Kitt Nielsen

Fra: Jeanne Ditte Jensen på vegne af Anne-Sofie Degn
Sendt: 22. februar 2018 14:34
Til: Alex Vanopslagh (Borgerrepræsentationen)
Emne: Svar: Opfølgende politikerspørgsmål fra Alex Vanopslagh ift. bycyklerne - 2018-0046285
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Kategorier: Gul kategori

Kære Alex Vanopslagh

Tak for din opfølgende henvendelsen 11. februar 2018 om By- og Pendlercyklen. I første omgang svar på dine spørgsmål:

Den lave tilgængelighed i 2017
I august 2017 knækkede stellet på en af Bycyklerne. I forlængelse af bruddet har alle cykler fra samme produktionsserie været taget ud af drift og gennemgået et ekstra tjek, hvilket i en periode har reduceret tilgængeligheden. I efteråret 2017 var der derudover perioder med usædvanligt meget hærværk, hvilket i perioden har reduceret cykelflåden yderligere.

Forholdende omkring cykeltilgængelighed er reguleret af Rammeaftalen mellem kontraktholder og operatør. Jeg har vedhæftet Rammeaftale med tilhørende bilag. Rammeaftalens bilag D, Service Level Agreement, fastsætter en række servicemål bl.a. for cykeltilgængelighed. Hvis servicemålene ikke opfyldes, udløser det en bod, hvilket også er beskrevet i bilag D til aftalen. Bilaget beskriver også, hvordan en markant afvigelse fra servicemålene kan betragtes som væsentlig mislighold.

Da Københavns Kommune ikke er part i Rammeaftalen, har forvaltningen ikke direkte indflydelse på cykeltilgængeligheden, men det er naturligvis en forudsætning for vores samarbejdsaftale med By- og Pendlercykel Fonden, at de sikrer, at Rammeaftalen overholdes. Hvis du ønsker en yderligere spørgsmål til cykeltilgængelighed og Rammeaftalen, så er du meget velkommen til at tage direkte kontakt til By- og Pendlercykel Fondens direktør, Tina Füssel.

By- og Pendlercykel Fondens ejerskab af Bikeshare
Da Bikeshare i foråret 2017 blev taget under rekonstruktion valgte By- og Pendlercykel Fonden at overtage selskabet for at sikre den fortsatte drift af systemet, hvilket anses for at være i tråd med fondens formål om at sikre udbredelsen af at bycykelsystem. Fonden og Bikeshare er, uanset købet, to separate juridiske enheder med separate bestyrelser. Forholdet mellem parterne er fortsat reguleret af Rammeaftalen, som blev indgået i 2012 i forlængelse af det offentlige udbud.

Borgerrepræsentationen har ret til at udpege et medlem til bestyrelsen i By- og Pendlercykel Fonden, men da fonden er en privat, erhvervsdrivende Fond, som er uafhængig af sine stiftere (Københavns Kommune og Frederiksberg Kommune), så skal Københavns Kommune ikke godkende de beslutninger, som fonden træffer, så længe Fonden overholder den Samarbejdsaftale, som er indgået mellem parterne. Som erhvervsdrivende fond er fonden under tilsyn af Erhvervsstyrelsen.

Beregning af Bod
Som nævnt er beregningen af bod beskrevet i bilag D til Rammeaftalen. Bod beregnes på baggrund af en række parametre, heriblandt cykeltilgængelighed. Generelt lever Bikeshare op til Rammeaftalen, og derfor har bodsbetalingen været af begrænset størrelse. Fx udgjorde boden for august 2017 9.008 kr., mens boden for oktober 2017 er udgjorde 12.174 kr. Til sammenligning udgjorde den største beregnede bod for en enkelt måned i 2016 10.174 kr., og den samlede beregnede bod for hele 2016 30.868 kr. Hverken bod eller tilskud gives pr. cykel, men det er selvfølgelig muligt at dele beløbet ud på de 1860 cykler.

Der udarbejdes ikke årlige driftsrapporter, men fonden følger udviklingen på månedlig basis. Samarbejdsaftalen mellem fonden, kommunerne og DSB fastsætter, at der skal afholde mindst to årlige statusmøder, hvor parterne bl.a. drøfter brug og drift af systemet. Herudover kan parterne efterspørger yderligere data fra fonden.

Når du læser Rammeaftalen, skal du være opmærksom på, at By- og Pendlercykel Fonden i 2014 overtog alle rettigheder og pligter fra selskabet Cykel DK, derfor er det Cykel DK og ikke fonden, som er nævnt i kontraktmaterialet. Du bør også være opmærksom på, at bilag A udgøres af det samlede udbudsmateriale, som er de dokumenter, der er navngivet med Appendix.

Jeg har medsendt de dokumenter, du beder om.

Med venlig hilsen

Anne-Sofie Degn
Vicedirektør
Byens Anvendelse

KØBENHAVNS KOMMUNE
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Fra: Alex Vanopslagh (Borgerrepræsentationen)
Sendt: 11. februar 2018 12:29
Til: Cecilie Gedua Vyff
Cc: Marlene Langbo-Friis
Emne: Vs: Svar: Opfølgende politikerspørgsmål fra Alex Vanopslagh ift. bycyklerne. eDoc sag 2018-0046285
Kære Cecilie
Jeg ønsker at stille nedenstående opfølgende politikerspørgsmål - og er lidt i tvivl, om du er den rette modtager. Jeg kan forstå, at du modtager henvendelser, der var tiltænkt Anne-Sofie under hendes fravær.
Bh Alex

Fra: Alex Vanopslagh (Borgerrepræsentationen)
Sendt: 11. februar 2018 12:25
Til: Anne-Sofie Degn
Cc: Marlene Langbo-Friis
Emne: Sv: Svar: Opfølgende politikerspørgsmål fra Alex Vanopslagh ift. bycyklerne. eDoc sag 2018-0046285

Kære Jeanne
Mange tak for din mail - det var præcis de tal, som jeg efterlyste :-)

Jeg har yderligere en række opfølgende spørgsmål, som jeg ønsker at få besvaret. Har du mulighed for at videreformidle i systemet?
Derudover har jeg forsøgt at finde kontrakten mellem fonden og operatøren (inkl. bilag) samt at finde driftsrapporterne for 2016 og 2017. Jeg tænker, at de ligger online et sted, men at jeg blot ikke har kunne finde dem. Har du mulighed for at guide mig den rette vej - alternativt sende mig dem?

Opfølgende politikerspørgsmål fra Alex Vanopslagh ift. Bycyklerne

· Hvad skyldes de lave tilgængelighedstal i september, oktober, november og december (2017)? Er der konkrete, tekniske årsager hertil? Hvad er planen for at få tilgængeligeheden op igen – og hvornår forventes det, at operatøren kan leve op til kontraktens forpligtigelser igen?
· Hvad er meningen med, at operatøren – som er ejet af By- og Pendlercykelfonden – skal betale en bod til By- og pendlercykelfonden? Er det ikke blot at betale bøder til sig selv? Er dette lovligt? Forventes det at have en positiv virkning at rykke pengene fra den ene kasse til den anden indenfor samme organisation?
· Er det muligt at regne ud, hvad bodens pris er i gennemsnit pr. cykel og sammenholde det med, hvad hver af de 1.840 cykler får i gennemsnitligt tilskud?

Fra: Jeanne Ditte Jensen på vegne af Anne-Sofie Degn
Sendt: 8. februar 2018 16:56
Til: Alex Vanopslagh (Borgerrepræsentationen)
Cc: Marlene Langbo-Friis
Emne: Svar: Opfølgende politikerspørgsmål fra Alex Vanopslagh ift. bycyklerne. eDoc sag 2018-0046285

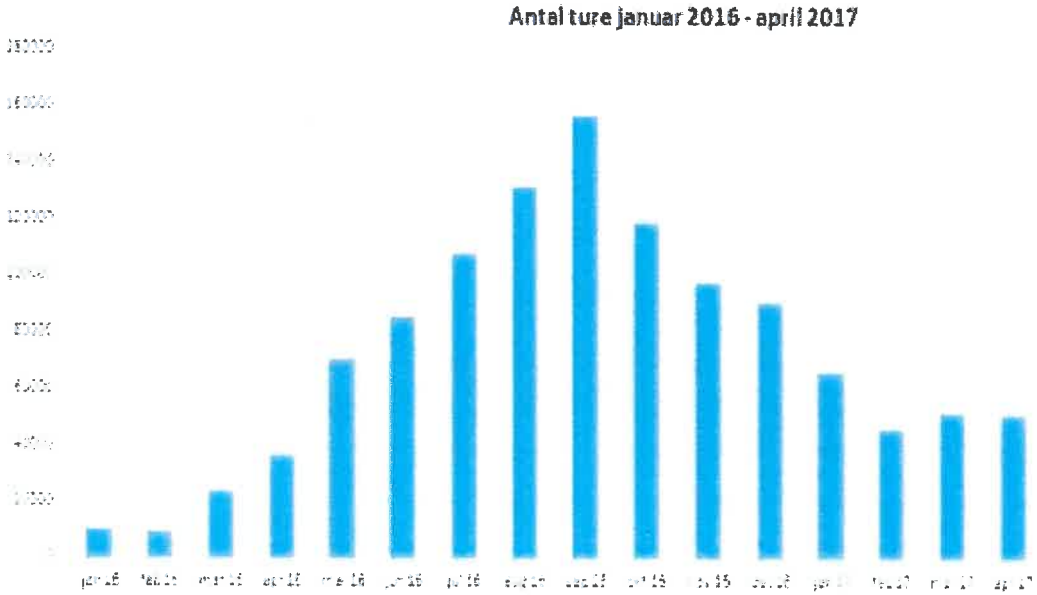
Kære Alex Vanopslagh
Tak for din opfølgende henvendelse til Teknik- og Miljøforvaltningen fra den 29. januar 2018.

Du spørger til en oversigt over "bike count"/tilgængelige cykler samt brugstal for 2016.
By- og Pendlercykelfonden har leveret de to nedenstående oversigter, der viser henholdsvis tilgængelige cykler i 2016, og brugstal for perioden januar 2016 til april 2017:

Bike Count 2016

Date	Percent Available
January	58,25 %
February	28,96 %
March	66,08 %
April	81,54 %
May	87,57 %
June	85,00 %
July	82,69 %
August	88,14 %
September	90,62 %
October	89,44 %
November	87,06 %
December	88,60 %
Average	77,83 %

Tilgængeligheden i januar og februar 2016 var stærkt påvirket af, at et ISO-krav til drejeradius på cyklerne betød, at alle cyklerne måtte en tur forbi værkstedet for at få justeret styret.



Jeg håber, det besvarer din henvendelse.

Med venlig hilsen

Anne-Sofie Degn
Vicedirektør
Byens Anvendelse

KØBENHAVNS KOMMUNE
Teknik- og Miljøforvaltningen

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Fra: Marlene Langbo-Friis
Sendt: 29. januar 2018 12:18
Til: TMFKP Sekretariat
Cc: Alex Vanopslagh (Borgerrepræsentationen)
Emne: VS: Opfølgende spørgsmål ift. bycyklerne

Kære forvaltning,

Tak for det vedhæftede svar. På vegne af Alex Vanopslagh (I) kommer her et enkelt supplerende politikerspørgsmål:

1. Er det muligt at få tilsendt oversigt over "bike count"/tilgængelige cykler samt brugstal for 2016 (svarende til de oplyste tal for 2017)?

Med venlig hilsen

Marlene Langbo-Friis
Fuldmægtig
Borgerrepræsentationens Sekretariat

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Appendix 1 – Purpose description

Bike-sharing system

October 15th 2012

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1. Introduction

GUIDELINES FOR TENDERER

Appendix 1 contains only minimum requirements and shall be fulfilled by the Tenderer. The Appendix is final and cannot be commented or modified.

Any markings, comments or modifications by the Tenderer outside sections designated thereto, or which are not compliant with the additional guidelines will be disregarded and not be considered part of the tender, and they will be deleted and not be reflected in the signature version of the document.

If the Tenderer has any reservations to this Appendix, the Tenderer shall describe these reservations in the Reservations List appended to the Tender Conditions.

2. Background

The Customer (DSB) runs national train operation and is interested in the establishment of a bike-sharing system around the rail network at stations and in cities in the whole country. This will be done in order to ensure an easy connection to public transport and hereby generate an access of new customers for the train.

The users' connection possibilities to the train constitute a substantial barrier for the use of the train. By establishing a bike-sharing system the Customer can accommodate this problem and cover all of the user's journey and not only from station to station. Experiences from the Customer show that the combination of train and bicycle gives the end users increased flexibility as well as reduced travel time and therefore attracts more travelers to the train.

The country's municipalities have coincident interests with the Customer, as the establishment of a bike-sharing system supports the municipalities' wish for promoting green transport and a cleaner city.

2.1. Vision

It is the vision to give citizens, customers of public transport, tourists or visitors in the city the possibility of using a public transport system from door to door and not only from centre to centre. The overall success criterion for the system is therefore to create an efficient and flexible bike-sharing system, which is easy and simple to use for the end user in connection with the existing public transport.

The system shall be attractive for commuters and visitors, who arrive in the cities either with the train, the bus or the metro and thus encourage them to use the shared bikes as a part of their daily journey from and to work, a meeting or similar.

Furthermore, the bike has to function as an attractive and easily accessible mean of transport for citizens, who in shorter periods do not choose to take their own bikes for one or another reason.

Regardless if the end user uses the system daily or only occasionally, the access to the system shall be so easy and fast that the system is seen as attractive. The system

shall be designed and operated in a way, that the end user has confidence in the system.

2.2. Concept description

The bike-sharing system shall be a bike for hire service that provides end users of the Customer (DSB) a high-quality automated bike rental. It is expected that the bikes will be placed at a number of chosen train stations, relevant bus centers, tourist attractions and other central locations.

The customer wants to establish a bike-sharing system, to which “major customers” can buy access on behalf of their employees or customers. A major customer can be a private company or a public institution.

Appendix 2
Service requirement

Bike-sharing system

October 15th 2012

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A. Business model

The bike-sharing system shall be a bike for hire service that provides End Users ~~of the Customer (DSB~~) a high-quality automated bike rental. It is expected that the bikes will be placed at a number of selected train stations, bus centers, tourist attractions and other central locations.

~~The Customer will market the system towards End Users and bear the risk for the system's finances; therefore the Customer will retain all revenues from user payments. Furthermore, the Customer is responsible for marketing and sale of access to the system to "major customers". The Customer is also responsible for the development and implementation of commercial initiatives, which make it possible to create specific products for selected End User groups.~~

~~The system is not financed by advertisements, however third-party companies or institutions under public law have the possibility of entering a sponsor agreement with The Customer.~~

1. Cooperation with the Supplier

~~The Customer is the contractor of a Framework Agreement, and the Supplier is the financial participant to whom the Framework Agreement is assigned.~~

~~The Customer wants to execute this project wherein the Supplier's experiences from similar projects are utilized~~ The Supplier shall hold a pro-active role in relation to the solutions design – referring to the Customer's commercial needs, which are described in these tender documents. Thus, it is the intention to execute the project with a high degree of collaboration from all partners. To the benefit of the End User, the collaboration between the Customer and the Supplier shall go on with the highest possible openness and transparency in relation to the development and operation of the system.

The Customer wants the Supplier to actively participate in continuous development meetings in view of optimizing and developing the system, based on the Supplier's experiences from the operation around Denmark and/or abroad.

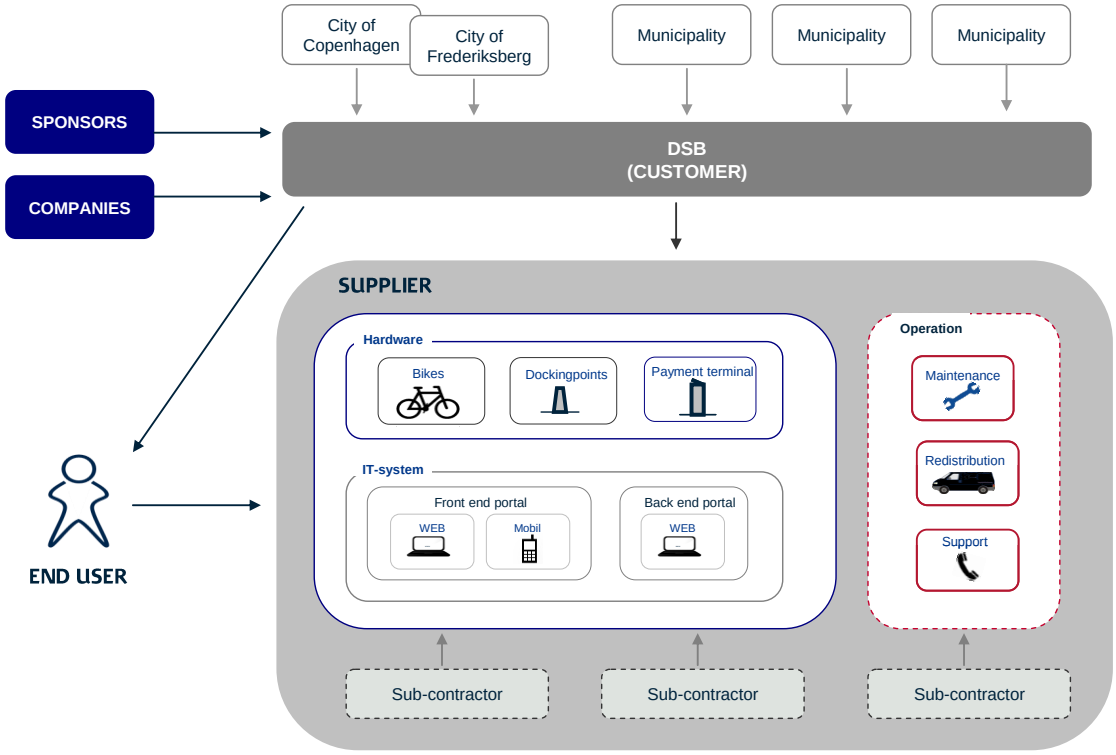
2. Cooperation with the municipalities

As a rule, the establishment of the bike-sharing system will happen in cooperation with one or more municipalities, which buy access to the system via the Customer~~. It is however the Customer that is responsible for the system and that acts as the single point of contact for the Supplier~~. The Customer can therefore be seen as a "service provider" for the municipalities.

~~At first it is expected the bike-sharing system shall be established in the cities of Copenhagen and Frederiksberg. In the long term the Customer may expand the system to municipalities all over the country. There is an ongoing dialogue with a range of municipalities that have shown interest in the solution.~~

The Framework Agreement between the Customer and the Supplier will be a Framework Agreement in order to ensure that the system continuously can be expanded. Only once the Customer has entered into an agreement with a municipality regarding the establishment of the bike-sharing system will the Customer purchase the services from the Supplier based on the Framework Agreement. Below, Figure 1 shows possible business partners for the cooperation, the connection between these and the elements the Supplier shall deliver.

Figure 1: Overview of the system



~~There are several scenarios explaining how a municipality can join the bike-sharing system, depending on the municipality's wish regarding prices, products and marketing and how this corresponds to the solution developed in the cities of Copenhagen and Frederiksberg. For example, municipalities in the capital region may have similar needs and a desire for conformity with one another, whereas municipalities in other parts of the country may have other wishes regarding prices, products and marketing of their respective brand or region. Thus, it shall be possible to adjust the system accordingly to each of the municipalities' wishes.~~

Resizing of the hardware to the other municipalities is simple, as the individual municipality itself chooses the amount of bicycles, docking points and payment machines that are to be established in their municipality.

~~For the IT-system the situation is a bit more complex as The Customer will buy the user right for one complete IT-system, which shall allow for the management of users from more municipalities, where there potentially are different prices and conditions.~~

~~**Table 1: IT-system**~~

~~**Elements in the**~~	~~**Cities of CPH and**~~	~~**Municipality that**~~	~~**Municipality that**~~

system	FRB	wishes a solution identical to CPH and FRB	wishes a solution with other prices and conditions than CPH and FRB
• Front-end portal for End Users • Back-end portal for internal users • Integrations to other systems	"Basic module" in the IT-system shall manage prices and conditions for End Users in CPH and FRB	"Expanded module" shall manage prices and conditions for End Users in f. ex. municipalities in the capital's suburbs (similar to CPH and FRB)	"Expanded module" shall manage prices and conditions for End Users in municipalities in Jylland.

In connection with the operation of the system there can also be different requirements to the Supplier, depending on the municipality's need. Below, the tasks the Supplier can expect to manage, are outlined in Table 2.

Table 2: Operation

Elements in the system	Cities of CPH and FRB	Municipality that wishes a solution identical to CPH and FRB	Municipality that wishes a solution with other prices and conditions than CPH and FRB
• Maintenance and cleaning	X	Option	Option
• Replacement	X	X	X
• Redistribution	X	Option	Option
• Customer support	Option	Option	Option

Table 2 makes it evident that the cities of Copenhagen and Frederiksberg want the Supplier to manage the operation of their portion of the system. For other municipalities these operational tasks performed by the Supplier will be an option, as the operation in some cases can be managed by the municipality itself.

3. End Users

The Customer wants to have the primary contact with the End User with regards to sale, marketing and loyalty care. It is also the Customer who determines products and prices for the End Users in the different municipalities.

The system shall be capable of managing different user types with different travel behavior, who have different needs for products and prices. The system's primary target group is commuters who use public transport and have a need for a product that gives them access to many rentals for a low unit price. Ad-hoc users on the other hand need a flexible product that gives them easy access to the bicycles without commitment.

~~It is expected to offer products to the End Users that can meet their different travel behaviors. Below in Table 3, there is an example of prices that are expected to be implemented in the system.~~

~~Table 3: Examples of products and prices~~

~~Products~~	~~Commitment~~	~~Price/month~~	~~Price/hour~~
~~Subscription 1~~	~~12 months~~	~~100 DKK~~	~~0,5 DKK~~
~~Subscription 2~~	~~No~~	~~100 DKK~~	~~2,0 DKK~~
~~Hourly rate~~	~~No~~	~~No~~	~~10 DKK for the 1st hour~~ ~~20 DKK for the following hours~~

4. Sponsors

It shall be possible for the Customer to request the Supplier affix sponsorship advertisements on e.g. the physical elements of the bike sharing-system. The Supplier shall incorporate this possibility into the basic design of the system and shall be available for the system's launch, should the Customer desire to use this.

The Customer will be responsible for dialogue with sponsors and enter into agreements with them. The Supplier shall forward any prospective sponsors on to the Customer. The Supplier therefore shall only ensure the mounting of sponsor advertisements on various hardware at the Customer's request.

5. Companies

The Customer wants to establish a bike-sharing system to which a major customer such as a private company or a public institution (major customers), can buy access on behalf of their employees or clients. The essential aspect of the solution to major customers is that the major customers'local administrator will administrate access to the system on behalf of their End Users. Thus it is important that the administration is as easy and simple as possible for their benefit.

~~The Supplier shall provide the following two methods for a major customer to buy access to the system:~~

1. ~~Purchase of hardware and IT-solution and possibly operation for a bike-sharing station at the major customers' site.~~
2. ~~Purchase of "price plans" (subscriptions or usage) for End Users.~~

B. Guide for the requirement specifications

This tender material describes the requirements the Customer demands in connection with the purchase and operation of the bike-sharing system. The tender material and the requirement specifications contain a range of different technical and tender terms.

It is crucial that the Supplier reserves enough time to acquaint itself with the guide for the requirement specifications and particularly with how the Customer's need is phrased in the individual requirements.

1. Requirement and consequence

The Customer's need is classified in four categories, named as the following:

- Minimum requirement
  *A minimum requirement **must** be fulfilled by the Supplier and shall be part of their tender. If a minimum requirement is not fulfilled, or if it is made with reservations, the tender will be seen as "not conditional" and will not be further considered for the Framework Agreement award.*

- Requirement
  *A requirement (marked as "req") is the Customer's desire for the system and **can** be fulfilled by the Tenderer fully or partly or not at all. If a requirement is only partly fulfilled or even not fulfilled, the tender will still be considered as "conditional".*

- Information requirement
  *An information requirement marked as "info.req" (information requirements) is as well as "a requirement" the Customer's desire for the system and **can** be fulfilled by the Tenderer fully or partly or not at all. An information requirement **must** be answered by the Tenderer. A tender lacking response to an information requirement will cause the tender to be "not conditional" and will not be further considered for the Framework Agreement award.*

It will be considered advantageous if the information requirements are supported with sketches, drawings, flow graphs, screen dumps etc, that support the tenderer's description of the solution in the best possible way. If there are time wise, financial or qualitative consequences of a non-fulfilled requirement, this shall be stated by the supplier.

There will be consequences of lacking response for all requirements. The consequence is described above and it rests with the Supplier to ensure that the above text is understood in detail with regards to the Supplier's preparation of the tender and the possibility of entering into the tender evaluation.

Each specification is listed below starting in the next section. A minimum requirement is listed as "min. req.", requirement is "req.", information requirement as "info.".

Each requirement will be formatted in the following manner:

Requirement # **Requirement title**
Text describing the requirement.
Additional text.

The requirement text is marked with a vertical line on the left side. It is only the requirement text that constitutes the Customer's requirement. The text outside the vertical line on the left hand contains only additional information used to better describe the requirement.

2. How the compliance list is to be completed

Compliance of requirements will be graded. The Supplier shall enclose a completed compliance overview, including statements on whether and how the requirement shall be met.

The grade of compliance shall be given by the Supplier according to the following method:

1 - Corresponding to "completely fulfilled"
2 - Corresponding to "partly fulfilled"

3 - Corresponding to “not fulfilled”

Note: The statement of the compliance grade ”partly fulfilled” or ”not fulfilled” constitutes a reservation on the part of the Supplier’s response.

Minimum requirements are not part of this list, as they will be “not conditional” if the Supplier doesn’t fulfill these.

In case the Supplier chooses to state the compliance grade as “partly fulfilled” for a requirement, the Supplier shall always account for at least the following conditions in the comment field:

- What shortcomings are in the offered solution compared to the initial described requirement?
- What consequences would the shortcomings have for the Customer and the End User, respectively?
- What possibilities are there to compensate for the described shortcomings?

In case the Supplier does not state anything in the column titled ”compliance grade”, this will be considered as compliance grade 3 and therefore as <u>not</u> fulfilled in the tender.

Response to Information requirements

For responses to an information requirement, the Supplier shall state in the comment field of the compliance list, where in the tender the response can be found.

Example of the compliance list:

Point no.	*Page*	*Specification*	*Compliance grade 1, 2 or 3*	*Comment*
Req. 1	*1*	*Example for requirment title*	*1*	

All appendices are concluded with a compliance list, which shall be completed by the Supplier.

1. Requirements for deliverables

This paragraph describes the requirements for the bike-sharing system, seen from the perspective of different users.

1.1. User types

There are a range of different users of the bike-sharing system which can generally be divided in three categories:

- End Users (cyclists)
- Internal users ~~at the Customer's organization~~
- External users at third party organizations

The drawing below gives an overview over the type of users which have various needs, behaviors and situations?

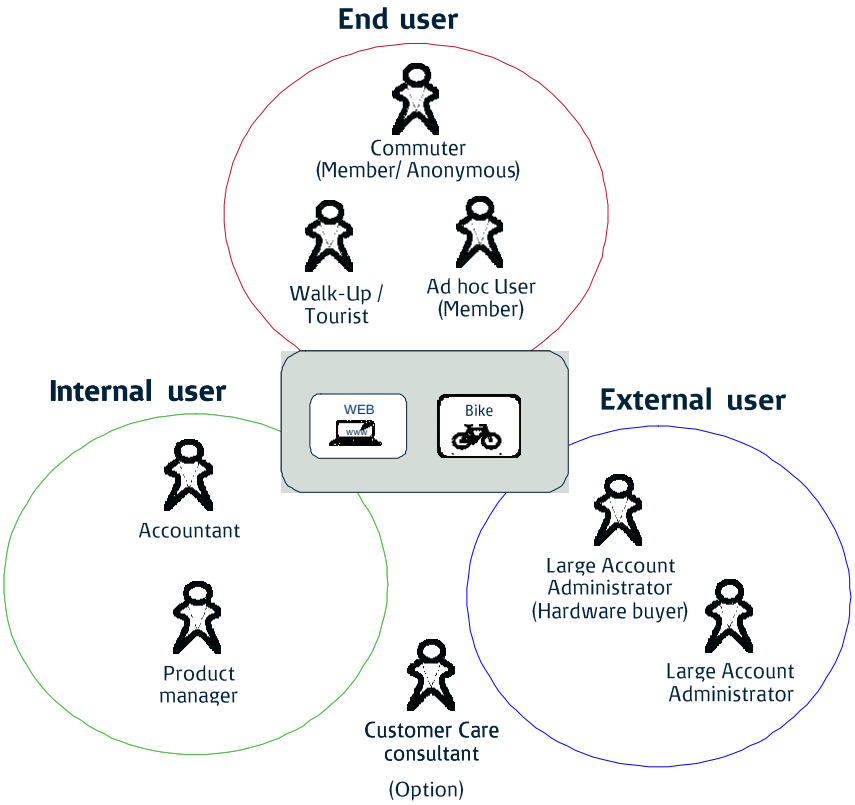


Figure 1: Overview of types of users and their relations

1.1.1. End User

Depending on their behavior and affiliation to the Customer, End Users can be divided in four different segments which are shown below:

	Anonymous users	**Registered users**
Low usage frequency	Walk-up / tourist	Ad hoc Users
High usage frequency	Flexible Commuter	Membership Commuter

Membership commuter
Commuters are the most important and frequent users of the system. They will receive a fixed low price for products with a long duration, as they are regular daily users of the system. The commuter is willing to spend more time to register, as he will profit from it in the long run. Thus, the system contains some information about this End User.

It is of importance that the commuter's access to the bike-sharing system is as easy and fast as possible and that queues during the bicycle check-in/check-out at stations are avoided.

Walk-up/Tourist
Walk-ups and tourists are anonymous End Users, who either are resident Copenhageners or visitors to the city. This End User will typically base his choice of transport on a range of factors each time and therefore needs an easy and fast set-up as End User.

It is vital that the system is designed in a way that the End User can use a bicycle without being registered as a user in advance.

Ad hoc users
This user type is registered in the system and uses the bicycle regularly on an ad-hoc basis. This End User knows the system and uses the bicycles as a part of his everyday life, if it is needed. This End User segment sets a great value on the bicycles' availability and the possibility of getting a quick overview over vacant bicycles while on the move.

Flexible commuter
This category of users doesn't want to be registered in the system, as they emphasize freedom and the possibility of choosing a bicycle as it fits their needs, inde-

pendently of the use. The products applicable to this user group will therefore be more expensive than products for the regular, registered users.

~~1.1.2. Internal users~~

~~Besides the End Users, there are also a range of internal users. Internal users are typically employees of the Customer with different areas of responsibility within the system. They use the systems' back-end in relation to their work tasks. Internal users can be Product Managers, employees of finance or support.~~

~~Below are descriptions of the three types of internal users, who will primarily use the system's backend.~~

~~*Product Manager*~~
~~The Product Manager is a central user of the back-end system (administration system). The Product Manager has the daily responsibility for the Customer's products and shall contribute to develop the use of the system among the four different user segments.~~

~~*Financial staff*~~
~~The financial staff has a central role in relation to the daily administration of the Customer's activities. The financial staff work in the Customer's ERP-system and are expected to be daily users of data from the Supplier's IT-system.~~

~~*Support staff*~~
~~The support staff manages End User requests by email and phone. The support staff shall function as first-line support, to which the End Users call or write, if they have questions regarding the use of the system, the conditions or the payment. Whether the support function shall be managed by the Supplier or the Customer is undecided, but will be determined as a part of this tender. Thus, support staff is not categorized with regards to user types.~~

1.1.3. External users

Furthermore there will be a category of users, who are called external users. These include the Customer's major customers, which is companies and public institutions that want to buy access to the bike-sharing system on behalf of their employees or their End Users. The essential need with these users is that they admin-

istrate the access to the system on behalf of a range of End Users, which is why it is important that these users have an easy and clear portal for administration.

Their tasks will cover everything from approving that the employees are attached to a "company-paid bike scheme", reconciliation of accounts and payment of the companies' total usage fees and also distribution of access codes/keys to guests or to their End Users.

1.2. Requirement to the End User's experience

Listed below are the requirements described from End Users' point of view in relation to the flow from registration to use and return of the bicycle.

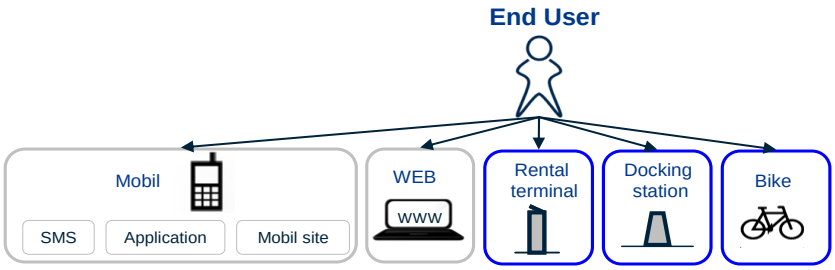
The End User needs to be able to use the system through a wide range of different channels to (i.e. register with the system, get information about vacant bicycles or docking points, make bookings and payments, report a faulty item or send a Customer request).

Info. 2.1 **End User portal**

The Supplier shall deliver End User portals, which make it possible for the End User to access and use the bike-sharing system from a range of channels. The Supplier shall account for which functionalities are accessible for the End User through the different channels.

GoBike compliance grade 1 and answer to requirement:

System description, including visual and functional mock-ups.
See LB 7.1 and LB appendix A (Systems Description & User Interaction)



Membership sign up	?	?	?	X	?	?	?
Make payment agreement / save card information	?	?	?	X	?	?	?
Information regarding available bicycles	?	?	?	X	?	?	?
Booking	?	?	?	X	?	?	?
(Reservation of deposit)	?	?	?	X	?	?	?
Check out a bicycle	?	?	?	X	?	?	?
Information regarding available dockingpoints	?	?	?	X	?	?	?
Best buy (returning the bicycle)	?	?	?	X	?	?	?
Check in the bicycle	?	?	?	X	?	?	?
Information regarding consumption/use	?	?	?	X	?	?	?
Make payment	?	?	?	X	?	?	?
Payment information / confirmation	?	?	?	X	?	?	?
Contact support	?	?	?	X	?	?	?
Reporting a defect	?	?	?	X	?	?	?

Figure 2: Overview of dialogue and communication channels with the bike-sharing system, seen from the End User's point of view. "X" refers to mandatory (minimum) requirements and "?" refers to features which the Supplier must describe according to the offered solution.

The above drawing shows an overview over the different channels in relation to the End User's possibilities.

The website is a central part of the solution and the overall deliverable, and shall function as a registration possibility, as well as an information and sale channel for all types of End Users.

Req. 2.1. **Access from the website**

All functions the Supplier provides in connection with the use of the system shall by default be accessible through the website.

GoBike compliance grade 1 and answer to requirement:

GoBike will deliver portals for PC/Mac and in time SmartPhones as well. An overview of the functionality on each channel can be found in the appendix.

SmartPhone applications are not part of the basic solution.. However, GoBike plans to include SmartPhone applications in version 1 of the solution. Website access including booking will be immediately available and be part of the system pre-launch test.

At launch, GoBike will provide Smartphone access through a mobile-optimized dynamoc website.

See LB 7.1 and LB appendix A (Systems Description & User Interaction)

The Customer wants access to the bike-sharing system to be as easy as possible for the End User who is on the move. In order to prevent bottlenecks at the payment machines or docking points in connection with the check-in/check-out of the bicycles, the Customer wishes at the same time that the system can be accessed by the End Users' own mobile devices to the highest extent possible. As the Customer's focus is on reaching a broad target audience and not only "early adopters", a solution which is accessible through many channels is emphasized.

Info. 2.2 **Focus on mobile solutions**

The Supplier shall account for which possibilities and functionalities are accessible for the End User through mobile phones, which shall include how SMS, applications and mobile sites are supported.

The Supplier's description shall include an explanation of mobile payment. The Supplier shall account for which operating systems (as a minimum iOS and Android) and browsers are supported.

GoBike compliance grade 1 and answer to requirement:

The Gobike IPBM IS A MOBILE SOLUTION!! Gobike is mobile from top to bottom. None of the system parts require a fixed location to access. Web portal, user account, Bike rental, payment solutions, user community, etc.all can be accessed by (mobile) internet on laptop, smartphone, tablets PC.
The Urbike is the best example of the Gobike system mobility, while the Urbike comes with a tablet PC incorporated.
The Gobike user interface will accept all commercial known systems, like sms, apple, android, windows and also it is possible to create interfaces for private platforms.

See LB 7.1 and LB appendix A (Systems Description & User Interaction)

The following requirements to the End User's experience are divided into eight paragraphs that follow the structure of the "touch-point" model below. The model demonstrates the End User's usage experience of the bike-sharing system.

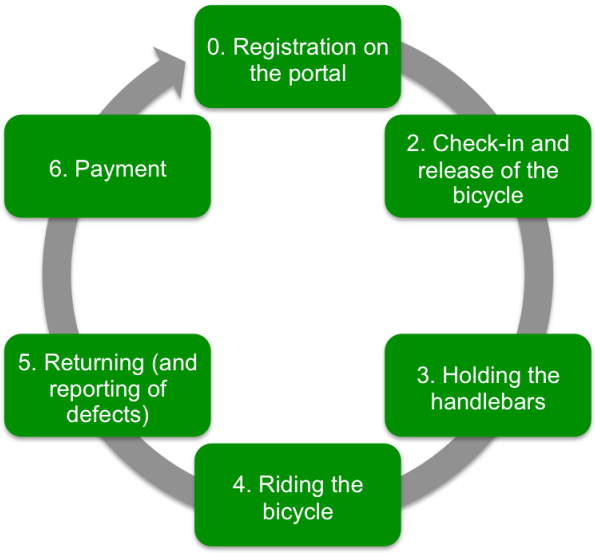


Figure 3: Model for End User usage experience

1.2.1. Registration on the End User portal

The Supplier shall make it possible ~~for the Customer~~ to offer a portal to the End User that meets the End User's need in connection with the use of the bike-sharing system. In other words: The End User shall be able to get information about the bike-sharing system, register himself as a user of the system, make reservations, view their usage, etc. The portal shall be sufficient and fulfill all requirements an End User has in connection with the use of the bike-sharing system. The End User shall be able to login with a personal login.

Min. req. 2.1 **Contractual terms**

The applicable contractual terms shall be introduced to the End User at account creation and shall always be available for review by the End User.

GoBike compliance grade 1 and answer to requirement:

This is incorporated into the sign-up flow. Final sign-up will not be possible without accepting the terms and conditions.

See LB 7.1 and LB appendix A (Systems Description & User Interaction)

Min. req. 2.2 Personal profile

The Supplier shall, as part of the End User portal, be able to manage:

- Personal End User information
- Personal logon procedure with a unique password (which the End User shall be able to change)
- Personal usage information within a period of 1 year (i.e. number of bookings of bicycles, subscription type, information regarding current rentals, bicycle-ID)
- Information regarding the End User's historical usage and payments

GoBike compliance grade 1 and answer to requirement:

GoBike systems contain a large array of customer information, including usage, behavior and similar information. These information - or parts thereof - will be available to the customer and/or the GoBike organisation.

No restrictions stated. Customer can define selections of the information strings, as not all information is expected to be relevant for the customer.

Min. req. 2.3 End User information

The Supplier shall ensure an End User account can be created with:

- Name
- Address
- Mobile number (national and international telephone number)
- E-mail address
- ~~Credit card information~~
- Age
- Gender

GoBike compliance grade 1 and answer to requirement:

GoBike Customer database will contain all listed information - except credit card information which, by law, cannot be stored. The GoBike payment system will save a token, provided by the credit card validator, which will allow GoBike to perform debits on customer credit cards. GoBike follows standard procedures in these matters - with full legislative adherence.

Min. req. 2.4 **Payment agreements and saved credit card information**

It shall be possible for the End User to enter into a payment agreement with fixed monthly payments. It also shall be possible to save one's credit card information for future use, so that the End User in the future easily can rent a shared bicycle without reentering their credit card information, but rather by entering one's personal code.

GoBike compliance grade 1 and answer to requirement:

Credit card information cannot, by law, be stored. The GoBike payment system will save a token, provided by the credit card validator, which will allow GoBike to perform debits on customer credit cards. GoBike follows standard procedures in these matters - with full legislative adherence.

1.2.2. Holding the handlebars

The Customer wants it to be easy to get a bicycle regardless if the End User is anonymous or known by the Customer through their membership.

Info. 2.3 **Fast and easy check-out of bicycles**

The Supplier shall account for which "access media" (i.e. keys, codes or cards) are to be used for check-out with the different End User segments. The Customer prefers a solution where the accessibility for commuters - who shall have fast and easy access to a bicycle - is optimized and which creates the least possible queue at the check-in station. For unknown or ad hoc End Users check-out shall be able to be done immediately without prior contact with the Customer.

GoBike compliance grade 1 and answer to requirement:

The check-in, check-out, registration and payment is done ¨sitting on the bike¨. No queues, no waiting and no paperwork with the Gobike system.
The tablet PC on the Urbike, accepts Chip cards, Swipe cards, membership access codes and credit cards payment. All type of DSB clients and users can di-

rectly and easily access the system from the bike.
In addition, payment via SMS will be available.

Initial version will offer payment using credit card and subscription. Subscription sign-up will eventually be available at numerous channels.

Subsctiption sign-up is part of the basic solution with web-based sign-up. Additional channels will be added as these will be identified. External sign-up locations - including DSB and/or other channels - will also be taken into consideration. The GoBike system is open and will be able to accept sign-up requests from any external source adhering to the GoBike syntax.

See: LB appendix A (Systems Description & User Interaction).

Min. req. 2.5 **Check-out of bicycle**

The Supplier shall ensure that it is evident for the End User which bicycle will be released. At the same time it shall be evident if a bicycle that is checked-in is available for rent or unavailable (i.e. reserved or broken).

GoBike compliance grade 1 and answer to requirement:

Since the actual release of the bicycle is done using the tablet which is mounted on the bike, there will be no doubt which bike is being released.

Further, all docking stations have a unique ID which is clearly visible on them. This ID is being used when redirecting a customer to another location on full bicycle station.

In setups where a standard kiosk is being used, unlocking a bike at a kiosk will also refer to this unique docking station ID.

Info. 2.4 **Returning a bicycle**

The Supplier shall describe how it is possible for the End User to get information regarding where the bicycle may be returned.

GoBike compliance grade 1 and answer to requirement:

The user has access to the bicycle station position through the internet web portal and through the route map application on the bike tablet PC. The tablet can func-

tion as a route guide system and lead the user directly to the destination address he introduces or the user can simply drive and follow his position on the tablet screen. This screen shows next to the roads also the locations of the bike stations nearest by.

Please refer to LB appendix A (Systems Description & User Interaction).

Info. 2.5 **Returning a bicycle and getting a discount (best-buy)**

The Supplier shall provide information regarding where it is most economically beneficial to return the bike to a location for the user. The Supplier shall describe how it is possible to make the information available for the End User during the End User's trip. The Customer expects the information to be available via mobile phone and the payment machines.

GoBike compliance grade 1 and answer to requirement:

The system stimulates the users to leave the bicycle at those bicycle stations which require receiving more bicycles. In this way trailer transports of bicycles between stations are reduced and the costs also.
The user is shown on the bike tablet screen the real time situation of the stations and with different colours the user is shown on the screen which stations offer a discount on the trip price if the bicycle is returned there.
The trip cost is the standard amount; over this amount discounts can be applied. This has the advantage that the tariff tables and sueems need no adjustment.

GoBike systems will continuously monitor vacant and occupied docking stations in all locations. Based on these info, the user will be presented with a list of possible return locations - all based upon the current GPS based position. For each of these locations, an incentive can be added. Please refer to appendix for example of UX related to returning of a bicycle.

The End User can hereby be motivated to contribute to the redistribution of the system, by planning their check-in location beforehand based on a bonus or discount possibility.

1.2.3. Riding the bicycle

If the End User uses a bicycle and wishes to return it, it shall be easy to get information regarding their present trip usage.

Req. 2.2. **Usage information**

The End User shall have the possibility to be informed of the following via web-site as well as mobile phone (i.e. widget):

- Length of the current rental period
- Preliminary price of the current rental period
- Projected price for the next time interval of the current rental period

GoBike compliance grade 1 and answer to requirement:

GoBike systems provide these information in multiple channels.

At launch, GoBike will provide Smartphone access through a mobile-optimized dynamoc website. This description will include a preliminary system architecture description.

Please refer to GoBike document ""Løsningsbeskrivelse 7.1"" which contains a full description of user interaction in the basic solution.

In order to reduce the need for redistribution of bicycles, the Customer wants a bike-sharing system that rewards the user for returning the bicycle to locations which need bicycles. That is location, where there is a high demand for bicycles or where there are empty docking stations.

Info. 2.6 **Discount or bonus for returning a bicycle to a desired location**

The Supplier shall account for an incentive system, where the End User receives a discount or a bonus immediately after returning the bicycle to a location where there is a demand for additional bicycles.

GoBike compliance grade 1 and answer to requirement:

As also explained in ¨Info request 2.5¨ and ¨request 2.2¨, the Gobike IPBM disposes over an intelligent capacity, which can calculate the bicycle need of the different bicycle stations of the system.
The IPBM has a learning capacity, which makes that the required amounts per station per day per hour, can be adjusted automatically based upon the long time history log and bicycle rentals.

Req. 2.3. **Extra time for a full station**

If the End User's arrives at a full dockingstation, the End User shall have the possibility of obtaining additional time without charge after they notify via the payment machine at the full station or via the mobile phone. The additional time will allow the End User to reach the nearest station to their desired station without incurring a fee.

GoBike compliance grade 1 and answer to requirement:

Req. 2.3. Extra time for a full station
In case of full docking stations, the user can report such using the Tablet PC. GoBike systems will verify status of each docking point at the selected docking station.

a. In case of vacant docking points at the docking station: User will be directed to vacant docking point via the Tablet PC and the unique ID of the docking point.
b. In case of full docking station, user will be advised nearest alternatives using the Tablet PC. Upon selection of desired alternative docking station, lease-time will be paused for [estimated transportation time]*1,3, allowing the user to drive to selected alternative docking station with no charge. Should user exceed [estimated transportation time]*1,3 for this transportation, a warning iwill be issued using the tablet PC. In case of <3 vacant docking points at selected alternative docking station, a docking point will be reserved for the user in [estimated transportation time]*1,3.

Info. 2.7 **Road service and assistance**

The Supplier shall provide a road service for End Users, who wants assistance with returning a non-functional bicycle. The service shall be available within normal opening hours, and it shall be possible for the Customer to charge the End User a fee for this service.

GoBike compliance grade 1 and answer to requirement:

The user can send out alarm form the bike or through smartphone in case the bicycle is broken down. The Gobike partner Falck will send out and assistance team to the user and repair the bike or change it for another one. So the user can continue his trip.

Further, the customer is able to lock the bike at any location and leave it there for pick-up by GoBike, should he/she not want to wait for assistance. In such cases, GoBike will be able to offer a taxi (not in all locations) for pick-up of customer.

Please refer to LB appendix A (Systems Description & User Interaction).

1.2.4. Returning and reporting of defects

Req. 2.4. **Fault reporting**

The system shall have a function that makes it possible for the End User to report a defect bicycle via the docking station upon the broken bicycle's return. Defect bicycles shall immediately be taken out of circulation and be repaired/replaced.

GoBike compliance grade 1 and answer to requirement:

Reporting a broken bicycle can happen in numerous scenarios:

1. In Dock - at lease out
2. During the travel
3. At return of bicycle

In all cases, the tablet on the bicycle is used for this reporting.

A bicycle reported as broken will be locked and clearly marked broken until re-paired.

Please refer to appendix for visualization.

Req. 2.5. **Returning of a defect bicycle**

The system shall ensure that no usage fee will be charged for a defect bicycle. It shall be possible for the End User to exchange a bicycle, which they determine to be unusable, within a period of five (5) minutes from the start of the rental for no fee. This requires that the bicycle is returned to the same renting location.

GoBike compliance grade 1 and answer to requirement:

The GoBike systems will ensure that appropriate discount (0-100%) is offered to

customer depending on situation of break-down.

For visualization, please refer to appendix and visualizations for Requirement 2.4, Info 2.4

1.2.5. Payment

Regardless if an End User is known or anonymous, an easy payment for the use of the bicycle is a substantial part of the system. ~~The Customer wants, that known users can save credit card information to their account, so that the End User afterwards easily can make a payment for the use of a bicycle, without entering the credit card information but just by using his personal code.~~

Info. 2.8 **Accounting for payment regarding user types and channels**

The Supplier shall in its tender - with sketches, flow charts and/or screen dumps - account for how the different End User types can make payments through the different channels. The Supplier shall account for:

- If SMS communication can be used for approval of a purchase, where saved payment information will exist
- How a deposit is reserved on the End User's credit card, when an End Users check-out a bike.
- If the "NETS" payment solution, "Mobil Penge", can be integrated in the solution (see: http://www.nets.eu/dk-da/service/verifikation-af-betalingsloesninger/specifikationer-og-aftaler/krav-til-mobilpenge/Pages/default.aspx)
- If Near Field Communication (NFC) or 2D-bar codes can be used as a payment channel
- How the End User would receive a unique ID for each transaction, which can be identified across the Supplier's, Customer's or payment provider's systems.

GoBike compliance grade 1 and answer to requirement:

GObike support the following payment channels:

1. Credit card payment
2. Subscription (monthly payment)
3. SMS

Future integrations to i.e. Rejsekortet will be considered on a continuous basis.

1. Credit Card payment
For all unregistrered users and/or registrered non-subsctiption users, gobike support full credit card payment. All major credit and debit cards will be supported, including national non-major card Dankort.

The payment process can be listed as follows:

1. Upon login, gobike authorizes and reserves DKK 50,00 on the users credit/debit card
2. At the end of the trip, the total cost is calculated
3a. Total cost<DKK 50.00: The actual total cost is debited the users credit/debit card.
3b. Total cost>DKK 50.00: The credit/debit card is re-authorized for Total cost.
3b/a. If re-authorization fails, the reserved DKK 50.00 will be debited the users credit/debit card. The remainder will be entering the standard gobike reminder flow.
3b/b. If re-authorization is succesful, the TotalCost is debited users credit/debit card.

2. Subscription
Upon entering a subscription schene, the user is credit validated for DKK 3.000. On a monthly basis, gobike generates a total of the monthly usage and debits this on the users credit/debit card. Credit/debit card will be re-authorised on a monthly basis to accommodate the variable amounts. Should validation fail, the invoice will enter the regular gobike reminder flow, and user will be de-activated until balance is levelled.

3. SMS
Using SMS payment requires the user to be a registrered gobike user. Registration information includes users mobile phone number, which is used during the SMS authorization process. User submits a SMS with appropriate docking station ID to the gobike SMS gateway. The users phone number is used for credit validation. If succesful, the users mobile phone acount will be debited with the appropriate amount. This process requires a SMS upon lease start and another on lease end for re-authoristion of the Total Cost amount.

Min. req. 2.6 **Payment channels**

The payment system shall be able to manage at least one of the below mentioned payment vendors, in addition to Dankort, Visa and Visa-electron:

- MasterCard/Eurocard
- Maestro (only if MasterCard's Secure Code or Visa's Verified/J-Secure)
- JCB (Japanese credit card)
- CUP (Chinese credit card)
- American Express

It is assumed that the payment card will require PIN code access.

GoBike compliance grade 1 and answer to requirement:

All current credit cards, which can be validated through DIPS will be accommodted. Further, subscriptions of any kind - personal, company, membership etc - are supported.

~~1.3.Requirements from internal and external users (to an Administration system)~~

~~In order to make it possible to manage the administration and operation of the system, a range of internal and external users shall have access to an administration system. "Administration system" is a generic term for an independent web-based IT-system (also called backend system) with multiple modules in which the Customer shall have access.~~

~~As there are different users with different needs for the system, the system shall be designed in a way that the appropriate staff may obtain access to the functionalities that make it possible to manage their respective work tasks.~~

~~The administration system shall be accessible for internal users from the Customer as well as the Customer's "major customers", in other words: the system shall be able to contain the following user roles:~~

- ~~Product Manager (internal user from the Customer's organization)~~
- ~~Support staff (internal user at the Customer's organization)~~
- ~~Third party organization administrator (external user)~~

~~Below there is an overview over how the administration system is seen, divided in relation to the roles and functionalities.~~

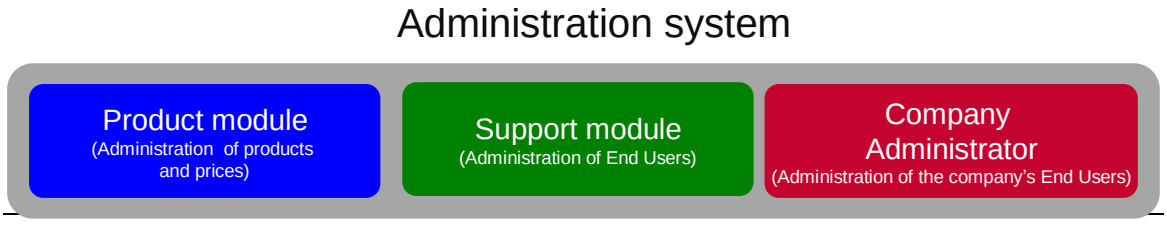


Figure 4: Overview of back-end IT-system

The grey box shows the whole Administration system.

The dark blue box indicates the functionalities of the Administration system that particularly shall be used by the Product Manager, project manager or others with sales or product responsibility. Requirements for these functionalities are gathered under paragraph 1.4 Requirements of a Product Manager.

The green box indicates the functionalities of the Administration system that particularly shall be used by those who handle support and Customer service for End Users. The Customer support function can be managed by either the Supplier or the Customer; thus the requirement is marked as an option, cf. Appendix 10 Options. Regardless of whom is managing the Customer support, the Customer shall have full access to the Customer support portal. Therefore, the administration system shall contain a support module. The requirements to these functionalities are gathered under paragraph 1.5 Requirements of the Support staff.

The red box indicates the functionalities of the Administration system that are used in connection with a third party organization's handling of End Users and access to bicycles for its employees, End Users, etc. The requirements to these functionalities are gathered under paragraph 1.6 Requirements of a company administrator.

1.4.Requirements of the Product Manager

In order to give the Supplier a deeper understanding of the Product Manager's tasks, a selection of tasks are described below. The Product Manager's tasks generally can be divided into three categories:

1. Assure correct price plans for the End Users
2. Manage cooperation agreements with external partners
3. Assure a good End User experience by following-up on the service levels

Below, the three work areas are elaborated upon for the purpose of giving the Supplier insight into the work tasks of a Product Manager.

~~**1.4.1. Assurance of correct price plans**~~

~~One of the primary tasks of the Product Manager is to assure correct price plans for the different End User segments. The Product Manager creates, maintains and deletes price plans in connection with selected End User segments.~~

~~Thus, when developing the system, the Supplier shall ensure it is possible to use variable prices in connection with the same service and that this can be done by the Product Manager in an End User-friendly and intuitive way that minimizes effort and creates an overview of price plans and End Users.~~

Req. 2.6. **Creation and maintenance of products**

It shall be possible ~~for the Product Manager~~ to create and define products and prices, such as:

- Price plans
- Subscription bond for example 12 months
- Monthly product
- Daily product
- Hourly product
- Sign-up fee
- Deposit which is retained for each rental (the amount of which shall be variable depending on whether the End User is known or unknown)
- ~~An item number for rent, booking fee, payment fee, deposit etc., so these can be registered in the Customer's ERP-system (SAP-system)~~

GoBike compliance grade 1 and answer to requirement:

The Product manager will have a landin to the GoBike systems, which allows him/her to create and manage product packages.

Such packages may have a date-span associated with them, allowing Product Managers to create i.e. campaigns, which will then be activated at a stipulated date.

As the Customer continuously wants to make campaigns and special products/offers for various periods, either for selected End Users or for all End Users, the system shall be able to handle flexible products and prices. The Product Man-

ager is responsible for keeping the Supplier updated with pricing of rental and usage of the bike-sharing system.

Req. 2.7. **Flexible price plans**

It shall be possible ~~for the Customer~~ to create, define and cancel products and price plans itself. Flexible price plans can include:

- Fixed prices regardless of the usage
- Variable prices regarding time, date, week day and distance
- Free for a specified number of minutes or distance (i.e. 2 hours or 10 km, respectively)
- Free for a certain period (i.e. free on Sundays)

GoBike compliance grade 1 and answer to requirement:

GoBike systems fully support flexible payment plans. Should the customer require additional parameters not already in the system, GoBike can deliver such additional parameters as bespoke development within the boundaries of the SLA.

Please also refer to response for Requirement 2.6

~~It is a significant task of the Product Manager to make special agreements with various business partners and to offer them particular products targeted for their own employees, End Users, etc. This means that the Product Manager shall be able to differentiate prices for various End Users.~~

Req. 2.8. **Flexible price plans for different End Users**

It shall be possible for the Customer to create, define and cancel products and price plans that are related to different End Users. Whether the End Users shall be rated with a special price depends on whether the End User is identified as included by an agreement the Customer has settled with a business partner. ~~The identification of the End User shall happen via a look-up to:~~

- ~~The business partner database (see paragraph 7.2 "Integration to other systems")~~
- ~~The Customer's own database within the "Administration system" which is provided for business partners (see paragraph 3.6)~~

GoBike compliance grade 1 and answer to requirement:

This is fully supported by the GoBike systems. As a general rule, GoBike systems manage and react on information stored in own databases.

Integration to external systems is subject to review prior to GoBike approval.

GoBike systems will have full abstraction layers, which accommodates look-up in any database to which an integrations has been made - including, naturally, GoBike internal databases. Based on such lookup and associated user validation, the appropriate price plan is selected.

Please refer to: LB Appendix ""Systems Description & User Interaction"" section 7.1 which contains a user interaction flow for user creation. Further this document contains a full user interaction description.

~~The use of the Customers own database or the business partners' database depends on the expected number of End Users who are to receive the special price. For a small number of End Users (for example 200) it would be more efficient to create the End Users directly in the Customer's own database within the Administration System. For at large number of End Users (for example 50,000) it would be more efficient to integrate to the business partners existing database.~~

Req. 2.9. **Determining start time for a product**

It shall be possible ~~The Product Manager shall be able~~ to determine the date and time when a product/campaign shall start and end.

GoBike compliance grade 1 and answer to requirement:

This requirement can be fully met. See also ¨Requirement 2.7¨The customer may enter the system and temporarily change the price for a certain area; i.e. a number of bicycle stands. The price is fixed or defined pr. bicycle area. That means that each and every bicycle stand can have it's own price. On the screendump below it's possible to see how the various areas (now bicycle stands) may have separate pricing.

Both fixed and temporarily during campaigns. In addition the pricing structure may be configured to promotions or specific criterias, i.e. the first 30 minutes for

free, etc. It can also be done with different pricing pr. day.

Info. 2.9 **Handling of different prices and rental conditions**

The Supplier shall account for how the system can handle different prices and rental conditions for the bicycles differentiated on End Users and geografical areas/municipalites.

GoBike compliance grade 1 and answer to requirement:

The GoBike system is designed to operate with multiple prices for a bicycle rental (parking areas), with dynamic pricing (i.e. promotions) and various priceplans for the end customer (i.e. with or withour subscription or discounts). Thus the system support individual prices pr. Rental areas or station, as well as individual pricing pr. End user – being corporate or private person.

Req. 2.10. **Granting bonus/discount**

The Product Manager shall have access to grant a bonus and/or discount to the End User, either in the form of time or money. The granting shall be able to be done manually by uploading a CSV (comma-separated values) file with the End User's unique ID (i.e. Customer number, phone number, e-mail) or automatically by indicating which database is legitimated for the bonus or discount.

GoBike compliance grade 1 and answer to requirement:

This requirement can be fully met.Discounts on the registration or subscription fee may be granted directly from the system. In order to avoid misuse the system supports differentiated access to providing discounts.

GoBike proposes - and prefers - no replication of data. GoBike systems will allow for Product Managers with appropriate access to the systems, to manage all price plan, modify these and/or create new. Price plans can be associated with a group of users or a single user. GoBike systems will comply iwth the bonus parameters as listed. In the GoBike CRM system, external relationsships will be stored as well, thus making it hazzlefree to associate a price list to user groups defined by memberships in external databases as well. User validation will be done in the relevant database on landin.

For more information see: System description and funcitonal mock-up of the

Payment, CRM and Bike Management system and Løsningsbeskrivelsen section 6.6 - Produktchefsinterface

Req. 2.11. **Change of standard restrictions**

It shall be possible to change any of the number variables in the system (i.e. how much time an End User has to return a broken bicycle, amount of time to return a bike when the End User's desired station is full, amount of time for a free trip, etc.)

GoBike compliance grade 1 and answer to requirement:

This is included in the customer journey mock-ups. GoBike will deliver a full set of customer journeys including full visual mock-ups no later than September 1, 2012.

For more information see System description and funcitonal mock-up of the Payment, CRM and Bike Management system will be delivered before october 18, 2012.
Løsningsbeskrivelsen: 6.6. Produktchefsinterface

Req. 2.12. **Content editing of website**

It shall be possible ~~for the Product Manager~~ to edit text and pictures on the user-faced part of the IT-system (front-end system). The ~~Product Manager~~ shall be able to do daily content -updates and -edits on the website easily via a Content Managemant System, in order to contribute to product maintenance and development.

GoBike compliance grade 1 and answer to requirement:

This requirement can be fully met.The web (mobile web) and app interface with the core system is handled by and API. Thus key information from/to the end users web interface is handled through an open API.

Editing content on the website itself is done in the Content Management System. Modifications to content will be subject to approval prior to publication, using the built-in workflow engine.

Any modification, addition or deletion of content on the public part of GoBike

websites and/or applications, may be subject to GoBike approval prior to publishing.

~~1.4.2. Entering cooperation agreements~~

~~Another essential task of the Product Manager is to enter into a cooperation agreement with various commercial partners, non-commercial partners and "major customers" who support the spread of the product or increase the knowledge of the system.~~

~~These partnerships can vary depending on the service the partner wishes to provide to their employees, End Users and so on, as well as on the partner's wish for a manual or an automatic solution, wherein the integration of the business partner's and the Customer's technical platforms will be done. The partnerships can thus give rise to complete or partial integrations, which include the backend system where external business partners via user control get access to the backend system and therefore the ability to administrate their own members or End Users of the system.~~

~~Common for all partnerships is that the End User gets an advantage because the business partner has entered an agreement with the Customer. Various cooperation agreements and their consequences for the system's configuration/design are described below.~~

~~Case 1: Partner with Public Transport Operators~~

~~The Customer enters into an agreement with the Public Transport Operator DSB S-tog regarding discount on the subscription product for DSB S-tog's benefit/loyal customers which are signed up in DSB S-tog's benefit program "S-more". The agreement implies that "S-more members" can receive a 25% discount on selected products when using the bike-sharing system. As the S-more members are paying less than full price, the difference between the full priced product and the discounted products represent a lost income. In order to compensate for the lost income the Customer send an invoice to DSB S-tog. Thus the system shall be able to calculate the total amount of discount which is to be invoiced to the business partners (in this case DSB S-tog).~~

S-more members get access to the discount by signing up for the scheme on S-more's own website. This means it is S-more's own database, which keeps track of if End Users should receive the discount. Integration between the IT-system provided by the Supplier and S-more's database makes it possible for the Customer to verify which S-more members shall have a discount on the price. It is the partner (S-more) which verfies

Case 2: Partner with a municipality

The Customer enters a cooperation agreement with a municipality regarding free use of the bike-sharing system during the winter months. The agreement implies that the citizens of the municipality don´t have to pay for the use of the bicycles during this period, but rather the municipality pays.. The citizens of the municipality obtain the advantage of this offer by signing up for the scheme on the municipality's website (presumably managed by e Nem-ID access). In other words, it is the municipality itself that determines which of the registrants are its citizens and therefore acceptable to receive the offer. Integration between the Customer's and the municipality's database makes it possible for the Customer to:

- verify which citizens are acceptable to receive free bicycle use and
- charge these End Users 0 kroner for their usage during this period.

The Customer desires to offer companies an easy and fast way to access to the Customer's system, without integration to the business partner's own database needing to be made. Hence, the Supplier shall offer access to a partner portal, where the business partners can administrate Customers, employees, etc., who wish to sign up for the offer.

It is crucial for the partner portal that it be easy to administrate for the local administrator with the partner, and that the partner's End Users can be submitted to the site and can apply for getting access to the offer.

Below there is a description with a company that wants a manual handling of users.

Case 3: Partner with consultancy ABC Konsult A/S

The Customer enters a cooperation agreement with the consultancy ABC Konsult A/S, which wants to offer free use of the bike-sharing system to all its employees in connection with their transport to and from work and during working hours. As there are 120 employees, integration with the consultancy's database is not de-

~~sired. Instead, the company wishes a manual handling of users by the receptionist of ABC Konsult A/S directly in the Administration system provided by the Supplier. The consultancy wants to put a sign-up module consisting of a special access website at disposal for ABC Konsult A/S employees. The receptionist, who is the local administrator, obtains administrator- rights and approves all incoming applications for the solution.~~

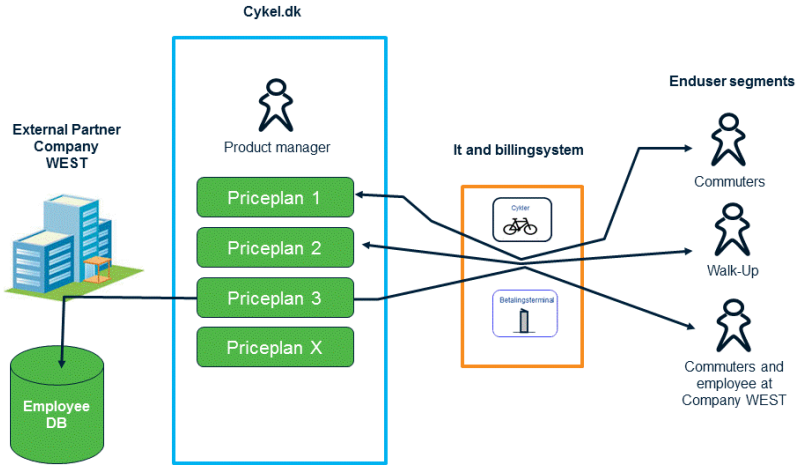


Figure 5: Outline of how End Users can be offered different price plans and connection to external databases for End User validation (see description in case 3)

~~Info. 2.10~~ **~~SAP debtornumber~~**

~~Major customer[illegible]ustomer shall [illegible]et up "[illegible]ajor customers" with their SAP-debtor number, so [illegible] can be tagged [illegible] action data, can be transferred to the Customer [illegible]. SAP debtor numbers are given after Framework Agreement formation.~~

Obsolete

Info. 2.11 **Front-end for external partners**

The Supplier shall offer a function in the IT-System which makes it possible ~~for the Customer's Product Manager~~ to place a part of the system, including the corresponding front-end, at the disposal of external partners (i.e. major customers). From here, the external partner shall have the possibility of administrating their own members/employees themself. The administration shall include, among other things, the set-up, adding and deleting of members as well as the possibility to extract statistics regarding the usage of their members.

GoBike compliance grade 1 and answer to requirement:

The partners will receive access to relevant GoBike Systems. The partners are just another user type. They will be granted rights for viewing, executing, modifying any of the system part, which they are granted access to.
According to the user type the screen display can be customized.
The system operates as SaaS or Software-as-a-Service. This implies that the system is accessible via a web-browser. The administration of the access to the system tandether with privileges are governed by the system administrator.

Løsningsbeskrivelsen section:
6.5 Erhvervsadgang
6.6. Produktchefsinterface
and LB appendix A (Systems Description & User Interaction).

Info. 2.12 **Validating of price**

The Supplier shall design a system where the price is validated with regards to the individual End User's agreement conditions. The End User's agreement conditions (i.e. price for the bicycle rental, etc.) shall be determined based on a note in the central part of the system, where rights, conditions, prices, payment methods and payment conditions are stated. The same End User can appear in/use different price plans, depending on the need and situation. The system shall validate if the End User is able/allowed to complete the bicycle rental on the price plan with the corresponding conditions/rights, on which the End User is trying to complete the trip.

GoBike compliance grade 1 and answer to requirement:

The systems supports the possibility to open7close access to certain areas; i.e. if the possibility to use the service should only be limited to Copenhagen or Frederiksberg. Generally the pricing is determined in two way – either by providing the subscriber of the service with certain rights that overrules the local pricing; i.e. by design a flatrate subscription, that – against a flat rate subscription, gives the customer the possibility to use the service unlimited. On the other end, the service might be free, but then the end user has to pay the local price for using the bike. Both options are possible.

GoBike systems price plan matrix will concur with the listed scenario. The customer can define the areas and price matrix groups with GoBike.

Please refer to LB appendix A (Systems Description & User Interaction). section 2.2.3.

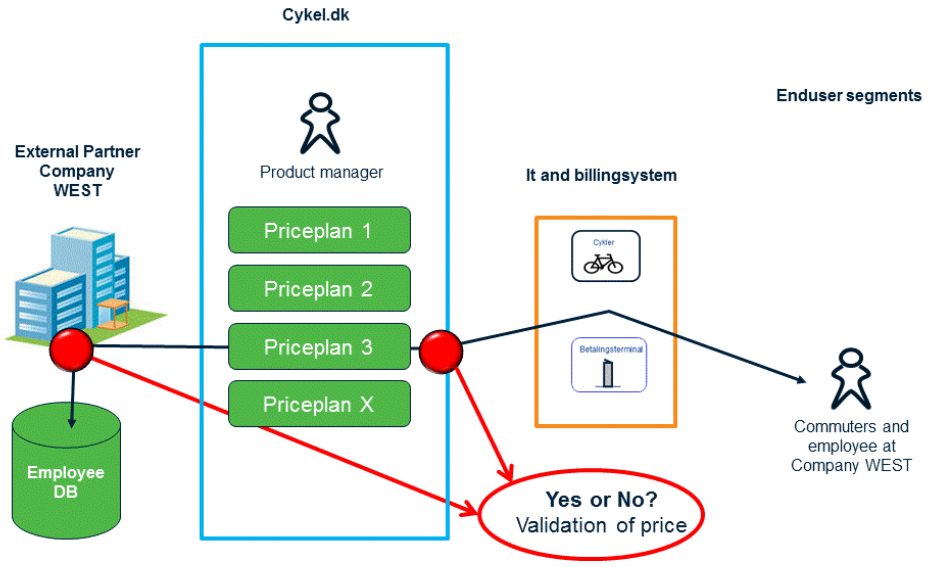


Figure 6: Outline of validation of price plans

1.4.3. Follow-up on the use of the system

Another essential task of the Product Manager is to ensure a good End User experience by continuously monitoring the Supplier's performance with regards to the outlined service goals (i.e. Customer satisfaction, etc.). ~~The Product Manager – potentially in cooperation with the Supplier – has to point out and launch initiatives which are oriented towards the End User and which increase the awareness of the product through sales and campaign activities.~~

~~The Product Manager thus needs a back-end system from the Supplier that makes it easy to follow-up on service goals and KPI's (Key Performance Indicator) in the system. In other words, the Product Manager needs to be able to extract statistics on data such as consumption, sale and Customer requests.~~

~~The Product Manager is responsible for the business case and the budget follow-up and thus needs a system from the Supplier which makes it easy to extract essential information regarding turnover, the user's behavior and general usage~~

Info. 2.13 **User statistics**

The Supplier is asked to describe which statistic information the system will provide to the Customer.

GoBike compliance grade 1 and answer to requirement:

All user and operation data are registered per event. The data can be crossed and checked.
An event line can include among others: Event ID, Tariff type, User ID, Trip related data, restriction data, payment data, DSB SAP Debtoraccount data, etc.
There are virtually no limitations the more detailed the data fields the more detailed the queries for the reports can be. Standard reports are available. Bespoke reports can be generated upon request.

Req. 2.13. **Standard report**

The system shall be able to generate standard reports about the utilization of the system. The Supplier shall provide standard reports once a month, and additionally as needed, with the necessary use of text and graphs, which easily can be copied and used as management information by the Product Manager.

The format and schedule of the standard reports will be determined in cooperation by the Customer and Supplier after entering into the agreement, but shall as a rule give knowledge about:

- **End Users**
- registered
- Not registered
- Number of new End Users per month
- Number of End Users that rent a bicycle per day and month
- Number of commenced orders or number of completed orders per day and month on the website/mobile portal

- **Locations**
- Status of maintenance tasks on all locations
- Locations with number of rentals and number of returns
- Locations with the highest occupancy rate (share of vacant bicycles compared to docking points)
- Locations with the lowest occupancy rate (share of vacant bicycles compared to docking points)

- Busiest periods of the day for the period and year-to-date utilization throughout the day
- Least busy periods of the day for the period and year-to-date

- **Rentals**
- Number of rentals
  - Per hour/ day/ month within a certain period
  - Allocated on price plans (target group)
  - Allocated on product groups
  - Allocated on time (use-time – how long has the bicycle been rented out?)
- Number of bookings that resulted in a rental (booking success rate)

- **Web- and mobile statistics**

Number of unique users per day and month on the website and mobile portal

- **Customer requests**
- Number of Customer requests per day and month
- Top 10 most demanded requests
- Reaction time on requests to the Customer service for telephone requests and written/email-requests (measured in minutes)

- **Service levels**
  (see Appendix 11 Service Level Agreement)

GoBike compliance grade 1 and answer to requirement:

This requirement can be fully met.The system provides a back-end for the customer to land-in and access the system via the web:
Through the system it will be possible to check and very all transaction activities in the system. The system supports follow-up on the various rental stations (p-areas), the specific rental on the rental station (parkeringer), and the transaction report for making the payments to the municipalities (Clearing report).
In the customer system for the municipality at hand or bi-cycle operator (third party), specific searches can be made on.

• Registreringsnummer (customer)
• Område (rental station)
• Periode (time period)

• Starttidspunkt (start time)
• Sluttidspunkt (end time)
• Afsluttede parkeringer (ended rentals)
• Igangværende parkeringer (On going rentals)

1.5. Requirement of the support staff

A good End User service is a part of the premise for getting more and more confident End Users and hereby contributing to fulfill the conditions in the incentive model.

It is important that the Supplier's solution supports the support staff's need to service the End Users efficiently when they have questions regarding bicycle rental, capacity (vacant bicycles and docking stations), technical set-up and payment, among other things.

The Customer support function or call center (1st line of support) that handles End Users' inquiries can be managed by ~~either~~ the Supplier ~~or the Customer; thus the requirement is marked as an option. Regardless of who will be performing Customer support, the Customer shall have full access to the Customer support portal of the website. If the Customer support function is performed by the Customer, the Supplier shall in addition offer a 2nd line of support.~~

Info. 2.14 **Customer support function (2nd line of support)**

The Supplier shall provide a 2nd line of support for the handling of the specific End User inquiries, when the 1st line of support cannot respond to the End User's requests immediately. The 2nd line support function gives support to the 1st line support function, and thus do not have direct contact with End Users. The second line call center's focus will be on responding to technical inquiries, personal usage questions, error management, crediting, etc.
Support shall be done in Danish and English, written as well as orally.

GoBike compliance grade 1 and answer to requirement:

Gobike will set up a call centre for the 2nd line customer support. When the number of the call centre is called, the user will get a choice menu. According to the type of enquiry he wants to make he can chose between relevant question sections including general information.

According to the area of interest the user will be directed to the appropriate call center setup division.

Req. 2.14. **Customer support portal**

The Supplier shall deliver a web-based Customer support portal that makes it possible to get an overview of End User activity and history in a user-friendly and intuitive manner for the support staff who handle many different user requests during the typical working day.

The primary tasks of the support staff are to answer Customer requests and help the End User with the use of the bike-sharing system. The support portal shall contain:

1. General information ("How to use the bike-sharing system")
2. Information regarding the fleet (vacant bicycles and docking points)
3. Requests regarding reservations
4. Requests regarding usage, prices and payments
5. Handling of failure fault reports

GoBike compliance grade 1 and answer to requirement:

This will be a part of the GoBike system infrastructure. End User FQA sections will be included in relevant online portals.

1.5.1. General information

~~If the Customer support is performed by the Customer, the Supplier shall provide written material (i.e. manuals), which in an easy and user-friendly way describes how the End User uses the bike-sharing system.~~

Req. 2.15. ~~**Description of the solution**~~

~~The Supplier shall provide written material with screen dumps to the Customer support that describe the system and makes it possible for the Customer support to instruct the End User on:~~

- ~~Registration on the site~~
- ~~How the reservation is done~~
- ~~How the payment is completed, including:~~

- ~~Saved credit card information~~
- ~~Subscription agreement (fixed payments)~~
- ~~Payments (reservation of deposit)~~
- ~~Fault report~~

~~GoBike compliance grade 1 and answer to requirement:~~

~~The customer service can land on to the end user screen on the bicycle, or open a screen copy 100% similar as the client is looking at, at his smartphone or internet page, and see what the ¨client¨ on the street is doing. By phone the customer service can guide the client step by step through the screens. The client is required to confirm all operations himself to make transactions valid.~~
~~As the custom support sees the same information as the client, it is very easy to assist him on any operation.~~

~~Integration to external systems are transparent and will not be noticed by the user. The mock-ups delivered reflect the graphical user interface.~~

1.5.2. Information regarding the system

The Customer support shall be able to guide the End User to the closest bicycle or vacant docking point, or recommend the financially most convenient return location. Thus, the Supplier shall provide real time data for the Customer support.

Req. 2.16. **Real time data**

The Supplier shall ensure that the backend system shows the actual information in real time, so that the support staff have the best possible conditions to acquaint themselves with the situation of the End Users and give good Customer support. This means that the support staff shall have access to the following:

- Any bicycle's position on a map (by entering the End User's ID or bicycle ID) and directions to the closest vacant docking station
- The closest available bicycle or docking point by entering an address or POI (Point of Interest)
- General operation status for the whole system, divided into locations and/or geographic areas
- History of the general operation status

The essential real time data shall be presented in a user-friendly and clear way to the support staff, so they may quickly get an overview and guide the End User.

GoBike compliance grade 1 and answer to requirement:

The Gobike System is a real time system. All information is continuously transmitted through the whole system. The Bike Management System managing the data received from the bikes, the bicycle stations, the users' web interface and the input from third party systems.

Due to the fact that the Urbikes have GPS in their tablet PC´s it is possibly to follow up a bike in realtime with all trip and operation data available on the screen. All the mentioned requirements can be fulfilled.

1.5.3. Requests regarding reservations

The Customer support function shall be able to answer requests regarding reservations and make reservations on behalf of End Users.

Req. 2.17. **Overview of reservations and vacant capacity**

The Supplier shall provide a solution for the Customer support function that allows answering requests regarding reservation at the present as well as in the more distant future (up to). Requests can include:

- Whether a reservation was completed or cancelled
- Whether it is necessary to reserve a bicycle at a given location at a given time

GoBike compliance grade 1 and answer to requirement:

All bikes are 24/7 online and connected to the OMS. All information inquires are real time.
Through the GPS function of the Urbikes, all bikes can be continuously tracked. The GPS combined with the route map, make it possible to search for bike stations close to the geandraphical situation of the user or the closest bicycle station next to the users destination.
The system offers the possibility to block bicycles by reservation. However we advise to use this functionality with discretion, while it will have a negative influence on the system rotation and bicycle occupation level.

Req. 2.18. **Making reservations**

The system shall be designed in a way that the support staff can make reservations on behalf of the End User (or a group of End Users).

GoBike compliance grade 1 and answer to requirement:

(see also Req. 2.17) The bicycles can be identified individually by IP address of the tablet PC and bike ID tag. In this way certain bikes can be selected for certain user ID´s-
This requirement can be fully met.

1.5.4. Requests regarding usage, prices and payments

One of the essential tasks of the support staff is to answer requests regarding usage, prices and payments for a specific trip. That means that the support portal has to support the staff˝s task by providing the information on specific trips/rentals.

Min. req. 2.7 **History on individual rentals**

The system shall be designed in a way that the support staff can see information on individual rentals and is able to answer to the following questions:

- Start and end time and date
- Rental period (in minutes)
- Rental location and return location
- User ID
- Charged amount
- Possible special agreements regarding discount/bonus
- Payment method

GoBike compliance grade 1 and answer to requirement:

The system will initially provide an aggregated overview. Based on this, the customer can perform a drill down on any number - and eventuelly end up with a single rental. Further, the system will allow the customer to search for specific rentals.

All listed information will be available on a per-rental basis.

Info. 2.15 **Information on End User history**

The Supplier shall, with sketches and illustrations, account for how the information about the End User's previous contact ~~with the Customer~~ is presented in the system, as well as which information is accessible.

GoBike compliance grade 1 and answer to requirement:

The user history details are shown in a screen tandether with trips made, distances, times, payments, etc. In case further information is required then by mouse selection an item in the list further detailed information can be obtained

Please refer toLB appendix A (Systems Description & User Interaction). section 4.2.5 and 6.2.7

Req. 2.19. **Note field**

The system shall contain a field for notes/comments linked to the End User as well as the individual rental of the bicycle. The comment field shall be used for Customer service calls or for the settling of complaints. The notes shall be saved for a certain period of time so that the support staff has the possibility of follow an End User or certain hardware component's history.

GoBike compliance grade 1 and answer to requirement:

In the database for all events and field headers exists the possibility to add comments for future customer service contacts to consult.
The requirement can be fully met.

Info. 2.16 **Crediting**

It shall be possible to credit a purchase, so that the End User gets his money back. This can only happen if the support staff at the same time writes an explanation in the note field. Furthermore it shall be possible to extract the amount of crediting of End Users for each member of the support staff. The process for crediting shall be such that the Customer doesn't need to do anything itself, but rather the support staff will perform the necessary crediting to the End User's account. The Supplier shall describe the flow for support staff to credit an End User. For credit card payments, the crediting shall happen via the same channel of the original payment.

GoBike compliance grade 1 and answer to requirement:

In case an amount should be credited, the support staff can activate a credit procedure.
Based upon the operation ID all information from the operation to be credited can be called upon the screen.
The support staff co-worker should give reason for crediting. This can be by filling out open text field or through a selection menu.
In case of a registered user the amount will be credited on to his account and compensated with his monthly settlement. In case of credit card, the unique operation ID will be send to Easypark. Easypark will settle the credit amount through DINS. By identifying the operation based on the internal operation ID from Gobike/Easypark system. DINS will be able to match this ID with the credit card user data and execute the settlement.
Any action will be landged, so will always be able to recalled in a future occasion, shown all operation details, date, time and co-worker which handled the operation.

1.6. Requirement of major customer (company administrators)

The Customer wants to establish a bike-sharing system to which "major customers" can buy access on behalf of their employees or End Users. A major customer can be a private company or a public institution. The essential part of the solution to major customers is that a local administrator administrates the access to the system on behalf of some End Users. Thus it is important that the administration is as easy and simple as possible.

It is distinguished between two ways, in which a major customer can buy access to the system:

~~1. Purchase of hardware and IT solution and possibly operation~~
2. Purchase of "price plans" (subscriptions or products)

Which solution the major customer prefers is dependent on the major customer's need as well as if there are shared bikes established beforehand at the location where the organization needs bicycles. Below an example for each solution is described.

Example for solution 1
The company "NN" wishes to place a bicycle station at DSB's Måløv Station, ~~where there currently isn't a station established~~, and thus the company buys access for hardware and the IT solution. With the purchase of the hardware the company gets a special right for a certain amount of bicycles. ~~Hence, the company gets the possibility of placing their own branding on the bicycles and offering the bicycles for free to their End Users.~~

Example for solution 2
The company "CC" wants to offer all visitors of the company's visitor center access to bicycles at DSB's Enghave and Valby Stations, where there already are bike-sharing placements. In this solution the company finances the End User's usage of bicycles, but the company will not have special rights with regards to the bicycles.

Listed below are the work tasks the company administrator of a large organization has in connection with entering an agreement with the Customer and regarding use to the bike-sharing system.

A company administrator's most essential tasks are about:

1. Handling of End Users of the major customer
2. Limiting the access to the bicycles (is only valid for solution 1)
3. Extraction of statistics

1.6.1. Handling of End Users of the major customer

If a major customer buys access to bicycles for the benefit of its employees, its Customers or other visitors, the major customer needs to be able to handle its own End Users, meaning it needs to be able to create End Users in the system and provide the End Users an access key to unlock the bicycles.

Req. 2.20. **The major customer's administration of End User-creations**

The Supplier shall deliver a major customer portal that makes it possible for a major customer (company administrator) to administrate creations of "own End Users". The system shall be designed with a special entry for the specific major customer (f. ex. via specific URL or user login). The portal shall fulfill the need of two different user roles:

- The company administrator, who can create members (End Users) himself or send information about how to create themselves in the system to the End Users. If an End User applies for access, the company administrator shall be provided with an approval-procedure in order to control, who gets access to the system
- The End User, who can use the system, by receiving a message of the company administrator and hereafter create himself I the system under the current major customer agreement

GoBike compliance grade 1 and answer to requirement:

(See also Info 2.11) The GoBike Systems can be configured according the user and user rights. In this way for major customers can be created an area and access rights where they manage their users and user rights, as being a super user within a virtual separated area in the system.
All mentioned requirements can be met.
The systems supports registration for the customer through the web (end user selfservice, in –app registration or through customer service interface. It takes approximately 2-3 minutes to register a customer in an inbound call.

For more information see:
Løsningsbeskrivelsen section 6.5 Erhvervsadgang and PID section 5.2 Proof-of-concept
LB appendix A (Systems Description & User Interaction) section 4.2.3

Req. 2.21. **"Access key" for End Users of the major customer**

The Supplier shall ensure that the End Users of the major customer are assigned an access key for the major customer's bicycles. Regardless of the access key being electronically or physically, the Supplier is responsible for distributing the key to the End Users or to the company administration.

GoBike compliance grade 1 and answer to requirement:

Electronic access keys can be created and individually distributed by email, smartphone or sms, through a reconfirmation procedure. This means that the user should confirm his address or phone number, and first receives a confirmation message to this address. The user will not receive the key until he has reconfirmed the key message.

All mentioned requirements can be met. However, the major customer's bicycles will not be understood as physical bikes but any bike or group of bikes reserved for the major customer at a given time.

All third party integration is subject to further investigation on an individual basis.

As there are different types of End Users with different needs for bicycles, the Supplier shall be able to handle "access keys" for one-time-use or for continuous use. For one-time-use, it is emphasized that the solution is easy accessible and does not require a complicated physical delivery.

Req. 2.22. **Limitation of access to the bicycles**

In these situations, where the major customer has purchased hardware and hereby rights to a certain amount of bicycles, the major customer shall comment on if "normal" End Users are allowed to use the bicycles. The Supplier shall therefore provide a solution to the Customer, where it is possible to limit the access to the major customer's bicycles (possibily only for a limited period).

GoBike compliance grade 1 and answer to requirement:

Groups of bicycles can be ID by their IP address and bicycle ID tag. This makes it possible to create exceptions to the rule for these bicycles, being access limitation or increasing access and for a period of time.
All mentioned requirements can be met.
However, ""the major customer's bicycles"" will not be understood as physical bikes but any bike or group of bikes reserved for the major customer at a given time.

Req. 2.23. **Bicycle reservation of major customers**

It shall be possible ~~(for the Product Manager)~~ on the behalf of the major customer shall to make a joint reservation for an amount of bicycles at a certain docking station. The reservation applies to the End Users of the major customer.

GoBike compliance grade 1 and answer to requirement:

(see also Req. 2.22) Reservation is a special limitation and exception to the rule.

All mentioned requirements can be met.

~~As the Customer expects there would be some major customers that desire a solution with bicycles that functions without being docked into dockingpoints.~~

Info. 2.17 **Bicycles without docking stations**

The Supplier shall account for how a solution with bicycles that do not need to be docked into a docking point can function with the overall solution.

GoBike compliance grade 1 and answer to requirement:

The Urbikes dispose over kick stand. So they can be parked outside the docking stations also. If bike is locked outside a docking station and during a lease, GoBike Systems will be notified accordingly. If returned outside a docking station, the GoBike system will be notified accordingly.
Only limitation of length is the battery capacity of the tablet PC.

1.6.2. Extraction of statistics

There will be a company administrator with the major customer, who shall have the possibility of extracting financial and statistical reports in connection with own End Users. The company administrator shall in this connection have access to reports regarding the user history, described in Info 16.

The company administrator shall be able to create campaigns and change the rental conditions for own End Users with approval of the Customer. The technical access to such changes shall singly be handled by the Customer.

Info. 2.18 **Functionality for use for adjustments**

The Supplier shall account for, how the major customer's administrator can make inquiries about the member's transactions in a flexible way.

GoBike compliance grade 1 and answer to requirement:

Trough the operations history filter, the administrator can select the elements required for his query. The system will so afterwards all related operations and details. This information can be exported to other formats like exel.

Please refer to LB appendix A (Systems Description & User Interaction) section 4.2.3

Req. 2.24. **Statistical reports**

The system shall be able to handle statistic extractions on an aggregated level as well as on a detailed level for the following:

- Rentals (total number showed per hours)
- Users who have made rentals (user ID of known users)
- Number of users who have made rentals
- Price of rentals

GoBike compliance grade 1 and answer to requirement:

System is able to show statistical reports on any of the elements included in the historic database. The mentioned requirements can be fully met.
In case the administrator would like to make similar queries periodically, an automatic query can be prandrammed by time and period.

2. Hardware requirements

This chapter describes the material requirements with regards to the bike sharing system, including:

- General hardware requirements
- Specific requirements to the bicycle
- Specific requirements to the docking station/docking point
- Specific requirements to the payment machine

However, the descriptions below do not exclude that the described functionalities are integrated in the system in another way, so that there for instance won´t be docking stations and/or payment machines at every station in the system. The crucial thing is that the described functionalities are to be found in the final solution.

2.1. General hardware requirements

This paragraph describes the requirements, which aren't connected to single elements of the hardware.

2.1.1. Areas

There is very little available urban space available for bike-sharing stations, particularly around stations in the central parts of Frederiksberg and Copenhagen. It is therefore a big challenge to make room for docking points for a new bike-sharing system. Thus, a solution in which the hardware of the bike-sharing system (bicycles, docking points and payment machines) uses as little space as possible will be favorable.

The Supplier shall by design and choice of material ensure that the bicycles take as little space as possible when parked in the docking stations. This shall contribute to ensure passability and order for the End Users and other street users in the central areas and squares of the cities. Furthermore, the Supplier shall by design and choice of material contribute to a urban solution where the parked bicycles takes up as little space as possible and hereby increases the capacity in the urban areas, where the space physically is limited.

Info. 2.19 **Optimized areal use**

A solution in which bicycles, docking stations and payment machines overall fill as little space as possible, is desired. Thus, the Supplier shall provide a description including an illustration (with precise measurements stated in meters) of:

- How many bicycles, docking points and payment machines can be placed within the given areas on three locations in Copenhagen and Frederiksberg (Forum Metro Station, alternative 133.2 and the Copenhagen Main Station, alternative 36.1 and 36.2, see overview of locations, decribed in Sub-appendix 5A.1.1 Locations in the Cities of Copenhagen and Frederiksberg)
- How much space, measured in m^2, 20 bicycles with docking points and a payment machine occupies
- How much space will be taken when adding one docking point.
- How many bicycles and docking points, including a payment machine, can be placed in 30 m^2

The Supplier shall account for if the stations are modular and what the smallest unit for additional dockingpoints is.

GoBike compliance grade 1 and answer to requirement:

The Gobike bicycle stations are very space efficient. Due to the fact that the stations have no payment kiosk and the docks can be installed in a zig zag order.
The distance between bicycles is minimal.
The space required per bicycle including docking is 200cm x 40cm.
• The shown images are not clear enough and the given information is too little to give a reliable reply to this question.
• Aprox. 25m2.
• Aprox. 0,65m2.
• Aprox. 24 bicycles.
Smallest additional unit is 1 docking.

See: LB Section 6.3.3. Installations konfigurationer

Info. 2.20 **Establishing and dismantling of hardware**

The Supplier shall account for how the hardware can be established and dismantled with regards to the different locations and specific surface on which the hardware would be set up. The surface is primarily made of concrete, asphalt,

gravel and in a few cases, grass. The Supplier shall clearly account for the conditions and specific requirements of each type of surface for the Customer. The installation shall be done in accordance with the requirements of the local authorities.

GoBike compliance grade 1 and answer to requirement:

The bicycle stations are mounted on ground plates, therefore not sensible to underground. For fixing the ground plates to the surface, different options are available. For hard underground like concrete, chemical plugs will be drilled into the ground. In case the plate will be installed on grass surface there will be put concrete blocks into the ground to fix the ground plate.
Any way the fixing of the ground plate of the stations module is point wise, which makes that on removal of the station the original situation will be re-established without need of additional work.

2.1.2. Advertising space for sponsors

It shall be possible for the Customer to have the Supplier affix advertisements on the physical elements of the bike sharing-system.

Info. 2.21 **Advertising space for sponsors**

Advertising space for a sponsor company name or logo shall be incorporated into the design of the bicycle, docking station and payment machine, web-based Customer portal as well as possible additional attributes, but shall be subordinated to the final design. The following applies to advertising space for sponsors:

- It shall be separate from information, user interface and the system's overall identity
- It shall not have a negative influence on functionality or appear unsightly on the visual design
- The sponsor's name or logo shall be readable without affecting the bicycle's visual identity and design
- The sponsor's name or logo can appear on the surface that is colored in the grey dominant colors

GoBike compliance grade 1 and answer to requirement:

The Gobike system has the following object suitable for advertising:
• Urbike frame and fender.
• Bicycle dockingstation.
• Table PC on bicycle.
• Web portal
The design of the advertising messages will be developed according to the conditions of DSB.
Gobike has the possibility of dynamic advertising. Due to the fact, that the Urbike and tablet PC have geo marketing capacity. This means that the publicity message can be changed according to user on the bike and location where the user is biking.

~~The real-estate on the Tablet PC belongs to GoBike as per negotiation.~~

~~The concrete content of the advertising space for sponsors in form of company name or logo will be provided later.~~

~~**Info. 2.22 Service name**~~

~~The service name has a [illegible] such that it is not dominating with regards to [illegible] the user experience.~~

Obsolete

~~**GoBike compliance grade 1 and answer to requirement:**~~

~~Service name can be put on the bike at any place which is proposed.~~

2.1.3. Safety and minimization of theft and vandalism

Info. 2.23 Robust hardware that minimizes theft and vandalism

The Supplier shall describe how the choice of design, material and equipment minimizes the possibility for theft and vandalism, such as graffiti.

GoBike compliance grade 1 and answer to requirement:

Urbikes are designed as street furniture. This means that the Urbike complies with the same requisites other street furniture complies with.
The design of the Urbike makes, that the Urbike requires 80% less maintenance than other bikes.
Mayor improvements of the Urbike are: Axle drive, puncture less tyres and 1

piece aluminium tube frame.
Furthermore, the parts used on the Urbike aren´t suitable for other bikes. Therefore theft is not beneficial. The Urbike has been designed from the point of view to fullfil its life time on the street in a unprotected public environment. Basic concepts in the design have been robustness and vandalism resistance.

The frame design is in V-shape without any external reforce elements. This makes that the bike is easy and comfortable to access for all persons. The innerside of the aluminum frame tube has been reforced at several points to avoid any material fatigue during the bikes life time. Reinforcing the frame from inside out, makes that it is no possible to weaken the bike structure with normal handtools.

Other very important item is, that all cables run inside the frame. This makes that vandalism on these sensible elements is kept to a minimum.

A special antivandalism characteristic is, that any bolts visible on the bike is from a specific metric type, which cannot be handled by normal tools. Special tools are requiered to dismount the bike, which makes that it is not possible to take off any functioning elements of the bike on the street.

The fender has been designed that it can withstand the weight of a person standing on it. The rear light, which is the most accessible, has been protected for accidental breaking.

By using hard axle (cardan) propulsion further eliminates one more possible vandalism point – and adds to the comfort of the user, since no risk for breakdowns (as with chains). The same counts for the breaking and gearchanging system. Being these pedalbreak and inside the wheel axle respectively, vandalizing them is extremely difficult – and not obvious.

The seat tube forms one part with the saddle. The tube diametre is much bigger than for normal bikes. So it not even can be adjusted for other bikes and therefore has no interest for thieves.

The Urbikes have a special double layer anti-graffity powder coating. This makes them easy cleanable.

Info. 2.24 **Safety**

The Customer wants safety improvements incorporated into the system, such as integrated lighting in the docking stations and payment machines. The later will also contribute to an increased visibility in the urban environment.The Supplier shall account for how lighting in the Supplier's solution improves safety.

GoBike compliance grade 1 and answer to requirement:

The Urbike disposes over LED lights. These light are continuously functioning while the bike is used and remains functioning, while waiting in front of a traffic light.
In the dockings the led light could be put on the improve sight and safety in the bicycle stations during the night time hours.

The design of the bike is simple though joyful. The design is in complete harmony with the Danish design culture. The Urbike complies fully with ¨Form follows function¨ and ¨Less is more¨.
Other terms are also 100% applicable: Simplicity by one tubular frame, Lightness by the aluminium construction and Quality by 80% less maintenance.
Bicycles have continous LED lights. This makes that at any moment the bike is used, the lights are on improving visibility of the user by other traffic and the safety. The lights also working when the user is waiting in front of a traffic light.

In case this would be desired, the bicycle lights could also be lightened while the bicycle is docked. In this way the user has improved visibility over the bicycle station. This also benefits safety by reducing the possibility that users bump into the docked bicycles.

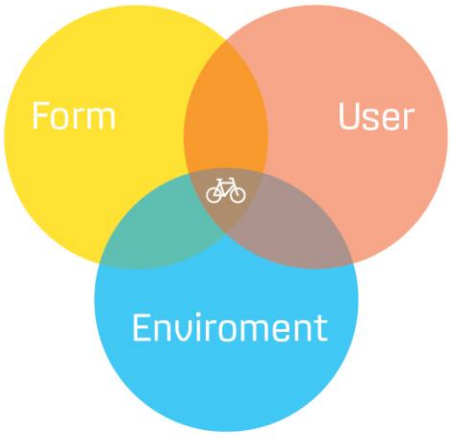
~~**2.1.4. Functionality, visual identity, design and quality**~~

~~It is the Customer's wish that the whole system, such as bicycles, docking stations, payment machines and a web-based Customer portal including possible additional attributes, appears as a complete design concept with a strongly recognizable identity. The identity of the whole system shall in its visual experience indicate Danish design culture – with clear references to aesthetics and simplicity. This applies both to the system's visual design as well as to elements in the daily operation and maintenance.~~

~~Danish design is known and respected and is of value for both the Customers and the products. It is not an exact or precise magnitude, but the following keywords and values are often used to describe the Danish design tradition. "Form follows function" and "Less is more" are known design indicators, which are seen as productive for both users, product developers and the Customer. Examples for other terms used for the Danish design tradition are: simplicity, lightness and quality.~~

~~When developing the system it shall be taken into account that there will be an overall visual identity based on a Design guide from the cooperation "Trafic Information Development Cooperation" (see Sub-appendix 2.1: Design guide CS4). In addition there will be a symbol and a name for the system of which both are under development.~~

~~The new bike-sharing system shall at the same time indicate new thinking and sustainable mobility in Denmark and, in connection with design, function and durability, interact with the architecture and identity of the individual Danish municipalities. It is in this respect crucial that the color choice for bicycles, docking stations and payment machines works with the existing urban space.~~



~~Figure 7: Bike-sharing will be at the intersection of Form, User-friendliness, and the Environment~~

Info. 2.25 **Requirement for a fast and effective system**

The design of the system shall be based on the End User's needs, including Danish bicycle culture. The Customer wants the system to reflect the users' demand for a fast and effective system, which is trustworthy, confidence-inspiring and an obvious choice in a busy weekday.

GoBike compliance grade 1 and answer to requirement:

In earlier paragraphs the user friendly characteristics of the Urbike already have been mentioned. Here we summarize the most important ones:
• Easy access unisex bicycle frame.
• Mechanical and electrical bike possible.
• Pick up and return ¨Sitting on the bike¨.
• Possibility to customize bicycle screen according to user.
• Heavy duty comfortable urban bike.
The following design features must be mentioned here:
• Tablet. Giving user on the bike access to the system and avoids queuing up before the kiosk.
• Multiple acces points to the system: Tablet, Smartphone, SMS, internet, credit card, dedicated chipcard and future Danish transportating card.
• Robust, reliable, comfortable bike, easy to rent, easy to return at any corner available.
• Gobike bicycle, is available when you need it and you can leave it inmediately when your trip is finished. No worries about parking place, parking costs, loading and un loading the bike in the train and no worries about maintenance.

Please refer to LB section 6.1

Info. 2.26 **Color**

The project's colors consist of a scale of neutral, warm grey dominant colors and a clear red color. The red color is used as a strategical accent for creating and supporting the systems visual identity. It is used as signal color on subcomponents on the material, so that the color doesn't dominant the urban space but always can be remembered.

- At least 6/7ths of the material's surface shall be colored in the shades of grey shown below.
- A maximum of 1/7th of the surface may be colored in the shade of red also shown below.

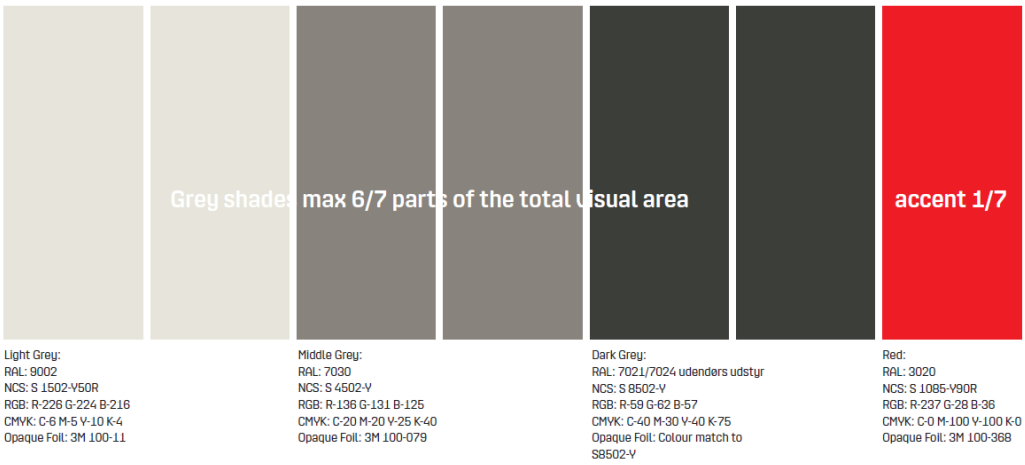


Figure 7: Colors to be used in the bike-sharing system

The coloring of the bicycles shall be uniform in the whole system and shall follow the above set of rules. The uniformity supports the bicycle's identity and recognition, gives flexibility with regards to the bicycle's application possibility and eases the logistic task in connection with the redistribution.

The color choice for docking stations and payment machines can however vary in accordance with the wishes of the individual municipalities. Hence, the dark grey color in the scheme (RAL 7021) can be replaced with a local municipality color, as long as this doesn't conflict with the general of the color range. In cases where such a solution is chosen, the overall concept shall still be recognizable across the municipalities.

GoBike compliance grade 1 and answer to requirement:

The Urbike can be delivered in any RAL colour the Cykel DK wishes. Also naming and branding are possible in anyway the client wishes too.
Note, However that it has been agreed that all bicycles are delivered in the same colour.

Min. req. 2.8 **Graphic**

The project's visual language and graphic shall have a connection with the TUS (see Sub-appendix 2.1: Design guide CS4). Font shall be AtB.

GoBike compliance grade 1 and answer to requirement:

The bikes can be delivered in any RAL color desired by the client. Also naming

and branding are possible in anyway the client wishes too.
Note, However that it has been agreed that all bicycles are delivered in the same colour.

Online fonts will be used as per Systems Description and Visual Guidelines specification document.

Info. 2.27 **Robustness and high quality**

The hardware shall be robust and of very high quality, such that fewer maintenance tasks and operational problems will occur in the Danish climate and with many different End Users. The hardware shall have a long durability and operation stability. The Supplier shall with their tender send an example of the offered bicycle, docking point, and payment machine in order to demonstrate the robustness and quality.

GoBike compliance grade 1 and answer to requirement:

The Urbike requires very low maintenance, because of the aluminium frame, closed axle drive, all cables run inside the frame and the puncture less tyres.
The Urbike requires 80% less maintenance.
Aluminum mono tube bike frame - No rust, no fatigue.
All cables inside - No hummidity problems. Axle driven – No greasy and/or rusty chain.
Dockings with any moving mechanical parts exposed – not sensible for rust or dirt.
Puncture-free tires – No maintenance, no flat tires and no metrolandical influence on tires pressure.

Info. 2.28 **Estimated lifespan for hardware**

The Supplier shall account for the expected estimated lifespan for the hardware for each component, under the conditions that all hardware is used by the End Users 4 hours/day. The Supplier shall state the lifespan in years and state the requirements for the estimated lifespan.

GoBike compliance grade 1 and answer to requirement:

• Frame: 10 years
• Tyres: 400 days

• Brakes: 2 years
• Docking: 5 years

Frame:
• Unisex aluminum monotube frame.
• Internal strength added inside the tube, which avoids ware out of the material due to mechanical stress.
• Doesn´t rust at any circumstances.
• Torsion resistant. Improves drivability and comfort.
• Holds all cables and electronics. Nor sensitive for humidity, dirt or vandalism.
• Low weight. Total bike aprox 15kg.
• Integrated LED light. Vandalism preventive.
• 10 year life time guarantee.
• LED light life time guarantee 10.000hours.

Propulsion:
• Axle driven.
• No dirty/greasy chain.
• Superior to chain, because 0 maintenance and no dirty clothing.
• Superior to drive belt, because vandalism prove (can´t be cut with knife)
• Safe: No outside moving parts.
• Back kick break. Vandalism prove
• 8 year life time guarantee.
• Pedals. 2 year life time guarantee

Wheels:
• Puncture less tires. Guaranteed for 15.000km
• Patented Urbike puncture prove technolandy. Guarantees driving experience of normal air tube.
• Vandalism preventive. Can´t be dismounted without special tools.
• Aluminum wheel rims. No rust
• 26 Inch wheels. Combine comfortable and stable driving.
• Drum brake (front). Very low maintenance
• 8 year lifetime guarantee

Fork:
• Heavy duty fork. Sustains blows from driving up and down pavements
• Holds cables for lights, electronics and engine (E-Urbike)
• Anchors bike into docking and connects for communication and charging with

docking.
• 8 year lifetime guarantee

Saddle:
• Comfortable unisex seat.
• Easy adjustable with one hand by handle.
• Clean seat height adjusting. No greasy and/or rusty parts.
• Seat piston developed by Urbikes. Unlimited height positions between low and high position.
• Accessible for people from 1.50m up to 2.05m
• Automatic ergonomic adjustment for each user.
• Seat: 8 year lifetime guarantee
• Seat pin: 4 year lifetime guarantee

Handlebars:
• Ergonomic design. Allows comfortable straight sitting position. (back problems)
• Holds tablet pc.
• Forms one solid piece. Can´t be removed without special tools. Vandalism preventive
• Basket has been changed for cargo platform. More resistant and allows bigger size loads (like briefcases) to be transported.
• At the back also a cargo platform is added for heavy loads and optional for child seats.
• Handlebars 8 year life time guarantee.
• Handbrake front wheel 2 year life time guarantee

Docking:
• Easy access docking, no need of lifting bikes (back problems!)
• Impossible to attach other (private) bikes to.
• Very little space required for bicycle station (bikes/m2)
• No moving parts.
• No parts disposed to weather influence.
• Individual docks. If one fails the rest continue functioning.
• Low maintenance requirement.
• Easy (dis)mounting of bicycle stations
• Dock housing. 8 year life time guarantee
• Dock lever. 4 year life time guarantee (very conservative!!!)

Tires: 15.000km
Battery: 18 months

Guarantees stated above are based on normal daily urban circumstances and complying maintenance calendar

2.1.5. Power supply

Info. 2.29 **Alternative power supply**

Docking stations, payment machines and other functions of this kind shall be able to stand free, that is without connection to the electricity network, but rather by alternative energy sources.

GoBike compliance grade 1 and answer to requirement:

To guaranty reliability and stability of the system Gobike advises to connect the bicycle systems at all times to the grid. Solar power at the present day and under Danish conditions is a too expensive and not reliable option.
Especially if DSB requests to light the bicycle stations during night hours (see info. 2.24) then solar power will certainly not generate sufficient energy.
GoBike will offer docking stations prepared for e-bikes. This solution requires more power output than presently possible from a solar powered device.

Therefore, all GoBike docking stations will be attached to the powergrid by SEAS (using DONG as sub-supplier whereever applicable).

Power will be provided by Global Energy – and will be ”green power” (wind-mills). Thereby, GoBike indirectly comply with the requirement.

Info. 2.30 **Average power consumption**

The Supplier shall account for the yearly average power consumption for the various hardware. The Supplier shall account for possible rwquirements for the power consumption. The power consumption shall be stated in Appendix 15 - Prices.

GoBike compliance grade 1 and answer to requirement:

The tablet PC is the major source of power consumption. This will be in

hypernation mode, while not in use (i.e. when docked). When fully used, with active 3g network connection, the tablet uses 800mAH.

Final power consumption specification is pending tests of applied tablet PC. Once these tests are done the consumption per hour of usage for the bike including tablet can be determined. Same aplies for the docking station. Once these measurements are readily available, a split between power consumption for docking and tablet PC - and any e-bikes charging consumtions - can be determined. All bikes monitors power consumption, which will be reported as part of the monthly reportings.

See Løsningsbeskrivelse section 9.7.2 and Frame Agreement appendix F1

2.1.6. Climate

Info. 2.31 Adaptation to climate and topography

The system's design shall be adapted to Danish climate and topography. Hence all physical elements shall be able to bear the Danish climate and landscape in which the product has to work. The climatic conditions in Denmark entail that it rains throughout the year with gradual intervals and frequently snows (2-4 months a year), which means that the snow is melted with road salt. Denmark is a rather flat country, however with some hills.

GoBike compliance grade 1 and answer to requirement:

The Urbike is made from aluminium and there are no mechanical moving or electrical parts exposed to the environment.
The docking stations are specially coated against humidity. All parts are inside the docking and therefore not exposed to environmental influences.
The Gobike system has no iron holding elements exposed to the meteo influence. No chain which must be lubricated, no electronics or cables which are exposed to humidity or dirt.

See also Info 2.27 and Info 2.28 here above.

2.1.7. Sustainable production and operation

Min. req. 2.9 Requirement for sustainable production and operation

The Supplier shall document sustainability in purchase, production, delivery, installation, operation, maintenance and removal of the bike-sharing system.

GoBike compliance grade 1 and answer to requirement:

Read and agreed. It is Gobike's policy to promote and encourage a clear commitment to a sustainable production and operation. Gobike will appoint a resource with the responsibility to manage all the environmental activities related to the prandram.

A ressource reporting to the Gobike Prandram Director will be appointed for managing all the environmental as well as safety and health activities related to the prandram.

Please refer to the detailed description in PID section 13.

2.1.8. Environment and working environment

The customer works according to the guidelines outlined in the work environment standard OHSAS 18001:2008, and thus stipulates corresponding requirements to its suppliers of goods and services. The customer wants to ensure that no employee or end user is exposed to dangerous influences at work or as user of the system. It is a goal to strain the external environment as least as possible.

Min. req. 2.10 **Requirements for justifiable environment with regards to safety- and health**

The supplier’s work shall be fully justifiable with regards to health and work safety, in accordance with the rules notification on work performance and the Health and Safety at Work Act with the appertaining notifications and instructions. If agreements with sub-suppliers are made, these requirements also apply to the environment and work environment of the sub-supplier.

GoBike compliance grade 1 and answer to requirement:

Read and agreed. Gobike's resource responsible for environmental issues will also maintain a register of relevant legal requirements related to safty and health. Gobike is fully committed to comply with all these rules and will ensure that its subcontractors will also apply to this.

See answer under Min. req. 2.9

Min. req. 2.11 **Requirements for documentation of work environment**

The supplier shall always be able to document the company's priorization of the work environment and the systematical and justifiable work with the own work environment.

GoBike compliance grade 1 and answer to requirement:

Read and agreed. The environmental approach will be documented in an Environmental Management Manual. Gobike will ensure that each subcontrator has a similar plan and that these are in accordance with the rules and applicable legislation.
Please refer to the detailed description in PID section 13.

Info. 2.32 **Requirements for the use of material**

Material used for or on the hardware or for maintenance of hardware may not be:

1. Substances which are cancer-causing, mutagenic or reproduction-toxic (CRM)
2. Allergenic substances (substances marked R42, R43 pr R42/43)
3. Organic solvents, which are listed on the guiding list of organic solvents of the Danish Working Environment Authority
4. Aromatic or chlorinating organic solvents
5. Substances listed on the environment protection agency's list of unwanted substances (LOUS-list)

If the products contain one or more of the above named substances, the supplier shall explain why it is necessary to use these and shall state the quantity of the substance (weight %).

GoBike compliance grade 1 and answer to requirement:

The Gobike system contains no hazardous substances or products and complies with the CE standard and ISO 14001.
Neither none of the mentioned substances are included.
GoBike holds a number of certificates in regard to environmental compliance.

Selected certificates have been displayed prior to contract signature.

Info. 2.33 **General info-requirement regarding environment and work environment**

The customer wants the supplier's solution to be as environment- and work environment friendly as technically possible. The supplier shall in its tender describe how this is fulfilled according to Sub-appendix 2.2: General info-requirement for environment and work environment.

GoBike compliance grade 1 and answer to requirement:

Requirements for Hardware:
1. Bicycles: Frame, wheels, tyres, seat, handlebars – 95%
Docking: Frame and components – 98%
2. All elements are powder painted to reduce emissions of solvents.
3. 0dB
4. Products comply CE standard and ISO 14001.
Requirement for the IT-System
1. The server function is out sourced to www.arsys.es. Other hosting/housing providers are also acceptable if DSB desires so.
2. See reply to question 1.
3. Supplier very conscious about sustainable and environmental friendly business. Therefore uses a few IT hardware as possible and the hardware which is used will be disposed by official recandnized and authorised recycle organisations.
Requirement for redistribution
1. The IPBM system for Gobike will reduce the number of bikes to be distributed over the empty stations.
The distribution which must take place, will be combined as much as possible with other maintenance work to make the trip more efficient.
Gobike considers applying electric driven maintenance vehicles which have 0 emission. (http://www.youtube.com/watch?v=T85tIsCEZk8)
2. The system will alert the employees for full/empty stations. So the employees know exactly where to drive to. The bicycles will be loaded on the truck or trailer by a light metal ramp. The light weight ramp doesn´t create stress on the backs of the employees and makes it easy to drive up the bicycles. The bicycles are docked on the truck like they do in the street. No lifting of the bicycle is required.
3. In case electrical vehicles are used the emission will be 0 g/km.
GoBike holds a number of certificates in regard to environmental compliance. These are listed in section 3.4 of this document.

2.2. Bicycle

In this paragraph the Customer's specific requirements of the bicycle are described. User-friendliness, comfort, operational stability, durability and low purchasing and maintenance costs are emphasized. In order to diminish maintenance needs, it shall be the goal to strive towards the bicycle's equipment being fixed and multifunctional.

2.2.1. Functionality and design

In Denmark the climate plays an important role in the End Users' daily transport on the bicycle. Especially in the winter half year the climate is characterized by wind, rain and moderate coldness; during the last few years there have also been snow and ice for two to three months, . The municipalities widely use salt as a part of snow response, which can be tough on certain materials. The Customer considers the Supplier's response to climate conditions as important in their solution and design.

In the big cities in Denmark the bicycle is often the End User's primary means of transport. Thus, one can often see End Users biking around with a backpack, bags and children on the bicycle. This requires that the bicycle as a practical means of transport can be adapted to the individual needs.

Min. req. 2.12 **Compliance with Danish Standard**

The bicycle shall comply with the Danish Standard for "City and trekking bicycles – Security requirements and test methods", DS/EN 14764:2006, see http://webshop.ds.dk/product/M206712/standard.aspx

GoBike compliance grade 1 and answer to requirement:

Read and agreed.

Info. 2.34 **Good comfort for all End Users**

The bicycle shall be designed in a way such that the End User experiences comfort when using the bicycle and it shall be able to fit men and women of average height between 1.55m - 2.05m. The adjustment of the bicycle's seating position (saddle) and of elements on the bicycle shall be simple and shall not require tools or much strength.

GoBike compliance grade 1 and answer to requirement:

The Urbike ergonomic design makes that any user can ride comfortably on the bike. Due to the office seat gas tube the seat height can be changed as easily as one does at office.Easy access unisex ergonomic open V-frame bike. Can be accessed with any kind of clothing type.

The saddle has:
• Comfortable unisex seat.
• Easy adjustable with one hand by handle.
• Clean seat height adjusting. No greasy and/or rusty parts.
• Seat piston developed by Urbikes. Unlimited height positions between low and high position.
• Accessible for people from 1.50m up to 2.05m
• Automatic ergonomic adjustment for each user. Just by adjusting the seat height also the position towards the handlebars and the angle between saddle and pedals is adjusted. So any person has a comfortable straight up position on the bike.

Info. 2.35 **Minimization of filth affecting users**

The bicycle shall be designed in such a way that the End User will not become dirty by using it.

GoBike compliance grade 1 and answer to requirement:

The Urbike has no moving mechanical parts which can make the user dirty. For pick up and return of the bike, the user needn´t take of his hands from the handlebars.Bike disposes over:
• Easy adjustable seat height with one hand by handle.
• Clean seat height adjusting. No greasy and/or rusty parts
• Axle propulsion, which avoids dirty/greasy chain and no dirty clothing.

Info. 2.36 **Basket/personal item transport**

The Supplier shall provide a bicycle with a luggage rack which makes it possibility to transport one’s personal items. It shall be possible to fixate the luggage.

GoBike compliance grade 1 and answer to requirement:

As shown on the Urbike image earlier, the user can take his personal items in front of the bike on the cargo platform. The platform closes with a spring. Also auxiliary attachment material can be used to fix the objects.
As an option the Urbike can be delivered with saddlebags over the rear wheel.
The bicycle disposes over a cargo platform on the handlebars, which allow users to take bag or suitcase on the bike. The cargo can be fixated by spring mechanism.

Please refer to LB section 6.1.

Info. 2.37 **Lights**

The bicycle shall have fixed lights that comply with the legal requirements in Denmark and do not require batteries. The lights shall continuously work for short stops and as stop for red lights. The Customer prefers a solution with a standing light that contiues up to 1 minute after stopping.

GoBike compliance grade 1 and answer to requirement:

Urbike disposes over accu powered LED lights. The accu is charged while the bicycle is in movement or docked.
The lights dispose over time relay function, which allow them to shut down after pre-established period after bike stopped running.
Bicycles have continous LED lights. This makes that at any moment the bike is used, the lights are on improving visibility of the user by other traffic and the safety. The lights also working, by supercab, when the user is waiting in front of a traffic light. This time is standard configured at 2 minutes. They are powered by internal bike battery, which is automatically charged by alternator while biking.

Info. 2.38 **Parking outside the docking points**

There shall be a possibility for the bicycle to be locked (i.e. secondary lock) by the End User and stand stable (i.e. kickstand) during a trip away from a location.

GoBike compliance grade 1 and answer to requirement:

All Urbikes come with side stand for stationing outside docking. The E-Urbike is immobilized by the engine block. The mechanical Urbike can be delivered with a mechanical lock, which is operated by a PIN code and the touch screen. This

avoids the necessity of using mechanical keys.

Through the tablet an alarm is activated and the motor is disconnected and the location is fixed. If the bike is moved 1 meter the alarm goes off (Blackberry protet system). In case the bike is continuously moved the alarm will go off continuously. With the alarm connected the motor blocks the wheel spinning. The alarm is shut off by passing swipe card or introducing PIN Code. This is in development, but is technically quite easy and will be available on short notice.

The bicycles will have a mechanical lock, which is activated from the tablet PC. The lock mechanically inserts a pin into the crankcase, making it impossible to use the bike.

Locking and unlocking is done using a pin-code defined by the customer.

Returning a bicycle outside a docking station will require the bicycle to be locked using the GoBike pin-code based locking functionality. A bicycle is not regarded as returned in the system until it has been locked.

Min. req. 2.13 Unique identification / tracking of bicycle

Unique identification of the individual bicycle is important.~~for the Product Manager and Customer support staff. The Product Manager has to be able to identify unique bicycles in order to analyze user patterns and the Customer support staff has to be able to receive and forward failure messages on unique bicycles.~~

The bicycle shall contain a unique ID and a tracking mechanism. The tracking mechanism's specifications and limitations (i.e. coverage and precision) shall be described by the Supplier. The bicycle shall be able to deliver data regarding:

- Position
- Choice of route
- Time on the bicycle

GoBike compliance grade 1 and answer to requirement:

Each bicycle has a unique ID in the GoBike systems. This ID can be traced in all systems - and be used for statistics as well as real-time information. Further, since the bicycle reports it location to the GoBike systems on a regular basis, the position of the bicycle can also be determined based on the unique ID.

Reporting of the position is performed based on GPS location - and thus using the precision available from the present GPS system. Should GPS not be available, GoBike will use GPRS/3G interpolation and triangulation for position determination.

2.3. Docking stations and docking points

As part of the tender, the Supplier shall install/construct docking points and docking stations at specific locations. The locations for the new bike-sharing system will mostly be close to train and metro stations, at other traffic hubs and at central places in the cities, and in the long term, at private partners, educational institutions or tourist sights. It shall be possible to pick up and return the bicycles at all the locations.

The system shall consist of physical docking stations and as a starting point also physical docking points. A solution without physical docking points can be accepted by the Customer if the Supplier can ensure that the bicycles in the docking stations are standing as robust and properly as they would in physical docking points.

~~In Copenhagen and Frederiksberg many citizens have their own bicycle (about 500.000), and there is a big challenge for one to find sufficient room to park their own bicycle. There are, for instance, often parked bicycles outside the bicycle racks around many train and metro stations, as there are too few bicycle parking racks.~~

~~It is therefore desired that docking points for the bike-sharing system are, as far as possible, placed separately on locations, where the need for ordinary bicycle parking is high. At certain locations a proposed alternative will however be next to the ordinary bicycle parking. Hence, it will be a challenge to ensure that ordinary bicycles are not parked in the docking points for the shared bicycles.~~

Info. 2.39 **Exemption of docking stations for other possible means of transport**

The Supplier shall explain how the offered solution supports the Customer's requirement that docking stations are free from other possible means of transport (i.e. private bicycles, motorbikes, etc.), so that the docks are accessible for the End User wanting to return a shared bicycle.

GoBike compliance grade 1 and answer to requirement:

The construction of the bicycle dockings is in such a way that they are not useful for conventional bike parking and conventional bike securing with chains. Therefore the public will not be tempted to use the Gobike bicycle station as a parking for their bikes.The Gobike docks´design make it impossible to stall or attached other bicycles or vehicles to it. So therefore, blocking free access to the bicyclestation by other vehicles is avoided.

Info. 2.40 **Illustration of docking stations**

The Supplier shall, with the help of graphic depictions, account for how the three chosen locations described above will visually appear once the system is established (Forum Metrostation, alternative 133.2 as well as at the main station, alternative 36.1 og 36.2, see Sub-appendix 5A.1.1 Locations in the Cities of Copenhagen and Frederiksberg).
It must be possible to use the illustration for further communication and presentation with regards to the project's interests.

GoBike compliance grade 1 and answer to requirement:

Please refer to LB section 6.3

2.4.Payment machines

~~Payment machines are physical entities placed close to the docking stations, where the End User can rent and pay for the shared bicycles, obtain product information or contact Customer service.~~

Req. 2.25. **Suggestions for other locations/placements**

On the payment machines it shall be possible to see in real time the closest stations where available bicycles and docking points are located.

GoBike compliance grade 1 and answer to requirement:

All Urbikes are equipped with tablet PC, which offer real time info about the system. On the tablet, smartphone and internet user interface, local area information

is given of the nearest other (bicycle) stations.

Please refer to LB section 6.1 and 6.2 and LB appendix A (Systems Description & User Interaction)

2.5. Adjustment of the system

It shall be able to adjust the system as a whole to the End Users ongoing need. ~~Thus, the Customer shall have the possibility for an ongoing adjustment of the capacity of bicycles, placements of those and placements of docking stations, depending on the demand.~~

~~Both the City of Copenhagen and the City of Frederiksberg arrange, attract or place areas and streets for a range of big events throughout the year. Every year music festivals, sports events, congresses and exhibitions attract a lot of guests and resident End Users to the center. Furthermore, the seasons generate various flows with regards to transport patterns and redistribution needs. The summer generates more activity at the beaches and in the parks close to the city, while the winter does the opposite.~~

Info. 2.41 **Temporary docking stations**

There shall be a possibility for temporary docking stations either in their initial design or in an adjusted version. The need for temporary stations covers for the possibility of serving a time temporary objective with special events in the city, or of testing locations that could be suitable for the bike-sharing system. The Supplier shall offer mobile payment machines and docking stations, which can be moved with short notice and without much construction work.

GoBike compliance grade 1 and answer to requirement:

The Gobike bicycle stations are delivered in factory finished modules. The modules will be placed directly from the trailer on the street and fixed to the street with chemical plugs or anchors. No additional installation of civil work on the docking points or on the station is required.
This makes that in case desired it is very easy to install temporary bicycle stations, size them according to on the spot and periodical needs, and remove them again when the period passed. Once the bicycle station is removed, there street

situation is unchanged as before placing the bicycle station.

Løsningsbeskrivelsen:
6.3.4. Temporære Docking-stationer

3. General requirements to the deliverable

This chapter describes the general and overall requirements of the deliverable.

3.1. User-friendliness

In order to support and promote the use of the bike-sharing system among End Users, it is important that the system in its single parts and in the overall flow appear logical and user-friendly. Below are requirements which shall support the Customer's objective of a positive End User experience of the system. Together with the software, the design of the hardware shall, in structure and functionality, ensure user-friendliness and a good flow crosswise. It shall be easy and simple to:

- Reserve and rent a bicycle (possibly with help texts)
- Find the information that is requested by the End Users' in concrete situations
- Execute the administrative tasks with the Customer

Req. 2.26. **User-friendly interface**

The user interface shall be characterized by a high user-friendliness. This means that the End Users and the Customer intuitively can use the system, from the registration of a profile and the booking, to payment and returning of the bicycle. See also Min. req. 8 (below) regarding language.

GoBike compliance grade 1 and answer to requirement:

The Gobike Web interface follows the commonly accepted internet web page landic. Users will find it very easy to work with the web interface. The pages follow each other up in a landical way and with a button click the user can activate functionalities. To get an visual idea, we refer to the summary of web pages as shown in the earlier paragraph 1.5 ¨Requirement support staff¨.
The tablets PC on the Urbikes are the latest advance in user friendliness. The user can ¨sitting on the bike¨ get access to the system and pick up a bike. If the user has a registered user ID number, he can input this directly on the tablet touch screen, he can swipe his registered user chipcard or simply introduce his credit card details, where after the bike is released.

On the touch screen are next to the system land in (bike release) other user buttons available. These buttons are among other a help button and language button. The help button can activate a help wizard which leads the user step by step through any operation for which the user requires assistance.
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The tablets PC on the Urbikes are the latest advance in user friendliness. The user can ¨sitting on the bike¨ get access to the system and pick up a bike. If the user has a registered user ID number, he can input this directly on the tablet touch screen, he can swipe his registered user chipcard or simply introduce his credit card details, where after the bike is released.

On the touch screen are next to the system land in (bike release) other user buttons available. These buttons are among other a help button and language button.

The help button can activate a help wizard which leads the user step by step through any operation for which the user requires assistance.

The structure of the Gobike IPBM system is based upon comfort. Comfort of mobility, comfort of information and the comfort of user friendliness.

The whole system environment is based up on the design and development of benchmark systems like Windows, Tom Tom Route planner, Internet, Iphone and Android.

Info. 2.42 **Decryption and test of user-friendliness**

The Supplier shall, with screen dumps and drawings, describe the process and method with which user-friendliness is incorporated. A concrete description and illustration of what the End User experiences with regards to the system's user-friendliness is requested.

The Supplier shall describe:

- How End Users and the Customer's internal users experience the structure, service flow and design

- What test(s) will be execute to ensure user-friendliness among End Users and how these tests, their criteria and their executions are organized
- A time plan for the execution of the tests
- The test results shall be reported to the Customer, and the report shall contain recommendations for how the test results can be improved.

GoBike compliance grade 1 and answer to requirement:

A series of user interaction flows has been identified - targeting various user groups and user scenarios. Based on these user interaction flows, a series of accommodating screens (for web, smartphone and tablet) have been designed.

Through behavior measurements, GoBike will continuosly uptimize the individual screens - and add new functionality where required.

The implementation plan, including tests, is listed in the general GoBike project plan.

EndUser tests are being conducted through UI and UX experts using lab-tests. Tests will be performed in labs in Copenhagen (Nytorv) with a group of test-persons representative for the expected user groups. Tests will be performed throughout the system design and mock-up phase and will be finalized prior to commencement of system development. Please refer to the overall GoBike implementation plan for details.
Please refer to the appendix for a sample of a user scenario.

Please refer to: LB appendix A (Systems Description & User Interaction) for a description of this which contains a full set of mock-ups of user experience on Website, Tablet PC and SmartPhone.

Min. req. 2.14 Language

All written and verbal communication addressed to all user types shall be in Danish. In addition, the texts for the End Users shall as a minimum also be in English.This text requirement applies to all equipment, website, electronic and verbal communication, Customer support, etc.

GoBike compliance grade 1 and answer to requirement:

All systems from GoBike will be capable of language versioning - including Chinese (as based on UTF-8)

3.2.Revision

It is important for the Customer that there is transparency in the invoicing process, from End User to payment provider (i.e. Nets, credit card providers and potentially telephone operators) and the Supplier.

The financial staff shall have the possibility to follow the factual invoicing of the End Users and balance it with their own information. It is important for the Customer that the system is transparent and that it is possible to follow the money flows.

Min. req. 2.15 **Transparency**

The Supplier shall offer a system which is transparent with regards to finances and invoicing. Via a revision process it shall be possible to get an overview of where the money is with regards to the different involved partners in the payment flow and their administrative procedures. Thus, the Supplier must not develop a system that unnecessarily binds the money to their own advantage or benefits payment providers by credits or long payment or binding periods. It is the Customer's expectation that the turnover is registered in the Customer's accounts as soon as possible.

GoBike compliance grade 1 and answer to requirement:

GoBike standard ERP system, which is used by the appointed chartered accountant, adheres to danish legislation on this area.

Info. 2.43 **Transparent payment flow**

The Supplier shall describe how the payment flow runs, including the payment provider's responsibility and role. The Supplier shall account for which conditions underlie the cash flow and how the Customer can get insight into the actual numbers in the payment flow.

GoBike compliance grade 1 and answer to requirement:

See Løsningsbeskrivelse section 5.4

Info. 2.44 **Optimization of payment flow**

The Supplier shall describe which initiatives are made in the payment flow that support the requirement of the fastest possible deposit of the funds into the Customer's accounts. Based on the three different End User types (commuter, tourists and walk-ups) the Supplier shall indicate the maximum credit time from when a payment is done by the End User to when it is registered on the Customer's account.

GoBike compliance grade 1 and answer to requirement:

See Løsningsbeskrivelse section 5.4

Info. 2.45 **Audit possibilities**

The Supplier shall describe which possibilities the financial staff has to audit the system.

GoBike compliance grade 1 and answer to requirement:

See Løsningsbeskrivelse section 5.4

User statistics is an important part of the Customer's work of optimizing and improving the product. The Customer therefore wants all data to be logged and made easily available for statistical use.

Req. 2.27. ~~**Legal requirement**~~

~~The Supplier shall ensure the legal requirement at any time is secured in the system, including the securing of the transaction and audit trail. The transaction line shall ensure a clear connection between the individual registrations in the system and the registration in the~~ ~~The control line shall ensure a sufficient documentation~~ ~~individual sale transaction is exposed to. The documentation of the transactions and controls shall be in such a quality, that the audit of the Customer's annual report can be based on it.~~

Obsolete

~~3.3.Internal instruction~~

~~Info. 2.46~~ **~~Instruction of internal super user~~**

~~The Supplier shall give an introduction and teach a selected number of the Customer's internal users (max. 10 persons). The instruction must take place in a period close to the operational start of the system. The instruction shall incorporate the administration of users, creation of interfaces to other systems. The instruction shall be as "train the trainer" so the participants to pass on their knowledge to other internal users afterwards. The instruction shall take place at the Customer's worksite and be in Danish.~~

Obsolete

4. General IT requirements

This paragraph deals with IT-related requirements regarding integration, operation and maintenance.

4.1. Integration with other systems

The Supplier's system shall be able to integrate with the following systems of the Customer:

- ~~DSB's SAP system for accounting~~
- ~~DSB's online payment solution~~
- ~~DSB's data warehouse~~
- S-more - DSB's S-tog loyalty program

Described below are the Customer's general requirements for integration, followed by specific requirements for the integration with ~~DSB's SAP-system, online payment solution, data warehouse and~~ S-more.

~~4.1.1. Common requirements for integration~~

~~Unless otherwise explicitly stated, the requirements described in this section apply to all named integrations.~~

Info. 2.47 **Keep data access rights**

The Supplier shall describe how the system's secured data is transferred to other systems with regard to security requirements, cf. paragraph 4.2.

GoBike compliance grade 1 and answer to requirement:

The information to other systems is transferred through secure interface applications.
The information is encrypted at any time while it is send over secure lines. The transaction is configured as follows:
1. Greeting signal/Hand shake
2. Receiving system replies
3. Sending system announces transmission with packages and details
4. Receiving system confirm correct reception of the information

5. Data transmission starts.
6. Transmission end signal is send
7. Receiving system confirms end signal and checks of received packages is correct.
8. Receiving system confirms number of packages received is OK
9. Connection is closed.
No information can be lost while both systems confirm the amount of information send and received.

Please refer to LB appendix A (Systems Description & User Interaction) section 2 and Løsningsbeskrivelse section 5.6: "Datasikkerhed"

Req. 2.28. **Protect against data loss or duplication when transferring**

The Supplier shall ensure that the system is protected against loss or duplication of data that is transferred to or from other systems, (i.e. because one or both systems have been offline or closed down).

GoBike compliance grade 1 and answer to requirement:

As briefly explained in Info 2.47, the system is prepared to avoid duplication or loss of information.
Data sent will not be confirmed sent until both system reply and agree on the send information. All systems have backup system where operations are saved.

Please refer to LB appendix A (Systems Description & User Interaction) section 2 and Løsningsbeskrivelse section 5.6: "Datasikkerhed"

Req. 2.29. ~~**Protect data against problems with simultaneity**~~

~~The Supplier shall ensure that the system is protected against problems with simultaneity that is that system A changes information while system B is doing the same. Neither of the systems shall notice that there is a conflict.~~

Obsolete

Req. 2.30. ~~**Communicate with the Customer via WS-I compliant web services**~~

~~The servers outside the Customer shall communicate with displayed web services via WS-I compliant web services. The communication shall be secured with security pt. 2.30, Table 2.~~

Obsolete

Req. 2.31. ~~**Integrations test in test environment**~~

~~When developing integration points towards the Customer's systems, the Supplier shall test himself against the other supplier, until the Supplier can deliver the product in a condition, where it is possible to initiate integration tests in a test environment. There won't be developments through VPN tunnels or similar within DSB's development environment.~~

Obsolete

Req. 2.32. **Integration points of the documents**

The Supplier shall ensure that all documentation is composed understandably and is suitable for integration and data extraction. All documentation shall be written in Danish or English.

GoBike compliance grade 1 and answer to requirement:

System documentation will be based on .NET standard commentary and API autandeneration documentation standards.

Info. 2.48 **Easy to further develop**

The Supplier shall describe how the system ensures that it is easy to add new interfaces or change that is existing (i.e. SOA services, database requests and APIs).

GoBike compliance grade 1 and answer to requirement:

System documentation will be based on .NET standard commentary and API autandeneration documentation standards. Open APIs will allow further development. Further, GoBike offers to deposit source code at a reasonable frequency at a suited 3rd party on the Customers expense.

~~4.1.2. Integration with DSB's SAP~~

~~DSB's SAP is used to support all of its Customers' functionality for use of accounting, balancing, management information, etc.~~

~~SAP displays a web service that can be called via DSB's integration platform, which manages the buffering in case SAP is down, the load balancing, etc. It is planned to upgrade the integration platform to Oracle 11G.~~

SAP's web service offers to give a "handshake" back, wherein it confirms that the transaction was received and processed, or if it was received with an error, typically a format error.

SAP's web service rejects duplicates.

SAP's web service is documented in Sub-appendix 2.3 SAP Accounting interface Protocol v1 11. It lies with the Customer to update that documentation with eventual changes.

Req. 2.33. **Data for transmission**

The Supplier has the responsibility for executing the system's part of the integration with SAP's web service.

SAP shall receive all single transactions from the system. Prior to the implementation there shall be a final clarification of which data precisely shall be exchanged. Among other things, this concerns:

Obsolete

- The major customers' transactions linked to a major customer
- Allocation of receivable bicycle time for the End User
- Payment channel in relation to subscriptions, invoices, web, mobile or terminal
- Ticket from the online payment system for use in identification of the payment card

The fields to which the Supplier directly should respond are listed below.

Obligatory	Segment	Tag / field	Content	Example
X	Header	Expedition ID	Unique transaction ID that ensures revision tracking from accounting to source system	60025099001
X	Header	Batch Indicator	J = accounting asynchronous N = accounting synchronous	J
X	Header	Source system	An ID that characterizes the data Supplier CL = Central Log RK = Rejsekort (Travel pass) CC = City Cykel (City bicycle)	CC

X	Header	Version	Constant	1
X	Header	Log date	Time stamp for the transactions log in the back-end system	20111110151205
X	Header	Expedition date	Time stamp for the transactions "birth"	20111110151205
X	Header	Expedition type	1 = Cash sale and payment with payment card or cash	1
X	Header	Valuta	Valuta code of amount	DKK
X	Header	Sale location	DSB sale location number – shows by which organization entity the sale has been made **	8600505
X	Header	Seller	DSB seller – shows which seller / user has executed the sale **	159053
	Header	Sales round	Sales round = one shift for an employee	12500005059
X	Sale	Transaction ID	Shows what commercial incident has happened OMS = Omsætning billetsalg (Turnover ticket sale) OMV = Omsætning Varer med moms (Turnover products with VAT) OMW = Omsætning varer uden moms (Turnover products without VAT)	OMV
	Sale	Product	Product number	
	Sale	Product test	Product text	Bicycle rent
X	Sale	Unit	Amount	1
X	Sale	Operational sign	Sale = + Return = -	+
X	Sale	Unit price	Price per unit	650,00
X	Sale	Gross amount	Sale sum (product of the two fields above)	650,00
X	Sale	VAT indicator	Relevant if there is VAT	S0 = 0 % S1 = 25 %
X	Payment	Transaction ID	Shows what commercial incident has happened - BET = Payment etc.	BET
X	Payment	Business agreement	NETS cashing agreement	3481336
(X)	Payment	Type of payment	Type of card: 4571 VisaDankort 5033 MasterCard Etc. Use ISO values	4571

			*	
(X)	Payment	Type of payment card	Type of card: 0 Cash 11 Dankort 15 Eurocard Etc. *	
X	Payment	Payment card no.	DIBS or PBS card transaction number delivered right aligned with prefixed 0s (zero)	Ex: 0000105
	Payment	Payment terminal no.	ID for payment terminal	5521905
X	Sale	Operational sign	Payment = + Return payment = -	+
X	Payment	Amount	Payment amount	650,00

Req. 2.34. **Transfer of single transactions**

The Supplier shall ensure that single transactions continuously are transferred via integration [illegible]

Obsolete

Req. 2.35. **Assurance of balance between turnover and payment**

The Supplier shall [illegible] turnover and payment are always in balance. If [illegible], DAP will account for the difference on a failure account so that DSB's accounting department can catch the problem.

Obsolete

4.1.3. Integration with DSB's online payment solution

The Customer wants DSB's online payment solution to be used for the execution of payment for all channels. Today, DBS has 3-4 business agreements with DIBS. It is expected that the system shall use one of these or a corresponding new business agreement.

DSB's online payment solution is documented in Sub-appendix 2.4: DSB's online payment solution. It lies with the Customer to update this documentation with potential changes.

The Supplier shall have the responsibility to execute the system's part of the integration with DSB's online payment solution.

Req. 2.36. **~~All channels via online payment solution~~**

~~The Supplier shall ensure that all channels via online payments are executed, the payments are executed via DSB's online payment solution.~~

Obsolete

~~4.1.4. Integration with DSB's data warehouse~~

~~The Customer wants all transaction data to be transferred to DSB's data warehouse for market intelligence use. It is not yet determined how the Customer wants the data to be transferred to the data warehouse.~~

~~The Customer wants all transaction data in the system to be transferred, including:~~

- ~~When the bicycle was rented, as well as from where to where~~
- ~~Information regarding bookings – including the time period from the booking to the rental, as well as from where to where~~
- ~~Finances~~
- ~~Range of products with the corresponding finance and frequency~~

Req. 2.37. **~~Integration with data warehouse~~**

~~The Supplier shall ensure integration via API to Customer's data warehouse with a minimum frequency of 1 hour.~~

Obsolete

GoBike compliance grade 1 and answer to requirement:

GoBike systems can deliver all data from the underlying databases in realtime (as webservices) or as file transfer with a certain frequency. Included is one report/export based on customers syntax. Customer must provide sufficient documentation to its datawarehouse integration points to GoBike, in order for GoBike to accommodate the integration syntax. GoBike is not responsible for any datamishandling after having provided information in the syntax and in the manner specified by the customer.

Please refer to Løsningsbeskrivelse section 5.7.1. and LB appendix A (Systems Description & User Interaction).

4.1.5. Integration with loyalty programmes

The Customer wants the system to be able to integrate with different loyalty programmes, including "S-more", which is a loyalty program for the commuters of S-tog. The Customer wants to offer the End Users the ability to sign up at S-more's Customer portal for the allocation of usage time to the End Users via the loyalty program.

S-more's integration points are documented. It is the Customer's responsibility to update the documentation with changes.

Req. 2.38. **Integration with S-more**

The Supplier is responsible for executing the systems part of the integration with S-more. The Supplier shall be able to send data to the S-more database via a cloud standard SOAP-interface with stating the End Users mobil number (MSISDN). The data regarding purchase transaction shall be forwarded, so dat the S-more database can receive data and accumulate the purchase on the End User level.

GoBike compliance grade 1 and answer to requirement:

GoBike systems can deliver all data from the underlying databases in realtime (as webservices) or as file transfer with a certain frequency. Included is one report/export based on customers syntax. Customer must provide sufficient documentation to its datawarehouse integration points to GoBike, in order for GoBike to accommodate the integration syntax. GoBike is not responsible for any datamishandling after having provided information in the syntax and in the manner specified by the customer.

Please refer to Løsningsbeskrivelse 5.7.2. and LB appendix A (Systems Description & User Interaction).

4.2.IT security

IT security is an essential element in all IT systems. It is therefore important to get a general description of the offered solution as well as a description of it in relation to the below examples of requirements and to security standards mentioned in paragraph 7.4.

4.2.1. Access rights for users

Below are requirements which relate to working tasks that shall be supported by different users in different contexts, in order to ensure an authorized access to the system when authorization is necessary.

Req. 2.39. **Identification of user**

The Supplier shall ensure that internal users can clearly be identified.

GoBike compliance grade 1 and answer to requirement:

All user are ID with unique user code, which is used although the system. In addition to the "visible" User ID - which the customer will be aware of - the system will use a GUID for identification.

Please refer to the GoBike document "Løsningsbeksrivelse" section 5.6 "Datasikkerhed" for a description of this.

Req. 2.40. **Away from the system**

The Supplier shall ensure a solution which supports that when the user is away from the Administration system a certain amount of time, the following does not occur:

- Another user can use the system with the rights of the first user
- If the system logs out itself, it is difficult to log on again
- If the system logs out itself, data that was typed in can be lost

GoBike compliance grade 1 and answer to requirement:

Standard security restrictions will apply.

Please refer to the GoBike document "Løsningsbeksrivelse" section 5.6 "Datasikkerhed" for a description of this.

Req. 2.41. **Access**

The Supplier shall ensure that only authorized users can get access to the systems and data.

Examples of solution:

1. Rights are controlled in the database system

2. The user's screen picture only shows the functions for which he has the user right.

GoBike compliance grade 1 and answer to requirement:

All users are ID by user name, password and user type. According to the user type and individual special right the user disposes of he can get access to certain environments of the system or not, and is he allowed to execute operations or can only consult.

GoBike cannot be held responsible for the password and storage-of-password guidelines at the customer. Should an unauthorized user gain access to the system, by using a named account, the Customer is to be held responsible. This also applies, should this unauthorized user perform any harm on the system(s) and/or underlying data.

Please refer to the GoBike document "Løsningsbeksrivelse" section 5.6 "Datasikkerhed" for a description of this.

4.2.2. Security administration

The work of the security administration includes the tasks named below. The users, to whom rights shall be assigned in the system, include End Users, internal and external users. All changes in rights shall be logged with information of who made which changes and when.

Req. 2.42. **Edit rights**

The Supplier shall ensure that users can be created and rights can be assigned to them or taken away from them.

GoBike compliance grade 1 and answer to requirement:

(see also 2.41) The requirement can be fully met.

Please refer to the GoBike document "Løsningsbeksrivelse" section 5.6 "Datasikkerhed" for a description of this.

Req. 2.43. **Create roles**

The Supplier shall ensure that new types of user roles with a new combination of rights can be created.

GoBike compliance grade 1 and answer to requirement:

Unlimited number of user roles, within the security hierarchy of the GoBike systems, can be applied at any time.

Please refer to the GoBike document "Løsningsbeksrivelse" section 5.6 "Datasikkerhed" for a description of this.

Req. 2.44. **Overview of rights**

The Supplier shall ensure that the security administrator can obtain an overview of who has which rights and if a right is not assigned to any user roles.

GoBike compliance grade 1 and answer to requirement:

User overview will be provided as standard administration tool of the GoBike systems.

Please refer to the GoBike document "Løsningsbeksrivelse" section 5.6 "Datasikkerhed" for a description of this.

Req. 2.45. **Logging level**

~~Together with the Customer~~the Supplier is responsible for determining the final logging level for the solution, including ensuring that the legal requirements are met. The logging shall generally contain all relevant information to clearly identify incidents, times and user. Incidents regarding payment and changes of rights are important to log.

GoBike compliance grade 1 and answer to requirement:

A full user activity land will be implemented, landging:

- date/time of landin
- date/time of landoff
- IP

- any significant action (to be defined by GoBike) in the system

Please refer to the GoBike document "Løsningsbeksrivelse" section 5.6 "Datasikkerhed" for a description of this.

4.2.3. Protection against data loss

Data can accidentally be lost or misconstrued in different ways. The following describe common ways:

Req. 2.46. **Loss or duplication**

The Supplier shall ensure that the system is protected against loss or duplication when transferring between two systems, for example in connection with a crash in one or both systems.

GoBike compliance grade 1 and answer to requirement:

Standard back-up routines apply.

(see also re. 2.28 and req. 2.29)

Please refer to the GoBike document "Løsningsbeksrivelse" section 5.6 "Datasikkerhed" for a description of this.

Min. req. 2.16 **Disc crash**

The Supplier shall protect the system against disc crash and the consequences of it.

GoBike compliance grade 1 and answer to requirement:

System will be hosted in a RAID-based environment with full redundant fail-over.

Please refer to the GoBike document "Løsningsbeksrivelse" section 5.6.1 "Driftssikkerhed" for a description of this.

Min. req. 2.17 **Fire**

The Supplier shall protect the system against fire and the consequences of it.

GoBike compliance grade 1 and answer to requirement:

System will be hosted in a RAID-based environment with full redundant fail-over. Servers will be located in a certified hosting centre with full fire protection.

Please refer to the GoBike document "Løsningsbeksrivelse" section 5.6.1 "Driftssikkerhed" for a description of this.

4.2.4. Protection against unintended user behavior

Unintended user behavior is understood as the user doing something he/she didn't intended, for example by hitting the wrong button or using a command that has another effect than thought.

Req. 2.47. **Unintended actions without crash**

The Supplier shall ensure that the system doesn't crash due to unintended user actions, neither on the client nor on the server.

GoBike compliance grade 1 and answer to requirement:

Only system administrators can access such sensible areas that they can influence the stability of the system. Any change of system software is tested in a special test environment, before it is implemented.
A back up copy of the system is always available in any case.

Further, GoBike's front-end systems will be based on Windows technolandy - allowing a "keep alive" monitoring. Should a system fail or crash due to user interaction, it will auto-restart immediately. An error land and notification will be automatically sent to GoBike's monitoring systems.

Please refer to the GoBike document "Løsningsbeksrivelse" section 5.6 "Datasikkerhed" for a description of this.

Req. 2.48. **Control of data typed in**

The Supplier shall ensure that all data typed in is controlled regarding format, consistency and reasonableness. In case of doubts, the user shall be warned and asked to correct or comment.

GoBike compliance grade 1 and answer to requirement:

System shall apply strict data field formats, making sure that all data is inputted in the same manner. Regular expressions are to be used as validation methodolandy wherever appropriate.

Please refer to the GoBike document "Løsningsbeksrivelse" section 5.6 "Datasikkerhed" for a description of this.

Req. 2.49. Correct mistakes

The Supplier shall ensure that the user easily can correct mistakes.

GoBike compliance grade 1 and answer to requirement:

GoBike will not incorporate auto-correction functionality, as studies indicate that in the context where the users are interacting with GoBike systems, this will not provide any increase in usability.

All GoBike systems, however, will be based on optimized interaction flows - with an easy "roll back" should the user have performed an error during any process.

Req. 2.50. Stop long-lasting functions

The Supplier shall ensure that the user can stop long-lasting functions (i.e. big data transmissions) and return to a well-defined condition.

GoBike compliance grade 1 and answer to requirement:

All long-lasting functions - including data transfer - will be performed in background.

4.2.5. Protection against threats

In relation to IT security within and around the offered solution it is crucial for the Customer to understand which IT security threats shall be protected with regards to business risks.

Min. req. 2.18 Documentation of the completion of a risk analysis

The Supplier shall document the completion of a risk analysis of the chosen security analysis in relation to violation of integrity, confidentiality, accessibility and non-repudiation. The analysis that shall be compiled for the Customer shall furthermore describe eventual risks.

The analysis shall be incorporated into the tender and updated as a part of the clarification and design phases after Framework Agreement signature.

GoBike compliance grade 1 and answer to requirement:

Read and agreed. Gobike will within 45 days of contract award complete a detailed risk analysis of the entire Gobike system solution in relation to among other the mentioned areas and the applicable legislation. This risk analysis will be submitted to the Customer for approval.

Gobike will ensure that this risk analysis is updated in case of changes during the prandram.

A preliminary risk analysis of the mentioned aspects of the Gobike system have been completed and documented. Please refer to the description in the Løsningsbeskrivelse section 5.6.2. and LB Appendix B.

4.3.IT Operation

This chapter describes the requirements for the Supplier regarding operation, support and maintenance of the system. The chapter stipulates requirements for services the Supplier is discharged for. ~~The requirements can only partly be verified (tested) at acquisition. The final verification happens later, at the operation test.~~ The chapter provides input to the Service Level Agreement, which shall be contracted at a later time.

Req. 2.51. **Operation environment**

For the execution of the system, the Supplier shall provide an operation environment that makes it possible to fulfill the operational requirements described in this section. The environment shall contain the necessary licenses for the operating systems, databases, server software and anti-virus/security applications, as well as the applications, which are necessary for supervision, alarms or similar, that the Supplier uses in their operation center. Also potential software, which is necessary

for data transmission with external system and other network traffic, shall be part of the environment.

GoBike compliance grade 1 and answer to requirement:

GoBike are working closely with Microsoft on this issue and will comply fully.

Req. 2.52. Test environment

The Supplier shall ensure that the operation environment offers a possibility for establishing a test environment that supports continuous tests of updates. In addition, a test environment shall be used for implementation of new functionalities, development and adjustment of the communication with external data sources as well as the necessary unforeseen changes in the environment and the solution.

GoBike compliance grade 1 and answer to requirement:

A full staging environment for "real life" testing is a part of the GoBike infrastructure.

Min. req. 2.19 Planning of capacity

The Supplier shall conduct performance management with regards to strains of CPU power, network, disc space, and RAM with regards to optimization, tuning and adjustment of the capacity.

GoBike compliance grade 1 and answer to requirement:

Capacity planning and subsequently hardware scaling is performed as part of unit- and stress-testings of the system(s). GoBike aims at response times <1s (less data transmission where appropriate)

Min. req. 2.20 Obligation for initiative

The supplier has the obligation for initiative with regards to uncovering and correcting failures and defects in the delivered services. This means that the supplier is resonsible for monitoring the specified operation environment so it is possible to pro-actively inform the customer in case it is not possible to deliver the services in the quality defined in the service levels in appendis 10.

GoBike compliance grade 1 and answer to requirement:

GoBike have monitoring systems which will alert appropriate parties whenever a significant event occors.

4.3.1. Data storage

Min. req. 2.21 **5-year access to revision-relevant transactions**

The system shall give access to revision-relevant transactions of the past full 5 calendar years and the ongoing year for the sake of revision requirements (legislation).

GoBike compliance grade 1 and answer to requirement:

All transaction relevant information will be stored no less than 5 years with continuous back-up.

4.3.2. Availability

Regarding availability the system is divided into two categories: back-end system and end user-faced system. The end user-faced system is defined as the part of the system that the end users experience; the back-end system is defined as the remaining part of the system. Where nothing else is described, the requirements are valid for the total system.

The system is out of operation when a substantial part of the user base cannot execute their work tasks as usual. The reasons for the operation stop could be:

1. The user's circumstances, i.e. failure of the user's equipment
2. External failures, i.e. a minor blackout
3. External failures as a result of force majeure
4. Failure in an end user-faced client, including user interface
5. Failure of communication between the client and back-end
6. Failure in the data typed by the users (particular by the Product Manager)
7. The supplier's circumstances, i.e. failure of hardware or basis software
8. Application failure
9. Planned maintenance
10. Insufficient hardware capacity

In the statements only those operation stops are calculated, that are base on the supplier's circumstances (reason 2, 4, 5, 7, 8 and 10).

Operation time in a period is calculated as the periods' total length minus the total length of the operation stops the supplier is responsible for. Availability is limited to the operation time divided by the period.

Min. req. 2.22 Monthly statement

The supplier shall calculate the availability on a monthly basis with regards to calendar months.

GoBike compliance grade 1 and answer to requirement:

GoBike will incorporate such report. Customer is responsible for providing details on specific content and structure of this report.

Min. req. 2.23 Planned shut-downs in the periode of 02:00 – 04:00

Planned shut-downs shall happen in the period between 02:00 – 04:00. As a rule such a shut-down is allowed once a week.

GoBike compliance grade 1 and answer to requirement:

GoBike will comply on this. Bicycles will be automatically locked during planned shut-down. It will be ensured, that not all bicycles in a location is under planned shut-down at any time.

Min. req. 2.24 Reetablishment

The supplier is responsible for ensuring that there always is a possibility of re-establish the solution without substantial data loss. It is the supplier's responsibility that the solution is part of the back-up procedures that exist in the supplier's operation center.

GoBike compliance grade 1 and answer to requirement:

GoBike will have full daily back-up on server side. Client side will use keep-alive functions, which will auto-restart the applications on failure.

Min. req. 2.25 Disaster recovery

The supplier is responsible for the solution being part of disaster recovery plans with high priority that the supplier should have.

GoBike compliance grade 1 and answer to requirement:

GoBike will have full daily back-up on server side. Client side will use keep-alive functions, which will auto-restart the applications on failure.

Min. req. 2.26 Periodic back-up

The supplier is responsible to do periodical back-ups of application and data.

GoBike compliance grade 1 and answer to requirement:

GoBike will have full daily back-up on server side. Client side will use keep-alive functions, which will auto-restart the applications on failure.

4.3.3. Support

Support covers help for the users, supervision of the operation situation and changes in the technical configurations. All the named times apply to 80% of the cases.

Info. 2.49 Reporting of data errors to the customer

The supplier shall describe how it is ensured that the Supplier reports to the Customer when there are data errors in the system

GoBike compliance grade 1 and answer to requirement:

GoBike can create error-reports based on specification by the customer and forward these at a desired frequency. Customer is responsible to provide specification of such report.

Min. req. 2.27 Automatical monitoring

The supplier shall establish an automatical monitoring which actively monitors the critical processes, network acesses, business applications (i.e. access to price look-ups), databases and servers, so it is possible to automatically set an alarm and registrate failures and crashes in connection with the deliverbale of the agreed services.

GoBike compliance grade 1 and answer to requirement:

The listed monitoring parameters will be part of the GoBike monitoring system.

Min. req. 2.28 Monitoring of back-up restore

It is the supplier's responsibility to monitor the backup-restore procedure and the anti-virus and safety software.

GoBike compliance grade 1 and answer to requirement:

The listed monitoring parameters will be part of the GoBike monitoring system.

4.3.4. Change management

Min. req. 2.29 Initialization of a new program part

The supplier shall do coordination and planning as well as lead the initialization if a new program part, corrections or changes are implemented in the production of applications, on serves or server software, on routers or other network equipement, as wll as in the database software.

GoBike compliance grade 1 and answer to requirement:

GoBike will comply on this. Bicycles will be automatically locked during planned shut-down. It will be ensured, that not all bicycles in a location is under planned shut-down at any time.

Min. req. 2.30 Changes of availability

If a change has a negative impact on the availability, the supplier shall inform the customer about that. The Suppliere shall in this case ensure the necessary documentation of the problem.

GoBike compliance grade 1 and answer to requirement:

GoBike will comply on this. Bicycles will be automatically locked during planned shut-down. It will be ensured, that not all bicycles in a location is under planned shut-down at any time.

Min. req. 2.31 Response times on changes

The supplier shall measure response times in connection with the implementation of changes of the hardware configuration or the business applications. The response time is to be measured in a test system, so the customer can be adviced on deterioration of the service level on implementation of changes, before this will be produced.

GoBike compliance grade 1 and answer to requirement:

Capacity planning and subsequently hardware scaling is performed as part of unit- and stress-testings of the system(s). GoBike aims at response times <1s (less data transmission where appropriate)

4.3.5. Configuration management

Min. req. 2.32 Configuration management

The supplier has the duty to controll that all changes and corrections have a clear versionnumber and that it is always possible to identify current elements.

GoBike compliance grade 1 and answer to requirement:

Standard versioning conventions will be utilized, with three levels (X.X.X). Second and third level updates can be done by GoBike during 02.00-04.00 as per specification, whereas primary version updates will be coordinated with the customer.

4.4.Standards

Relevant requirements for standards are described below:

Min. req. 2.33 PCI certification

The supplier shall ensure that the solution is PCI certified or uses a PCI certified component or provider (3rd party supplier) for the handling of credit card data in connection with payment transactions.

GoBike compliance grade 1 and answer to requirement:

The payment validator used by GoBike has all relevant certifications. GoBike only submits relevant information to this validator through secure connections and receives a boolean in return. No sensitive information are stored in the GoBike frontend applications.

NETS provides the handling of payments in Denmark. Reference: www.nets.dk

Min. req. 2.34 ISO27002/DS484:2005

The supplier shall describe how it relates to ISO27002/DS484:2005.

GoBike compliance grade 1 and answer to requirement:

GoBike systems, systeminfrastructure etc. Are on level with ISO27002/DS484:2005

Min. req. 2.35 API for further development

As a part of the solution, the supplier shall provide open API software interfaces, so that the users can be co-developers for innovative user applications that support the bike-sharing system.

GoBike compliance grade 1 and answer to requirement:

System documentation will be based on .NET standard commentary and API autandeneration documentation standards.

GoBike will control which applications can be added to the system platform. No additions can be made without specific approval by GoBike. GoBike cannot be held responsible for any consequences from third party software/add-ons regardless of whether these have been approved by GoBike.

Providers of third party applications are to be held responsible for any damage this may cause to any GoBike system. Customer cannot hold GoBike directly or indirectly responsible for any damage any third party component may cause.

Min. req. 2.36 Good accounting practice

The supplier shall describe how it has ensured that the system complies with good accounting practice. The supplier shall eventually ensure certification itself.

GoBike compliance grade 1 and answer to requirement:

GoBike standard ERP system used by the appointed chartered accountant complies to danish legislation.

4.5. Documentation

~~**Min. req. 2.37 Manual for the administration system**~~

~~The customer shall have manual available in which the use of the administration system that shall be accessible via an internet browser is described online and in print. The manual shall be in Danish.~~

Obsolete

5. Expansion to other municipalities in Denmark

The customer wants the system to be rolled out to the other municipalities in the rest of the country, and that other transport service organizations or municipalities can be connected to the system.

Min. req. 2.38 **Expansion to other municipalities/major customers**

The supplier shall in its offered solution ensure that the system can be expanded to other municipalities/major customers.

GoBike compliance grade 1 and answer to requirement:

The GoBike solution will be fully redistributable and scalable.

Info. 2.50 **Handling of different prices and rental conditions**

The supplier shall in its offer account for how the IT system continuously can be expanded to other geographical areas (i.e. municipalities). The supplier shall be able to expand the system with independent prices, products and conditions within independent modules.

GoBike compliance grade 1 and answer to requirement:

The tariff matrix can continuously be expanded. For each new area included a new tariff can be configured.

Unlimited number of price plans can be created.

Info. 2.51 **Individual grafical adjustments on the interface for IT-systemet**

The supplier shall account for the possibility of versionising and adjusting the IT-systems graphical front-end (graphic user interface) to individual needs of f.ex. other municipalities or transport service organizations. The versioning and adjusting can consist of individual ”look and feel” alternatives in f.ex. color chois, placement of loge/brand or pictures.

GoBike compliance grade 1 and answer to requirement:

The overall branding/design guideline for all GoBike systems will be specified

by GoBike. All content will be optimized for each location.

Bespoke solutions and versions can be made, but will not be part of the GoBike maintenance and surveillance obligations.

Unlimited number of price plans can be created.

Info. 2.52 **Resizing**

The supplier shall ensure that the environments can be resized concurrently with the customer's need and technology's (payment possibilities) launch in the market. The resizing of the solution shall both support an increasing number of end users and an increasing number of transactions. It lies with the supplier to include the need for capacity expansion in the monthly operation reports.

GoBike compliance grade 1 and answer to requirement:

Capacity planning and subsequently hardware scaling is performed as part of unit- and stress-testings of the system(s). GoBike aims at response times <1s (less data transmission where appropriate)

6. Sub-appendices

- **Sub-appendix 2.1: Design guide CS4**
- **Sub-appendix 2.2: General info-requirements for environment and working environment**
- ~~**Sub-appendix 2.3: SAP Accounting interface Protocol v1 11**~~
- ~~**Sub-appendix 2.4: DSB's online payment solution**~~

7. Compliance list

The compliance with the requirements can be graded. The Supplier must enclose a completed compliance overview with statements regarding whether and how the requirements are met.

The compliance grade shall be given according to the following graduation principle:

1 - Corresponding to “completely fulfilled”
2 - Corresponding to “partly fulfilled”
3 - Corresponding to “not fulfilled”

Note: The statement of the compliance grade ”partly fulfilled” or ”not fulfilled” constitutes a reservation.

Minimum requirements are not part of this list, as it will directly be “not conditional” if the Supplier doesn’t fulfill these.

In case the Supplier chooses to state the compliance grade as “partly fulfilled” for a requirement, the Supplier shall always account for the at least the following conditions in the comment field:

- Which shortcomings there are in the offered solution compared to the initial described requirement
- Which consequences the shortcomings will have for the Customer respectively end user
- Which possibilities there are to compensate for the described shortcomings

In case the Supplier does not state anything in column ”compliance grade”, this will be considered as compliance grade 3 and therefore as not fulfilled in the tender.

Response to Info requirements
For responses to an info requirement, it shall be stated in the comment field of the compliance list, where in the tender the response can be found.

ID	Specification	Compliance grade 1, 2 or 3	Comments
Info 2.1	End User portal	1	
Req. 2.1	Access from the website	1	
Info 2.2	Focus on mobile solutions	1	
Info 2.3	Fast and easy check-out of bicycles	1	
Info 2.4	Returning a bicycle	1	
Info 2.5	Returning a bicycle and getting a discount (best-buy)	1	
Req. 2.2	Usage information	1	
Info 2.6	Discount or bonus for returning a bicycle to a desired location	1	
Req. 2.3	Extra time for a full station	1	
Info 2.7	Road service and assistance	1	
Req. 2.4	Fault reporting	1	
Req. 2.5	Returning of a defect bicycle	1	
Info 2.8	Accounting for payment regarding user types and channels	1	
Req. 2.6	Creation and maintenance of products	1	
Req. 2.7	Flexible price plans	1	
Req. 2.8	Flexible price plans for different End Users	1	
Req. 2.9	Determining start time for a product	1	
Info 2.9	Handling of different prices and rental conditions	1	
Req. 2.10	Granting bonus/discount	1	
Req. 2.11	Change of standard restrictions	1	
Req. 2.12	Content editing of website	1	
Info 2.10	SAP debtornumber	-	
Info 2.11	Front-end for external partners	1	
Info 2.12	Validating of price	1	
Info 2.13	User statistics	1	
Req. 2.13	Standard report	1	
Info 2.14	Customer support function (2nd line of support)	1	
Req. 2.14	Customer support portal	1	
Req. 2.15	Description of the solution	1	
Req. 2.16	Real time data	1	
Req. 2.17	Overview of reservations and vacant capacity	1	
Req. 2.18	Making reservations	1	
Info 2.15	Information on End User history	1	
Req. 2.19	Note field	1	
Info 2.16	Crediting	1	
Req. 2.20	The major customer’s administration of End User-creations	1	

ID	Specification	Compliance grade 1, 2 or 3	Comments
Req. 2.21	“Access key” for End Users of the major customer	1	
Req. 2.22	Limitation of access to the bicycles	1	
Req. 2.23	Bicycle reservation of major customers	1	
Info 2.17	Bicycles without docking stations	1	
Info 2.18	Functionality for use for adjustments	1	
Req 2.24	Statistical reports	1	
Info 2.19	Optimized areal use	1	
Info 2.20	Establishing and dismantling of hardware	1	
Info 2.21	Advertising space for sponsors	1	
Info 2.22	Service name	1	
Info 2.23	Robust hardware that minimizes theft and vandalism	1	
Req. 2.24	Safety	1	
Info 2.25	Requirement for a fast and effective system	1	
Info. 2.26	Color	1	
Info 2.27	Robustness and high quality	1	
Info 2.28	Estimated lifespan for hardware	1	
Info 2.29	Alternative power supply	1	
Info 2.30	Average power consumption	1	
Info 2.31	Adaptation to climate and topography	1	
Info 2.32	Requirements for the use of material	1	
Info 2.33	General info-requirement regarding environment and work environment	1	
Info 2.34	Good comfort for all End Users	1	
Info 2.35	Minimization of filth affecting users	1	
Info 2.36	Basket/personal item transport	1	
Info 2.37	Lights	1	
Info 2.38	Parking outside the docking points	1	
Info 2.39	Exemption of docking stations for other possible means of transport	1	
Info 2.40	Illustration of docking stations	1	
Req. 2.25	Suggestions for other locations/placements	1	
Info 2.41	Temporary docking stations	1	
Req. 2.26	User-friendly interface	1	
Info 2.42	Decryption and test of user-friendliness	1	
Info 2.43	Transparent payment flow	1	
Info 2.44	Optimization of payment flow	1	
Info 2.45	Audit possibilities	1	
Req. 2.27	Legal requirement	-	
Info 2.46	Instruction of internal super user	-	

ID	Specification	Compliance grade 1, 2 or 3	Comments
Info 2.47	Keep data access rights	1	
Req. 2.28	Protect against data loss or duplication when transferring	1	
Req. 2.29	Protect data against problems with simultaneity	-	
Req. 2.30	Communicate with the Customer via WS-I compliant web services	-	
Req. 2.31	Integrations test in test environment	-	
Req. 2.32	Integration points of the documents	1	
Info 2.48	Easy to further develop	1	
Req. 2.33	Data for transmission	-	
Req. 2.34	Transfer of single transactions	-	
Req. 2.35	Assurance of balance between turnover and payment	-	
Req. 2.36	All channels via online payment solution	-	
Req. 2.37	Integration with data warehouse	1	
Req. 2.38	Integration with S-more	1	
Req. 2.39	Identification of user	1	
Req. 2.40	Away from the system	1	
Req. 2.41	Access	1	
Req. 2.42	Edit rights	1	
Req. 2.43	Create roles	1	
Req. 2.44	Overview of rights	1	
Req. 2.45	Overview of rights	1	
Req. 2.46	Loss or duplication	1	
Req. 2.47	Unintended actions without crash	1	
Req. 2.48	Control of data typed in	1	
Req. 2.49	Correct mistakes	1	
Req. 2.50	Stop long-lasting functions	1	
Req. 2.51	Operation environment	1	
Req. 2.52	Test environment	1	
Info 2.49	Reporting of data errors to the customer	1	
Info 2.50	Handling of different prices and rental conditions	1	
Info 2.51	Individual grafical adjustments on the interface for IT-systemet	1	
Info. 2.52	Resizing	1	

Appendix 3
Supplier description of Service requirements

Bike-sharing system

October 15th 2012

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2. Supplier description of service requirements **4**

1. Introduction

GUIDELINES FOR TENDERER

In this appendix it is a minimum requirement, the supplier encloses a complete response of Appendix 2 Service Requirements. The response shall comprise a sufficient description of the offered solution.

However, the supplier is made adverted to the following appendixes, which shall contain the Tenderer's complete description within the concerned areas:

- Appendix 8 Operation and Monitoring
- Appendix 9 Maintenance

The Tenderer's description can therefore contain references to the above named appendixes.

The supplier's complete description of the offered solution should contain:

- An general description of the offered concept
- A detailed description of what is offered, such as the offered hardware elements and the offered IT-solution
- Detailed information regarding functionalities of both the offered hardware and software
- ~~Clear indication of the differences – if there are - of package 1 and 2, see appendix 4 Solution description~~
- Clear indication of dependencies – if there are - between choices of options, in the way these are offered by the supplier in appendix 10 Options
- Clear indication of impacts for the compliance of the service levels in case there is or can be made a choice, see appendix 11 Service Level Agreement

Info-requirements in appendix 2 Service requirements shall also be answered with this appendix. The Tenderer shall clearly mark the text that responds to an info-requirement with stating the relevant info-requirement number.

2. Supplier description of service requirements

See appendix B: Løsningsbeskrivelse

3. Response to the info-requirements of Appendix 2 Service requirements

See appendix B: Løsningsbeskrivelse

Appendix 04
Solution description

Bike-sharing system

October 15th 2012

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~~2.~~ Description of the ~~municipalities' freedom of choice~~ 4

2.1. ~~Full~~ bike system ~~(package 1)~~ 4

~~2.2. Light Bike System (Package 2)~~ 5

1. Introduction

In order to offer an attractive bike-sharing system that fits the individual municipalities' need, the Customer wants to give the municipalities freedom of choice with respect to maintenance and redistribution of the system.

~~The Customer wants to offer the municipalities two different packages, so that it is possible for the municipalities to choose whether they themselves want to claim responsibility for maintenance and redistribution of the bicycles, possibly with use of the municipality's citizens on public benefits, or if the municipality wants to leave that to the Supplier.~~

The Supplier shall ~~in both packages~~ perform all delivering- and establishing tasks. However, for those municipalities, which want to manage operation and maintenance of the bicycles themselves, the Supplier has fewer operational tasks after the establishment of the system.

GUIDELINES FOR TENDERER

Appendix 4 contains only minimum requirements and shall be fulfilled by the Tenderer. The Appendix is final and cannot be commented or modified.

Any markings, comments or modifications by the Tenderer outside sections designated thereto, or which are not compliant with the additional guidelines will be disregarded and not be considered part of the tender, and they will be deleted and not be reflected in the signature version of the document.

If the Tenderer has any reservations to this Appendix, the Tenderer shall describe these reservations in the Reservations List appended to the Tender Conditions.

~~2.~~ Description of the ~~municipalities' freedom of choice~~

~~The Customer wants to offer the municipalities two different packages, so that it is possible for the municipalities to choose whether all tasks are to be bought of the Customer or if the municipality itself manages maintenance- and redistribution tasks, possibly with use of citizens on public benefits. The two packages – which are called full bike system package respectively light bike system package – are described below.~~

2.1. ~~Full~~ bike system ~~(package 1)~~

~~By choosing the full bike system (package 1), the municipality buys all services from the Customer. Besides the delivery and establishment of the bike-sharing system the Supplier shall therefore also manage all tasks in connection with redistribution and maintenance of the system after the establishment.~~

~~Full bike system (Package 1)~~		
#	**Deliverable**	**Comment**
1	Delivery and establishment of all hardware, see appendix 3 Supplier description	Bicycles, docking points and payment machines
2	Delivery, operation, observation and maintenance of the IT-system, see appendix 8 Operation and Monitoring and appendix 9 Maintenance	Back-end and front-end. Including IT-solutions in the docking points and payment machines
3	Redistribution, see appendix 8 Operation and Monitoring	Fleet management of bicycles with respect to service level and demand
4	Maintenance, see appendix 9 Operation and Monitoring	Maintenance of bicycles, docking points and payment machines. Cleaning of bicycles, docking points and payment machines
5	1. line Customer support* - see appendix 10 Options	
6	~~Cleaning of areas** - see appendix 10 Options~~	~~Cleaning of the physical areas around docking stations/docking points~~

~~*) 1. line Customer support is an option, which gives the municipality the possibility of managing Customer support itself or letting the Customer manage the task~~

***.) Cleaning of areas is an option, which gives the municipality the possibility of purchasing the cleaning from the Supplier, as a part of the Supplier's other tasks regarding operation and maintenance.*

2.2. Light Bike System (Package 2)

By choosing the light bike system (package 2) the municipality doesn't want to buy all services from the Customer. Besides the delivery and the establishment of the system, the Supplier shall therefore solely manage operation, observation and maintenance of the IT-system, including possible IT in the payment machines and docking points. The municipality manages the tasks concerning redistribution of bicycles, maintenance and cleaning of bicycles, docking points and payment machines itself.

Light bike system (Package 2)		
#	**Deliverable**	**Comment**
1	Delivery and establishment of all hardware, see appendix 3 Supplier description	Bicycles, docking points and payment machines
2	Delivery, operation, observation and maintenance of the IT-system, see appendix 8 Operation and Monitoring and appendix 9 Maintenance	Back-end and front-end. Including IT-solutions in the docking points and payment machines

Appendix 5 Ordering

Bike-sharing system

Oktober 2012

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~~2.1. Template for the order process~~ 4

~~2.2. Content of the order templates~~ 5

~~2.3. Content of offer~~ 5

Appendix 5A: Order template purchase on the framework agreement [Draft] **7**

Appendix 5B: Order template Additional Order on the framework agreement [Draft] **10**

1. Introduction

This appendix contains a generic description of the ordering process of the bike-sharing system. Some of the activities in this appendix may overlap the activities in Appendix 6 Proces for Installation.

The ordering process states the allocation of tasks and responsibility between Supplier, Customer and new municipalities or major customers, which want to enter an agreement on the use of the system. The ordering process covers the period from the Customers request to the Supplier until there is a binding agreement concerning the establishment of the system.

The appendix describes two types of Orders:

1) an initial Order for a municipality (or a group of municipalities).
2) an additional Order for a municipality (or a group of municipalities). An additional Order takes place when a municipality for example wants expand the system by a numbers bicycles or replace rundown bicycles.

GUIDELINES FOR TENDERER

In this appendix it is a minimum requirement, the Tenderer encloses a complete response of Appendix 5 Ordering each time the Customer makes an ordering on the framework agreement. The response shall comprise a sufficient description of the offered solution.

2. Requirement to the ordering process

The objective of this appendix is to ensure:

- Orders on the Framework agreement happen on the basis of a fixed process
- Customer and Supplier are aligned on roles and responsibility
- a common perception of when an order is binding

Hence, there are a range of activities and approvals determined in this appendix, which are requisites for that a final order can be made. Hereby the appendix visualizes the dependencies/requisites, which are connected with the ordering process.

2.1. Template for the order process

The Supplier shall enclose a finished template, which illustrates partly the ordering process and partly the allocation of activities and responsibilities. The template shall be made in a user-friendly layout and must not require special it-programs or other tools.

The process for orders on the framework agreement is outlined below. The process consists of but is not limited to the interaction between Customer and Supplier and there mutual activities.

Activity	Customer	Supplier
1	The Customer sends a request on establishing of the bike-sharing system on behalf of a municipality. The Customer encloses drawings of the area with markings of the desired placement and eventually with proposals for alternative solutions.	
2a	In case a explanation is needed, there will be a dialogue between Customer, municipality and Supplier	
2		The Supplier answers the request with an offer within maximum [X] days from receiving the request.
3	Based on the Customer's request, the Supplier visits the area, where the solution shall be installed, together with the Cus-	

	tomer (and maybe with the municipality). The Supplier shall inform the Customer about eventual circumstances or reservations, which can have an influence on the installation of the solution on the areas.	
4	Based on the Suppliers offer, the Customer makes a final order by completing the order template, which is sent to the Supplier.	
5		The Supplier sends an order confirmation that confirms number, prices and agreed delivery dates.
6	The Customer obtains the necessary approvals for the installation of the hardware on the areas and gives the Supplier the final approval for that the installation can be started.	

2.2. Content of the order templates

The Supplier shall describe, which information the Customer shall give in connection with the order. The Customer expects that the order templates as a minimum contains the elements, which are indicated in the drafts at the end of this appendix.

The following appendices shall be used for the two types of Orders:

1) an initial Order for a municipality (or a group of municipalities): Appendix 5A
2) an additional Order for a municipality (or a group of municipalities): Appendix 5B

2.3. Content of offer

~~The Supplier shall account for which information the Customer receives with the confirmation of the Customer's order. The Customer expects that the confirmation as a minimum contains a detailed description of below:~~

- ~~Price of the chosen solution~~
- ~~Time plan for establishing of the solution, based on a generic installation plan according to appendix 6~~
- ~~A drawing of the area/placement of the chosen solution~~
- ~~Requisites for the time plan (f. ex. when the approval for start of the installation process latest shall be on hand)~~
- ~~The Supplier's expectations of the Customer's role and responsibility~~
- ~~Description of new sub Suppliers if the Supplier changes use of sub Suppliers, cf. Appendix 18.~~

Appendix 5A: Order template purchase on the framework agreement [Draft]

Supplier:
[Suppliers name]
[Address]

Att.: [Contact person]

CVR nr. [to be completed]
Framework agreement no. [to be completed]

Orderer:
DSB
Sølvgade 40
DK-1349 København K

Contact person: [to be completed]
Mobil: [to be completed]
E-mail: [to be completed]

The Supplier shall deliver the described solution in the present order template to the Customer, on the conditions that appear from the frame work agreement nr. [XX] between DSB and the Supplier

The delivery of the hardware shall either happen at the Customer or at the Customer's business partner. This is specified below in the template.

1. Delivery of solution to the business partner

The hardware shall be delivered to:

[ ] Customer or [ ] Business partner (below is to be completed)

Business partner	
Company	[to be completed]
Contact person	[to be completed]
Phone	[to be completed]
E-mail	[to be completed]

2. Choice of solution

According to appendix 4 regarding solution description

[ ] Package 1 or [ ] Package 2

3. Size of the solution

Elements of the solution	**Number**
Bicycles	[to be completed]
Docking points	[to be completed]

Payment machines	[to be completed]

4. Locations

The solution is expected to be placed on the following locations (one location may have several placements)

Location	Short description of the placement and ground, on which the solution is to be installed	Enclosure of map and pictures with markings of the area	Expected number of docking points on the area
[Name of location 1]	[Name of placement 1], [description to be completed]	[ ] Map [ ] Picture	[to be completed]
[Name of location 1]	[Name of placement 2], [description to be completed]	[ ] Map [ ] Picture	[to be completed]
[Name of location 2]	[Name of placement 1], [description to be completed]	[ ] Map [ ] Picture	[to be completed]
…			

5. Initialization and duration

Expected start date of operating period	[dd.mm.yyyy]
Expected end date of operating periode	[dd.mm.yyyy]

6. Specific requirements

Declaration of specific requirements in connection with the solution
[To be completed by the Customer]

7. Prices

The present solution will be delivered to the following price:

	Price DKK	Discount	Price DKK
Contract sum:	[to be completed]		[to be completed]

Order confirmation:

The signed order template shall be returned to DSB (see above information)

Supplier		**DSB**	
.....	.....	.....	.....
For the Supplier	date	for DSB	date
Signature and company stamp			

DSB, Sølvgade 40, DK-1349 København K

Appendix 5B: Order template Additional Order on the framework agreement [Draft]

Supplier:
[Suppliers name]
[Address]

Att.: [Contact person]

CVR nr. [to be completed]
Framework agreement no. [to be completed]

Orderer:
DSB
Sølvgade 40
DK-1349 København K

Contact person: [to be completed]
Mobil: [to be completed]
E-mail: [to be completed]

The Supplier shall deliver the described solution in the present order template to the Customer, on the conditions that appear from the frame work agreement nr. [XX] between DSB and the Supplier

The delivery of the hardware shall either happen at the Customer or at the Customer's business partner. This is specified below in the template.

1. Additional Order related to initial Order

The additional Order is related to Order no. 5A.[To be completed]

2. Delivery of solution to the business partner

The hardware shall be delivered to:

[ ] Customer or [ ] Business partner (below is to be completed)

Business partner	
Company	[to be completed]
Contact person	[to be completed]
Phone	[to be completed]
E-mail	[to be completed]

3. Choice of solution

According to appendix 4 regarding solution description

[ ] Package 1 or [ ] Package 2

4. Size of the solution

Elements of the solution	Number
Bicycles	[to be completed]
Docking points	[to be completed]
Payment machines	[to be completed]

5. Locations (only to be completed when purchasing dockingspoints or payments terminals)

The solution is expected to be placed on the following locations (one location may have several placements)

Location	Short description of the placement and ground, on which the solution is to be installed	Enclosure of map and pictures with markings of the area	Expected number of docking points on the area
[Name of location 1]	[Name of placement 1], [description to be completed]	[ ] Map [ ] Picture	[to be completed]
[Name of location 1]	[Name of placement 2], [description to be completed]	[ ] Map [ ] Picture	[to be completed]
[Name of location 2]	[Name of placement 1], [description to be completed]	[ ] Map [ ] Picture	[to be completed]
…			

6. Initialization

Expected date of delivery [dd.mm.yyyy]

7. Specific requirements

Declaration of specific requirements in connection with the repurchase
[To be completed by the Customer]

8. Prices

The present solution will be delivered to the following price:

	Price DKK	Discount	Price DKK
Contract sum:	[to be completed]		[to be completed]

Order confirmation:

The signed order template shall be returned to DSB (see above information)

Supplier		**DSB**	
.....	.....	.....	.....
For the Supplier	date	for DSB	date
Signature and company stamp			

DSB, Sølvgade 40, DK-1349 København K

Appendix 6
Process for installation

Bike-sharing system

October 15th 2012

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3. Compliance list 8

1. Introduction

GUIDELINES FOR TENDERER

In this appendix it is a minimum requirement, the Tenderer encloses a complete response of Appendix 6 Proces for Installation. The response shall comprise a sufficient description of the offered solution.

The Tenderer shall furthermore complete the Compliance list at the end of this appendix.

Info-requirements in this appendix shall also be answered with this appendix. The Tenderer shall clearly mark the text that responds to an info-requirement with stating the relevant info-requirement number.

This appendix contains requirements to a generic installation plan for a standard installation of the bike-sharing system.

The installation plan indicates the allocation of task- and responsibility between Supplier and Customer. The installation plan covers the period from the formation of contract to the installation and acquisition of the bike-sharing system.

The Supplier shall use the template as a basis for a concrete installation plan for each order. The Supplier shall therefore in his tender provide a generic installation plan in this appendix, as well as an example of a concrete use of the template, to describe how the installation is planned for the first order.

The installation plan shall be part of the contractual basis for the upcoming expansion to the other municipalities.

2. Installation plan

The objective with a generic installation plan is, to make all orders that are made via appendix 5 robust and to minimize the risk of faults or a lack of matching of expectations between the partners. Hence, in this appendix a process is determined, for which activities and approvals are expected to be executed as a part of the establishing phase and are taking place before the Customer's final acquisition. Likewise, the process shall point out which activities and approvals are taking place before the final order. Together, this constitutes the installation plan. The installation plan shall therefore show the dependencies/requisites in the Supplier's planning as well as work as a basis for the preparation of a milestones plan for each new order. By this, all involved participants get the possibility of improving their contribution, effort and responsibility for the establishment and launching of the establishment of the system.

Based on the Supplier's response of this appendix, it shall be possible for the Customer to get a total overview over the whole installation process with regards to calendar time and use of resources.

The Supplier's installation plan for the orders of the Customer, see appendix 5 "Order", will thus be based on the generic installation plan in the present appendix 6.

Info.req. 6.1 **Template for the installation plan**

The Supplier shall as a part of his tender enclose a completed template for the installation plan, that illustrates the installation process and the allocation of activities and responsibilities. The template shall be composed in a user-friendly layout and must not require specific requirements for IT-programs or other tools. It shall be easy for the participants to cooperate about the use of the installation plan in practice.

The installation plan shall take the requirements described in this document into account.

GoBike compliance grade 1 and answer to requirement:

The Supplier wants to underline the importance of various technical reunions with the customer, to work out a detailed and reliable installation plan.
See: PID section: 7 Installation and specielt section: 7.7 Generiske installationsplan.

A part of the expected activities is shown below. This only covers the Customer's preliminary expectations towards activities and towards the partner's allocation of responsibilities. The Customer expects the Supplier to use his own experience and existing quality systems in his tender, to optimize the templates for the installation plan for the final use for the establishment. Below list shows, which milestones the Customer expects to be subject to a penalty payment in the establishing phase. This is marked with 'BOD'. Furthermore the milestones, on which the Customer expects to have an exit possibility, are marked. This is marked with 'EXIT'.

- The Supplier receives a request from the Customer regarding initiation of a new order
- The Supplier and the Customer have a dialogue about the extent of the new order and about the expected locations and so on that are part of the new order
- Milestone – the Supplier receives a final approval from the Customer and can start the installation (see appendix 5 Order)
- The Supplier makes an installation plan for the installation, with information about dates and milestones
- The Supplier orders the hardware
- The Supplier sends the installation plan (the completed template) to the Customer
- Milestone – the Customer approves the installation plan
- Local inspection of the area for the establishment of the hardware (facility work)
- Concrete drawing up of sketches/pictures for the establishment of the hardware with regards to the local rules and conditions
- Milestone – Approval of the local examination report with information on specific hardware entities and their actual placement. Proof-of-concept, see appendix 7 Test (is only done for the initial purchase) EXIT
- Milestone – Pilot project, see appendix 7 Test (is done for the initial purchase and can additionally be done for orders) EXIT
- Milestone – Flow-test/Acceptance test, see appendix 7 Test, BOD
- Milestone – Performance test, see appendix 7 Test, BOD
- Milestone – Launching date BOD

Req. 6.1 **Content of the installation plan**

The installation plan shall as a minimum contain a detailed description of the partner's (Customer and Supplier) task in relation to the above named activities and milestones. The description shall contain an indication of time of the individual activities (work days/hours).
The Customer expects the Supplier to use his own experiences and existing quality systems in his tender, to optimize and to quality assure the installation plan for the final use for implementation and expansion of the system.

GoBike compliance grade 1 and answer to requirement:

Please refer to the detailed description in PID section: 7 Installation and specielt section: 7.7 Generiske installationsplan

Req. 6.2 **Description of activities**

For milestones and activities, the Supplier shall as a minimum account for:

- What the activity/milestone specifically contains
- How the activity/milestone is expected to be executed
- Requisites for the execution of the activity
- Requisites for the approval of the milestone
- Duration (calendar time)

The duration shall be indicated for both the single activity and in relation to their mutual connection

GoBike compliance grade 1 and answer to requirement:

Read and agreed. Please refer to the detailed description in PID section: 7 Installation and specielt section: 7.7 Generiske installationsplan

Req. 6.3 **Process for placement of hardware**

The installation plan shall as a minimum contain the following activities / milestones in connection with the facility of the hardware:

- The Customer decides, where the docking stations are to be placed
- The Supplier shall document to the Customer (possibly with drawings), how the precise placements of the system (docking stations, payment machines and bicycles) will be before the installation process is initiated

- The Customer shall approve all placements of docking stations, based on the Supplier's drawings/illustrations of the system, before the hardware is installed.

GoBike compliance grade 1 and answer to requirement:

Please refer to the detailed description in PID section: 7 Installation and specielt section: 7.7 Generiske installationsplan.

Req. 6.4 **Responsibility and obligation for initiative**

The Supplier shall in the installation plan clearly indicate which part (Customer or Supplier) does have the responsibility for initiating, executing and approving activities and milestones. The Supplier shall also clearly describe possible requisites for that the concerned part is able to handle that responsibility.

GoBike compliance grade 1 and answer to requirement:

During the system installation and start up meeting all responsibilities and initiations of actions will be established between the Supplier and the Customer.

Please refer to the detailed description in PID section: 7 Installation and specielt section: 7.7 Generiske installationsplan.

3. Compliance list

The compliance with the requirements can be graded. The Supplier must enclose a completed compliance overview with statements regarding whether and how the requirements are met.

The compliance grade shall be given according to the following graduation principle:

1 - Corresponding to “completely fulfilled”
2 - Corresponding to “partly fulfilled”
3 - Corresponding to “not fulfilled”

Note: The statement of the compliance grade ”partly fulfilled” or ”not fulfilled” constitutes a reservation.

Minimum requirements are not part of this list, as it will directly be “not conditional” if the Supplier doesn’t fulfill these.

In case the Supplier chooses to state the compliance grade as “partly fulfilled” for a requirement, the Supplier shall always account for the at least the following conditions in the comment field:

- Which shortcomings there are in the offered solution compared to the initial described requirement
- Which consequences the shortcomings will have for the Customer respectively end user
- Which possibilities there are to compensate for the described shortcomings

In case the Supplier does not state anything in column ”compliance grade”, this will be considered as compliance grade 3 and therefore as not fulfilled in the tender.

Response to Info requirements
For responses to an info requirement, it shall be stated in the comment field of the compliance list, where in the tender the response can be found.

ID	Specification	Compliance grade 1, 2 or 3	Comments
Info. 6.1	Template for the installation plan	1	
Req. 6.1	Content of the installation plan	1	
Req. 6.2	Description of activities	1	
Reg. 6.3	Process for placement of hardware	1	
Req. 6.4	Responsibility and obligation for initiative	1	

Appendix 7
Test

Bike-sharing system

October 15th 2012

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1. Introduction

This appendix contains the Customer's requirements for tests. To ensure that the Customer launches an attractive bike-sharing system that meets the functional requirements, the requirements for design and the requirements for service levels, the Supplier shall execute a string of tests. Some of these tests are expected to be executed in close cooperation between the Supplier and the Customer.

The Customer has defined a need for several tests. These are described below. For each test, the objective and the Customer's expectations regarding execution and results are described.

GUIDELINES FOR TENDERER

With response to this appendix, the Supplier is expected to state to the conditions regarding the desired test. Furthermore, the Supplier is expected to supplement this with his own experience regarding test procedure. The Customer wants to have offered a test procedure that meets the Customer's need for a guaranty to launch a robust and dependable bike-sharing system.

The tests are expected to be done for the following parts of the bike-sharing system:

- Bicycles
- Docking stations
- IT-system
- Integrations
- Booking and payment

This appendix contains a range of requirements and information requirements. Based on these requirements the Tenderer shall complete the Compliance list at the end of this appendix.

Info-requirements in this appendix shall also be answered with this appendix. The Tenderer shall clearly mark the text that responds to an info-requirement with stating the relevant info-requirement number.

2. Preliminary test

Before the execution of an Acceptance test, the Supplier shall execute several preliminary tests, among these:

- Proof-of-Concept
- Pilot-test

2.1. Proof-of-Concept test

In order for the Customer to receive high certainty that the concept offered by the Supplier can be realized, the Supplier's Proof-of-Concept shall be executed soonest possible after contract formation.

Req. 7.1 **Proof-of-Concept**

After contract formation, the Supplier shall execute a Proof-of-Concept. The Proof-of-Concept shall contain all essential parts of the offered concept, including the IT-solution and the hardware components

The Supplier's Proof-of-Concept shall include an evaluated dialogue between Customer and Supplier.

The Supplier's time plan for the Proof-of-Concept shall allow for the Customer's final approval of the concept being in accordance with the Customer's expectations.

The Proof-of-Concept can be executed on one of the Customer's locations.
The Proof-of-Concept shall be executed one time before the first deliverable of the bike-sharing system.

GoBike compliance grade 1 and answer to requirement:

Please refer to:
a) PID 5.2
b) PID 14.1 + Gantt plan
c) PID 5.2; PID 14.1 + Gantt plan
d) Agreed
e) Agreed
See also PID 14.1 "Hovedmilepæle"

Req. 7.2 **Lacking approval of the Proof-of-Concept**

The Supplier can execute two Proof-of-Concept in total within 14 calendar days. In case the Supplier does not get the Customer's approval after the execution of the Proof-of-Concept, an additional Proof-of-Concept can be executed. The Supplier shall in this case execute a second Proof-of-Concept within 14 calendar days after the Customer's rejection of the 1. Proof-of-Concept.
If the Supplier doesn't receive approval for the 2nd execution either, the Customer is allowed to use its exit rights.
The accept criteria for the Proof-of-Concept shall be agreed between Customer and Supplier before the execution of the test.

GoBike compliance grade 1 and answer to requirement:

Please refer to: PID 5.2 and Frame agreement Appendix E Test plan

Info. 7.1 **Proposal for the execution of the Proof-of-Concept to be enclosed**

The Supplier shall enclose a proposal to his tender for how a Proof-of-Concept can be executed. The offer shall clearly indicate when the Supplier earliest will be able to execute the test.

The Supplier's proposal shall take the Customer's requirements as described above into account.

GoBike compliance grade 1 and answer to requirement:

In System test plan a prof of concept is included.

See process desceiption in PID section 5.2
and Frame agreement Appendix E - Testplan.

2.2. Pilot-test

The Supplier shall execute a pilot test with the objective of demonstrating that the actual establishment of the concept works. Hence, the Supplier shall establish a smaller number of locations with the actual equipment and shall have established the IT-system, whereupon a function-test is executed. The pilot test shall be executed as a small Acceptance test with a flow-test.

Req. 7.3 **Pilot-test**

As part of the preliminary tests and before the consecutive test, the Supplier shall execute a pilot test before the comprehensive acceptance- and Performance test. The pilot test includes the full establishment of a smaller number of locations as well as the full establishment of the IT-system.

The Supplier's pilot test shall include an evaluated dialogue between Customer and Supplier.

The Supplier's time plan for the pilot test shall allow for the Customer's final approval of the pilot test being executed satisfactory.

The pilot-test is executed before the first deliverable of the total bike-sharing system. With each new order of the system, the individual municipality can correspondingly chose that a pilot-test shall be executed.

GoBike compliance grade 1 and answer to requirement:

In System test plan a Pilot test description is included.

For further information see:
a) PID 6.6 + Appenix E. Test plan
b) PID 5.4
c) PID 14.1 + Gantt
d) Agreed

Req. 7.4 **Lacking approval of the pilot-test**

The Supplier can execute three pilot-tests in total within 30 calendar days. In case the Supplier does not get the Customer's approval after the execution of the pilot-test, maximal two additional pilot-tests can be executed. The Supplier shall in this case execute a second or possibly third pilot-test within 30 calendar days after the Customer's rejection of the 1. pilot-test.

If the Supplier doesn't receive approval for the 3rd execution either, the Customer is allowed to use its exit rights according to the contract.
The accept criteria for the pilot-test shall be agreed between Customer and Supplier before the execution of the test

GoBike compliance grade 1 and answer to requirement:

In System test plan a Pilot test description is included. In case the system shows some points in which the test is not assed in a satisfactory manner, these points will be reviewed and ajustments will be made. Having the hardware installed on the street and the back office system active, these adjustments can be realized in a quick and effective manner. For which the given time frame will be sufficient to solve any bug in the system.
See Frame agreement Appendix E. Test plan

Info. 7.2 **Proposal for execution of pilot test to be enclosed**

The Supplier shall enclose a proposal to his tender, for how a pilot test can be executed. The offer shall clearly indicate, when the Supplier will execute the test and how many locations there are included in the pilot test.
The Supplier shall also describe to what extent the offered IT-solution will be present during the pilot test.

The Supplier's proposal shall take the Customer's requirements as described above into account.

GoBike compliance grade 1 and answer to requirement:

In System test plan a Pilot test description is included.

See process description in PID section 6 and section 6.6. and appendix E. Test plan

3. Consecutive flow-test

Before the launching the Supplier shall as a part of the overall Acceptance test execute a consecutive flow-test.

The objective of the flow-test is:
To demonstrate that the bike-sharing system works as a whole, from booking of bicycles, payment, to check-in and check-out of bicycles at the docking stations, updating of the IT-system (front- and back-end) and so on.

The Customer's expectations for the execution of the test are:

- The test is planned and executed in close cooperation with the Customer
- The overall detailed plan for the flow-test is approved by the Customer 30 calendar days before the actual execution of the test
- ~~Before the execution of the test, the Supplier shall execute own tests of all parts of the bike-sharing system, among these separate test of the hardware, the IT-system, the payment system as well as own consecutive flow-tests. These own tests have the objective of ensuring that the bike-sharing system is ready for the Customer's test~~
- The test shall involve a number of persons from the Customer, who physically do bookings and payments for the use of bicycles and who physically use the bike-sharing system between different locations
- The Supplier shall ensure, that the test includes all locations

Info. 7.3 **Proposal for execution of flow-test to be enclosed**

The Supplier shall enclose a proposal to his tender, for how a flow-test can be executed.
The Supplier's proposal shall take the Customer's expectations as described above into account.

GoBike compliance grade 1 and answer to requirement:

In System test plan a Flow test description is included.

Se process beskrivelse i PID section: 7.5 AcceptTest and 7.6. Godkendelse and appendix E. Test Plan

4. Hardware test

The Supplier shall execute a test of the hardware that will be part of the bike-sharing system, among these the bicycles and docking stations that will be used.

The objective of the test of the hardware is to test, if the desired functionalities, robustness, design and possibly service levels are satisfactory. Furthermore it is the objective to ascertain whether the hardware is ready for the flow-test.

4.1. Bicycles

The Customer's expectations to the Supplier's test of bicycles are as follows:

- On establishment of the bike-sharing system, the Customer shall approve the bicycles that shall be used
- With own tests the Supplier shall ensure that the used bicycles meet the legal requirements the Customer stipulates
- With own tests the Supplier shall ensure that the used bicycles meet the level of robustness, design and security which is guaranteed by the Supplier
- The Supplier shall execute own tests of the bicycles before the flow-test
- Before the flow-test, the Customer will do random checks to see whether the bicycles live up to what was agreed on

Based on the random checks the Customer shall approve the final deliverable of bicycles from the Supplier.

Info. 7.4 **Proposal for execution of test of bicycles to be enclosed**

The Supplier shall enclose a proposal to his tender, for how a test of the bicycles will be executed by the Supplier.
The Supplier's proposal shall take the Customer's expectations as described above into account.

GoBike compliance grade 1 and answer to requirement:

In System test plan hardware validation is defined.

Se process beskrivelse i PID section: 6. Udviklingsfasen and specielt section 6.8 Hardware test and 5.4 /5.5 5.4. Testplan and testspecifikationer and appendix E. Test Plan

4.2. Docking stations

The Customer's expectations to the Supplier's test of docking stations are as follows:

- On start of the establishment of the bike-sharing system, the Customer shall approve the docking station that is to be used
- With own tests the Supplier shall ensure that the used docking station meets the Customer's requirements
- With own tests the Supplier shall ensure that the used docking station meets the level of robustness, design and security, which is guaranteed by the Supplier
- With own tests the Supplier shall ensure that the used docking station delivers and receives the data that is required in the solution
- The Supplier shall execute own tests of the docking stations before the flow-test
- Before the flow-test, the Customer will do random checks to see whether the docking stations live up to what was agreed on

Based on the random checks the Customer shall approve the final deliverable of docking stations from the Supplier.

Info. 7.5 **Proposal for execution of test of docking stations to be enclosed**

The Supplier shall enclose a proposal to his tender, for how a test of the docking stations will be executed by the Supplier.
The Supplier's proposal shall take the Customer's expectations as described above into account.

GoBike compliance grade 1 and answer to requirement:

In System test plan hardware validation is defined.

Se process beskrivelse i PID section: 6. Udviklingsfasen and specielt section 6.8 Hardwre test and 5.4 /5.5 5.4. Testplan and testspecifikationer and appendix E. Test Plan

4.3. Payment machines

The ~~Customer's expectations to the~~ Supplier's test of payment terminals are as follows:

- ~~On start of the establishment of the bike-sharing system, the Customer shall approve the payment terminal that is to be used~~
- ~~With own tests the Supplier shall ensure that the used payment terminal meets the Customer's functional requirements~~
- ~~With own tests the Supplier shall ensure that the used payment terminal meets the level of robustness, design and security which is guaranteed by the Supplier~~
- ~~With own tests the Supplier shall ensure that the used payment terminal delivers and receives the data that is required in the solution~~
- ~~The Supplier shall execute own tests of the payment terminal before the flow-test~~
- Before the flow-test, the Customer will do random checks to see whether the payment terminals live up to what was agreed on

Based on the random checks the Customer shall approve the final deliverable of payment terminals from the Supplier.

~~Info. 7.6~~ **~~Proposal for execution of test of payment terminals to be enclosed~~**

~~The Supplier shall enclose his proposal to this tender, for how a test of the payment terminals will be executed by the Supplier.~~
~~The Supplier's proposal shall take the Customer's expectations as described above into account.~~

Obsolete

5. IT-system

5.1. Test at the time of establishment

The Supplier shall execute an acceptance and Performance test of the IT-system including the IT-related parts of the bike-sharing system at the time of establishment.

The acceptance- and Performance test shall be executed as described in paragraph 5.

5.2. Back- and front-end test for new orders

The Supplier shall execute an acceptance- and Performance test on the establishment of IT-related parts for new orders of the bike-sharing system. For both back- and front-end as well as for the system as a whole there shall be executed a test at the new locations.

The acceptance- and Performance test shall be executed as described in paragraph 5.

5.3. Booking- and payment system

The Supplier shall execute a test to ensure that the offered booking- and payment system works as intended and as specified by the Supplier. The Supplier shall execute test for all offered payment channels. The acceptance- and Performance test shall be executed as described in paragraph 5.
~~In addition, the Supplier shall ensure the following:~~

- ~~On the establishment of the bike-sharing system, the Customer shall be involved in the design of the user interface for the offered booking- and payment system~~
- ~~The Supplier shall establish the necessary agreements with third parts, that were necessary to establish the offered booking- and payment system~~
- ~~With own tests the Supplier shall ensure that the booking- and payment system meets the functional requirements of the Customer~~

- ~~With own tests the Supplier shall ensure that the booking- and payment system meets the level of robustness, design and security which is guaranteed by the Supplier~~
- ~~With own tests the Supplier shall ensure that the booking- and payment system delivers and receives the data that is required in the solution~~

~~The Supplier shall execute own tests of the booking- and payment system before the flow-test.~~

Info. 7.7 **Proposal for execution of test of the booking- and payment system to be enclosed**

The Supplier shall enclose a proposal to his tender, for how a test of the booking- and payment system will be executed by the Supplier.
The Supplier's proposal shall take the Customer's expectations as described above into account.

GoBike compliance grade 1 and answer to requirement:

In System test plan a Test booking and payment system description is included during system test phase, integration phase and acceptance test phase.

See process beskrivelse i PID section: 7.5 AcceptTest and 7.6. Godkendelse and Appendix E. Test Plan

6. Acceptance- and Performance test

The Supplier shall execute tests for the IT-system delivered with the first deliverable for appendix 5A, among these an Acceptance test and a Performance test. In addition, the Supplier shall execute a corresponding test for each new deliverable - however the test of the back-end system will be limited to the newly connected deliverable.

Info. 7.8 **Proposal for execution of the test of IT-system to be enclosed**

The Supplier shall enclose a proposal to his tender, for how the acceptance- and Performance test will be executed by the Supplier.
The Supplier's proposal shall take the Customer's expectations as described below into account.

Furthermore, the Supplier shall incorporate how the Customer can be included in the test of f. ~~ex. the design or the integration components early during the establishing phase.~~ The Supplier is also asked to account for how much development there will be in connection with the establishment of the IT-related components of the whole solution.

GoBike compliance grade 1 and answer to requirement:

In System test plan acceptance and performace test description is included and there will be deliberables with results for hardware validation.

For more information see PID section: 7.5 "AcceptTest" and section 7.6 "Godkendelse" and Appendix E. Test Plan

6.1.1. Common requirements for acceptance- and Performance tests

Req. 7.5 **Requirements for the start of the acceptance- and Performance test**

The Supplier shall execute the proof-of concept and the pilot-test up to the Customer's approval before initiating the Acceptance test. The Supplier shall also document how all hardware was controlled and tested.

GoBike compliance grade 1 and answer to requirement:

In System test plan hardware validation is defined.

For more information see:PID section 7.5 "AcceptTest" and section 7.6 "Godkendelse"
See also PID section 5.4 "Testplan" and section 5.2 "Proof-of-consept."

Req. 7.6 **Time of execution of the tests**

The Supplier shall ensure that the acceptance- and Performance test is executed on the date according to the time plan.

GoBike compliance grade 1 and answer to requirement:

See PID section 14.1 Hovedmilepæle

Req. 7.7 **Execution of the tests**

The tests shall be executed under conditions that to the greatest possible extent correspond to a normal operation situation.

GoBike compliance grade 1 and answer to requirement:

See aditional information in PID section 13.2.4. Testaktiviteter and Appendix E. Test Plan

Req. 7.8 **Error categories**

Errors identified during a test are divided in the categories that are indicated in the table below:

Category	Description
A	**Critical errors** Critical errors, where a reasonable circumvention is *not* possible Errors that hinder the use of the solution, including the solutions whole or partly unavailability
B	**Serious errors** Critical errors, where a reasonable circumvention according to the Supplier's instructions is possible. Errors that hinder the use of the solution, including the solutions whole or partly unavailability.
C	**Significant errors** Significant errors, where a reasonable circumvention is *not* possible.

	Errors that prompt inconveniences for the Customer.
D	**Normal errors** Significant errors, where a reasonable circumvention according to the Supplier's instructions is possible. Errors that prompt inconveniences for the Customer.
E	**Less significant errors** Errors that do not have an impact or only a trivial one on the solution of the Customer's tasks.

Error	**Can be circumvent**	**Cannot be circumvent**
Critical	Category B	Category A
Significant	Category D	Category C

Category E is not mentioned, as errors in this category only have a trivial impact on the solution's usability and thus circumvention is insignificant

GoBike compliance grade 1 and answer to requirement:

See aditional information in PID section 13.2.4. Testaktiviteter and Appendix E. Test Plan

Req. 7.9 **Error level of the test**

The error level for a test is calculated by counting the errors in the defined error categories.

GoBike compliance grade 1 and answer to requirement:

See aditional information in PID section 13.2.4. Testaktiviteter and Appendix E. Test Plan

Req. 7.10 **Categorization of errors**

As a basis, the Customer determines to which error category an error belongs.

GoBike compliance grade 1 and answer to requirement:

See aditional information in PID section 13.2.4. Testaktiviteter and Appendix E. Test Plan

Req. 7.11 **Cessation of test due to errors**

The test is ceased if category A-errors are found. The Customer is allowed to cease the test if at least 1 category B- or category C-error or at least 5 category D error or at least 25 category E errors are found.

GoBike compliance grade 1 and answer to requirement:

See aditional information in PID section 13.2.4. Testaktiviteter and Appendix E. Test Plan

Req. 7.12 **Circumvention of errors**

The Supplier shall indicate possibilities to circumvent category-B and category D-errors that have been found. The Customer decides if the indicated possibilities for the circumvention are usable and has the right to cease the test inspite that with regards to requirement 6.

GoBike compliance grade 1 and answer to requirement:

See aditional information in PID section 13.2.4. Testaktiviteter and Appendix E. Test Plan

Req. 7.13 **Approval of tests**

A test is approved if the approval criteria for it are fulfilled.

GoBike compliance grade 1 and answer to requirement:

See aditional information in PID section 13.2.4. Testaktiviteter and Appendix E. Test Plan

Req. 7.14 **Specific approval criteria for tests**

For each deliverable it can be agreed on specific approval criteria that shall be fulfilled. These specific approval criteria can contain - but is not limited to - the adherence to an agreed maximum error level.

GoBike compliance grade 1 and answer to requirement:

See aditional information in PID section 13.2.4. Testaktiviteter and Appendix E. Test Plan

Req. 7.15 **Approval criteria for tests**

A test, for which it wasn't agreed on any specific approval criteria, is approved if its error level (see req. 7.6) is below the maximal accepted error level as specified in the table below. This means, that the number of errors has to be ascertained for each error category and shall not exceed the maximal accepted number of errors in the concerned category (maximal error level)

Error category	Maximal error level
Category A	No error
Category B	No error
Category C	No error
Category D	2 errors
Category E	10 errors

GoBike compliance grade 1 and answer to requirement:

See aditional information in PID section 13.2.4. Testaktiviteter and Appendix E. Test Plan

Req. 7.16 **Termination of Agreement due to failed tests**

The Customer shall be able to terminate the Agreement if the Supplier fails the Acceptance test three (3) times or fails the Performance test three (3) times.

GoBike compliance grade 1 and answer to requirement:

See aditional information in PID section 13.2.4. Testaktiviteter and Appendix E. Test Planons

6.2. Acceptance test

The Acceptance test is executed as a function-test.

The objective of the Acceptance test is primarily to ascertain, that all functions are present.

In connection with the Acceptance test it can however be asserted, if the documentation is delivered, if the service level is met and if connected services are delivered according to the agreement.

The objective is to test the deliverable under realistic conditions similar to the production – in order to create a certainty for an adequate launching before the deliverable is put in the operation environment.
It is not the objective of the Acceptance test to repeat all the other tests that were executed. In principal, new tests must not be introduced during the Acceptance test, apart from the tests that are a consequence of a changing execution environment and the test that the Customer is executing in order to test if the deliverable is ready for the operation and the management and maintenance that follows.

Req. 7.17 **Content of test plan-proposal for the Acceptance test**

The Supplier's proposal for a test plan shall contain a specification of test - character and –extent, among these what data the Customer shall provide with regards to an appropriate execution of the test, as well as a time from which on the Customer participates

GoBike compliance grade 1 and answer to requirement:

In System test plan there is a description about test Specification which provides specifications for the construction of Test Cases and includes list(s) of test case areas, test data, test objectives and acceptance criteria.

PID section 5.4 and Appendix E "Testplan"

The Supplier shall conduct the acceptance as a function test, wherein the agreed functionalities including integration to other systems are controlled and the documentation is delivered. The testing of all essential functions and the documentation are included in the Supplier's proposal for the test plan. The remaining functions and conditions are tested in accordance with the test plan.

Req. 7.18 **Elements of the function test**

The Supplier shall execute a function test which as a minimum includes the following elements:

- ~~Preparing test, where the key functions of the solution are tested by a few testers with the objective to assert if the test can be started~~
- Function test (component test), where it is tested if the solutions individual component work correctly and according to the specifications
- Integration test, where it is tested if the solutions' functionalities in combination work correctly and according to specifications, among these the test for the booking- and payment system

- Endurance test, where the solution is tested for scalability, see requirements in appendix 11
- Test of response time, where the solution is tested in relation to response time according to requirements in appendix 11
- Security test, where the procedures for the solution's data and access security are tested
- Test of documentation, where the design- and data documentation as well as data structures and possibly user documentation shall be tested

Comprehensive test

GoBike compliance grade 1 and answer to requirement:

System test plan include description about the system test phase, integration phase and acceptance test phase. Thre will be a matrix to check if all customer requirements are covered by one or more test.

For more information see PID section 5.4 Testplan and test specikikationer and section 7.5 Accepttest.

Req. 7.19 **Statement of compliance of service level that is part of the order**

In case the Customer wants a separate statement regarding the compliance of the solution with the requirements outlined in appendix 11 (besides the test of response time), it shall state this in the order for the concerned deliverable to the Supplier.

GoBike compliance grade 1 and answer to requirement:

Read an agreed.

The Acceptance test is executed by the Supplier together with the Customer's active participation. The Customer's participation is described more detailed in the Supplier's proposal for the test plan according to the requirement above.

Req. 7.20 **Report on test progress**

Immediately after the end of the Acceptance test, the Supplier shall prepare a report on the test progress including a statement on potentially determined defects in a list of defects.

GoBike compliance grade 1 and answer to requirement:

Agreed.
See aditional information in PID section 13.2.4. Testaktiviteter and Appendix E. Test Plan

6.3. Performance test

The objective of the Performance test is to ascertain whether the deliverable for the concerned sub-project meets the stipulated service levels in appendix 11.

Req. 7.21 **Content of test plan-proposal for Performance test**

The Supplier's proposal for a test plan shall contain a specification of test - character and –extent, among these what data the Customer shall provide with regards to an appropriate execution of the test, as well as a time from which on the Customer participates.

GoBike compliance grade 1 and answer to requirement:

In System test plan there is a description about test Specification which provides specifications for the construction of Test Cases and includes list(s) of test case areas, test data, test objectives and acceptance criteria.

PID section 5.4 Testplan and test specikikationer and section 8.4 Performance test.
See Appendix E "Testplan"

Req. 7.22 **Content of test plan for Performance test**

The Supplier's test plan shall contain a description of the technical conditions and resources that are required for the execution of the Performance test. The test plan shall ensure that the Performance test shows a accurate picture of the compliance with the stipulated service level.

GoBike compliance grade 1 and answer to requirement:

In System test plan there is a description about test Specification which provides specifications for the construction of Test Cases and includes list(s) of test case

areas, test data, test objectives and acceptance criteria.

PID section 5.4 Testplan and test specikikationer and section 8.4 Performance test.
See Appendix E "Testplan"

Req. 7.23 **Start of Performance test**

The Performance test can only start after the Acceptance test is accepted by the Customer and the Customer has informed the Supplier about this, however no later than 30 days after the day of hand-over.

GoBike compliance grade 1 and answer to requirement:

Agreed

The Performance test is executed by the Supplier in cooperation with the Customer and is executed for the whole solution.
During the Performance test the Supplier has the right and duty to continuously optimize the solution's performance and to correct possible defects to the extent to which it might be necessary.

Req. 7.24 **Support to the Customer during the Performance test**

During the Performance test, the Supplier shall help the Customer by responding to the Customer's questions regarding the use of the solution.

GoBike compliance grade 1 and answer to requirement:

Agreed

Req. 7.25 **Duration of the Performance test**

The Performance test shall stretch over a period of at least 30 calendar days, in which the solution is in full operation. The Performance test continues until the agreed service level is kept for 30 successive calendar days or the Customer terminates the Agreement in accordance with the terms on this.

GoBike compliance grade 1 and answer to requirement:

Agreed

Req. 7.26 **Approval of Performance test**

In case the Customer has approved the Acceptance test with known defects listed in a list of defects, the Customer is only obliged to accept the Performance test, if these defects essentially have been corrected.

GoBike compliance grade 1 and answer to requirement:

Agreed

Req. 7.27 **Report on test progress**

Immediately after the end of the Performance test, the Customer prepares a report on the test progress including a statement on potentially determined defects in a list of defects. The Supplier can give input to this report if this is deemed relevant.

GoBike compliance grade 1 and answer to requirement:

Agreed

7. Documentation

Req. 7.28 **Documentation of all tests**

The Supplier shall document all tests performed by the Supplier including the Suppliers own tests. The Supplier shall on the request of the Customer produce all documentation of the tests to the Customer.

GoBike compliance grade 1 and answer to requirement:

Agreed

8. Compliance list

The compliance with the requirements can be graded. The Supplier must enclose a completed compliance overview with statements regarding whether and how the requirements are met.

The compliance grade shall be given according to the following graduation principle:

1 - Corresponding to “completely fulfilled”
2 - Corresponding to “partly fulfilled”
3 - Corresponding to “not fulfilled”

Note: The statement of the compliance grade ”partly fulfilled” or ”not fulfilled” constitutes a reservation.

Minimum requirements are not part of this list, as it will directly be “not conditional” if the Supplier doesn’t fulfill these.

In case the Supplier chooses to state the compliance grade as “partly fulfilled” for a requirement, the Supplier shall always account for the at least the following conditions in the comment field:

- Which shortcomings there are in the offered solution compared to the initial described requirement
- Which consequences the shortcomings will have for the Customer respectively end user
- Which possibilities there are to compensate for the described shortcomings

In case the Supplier does not state anything in column ”compliance grade”, this will be considered as compliance grade 3 and therefore as not fulfilled in the tender.

Response to Info requirements
For responses to an info requirement, it shall be stated in the comment field of the compliance list, where in the tender the response can be found.

Point no.	Specification	Compliance grade 1, 2 or 3	Comment
Krav 1	Proof-of-Concept	1	
Info. 1	Vedlæggelse af forslag til gennemførelse af Proof-of-Concept	1	
Krav 2	Pilot-test	1	
Info. 2	Vedlæggelse af forslag til gennemførelse af Pilot-test		
Info. 3	Vedlæggelse af forslag til gennemførelse af flow-test		
Info. 4	Vedlæggelse af forslag til gennemførelse af test af cykler		
Info. 5	Vedlæggelse af forslag til gennemførelse af test af dockingstationer		
Info. 6	Vedlæggelse af forslag til gennemførelse af test af dockingstationer	-	
Info. 7	Vedlæggelse af forslag til gennemførelse af test af bestillings- og betalingssystem		
Info. 8	Vedlæggelse af forslag til gennemførelse af test af IT-systemet		
Krav 3	Tidspunkt for prøvernes gennemførelse		
Krav 4	Prøvernes gennemførelse		
Krav 5	Fejlkategorier		
Krav 6	Prøvens fejlniveau		
Krav 7	Kategorisering af fejl		
Krav 8	Indstilling af prøve grundet fejl		
Krav 9	Omgåelse af fejl		
Krav 10	Godkendelse af prøver		
Krav 11	Specifikke godkendelseskriterier for prøver		
Krav 12	Godkendelseskriterier for prøver		
Krav 13	Indhold af udkast til prøveplan for overtagelsesprøve		
Krav 14	Funktionsprøvens elementer		
Krav 15	Konstatering af overholdelse af servicemål skal indgå i bestillingen		
Krav 16	Rapport over prøveforløb		
Krav 17	Indhold af udkast til prøveplan for overtagelsesprøve		
Krav 18	Indhold af prøveplan for driftsprøve		
Krav 19	Påbegyndelse af driftsprøven		
Krav 20	Support til Kunden under driftsprøven		
Krav 21	Driftsprøvens varighed		
Krav 22	Godkendelse af driftsprøver		
Krav 23	Rapport over prøveforløb		

Appendix 8
Operation and Monitoring

Bike-sharing system

October 15th 2012

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1. Introduction

GUIDELINES FOR TENDERER

In this Appendix, the Supplier shall attach a complete response stating how the Supplier will carry out the complete task of operation and monitoring in relation to the services requested in Appendix 2 Service Requirements as well as in relation to meeting the requirements concerning service targets described in Appendix 11 Service Level Agreement. The response must comprise a full account of the operation and monitoring tendered as part of the tendered solution, see also Appendix 3 Supplier's Description of Service Requirements.

The Supplier must note the following Appendices, which must contain the Supplier's complete description within the areas in question:

- Appendix 3 Supplier's Description of Service Requirements
- Appendix 9 Maintenance

Consequently, the Supplier's description may include references to the above-mentioned Appendices.

The Supplier's complete description of the tendered operation and monitoring should contain:

- A complete overview of the tendered services under operation and monitoring.
- A detailed description of what is tendered, including quality assurance measures.
- A clear indication if what is tendered in packages 1 and 2 differs, see Appendix 4 Solution Description.
- A clear indication if the choice of options is associated with conditions as the options are tendered by the Supplier in Appendix 10 Options.
- A clear indication if a choice is made or a choice can be made that influences fulfilment of the service targets, see Appendix 11 Service Level Agreement.

Info-requirements in this appendix shall also be answered with this appendix. The Tenderer shall clearly mark the text that responds to an info-requirement with stating the relevant info-requirement number.

2. Specific info requirements

Info. 8.1 **Optimisation of the redistribution**

The Supplier shall describe how redistribution will be organised and continually optimised in the best possible way to support the end-users' current travel patterns, behaviour and need for bicycles. The pattern of redistribution must reflect the needs of daily commuters and the general demand concerning daytime, weekday, season and events.

GoBike compliance grade 1 and answer to requirement:

Redistribution is carried out by our team of technicians under supervision of a team manager. The team is radio controlled and supervised from our dispatch center. Communication between dispatch center and service team is via Falcks own IT system, which is online and updated 24/7.

This makes a flexible system, where we can distribute our workforce within minutes to meet current demand.

The main part of redistribution will be carried outside of peak hours – i.e. between 10 a.m. and 2 p.m., and before 7 am, 7 days a week.

Info. 8.2 **Description of procedure for redistribution**

The Supplier shall describe how the Service levels for redistribution will be documented, demonstrated and met.

GoBike compliance grade 1 and answer to requirement:

Each docking station contains a lan. A warning system sends signals to our dispatch center, when bicycles need redistribution.

Redistribution will be assigned to a service team. The service team receives an electronic serviced report for documentation. The service team fills in the report. When redistribution has been carried out, the service team documents that redistribution has been carried out, by returning the electronic service report. This electronic service report automatically updates the service lan on the docking station. The land contains information on when task has been assigned, and when task is completed – thereby documenting that SLA has been met.

Info. 8.3 **The Supplier's organisation of the redistribution**

The Supplier shall describe how the redistribution will be organised and executed to cause the least possible inconvenience to the outside world (immediate local environment and global climate environment) with respect to air and noise pollution, Co2 emissions, traffic safety and road passability.

GoBike compliance grade 1 and answer to requirement:

Redistribution will for the most part be carried out outside of peak hours, to avoid creating inconvenience (road passability), and also to ensure that engines will be running as little as possible – both to ensure better economy and reduce air and noise pollution as much as possible.

Our personnel are all responsible drivers, being Falck we are used to showing great consideration for our other road users, including pedestrians and bicyclists.

Info. 8.4 **Local organisation for redistribution**

The Supplier shall describe how the Supplier's organisation handling the redistribution will be executed in the different geographical areas.

GoBike compliance grade 1 and answer to requirement:

We consider Copenhagen to be one geographical area, with one big team covering the whole City. This guarantees a very flexible solution, and minimizes the risk of having too few or too many technicians in a specific geographic area.

Løsningsbeskrivelsen section: 9.2 Redistribution

Info. 8.5 **Monitoring operation**

The Supplier shall describe how it can be assured that the Supplier will monitor the total operation concerning both software and hardware operations. The Supplier's monitoring must ensure that availability problems are immediately visible to the Supplier as or before the problems arise. On this basis, the Supplier must commence initiatives to safeguard the overall operation, including availability. The Supplier is under an obligation to inform the Customer about all faults concerning operation. If a major fault or disruption occurs, the Customer must be informed immediately.

GoBike compliance grade 1 and answer to requirement:

Signals from the bicycle surveillance system are sent to our dispatch center, which is manned 24/7.

Our dispatch center reacts within minutes on signals indication that operations need to be carried out.
Dispatch center personnel reacts in accordance with written instructions and issues service orders to our technicians, when operations need to be carried out.
Orders are sent to our technicians electronically, and will appear on his tablet within seconds.

Dispatch center is in charge of overall surveillance of software, hardware and technicians.

3. Operation and monitoring

The Supplier’s complete description must be inserted in this section.

4. Compliance list

The compliance with the requirements can be graded. The Supplier must enclose a completed compliance overview with statements regarding whether and how the requirements are met.

The compliance grade shall be given according to the following graduation principle:

1 - Corresponding to “completely fulfilled”
2 - Corresponding to “partly fulfilled”
3 - Corresponding to “not fulfilled”

Note: The statement of the compliance grade ”partly fulfilled” or ”not fulfilled” constitutes a reservation.

Minimum requirements are not part of this list, as it will directly be “not conditional” if the Supplier doesn’t fulfill these.

In case the Supplier chooses to state the compliance grade as “partly fulfilled” for a requirement, the Supplier shall always account for the at least the following conditions in the comment field:

- Which shortcomings there are in the offered solution compared to the initial described requirement
- Which consequences the shortcomings will have for the Customer respectively end user
- Which possibilities there are to compensate for the described shortcomings

In case the Supplier does not state anything in column ”compliance grade”, this will be considered as compliance grade 3 and therefore as not fulfilled in the tender.

Response to Info requirements
For responses to an info requirement, it shall be stated in the comment field of the compliance list, where in the tender the response can be found.

ID	Specification	Compliance grade 1, 2 eller 3	Comment
Info. 8.1	Optimisation of the redistribution	1	
Info. 8.2	Description of procedure for redistribution	1	
Info. 8.3	The suppliers organisation of the redistribution	1	
Info. 8.4	Local organisation for redistribution	1	
Info. 8.5	Monitoring operation	1	

Appendix 9
Maintenance

Bike-sharing system

October 15th 2012

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1. Introduction

GUIDELINES FOR TENDERER

In this Appendix, the Supplier shall attach a complete response stating how the Supplier will carry out the complete task of maintenance in relation to the services requested in Appendix 2 Service Requirements as well as in relation to being able to meet the requirements concerning the service l described in Appendix 11 Service Level Agreement. The response must comprise a full description of the maintenance tendered as part of the tendered solution, see also Appendix 3 Supplier's Description of Service Requirements.

The Supplier must note the following Appendices, which must contain the Supplier's complete description within the areas in question:

- Appendix 3 Supplier's Description of Service Requirements
- Appendix 8 Operation and Monitoring

Consequently, the Supplier's description may contain references to the above-mentioned Appendices.

The Supplier's complete description of the tendered maintenance should to contain:

- An overview of the tendered services under maintenance.
- A detailed description of what is tendered, including quality assurance measures.
- ~~A clear indication if the contents offered in packages 1 and 2 differ, see Appendix 4 Solution Description.~~
- A clear indication if the choice of options is associated with conditions as the options are tendered by the Supplier in Appendix 10 Options.
- A clear indication if a choice is made or a choice can be made that influences fulfilment of the service targets, see Appendix 11 Service Level Agreement.

Info-requirements in this appendix shall also be answered with this appendix. The Tenderer shall clearly mark the text that responds to an info-requirement with stating the relevant info-requirement number.

2. Specific requirements and info requirements

Info. 9.1 **Optimisation of maintenance**

The Supplier shall describe how the maintenance will be organised and continually optimised in the best possible way to support the end users' current travel patterns, behaviour and need for bicycles. The pattern of maintenance must reflect the general demand with respect to season and events.

GoBike compliance grade 1 and answer to requirement:

Gobike works together with local partners for maintenance. These partners know best there way around in their area and can offer the quickest reaction times.
The system offers the added flexibility that in case a partner doesn´t work out well, this partner can easily be changed for another one. In this way Gobike can guaranty always the highest service level.
A team of technicians under supervision of a team manager carries out maintenance. The team is radio controlled and supervised from our dispatch centre. Communication between dispatch centre and service team is via Falcks own IT system, which is online and updated 24/7.

This makes a flexible system, where we can distribute our workforce within minutes to meet current demand.

The main part of service will be carried outside of peak hours – i.e. between 10 a.m. and 2 p.m., 7 days a week.

Info. 9.2 **Description of procedure for maintenance**

The Supplier shall describe how the Service Levels for maintenance will be documented, demonstrated and met.

GoBike compliance grade 1 and answer to requirement:

Falck established a 24/7 customer service/surveillance in our control center in Vejle, who today is handling 24/7 surveillance of more than 10.000 burglar alarms. Staff will survey the system 24/7, and will also be ready to take calls from customers, regarding technical issues.

One phone number will be available to customers, calls will be separated into payment and technical issues, respectively.

Each bike contains a log describing the service frequence. Every maintenance will be assigned to a service man, based on a planned service frequence. The service man receives an electronic serviced report for documentation. The service man fills in the report and registers any spare parts used. When maintenance has been carried out, the service man documents that service has been carried out, by returning the electronic service report. This electronic service report automatically updates the service land on the bicycle. The land contains information on when task has been assigned, and when task is completed – thereby documenting that SLA has been met.

~~Info. 9.3~~ **~~The Supplier's organisation of the maintenance~~**

~~The Supplier shall describe how maintenance will be organised and executed to ensure that it~~

Obsolete

~~GoBike compliance grade 1 and answer to requirement:~~

~~Maintenance is carried out by a team of technicians under supervision of a team manager. The team is radio controlled and supervised from our dispatch center. Communication between dispatch center and service team is via Falcks own IT system called SimaCar, which is online and updated 24/7.~~

~~This makes a flexible system, where we can distribute our workforce within minutes to meet current demand.~~

~~The main part of service will be carried outside of peak hours – i.e. between 10 a.m. and 2 p.m., 7 days a week.~~

~~Info. 9.4~~ **~~Local organisation for maintenance~~**

~~The Supplier shall describe how the organisation handling the maintenance will be executed in the~~

Obsolete

GoBike compliance grade 1 and answer to requirement:

GoBike consider Copenhagen to be one geographical area, with one big team covering the whole City. This guarantees a very flexible solution, and minimizes the risk of having too few or too many technicians in a specific geographic area.

Maintenance and redistribution is carried out by Falck who has a national cover-

age, thus will be able to support and fulfill this requirement throughout Denmark. Terms and Conditions for maintenance and redistribution may vary depending on population density, number of bicycles etc.

2.1. Service Levels for cleaning and maintenance of hardware

Req. 9.1 **The hardware must appear well maintained and clean**

The Supplier is responsible for ensuring that all the various hardware (bicycles, docking points and payment machines) always appears well maintained and clean.

GoBike compliance grade 1 and answer to requirement:

Acute service will be carried out upon request from customers and/or information from the surveillance system. Regular maintenance is carried out in accordance with service log – this ensures, that all bicycles will be visited frequently, regardless the circumstances.

Furthermore, we ensure through constant visual inspection, that bikes appear well maintained.

Info. 9.5 **Operation and maintenance of hardware**

The Supplier's tender shall describe how the operation and maintenance of the various hardware parts will be carried out, comprising how it will be ensured that they always appear well maintained and clean.

GoBike compliance grade 1 and answer to requirement:

Falck reacts on signals from the bicycle surveillance system (tablets) and issues service order via the it system to the service team.

Any defect parts will be repaired or replaced at the GoBike service partner. Bicycle will be replaced, if main construction (frame) is defect.

The Customer is responsible for replacing the hardware unless the option concerning the Supplier's ownership of hardware is selected.

Req. 9.2 **Suggestions for replacement of hardware**

To ensure the system always appears well maintained, the Supplier shall on his own initiative and continually make suggestions to the Customer regarding what hardware needs replacement.

GoBike compliance grade 1 and answer to requirement:

If, in connection with service, we judge that on site repair is not an option, the service technician will take the bike out of service.

For this purpose, we will always have a supply of spare bicycles – quantity to be agreed upon with the Customer.
In his service report he will mark "Bicycle exchanged". These service reports will be included in a monthly report to the Customer, and will also be available online, 24/7.

Info. 9.6 **Replacement or repair**

The Supplier shall account for when hardware will be replaced rather than repaired. The Supplier must in this regard include a special account of the criteria for replacement and repair, respectively.
The Supplier must also describe the Supplier's experience with a view to the frequency of replacement and repair, respectively.

GoBike compliance grade 1 and answer to requirement:

The Supplier has a politic of replacement over repair. It proved to be quicker and more reliable to replace the parts in the street and repair the parts in the factory, where the tools and circumstances are available.
Falck will have all necessary parts available in their trucks for replacement.

Our general instructions of the service men includes criteria for replacement and repair.
Repair on site will be carried out, if this can be done within 30 minutes.

If not, the bicycle will be delivered at the nearest GoBike service partner. Here decision will be made as to whether to repair or exchange. Criteria is cost efficiency.

Req. 9.3 **Removal of graffiti**

It is the Supplier's responsibility to remove graffiti on all hardware parts within 24 hours of its registration.

GoBike compliance grade 1 and answer to requirement:

A graffiti removal team will carry out removal of graffiti. Graffiti is detected through visual inspection or reports from customers. The customer report from the kiosk by pressing "anmeld graffiti" or by making phone call to our dispatch center. Order issued to graffiti removal team. Graffiti will be removed within 24 hours whereever possible.

Note, however, the detailed description in LB section 9.8.1. Graffiti-hærværk

See appendix D: Service Level Agreement

Info. 9.7 **Procedure for removal of graffiti**

The Supplier's tender shall describe how graffiti within 24 hours will be handled.

Obsolete

GoBike compliance grade 1 and answer to requirement:

A graffiti removal team will carry out removal of graffiti. Graffiti is detected through visual inspection or reports from customers. The customer report from the kiosk by pressing "anmeld graffiti" or by making phone call to our dispatch center. Order issued to graffiti removal team. Graffiti will be removed within 24 hours whereever possible.

Note, however, the detailed description in LB section 9.8.1. Graffiti-hærværk

Gobike's partner will handle reported incidents of graffiti as part of the overall maintenance of the system. Graffiti can be reported by end-users, by Customer employees or by Gobike's maintenance partner. Graffiti incidents are logged and reported in different categories enabling an fast, efficient and relevant action. Removal will in most cases be handled by a specialised antigraffiti company who will monitor and register graffiti by photograph documentation in parallel with Gobike's own registration.
The antigraffiti company uses PSS-20, which is EPD certified (environmental product declaration). PSS-20 is produced and approved according to ISO 9000

~~standards. The chemical products are bio-degradable within 24 hours. On PSS-20 protected areas the graffiti can be removed without use of chemical product at all. In special environmentally sensitive areas, absorption of water and chemical products and dry paint shells is offered. Water is recirculated in the graffiti cleaning.~~

See appendix B: Løsningsbeskrivelse

Info. 9.8 **Service window**

The Supplier shall account for when, i.e. what time interval of the day or night, week, month, it will be expedient to set up service windows to ensure the Supplier's compliance with service targets in connection with maintenance.

GoBike compliance grade 1 and answer to requirement:

This period will be established after negotiation with Cykel DK and the partners.Our service team will be operating 7 days a week, 12 months a year. Number of technicians varies according to season and time, i.e. less personnel during the night and weekends + low season (winter).

2.2. Maintenance of the IT solution

Req. 9.4 **Maintenance**

Maintenance covers both remedying faults in the application and improving the system, e.g. with new functions.

Requirements concerning remedying faults:	Examples of solutions:	Code:
1. The Supplier keeps a log of both reported faults and desired changes.		
2. The Parties meet regularly, partly to check the evaluations of faults and partly to decide what must be corrected or improved and what it will cost.	*Monthly operation and status meetings to be held.*	

GoBike compliance grade 1 and answer to requirement:

At monthly meetings we will bring statistics on number of repairs, type of repairs etc.

~~2.3. Seasonal fluctuations~~

~~Info. 9.9~~ **~~Seasonal fluctuations~~**

~~The Supplier must describe the measures he Supplier expects to take into account seasonal fluctuations in the demand for bicycles, if applicable.~~

Obsolete

~~Req. 9.5~~ **~~Winter storage~~**

~~If the Supplier expects a seasonal difference in the winter period, when fewer bicycles are expected to be serviced, the Supplier must store the bicycles taken out of circulation in an area made available by the Supplier.~~

Obsolete

3. Maintenance

The Supplier’s description must be inserted in this section.

4. Compliance list

The compliance with the requirements can be graded. The Supplier must enclose a completed compliance overview with statements regarding whether and how the requirements are met.

The compliance grade shall be given according to the following graduation principle:

1 - Corresponding to “completely fulfilled”
2 - Corresponding to “partly fulfilled”
3 - Corresponding to “not fulfilled”

Note: The statement of the compliance grade ”partly fulfilled” or ”not fulfilled” constitutes a reservation.

Minimum requirements are not part of this list, as it will directly be “not conditional” if the Supplier doesn’t fulfill these.

In case the Supplier chooses to state the compliance grade as “partly fulfilled” for a requirement, the Supplier shall always account for the at least the following conditions in the comment field:

- Which shortcomings there are in the offered solution compared to the initial described requirement
- Which consequences the shortcomings will have for the Customer respectively end user
- Which possibilities there are to compensate for the described shortcomings

In case the Supplier does not state anything in column ”compliance grade”, this will be considered as compliance grade 3 and therefore as not fulfilled in the tender.

Response to Info requirements
For responses to an info requirement, it shall be stated in the comment field of the compliance list, where in the tender the response can be found.

ID	Specification	Compliance grade 1, 2 eller 3	Comment
Info. 9.1	Optimisation of the maintenance	1	
Info. 9.2	Description of procedure for maintenance	1	
Info. 9.3	The suppliers organisation of the maintenance	1	
Info. 9.4	Local organisation for maintenance	1	
Req. 9.1	The hardware must appear well maintained and clean	1	
Info. 9.5	Operation and maintenance of hardware	1	
Req. 9.2	Suggestions for replacement of hardware	1	
Info. 9.6	Replacement or repair	1	
Req. 9.3	Removal of graffiti	1	
Info. 9.7	Procedure for removal of graffiti	1	
Info. 9.8	Service window	1	
Req. 9.4	Maintenance	1	
Info. 9.9	Seasonal fluctuations	-	
Req. 9.5	Winter storage	-	

Appendix 10 Options

Bike-sharing system

October 15th 2012

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1. Introduction

This appendix contains a description of a range of optional services, on which the Customer wants the Supplier to give an offer.

GUIDELINES FOR TENDERER

The Tenderer shall for each requested option describe, how the requested service can be provided and give a price for each option. In case several alternatives can be offered for an option, the alternatives shall be marked with the option's number and a letter, for example: Option 10.6.a, option 10.6.b and so on.

The Tenderer shall for all below named options indicate a compliance grade and prices by completing the Compliance list at the end of this appendix. The prices shall appear from Appendix 15 Prices. Prices that do not appear in Appendix 15 Prices, are no concern for the Customer.

2. Option - Community

In order to support the expansion of the bike-sharing system, to contribute to the creation of a good user experience and to encourage loyalty among the end users generally, the Customer wants to have offered below functionalities as an option.

The requirements for the option in Community are stipulated in prolongation of the requirements and description of the end user experience in appendix 2 Service requirements, paragraph 3.2.

Option 10.1 End user community

As an option the Customer wants to have offered an end user community that contributes to the creation of loyalty/affiliation/support at the end users and interaction with the end users, for instance by giving the end user the possibility of giving input, f. ex. by a mailbox for criticism and praise, an idea forum etc. Furthermore, the Customer has the following expectations:

- The possibility of offering the end user - as part of their creation in the system - a possibility for registeration for the end user community
- The possibility for the end user to delete and edit text, pictures and other content in his/her profile. The Customer shall have the possibility to block (blacklist) the end users access to the community

Obsolete

The Supplier shall account for how the desired option can be fulfilled and what possibilities the option offers with regards to functionality and interaction.

The option shall be available for the Customer's order during contract duration. The option can be ordered by the Customer one time and shall on establishment be available in the overall solution, so that it can be made available for all deliverable-agreements.

The price for the option shall be indicated in appendix 15 Prices.

GoBike compliance grade 1 and answer to requirement:

The listed functionalities are a part of the GoBike system roadmap.

Basic functionality as listed is regarded as part of the basic solution. However, extensive community functionality must be defined - and will be so as part of the GoBike systtem specification and roadmap process. Integration to relevant social communities is also a part of the basic soltuion.

~~It has been agreed that GoBike shall establish and operate a end user comunity. Furthermore, it has been agreed that GoBike owns the comunity.~~

3. ~~Option –~~ Support function

Another important part of the Customer experience is the possibility that the end user can get the necessary support in relation to the use of the system. ~~The Customer cannot take the final decision on whom or how the end user support function shall be handled on launching of the system. Thus, the support function is marked as an option with underlying requirements.~~
The option is described based on the appendix 2 Service requirements, where - among others - requirements to the administration system, support system (2nd line support) and employee of support are described.

Option 10.2 **End user support function (1st line support)**

As an option the Customer wants to get offered an end user support function for the handling of requests from the end user via Email or phone.
The employee of support shall act as 1st line support to which the end users call or email, when they have questions regarding the use of the system, the conditions and payments as well as urgent problems with the material during rental. The support shall be in Danish and English.
~~The employee of support shall on end user request be best possibly prepared to solve these requests in the first attempt and hereby avoid that the end user is sent further in the system without success.~~
~~The Supplier shall be able to register requests from the end users day and night (24/7/365)~~

~~Service Level:~~

- ~~Telephone answering time shall not exceed sixty (60) seconds.~~
- ~~E-mail answering time shall not exceed five (5) working days.~~
- ~~The above mentioned standard shall be met by the Supplier eighty percent (80%) of the time during each calendar month.~~

See appendix D:SLA

The Supplier shall account for how the desired option can be fulfilled and which possibilities the option offers with regards to functionality and interaction, also including how the requirement regarding registration of requests from the end user day and night is fulfilled.

The option shall be available for the Customer's order during the contract duration. The option can be ordered on each deliverable-contract formation.

The price for the option shall be indicated in Appendix 15 Prices. In case there is a volume-based estimate connected with this option, the Supplier shall account for this and include the relevant prices in Appendix 15 Prices.

GoBike compliance grade 1 and answer to requirement:

GoBikes service partner has established a very well functioning customer support call centre. GoBike will offer 1st line support.

See LB section 9.4

4. Option – Other types of bicycles

The Customer foresees a need among chosen end users, who wish to rent another type of bicycle than the normal shared bicycle. In order to meet these very special and individual needs among end users and to reflect the end users varying use of bicycles in Denmark as primary mean of transport beforehand, the Customer wants an option on the implementation and operation of other type of bicycles.

Reference: The requirements for other type of bicycle are based on appendix 2, wherein detailed descriptions set the requirements for general user experience from different user types.

Option 10.3 **Other types of bicycles**

As an option, the Customer wants an offer on other types of bicycles that will be part of the bike-sharing system, including operation and maintenance of these.

The Supplier shall describe which and how other types of bicycles can be part of the system. Other types of bicycles could f. ex. be children bicycles, lady bicycles or el-bicycles. The description shall contain the particular conditions - according to the Supplier's assessment – of which the Customer shall be aware when using the option or which bind the Customer in another way with regard to the option.

The option shall be available for the Customer's order during the contract duration. The option can be ordered on deliverable-contract formation.

The price for the option shall be indicated in appendix 15 Prices.

GoBike compliance grade 1 and answer to requirement:

The Gobike docking stations are accessible for other bikes. This has no additional costs.
In case DSB would like to develop other bicycle types, like: cargo cars and trikes according to the Urbike concept, Gobike will be able to do so. Although this requires a design trajectory which is not included in the scope of this tender.

The basic scope of bike to be delivered will include standard manual bikes and minimum 50 e-bikes according to specification. The e-bikes will be used for evaluating the demand of this type of bikes. Additional e-bikes can be delivered according to the agreed prices.

Gobike are working on additional new bike alternatives such as Gobike Cargo, Gobike Family, etc. Designs of these types of bikes will be available during 2013 and can be delivered during 2014. Gobike Family will be e-bikes designed so that children can be transported safely. Gobike Cargo will be e-bikes with several designs fit for different purposes and/or organisations. Gobike will have to consider the layout of docking stations in order to ensure adequate space for these larger bike types.
Gobike is also working on an alternative covering the the introduction of an e-car sharing concept as an integral part of the overall Gobike solution.

See also LB section 7.3

5. Option – Differentiated choice of color

As an option the Customer wants the possibility of differentiated choice of color. Differentiated choice of color can come up when - after the launching in Copenhagen and Frederiksberg - other municipalities wants to use the bike-sharing system locally. Local considerations can mean that the system shall appear in another color. The Customer wants to offer this to the other municipalities.

Differentiated choice of color is an option that is based on appendix 2 service requirements, paragraph 8, where the expansion to other municipalities in Denmark is described.

Option 10.4 Possibility ofdifferentiated choice of color of the hardware

The Supplier shall be able to deliver hardware (bicycles, docking stations and payment machines) in different colors.

The Supplier shall describe how this option can be handled by the Supplier. The description shall contain the particular conditions - according to the Supplier's assessment – of which the Customer shall be aware when using the option or which bind the Customer in another way with regard to the option.

The option shall be available for the Customer's order during the contract duration. The option can be ordered on deliverable contract formation.

The price for the option shall be indicated in appendix 15 Prices.

GoBike compliance grade 1 and answer to requirement:

Any bike colour requested ex factory has the same price. A minimum ordering quantity for bespoke color options will be set by GoBike.

The Parties have agreed that all bikes without exception will be delivered in the same colours. This means that there will be no colour or design variance for any participating authority or organisation. Cykel.dk will decide on the final distinct colours (default will be white).

6. Option – Cleaning of areas

The Customer knows that the cleaning of areas around parked bicycles at docking station is more difficult than ordinary cleaning of public areas. The difficulties are primarily due to narrow conditions around the bicycles, that make it difficult for f. ex. the communal cleaning- and sweeping machines to get around quickly and remove waste.

The Customer wants an option on cleaning of areas around the docking stations, as the Customer deems that the Supplier has the possibility of handling this task in connection with the redistribution and the daily operation of the system. The Supplier is – all things being equal – in touch with the system more often than the Customer's /the municipalities' service employees.

The option of cleaning the areas is based on the requirements regarding operation of the system that are indicated in appendix 2 Service requirements, paragraph 5.

Option 10.5 Option regarding cleaning of areas

As an option the Customer want an offer for the Supplier being responsible for the cleaning of areas at the docking stations and docking points.

The Supplier shall describe how this option can be handled by the Supplier as part of the daily operational and redistribution task. The description shall contain the particular conditions – according to the Supplier's assessment – of which the Customer shall be aware when using the option or which bind the Customer in another way with regard to the option.

Obsolete

The option shall be available for the Customer's order during the contract duration. The option can be ordered on deliverable contract formation.

The price for the option shall be indicated in appendix 15 Prices.

~~7. Option – Ownership of hardware by the Supplier~~

~~As an option the Customer wants the possibility offered, that the Supplier owns all hardware. If the Customer chooses this model, the contract must generally be adjusted to this before contract formation.~~

~~Option 10.6~~ **~~Ownership of hardware~~**

~~As an option the Supplier shall offer ownership of all hardware, so that the Supplier's overall service to the Customer has the character of being a 'turn-key' solution, where the Supplier puts a complete solution at the Customer's disposal against a fixed monthly remuneration. The Supplier shall still meet the requirements that otherwise are stipulated in the framework agreement.~~

~~The Supplier shall account for how it influences the other required services and if there are advantages or disadvantages for the Customer respectively the Supplier connected with this solution.~~

~~The Supplier is also asked to do a risk evaluation, in which the two scenarios are set up against each other:~~

Obsolete

~~1. The Supplier owns all hardware~~
~~2. The Customer owns all hardware~~

~~The option is determined before contract formation. The option can be ordered by the Customer one time.~~

~~The price for the option shall be indicated in appendix 15 Prices.~~

8. Option – Replacement of sponsors

The Customer foresees the possibility of a sponsor being renewed or replaced during the contract duration with the Supplier. In order to meet the wish for a sponsor replacement during contract duration, the Customer has made an option that deals with the replacement of sponsors.

The replacement of sponsors is based on the content of appendix 2, wherein among others a description of sponsor possibilities in relation to the business model and the requirements for the advertising space for sponsors on the hardware are indicated.

Option 10.7 Option regarding replacement of sponsors on the advertising space for sponsors

As an option the Customer wants an offer for the replacements of the sponsors on the advertising space for sponsors being done by the Supplier.

The Supplier shall describe how this option can be handled by the Supplier as part of the daily operational and redistribution task. The Supplier shall describe how this option can be handled by the Supplier. The description shall contain the particular conditions - according to the Supplier's assessment – of which the Customer shall be aware when using the option or which bind the Customer in another way with regard to the option.

The price for the option shall be indicated in appendix 15 Prices

GoBike compliance grade 1 and answer to requirement:

GoBike can offer such service as an addition to the solution. Such service is subject to separate negotiation and specification by the customer of the various type of advertisements, advertisement media, frequency, location etc.

9. Option – Purchase/leasing of IT-system in connection with termination of the framework agreement

As an option, the Customer want offered the possibility that the Customer can purchase or lease the IT-system in connection with the termination of the framework agreement.

Option 10.8 Purchase/leasing of IT-system in connection with the termination of the framework agreement

The Customer wants to have offered to options in connection with the contract termination.

1. Purchase of the IT-system in connection with the termination of the framework agreement.
2. Leasing of the IT-system in connection with the termination of the framework agreement.

The Supplier shall account for how the two options can be offered and what possible maintenance that is offered. The Supplier shall particularly state if there are parts of the IT-systems [illegible] described in appendix 3 - that are not part of the [illegible]

Obsolete

It shall be possible to order the option in connection with the termination of the framework agreement. The option can be ordered by the Customer one time.

The price for the two options shall be indicated in appendix 15 Prices.

10. ~~Option –~~ Booking opportunity

In order to provide the End User with an extra service, the Customer wants to give the End User the opportunity to book a bicycle.

Option 10.9 **Booking of bicycles**

The Supplier shall offer a system, where End Users can book a bicycle in advance.

The system must be able to handle:

- A time limit for when an End User can book a bicycle (for example up to 1 hour before picking up the bicycle).
- A charging fee for a booking. It shall be possible to differentiate the charging fee for different End Users
- Giving the End User the option of cancelling a booking up to a few minutes before a reservation, and also automatically to cancel a booking if the bicycle is not collected after a certain amount of minutes after the start of the rental period
- Charging a "no-show" fee and a fee for cancellation after the deadline (a certain amount of minutes before the rental period)
- That chosen End Users have the option for auto-reservation so that a random bicycle is booked automatically the same time every day
- Giving the End User the option of reserving several bicycles on one time
- It shall be possible to reserve a proportion (for example 50%) of the present bicycles at each dockingstation for bookings. It shall be possible to differentiate the proportion for each location.

Service levels

- 100% of booked bicycle shall be available for the End User

The Supplier shall describe how a booked bicycle always can be available for the End User at the specific dockingstation and the time for which the End User has booked the bicycle.

GoBike compliance grade 1 and answer to requirement:

The described features will be a part of the GoBike software and applications version 1.x or 2. Booking will be available using website or smartphone. User portals for large customers will offer separate functionality in this regard.

The listed functionality is regarded as part of the basic solution and will be available through the web-channel.

11. Compliance list

The compliance with the requirements can be graded. The Supplier must enclose a completed compliance overview with statements regarding whether and how the requirements are met.

The compliance grade shall be given according to the following graduation principle:

1 - Corresponding to “completely fulfilled”
2 - Corresponding to “partly fulfilled”
3 - Corresponding to “not fulfilled”

Note: The statement of the compliance grade ”partly fulfilled” or ”not fulfilled” certainly constitutes a reservation.

Minimum requirements are not part of this list, as it will directly be “not conditional” if the Supplier doesn’t fulfill these.

In case the Supplier chooses to state the compliance grade as “partly fulfilled” for a requirement, the Supplier shall always account for the at least the following conditions in the comment field:

- Which shortcomings there are in the offered solution compared to the initial described requirement
- Which consequences the shortcomings will have for the Customer respectively end user
- Which possibilities there are to compensate for the described shortcomings

In case the Supplier does not state anything in column ”compliance grade”, this will be considered as compliance grade 3 and therefore as <u>not</u> fulfilled in the tender.

Response to Info requirements
For responses to an info requirement, it shall be stated in the comment field of the compliance list, where in the tender the response can be found.

ID	Specification	Compliance grade 1, 2 or 3	Comments
Option 10.1	End user community	1	
Option 10.2	End user support function (1st line support)	1	
Option 10.3	Other types of bicycles	1	
Option 10.4	Possibility ofdifferentiated choice of color of the hardware	1	
Option 10.5	Option regarding cleaning of areas	1	
Option 10.6	Ownership of hardware	1	
Option 10.7	Option regarding replacement of sponsors on the advertising space for sponsors	1	
Option 10.8	Purchase/leasing of IT-system in connection with the termination of the framework agreement	1	
Option 10.9	Booking opportunity	1	

Appendix 11
Service Level Agreement

Bike-sharing system

October 15th 2012

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1. Introduction

This appendix comprises the Customer's requirements to the service levels, such as requirements to the service level, methods of measurements and calculations. Requirements for compensation and incentives regarding the named service levels are indicated in appendix 12 Compensation respectively appendix 13 Incentives.

The service levels are solely connected to the areas of responsibility where the Supplier himself essentially has the responsibility for and they include each deliverable that happens under the framework agreement, unless other is specifically stated in an independent deliverable contract.

GUIDELINES FOR TENDERERS

This appendix contains a range of requirements and information requirements. Based on these requirements the Tenderer shall complete the compliance list at the end of this appendix.

Info-requirements in this appendix shall also be answered with this appendix. The Tenderer shall clearly mark the text that responds to an info-requirement with stating the relevant info-requirement number.

2. Service Level

The service level is the Customer's requirement to the Supplier, expressed in a service level that supports a good end user experience.

The Customer's objective is, that the end user as a daily user of the bike-sharing system experiences, that all essential parts of the system work optimal in the daily transport, which means:

- The bicycles and docking points are available when needed
- The system is well maintained and functional
- The hardware appears welcoming and clean
- The IT-system is robust and supports fast response times

The service level requirements are related to the different elements of the system and will be measured individually for each area.

The service levels and the operation efficiency will be measured within ordinary operation time respectively within peak hours.

The Supplier state service levels for the total deliverable and shall be able to differentiate the statements on municipality-level or for a group of municipalities. The service levels for the IT-system shall however – as far as it concerns response time and operation efficiency – state for the overall system.

2.1. Definitions

Req. 11.1 **Definition of regular operation time**

The regular operation time covers the period, in which the system is available and well-functioning for normal use for the users.

Regular operation time is defined by: all day (00.00-24.00) 7 days per week (Monday-Sunday incl. holidays).

GoBike compliance grade 1 and answer to requirement:

The supplier will input this definition in this system configuration, and make sure

that the system is active during the mentioned period.

See Frame agreement appendix D

~~**Req. 11.2 Definition of peak hour**~~

~~Peak hour is defined by: all week days from 7.00-9.00 as well as 15.00-20.00.~~

~~**GoBike compliance grade 1 and answer to requirement:**~~

~~The Supplier will ID a specific time frame for peah hour in the system, so particular system actions can be defined during this period.~~

~~See Frame agreement appendix D~~

See appendix D: SLA

~~**Req. 11.3 Definition of bicycle availability**~~

~~A bicycle will be deemed as Available when it is either:~~

~~1. In use by an end user or~~

~~2. Docked at a docking point with no repair flag against it.~~

~~**GoBike compliance grade 1 and answer to requirement:**~~

~~The supplier will input this definition in this system configuration, and make sure that the system is acts consecuently to it~~

~~See Frame agreement appendix D~~

See appendix D: SLA

Req. 11.4 Definition of docking points unavailability

A docking point is unavailable if it may not be used to either return of release a bicycle when required by an end user.

GoBike compliance grade 1 and answer to requirement:

The supplier will input this definition in this system configuration, and make sure that the system is acts consecuently to it.

See Frame agreement appendix D

Req. 11.5 **Measurement of availability**

Availability is measured twenty four (24) hours per day, seven (7) days per week excluding periods of scheduled maintenance.

GoBike compliance grade 1 and answer to requirement:

The supplier will input this definition in this system configuration, and make sure that the system is acts consecuently to it.
Also will this definition be included in the maintenance schedule.

See Frame agreement appendix D

Req. 11.6 **Definition of payment machine availability**

A machine is available if an end user is able to hire and pay for an available bicycle - not in use by another end user - via the Machine.

If the payment machine has other functions (for instance real time information), s these functions shall also be operational before the payment machine is considered available.

GoBike compliance grade 1 and answer to requirement:

Requirement is agreed to be invalid

Req. 11.7 **Definition of an empty station**

A docking station is an “empty docking station”, when there are no fully functionally bicycles currently located at the docking station. An empty station could have one or more bicycles flagged as requiring repair.

GoBike compliance grade 1 and answer to requirement:

The supplier will input this definition in this system configuration, and make sure that the system is acts consecuently to it.

Altough the supplier suggests to create a different status for a station with bicycles requiring repair, while the system actuation will be different. For example, the IPBM will try to ¨fill¨ an empty station with bicycles by incentivating users to leave their bicycles there. However if the docking are used by bikes which require repair, the system must know this and make sure that the broken bikes are

fixed first.

See Frame agreement appendix D

~~**Req. 11.8 Definition of a full station**~~

~~A docking station is a "full docking station", when there are no empty docking points at the relevant docking station.~~

~~**GoBike compliance grade 1 and answer to requirement:**~~

~~The supplier will input this definition in this system configuration, and make sure that the system is acts consecuently to it.~~

~~See also second comment on earlier requisite.~~

~~See Frame agreement appendix D~~

See Apppendix D: SLA and Appendix B: Løsningsbeskrivelse

~~**Req. 11.9 Definition of response time**~~

~~The response time is the period from the user sends his command to the result is visible and the user can send a new command. A command means a key press or a mouse click.~~

~~**GoBike compliance grade 1 and answer to requirement:**~~

~~Read and agreed - however, all measurements are to be done server-side without roundtrip additions.~~

2.2. Service Levels for bikes

2.2.1. Daily operation efficiency for bicycles

~~Req. 11.10~~ **~~Bicycle availability – daily minimum~~**

~~The minimum number of bicycles available shall not drop below 95% of the agreed daily Bicycle requirement throughout the day .~~

~~GoBike compliance grade 1 and answer to requirement:~~

~~This is ensured through our bicycle surveillance system, as well as visual inspection by our technicians.~~

~~GoBike will monitor and measure this using GoBike systems, which will allow preventive actions by GoBike. Should number of available bicycles drop below stipulated level, additional bicycles from the bicycle buffer of GoBike will be inserted into circulation, to maintain >90% availability.~~

~~Pre-booked bicycles, as per Option 10.9, will be regarded as avilable bicycles.~~

~~See Frame agreement appendix D~~

See appendix D:SLA

~~Req. 11.11~~ **~~Bicycle availability – peak hours~~**

~~95% of the agreed daily Bicycle requirement shall be available at peak hours.~~

~~GoBike compliance grade 1 and answer to requirement:~~

~~This is ensured through our bicycle surveillance system, as well as visual inspection by our technicians.~~

~~GoBike will monitor and measure this using GoBike systems, which will allow preventive actions by GoBike. Should number of available bicycles drop below stipulated level, additional bicycles from the bicycle buffer of GoBike will be inserted into circulation, to maintain >90% availability.~~

~~Pre-booked bicycles, as per Option 10.9, will be regarded as avilable bicycles.~~

See Appendix D:SLA

2.2.2. Timeliness of Bicycle Repair / Replacement / Withdrawal

~~**Req. 11.12**~~ ~~**Repair of bicycle**~~

~~When a bicycle is flagged as requiring repair, it shall either be repaired, or replaced by the Supplier, within twenty four (24) hours.~~

~~**GoBike compliance grade 1 and answer to requirement:**~~

~~The supplier will input this definition in this system configuration, and make sure that the system is acts consecuently to it.~~

~~Also will this definition be included in the maintenance schedule.~~

~~See Frame agreement appendix D~~

See appendix D:SLA

Req. 11.13 **Requiring repair**

A bicycle is deemed to be flagged as requiring repair when:

1. An end user, the Customer's personnel, or a Supplier employee notifies the contact centre of the bicycle requiring repair; or
2. A bicycle is automatically identified as having a fault by the system. For example when it is hired and returned within five (5) minutes, three (3) times in a row

GoBike compliance grade 1 and answer to requirement:

The supplier will input this definition in this system configuration, and make sure that the system is acts consecuently to it.

Also will this definition be included in the maintenance schedule.

See Frame agreement appendix D

Req. 11.14 **Functional bicycle**

A bicycle is deemed functional only when a suitably qualified mechanics has inspected and signed that it is safe and functioning correctly and when it has been returned to a docking point. This means that following elements shall be full filled:

- drive chain for proper functioning and lubrication;
- handlebar for proper centering and tightness;

- tires for proper inflation, defects, and wear;
- brakes for excessive wear and proper working order;
- saddle for proper tightness, neither excessive wear, nor and deterioration;
- shifters for proper functioning;
- lights for proper functioning;
- fenders and chain guard for proper functioning, free of defects and too much wear;
- ensure that all other bicycle components without limitation are properly attached and functioning and
- clean the bicycle.

GoBike compliance grade 1 and answer to requirement:

The supplier will input this definition in this system configuration, and make sure that the system is acts consecuently to it.

Also will this definition be included in the maintenance schedule.

See Frame agreement appendix D

~~**Info. 11.1 Operational efficiency for functional bicycles**~~

~~The Supplier shall account for how it will oblige the requirement of 95% of bicycles being available during regular operation time and 95% during peak hours.~~

~~**GoBike compliance grade 1 and answer to requirement:**~~

~~This is ensured through our bicycle surveillance system, as well as visual inspection by our technicians.~~

~~GoBike will monitor and measure this using GoBike systems, which will allow preventive actions by GoBike. Should number of available bicycles drop below stipulated level, additional bicycles from the bicycle buffer of GoBike will be inserted into circulation, to maintain >90% availability.~~

~~Pre-booked bicycles, as per Option 10.9, will be regarded as avilable bicycles.~~

~~See Appendix E~~

See appendix D:SLA

2.3. Service Levels for docking points

Req. 11.15 **Docking point availability – daily minimum**

The minimum number of docking points available shall not drop below 95% of the agreed daily docking point's requirement throughout the day.

GoBike compliance grade 1 and answer to requirement:

The supplier will input this definition in this system configuration, and make sure that the system is acts consecuently to it.

Also will this definition be included in the maintenance schedule.

See Frame agreement appendix D

Req. 11.16 **Repaired or replaced docking points**

A docking point shall either be:

1. Fully repaired or
2. Replaced

Within twenty four (24) hours of the identification of any loss of functionality

GoBike compliance grade 1 and answer to requirement:

The supplier will input this definition in this system configuration, and make sure that the system is acts consecuently to it.

Also will this definition be included in the maintenance schedule. Gobike partner Falck, will dispose over the technical means for bike repair or sustitution. Further service details will be given in the Falck Service presentation.

See Frame agreement appendix D

Info. 11.2 **Operational efficiency for functional docking points**

The Supplier shall account for how he will oblige the requirement of 95% docking points being available during regular operation time.

GoBike compliance grade 1 and answer to requirement:

This is ensured through our bicycle surveillance system, as well as visual inspection by our technicians.

GoBike will monitor and measure this using GoBike systems, which will allow preventive actions by GoBike. Should number of available bicycles drop below stipulated level, additional docking stations from the buffer of GoBike will be inserted into circulation, to maintain >95% availability.

Commenced replacement of docking is to be regarded as available docking station.

See Frame agreement appendix D

The docking station will be regarded available only when repair/replacement is finished.

2.4. Service Level for payment machine

Req. 11.17 **Repaired or replaced payment machines**

A payment machine shall either be:

3. Fully repaired or
4. Replaced

Within three (3) hours of the identification of any loss of functionality

GoBike compliance grade 1 and answer to requirement:

Requirement is agreed to be invalid

~~**Req. 11.18** **Payment machine availability – daily minimum**~~

~~The Supplier shall ensure that availability of all payment machines to the Customer shall be greater than 95% per day .~~

~~**GoBike compliance grade 1 and answer to requirement:**~~

~~Requirement is agreed to be invalid~~

~~**Req. 11.19 Payment machine availability – peak hours**~~

~~The Supplier shall ensure that availability of all payment machines to the Customer shall not drop below 95% during peak hours~~

~~**GoBike compliance grade 1 and answer to requirement:**~~

~~Requirement is agreed to be invalid~~

Info. 11.3 Operational efficiency for functional payment machine

The Supplier shall account for how he will oblige the requirement of 95% payment machines being available during regular operation time and 95% during peak hours.

GoBike compliance grade 1 and answer to requirement:

Requirement is agreed to be invalid

2.5. Service levels for redistribution

Req. 11.20 Classification of Priority 1 and Priority 2 stations

Up to 25% of the locations will be classified as a "**Priority 1**" based on the Customers view of the importance of the location to the overall system, as defined by the level of use. The remaining locations will be classified as "Priority 2".

All locations will be classified thirty (30) days prior to the Operational Commencement Date. The status of each location will be subject to review throughout the contract period. The Customer shall provide the Supplier with thirty (30) calendar days notice ahead of any change to the classification of locations.

GoBike compliance grade 1 and answer to requirement:

Classification of Priority 1 and Priority 2 stations will be included in our written instructions to our dispatch center, as well as in the general instructions of our technicians.

See Frame agreement appendix D

Req. 11.21 **Obligation to initiate redistribution**

The Supplier shall monitor the location of the bikes and must on its own initiative carry out the daily redistribution of bicycles in the whole system compared to the prioritization the Customer indicates in its classification of stations.

GoBike compliance grade 1 and answer to requirement:

Dispatch center is in charge of overall surveillance of software, hardware and technicians.

They react in accordance with written instructions, assuring that daily redistribution is carried out in accordance with prioritization.

Classification of Priority 1 and Priority 2 stations will be included in our written instructions to our dispatch center, as well as in the general instructions of our technicians.

See Frame agreement appendix D

2.5.1. Empty locations/docking stations

Req. 11.22 **Measurement of an empty station**

The number of minutes, in whole minutes, that each docking station is empty shall be tracked over a day from 00.00-24.00. For avoidance of doubt, minutes shall not start counting until a docking station has been empty for a full minute.

GoBike compliance grade 1 and answer to requirement:

Measurement is carried out by the bike surveillance systems. Signals are sent to our dispatch center, which reacts on signals in accordance with written instructions.

See Frame agreement appendix D

Req. 11.23 **Empty stations at the beginning of the day**

At 07.00 every day 100 % of all the docking stations shall not be empty.

GoBike compliance grade 1 and answer to requirement:

This is ensured through our bicycle surveillance system, as well as visual inspection by our technicians.

GoBike will monitor and measure this using GoBike systems, with a margin of +/- 5 minutes to avoid a non-fulfillment should all bicycles at one location be rented out at 6.59.

Pre-booked bicycles, as per Option 10.9, will be regarded as avilable bicycles.

See Frame agreement appendix D

~~**Req. 11.24 Empty stations throughout the day**~~

~~In the period between 07.00-24.00 a docking station shall not be empty more than four (4) hours (240 minutes) in total.~~

~~**GoBike compliance grade 1 and answer to requirement:**~~

~~This is ensured through our bicycle surveillance system, as well as visual inspection by our technicians.~~

~~GoBike will monitor and measure this using GoBike systems.~~

~~Pre-booked bicycles, as per Option 10.9, will be regarded as avilable bicycles.~~

~~See Frame agreement appendix D~~

~~Note the agreed requirement text is:~~
~~Req. 11.24 Empty stations throughout the day~~
~~- In the period between 07.00-18.00 a docking station shall not be empty more than four (4) hours (240 minutes) in total.~~
~~- In the period between 18.00-7.00 a docking station shall not be empty more than four (8) hours (480 minutes) in total.~~

See appendix D:SLA

~~**Req. 11.25 Empty priority 1 stations throughout the day**~~

~~Priority 1 locations (Docking Stations) shall not be empty during peak hours for a single period longer than sixty (60) minutes.~~

~~**GoBike compliance grade 1 and answer to requirement:**~~

~~This is ensured through our bicycle surveillance system, as well as visual inspection by our technicians.~~

~~GoBike will monitor and measure this using GoBike systems.~~

~~Pre-booked bicycles, as per Option 10.9, will be regarded as avilable bicycles.~~
~~Significant events and/or arrangements of any kind, which may have impact on the normal request for bicycles, will not be included in this measurement.~~
~~GoBike and the customer over obliged to create and maintain a mutual event calendar, in order for GoBike to take preventive measures.~~

~~See Frame agreement appendix D~~

~~Note: The agreed requirement text is:~~
~~Req. 11.25 Empty priority 1 stations throughout the day~~
~~Priority 1 locations (Docking Stations) shall not be empty during peak hours for a single period longer than ninty (90) minutes.~~

See appendix D: SLA

2.5.2. Full locations/docking stations

Req. 11.26 **Measurement of a full station**

The number of minutes, in whole minutes, that each docking station is full shall be tracked over a day. For avoidance of doubt, minutes shall not start counting until a docking station has been empty for a full minute.

GoBike compliance grade 1 and answer to requirement:

This is ensured through our bicycle surveillance system, as well as visual inspection by our technicians.

GoBike will monitor and measure this using GoBike systems.

Pre-booked bicycles, as per Option 10.9, will be regarded as avilable bicycles.

See Frame agreement appendix D

Req. 11.27 **Full stations at the beginning of the day**

At 07.00 every day 100 % of all the docking stations shall not be full.

GoBike compliance grade 1 and answer to requirement:

This is ensured through our bicycle surveillance system, as well as visual inspection by our technicians.

GoBike will monitor and measure this using GoBike systems, with a margin of +/- 5 minutes to avoid a non-fulfillment should a large number of bicycles at one location be returned at 6.59.

Pre-booked bicycles, as per Option 10.9, will be regarded as avilable bicycles.

See Frame agreement appendix D

~~**Req. 11.28** **Full stations throughout the day**~~

~~In the period between 07.00-24.00 a docking station shall not be full more than 4 hours (240 minutes) in total.~~

~~**GoBike compliance grade 1 and answer to requirement:**~~

~~This is ensured through our bicycle surveillance system, as well as visual inspection by our technicians.~~

~~GoBike will monitor and measure this using GoBike systems.~~

~~Pre-booked bicycles, as per Option 10.1, will be regarded as avilable bicycles.~~
~~Significant events and/or arrangements of any kind, which may have impact on the normal request for bicycles, will not be included in this measurement.~~
~~GoBike and the customer over obliged to create and maintain a mutual event calendar, in order for GoBike to take preventive measures.~~

~~See Frame agreement appendix D~~

~~Note the agreed requirement text is:~~
~~Req. 11.28 Full stations throughout the day~~
~~In the period between 07:00 til 18:00 a docking station shall not be full more than 8 hours (480 minutes) in total.~~
~~In the period between 18:00-07.00 a docking station shall not be full more than 4~~

hours (240 minutes) in total.

See appendix D: SLA

Req. 11.29 **Full Priority 1 stations throughout the day**

Priority 1 locations (docking stations) shall not be full during peak hours for a single period longer than sixty (60) minutes.

GoBike compliance grade 1 and answer to requirement:

This is ensured through our bicycle surveillance system, as well as visual inspection by our technicians.

GoBike will monitor and measure this using GoBike systems.

Pre-booked bicycles, as per Option 10.9, will be regarded as avilable bicycles. Significant events and/or arrangements of any kind, which may have impact on the normal request for bicycles, will not be included in this measurement. GoBike and the customer over obliged to create and maintain a mutual event calendar, in order for GoBike to take preventive measures.

See Frame agreement appendix D

Note the agreed requirement text is:
Req. 11.29 Full Priority 1 stations throughout the day
Priority 1 locations (docking stations) shall not be full during peak hours for a sin-gle period longer than ninety (90) minutes.

See appendix D: SLA

In order to avoid that the Customer and Supplier end up in a situation, where the determined service levels are not in accordance with the actual demand, the service levels regarding redistribution will be quality assured in relation to the actual demand after three months operation with regards to possible adjustments.

Req. 11.30 **Quality check of the service level for redistribution**

After the first three (3) operational months, the Customer can reevaluate the service level for distribution and make changes to it to better meet the end user de-

~~mand. The concrete service level regarding empty and full docking stations (section 2.5.1 and 2.5.2) will thus eventually be adjusted to better meet demand.~~

~~It shall be possible for the Customer to reevaluate and change the service levels for redistribution on a yearly basis in order to meet demand.~~

~~GoBike compliance grade 1 and answer to requirement:~~

~~Should customer decide to change service level for distribution, bicycle surveillance systems and written service instructions will be changed accordingly. Any major change stipulated by the customer may be subject to revision of the fees associated.~~

~~See Frame agreement appendix D~~

2.6. Service levels for the IT-system

2.6.1. Response time

Req. 11.31 **Measurements in peak load periods**

All measurements shall be made in peak load periods with the actual number of users, assuming that the load is within the defined limits.

GoBike compliance grade 1 and answer to requirement:

This is ensured through our bicycle surveillance system, as well as visual inspection by our technicians.

GoBike will monitor and measure this using GoBike systems.

Pre-booked bicycles, as per Option 10.1, will be regarded as avilable bicycles.

See Frame agreement appendix D

Req. 11.32 **Achievement of goals**

The times specified below must apply for 95% of the measurements.

GoBike compliance grade 1 and answer to requirement:

This is ensured through our bicycle surveillance system, as well as visual inspection by our technicians.

GoBike will monitor and measure this using GoBike systems.

Pre-booked bicycles, as per Option 10.9, will be regarded as avilable bicycles.

See Frame agreement appendix D

Info. 11.4 **Measuring response time**

The Supplier shall describe which requisites are necessary for the stated response times below – such as load (number of users and data), technical set-up (including band width of the network) - to do the measurements.

GoBike compliance grade 1 and answer to requirement:

GoBike regards this info as related to requirement 11.33 through 11.48

See Frame agreement appendix D

Req. 11.33 **Measurements in peak load periods**

All time measurements must be made once a week in the peak load periods.

GoBike compliance grade 1 and answer to requirement:

This is ensured through our bicycle surveillance system. GoBike will monitor and measure this using GoBike systems.

Pre-booked bicycles, as per Option 10.9, will be regarded as avilable bicycles.

See Frame agreement appendix D

Req. 11.34 **Typing speed**

When moving from one field to the next, the user's typing speed must not be slower than 0.2 s.

GoBike compliance grade 1 and answer to requirement:

GoBike will ensure that the system allows typing speed as specified, where typing is done in applications stored directly on the GoBike tablet PC. GoBike cannot be held responsible for third-party applications, applications residing on external storage (i.e. external servers where data-transmission is required) oir the customers ability to obtain the stipulated typing speed.

Measurements are done server-side.

See Frame agreement appendix D

Req. 11.35 **Moving from one screen to the next**

When moving from one screen to the next, data must be visible and typing possible within the mental switching time of 1.3 seconds

GoBike compliance grade 1 and answer to requirement:

GoBike will ensure that the system allows sceen changing speed as specified, where applications are stored directly on the GoBike tablet PC. GoBike cannot be held responsible for third-party applications, applications residing on external storage (i.e. external servers where data-transmission is required). Speed may vary - and possibly exceed stipulated limit - in situations with extreme cold and/or low battery situations, as CPU will reduce operating speed in such conditions.

Measurements are done server-side.

See Frame agreement appendix D

Req. 11.36 **Lookup in drop-down lists**

Lookup in drop-down lists must allow selection from the list within the mental switching time of 1.3 seconds.

GoBike compliance grade 1 and answer to requirement:

GoBike systems attempt to avoid drop-down menus in general. Design and usability is based on active tiles. Whereever drop-downs are unavoidable, GoBike will comply with the specified limit in applications stored locally. Where round-

trip is involved, GoBike cannot be held responsible for connection speed. Further, GoBike can only be held responsible for answeing times on hardware provided and certified by GoBike.

Measurements are done server-side.

See Frame agreement appendix D

Req. 11.37 **Reports used frequently**

Reports used frequently must be visible within the mental switching time of 1.3 seconds.

GoBike compliance grade 1 and answer to requirement:

GoBike will comply with the specified limit in applications stored locally. Where round-trip is involved, GoBike cannot be held responsible for connection speed. Further, GoBike can only be held responsible for answeing times on hardware provided and certified by GoBike.

Measurements are done server-side.

See Frame agreement appendix D

Req. 11.38 **Reports used occasionally**

Reports used occasionally must be visible within 20 seconds.

GoBike compliance grade 1 and answer to requirement:

In general GoBike will comply with the specified limits. However, GoBike reserves the right to exceed the specified limit, where reports contains a complexity exceeding ""normal expectations"" and/or where third-party data are to be included in the report. GoBike can only be held responsible for response times on hardware provided and certified by GoBike. GoBike cannot be held responsible for any data transmission speed (round-trip).

Measurements are done server-side.

See Frame agreement appendix D

Req. 11.39 **Data from external systems**

Data from external systems must be transferred and displayed within 20 seconds. For some time after this, the data must be accessible as fast as other data.

GoBike compliance grade 1 and answer to requirement:

GoBike will render data from external sources within 20 seconds starting from when these data are available to the GoBike systems. Measurement is not to be made from request but from receipt.

Measurements are done server-side.

GoBike systems will cache data locally wherever appropriate to increase operating speed.

See Frame agreement appendix D

Req. 11.40 **Login**

Login must be completed within 10 s.

GoBike compliance grade 1 and answer to requirement:

GoBike will comply with the specified limit in applications stored locally. Where round-trip is involved, GoBike cannot be held responsible for connection speed. Further, GoBike can only be held responsible for answeing times on hardware provided and certified by GoBike.

Measurements are done server-side. In this instance, a user will be validated server side within 10s from receipt of request. Should any third party validation be required, time consumption related hereto is not included in the time-frame.

See Frame agreement appendix D

Req. 11.41 **Repeated login**

Repeated login when the user temporarily has left the system must be completed within 4 s.

GoBike compliance grade 1 and answer to requirement:

GoBike will comply with the specified limit in applications stored locally. Where round-trip is involved, GoBike cannot be held responsible for connection speed. Further, GoBike can only be held responsible for answeing times on hardware provided and certified by GoBike.

Measurements are done server-side. In this instance, a user will be validated server side within 4s from receipt of request. Should any third party validation be required, time consumption related hereto is not included in the time-frame.

See Frame agreement appendix D

2.6.2. Operational efficiency

Regarding availability the system is divided into two categories: back-end system and end user-faced system. The end user-faced system is defined as the part of the system that the end users experience; the back-end system is defined as the remaining part of the system. Where nothing else is described, the requirements are valid for the total system.

The system is out of operation when a substantial part of the user base cannot execute their work tasks as usual. The reasons for the operation stop could be:

1. The user's circumstances, i.e. failure of the user's equipment
2. External failures, i.e. a minor blackout
3. External failures as a result of force majeure
4. Failure in an end user-faced client, including user interface
5. Failure of communication between the client and back-end
6. Failure in the data typed by the users (particular by the product manager)
7. The Supplier's circumstances, i.e. failure of hardware or basis software
8. Application failure
9. Planned maintenance
10. Insufficient hardware capacity

In the statements only those operation stops are calculated, that are base on the Supplier's circumstances (reason 2, 4, 5, 7, 8 and 10).

Req. 11.42 **Measurement of operational efficiency**

The operation time within a period is calculated as the period's total length minus the total length of the operation stops for which the Supplier is responsible. The

operation efficiency for the system will be measured in total and is calculated like this:

Available operation time x 100 %
_____
Agreed operation time

GoBike compliance grade 1 and answer to requirement:

Read and agreed.

See Frame agreement appendix D

Req. 11.43 **Monthly statements**

The Supplier shall assess the availability on a monthly basis with regards to the calendar months and notify the Customer of their assessments.

GoBike compliance grade 1 and answer to requirement:

Read and agreed.

See Frame agreement appendix D

Req. 11.44 **Operational efficiency for the administration system (back end)**

The back end system is to be seen as an 8-16/5 system, which is available during ordinary office hours five (5) days a week. The Supplier shall provide an administration system with an operational efficiency of 95%.

GoBike compliance grade 1 and answer to requirement:

Read and agreed.

Maintenance, upgrades, service packs etc will be carried out outside the stipulated operation hours.

See Frame agreement appendix D

~~**Req. 11.45 Operational efficiency for the front-end**~~

~~The end user faced system is to be seen as a 24/7/365 system, which is available 24 hours, 7 days per week, 365 days per year. The Supplier shall provide a front end system with an operational efficiency of 99,5%.~~

~~**GoBike compliance grade 1 and answer to requirement:**~~

~~Read and agreed.~~

~~Maintenance, upgrades, service packs etc will be carried out outside the stipulated operation hours.~~

~~GoBike cannot be held responsible for any third-party impact on GoBike systems, systems infrastructure or hardware infrastructure, including power loss, malhandling, bugs not registrered duing testing phases etc.~~

~~GoBike accepts reliability for errors reported as part of the test-cycle and pre-launch phase. Furthermore, GoBike will initiate immediate correction should any errors occur or be identified at a later stage. Errors in this regard are – as stated – to be defined as errors in deliverables by GoBike directly. Any third-party influenze is not to be regarded as a GoBike error.~~

~~See Frame agreement appendix D~~

See appendix D: SLA

2.7. Service levels for documentation

The Supplier shall on his own initiative document and submit the statement on service Levels.

Info. 11.5 Documentation of service levels

The Supplier shall on a monthly basis submit documentation to the Customer for the previous month's compliance with the service levels. The documentation shall be submitted no later than ten (10) work days after change of month. The documentation is to be called the "Operations report". The Operations report shall include documentation of:

- Continuous tracking of measurements of communication connections and execution of operation

- Analysis of statistics about response times, availability and strain
- Overall description of status and development
- Reporting on all service Levels and suggestions for changes, which if necessary have to be launched in order to improve the service Levels
- Capacity utilization – how many bicycles are in use among the end user
- Deviation in operation, i.e. extract from failure log
- information on potentially arising failures, reaction times, cause and error correction in the period of measurement
- Constant review of consequences on performance in connection with the Customer's or the Supplier's planned changes for the system landscape, functionality and consumption pattern
- Can be stated per municipality or per a group of municipalities

GoBike compliance grade 1 and answer to requirement:

Read and agreed.

Req. 11.46 **Control of service level**

The Customer can control the fulfillment of the service level by inspection. At the Customers request the Supplier shall provide the necessary data and documentation for review.

GoBike compliance grade 1 and answer to requirement:

Read and agreed.

See Frame agreement appendix D

Req. 11.47 **Period of measurement**

The operational efficiency is measured and assessed daily as regards the service levels in sections 2.2, 2.3, 2.4 og 2.5. The operational efficiency of the IT-system is measured and assessed 1 month at a time. The Supplier shall assure that accounts for operation times are kept.

GoBike compliance grade 1 and answer to requirement:

Read and agreed.

See Frame agreement appendix D

2.8. Supplier's obligation for initiative

Req. 11.48 **Supplier's obligation for initiative on lacking fulfillment of service level**

If the determined service levels are not fulfilled during the whole contract period (that is also during the 3 months penalty free starting period and in terms of redistribution), the Supplier shall:

- Provide a written proposal for improvements. The proposal shall be received by the Customer no later than 3 working days after the Supplier ascertained that the service level can not be fulfilled
- The proposal shall be approved by the Customer
- The Supplier shall be able to meet with the Customer within 4 days after the Customer's receipt of the proposal with regards to deliberation and approval of it
- The initiatives shall not impose any additional cost for the Customer

GoBike compliance grade 1 and answer to requirement:

Read and agreed.

See Frame agreement appendix D

3. Compliance list

The compliance with the requirements can be graded. The Supplier must enclose a completed compliance overview with statements regarding whether and how the requirements are met.

The compliance grade shall be given according to the following graduation principle:

1 - Corresponding to “completely fulfilled”
2 - Corresponding to “partly fulfilled”
3 - Corresponding to “not fulfilled”

Note: The statement of the compliance grade ”partly fulfilled” or ”not fulfilled” certainly constitutes a reservation.

Minimum requirements are not part of this list, as it will directly be “not conditional” if the Supplier doesn’t fulfill these.

In case the Supplier chooses to state the compliance grade as “partly fulfilled” for a requirement, the Supplier shall always account for the at least the following conditions in the comment field:

- Which shortcomings there are in the offered solution compared to the initial described requirement
- Which consequences the shortcomings will have for the Customer respectively end user
- Which possibilities there are to compensate for the described shortcomings

In case the Supplier does not state anything in column ”compliance grade”, this will be considered as compliance grade 3 and therefore as not fulfilled in the tender.

Response to Info requirements
For responses to an info requirement, it shall be stated in the comment field of the compliance list, where in the tender the response can be found.

ID	Page	Specification	Compliance grade 1, 2 or 3	Comments
Req. 11.1	2	Definition of regular operation time	1	
Req. 11.2	2	Definition of peak hour	1	
Req. 11.3	3	Definition of bicycle availability	1	
Req. 11.4	3	Definition of docking points unavailability	1	
Req. 11.5	3	Measurement of availability	1	
Req. 11.6	3	Definition of payment machine availability	**Invalid**	
Req. 11.7	3	Definition of an empty station	1	
Req. 11.8	3	Definition of a full station	1	
Req. 11.9	3	Definition of response time	1	
Req. 11.10	4	Bicycle availability – daily minimum	1	
Req. 11.11	4	Bicycle availability – peak hours	1	
Req. 11.12	4	Repair of bicycle	1	
Req. 11.13	4	Requiring repair	1	
Req. 11.14	4	Functional bicycle	1	
Info. 11.1	5	Operational efficiency for functional bicycles	1	
Req. 11.15	5	Docking point availability – daily minimum	1	
Req. 11.16	5	Repaired or replaced docking points	1	
Info. 11.2	5	Operational efficiency for functional docking points	1	
Req. 11.17	5	Repaired or replaced payment machines	**Invalid**	
Req. 11.18	5	Payment machine availability – daily minimum	**Invalid**	
Req. 11.19	6	Payment machine availability – peak hours	**Invalid**	
Info. 11.3	6	Operational efficiency for functional payment machine	**Invalid**	
Req. 11.20	6	Classification of Priority 1 and Priority 2 stations	1	
Req. 11.21	6	Obligation to initiate redistribution	1	
Req. 11.22	6	Measurement of an empty station	1	
Req. 11.23	6	Empty stations at the beginning of the day	1	
Req. 11.24	7	Empty stations throughout the day	1	
Req. 11.25	7	Empty priority 1 stations throughout the day	1	
Req. 11.26	7	Measurement of a full station	1	
Req. 11.27	7	Full stations at the beginning of the day	1	
Req. 11.28	7	Full stations throughout the day	1	
Req. 11.29	7	Full Priority 1 stations throughout the day	1	
Req. 11.30	7	Quality check of the service level for redistribution	1	
Req. 11.31	8	Measurements in peak load periods	1	
Req. 11.32	8	Achievement of goals	1	
Info. 11.4	8	Measuring response time	1	
Req. 11.33	8	Measurements in peak load periods	1	
Req. 11.34	8	Typing speed	1	

ID	Page	Specification	Compliance grade 1, 2 or 3	Comments
Req. 11.35	8	Moving from one screen to the next	1	
Req. 11.36	8	Lookup in drop-down lists	1	
Req. 11.37	8	Reports used frequently	1	
Req. 11.38	9	Reports used occasionally	1	
Req. 11.39	9	Data from external systems	1	
Req. 11.40	9	Login	1	
Req. 11.41	9	Repeated login	1	
Req. 11.42	10	Measurement of operational efficiency	1	
Req. 11.43	10	Monthly statements	1	
Req. 11.44	10	Operational efficiency for the administration system (back end)	1	
Req. 11.45	10	Operational efficiency for the front-end	1	
Info. 11.5	10	Documentation of service levels	1	
Req. 11.46	11	Control of service level	1	
Req. 11.47	11	Period of measurement	1	

Appendix 12
Compensation

Bike-sharing system

October 15th 2012

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1. Introduction

This appendix describes the penalty model which the Supplier is responsible for during the Term of the Orders. The penalty model will give rise to the financial liability for which the Supplier shall be responsible to the Customer.

Service levels and milestones for which the Supplier is responsible are subject to penalties. The service levels are described in Appendix 11 – "Service Level Agreement" (SLA) and Appendix 6 – "Process for Installation".

GUIDELINES FOR TENDERER

This appendix contains a range of requirements. Based on these requirements the Tenderer shall complete the Compliance list at the end of this appendix.

2. General clauses for penalty

2.1. Penalty-free start period on the requirements regarding redistribution

During the first three (3) months of operation the Customer will not penalize the Supplier for not meeting the requirement redistribution service level requirements. Also as the system expands throughout the country, the Supplier will again have a three (3) month grace period in each new municipality where the system has expanded.

The penalty-free start period is created with the objective of obtaining concrete experiences with the need for redistribution, so that the Supplier has the possibility of optimizing its redistribution towards the actual need without being penalized. In return, it is expected that within this period the Supplier shall implement immediate initiatives to improve the conditions where the Customer or the Supplier ascertained that the Supplier doesn't live up to his obligations regarding redistribution, as described in Appendix 11 – "Service Level Agreements".

2.2. Penalty statement

Req. 12.1 **Penalty statement**

Concerning redistribution, availability of bicycles, docking points and payment machines, the Supplier's operational efficiency shall be measured each day.

The Supplier's overall penalty statement shall be calculated each month for each municipality or where this is agreed specifically with the Customer, per order, where several municipalities are part of an order.

For the IT system, the Supplier's total penalty statement shall be calculated each month for the whole system.

The Supplier shall calculate all Penalty statements. The Customer shall occasionally check the Supplier's calculations.

The Customer’s requirement for the Supplier’s Operating fee for penalties shall be paid by the Supplier to the Customer quarterly, based on the three previous calendar months.

GoBike compliance grade 1 and answer to requirement:

Gobike will submit consolidated penalty statements on a monthly basis. These statements will provide the required informaiton on operational efficiency of the system, its components as well as the redistribution. The Statements will include the associated penalty caculations for for the whole system for the given month. Gobike will submit, no longer than 3 months after frame agreement signature, a proposal for the format and content of the Penalty Statement for Customer approval.

3. Penalty

Lacking fulfillment of the following service levels and milestones results in the penalty described below:

The service levels of Appendix 11 – "Service Level Agreement" that are subject to a penalty payment are:

- Operational efficiency for bicycles' availability (requirements 11.10 and 11.11)
- Operational efficiency for docking points' availability (requirement 11.15)
- Operational efficiency for payment machines (requirement 11.18)
- Operational efficiency for redistribution (requirements 11.24, 11.25, 11.28 and 11.29)
- Operational efficiency for front end IT system (requirement 11.45)

If the Supplier does not fulfill these service levels in accordance with Appendix 11 – "Service Level Agreement", penalty points for the lack of fulfillment will be imposed on the Supplier.

Below the milestones of Appendix 6 – "Process for Installation" that are subject to penalty payments are:

- Milestone – Launch date

If the Supplier does not fulfill these service levels in accordance with Appendix 6 – "Process for Installation", daily penalties will be imposed on the Supplier.

3.1. Penalty for operational efficiency for bicycles' availability

~~**Req. 12.2 Operational efficiency for bicycles' availability – daily minimum**~~

~~The following penalty applies to the service level of operational efficiency for bicycles' availability (req. 11.10):~~

~~Penalty occurs when:~~	~~Under 90%~~	~~90% - 93%~~	~~93,1% – 94,9%~~
~~Req. 11.10 in SLA regarding the bicycles' 95% availability during the whole day~~	~~3 points per 1%~~	~~2 points per 1%~~	~~1 point per 1%~~

~~GoBike compliance grade 1 and answer to requirement:~~

~~Completely fulfilled.~~

Example:
In a scenario where it is agreed that 3.500 bicycles shall be available, but where in one month in average only 3.115 bicycles are registered as available, an operational efficiency of 89% exists. The Supplier shall be penalized for the month in question with 540 points in total, according to the following calculation:

3.325 bicycles = 95% operational efficiency
3.115 bicycles = 89% operational efficiency

((95% - 89%) x 3 points) x 30 days = 540 points

~~Req. 12.3 Operational efficiency for bicycles' availability - peak hours~~

~~The following penalty applies to the service level on operational efficiency for bicycles' availability during peak hours (req. 11.11):~~

~~Penalty occurs when:~~	~~Under 90%~~	~~90% - 93%~~	~~93,1% – 95%~~
~~Req. 11.11 in SLA regarding the bicycles 95% availability during peak hours is not fulfilled~~	~~6 points per 1%~~	~~3 points per 1%~~	~~2 points per 1%~~

~~GoBike compliance grade 1 and answer to requirement:~~

~~Completely fulfilled.~~

3.2. Operational efficiency for docking points

~~Req. 12.4 Operational efficiency for docking points during – daily minimum~~

~~The following penalty applies to the service level on operation efficiency for docking points during the whole day:~~

~~Penalty occurs when~~	~~Under 90%~~	~~90% - 93%~~	~~93,1% – 94,9%~~
~~Req. 11.15 in SLA regarding docking points' 95% availability during the whole day~~	~~3 points per 1%~~	~~2 points per 1%~~	~~1 point per 1%~~

GoBike compliance grade 1 and answer to requirement:

Completely fulfilled.

3.3. Operational efficiency for payment machines

Req. 12.5 ***Operational efficiency for payment machines – daily minimum***

The following penalty applies to the service level on operation efficiency for payment machines during the whole day:

Penalty occurs when	*Under 90%*	*90% - 93%*	*93,1% – 95%*
Req.11.18 in SLA regarding payment machine 95% availability during the whole day	*30 points per 1%*	*20 points per 1%*	*10 points per 1%*

GoBike compliance grade 1 and answer to requirement:

Completely fulfilled.

3.4. Operational efficiency for redistribution

Req. 12.6 **Operational efficiency for redistribution (Empty stations)**

The following penalty applies to the service level on operational efficiency for redistribution (req. 11.24):

Penalty occurs when	Up to 1 hour	Up to 2 hours	Up to 3 hours or more
Req.11.24 in SLA regarding stations shall not be empty more than 4 hours is exceeded by	10 points	20 points	30 points

GoBike compliance grade 1 and answer to requirement:

Completely fulfilled.

Example:

In a scenario, where all stations on average are empty for four (4) hours per day; this means that the Supplier for the concerned month is penalized by 1.800 points in total, according to the following calculation:

Exceeding of 4 hours = 30 points for the first 3 hours + 30 points for the 4th hour = 60 points per day

Per month: 60 points x 30 days = 1.800 points

~~Req. 12.7 Operational efficiency for redistribution (Empty Priority 1 stations)~~

~~The following penalty applies to the service level on operational efficiency for redistribution (req. 11.25):~~

~~Penalty occurs when~~	~~Up to 30 minutes~~	~~Up to 45 minutes~~	~~Up to 1 hour or more~~
~~Req.11.25 in SLA regarding Priority 1 docking stations shall not be empty for longer than 60 minutes is exceeded by~~	~~10 points~~	~~20 points~~	~~30 points~~

~~GoBike compliance grade 1 and answer to requirement:~~

~~Completely fulfilled.~~

~~Req. 12.8 Operational efficiency for redistribution (Full stations)~~

~~The following penalty applies to the service level on operational efficiency for redistribution (req. 11.28):~~

~~Penalty occurs when~~	~~Up to 1 hour~~	~~Up to 2 hours~~	~~Up to 3 hours or more~~
~~Req. 11.28 in SLA regarding stations shall not be full more than 4 hours is exceeded by~~	~~10 points~~	~~20 points~~	~~30 points~~

~~GoBike compliance grade 1 and answer to requirement:~~

~~Completely fulfilled.~~

~~Req. 12.9 Operational efficiency for redistribution (Full Priority 1 stations)~~

~~The following penalty applies to the service level on operational efficiency for redistribution (req. 11.29):~~

~~Penalty occurs when~~	~~Up to 30 minutes~~	~~Up to 45 minutes~~	~~Up to 1 hour or more~~
~~Req. 11.29 in SLA regarding Priority 1stations shall not be full for a single period longer than 60 minutes is exceeded by~~	~~10 points~~	~~20 points~~	~~30 points~~

~~**GoBike compliance grade 1 and answer to requirement:**~~

~~Completely fulfilled.~~

3.5. Operational efficiency for the IT system

~~**Req. 12.10 Operational efficiency for the IT system**~~

~~The following penalty applies for service levels on operational efficiency:~~

~~Penalty occurs when~~	~~Under 95%~~	~~95% - 98%~~	~~98,1% – 99,4%~~
~~Req. 11.45 in SLA regarding operation efficiency of 99,5% for front end is exceeded by~~	~~9000 points per 1%~~	~~6000 points per 1%~~	~~3000 points per 1%~~

~~**GoBike compliance grade 1 and answer to requirement:**~~

~~Completely fulfilled.~~

3.6. Fulfillment of milestones

The following penalty applies for lacking fulfillment of milestones, see Appendix 6 Process for Installation.

Req. 12.11 Fulfillment of milestones

A daily penalty is imposed on the Supplier for each calendar day after the launch date that is exceeded, according to Appendix 6 Process for Installation.

GoBike compliance grade 1 and answer to requirement:

Completely fulfilled.

4. Calculation of penalty amount

4.1. Penalty in connection with service levels

Based on the monthly penalty statement, the total number of points the Supplier is imposed as a consequence of lacking fulfillment of the chosen service levels is calculated below. The number of points determines the amount of the penalty in the way that the greater the number of points equates to the bigger the penalty.

The penalty in connection with service levels composes a percentage of the Supplier's total Operating fee according to Appendix 15 Prices. The amount of the penalty can as a maximum compose 75% of the Supplier's Operating fee.

If the penalty three times during the entire Term of the Agreement compose 50% or more this will be considered as a material violation.

As the Customer wants to choose between three (3) different bonus models (see Appendix 13 – "Incentives"), that are expected to have different amounts of Operating fee depending on the size of the bonus, the penalty amount will be regulated according to the bonus model that is chosen. In bonus model 2 the Supplier's bonus is expected to be relatively large and the Operating fee smaller compared to bonus model 1. Hence, a poor service performance by the Supplier in bonus model 2 will directly influence the payment to the Supplier's, as the bonus is reduced. Due to this regulation of the Supplier's payment, the penalty amount is reduced in bonus model 1.

Below the regulation of the penalties for ~~bonus model 1 and bonus model 2~~ is shown:

Regulation of penalty	~~Bonus model 1~~	~~Bonus model 2~~	Bonus model 3
For each 100 points the Operating fee is diminished by:	~~0,15%~~	~~0,05%~~	0,X%

Below are an example for the calculations of points per month and their conversion into penalty.

Example

-	**Service level**	**Measured service level**	**Difference compared to SLA**	**Points / unit**	**Points / day**	**Points / month**
Req.11.10 in SLA regarding the bicycles' 95% availability the whole day	95%	89%	6%	3	18	540
Req. 11.11 in SLA regarding the bicycles' 95% availability during peak hours is not fulfilled	95%	89%	6%	6	36	1080
Req. 11.15 in SLA regarding the docking points' 95% availability during the whole day	95%	89%	6%	3	18	540
Req. 11.18 in SLA regarding the payment machines' 95% availability the whole day	95%	89%	6%	30	180	5400
Req. 11.24 in SLA regarding docking stations (ds) shall not be empty more than 4 hours is exceeded by	4 hours	8 hours	4 hours	30 for the first 3 hours and 30 for the 4th hour	60	1800
Req. 11.25 in SLA regarding priority 1 docking stations shall not be empty for a single period longer than 60 minutes is exceeded by	60 min.	2 1/2 hours	11/1 hour	30 for the first hour and 30 for the 2nd	60	1800
Req. 11.28 in SLA regarding docking stations (ds) shall not be full more than 4 hours is exceeded by	4 hours	8 hours	4 hours	30 for the first 3 hours and 30 for the 4th	60	1800
Req. 11.29 in SLA regarding Priority 1docking stations shall not be full for a single period longer than 60 minutes is exceeded by	60 min.	2 1/2 hours	1 1/2 hour	30 for the first hour and 30 for the 2nd	60	1800
Req. 11.45 in SLA regarding operation efficiency of 99,5% for front end is exceeded by	99,5%	98%	1,5%	9000	N/A	13500
Total points / month						**28260**

See appendix D: SLA

Based on above calculation of points, the Supplier's Operating fee will be regulated in the two bonus models as follows:

Bonus model 1
Reduction of Operating fee: 28.260 x 0,001 = 42,39%

~~Bonus model 2:~~
~~Reduction of Operating fee: 28.260 x 0,0003 = 14,13%~~

~~In bonus model 1 a monthly statement of 28.260 points means a reduction of the Supplier's Operating fee of 43,39% and in bonus model 2 the reduction of the Supplier's Operating fee will be 13,88%.~~

4.2. Penalty in connection with milestones

With lacking fulfillment of milestones, see Appendix 6 – "Process for Installation", a penalty in the form of a daily penalty is imposed on the Supplier. The penalty is calculated as a percentage of the Supplier's Establishment fee, see Appendix 15 – "Prices".

Penalty occurs	Per calendar day
For each calendar day after the launch date that is exceeded, the Supplier's Establishment fee is diminished by	1,00%

Example:
In a scenario, where a Customer have placed an Order where the Establishment fee compose an amount of DKK 1 mio., and the Launch date is delayed with 5 calendar days in relation to agreed, this means that the Supplier is penalized by DK 50,000, according to the following calculation:

Penalty each calendar day = DKK 1,000,000 * 1,00% = DKK 10,000
Total penalty = DKK 10,000 x 5 calendar days = DKK 50.000

5. Compliance list

The compliance with the requirements can be graded. The Supplier must enclose a completed compliance overview with statements regarding whether and how the requirements are met.

The compliance grade shall be given according to the following graduation principle:

1 - Corresponding to “completely fulfilled”
2 - Corresponding to “partly fulfilled”
3 - Corresponding to “not fulfilled”

Note: The statement of the compliance grade ”partly fulfilled” or ”not fulfilled” constitutes a reservation.

Minimum requirements are not part of this list, as it will directly be “not conditional” if the Supplier doesn’t fulfill these.

In case the Supplier chooses to state the compliance grade as “partly fulfilled” for a requirement, the Supplier shall always account for the at least the following conditions in the comment field:

- Which shortcomings there are in the offered solution compared to the initial described requirement
- Which consequences the shortcomings will have for the Customer respectively end user
- Which possibilities there are to compensate for the described shortcomings

In case the Supplier does not state anything in column ”compliance grade”, this will be considered as compliance grade 3 and therefore as not fulfilled in the tender.

Response to Info requirements
For responses to an info requirement, it shall be stated in the comment field of the compliance list, where in the tender the response can be found.

ID	Page	Specification	Compliance grade 1, 2 og 3	Comment
Req. 12.1	4	Penalty statement		
Req. 12.2	6	Operational efficiency for bicycles' availability – daily minimum		
Req. 12.3	7	Operational efficiency for bicycles' availability - peak hours		
Req. 12.4	7	Operational efficiency for docking points during – daily minimum		
Req. 12.5	7	Operational efficiency for payment machines – daily minimum		
Req. 12.6	8	Operational efficiency for redistribution (Empty stations)		
Req. 12.7	8	Operational efficiency for redistribution (Empty Priority 1 stations)		
Req. 12.8	9	Operational efficiency for redistribution (Full stations)		
Req. 12.9	9	Operational efficiency for redistribution (Full Priority 1 stations)		
Req. 12.10	9	Operational efficiency for the IT system		
Req. 12.11	9	Fulfillment of milestones		

Appendix 13
Incentives

Bike-sharing system

October 15th 2012

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1. Introduction

This appendix describes the bonus models (incentive models) to which the Supplier can be assigned during the Term of the Orders. The bonus models will give rise to financial regulation of the Operating fee the Supplier receives from the Customer.

~~The Customer has chosen first to determine the final bonus model for the operation and establishment of bike-sharing system after receipt of tenders as the Customer wants to get the 3 different bonus models prices. The chosen bonus model depends partly on the cost-level of the three models and the difference between them.~~

GUIDELINES FOR TENDERER

Appendix 13 contains only minimum requirements and shall be fulfilled by the Tenderer. The Appendix with exception of bonus model 3 is final and cannot be commented or modified.

Any markings, comments or modifications by the Tenderer outside sections designated thereto, or which are not compliant with the additional guidelines will be disregarded and not be considered part of the tender, and they will be deleted and not be reflected in the signature version of the document.

If the Tenderer has any reservations to this Appendix, the Tenderer shall describe these reservations in the Reservations List appended to the Tender Conditions.

2. Bonus model

The Customer wants a bonus model wherein the Supplier's remuneration for operation and maintenance of the system is based on a fixed as well as a variable part, depending on the system's success. This is done in order to ensure that the Supplier is motivated to optimize the system in a way that the end user always gets a good experience when using the bike-sharing system.

The system's success can be measured in several ways and it is important for the Customer that it is easy to do ongoing measurements and that the Key Performance Indicators (KPI's) are transparent. It is the Customer's perception that the end users' use of bicycles is a particularly suitable indicator for the system's success, as potential inconveniences in the system – whether it is about insufficient redistribution or broken bicycles -- will to a high extent be reflected in the use of bicycles.

Hence, the following KPI's were chosen to make up the Supplier's bonus:

1. Number of rentals
2. Number of hours a bicycle is rented

A successful system will result in many rentals, thus, this KPI weighs most. The number of rentals can vary highly depending on whether the rentals are done by ad-hoc users, which most often need the bicycle for shorter periods, or if the rentals are made by commuters, which most often need the bicycle for longer periods.

In order to ensure that the Supplier considers both groups and not only ad-hoc users, a KPI for the number of hours the bicycles are rented will exist as well.

2.1. Three bonus models

~~The Customer has not yet determined the desired bonus model to which the Supplier shall be assigned when establishing and operating the bike-sharing system. Before a decision of the final choice of bonus model can be made, the Customer wants to get the three different models priced.~~

~~The choice of the bonus model depends partly on the cost level in the three models as well as on the difference between these.~~

~~Below, the three bonus models are described.~~

~~2.1.1. Bonus model 1 (minor bonus)~~

~~In bonus model 1 the bonus composes a minor part in relation to the Supplier's total Operating fee. Below, the model for the bonus the Supplier is given is shown.~~

~~Bonus occurs:~~	~~Up to 20 million DKK/year~~	~~Over 20 Million DKK/year~~
~~Every time a bicycle is rented~~	~~0,50 DKK/rental~~	~~0,25 DKK per rental~~
~~For each started hour a bicycle is rented~~	~~0,16 DKK/hour~~	~~0,08 DKK/hour~~

~~The bonus per unit is cut in half when the Supplier's total yearly Operating fee including bonus constitutes 20 Million DKK/year.~~

~~2.1.2. Bonus model 2 (bigger bonus)~~

~~In bonus model 2 the Supplier is assigned to a model, in which the bonus composes a substantial part in relation to the Supplier's total Operating fee. Below, the model for the bonus the Supplier is given is shown.~~

~~Bonus occurs:~~	~~Up to 20 million DKK/year~~	~~Over 20 Million DKK/year~~
~~Every time a bicycle is rented~~	~~6,00 DKK/rental~~	~~3,00 DKK/rental~~
~~For each started hour a bicycle is rented~~	~~2,00 DKK/rental~~	~~1,00 DKK/rental~~

~~The bonus per unit is cut in half when the Supplier's total yearly Operating fee including bonus constitutes 20 Million DKK/year.~~

2.1.3. Bonus model 3 (optional model)

In bonus model 3 the Supplier has the option to suggest the model it prefers. It shall however still be based on the previously named KPI's.

Info.req. 13.1 Bonus model 3

The Supplier shall complete the following table for bonus model 3:

Bonus occurs:	Up to 20 mio. DKK/year	Over 20 Mio. DKK/year
Every time a bicycle is rented	XX DKK/rental	XX DKK/rental
For each started hour a bicycle is rented	XX DKK/rental	XX DKK/rental

GoBike compliance grade 1 and answer to requirement:

3. Compliance list

The compliance with the requirements can be graded. The Supplier must enclose a completed compliance overview with statements regarding whether and how the requirements are met.

The compliance grade shall be given according to the following graduation principle:

1 - Corresponding to “completely fulfilled”
2 - Corresponding to “partly fulfilled”
3 - Corresponding to “not fulfilled”

Note: The statement of the compliance grade ”partly fulfilled” or ”not fulfilled” constitutes a reservation.

Minimum requirements are not part of this list, as it will directly be “not conditional” if the Supplier doesn’t fulfill these.

In case the Supplier chooses to state the compliance grade as “partly fulfilled” for a requirement, the Supplier shall always account for the at least the following conditions in the comment field:

- Which shortcomings there are in the offered solution compared to the initial described requirement
- Which consequences the shortcomings will have for the Customer respectively end user
- Which possibilities there are to compensate for the described shortcomings

In case the Supplier does not state anything in column ”compliance grade”, this will be considered as compliance grade 3 and therefore as not fulfilled in the tender.

Response to Info requirements
For responses to an info requirement, it shall be stated in the comment field of the compliance list, where in the tender the response can be found.

ID	Specification	Compliance grade 1, 2 or 3	Comments
Info.req. 13.1	Bonus model 3		

Appendix 14
Guarantees and Warranties

Bike-sharing system

October 15th 2012

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1. Introduction

GUIDELINES FOR TENDERER

Appendix 14 contains only minimum requirements and shall be fulfilled by the Tenderer. The Appendix is final and cannot be commented or modified.

Any markings, comments or modifications by the Tenderer outside sections designated thereto, or which are not compliant with the additional guidelines will be disregarded and not be considered part of the tender, and they will be deleted and not be reflected in the signature version of the document.

If the Tenderer has any reservations to this Appendix, the Tenderer shall describe these reservations in the Reservations List appended to the Tender Conditions.

2. Guarantee requirement

The Supplier guarantees that every deliverable with reference to the agreement fulfills the requirements specified by Customer and is faultless. ~~The guarantee applies for a period of 24 months counted from delivery on. For all spare parts the guarantee period is however first counted from the installation day on. Additionally, the ordinary limitation rules concerning defect responsibility given by Danish law applies.~~

~~The Supplier commits to administrate and manage the guarantee. This means that the components that are part of the deliverable shall be traceable, f. ex. via a number system.~~

~~If during the guarantee period fault or defects of a deliverable are ascertained, shall the Customer without unfounded delay inform the Supplier.~~
~~The Supplier shall according to the Customer's choice and without costs for Customer do a replacement or repair the faulty/defect deliverable. The Customer is legitimated to get credited time, which is used in connection with reclamation and repairmen of the fault or defect, with an hourly rate of 400 DKK, excl. VAT. The replacement of the whole or part of the deliverable shall be done in accordance with the delivery conditions of the agreement.~~

~~If the Supplier doesn't carry out the repairs without unfounded delay, The Customer is legitimated to repair the ascertained faults or defects on the Suppliers account and risk.~~

~~If the Supplier doesn't carry out the replacement without unfounded delay, the Customer is legitimated to buy a replacement deliverable from a third part on the Suppliers account and risk.~~

~~The deliverable or parts of it, which is replaced or repaired in accordance with the guarantee, is included in a new guarantee period of 24 months from the time of replacement or the Customer's approval of the repaired deliverable.~~

~~The Customer's approach to investigate the deliverable before or at delivery, does not withdraw Customer's rights with reference to the Agreement and ordinary Danish law rules.~~

Appendix 15 Prices

Bike-sharing system

October 5th 2012

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1. Introduction

This Appendix comprises this document and a price overview to be filled in by the Supplier. ~~The Customer prefers not to decide on a specific business model until the Customer has received the tender from the Supplier. The Customer requests prices for three different bonus models and will subsequently choose the model that is most favourable. The Supplier is therefore requested to submit tenders for three different bonus models, see Appendix 13.~~

~~The Customer requests prices for two packages, see Appendix 4 Solution Description, as the municipalities/major customers wishing to buy access to a city and commuter bicycle system may have various wishes concerning a set-up, including who will undertake responsibility for the maintenance and redistribution tasks. Consequently, the Supplier is required to submit a tender for the two packages for each of the three above-mentioned bonus models – a total of six price plans that all reflect a potential set-up.~~

~~Each plan also contains a number of options for which the Customer requests prices.~~

GUIDELINES FOR TENDERER

The Tenderer shall prepare a response to the Appendix in connection with preparing the tender for the Framework Agreement. Appendix 15 Prices contains only minimum requirements and shall be fulfilled by the Tenderer.

Any markings, comments or modifications by the Tenderer outside sections designated thereto, or which are not compliant with the additional guidelines will be disregarded and not be considered part of the tender, and they will be deleted and not be reflected in the signature version of the document.

If the Tenderer has any reservations to this Appendix, the Tenderer shall describe these reservations in the Reservations List appended to the Tender Conditions.

Remuneration and prices not listed in this Appendix will be of no concern to the Customer.

2. General terms and conditions

- All prices are in Danish kroner. The prices include customs duties and other direct and indirect taxes applicable when the Framework Agreement is signed, exclusive of VAT.

- The remuneration is fixed and includes transport, meals and accommodation for the Supplier's employees.

- However, long trips and stays may be reimbursed by the Customer if agreed in advance. In such cases, this will always be in compliance with applicable Danish legislation.

- Licences must be settled on deployment if this cost is relevant to the Customer.

- All remuneration monthly, annual, plus variable will be paid when the service is delivered and follows the payment terms and conditions defined in the Agreement.

- All prices in remuneration, prices and hourly rates are fixed for the first 12 months of the term of the Agreement. They will subsequently be adjusted in accordance with the net price index.

- The prices submitted must be submitted taking into account that an incentive model is built into the billing and settlement with the Supplier.

- ~~As a rule, the Customer expects all services to be paid for after delivery and receipt of goods/approval by the Customer. Payment for turn-key deliveries is due only when the acceptance test and operating test have been approved by the Customer. The Customer requests 90% of the payment to be payable 60 days after the approved operating test, with the remaining 10% to be payable when the guarantee period expires. If the Supplier prefers another model, the Supplier must propose one or more models. The proposals will influence the overall evaluation of the Supplier's tender.~~

3. Completion of the Price schemes

The Supplier shall fill in the Price schemes based on the assumption that the Customer owns hardware (bicycles, docking points and payment machines).

The Supplier is required to price each area as a unit price per unit including installation and set-up. The price must reflect the total number required for use p.a. If a larger number has no impact on the price, the same price must be entered in the field as in the field where the smaller number is stated. NB: The price in items 3 and 4 must be stated per docking point. Only shaded fields (in light brown) are to be filled in.

3.1. Price schemes for three bonus models and two packages

Six versions of the Price schemes must be filled in – one scheme for each of the three bonus models (see Appendix 13), which covers the two packages (see Appendix 4). The pricing of packages under the three bonus models must reflect the individual bonus model. Below, the six scenarios to be priced are stated.

	Package 1 (App. 4)	**Package 2 (App. 4)**
Bonus model 1	Package 1 with bonus model 1	Package 2 with bonus model 1
Bonus model 2	Package 1 with bonus model 2	Package 2 with bonus model 2
Bonus model 3	Package 1 with bonus model 3	Package 2 with bonus model 3

The Customer expects the Supplier's prices for operation and maintenance tasks (in package 1) to be independent of the geographical placement, unless the Supplier specifically specifies exceptions in this regard. In cases where the Supplier specifies exceptions, a precise description must be provided of the assumptions under which the exception applies.

~~Package 2 is a reduced package in relation to package 1, as redistribution and maintenance are not part of the tender. The parts that are deleted in connection with package 2 are marked in the price plan.~~

~~Item 2.3 Expanding the IT system to include a new municipality~~
~~The prices for expanding the IT system to include a new municipality must be stated for each new municipality where adjustment of the IT system is required in relation to new prices, terms and conditions, etc. Expansion of the system to include a municipality where adjustment of the system is not required is therefore considered to be part of the existing system.~~

~~Item 5:~~ The Supplier shall account for the annual average power consumption of the various hW units. The Supplier shall account for assumptions concerning power consumption, if applicable. The consumption is calculated in kWh per hardware unit per year. The noted consumption is an average for a normal year. The price per kWh must be set in the tender evaluation at DKK 2.00.

The Operating fee and Establishment fee are marked in the Price schemes. The marking must be used, amongst other things, to clarify the penalty/bonus criteria.

~~3.2. Price scheme Further Services~~

~~In connection with operating the bicycle system, the need will arise to adjust the placement, expand, phase out and include new business areas. The Customer therefore requests the Supplier to price the service/work/costs associated with these services. Establishment is not included, as this is expected to be included in the price of a docking point. NB: Differentiated pricing may be involved depending on the surface (asphalt, gravel, stone, grass, etc.). The specific prices for the individual surfaces must be stated in the price plan. If the prices are identical, the same prices must be entered in all the fields so that all the fields are filled in.~~

3.3. Price scheme Reports

The Supplier shall make available to the Customer a number of standard reports as part of the regular service. ~~Depending on which reports the Supplier makes available to the Customer and the potential future needs that may arise, the need may arise for new standard reports to be designed or a special report to be pur-~~

~~chased on an hourly basis. Prices are required for both parts. The standard report as a unit price and the special report stated as a package with 10 hours (also a unit price), see price plan items 7.1 and 7.2.~~

~~3.4. Price scheme Manpower~~

~~The Customer would like to be able to buy unspecified services from the Supplier on an hourly basis. The Supplier is therefore requested to price these services in the plan at an hourly rate, see price plan items 8.1 – 8.6.~~

~~3.5. IT development~~

~~The Customer can request new integration points continuously and during the entire term of the Agreement, therefore the price of establishing such points must be stated – see price plan item 9.1.~~

~~3.6. Options~~

~~The Customer would like, via options, to clarify various additional purchases and a financing model. The options are described in Appendix 10 Options. In this connection, the Supplier is required to price the Price scheme with options.~~

~~3.7. Leasing of hardware 10.~~

~~The Supplier must state the additional costs imposed on the Customer if the Customer chooses a leasing solution. A percentage must be stated. The Supplier shall assume that the Customers payments will be made monthly during the Term of the Order.~~

~~3.8. Differentiated colour range 11.~~

~~Here, the price per unit for alternative colour choices for the hardware must be stated. If an alternative choice of colour does not affect the price, do not fill in the sheet.~~

3.9. ~~Options –~~ Other types of bicycles

The prices must be stated as the price per bicycle per year.

3.10.Option – Sponsorship replacement

The prices of replacing a sponsorship must be stated as the price per replacement per bicycle.

3.11.Option – Cleaning of areas

The prices of daily cleaning of the area around the Hardware (within 1 metre) must be stated per docking point per year.

3.12.Option – Support function

The prices of first line support must be stated on an annual basis. If the price depends on the number of bicycles, this must be stated under the quantities stated. If the price is the same, only one price must be stated.

3.13.Options – Community

The prices for the end user community must be stated on an annual basis.

The prices of monthly costs for customer support (first line support) must be stated in DKK per year.

3.14.Options – Purchase/leasing of the IT system in connection with expiry of the Framework Agreement

The purchase price must be stated as a total purchase price for the entire system. The leasing price must be shown as a monthly amount.

3.15.Options - Booking

Here, a price for which the end user/customer can make a booking via the tendered channels must be stated.

See also Appendix 10 concerning options.

Appendix 16
Governance

Bike-sharing system

October 15th 2012

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1. Introduction

This Appendix contains the Customer's requirements concerning the Cooperation organisation and other cooperation arrangements. Reference is made to the Framework Agreement definitions of terminology used in this Appendix.

GUIDELINES FOR TENDERER

On the basis of this Appendix, the Supplier shall prepare a complete response to this Appendix that clearly describes the Supplier's organisation. The Supplier shall therefore fill in the tables included in the individual requirements in this appendix, clearly stating the name of the Supplier representative.

The Supplier shall also note that the Appendix contains Minimum Requirements which the Supplier shall fulfil to be considered for this contract.

Any markings, comments or modifications by the Supplier outside sections designated thereto, or which are not compliant with the additional guidelines will be disregarded and not be considered part of the tender, and they will be deleted and not be reflected in the signature version of the document.

If the Supplier has any reservations to this Appendix, the Supplier shall describe these reservations in the Reservations List appended to the Tender Conditions.

The Appendix also contains a number of info requirements for which the Supplier shall account in connection with preparing the tender. The Supplier shall clearly mark the text that responds to an info-requirement with stating the relevant info-requirement number.

2. Cooperation organisation

The Supplier shall~~, in cooperation with the Customer~~, establish an ~~cooperation~~ organisation that can efficiently and reliably follow up on all the Supplier's services, and which, when relevant, can initiate corrective measures (within frameworks and with consequences agreed and specified in detail in advance). Reference is made to the content of Appendix 2 Service Requirements and Appendix 3 Supplier Description of Service Requirements as well as Appendix 8 Operation and Monitoring and Appendix 9 Maintenance.

The purpose of establishing a cooperation organisation is to ensure that the cooperation progresses expediently in relation to the obligations and targets of both Parties.

~~The cooperation organisation's main task is to coordinate the cooperation in-house at the Customer's as well as between the Customer and the Supplier, including specifically ensuring that deliverables, etc. are received in compliance with the agreed budget, time and quality.~~

~~The various fora shall be established in an in-house and external form. The Supplier is required to take part exclusively in external meetings at which the Supplier's participation is deemed necessary.~~

2.1. General requirements concerning cooperation

Min. Req. 16.1 **Assurance of knowledge and competencies**

The Supplier shall at all times ensure that the correct knowledge and the correct competencies are represented in the cooperation organisation, including in the individual agreements, so that the Framework Agreement is administered and managed as efficiently as possible and so that the Supplier can deliver services of the highest possible quality.

GoBike compliance grade 1 and answer to requirement:

Gobike's program organisation will comprise of resources with the necessary skills and competencies required. Please refer to the detailed description in Appendix.

Min. Req. 16.2 **Assurance of stability in deliverables**

With reference to section 3, the Supplier shall keep the Administration Team informed of and obtain its approval for planned initiatives to ensure the stability of the Supplier's deliverables. The Supplier shall subsequently report on this matter. This is also where all other options and opt-outs in the level of technical maintenance, etc. are to be agreed and continuously coordinated.

GoBike compliance grade 1 and answer to requirement:

Gobike's official representatives in the Administration Team will ensure that all relevant issues that may have an impact on project targets are reported and as such discuss relevant issues that may require customer intervention. Please refer to the detailed description in Appendix.

Min. Req. 16.3 **Meetings held at the Customer's location**

All meetings are to be held at the Customer's location, unless otherwise specifically agreed with the Customer.

GoBike compliance grade 1 and answer to requirement:

Read and agreed.

3. Administration of the content of the Framework Agreement (Administration Team)

The Customer shall establish an *Administration Team* that is responsible for overall ownership of the Framework Agreement and its content (cooperating with a view to fulfilling the Framework Agreement). The Administration Team shall ensure that the content of the agreement is realised, including following up on deliverables and associated tasks to ensure such realisation.

The Administration Team's overall objective is to ensure the continuity and quality of the cooperation, including ensuring mutual understanding of the content and realisation of the cooperation.

The Customer chairs the Administration Team. The Customer also carries out the secretariat function (prepares decision summaries and submits them for approval). The chairman is authorised to make commercial decisions of an important nature.

The main tasks of the Administration Team are to:

1. Clarify all questions of fundamental importance, including the long-term strategic development of cooperation between the Parties, agreement changes, etc.

2. Ensure the overall joint management, including general follow-up on progress, finances, quality, risks, communication and other issues affecting the realisation of the cooperation.

The Administration Team shall prioritise the ongoing tasks, e.g. clarify them and conduct quality assurance while clarifying any issues that may conflict (so that they can be dealt with appropriately).

The Administration Team is therefore also expected to carry out tasks within the following areas:

1. *Operating organisation:* Follow-up on the operating organisation to ensure that the agreed standards and commercial needs are met.

2. *Maintenance organisation*: Follow-up to ensure technical maintenance, etc. meets the agreed standard and commercial needs.

3. *Technology ownership*: Follow-up on both hardware and software (including new versions as well as third-party applications) and evaluation of whether these meet the specified technical and commercial targets.

The Customer expects to appoint a representative authorised to administer the Framework Agreement in relation to the guidelines specified here.

Concerning all tasks and responsibilities carried out by *The Administration Team*, it is expected that both the Customer and Supplier are represented at a level and with a mandate that provides the team with the authority to make decisions.

Min. Req. 16.4 **Administration Team**

The Supplier is under an obligation to participate in the Administration Team and shall play an active part in the commercial management and realisation of the Framework Agreement in relation to the Customer's needs and wishes.

GoBike compliance grade 1 and answer to requirement:

Gobike's official representatives in the Administration Team will play an active part in the commercial management and the realisation of the Framework Agreement. Please refer to the detailed description in Appendix.

Req. 16.1. **Administration Team's composition**

The Administration Team's members are specified in the table below. The Administration Team is expected to comprise one representative from the Customer as well as the Supplier's management representative. The Supplier representative shall in all respects have the authority to make management decisions within the entire area of the Framework Agreement as well as administering the Framework Agreement on behalf of the Supplier.

The Administration Team may decide that other people are to participate on an ad hoc basis or as permanent members. The Customer also reserves the right to change the composition of the Administration Team after start up, if necessary. The Administration Team may meet in-house without the participation of the Supplier when the Customer deems this relevant.

The Customer shall prepare minutes of the meetings and may at any time bring a keeper of the minutes to the meeting.

The Supplier representative shall be specified as part of the tender.

GoBike compliance grade 1 and answer to requirement:

Gobike's official representatives in the Administration Team will be CEO and Co-founder Torben Aaagaard and Contract/Program Director Torben Dyrvig. They will have full authorisation to act and decide on behalf of Gobike ensuring an efficient execution of the Framework Agreement. Please refer to the detailed description in Appendix C: PID.

Position
Customer representative *[State name]*
Customer representative *[State name]*
Supplier representative *[State name]*
Supplier representative *[State name]*

Req. 16.2. **Administration Team meetings**

Meetings of the Administration Team shall comply with the following:

- In ordinary circumstances, Administration Team meetings shall be held once a month at the Customer's premises.
- The meetings shall follow an agenda agreed in advance with all the relevant material distributed together minimum three working days in advance.
- The decision summaries for approval shall be distributed not later than three days after the meetings are held.

The secretariat function shall ensure that these guidelines are complied with, including the fact that any deviations are made only if mutual understanding is reached.

The Administration Team may also hold extraordinary meetings if significant deviations from normal operations occur that cannot be immediately corrected.

GoBike compliance grade 1 and answer to requirement:

Read and agreed.

Req. 16.3. **Meetings with the municipalities**

The Supplier shall participate in meetings with the Customer and municipalities concerning operations. The Supplier shall participate in the meetings as agreed with the Customer. The Customer expects these meetings to take place once or twice a year per municipality.

GoBike compliance grade 1 and answer to requirement:

Read and agreed.

4. Project organisation

Concerning new agreements on the establishment of the city and commuter bicycle system, the Customer expects the Supplier to organise and manage the establishment as independent projects. In this respect, the project organisation is expected to fully comply with best practice principles. When the establishment has been completed and the system has been launched, administration of the Agreement shall be passed to the Administration Team.

Info 16.1 **Project organisation**

The Supplier shall account for how the projects are to be organised and managed by the Supplier.

GoBike compliance grade 1 and answer to requirement:

Gobike will establish a dedicated Project Management organisation to manage the Danish Bike Sharing programme. This organisation will comprise of resources with the necessary skills and competencies required to deliver, maintain and operate the new bike sharing system according to the Framework Agreement. Please refer to the detailed description in PID section 10.2.

4.1. The Delivery Management Team

A Delivery Management Team shall be established comprising:

- One representative from the Customer's Administration Team,
- The Customer representative ~~from the business~~ (presumably a representative from the place where the deliverables will be supplied)
- Management representative from the Supplier.

The Delivery Management Team may meet in-house without the participation of the Supplier when the Customer deems this relevant. The Delivery Management Team will escalate the priority of decisions/conflicts if they cannot be resolved by the Delivery Management Team and will bring them to the attention of the Administration Team.

The Delivery Management Team's purpose is to discuss topical issues and challenges concerning project cooperation as well as resource and risk minimising initiatives.

Req. 16.4. **Supplier's Delivery Management Team representative**

In the tender for an Order, the Supplier shall appoint a person to represent the Supplier in the Delivery Management Team. The appointed person shall represent the Management of the Supplier and shall be able to act on its behalf. The appointed person shall represent the Supplier in all the Delivery Management Teams to the extent possible.

GoBike compliance grade 1 and answer to requirement:

Systems Director Kasper K. Larsen and the Project Manager (T.B.A.) are Gobike's representatives in the Delivery Management Team. Here they will among other play an active part in discussing and resolving any issues or topics that are relevant in order to ensure a successful completion of the project. They will have authorisation to act and decide on behalf of Gobike's Management.

Please refer to the detailed description in PID section 10.2.

Req. 16.5. **Delivery Management Team meetings**

The Delivery Management Team will meet as needed, though minimum once a month. ~~Delivery Management Team meetings shall be held at the Customer's location or at a location specified by the Customer that is suitable in the circumstances. The Customer's project manager is responsible for convening and distributing meeting agendas to the members of the Delivery Management Team.~~

GoBike compliance grade 1 and answer to requirement:

Read and agreed.

Req. 16.6. **Delivery Management Team minutes**

The Customer will prepare the minutes of the Delivery Management Team meetings, which will be sent no later than two working days after the meeting is held. Provided no objections are raised not later than two working days after the date of receipt of the minutes, the minutes are considered approved.
If the Supplier-submits written comments to the minutes, the Customer will send updated minutes with corrections marked to be received by the Supplier not later than five working days after receipt of the Supplier's comments. If the Customer is unable to accept all the Supplier's comments, this will be apparent in the updated minutes, and the comments shall be dealt with at the next Delivery Man-

agement Team meeting. In the case of urgent matters, the Customer can convene a meeting of the Delivery Management Team on this basis.

GoBike compliance grade 1 and answer to requirement:

Read and agreed.

Req. 16.7. **Delivery Management Team composition**

The Delivery Management Team comprises a minimum of one representative from the Customer's Administration Team, the Customer's business representative, the Supplier's representative in the Delivery Management Team, and in some cases stakeholders are involved in the project at the request of the Customer's project manager. The Customer's Administration Team or the Customer's project manager may decide that other people are to participate in the Delivery Management Team on an ad hoc basis or as permanent members. The Customer also reserves the right to change the composition of the Delivery Management Team after start-up, if necessary.

Position
The Customer representative from the Administration Team
The Customer representative from the business
A management representative from the Supplier,

The Supplier's and Customer's representatives in the Delivery Management Team shall be specified in the individual Order.

GoBike compliance grade 1 and answer to requirement:

Read and agreed. Gobike will consider if one of its representatives in the Administration Team will also be present for the meetings in the Delivery Management Team. Furthermore, Gobike also reserves the right to invite other people (e.g. from subcontractors) to participate in meetings on an ad hoc basis and when relevant. The Customer will be informed prior to the meeting if additional participants will be necessary.

4.1.1. The tasks of the Delivery Management Team

Req. 16.8. **The tasks of the Delivery Management Team**

The Delivery Management Team's tasks shall be defined as terms of reference and will closely correspond to the tasks resulting from the Customer following PRINCE2 guidelines for management team work. The Delivery Management Team will also be responsible for assurance of the following tasks:

1. **Control of deliverables**: Receipt of the project's products on an ongoing basis, and the Customer's and Supplier's mutual control that these meet the agreed and expected quality (including any tests to this end).
2. **Approval**: The Customer's *approval* that the Supplier has *definitively* put all the deliverables into operation so that they may be used in compliance with the Customer's commercial needs, including that SLAs and other relevant documentation are established in a satisfactory form.

GoBike compliance grade 1 and answer to requirement:

Read and agreed. It will be one of the primary responsibilities of Gobike's Project Manager to ensure the day-to-day technical project management and the fulfilment/approval of all scheduled deliveries. Please refer to the detailed description in Appendix.

4.2. Project management

When the system is established in new municipalities, the Supplier shall allocate a dedicated person responsible for the project/project manager during the establishment phase. The Customer will ensure that the Supplier's project manager has a permanent contact point at the Customer's.

The Project Management is responsible for monitoring the implementation of an Order and for ensuring day-to-day progress, including meeting the overall schedule and budget for the project and any activity, quality and delivery plans, etc.

Req. 16.9. **The Supplier's project manager**

The Supplier is to allocate a project manager to each Order to function as the person at the Supplier's premises responsible for ensuring high-quality deliverables, including that the deliverables are established at the right time and with the right financial resources and manning.

GoBike compliance grade 1 and answer to requirement:

Gobike will appoint an Project Manager who is responsible for the execution of the project. Initially this will comprise the delivery to Copenhagen and Frederiksberg. Gobike will use the same or allocate additional project management resources to ensure execution of subsequent orders for other municipalities joining the bike sharing scheme in later phases. Please refer to the detailed description in Appendix.

5. Other cooperation

5.1. The Supplier's use of sub-contractors

Concerning Orders entered into under the Framework Agreement, the Supplier shall respond to the following requirements on use of sub-contractors.

Req. 16.10. **Use of sub-contractors – for Orders**

The Supplier shall account for the use of sub-contractors. The area of each sub-contractor's competency shall be described.
CVs shall also be enclosed for relevant employees of the sub-contractor who may be considered for use.

GoBike compliance grade 1 and answer to requirement:

Gobike have established business relationships with key partners/subcontractors who contribute with domain knowledge in specific areas. This allows Gobike to have a flexible and scalable organization able to master all disciplines needed to develop and deliver a system of the size and complexity as the one required in Denmark. CVs of relevant employees of the partners sub-contractors can be provided upon request.

~~**Req. 16.11.** **Requirements for information on sub-contractors – for Orders**~~

~~The Supplier shall include information on sub-contractors if they are used:~~

- ~~All sub-contractors. The term sub-contractor is understood to mean both sub-contractors in-house at the Supplier's organisation and external sub-contractors.~~

~~The deliverables supplied by sub-contractors are described in general.~~

- ~~The names and functions of all key employees at the sub-contractor shall be stated.~~
- ~~For each key employee, the reasons why the person is a key employee shall be described.~~

Obsolete

~~**Min. Req. 16.5** **Duty to cooperate with third party suppliers**~~

~~The Supplier has a duty to cooperate with the Customer's third-party suppliers, also including bilateral cooperation with Orders.~~

Obsolete

6. Conditions for the Supplier's use of resources

Req. 16.12. **The Supplier's replacement of key employees**

The Supplier cannot replace key employees during the term of the Framework Agreement, including key employees working on Orders, unless this is due to personal issues or other circumstances outside the Supplier's control. Replacement of the Supplier's key employees or change of the agreed amount of participation in deliveries/projects shall be approved by the Customer's Administration Team. Replacement of other employees may occur with advance written notification to the Customer's Administration Team, although the Customer's approval shall still be obtained.

GoBike compliance grade 1 and answer to requirement:

Read and agreed.

Min. Req. 16.6 **Assurance of adequate and qualified personnel**

The Supplier shall always ensure that adequate and qualified staff is allocated during the entire term of the Agreement and ensure continuity in knowledge building and deliverables. Specifically, the Supplier may not reduce the number of employees if this brings the timely completion into jeopardy, or threatens operations. If delays occur or the risk of delays arises that are not due to issues relating to the Customer, the Supplier is under an obligation to allocate more human resources to the necessary extent with no extra remuneration from the Customer.

GoBike compliance grade 1 and answer to requirement:

Read and agreed.

~~**Req. 16.13.** **The Customer's replacement of the Supplier's employees**~~

~~The Customer can demand the replacement of employees in the Supplier's organisation if the Customer has justified objections to the employees(s) in question, such as insufficient competence, for example, or deadlines exceeded more than once.~~

Obsolete

Min. Req. 16.7 **Obligation to show initiative concerning problems**

The Supplier is under an obligation to notify the Customer if issues arise that jeopardise operations or individual deliverables. The Supplier is therefore under an obligation to notify the Customer if issues concerning the Customer's organisation or contributions are the cause of the problems.
Concerning Orders, both the Administration Team and the Delivery Management Team shall be notified.
Concerning the Framework Agreement in general, the Administration Team shall be notified.

GoBike compliance grade 1 and answer to requirement:

Read and agreed. Gobike will through its internal Prandram Management Organisation monitor all issues and risks that could in anyway cause problems or jeopardise a succesful completion of the prandram. Gobike will take immediate actions and keep the Customer's representatives informed. Gobike will also ensure that such issues are reported to the Administrative Team as well as the Delivery Management Team.

7. The Supplier's organisation

The Supplier shall base responses to the requirements below on the Customer's Governance requirements.

Info 16.2 **The Supplier's organisation**

The Supplier shall attach a comprehensive description of the tendered organisation taking into account the Customer's requirements in sections 2-6 above.

In this context, the Supplier is requested to explain any considerations if the Supplier is of the opinion that any issues should be further strengthened.

GoBike compliance grade 1 and answer to requirement:

Gobike will establish a dedicated Project Management organisation to manage the Danish Bike Sharing prandramme. This organisation will comprise of resources with the necessary skills and competencies required to deliver, maintain and operate the new bike sharing system according to the Framework Agreement.

Please refer to the detailed description in PID section 10.2

Info 16.3 **Attachment of CVs – the Supplier's organisation**

The Supplier shall attach with the tender the CVs of key employees assigned to the tendered solution - both those working for the Supplier and those working for significant sub-contractors.

The CVs shall as a minimum contain information on:

- name
- present job title
- recruitment date
- relevant training
- relevant certifications/courses, key qualifications,
- most important reference projects
- years of experience with the stated competencies

GoBike compliance grade 1 and answer to requirement:

The organisation diagram included in the Appendix shows the project organization that will have the overall responsibility for the implementation, operation

and maintenance of the Danish Bike Sharing System. All key resources are identified, although some are still to-be-appointed (T.B.A.). This will be done latest on the date of contract award. The Appendix includes CV's of the key employees that are already appointed. Addition CVs e.g. of sub-contractor employees can be provided upon request.

8. Compliance list

The compliance with the requirements can be graded. The Supplier must enclose a completed compliance overview with statements regarding whether and how the requirements are met.

The compliance grade shall be given according to the following graduation principle:

1 - Corresponding to “completely fulfilled”
2 - Corresponding to “partly fulfilled”
3 - Corresponding to “not fulfilled”

Note: The statement of the compliance grade ”partly fulfilled” or ”not fulfilled” constitutes a reservation.

Minimum requirements are not part of this list, as it will directly be “not conditional” if the Supplier doesn’t fulfill these.

In case the Supplier chooses to state the compliance grade as “partly fulfilled” for a requirement, the Supplier shall always account for the at least the following conditions in the comment field:

- Which shortcomings there are in the offered solution compared to the initial described requirement
- Which consequences the shortcomings will have for the Customer respectively end user
- Which possibilities there are to compensate for the described shortcomings

In case the Supplier does not state anything in column ”compliance grade”, this will be considered as compliance grade 3 and therefore as not fulfilled in the tender.

Response to Info requirements
For responses to an info requirement, it shall be stated in the comment field of the compliance list, where in the tender the response can be found.

ID	Specification	Compliance grade 1, 2 or 3	Comments
Req. 16.1	Administration Team's composition	1	
Req. 16.2	Administration Team meetings	1	
Req. 16.3	Meetings with the municipalities	1	
Info. 16.1	Project organisation	1	
Req. 16.4	Supplier's Delivery Management Team representative	1	
Req. 16.5	Delivery Management Team meetings	1	
Req. 16.6	Delivery Management Team minutes	1	
Req. 16.7	Delivery Management Team composition	1	
Req. 16.8	The tasks of the Delivery Management Team	1	
Req. 16.9	The Supplier's project manager	1	
Req. 16.10	Use of sub-contractors – for Orders	1	
Req. 16.11	Requirements for information on sub-contractors – for Orders	1	
Req. 16.12	The Supplier's replacement of key employees	1	
Req. 16.13	The Customer's replacement of the Supplier's employees	1	
Info. 16.2	The Supplier's organisation	1	
Info. 16.3	Attachment of CVs – the Supplier's organisation	1	

Appendix 17
Customer responsibilities

Bike-sharing system

October 15th 2012

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1. Introduction

This Appendix contains an overview of the Customer's involvement in the Supplier's activities in connection with the establishment and subsequent operation and maintenance of the city and commuter bicycle system.

GUIDELINES FOR TENDERER

The Supplier shall, on the basis of the complete tender material, in particular:

- Appendix 2 Service Requirements
- Appendix 6 Process for Installation
- Appendix 7 Test
- Appendix 8 Operation and Monitoring
- Appendix 9 Maintenance
- Appendix 16 Governance
- Framework Agreement Regarding Termination of the Contract

prepare a response to the Appendix in connection with preparing the tender.

The Appendix also contains a number of info requirements for which the Supplier shall account in connection with preparing the tender. The Supplier shall clearly mark the text that responds to an info-requirement with stating the relevant info-requirement number.

2. Customer involvement

In this Appendix, the Supplier shall specify the extent to which the Customer is expected to be involved and remain at the disposal of the Supplier during the process of establishment and operation, respectively, including participation in the activities expected to be carried out, e.g. during tests and regarding termination of the contract.

The Supplier may not count on any of the Customer's key employees being available in connection with normal holiday periods.

When submitting a tender concerning this Appendix, the Supplier shall prepare an overview with the following content:

For the various phases:

- Establishment (see the template for the installation plan in Appendix 6 Process for Installation)
- Operation
    - Operation and monitoring (see Appendix 8 Operation and Monitoring)
    - Maintenance (see Appendix 9 Maintenance)

and for activities such as:

- Testing (see Appendix 7 Test)
- Termination of the Contract (see Framework Agreement)
- Governance (see Appendix 16 Governance)

the following requirements apply:

Info. 17.1 **Expectations concerning Customer involvement**

The Supplier shall account for how the Customer is expected to be involved, including the roles and responsibilities the Customer is expected to undertake in addition to what is described in Appendix 16 Governance.

GoBike compliance grade 1 and answer to requirement:

Read and agreed. Please refer to the detailed description in PID.

Info. 17.2 **List of Customer-related activities**

The Supplier shall prepare an overview of the Customer's involvement. The overview shall contain a detailed list of possible Customer-related activities required by the Supplier in connection with the supply of services.

GoBike compliance grade 1 and answer to requirement:

Read and agreed. Please refer to the detailed description in PID.

Info. 17.3 **Description of the content of Customer-related activities**

The list of Customer-related activities shall include for each activity a full description of the Supplier's expectations concerning the content of the activity, an estimate of the Customer's resource consumption as well as requirements concerning execution, if applicable.

GoBike compliance grade 1 and answer to requirement:

Read and agreed. Please refer to the detailed description in PID.

Info. 17.4 **List of expected competencies on the part of the Customer**

The overview of the Customer's involvement shall contain a list of the resources and competencies required by the Supplier in connection with the supply of services, if applicable. The scope of the resources the Customer is required to make available shall be described in this Appendix.

GoBike compliance grade 1 and answer to requirement:

Read and agreed. Please refer to the detailed description in PID.

3. Compliance list

The compliance with the requirements can be graded. The Supplier shall enclose a completed compliance overview with statements regarding whether and how the requirements are met.

The compliance grade shall be given according to the following graduation principle:

1 - Corresponding to “completely fulfilled”
2 - Corresponding to “partly fulfilled”
3 - Corresponding to “not fulfilled”

Note: The statement of the compliance grade ”partly fulfilled” or ”not fulfilled” constitutes a reservation.

Minimum requirements are not part of this list, as it will directly be “not conditional” if the Supplier doesn’t fulfill these.

In case the Supplier chooses to state the compliance grade as “partly fulfilled” for a requirement, the Supplier shall always account for the at least the following conditions in the comment field:

- Which shortcomings there are in the offered solution compared to the initial described requirement
- Which consequences the shortcomings will have for the Customer respectively end user
- Which possibilities there are to compensate for the described shortcomings

In case the Supplier does not state anything in column ”compliance grade”, this will be considered as compliance grade 3 and therefore as not fulfilled in the tender.

Response to Info requirements
For responses to an info requirement, it shall be stated in the comment field of the compliance list, where in the tender the response can be found.

ID	Page	Specification	Compliance grade 1, 2 or 3	Comments
Info. 17.1	4	Expectations concerning Customer involvement		
Info. 17.2	4	List of Customer-related activities		
Info. 17.3	5	Description of the content of Customer-related activities		
Info. 17.4	5	List of expected competencies on the part of the Customer		

Appendix 18
Change procedures

Bike-sharing system

October 15th 2012

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1. Introduction

This Appendix contains Customer requirements as to how change procedures are to be regulated under the Framework Agreement and Orders (see Appendix 5 Order).

GUIDELINES FOR SUPPLIER

On the basis of this Appendix, the Supplier shall prepare a complete response to this Appendix.

The Supplier shall note that the Appendix contains Minimum Requirements which the Supplier shall fulfil to be considered for this contract.

Any markings, comments or modifications by the Supplier outside sections designated thereto, or which are not compliant with the additional guidelines will be disregarded and not be considered part of the tender, and they will be deleted and not be reflected in the signature version of the document.

If the Supplier has any reservations to this Appendix, the Supplier shall describe these reservations in the Reservations List appended to the Tender Conditions.

The Appendix also contains a number of info requirements for which the Supplier shall account in connection with preparing the tender. The Supplier shall clearly mark the text that responds to an info-requirement with stating the relevant info-requirement number.

2. Change of the contract

The purpose of change management is to specify procedures and rules as to how changes to the Framework Agreement and Orders, respectively, are to be managed.

Changes may be made at the request of the Customer or Supplier in compliance with this Appendix.

2.1. Change of the Framework Agreement

Changes are the responsibility of the Administration Team, see Appendix 16.

Min. Req.18.1 **Change requests regarding the Framework Agreement and its Appendices**

All changes to the Framework Agreement shall be submitted in writing as a change request form or as a change request in the form of an updated version of the Framework Agreement itself and its Appendices.

GoBike compliance grade 1 and answer to requirement:

Read and agreed. Gobike will establish a Change Management System in accordance with ISO9001 and Prince 2 change control principles. The Change Management System will be in full compliance with the requirements.

Please refer to the detailed description in PID section 12.1

Req. 18.1 **Documentation of changes**

It shall be possible to document all changes with full traceability.

GoBike compliance grade 1 and answer to requirement:

Read and agreed.

Please refer to the detailed description in PID section 12.1

Req. 18.2 **Approval of changes**

Approval of changes to the Framework Agreement shall be made by the Administration Team.
The change request or updated Framework Agreement shall be signed by both Parties.

GoBike compliance grade 1 and answer to requirement:

Read and agreed.

Please refer to the detailed description in PID section 12.1

2.2. Change of Orders

Changes relating to Orders shall be managed in compliance with this Appendix.

Min. Req.18.2 **Change requests for Orders**

All changes to Orders shall be available in writing.

GoBike compliance grade 1 and answer to requirement:

Read and agreed.

Please refer to the detailed description in PID section 12.1

~~**Req. 18.3** **Transfer of hardware to another Order**~~

~~It shall be possible for the Customer to transfer hardware from one Order to another.~~

~~**GoBike compliance grade 1 and answer to requirement:**~~

~~Read and agreed.~~

Req. 18.4 **Changes within the tolerance limits of an Order**

Changes within the tolerance limits of an Order shall be managed as changes to the project and approved by the Delivery Management Team, see Appendix 16.

GoBike compliance grade 1 and answer to requirement:

Read and agreed.
See PID section 10.3.2

Req. 18.5 **Changes outside the tolerance limits of an Order**

Changes that exceed the tolerance limits covered by the Delivery Management Team's mandate shall be submitted to the Administration Team for approval, see Appendix 16.

GoBike compliance grade 1 and answer to requirement:

Read and agreed.
See PID section 10.3.2

2.3. Customer access to ongoing changes

There will be an ongoing need for the Customer to order changes concerning the placement of docking points. This form of change shall be handled smoothly and quickly on the part of the Supplier.

The Customer expects a number of relocations of existing docking points as well as establishment of new docking points in the system, particularly in the implementation and start-up phase.

~~The Customer is responsible for ensuring that all legislative frameworks and agreements between the various stakeholders (e.g. the municipality, Metro Company, Rail Net Denmark, DSB) are in place before the Supplier commences work.~~
See appendix C: PID

The Customer is under an obligation to notify the Supplier about the relocation/establishment of new docking points as soon as possible with minimum 30 days' notice.

Prices for relocation, dismantling and re-establishment are fixed and are shown in the price list in Appendix 15.

Min. Req.18.3 **Establishment, relocation and dismantling of docking points**

The Customer shall be continuously able to order establishment, relocation or dismantling of docking points in the system.

GoBike compliance grade 1 and answer to requirement:

Read and agreed.

Min. Req.18.4 **Restoring the area in connection with relocation/former docking stations**

The Supplier is responsible for restoring the area to its original condition and appearance when a docking point/docking station is relocated/dismantled, unless otherwise specifically agreed with the Customer.

GoBike compliance grade 1 and answer to requirement:

Read and agreed. As these changes are routine procedures and Customer need based, no formal evaluation between the Customer and the Supplier is demmed nessasary. However, the changes are documented according to the generic process.

Info. 18.1 **Establishment time for docking points**

The Supplier shall state the maximum establishment time for:

- establishing new docking points
- relocating existing docking points
- dismantling existing docking points.

The Supplier shall state the time in weekdays (to be stated in hours/working days).
Establishment time is understood as the period (stated in hours/days) the Supplier as a maximum expects to use to execute the construction work and connection.

GoBike compliance grade 1 and answer to requirement:

Establishing new docking points depends if the products are in stock or not. If in stock and the necessary permissions to install are available from the authorities and/or site owner then the installation can be organised within a maximum of 5 days (the actual installation time is less than 5 hours).

Relocating existing docking points: the maximum time is 5 days

Dismantling existing docking points: the maximum time is 5 days

The Customer will also require easy access to ongoing replacement of sponsorships on the hardware during the operating period.

3. Customer change requests

Customer change requests should, as a minimum, contain the following information:

- a description of the desired change,
- the Customer's proposed priority for the change and
- the date on which the change request was submitted.

The change request shall be sufficiently detailed to enable the Supplier to prepare an estimate of the remuneration associated with preparing the proposed solution.

The Supplier is not entitled to separate remuneration for preparing such estimates.

4. Supplier change requests

Supplier change requests shall have the same content as the content of a proposed solution for the Customer.

The Supplier is not entitled to remuneration for preparing proposed solutions that are part of the change request from the Supplier.

Min. Req.18.5 **Change of the Supplier's system**

The Supplier may not implement changes in its systems that can result in consequences for integration with the Customer's or the Customer's subcontractors' systems and for retaining existing functionality for the tendered products, unless the Customer has approved the changes with a minimum of three months' notice.

GoBike compliance grade 1 and answer to requirement:

Read and agreed.

5. The Supplier's proposed solutions

The Supplier shall give the Customer all relevant information in the Supplier's possession with a view to the Customer's opinion and position on the consequences of a change the Customer is considering.

Req. 18.6 **The Supplier's proposed solutions**

A proposed solution may contain and deal with the following:

- Summary of the change request
- Description of the changes required to fulfil the change request
- Consequences for the schedule, see Process for installation, if applicable.
- Price of implementing the proposed solution, also including consequences for the payment plan, if applicable.
- Consequences for any other of the Suppliers' deliverables (sub-contractors).
- Consequences for documentation.
- Consequences for Customer participation, see Appendix 17.
- Consequences for service targets, see Appendix 11.
- Guarantee concerning the changes and consequences for other guarantees, see Appendix 14.
- Consequences for training, if applicable.
- Consequences for options, see Appendix 10.
- Timing of testing of the executed changes and consequences for testing other parts of the Order.
- Consequences for operation management, see Appendix 8 Operation and Monitoring.
- Consequences for maintenance obligations, see Appendix 9 Maintenance.
- Any other relevant issues.

Unless otherwise agreed, the Supplier shall prepare the necessary corrections to the Appendix concerning Orders that are impacted by the change, and the proposed solution shall be attached with them.

GoBike compliance grade 1 and answer to requirement:

Read and agreed. Gobike's proposed Change Management System will include a standard change request form shared with the Customers. The exact content will be agreed at the beginning of the Frame Agreement and will fulfil the listed requirements.

See PID section 12.1.2

6. Evaluation and approval of proposed solutions

6.1. Evaluation of proposed solutions

The Customer may choose to reject a proposed solution, to request a change in the proposed solution or to accept a proposed solution.

Min. Req.18.6 **Remuneration for preparation of solutions**

If a proposed solution prepared on the basis of the Customer's change request is approved, the Supplier's remuneration for preparing the solution is cancelled.

GoBike compliance grade 1 and answer to requirement:

Read and agreed. Please refer to the detailed description in the Appendix.

See PID section 12.1.2

Min. Req.18.7 **Change of proposed solutions**

If the Customer requests a change to the proposed solution, the Supplier shall immediately prepare an estimate of the remuneration expected to be associated with preparing a revised proposed solution. If an estimate is approved, the Supplier shall prepare a revised proposed solution for the Customer without undue delay and not later than within five working days. If the revised proposed solution is accepted, the Supplier's remuneration for preparing both the original and revised proposal is cancelled.

Requests concerning material changes to a proposed solution are considered to be a rejection of the proposed solution as well as submission of a new change request, which shall be dealt with separately in compliance with point X in the Agreement and this Appendix.

GoBike compliance grade 1 and answer to requirement:

Read and agreed. Please refer to the detailed description in PID section 12.1.2

6.2. Approval

No changes may be initiated by the Supplier until the Customer's acceptance has been obtained, and with managed changes to the Framework Agreement or an Order, this requires that the Parties have considered all the significant consequences of the change, including the consequences in terms of timing and prices.

Min. Req.18.8 **Written approval of changes**

All changes shall be approved in writing by the Customer before the change is initiated.

Change requests or the updated Framework Agreement shall be signed by both Parties.

GoBike compliance grade 1 and answer to requirement:

Read and agreed. Please refer to the detailed description in the Appendix.

See PID section 12.1.2

7. Change log

Min. Req.18.9 **Change log**

The Supplier shall keep a change log. This log shall specify:

- Dated change requests
- Dated estimates of the remuneration for preparing proposed solutions
- Dated proposed solutions
- Approved proposed solutions
- Updated schedules
- Other relevant documents

Each change request shall be given a unique identification number so that the change request and the associated documents can be traced in the change log.

GoBike compliance grade 1 and answer to requirement:

Read and agreed.
Please refer to the detailed description in PID section 12.1.6

The continuously updated change log shall be attached as an appendix to Framework Agreement Appendix 18 (this Appendix).

Req. 18.7 **Disagreement, independent third party**

If disagreement arises between the Parties concerning the consequences of a change request, the Customer has the right to the necessary insight into the basis for the Supplier's Proposed Solution.

Concerning pricing models and similar trade secrets, the Supplier may demand that the review be carried out by an independent third party who is subject to confidentiality.

At all times, the Customer has the right to have an independent third party who is subject to confidentiality review the Supplier's proposed solutions.

The Party requesting such review covers the cost of the independent third party.

GoBike compliance grade 1 and answer to requirement:

In addition to the solution described in requirement 18.7 Gobike suggest that a "Dispute Review Board" with members from the Customer and the Supplier is established as part of e.g. the Administration Team or a higher management level. The involvement of an external consultant as mediator could also be considered.
It is Gobike's experience that such a "Dispute Review Board" may solve issues fast and efficiently to mutual benefits for both parties.
Such Dispute Review Board may be established at the start of the Framework Agreement.

See PID section 12.1.7

8. Change management

The Customer has the following requirements related to change management of the IT solution.

Info. 18.2 **Descriptions of procedures**

The Supplier shall describe its procedures in relation to change management and ensuring the functionality and usability of these changes after implementation.

GoBike compliance grade 1 and answer to requirement:

Read and agreed. Please refer to the detailed description in the Appendix.

See: PID section 12.1

Req. 18.8 **Putting new software into operation**

The Supplier is responsible for coordination and planning as well as being in charge of the actual implementation, when new software, corrections or changes are put into production in applications, on servers or server software, in routers and other network equipment as well as in database software.

GoBike compliance grade 1 and answer to requirement:

Read and agreed.

Req. 18.9 **Changes in availability**

The Supplier shall inform the Customer if a change has a negative impact on availability. In such situations, the Supplier shall ensure the necessary documentation of the problem.

GoBike compliance grade 1 and answer to requirement:

Read and agreed.

Req. 18.10 **Response times for changes**

The Supplier shall measure response times in connection with implementing changes in the hardware configuration or business applications. The response times shall be measured on a test system so that the Customer may be advised of

any reduction in service level on implementation of the change before it is put into production.

GoBike compliance grade 1 and answer to requirement:

Read and agreed.
Please refer to the detailed description in the Appendix E - Testplan

9. Compliance list

The compliance with the requirements can be graded. The Supplier must enclose a completed compliance overview with statements regarding whether and how the requirements are met.

The compliance grade shall be given according to the following graduation principle:

1 - Corresponding to “completely fulfilled”
2 - Corresponding to “partly fulfilled”
3 - Corresponding to “not fulfilled”

Note: The statement of the compliance grade ”partly fulfilled” or ”not fulfilled” constitutes a reservation.

Minimum requirements are not part of this list, as it will directly be “not conditional” if the Supplier doesn’t fulfill these.

In case the Supplier chooses to state the compliance grade as “partly fulfilled” for a requirement, the Supplier shall always account for the at least the following conditions in the comment field:

- Which shortcomings there are in the offered solution compared to the initial described requirement
- Which consequences the shortcomings will have for the Customer respectively end user
- Which possibilities there are to compensate for the described shortcomings

In case the Supplier does not state anything in column ”compliance grade”, this will be considered as compliance grade 3 and therefore as not fulfilled in the tender.

Response to Info requirements
For responses to an info requirement, it shall be stated in the comment field of the compliance list, where in the tender the response can be found.

ID	Page	Specification	Compliance grade 1, 2 or 3	Comments
Req. 18.1	3	Documentation of changes	1	
Req. 18.2	3	Approval of changes	1	
Req. 18.3	3	Transfer of hardware to another Order	1	
Req. 18.4	4	Changes within the tolerance limits of an Order	1	
Req. 18.5	4	Changes outside the tolerance limits of an Order	1	
Info. 18.1	5	Establishment time for docking points	1	
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Bilag B.A:
System Description, Visual Guidelines & User interaction

(Appendiks A til Løsningsbeskrivelse)
Final
13. oktober 2012

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1. Document history

Revision date	Author	Version	Comments
	KKL		
13/11/2012	PSA	1	New front page

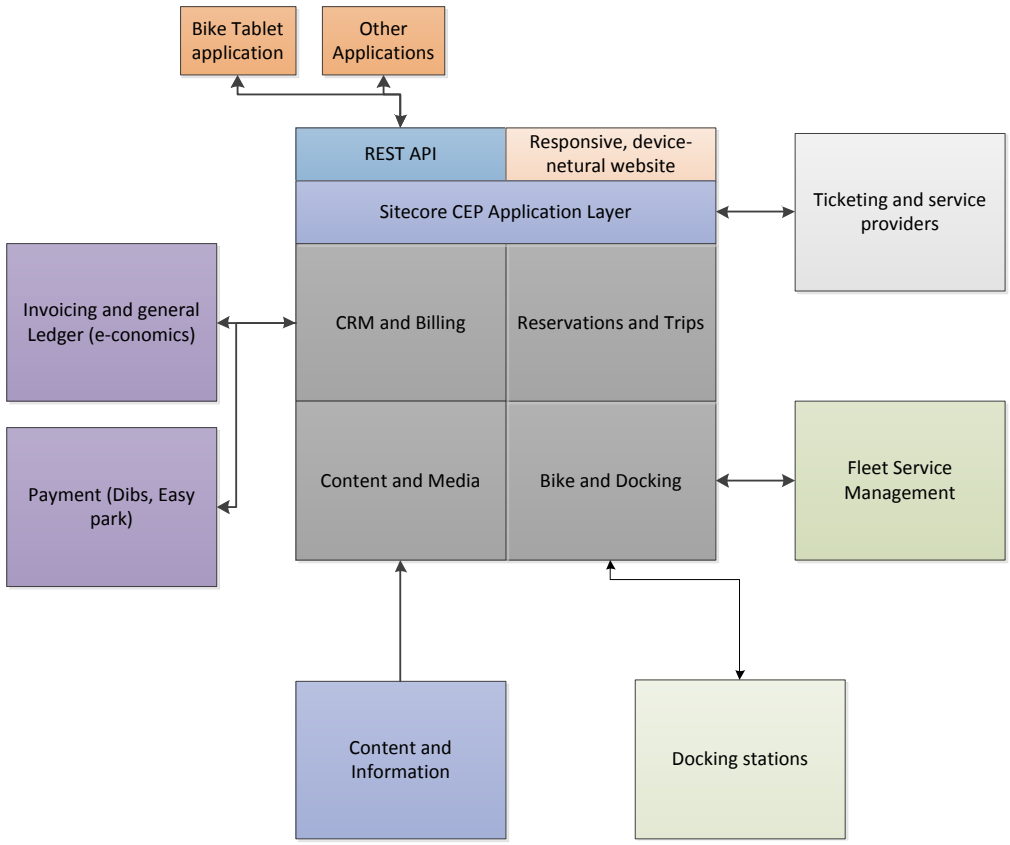
2. Systems Architecture

This section contains a high-level systems overview of the GoBike system architecture.

2.1. Overall Systems Architecture

The GoBike application framework will be built on standard web technology components, which enables rich web browser applications as well as smart device applications using a secure REST api.

The high-level system architecture is depicted in the below schematics.



As can be seen, the basic application consists of a number of major components.
Initial a number of application repositories exists. These are based on storage in a scalable MS SQL Server database, which has proven scalable and maintainable in large, high-availability platforms.

2.2. Core applications

2.2.1. Bike and Docking

A major part of the application is the database of bikes and dockings. This is the base information of the GoBike application stack. A bike or a docking can be planned for both activation and deactivation. This is of course used during service planning, something described further in the fleet service management integration section.

The application allows for a number of different types of vehicles - and can therefore support both manual and electrical bikes as well as an extension into their vehicle types if needed. This inventory database is the core element being synchronized with the fleet service management systems.

2.2.2. Reservation and trips

As another major component - and probably from a scaling perspective the most important technology design - is the reservation and trip component. This part of the application holds all possible reservation slots as well as already performed trips.

This part of the platform is built tightly around a scalable datamodel for storing a larger number of small records – as we foresee a large number of available timeslots and trips. Already performed trips will be stored along route information (GPS positioning information for the bike rented – therefore being able to draw the route and indicate point of interests seen on the route). The performed trips will be archived after a lock period – the length of the period to be determined.

The given datamodel can be segmented by bikes and do therefore not performed extraordinary scaling issues.

2.2.3. CRM + Billing

The CRM and billing part will carry the responsibility of storing users, sessions and trips for billing purposes. The online platform will not handle the responsibility of performing general ledger and tax, vat or other financial information – but will only hold purchases (for online purchase history purposes) as well as information on user behavior and account information.

This part will handle the payment matrices to be able to calculate the correct price for the specific customer and user.

2.2.4. Content and Media

To be able to guide the users of both the website (for planning purposes) as well as the bike rider during a trip the platform will hold information on a large number of points of interest in the region.

This content will be syndicated from other sources and stored in the platform. To be able to integrate the content fluently in relation to GPS information during a route, all POI information will be geo-coded and loaded into a geo-aware search index to be able to perform combination queries based on geographic location as well as user expressed interests. The index will also be able to perform free-text queries against the index – mostly used from the website for trip planning purposes.

2.3. Hardware components, 3rd party components and integration layers

A number of major integrations exist from the application platform.

2.3.1. Invoicing and general ledger

For purposes of general ledger and financial accounting, the platform will integrate a third-party financial platform. Currently it is planned to integrate the online e-conomics platform – but depending on finalization of design this might change.

We will though not develop a general ledger accounting platform – but integrate into this – just like all major e-commerce platforms do.

2.3.2. Fleet service management

To be able to perform service for the GoBike bike and docking station inventory, the GoBike application platform will integrate into the Falck Fleet Management platform (Sirius). The Sirius platform will own all reported incidents and planning of physical visits and service of bikes and docking stations – and will communicate for "out-of-service" messages and statuses for these with the GoBike platform.

The GoBike platform will notify the Sirius platform of location and reported failures of bikes or docking stations as these get reported by users.

2.3.3. Docking stations

A major part of the platform is of course integrating to the docking stations as well. The docking stations are controlling the bike rentals when docked – and can offer status information on the currently docked station.

2.3.4. Payment

The end users as well as B2B customers can pay for GoBike services in a multitude of ways. Online, credit-card based purchases are handled through standard payment gateways (currently Pensio are the planned gateway – but this might change). Credit card payments and clearances are commodity services and can be transferred to other gateway providers as deemed nessecary.

The platform will also integrate overcharged SMS phonebill payments as well as dialup phonebill charges. This will most likely be done through the Easypark platform as they can offer both SMS and dialup (Voice interactive platform) charging for users.

2.3.5. Content and information services

To be able to provide the users will a pleasant user experience for planning and performed their bike trips, GoBike will integrate a number of service providers with relevant information for the users.

Visit Denmark and Wonderful Copenhagen/Visit Copenhagen are major sources of information for this as well as other relevant provider. Restaurant and event dictionaries like AOK, iByen or MitKBH might also be integrated for eventbased information.

These will be integrated into the content and media repository – for the GoBike application platform to be able to provide relevant information during a trip.

2.3.6. Ticketing and service providers

For the convenience of end users the platform will also integrate a number of ticketing and other service providers. Planned is currently integration into DBS/ Metro ticketing systems to be able to purchase personal and bike tickets for longer trips using the trains.
At later stages further service providers will be considered for full purchace of trips including entrance fees and other elements of an end user trip.

2.4. Technology interfaces

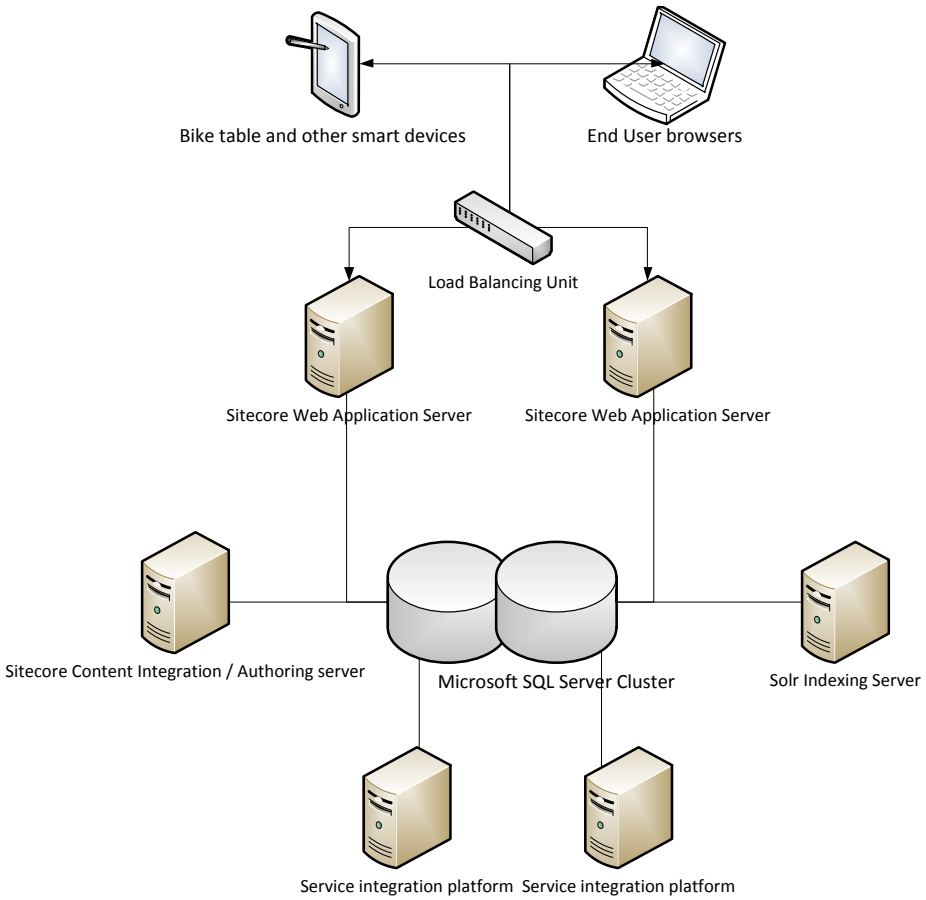
First and foremost in the access stack is the bike-mounted tablets. These tablets provide the navigation interface for manipulating the bike, docking and all services while initiating, during and ending the bike rental trip.

Secondly is the web-based access to the application. This access can be performing as browsing and leading to information areas as well as for planning purposes before actually getting in contact with GoBike rentals. The browser interfaces can as well be used for large account as well as personal followup, displaying trip and purchase information for financial or research purposes as well as things like displaying the route taken on a specific trip. The applications are described in UX design elsewhere.

2.5. Technical hosting of the platform

To be able to support the above platform with high-availability demands and high-capacity usage in season, the GoBike platform will be based on best practice implementation strategies from a number of large internet platforms.

A high-level hosting platform will look like this:



The platform will be based on a Sitecore CEP platform. The CEP (Customer Engagement Platform) from Sitecore contains a CMS, a web development platform, a strong e-mail marketing platform as well as a Digital Marketing Platform. The CEP platform has strong possibilities in user personalization and user profile creation – which makes the GoBike platform able to build strong knowledge on user interests based on their behavior during planning phases.

The data repository will be stored in a Microsoft SQL Server 2012 cluster. The content and media repository will be inside the Sitecore CMS databases while bike and docking repositories as well as reservations and trips will be handled in custom databases. The CRM and billing will be based in the standard Profile databases from Microsoft .NET extended with the needed billing information.

For full-text and geographical indexing we will integrate the Sitecore Search Solution – as search platform based on Apache Solr – a strong open source based search index capable of both full-text, metadata and geographical indexing.

3. Visual design guidelines

3.1. Tablet

3.1.1. Fonts

Segoe UI Semilight

ABCDEFGHIJKLMNOPQRSTUVWZYZÆØÅ

Segoe UI Regular

ABCDEFGHIJKLMNOPQRSTUVWZYZÆØÅ

Segoe UI Semibold

ABCDEFGHIJKLMNOPQRSTUVWZYZÆØÅ

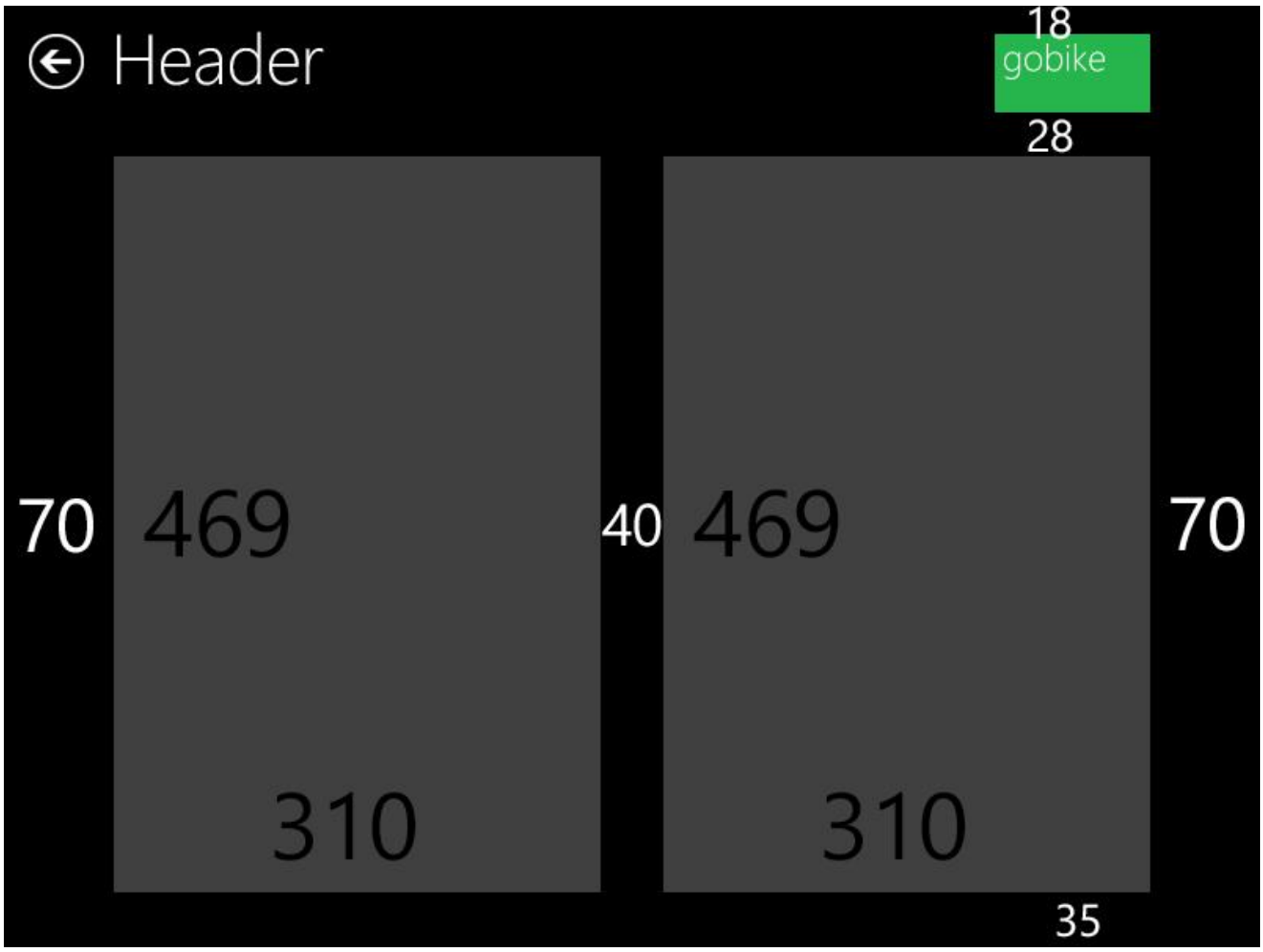
3.1.2. Colours



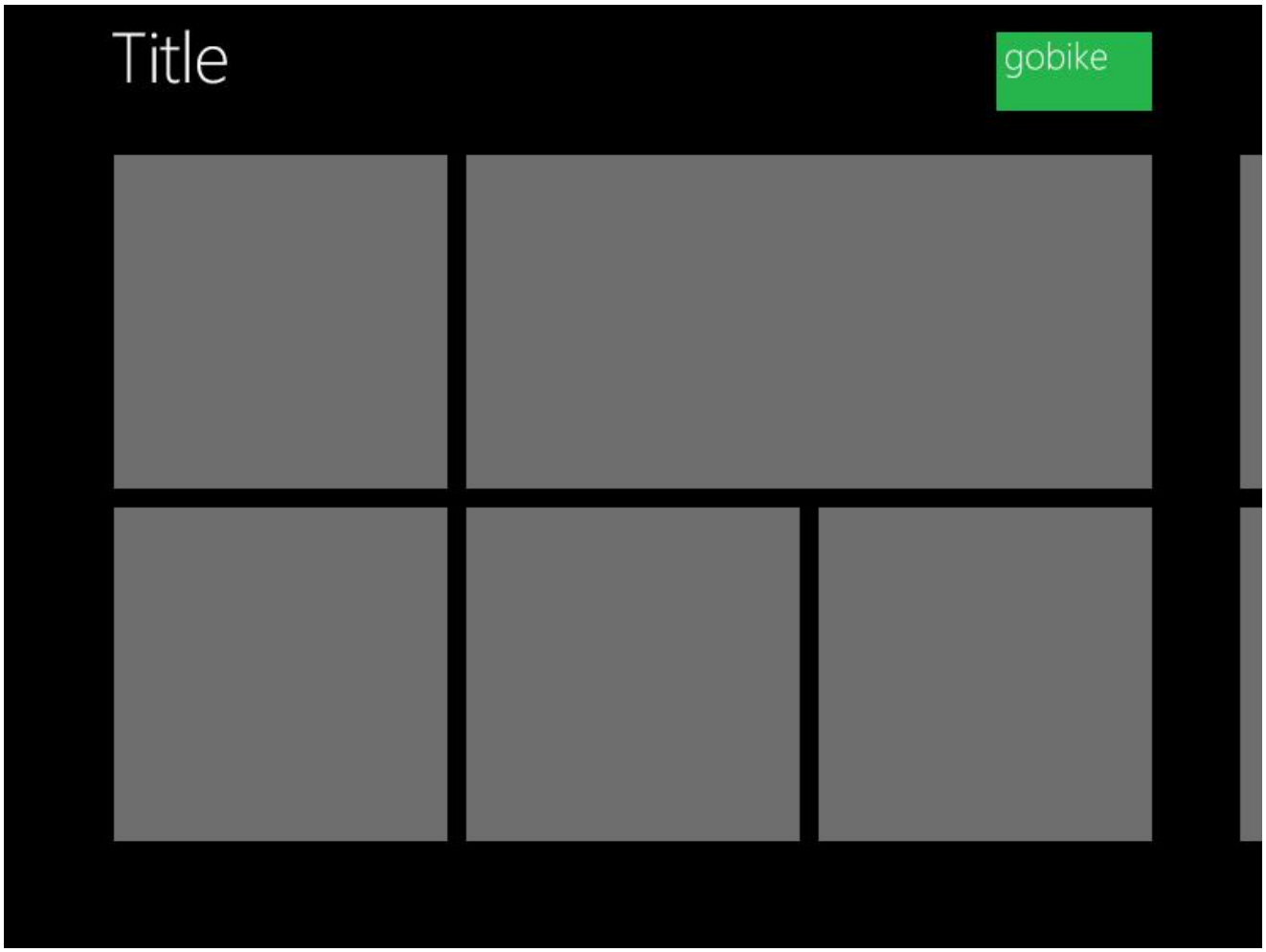
3.1.3. Real Estate

The following section desribes the real estate usage on the Tablet PC. Specific measurements are to be found in the associated PSD file.

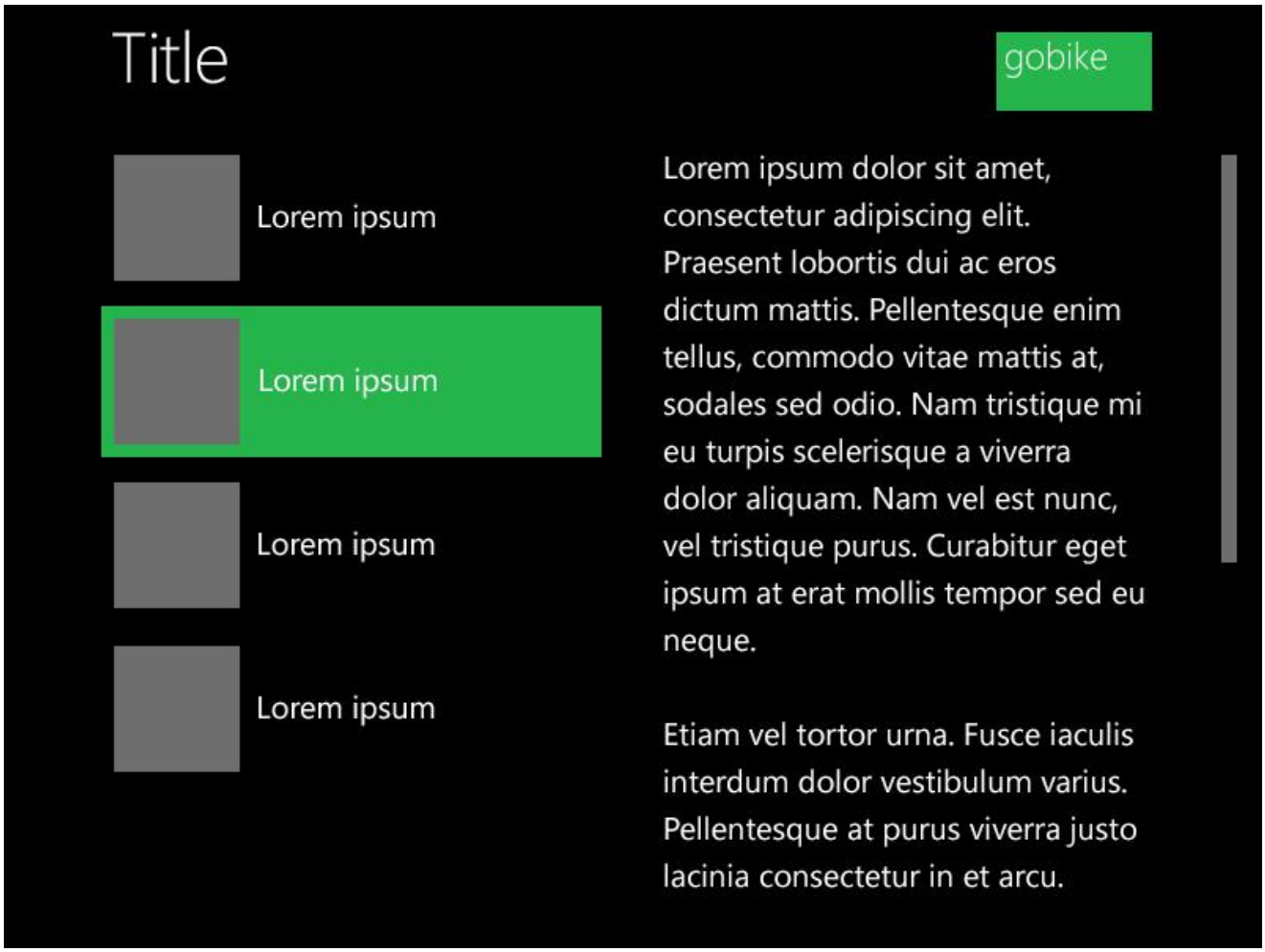
Wireframe



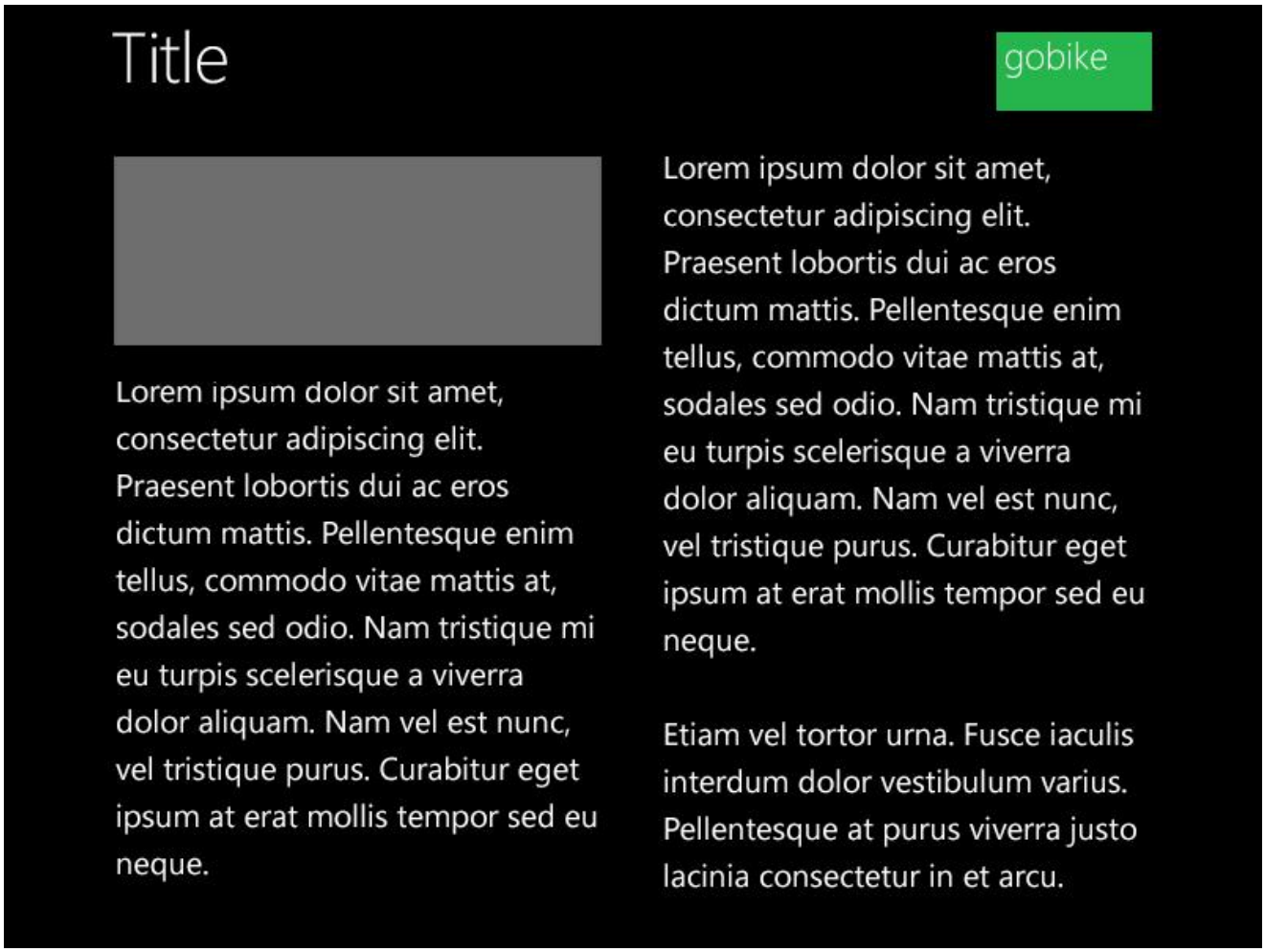
Menu page



Overview page



Article page

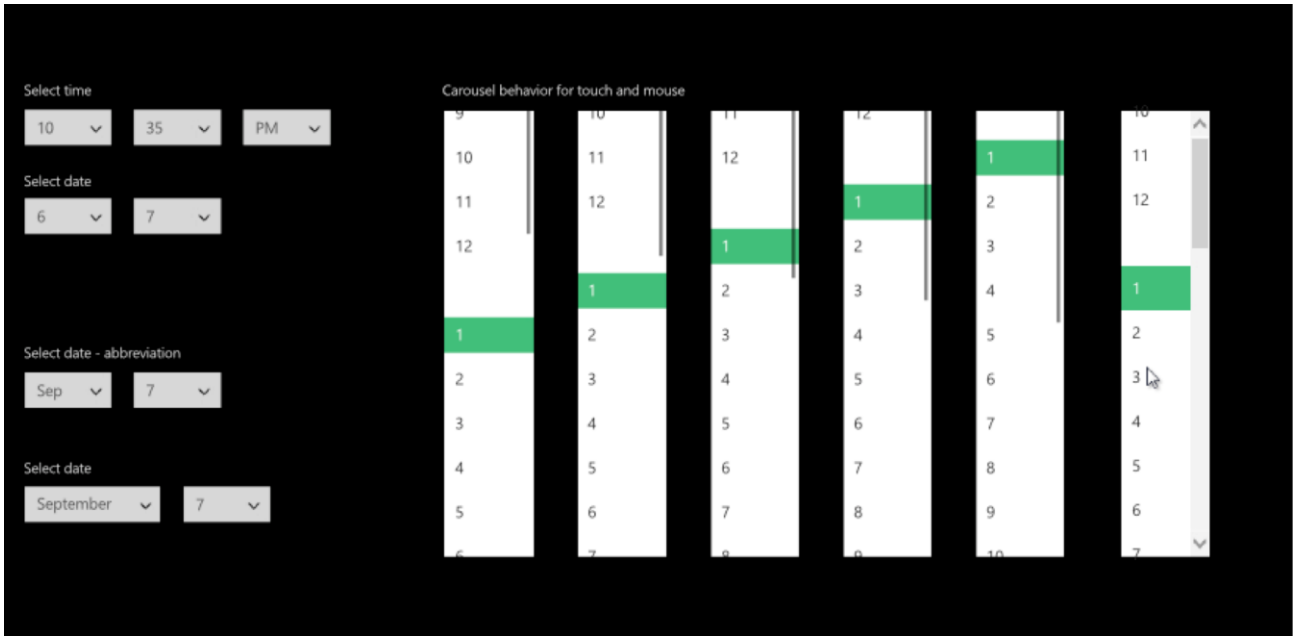


3.1.4. Design elements

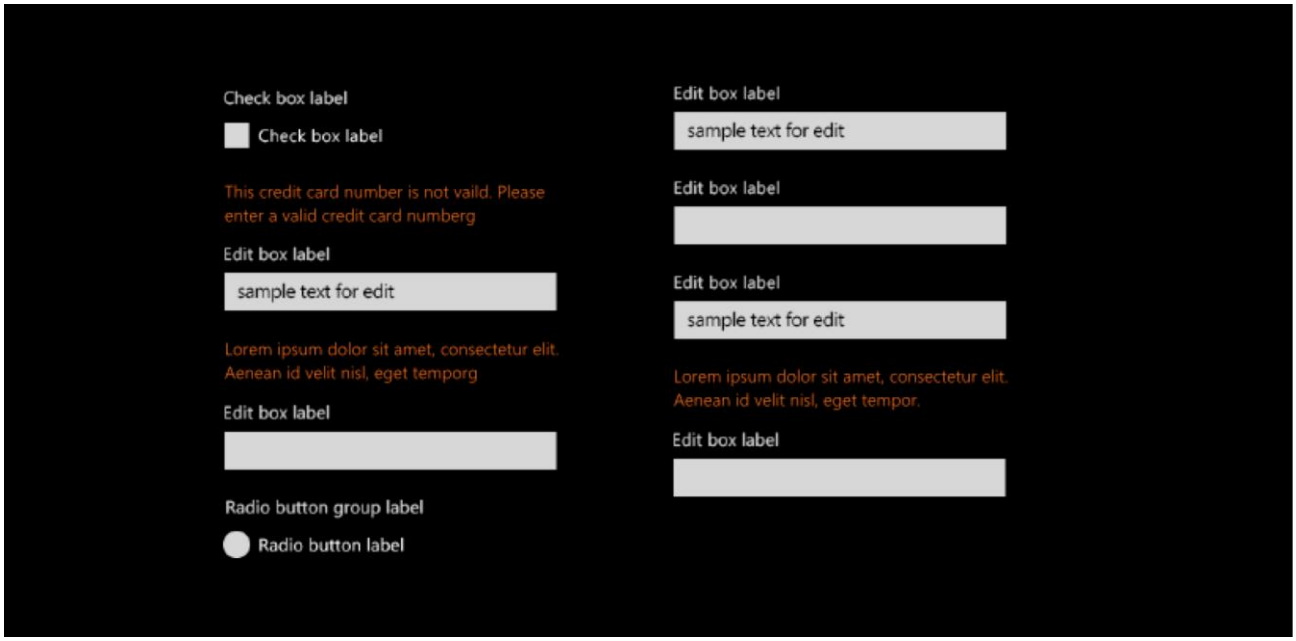
Check box



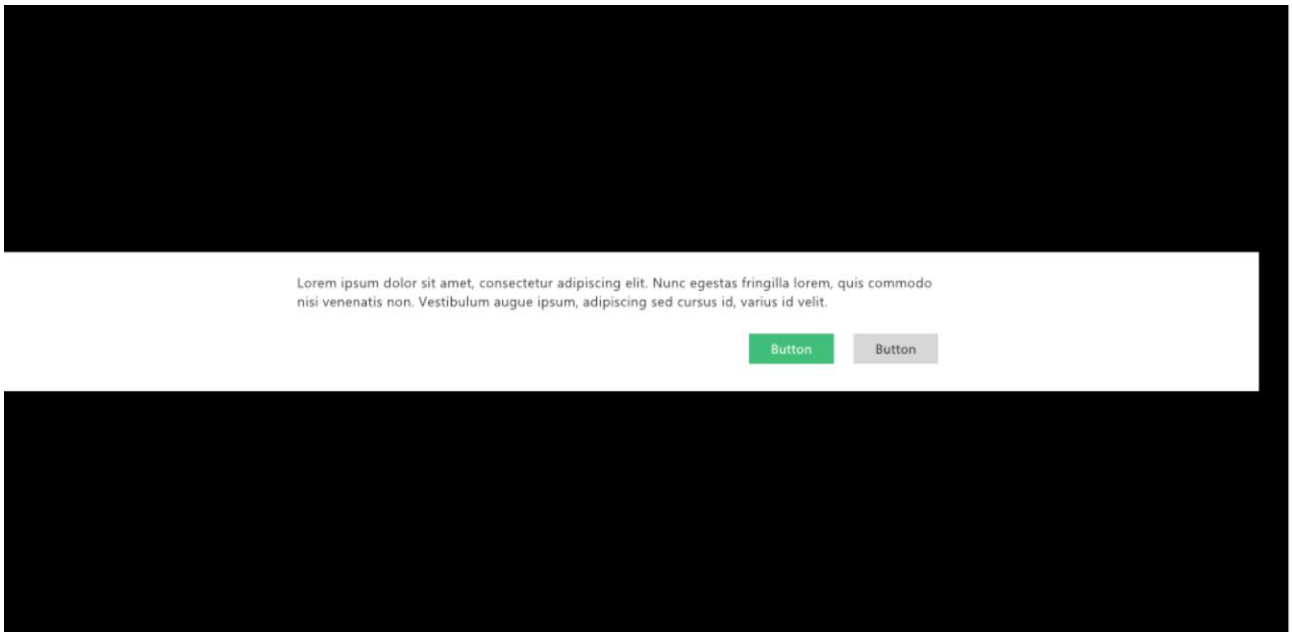
Date/time picker



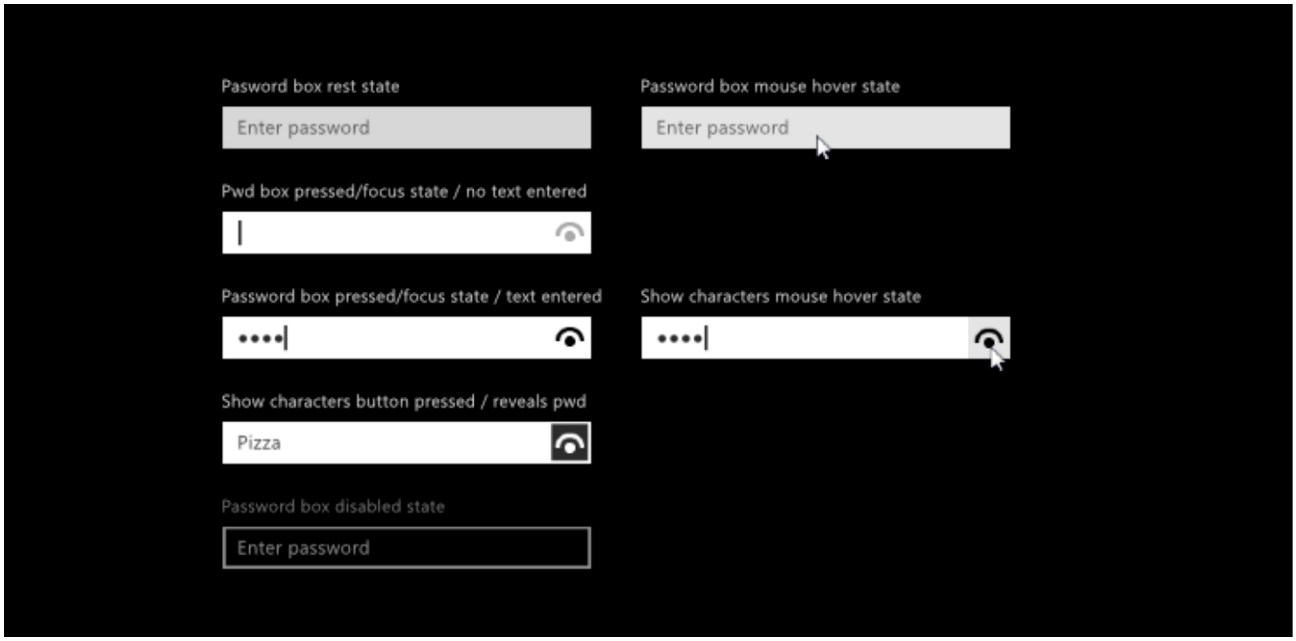
Inline errors



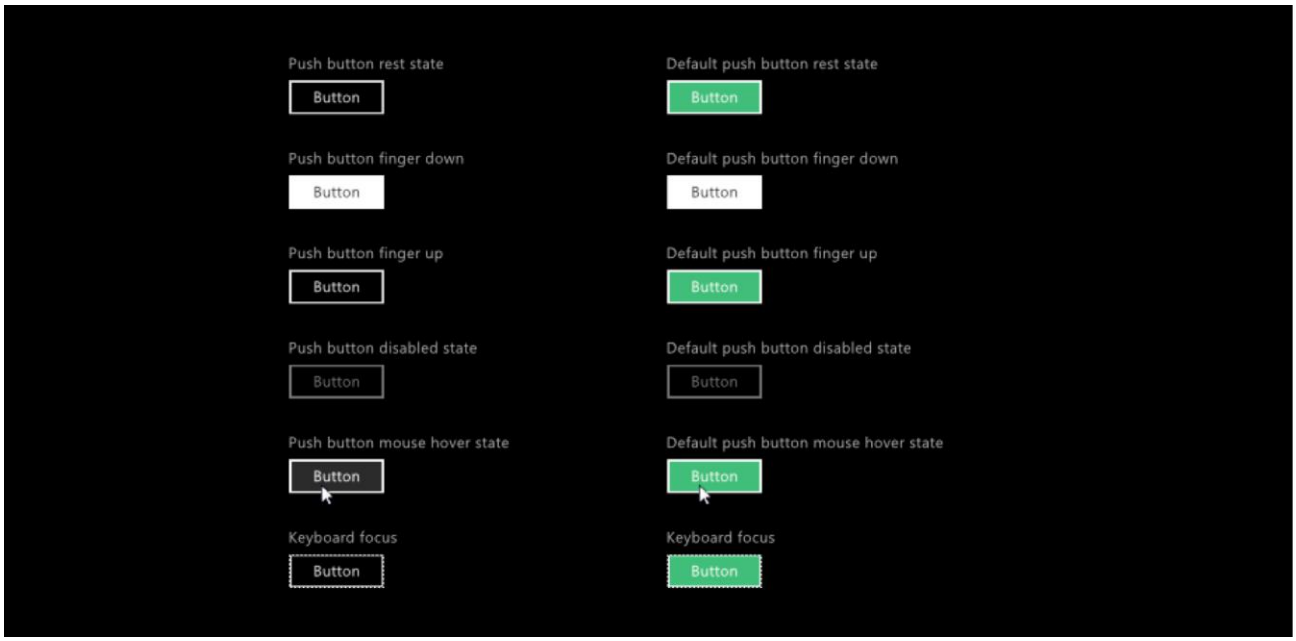
Message dialog



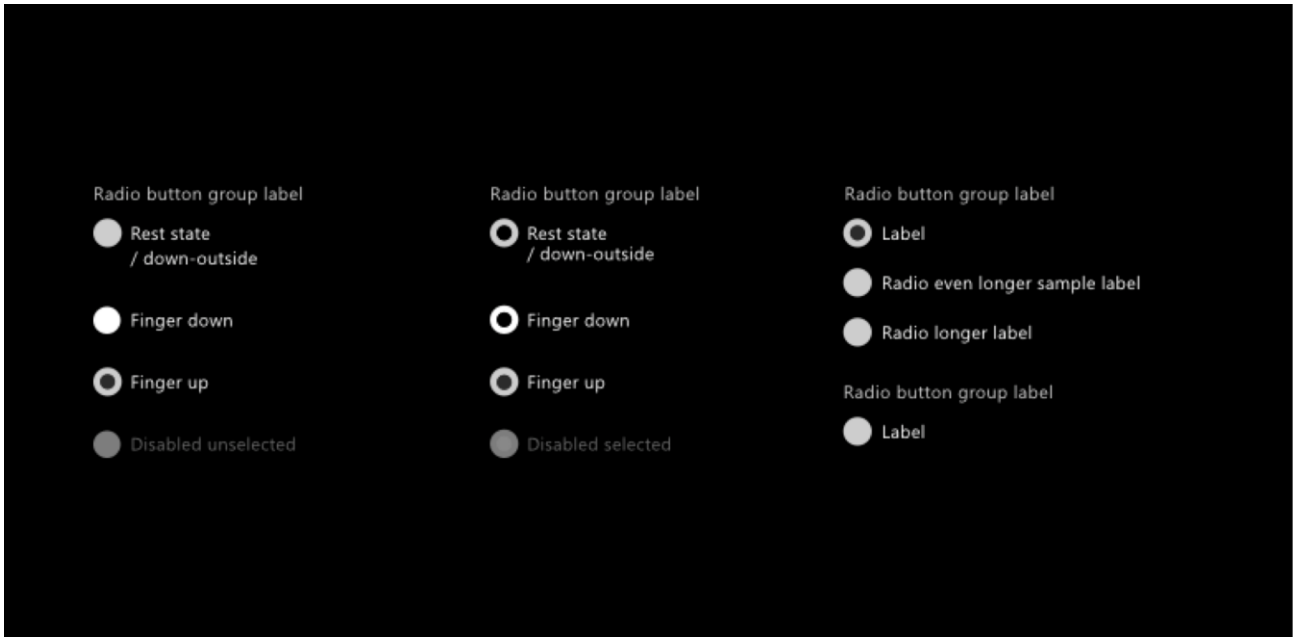
Password box



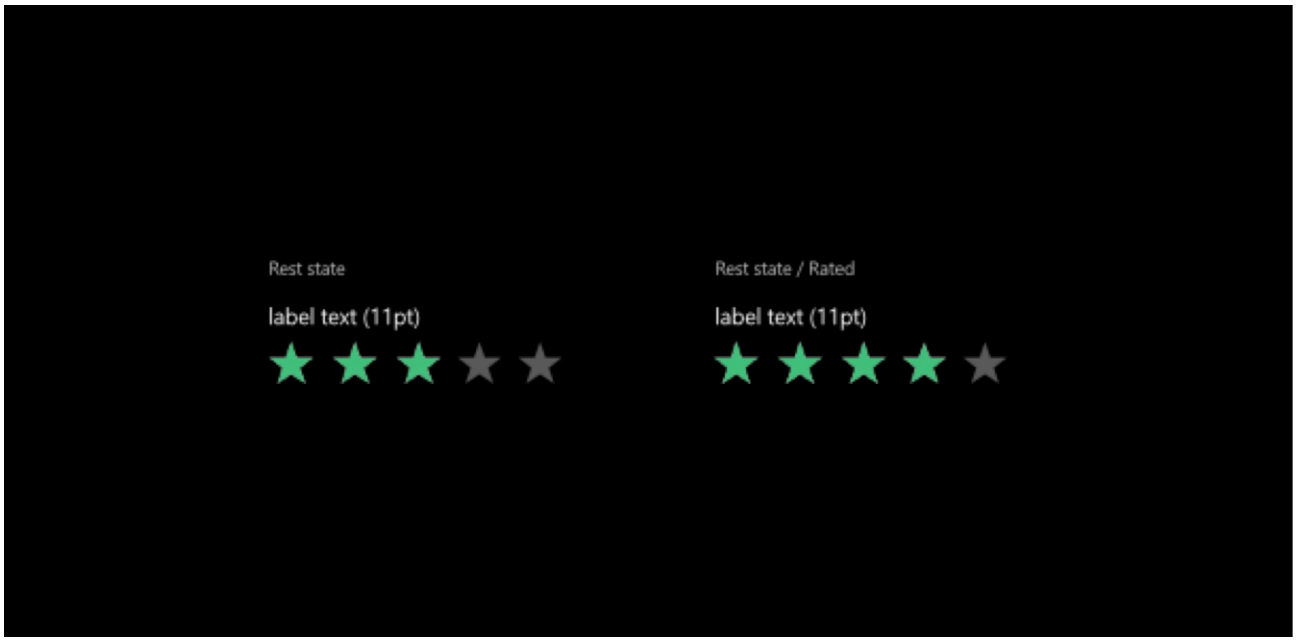
Push button



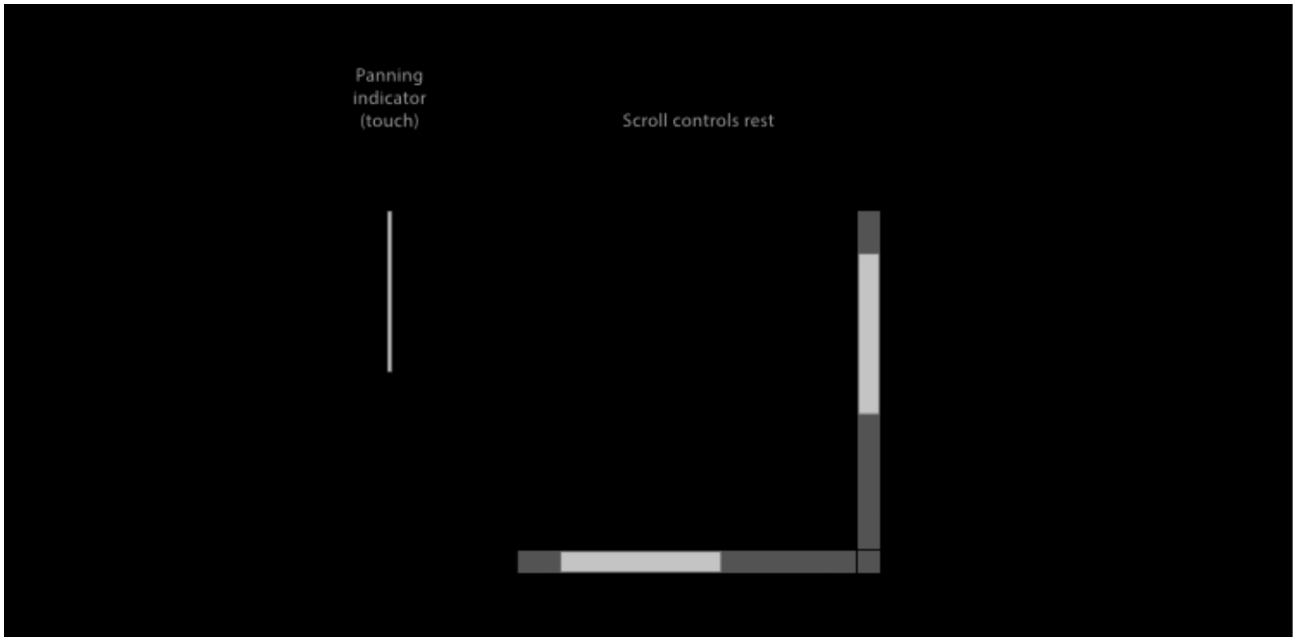
Radio button



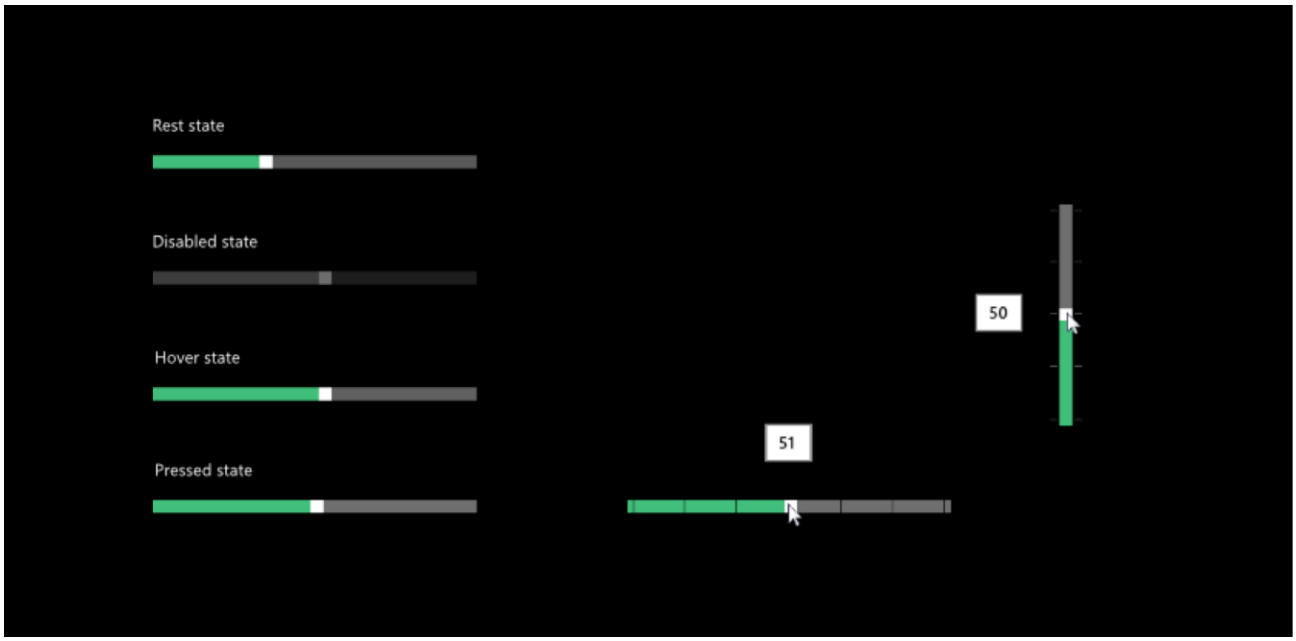
Rating



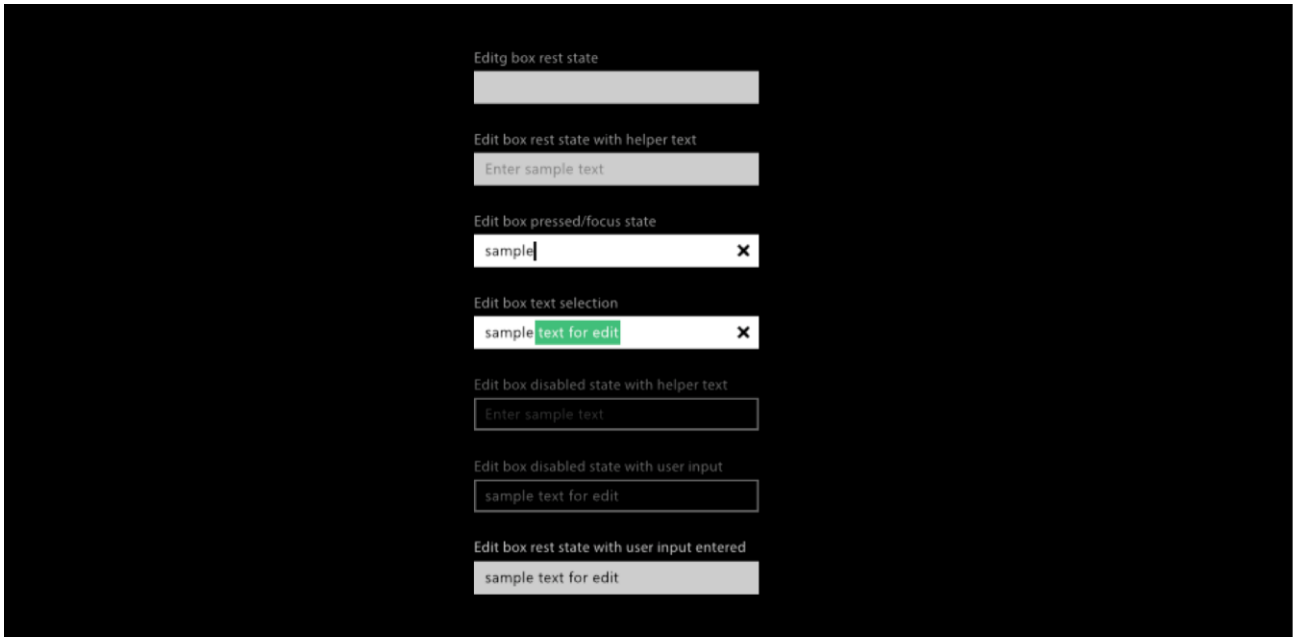
Scroll control



Slider



Textbox



Toggle switch



3.2. SmartPhone

3.2.1. Fonts

Segoe WP Semilight

ABCDEFGHIJKLMNOPQRSTUVWZYZÆØÅ

Segoe WP Regular

ABCDEFGHIJKLMNOPQRSTUVWZYZÆØÅ

Segoe WP Semibold

ABCDEFGHIJKLMNOPQRSTUVWZYZÆØÅ

3.2.2. Colours

GB green

CMYK - C74, Y86
RGB - R58, G182, B95
Web - 3AB65F

GB grey 1

CMYK - C60, M50, Y50, K20
RGB - 102, 102, 102
Web - 666666

GB grey 1

CMYK - C72, M66, Y65, K73
RGB - 33, 33, 33
Web - 212121

GB black

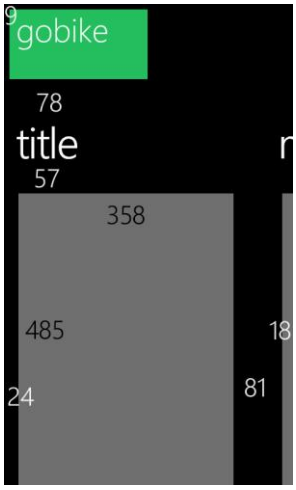
RGB - 0, 0, 0

GB white

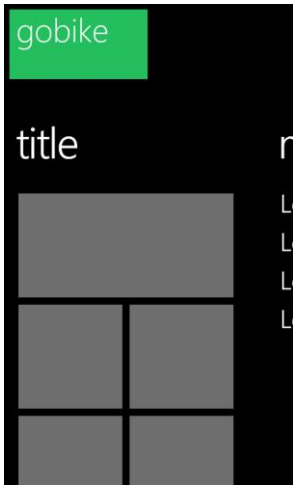
CMYK - C0, M0, Y0, K0
RGB - 255, 255, 255
Web - FFFFFF

3.2.3. Real Estate

Wireframe



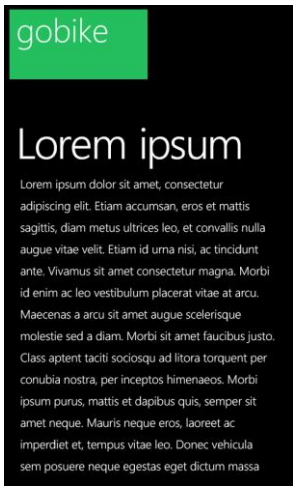
Frontpage



Overview page

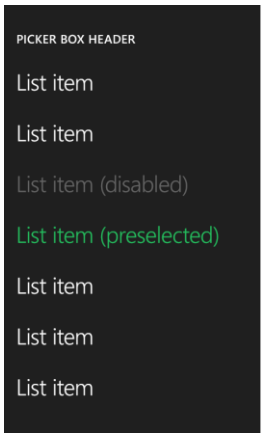


Article page



3.2.4. Design Elements

Picker box

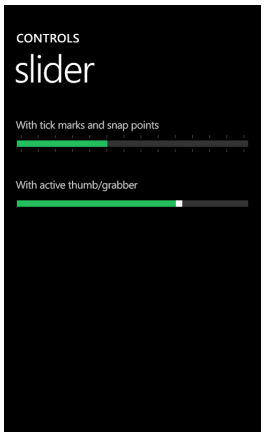




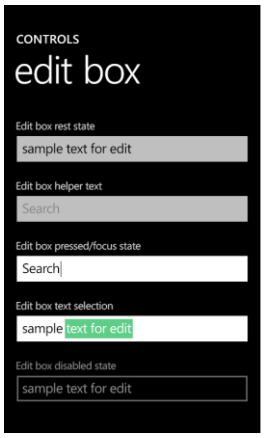
Toggle

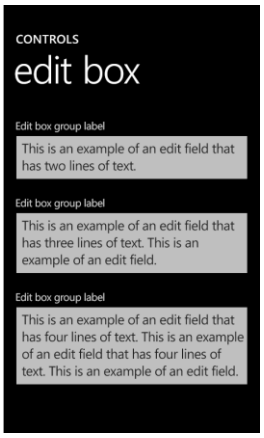


Slider

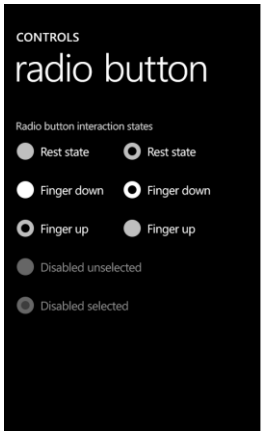


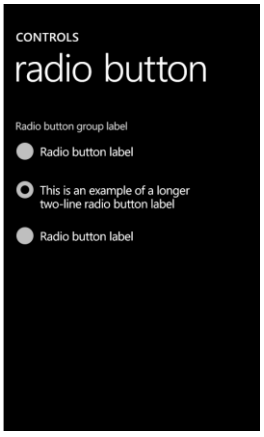
Edit box



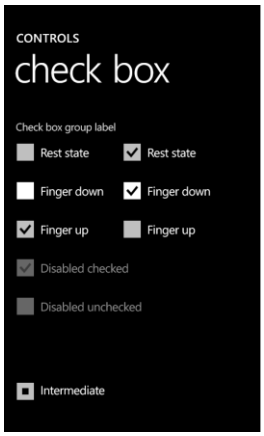


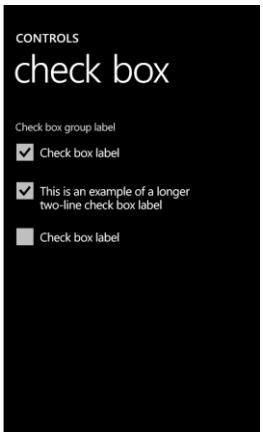
Radio buttons





Check box



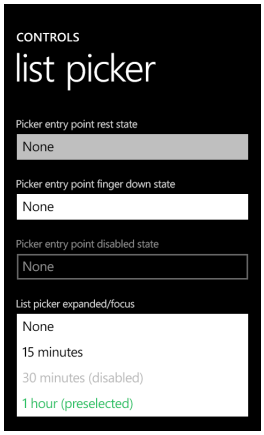


Time picker

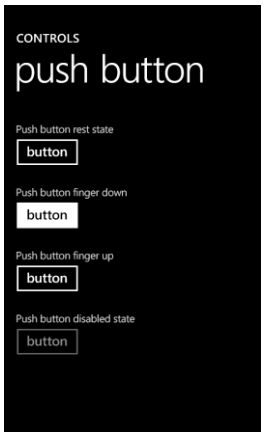




Inline picker



Push buttons



3.3. Web

3.3.1. Colors

GB green

CMYK - C74, Y86
RGB - R58, G182, B95
Web - 3AB65F

GB grey 1

CMYK - C60, M50, Y50, K20
RGB - 102, 102, 102
Web - 666666

GB grey 2

CMYK - C27, M22, Y22
RGB - 186, 186, 186
Web - BABABA

GB orange

CMYK - C10, M78, Y100, K2
RGB - R218, G90, B1
Web - DA5A01

GB white

CMYK - C0, M0, Y0, K0
RGB - 255, 255, 255
Web - FFFFFF

GB black

CMYK - C75, M68, Y67, K90
RGB - 0, 0, 0
Web - 000000

3.3.2. Buttons

Button

Hover

Active

3.3.3. Clickbuttons

- [ ] Not checked
- [x] Checked
- ( ) Radio
- (•) Radiod radio

3.3.4. Dropdown

Dropdown



Dropdown open

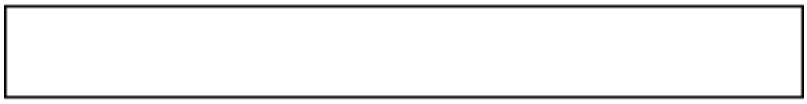


3.3.5. Textarea

Input



Input focus

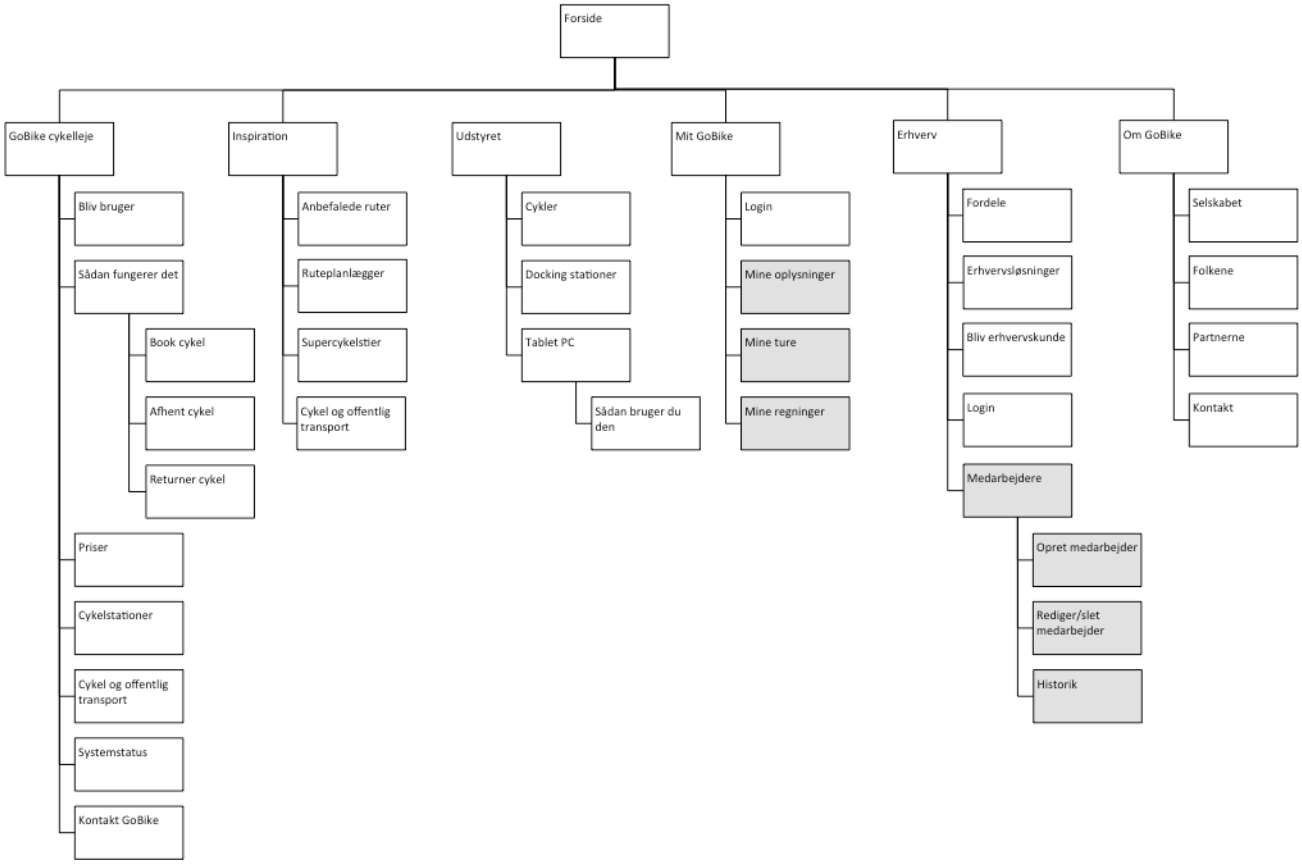


Input with placeholder



4. Website

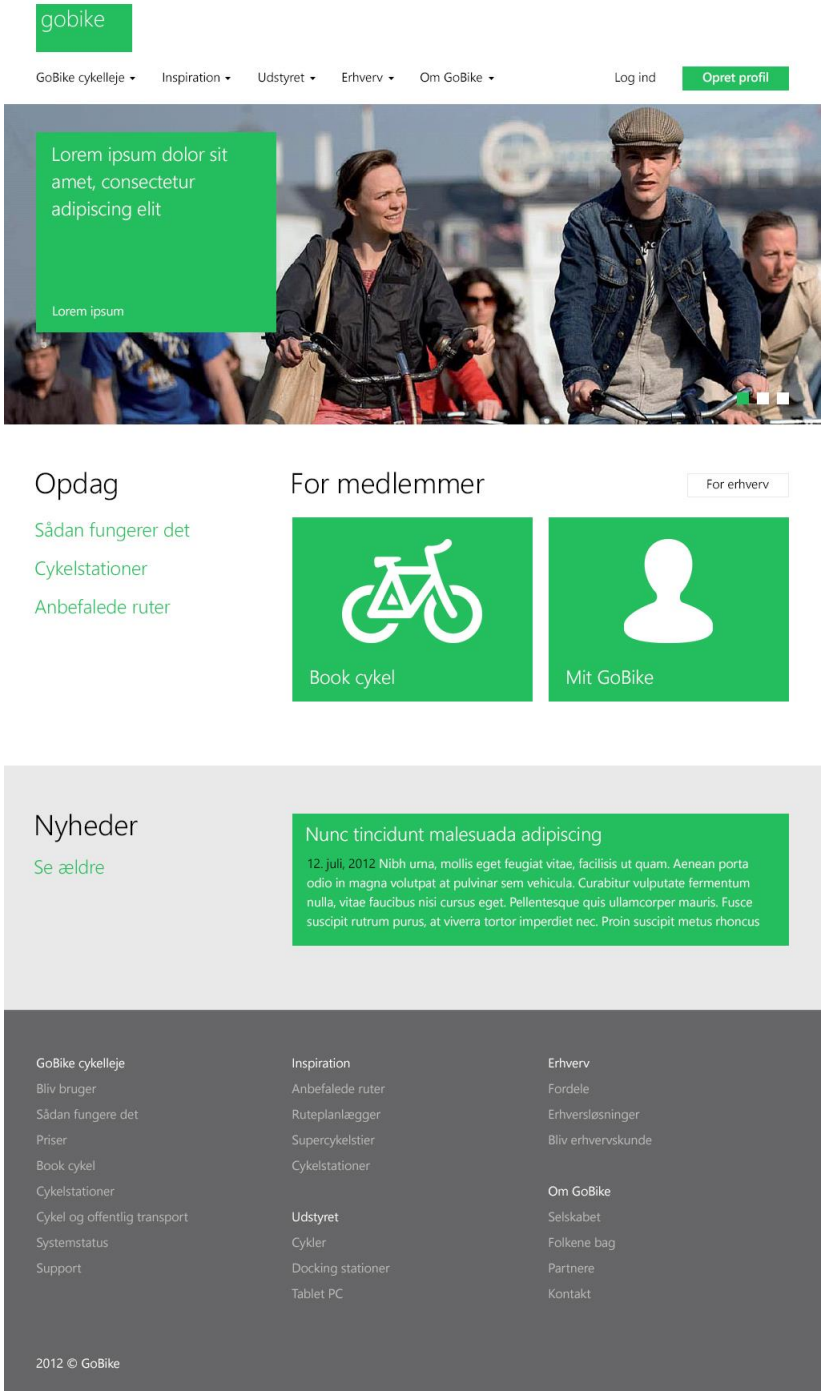
4.1. Information Architecture

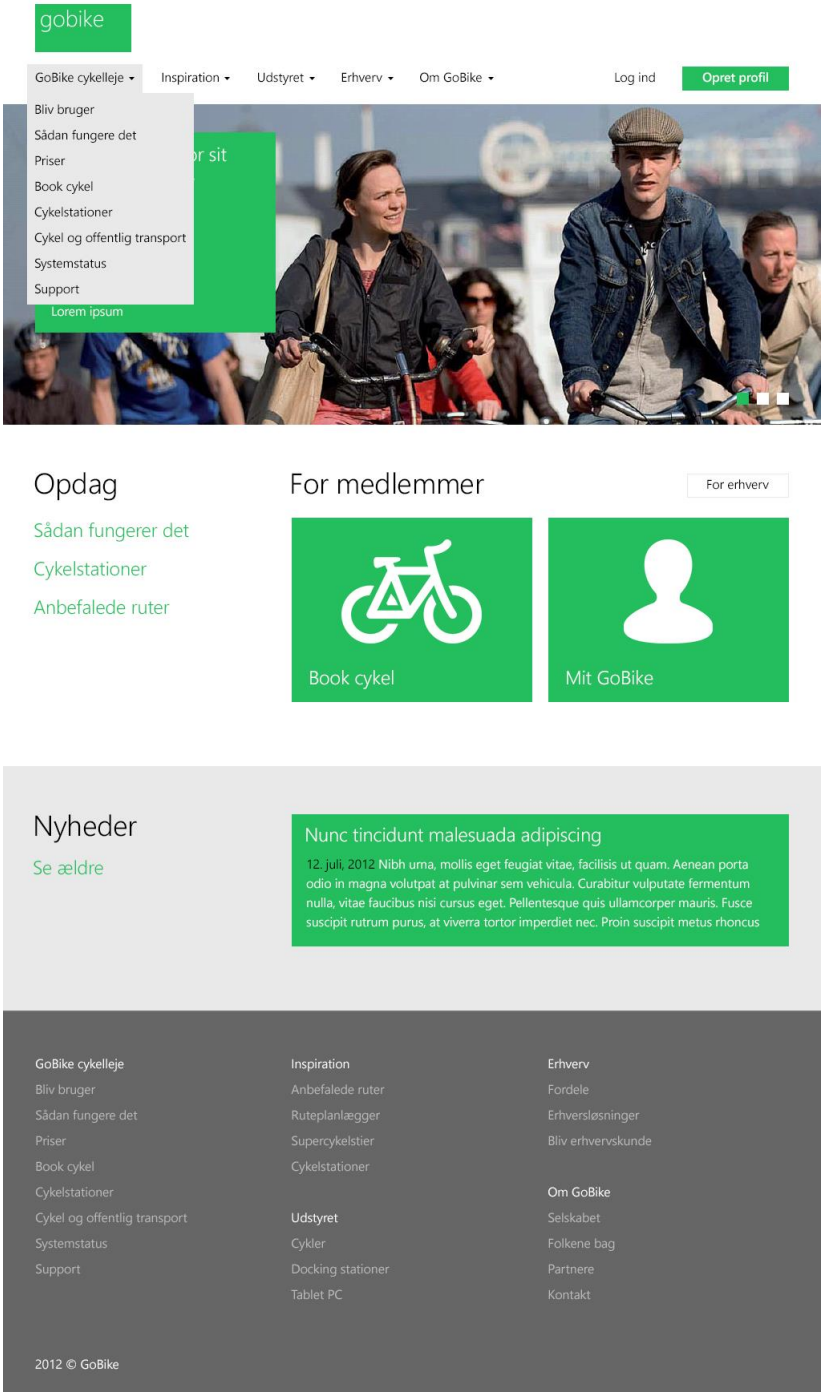


4.2. Visual mock-ups

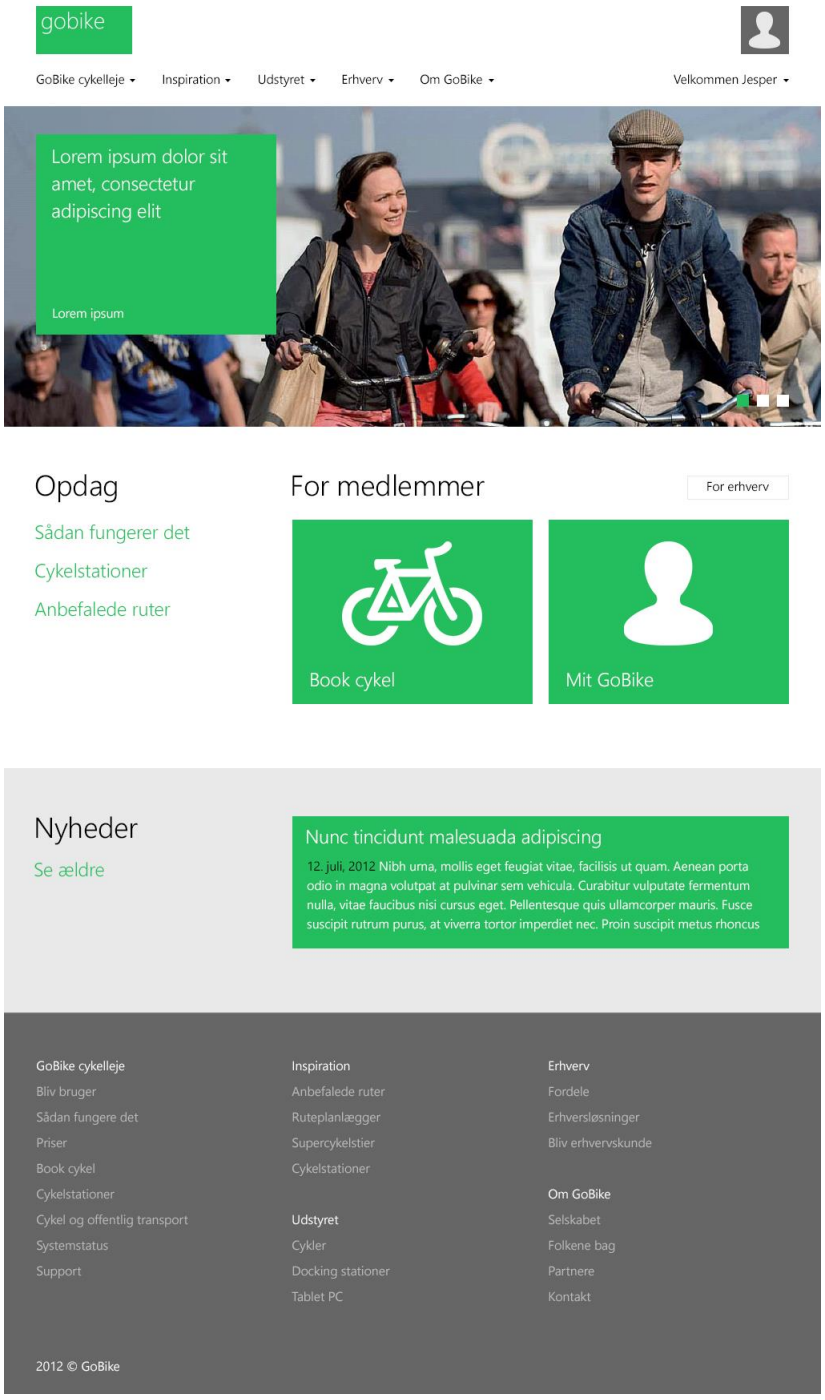
4.2.1. Frontpage

Not logged in



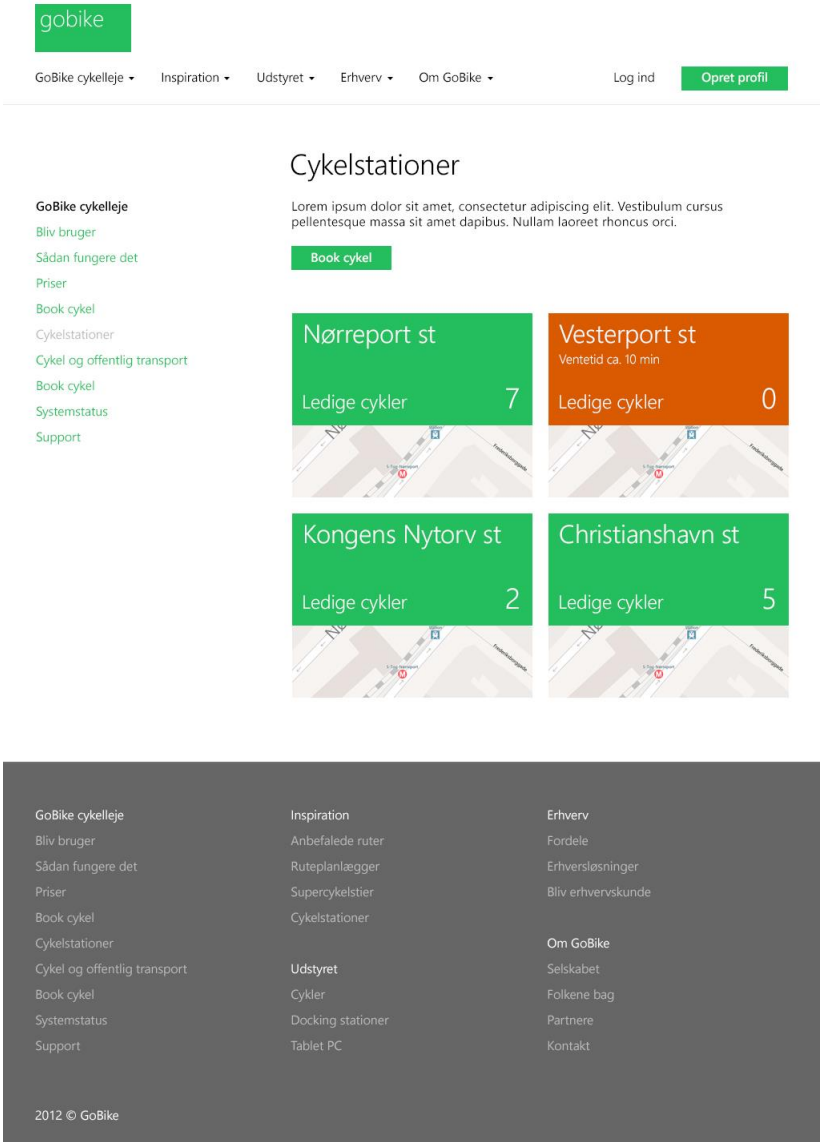

gobike
GoBike cykelleje
Inspiration
Udstyret
Erhverv
Om GoBike
Log ind
Opret profil
Bliv bruger
Sådan fungere det
Priser
Book cykel
Cykelstationer
Cykel og offentlig transport
Systemstatus
Support
Lorem ipsum
Opdag
Sådan fungerer det
Cykelstationer
Anbefalede ruter
For medlemmer
For erhverv
Book cykel
Mit GoBike
Nyheder
Se ældre
Nunc tincidunt malesuada adipiscing
12. juli, 2012 Nibh urna, mollis eget feugiat vitae, facilisis ut quam. Aenean porta odio in magna volutpat at pulvinar sem vehicula. Curabitur vulputate fermentum nulla, vitae faucibus nisi cursus eget. Pellentesque quis ullamcorper mauris. Fusce suscipit rutrum purus, at viverra tortor imperdiet nec. Proin suscipit metus rhoncus
GoBike cykelleje
Bliv bruger
Sådan fungere det
Priser
Book cykel
Cykelstationer
Cykel og offentlig transport
Systemstatus
Support
Inspiration
Anbefalede ruter
Ruteplanlægger
Supercykelstier
Cykelstationer
Udstyret
Cykler
Docking stationer
Tablet PC
Erhverv
Fordele
Erhversløsninger
Bliv erhvervskunde
Om GoBike
Selskabet
Folkene bag
Partnere
Kontakt
2012 © GoBike

Logged in

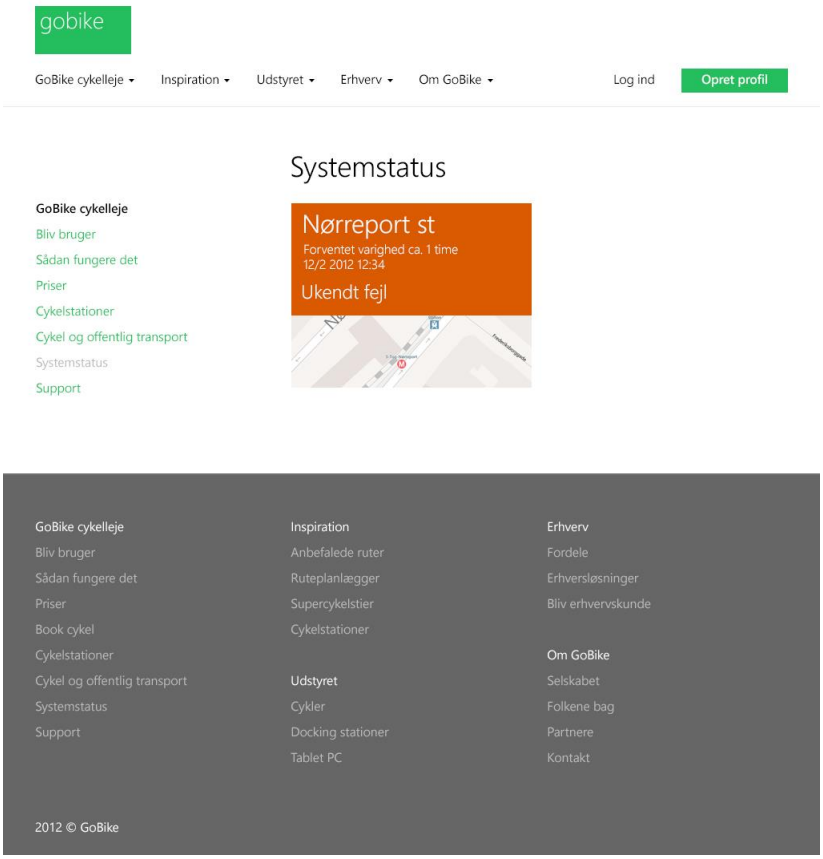

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GoBike cykelleje
Inspiration
Udstyret
Erhverv
Om GoBike
Velkommen Jesper
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Bliv bruger
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Cykelstationer
Cykel og offentlig transport
Systemstatus
Support
Inspiration
Anbefalede ruter
Ruteplanlægger
Supercykelstier
Cykelstationer
Udstyret
Cykler
Docking stationer
Tablet PC
Erhverv
Fordele
Erhversløsninger
Bliv erhvervskunde
Om GoBike
Selskabet
Folkene bag
Partnere
Kontakt
2012 © GoBike

4.2.2. Rent-a-bike

GoBike Locations

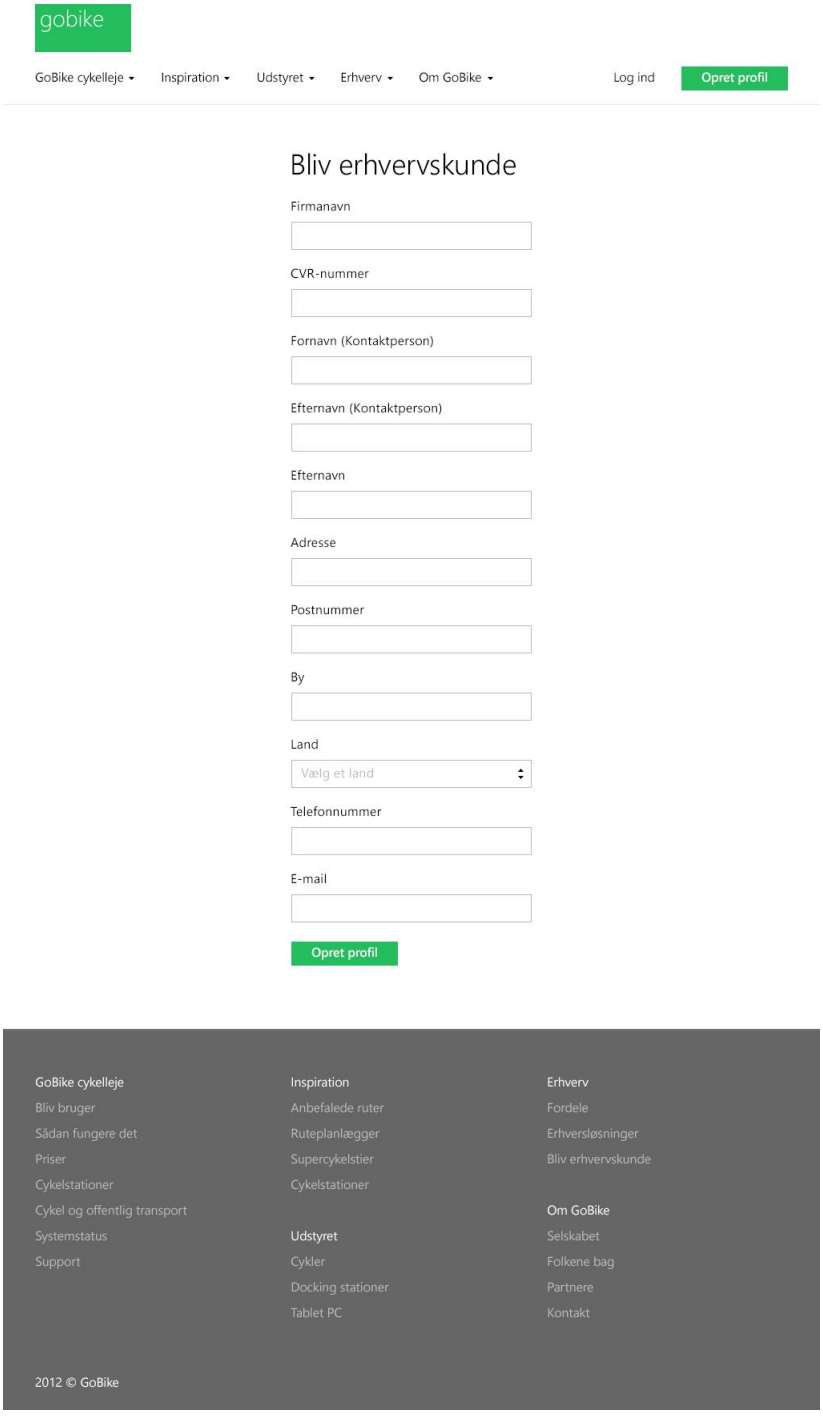


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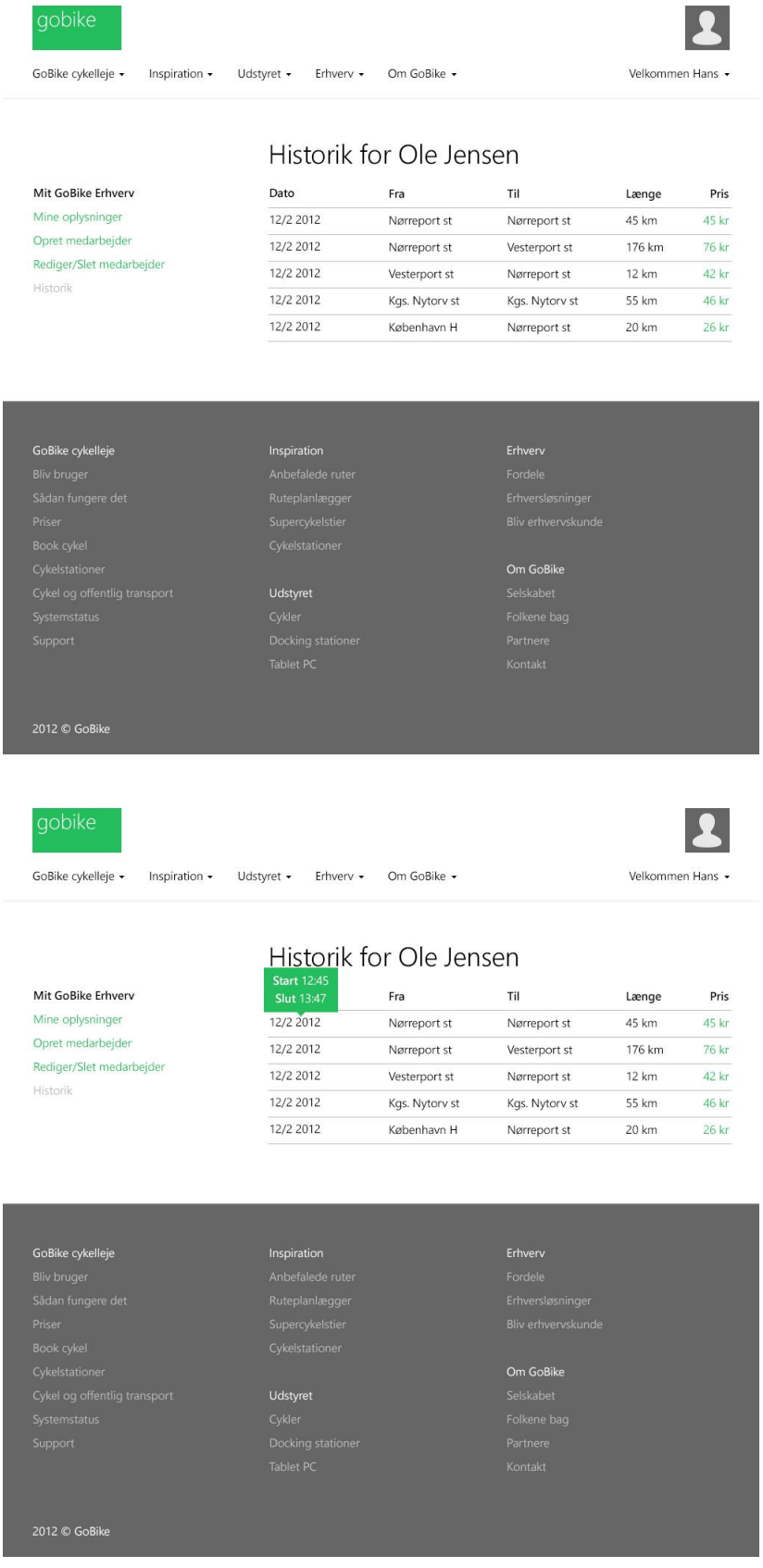


4.2.3. Business

Become GoBike customer

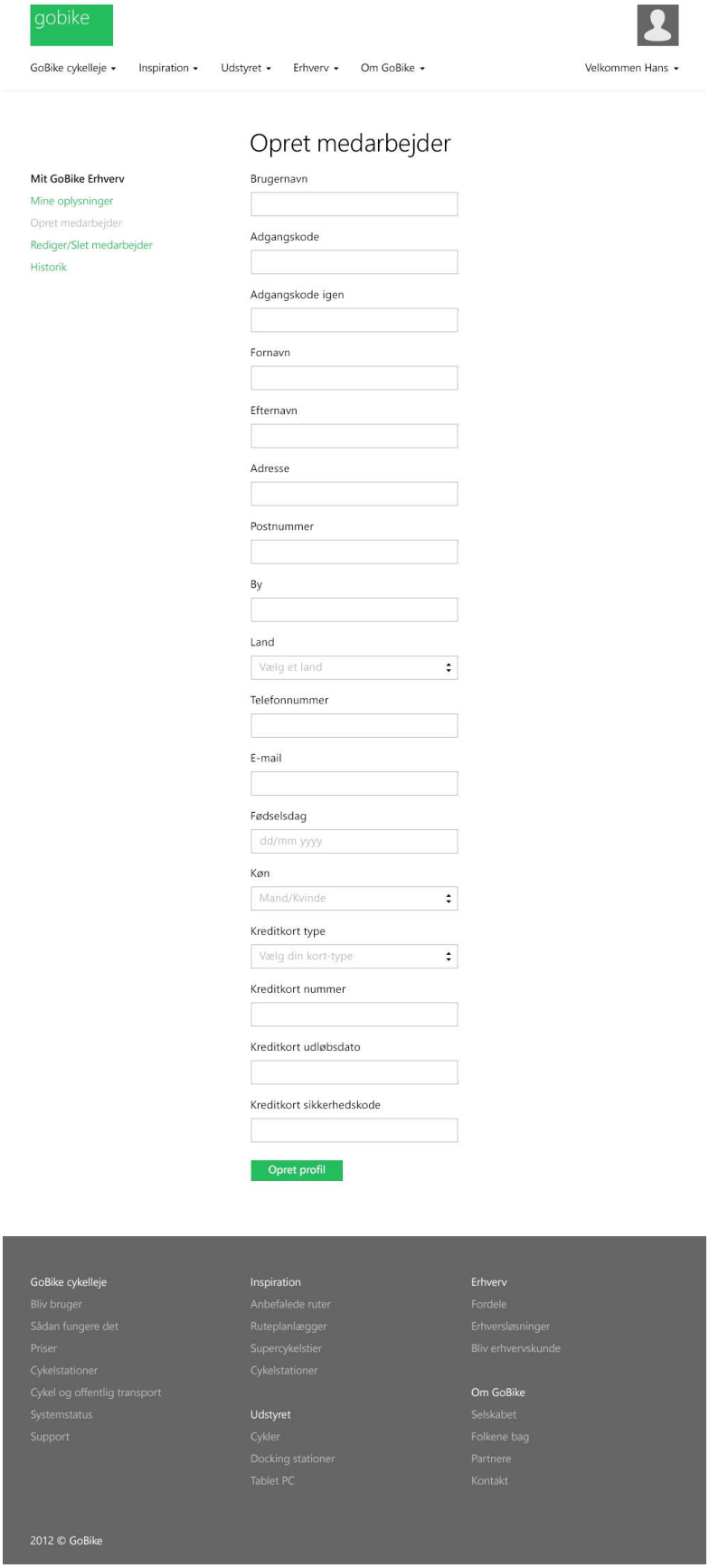


History

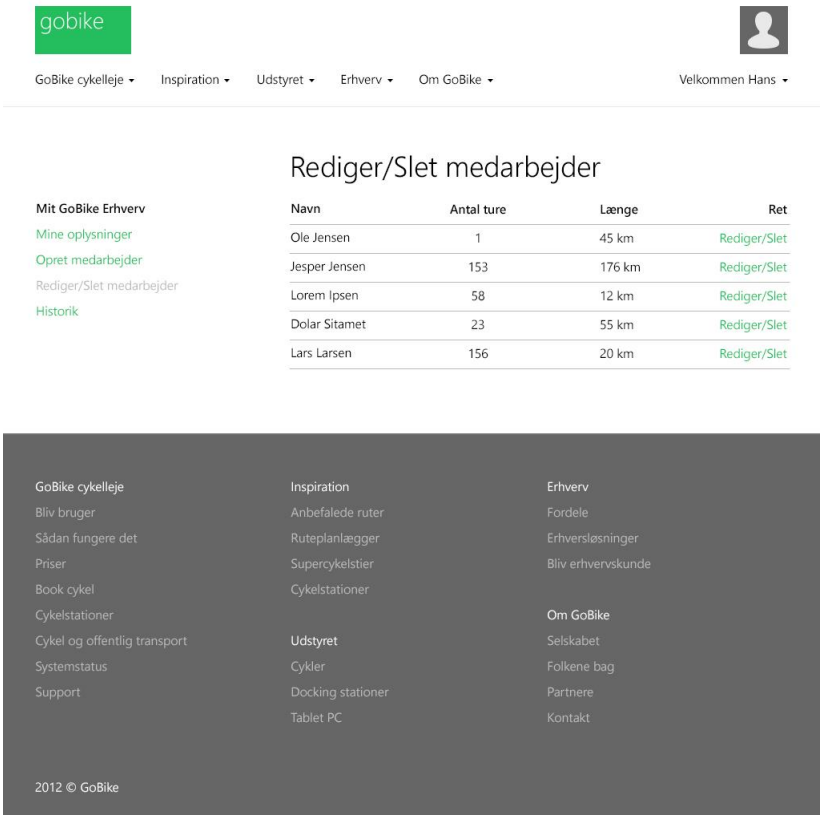

gobike
GoBike cykelleje
Inspiration
Udstyret
Erhverv
Om GoBike
Velkommen Hans
Historik for Ole Jensen
Mit GoBike Erhverv
Mine oplysninger
Opret medarbejder
Rediger/Slet medarbejder
Historik
Dato
Fra
Til
Længe
Pris
12/2 2012 Nørreport st Nørreport st 45 km 45 kr
12/2 2012 Nørreport st Vesterport st 176 km 76 kr
12/2 2012 Vesterport st Nørreport st 12 km 42 kr
12/2 2012 Kgs. Nytorv st Kgs. Nytorv st 55 km 46 kr
12/2 2012 København H Nørreport st 20 km 26 kr
GoBike cykelleje
Bliv bruger
Sådan fungere det
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Book cykel
Cykelstationer
Cykel og offentlig transport
Systemstatus
Support
Inspiration
Anbefalede ruter
Ruteplanlægger
Supercykelstier
Cykelstationer
Udstyret
Cykler
Docking stationer
Tablet PC
Erhverv
Fordele
Erhversløsninger
Bliv erhvervskunde
Om GoBike
Selskabet
Folkene bag
Partnere
Kontakt
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gobike
GoBike cykelleje
Inspiration
Udstyret
Erhverv
Om GoBike
Velkommen Hans
Historik for Ole Jensen
Start 12:45
Slut 13:47
Mit GoBike Erhverv
Mine oplysninger
Opret medarbejder
Rediger/Slet medarbejder
Historik
Fra
Til
Længe
Pris
12/2 2012 Nørreport st Nørreport st 45 km 45 kr
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GoBike cykelleje
Bliv bruger
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Cykelstationer
Cykel og offentlig transport
Systemstatus
Support
Inspiration
Anbefalede ruter
Ruteplanlægger
Supercykelstier
Cykelstationer
Udstyret
Cykler
Docking stationer
Tablet PC
Erhverv
Fordele
Erhversløsninger
Bliv erhvervskunde
Om GoBike
Selskabet
Folkene bag
Partnere
Kontakt
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Create employee

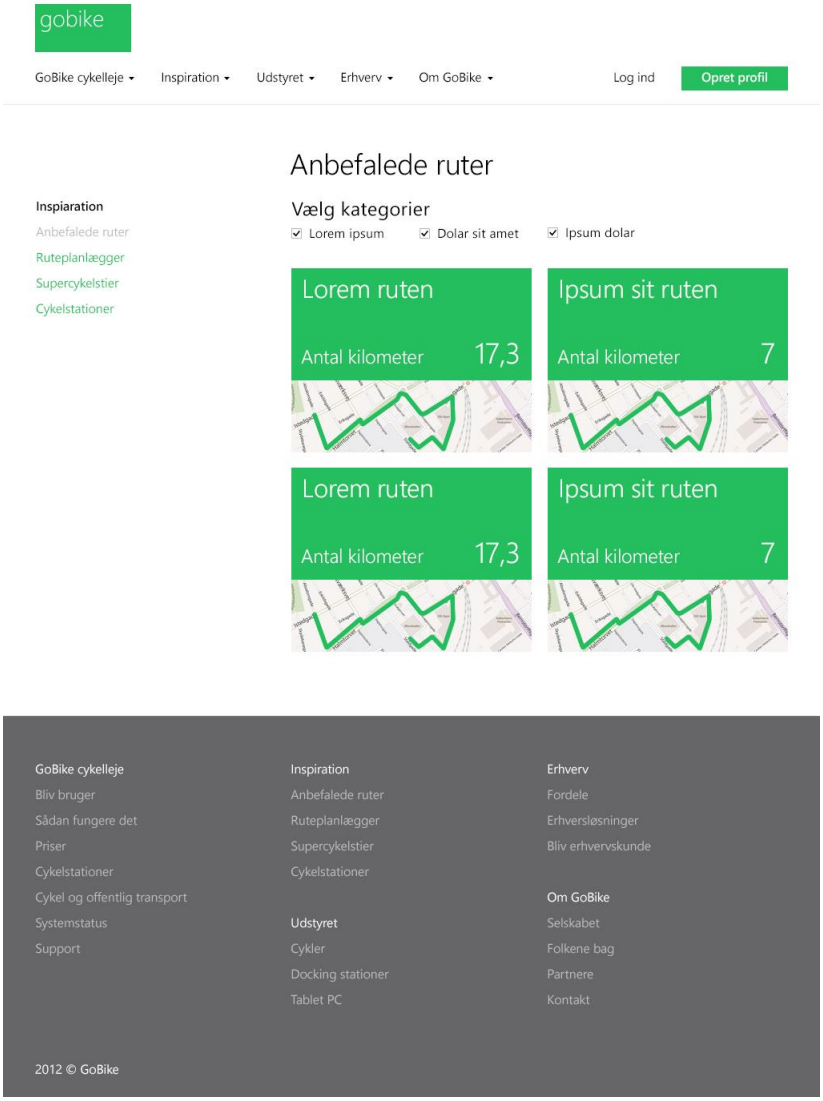


Employees


gobike
GoBike cykelleje
Inspiration
Udstyret
Erhverv
Om GoBike
Velkommen Hans
Rediger/Slet medarbejder
Mit GoBike Erhverv
Mine oplysninger
Opret medarbejder
Rediger/Slet medarbejder
Historik
Navn
Antal ture
Længe
Ret
Ole Jensen 1 45 km Rediger/Slet
Jesper Jensen 153 176 km Rediger/Slet
Lorem Ipsen 58 12 km Rediger/Slet
Dolar Sitamet 23 55 km Rediger/Slet
Lars Larsen 156 20 km Rediger/Slet
GoBike cykelleje
Bliv bruger
Sådan fungere det
Priser
Book cykel
Cykelstationer
Cykel og offentlig transport
Systemstatus
Support
Inspiration
Anbefalede ruter
Ruteplanlægger
Supercykelstier
Cykelstationer
Udstyret
Cykler
Docking stationer
Tablet PC
Erhverv
Fordele
Erhversløsninger
Bliv erhvervskunde
Om GoBike
Selskabet
Folkene bag
Partnere
Kontakt
2012 © GoBike

4.2.4. Inspiration

Recommended routes



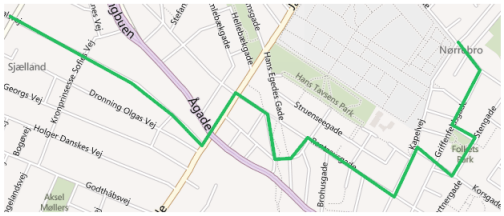
Recommended route

gobike

GoBike cykelleje Inspiration Udstyret Erhverv Om GoBike Log ind Opret profil

Inspiration
Anbefalede ruter
Ruteplanlægger
Supercykelstier
Cykelstationer

Lorem ipsum dolar



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GoBike cykelleje
Bliv bruger
Sådan fungere det
Priser
Book cykel
Cykelstationer
Cykel og offentlig transport
Systemstatus
Support

Inspiration
Anbefalede ruter
Ruteplanlægger
Supercykelstier
Cykelstationer

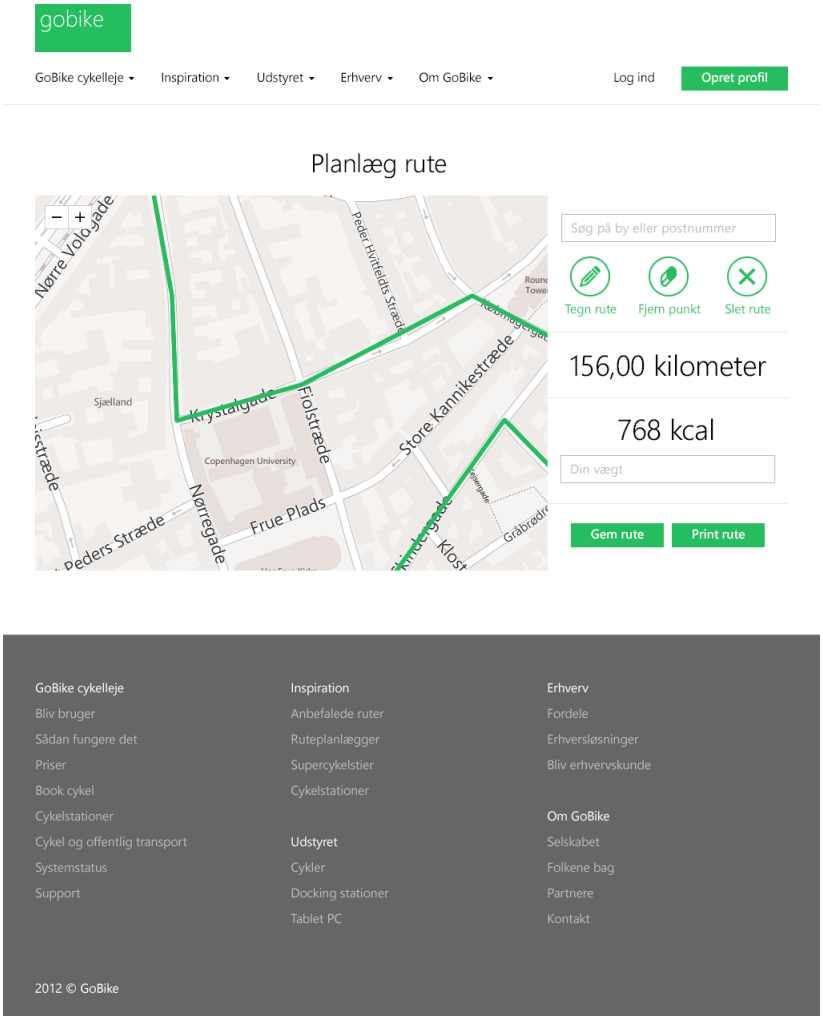
Udstyret
Cykler
Docking stationer
Tablet PC

Erhverv
Fordele
Erhversløsninger
Bliv erhvervskunde

Om GoBike
Selskabet
Folkene bag
Partnere
Kontakt

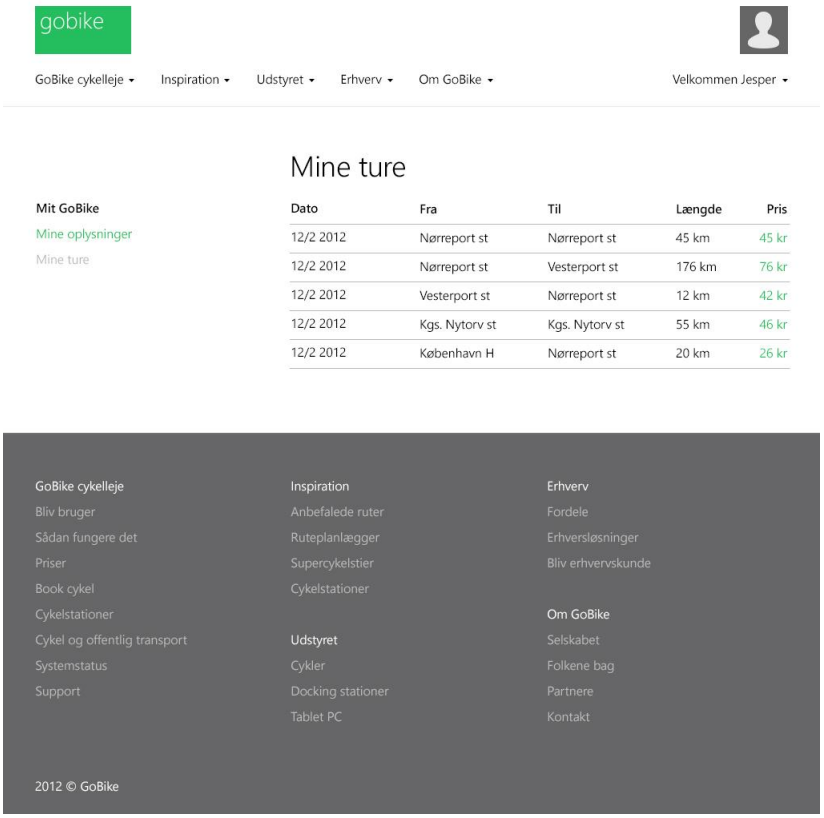
2012 © GoBike

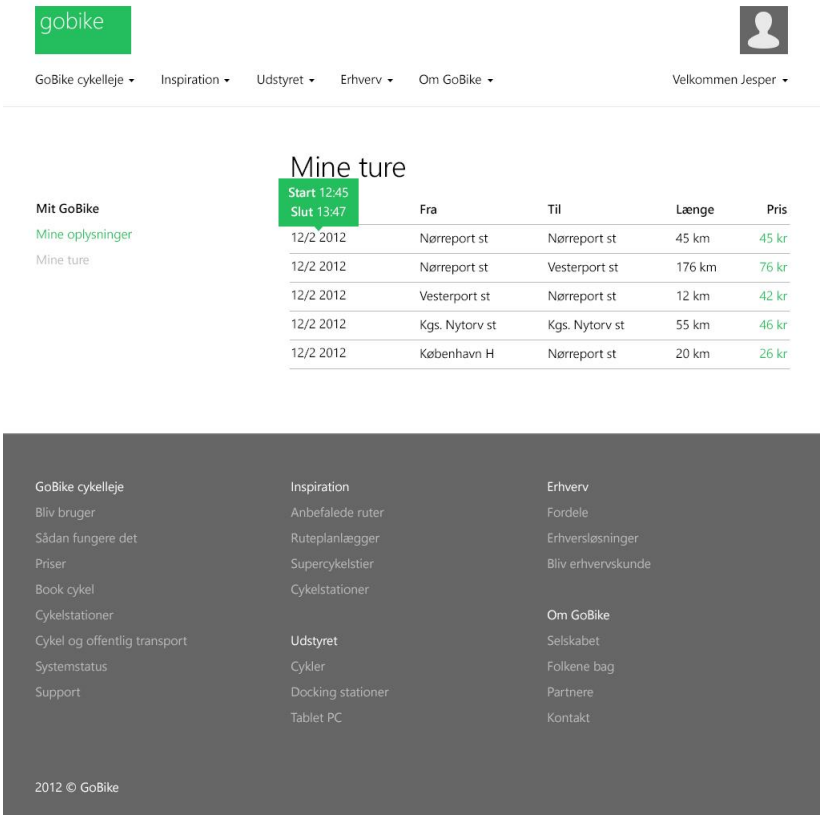
Route planner



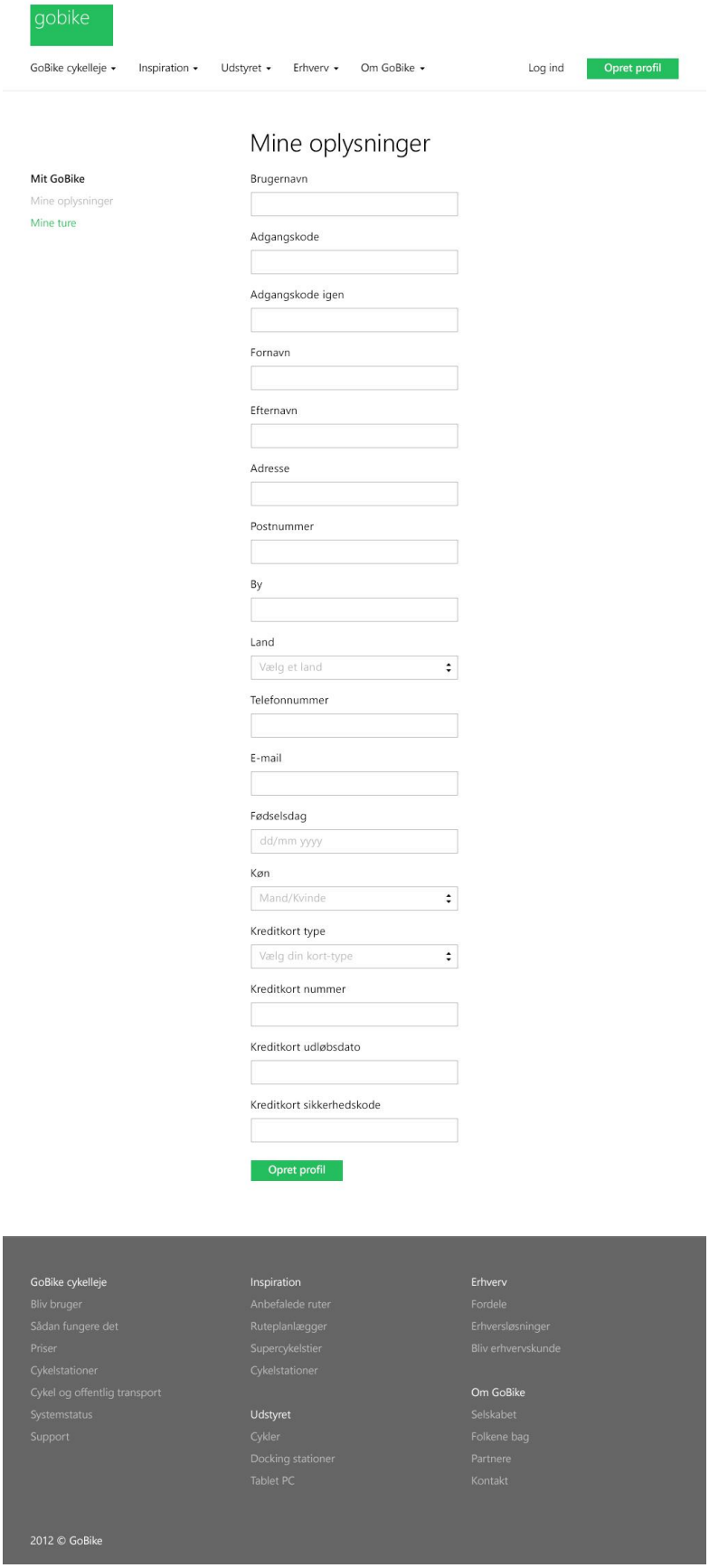
4.2.5. My GoBike

My trips

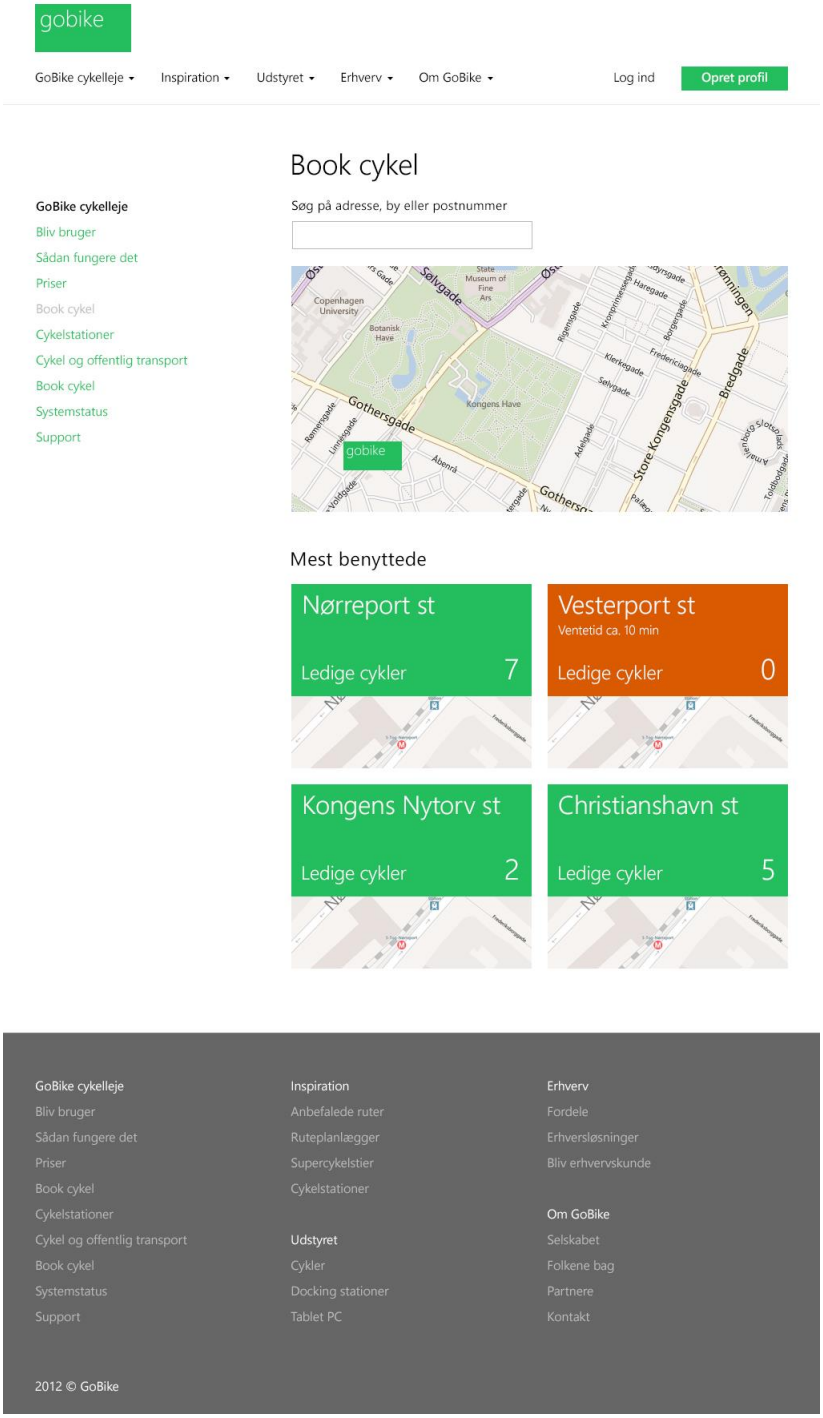


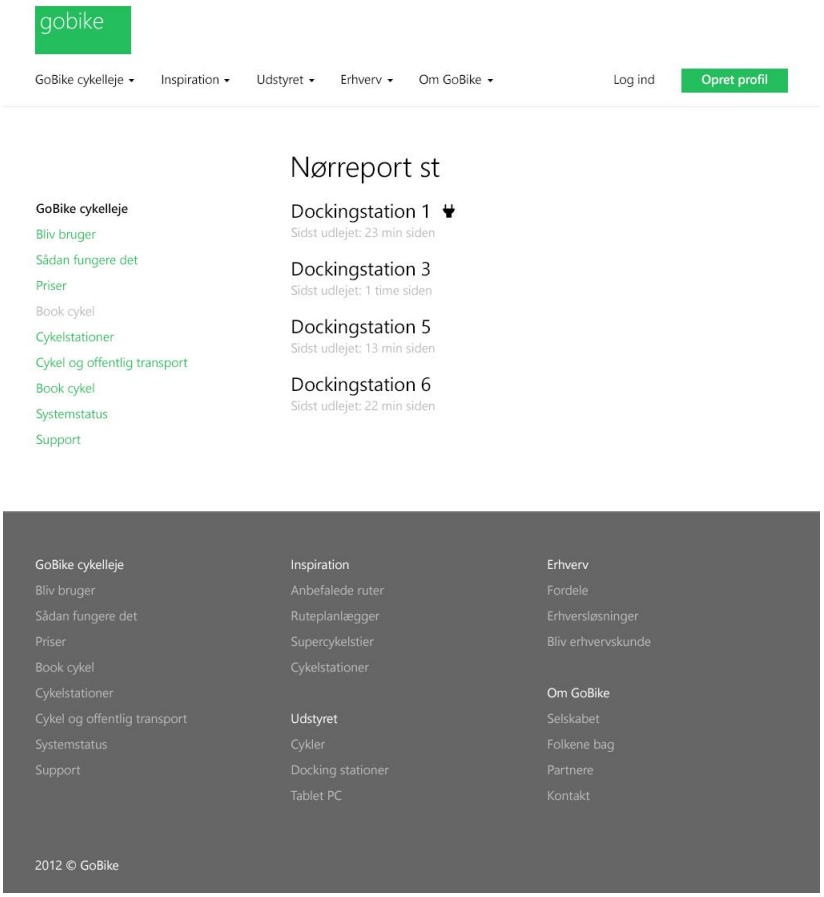

gobike
GoBike cykelleje
Inspiration
Udstyret
Erhverv
Om GoBike
Velkommen Jesper
Mine ture
Mit GoBike
Mine oplysninger
Mine ture
Start 12:45
Slut 13:47
Fra
Til
Længe
Pris
12/2 2012 Nørreport st Nørreport st 45 km 45 kr
12/2 2012 Nørreport st Vesterport st 176 km 76 kr
12/2 2012 Vesterport st Nørreport st 12 km 42 kr
12/2 2012 Kgs. Nytorv st Kgs. Nytorv st 55 km 46 kr
12/2 2012 København H Nørreport st 20 km 26 kr
GoBike cykelleje
Bliv bruger
Sådan fungere det
Priser
Book cykel
Cykelstationer
Cykel og offentlig transport
Systemstatus
Support
Inspiration
Anbefalede ruter
Ruteplanlægger
Supercykelstier
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Udstyret
Cykler
Docking stationer
Tablet PC
Erhverv
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Om GoBike
Selskabet
Folkene bag
Partnere
Kontakt
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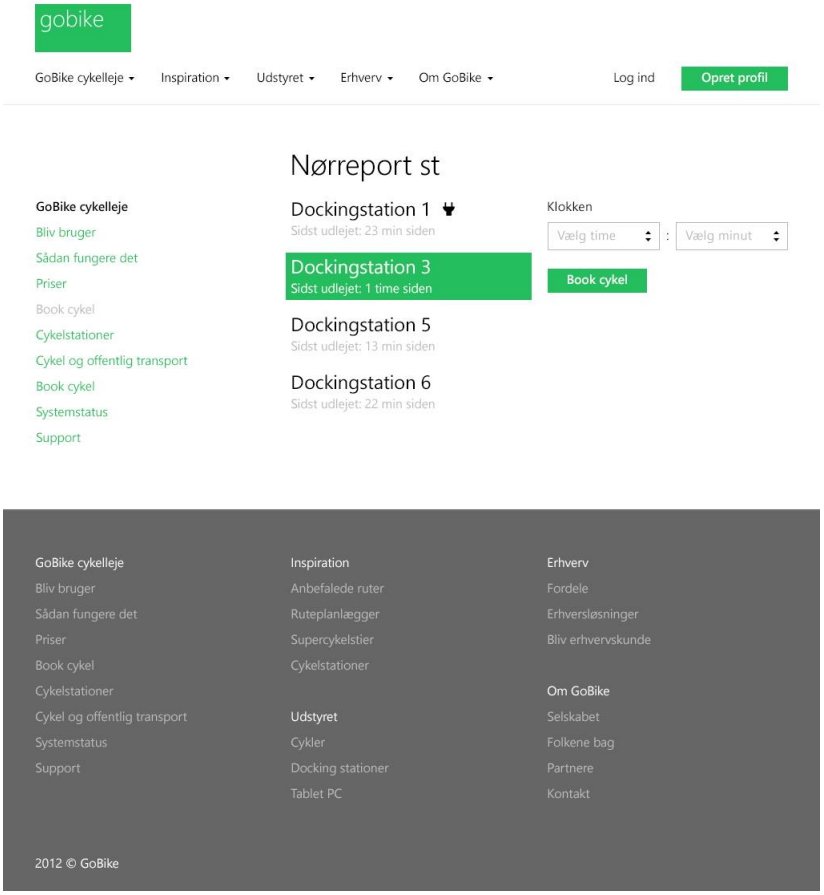
My information



4.2.6. Book bicycle

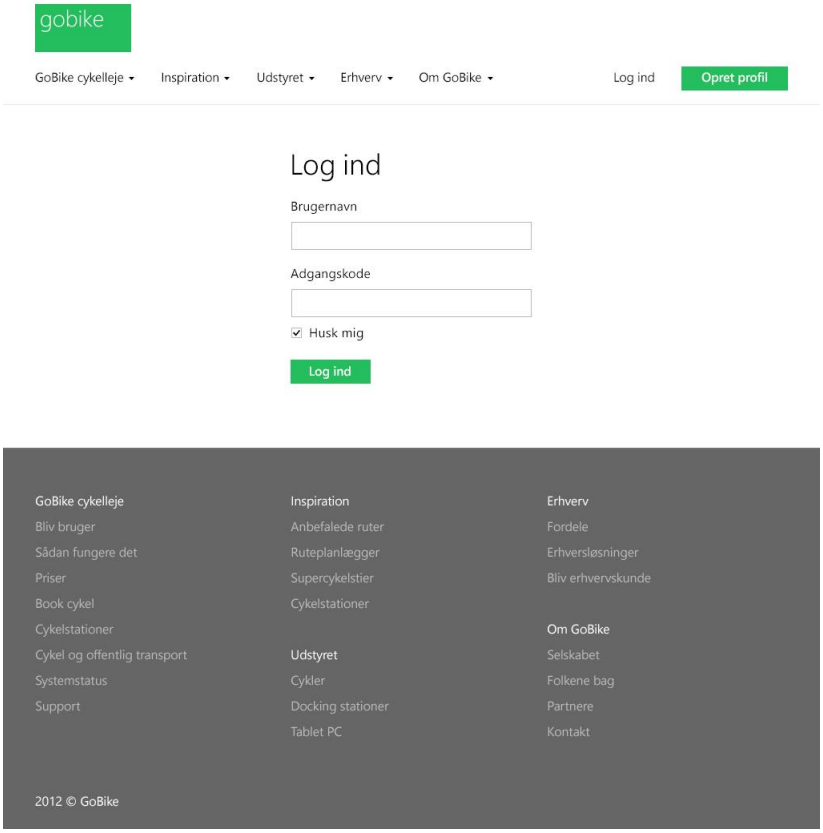



gobike
GoBike cykelleje
Inspiration
Udstyret
Erhverv
Om GoBike
Log ind
Opret profil
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GoBike cykelleje
Bliv bruger
Sådan fungere det
Priser
Book cykel
Cykelstationer
Cykel og offentlig transport
Book cykel
Systemstatus
Support
Dockingstation 1
Sidst udlejet: 23 min siden
Dockingstation 3
Sidst udlejet: 1 time siden
Dockingstation 5
Sidst udlejet: 13 min siden
Dockingstation 6
Sidst udlejet: 22 min siden
GoBike cykelleje
Bliv bruger
Sådan fungere det
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Book cykel
Cykelstationer
Cykel og offentlig transport
Systemstatus
Support
Inspiration
Anbefalede ruter
Ruteplanlægger
Supercykelstier
Cykelstationer
Udstyret
Cykler
Docking stationer
Tablet PC
Erhverv
Fordele
Erhversløsninger
Bliv erhvervskunde
Om GoBike
Selskabet
Folkene bag
Partnere
Kontakt
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GoBike cykelleje
Inspiration
Udstyret
Erhverv
Om GoBike
Log ind
Opret profil
Nørreport st
GoBike cykelleje
Bliv bruger
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Cykelstationer
Cykel og offentlig transport
Book cykel
Systemstatus
Support
Dockingstation 1
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Dockingstation 3
Sidst udlejet: 1 time siden
Dockingstation 5
Sidst udlejet: 13 min siden
Dockingstation 6
Sidst udlejet: 22 min siden
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Vælg minut
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GoBike cykelleje
Bliv bruger
Sådan fungere det
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Book cykel
Cykelstationer
Cykel og offentlig transport
Systemstatus
Support
Inspiration
Anbefalede ruter
Ruteplanlægger
Supercykelstier
Cykelstationer
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Docking stationer
Tablet PC
Erhverv
Fordele
Erhversløsninger
Bliv erhvervskunde
Om GoBike
Selskabet
Folkene bag
Partnere
Kontakt
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4.2.7. Various

Login



Content page

gobike

GoBike cykelleje Inspiration Udstyret Erhverv Om GoBike Log ind Opret profil

I'm a submenu
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GoBike cykelleje
Bliv bruger
Sådan fungere det
Priser
Book cykel
Cykelstationer
Cykel og offentlig transport
Systemstatus
Support

Inspiration
Anbefalede ruter
Ruteplanlægger
Supercykelstier
Cykelstationer

Udstyret
Cykler
Docking stationer
Tablet PC

Erhverv
Fordele
Erhversløsninger
Bliv erhvervskunde

Om GoBike
Selskabet
Folkene bag
Partnere
Kontakt

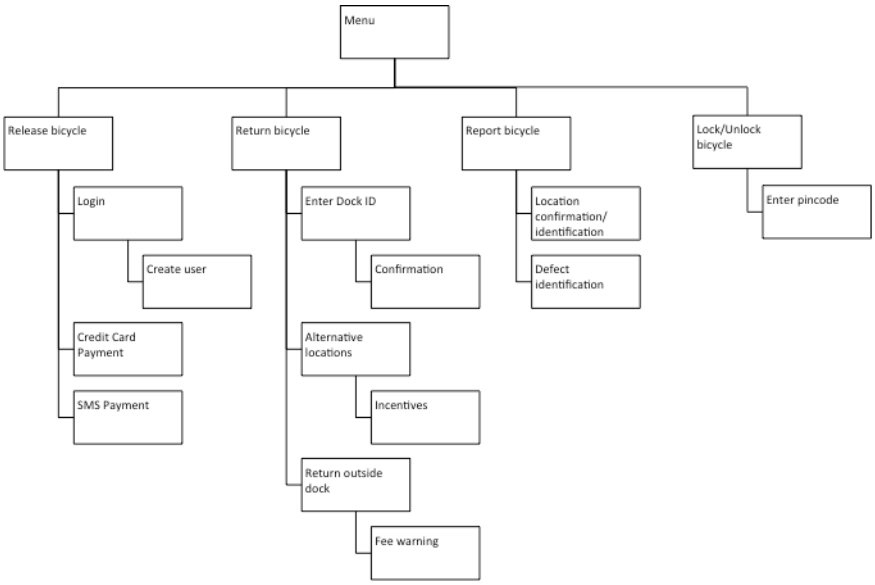
2012 © GoBike

4.3. Facebook


Jesper Jensen
226
Warsaw
About
Photos
Likes
Map
Movies
Jesper Jensen
8th August via GoBike
gobike
Jesper drove 14 km today on a GoBike
Lorem ipsum dolor sit amet, consectetur adipi-
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5. Tablet PC

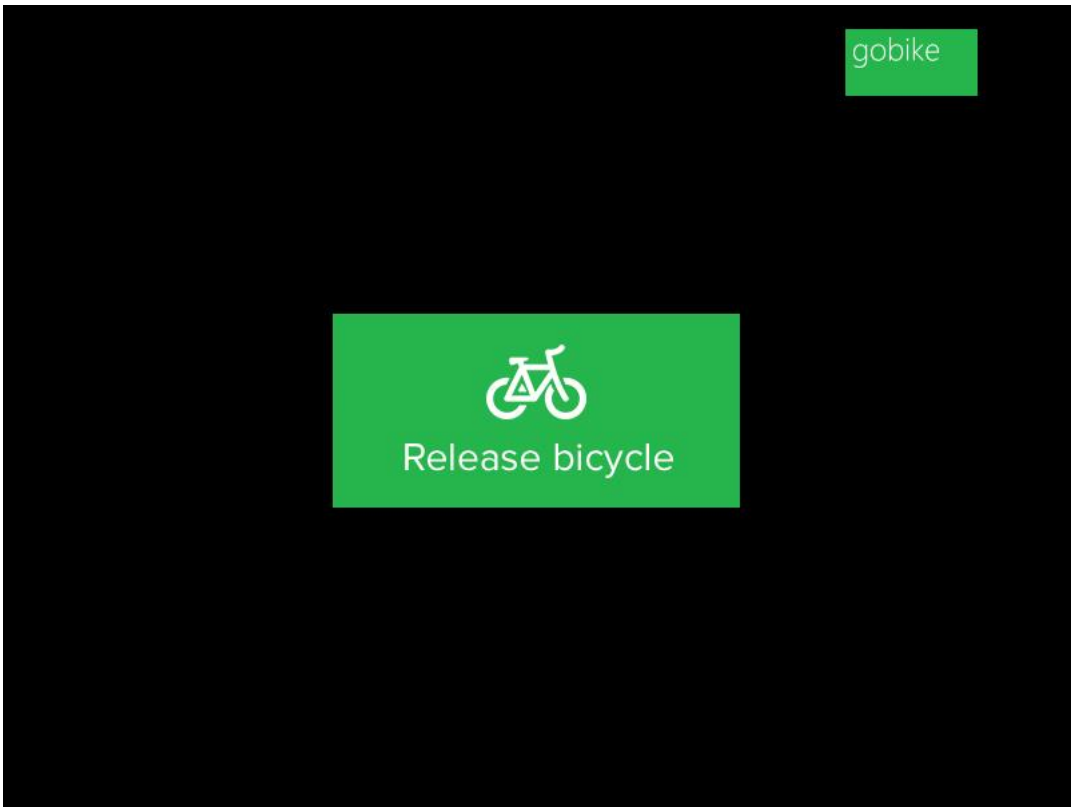
5.1. Information Architecture



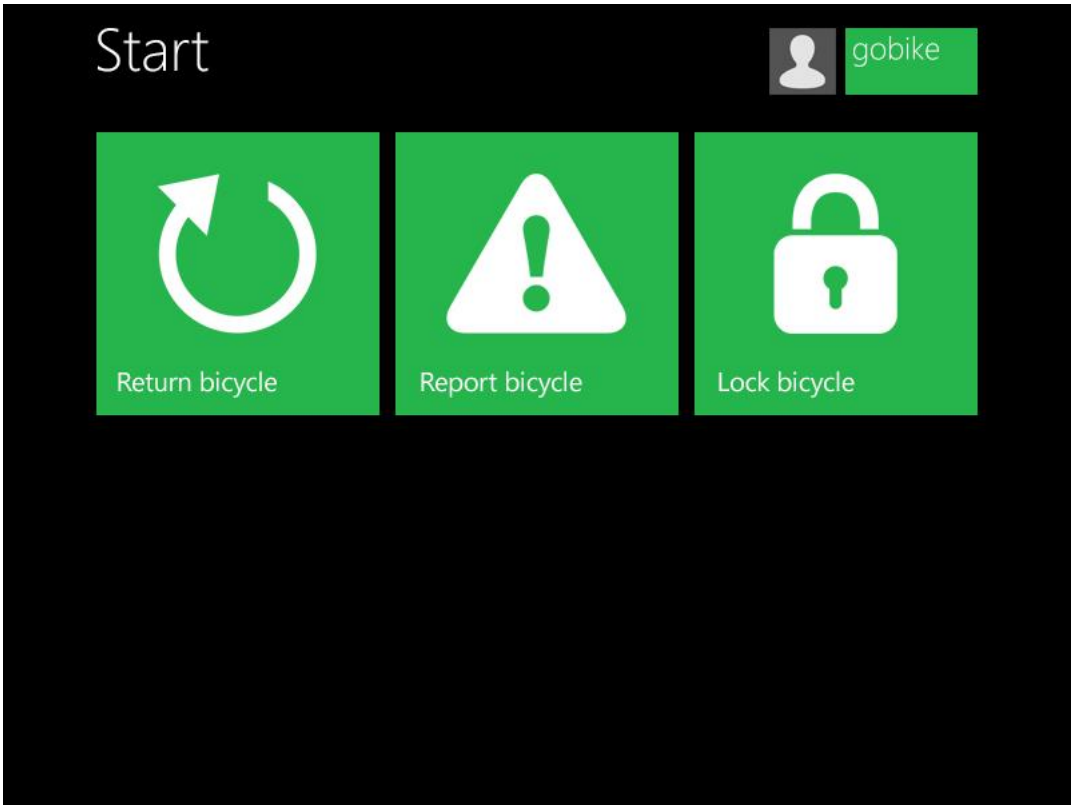
5.2. Visual mock-ups

5.2.1. Main menus

Docked bicycle

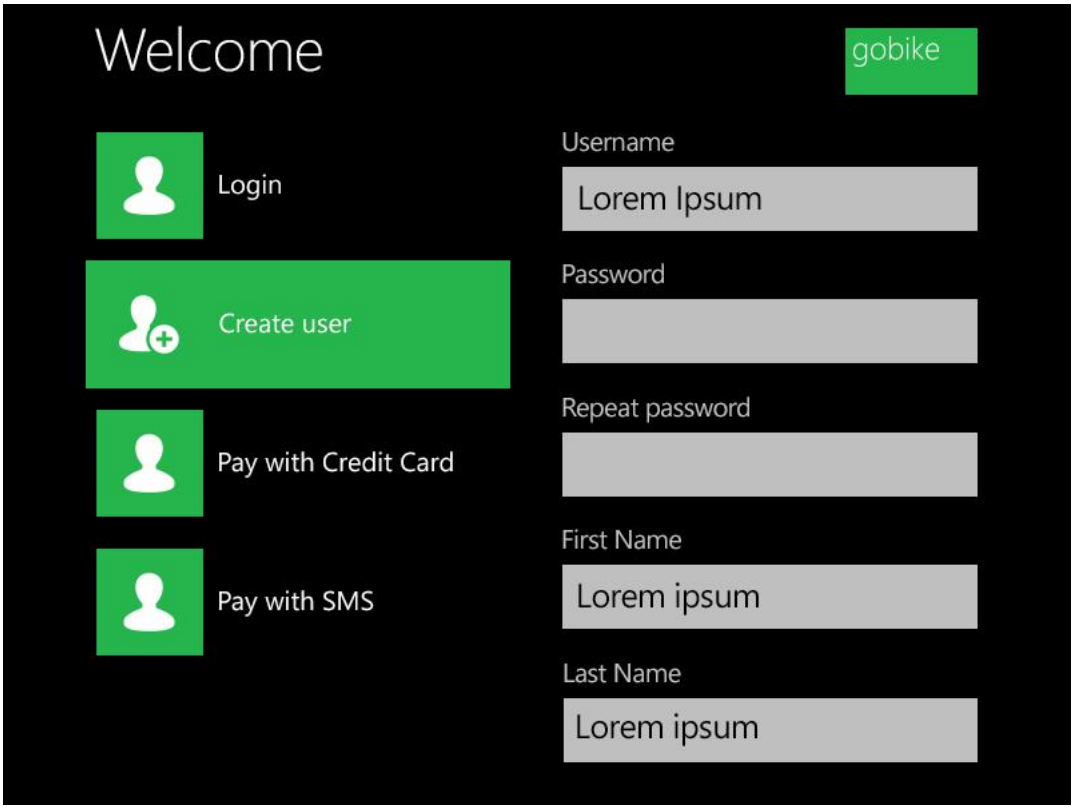


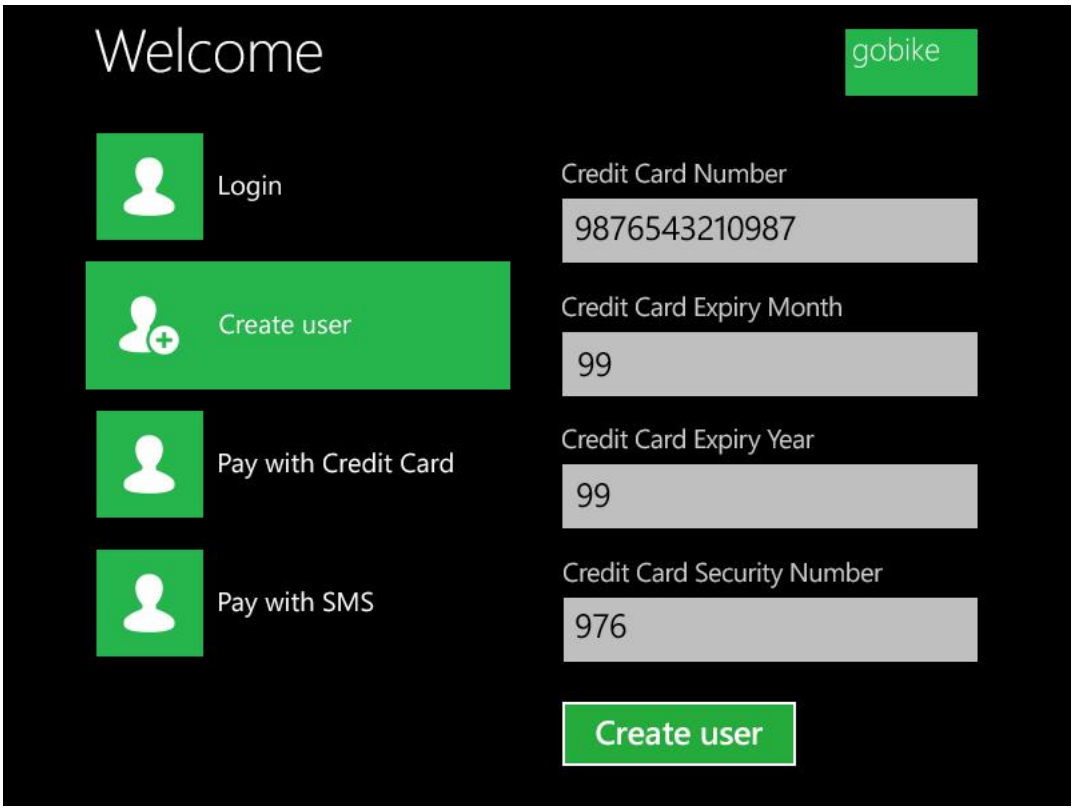
Undocked bicycle

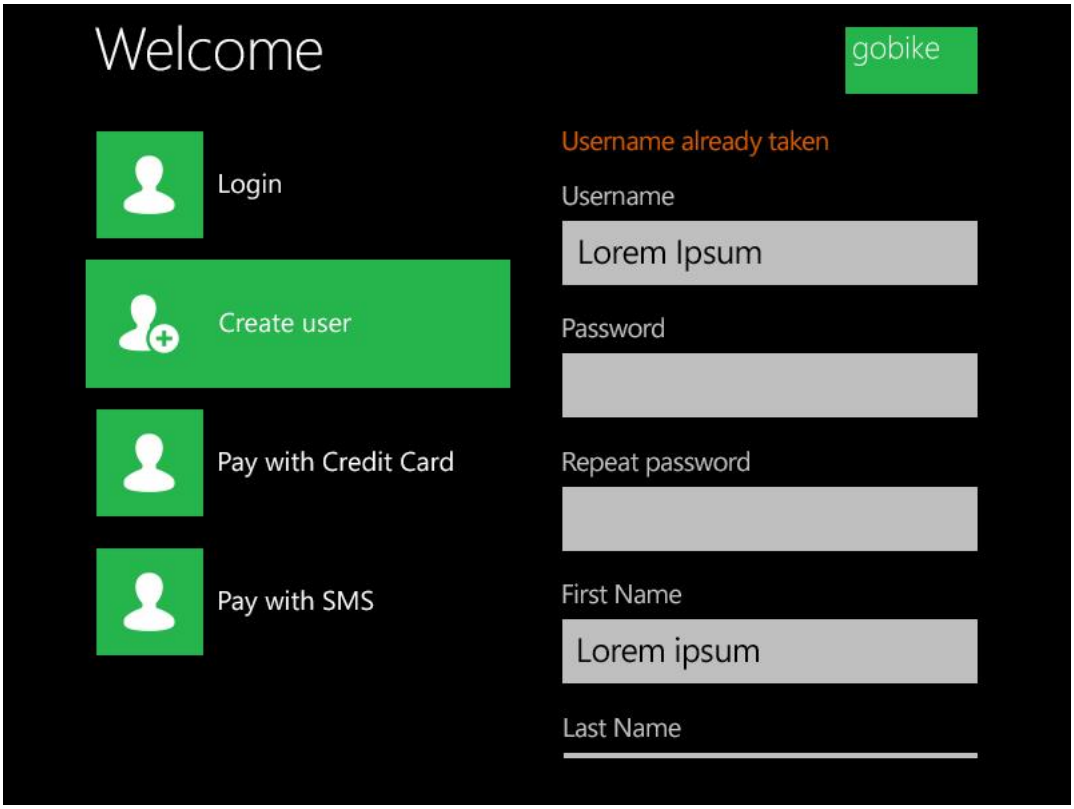


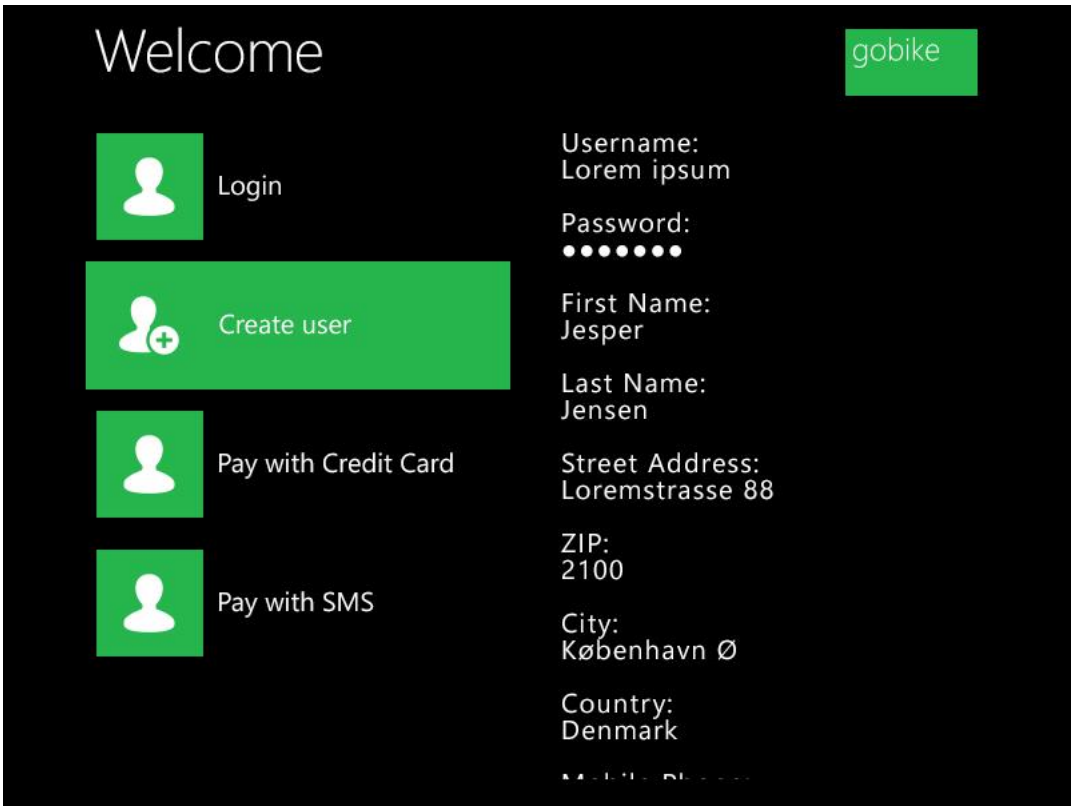
5.2.2. Payment

Create user

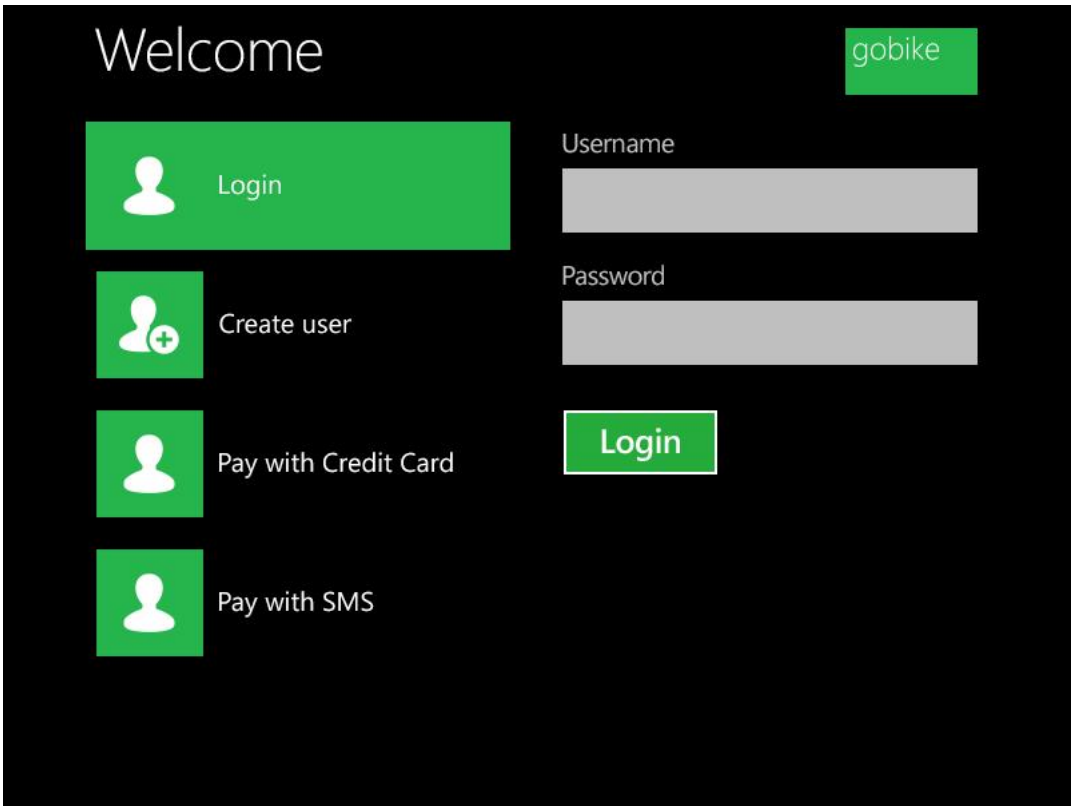


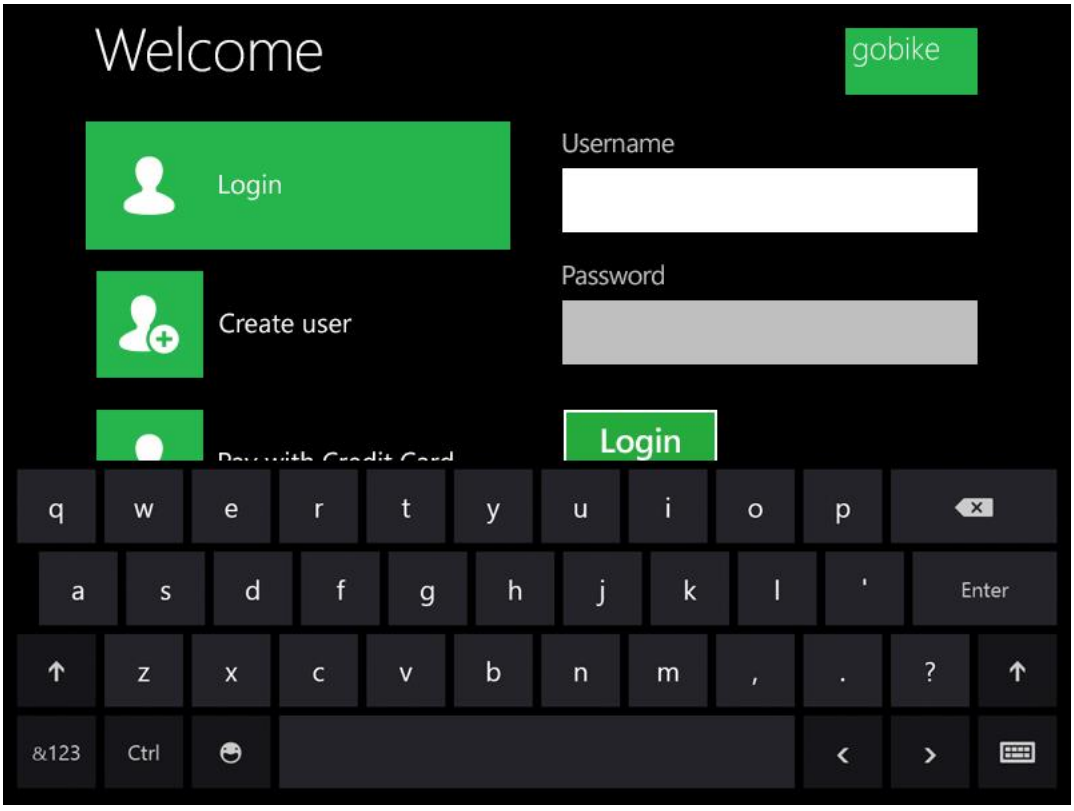


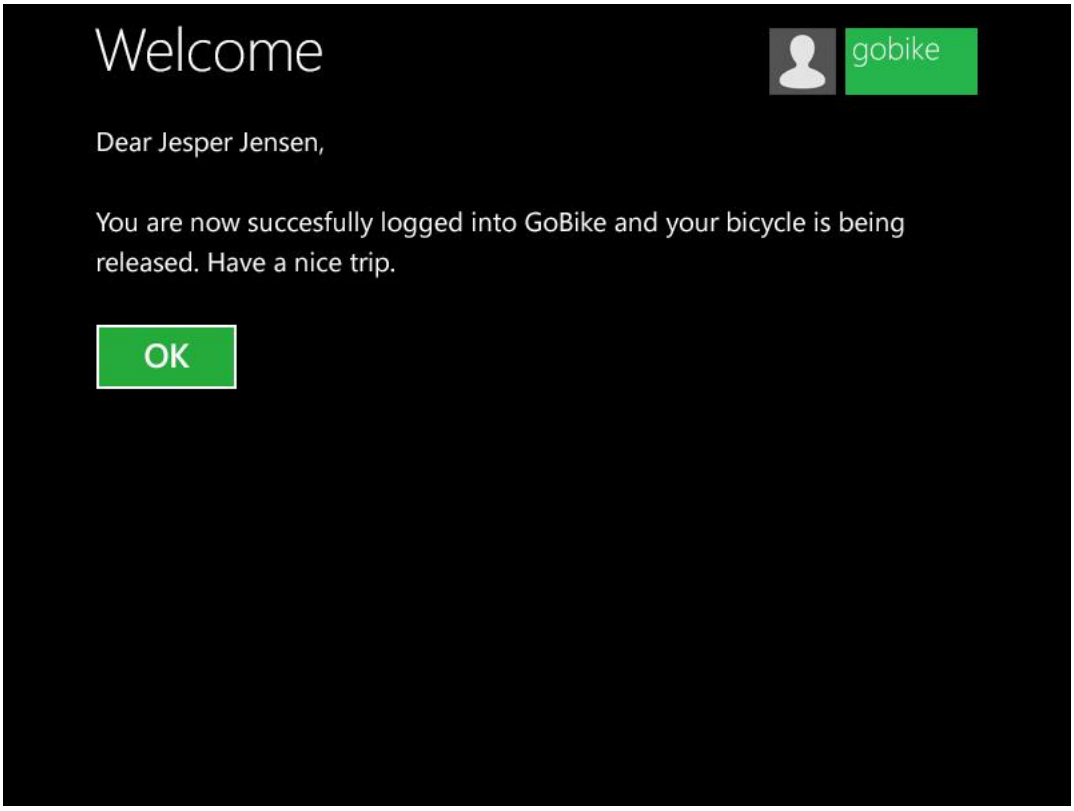

Welcome
gobike
Login
Create user
Pay with Credit Card
Pay with SMS
Username already taken
Username
Lorem Ipsum
Password
Repeat password
First Name
Lorem ipsum
Last Name


Welcome
gobike
Login
Create user
Pay with Credit Card
Pay with SMS
Username:
Lorem ipsum
Password:
●●●●●●●
First Name:
Jesper
Last Name:
Jensen
Street Address:
Loremstrasse 88
ZIP:
2100
City:
København Ø
Country:
Denmark

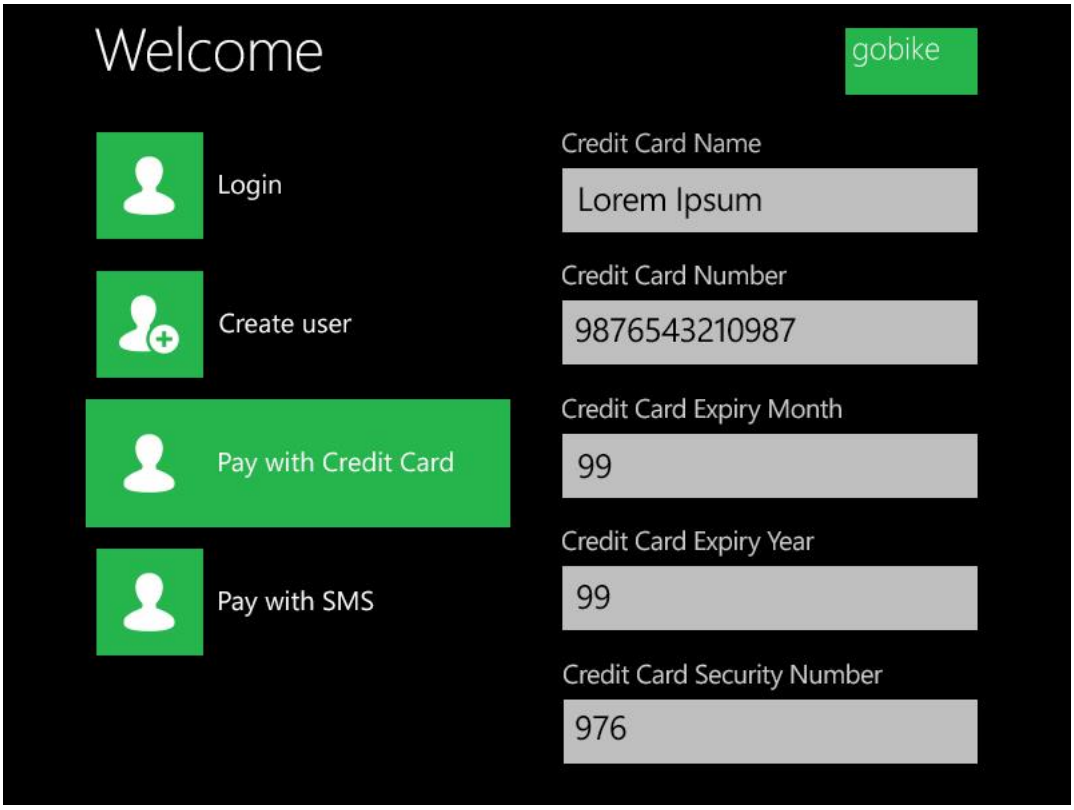
Login

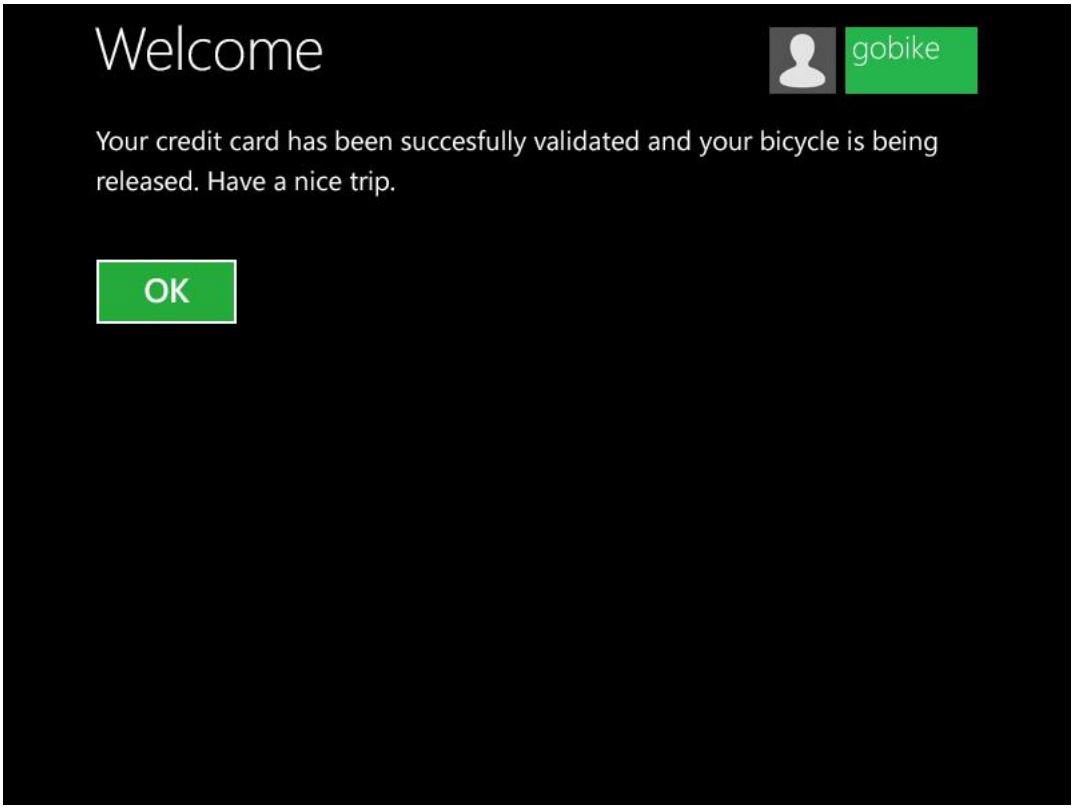

Welcome
gobike
Login
Create user
Pay with Credit Card
Pay with SMS
Username
Password
Login


Welcome
gobike
Login
Create user
Username
Password
Login
q w e r t y u i o p
a s d f g h j k l ' Enter
z x c v b n m , . ?
&123 Ctrl

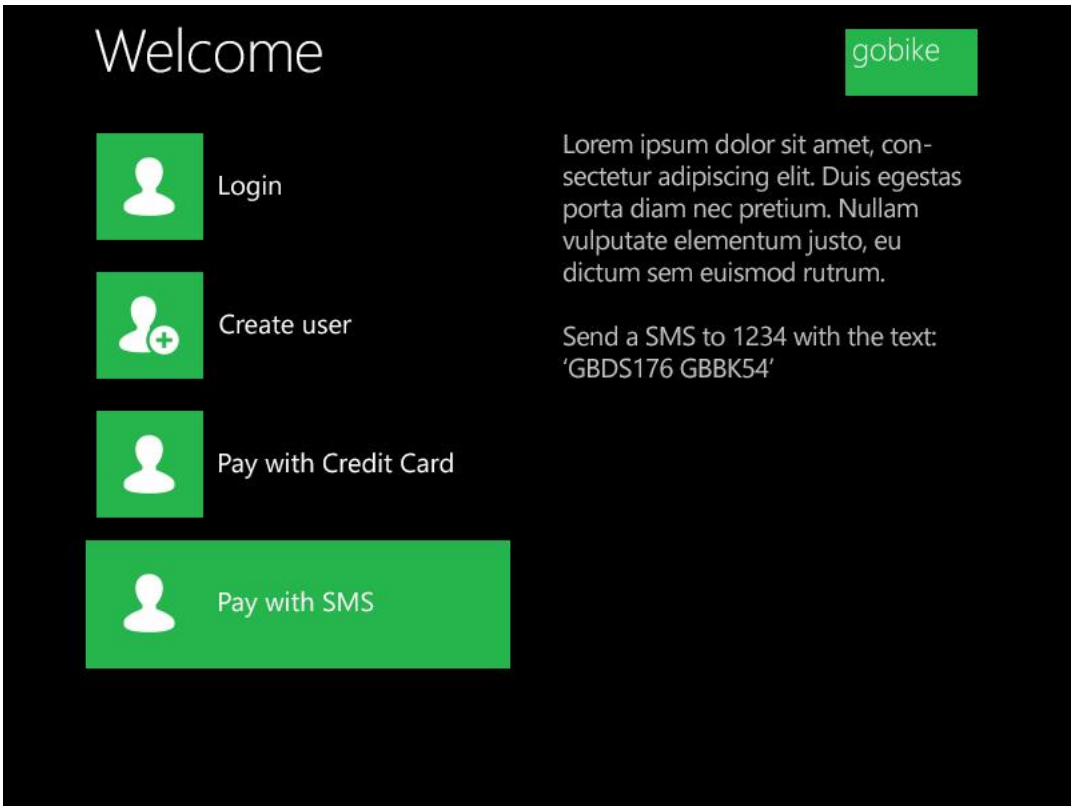

Welcome
gobike
Dear Jesper Jensen,
You are now succesfully logged into GoBike and your bicycle is being released. Have a nice trip.
OK

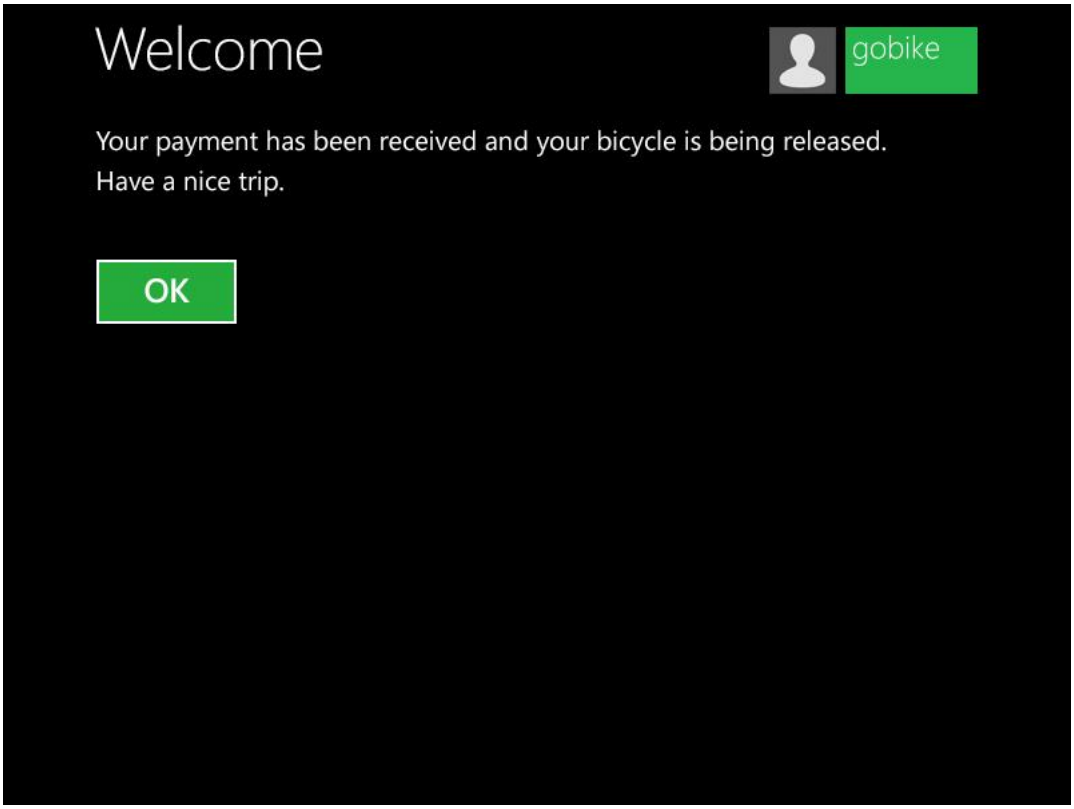
Credit Card


Welcome
gobike
Login
Create user
Pay with Credit Card
Pay with SMS
Credit Card Name
Lorem Ipsum
Credit Card Number
9876543210987
Credit Card Expiry Month
99
Credit Card Expiry Year
99
Credit Card Security Number
976

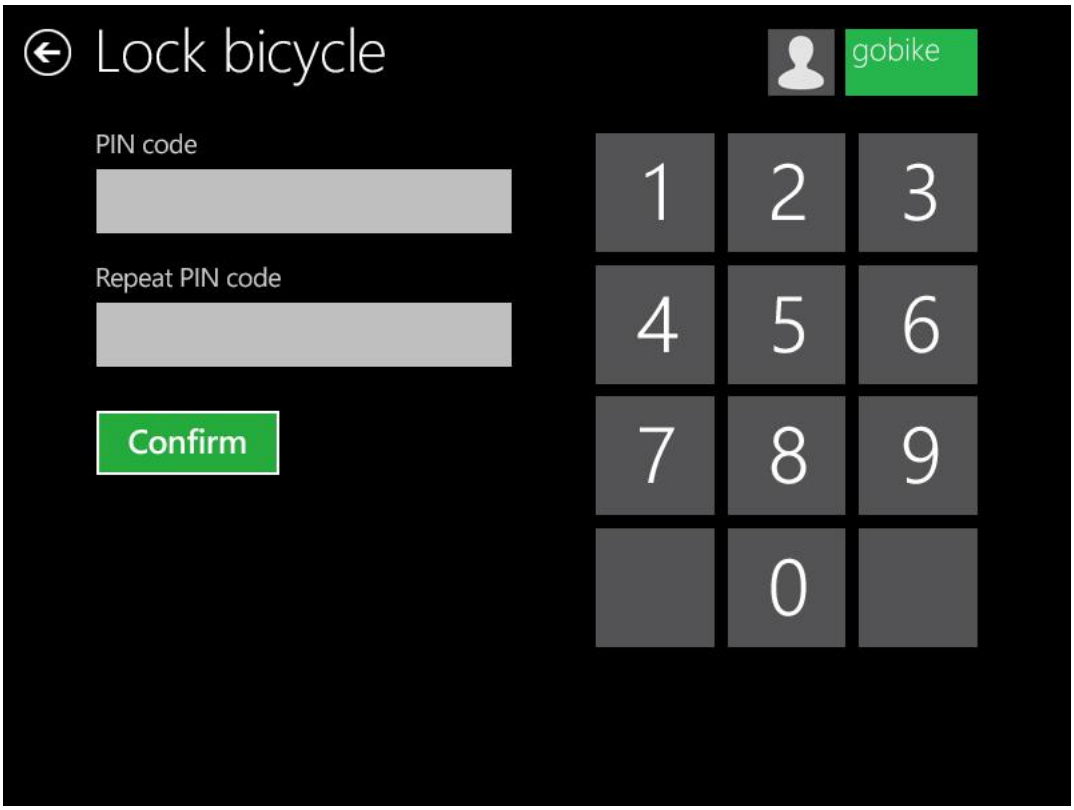

Welcome
gobike
Your credit card has been succesfully validated and your bicycle is being released. Have a nice trip.
OK

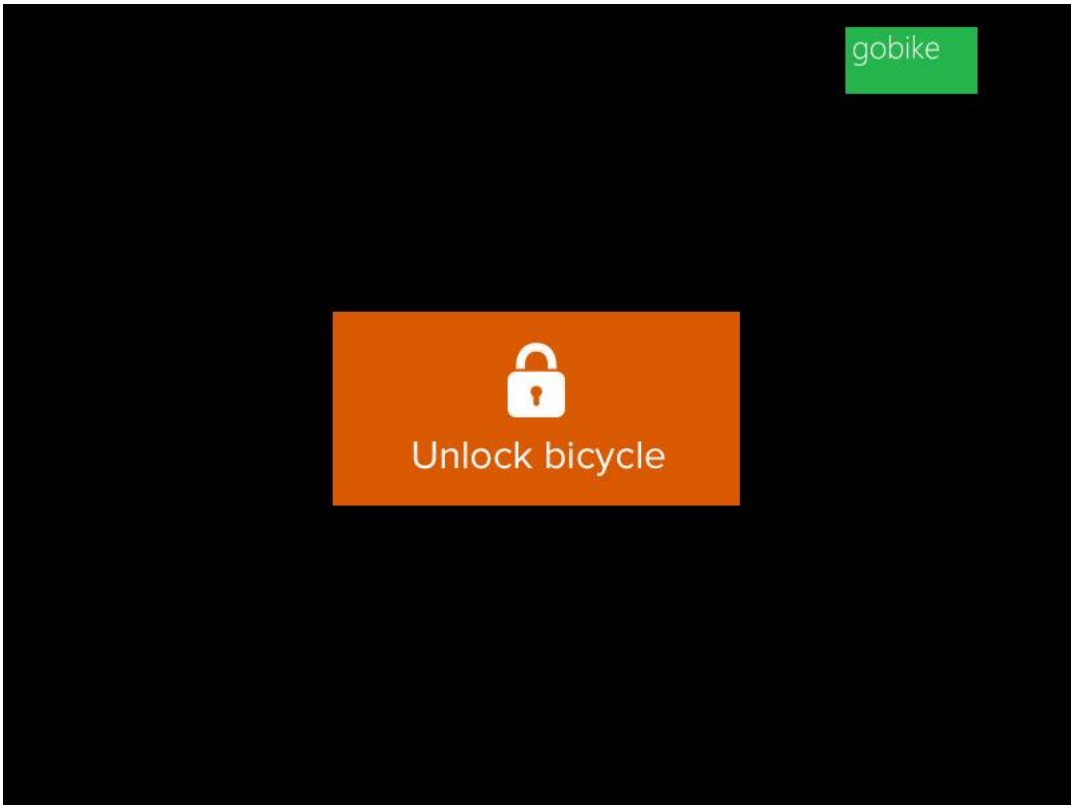
SMS

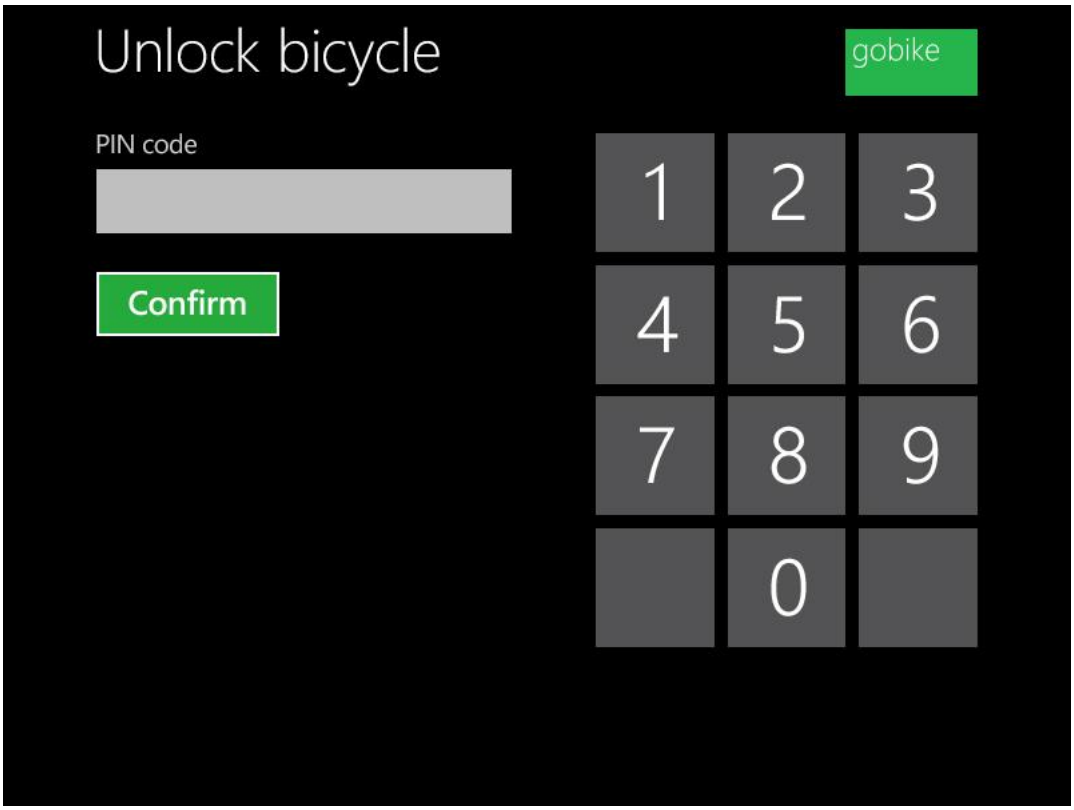

Welcome
gobike
Login
Create user
Pay with Credit Card
Pay with SMS
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis egestas porta diam nec pretium. Nullam vulputate elementum justo, eu dictum sem euismod rutrum.
Send a SMS to 1234 with the text: 'GBDS176 GBBK54'



5.2.3. Lock/Unlock bicycle

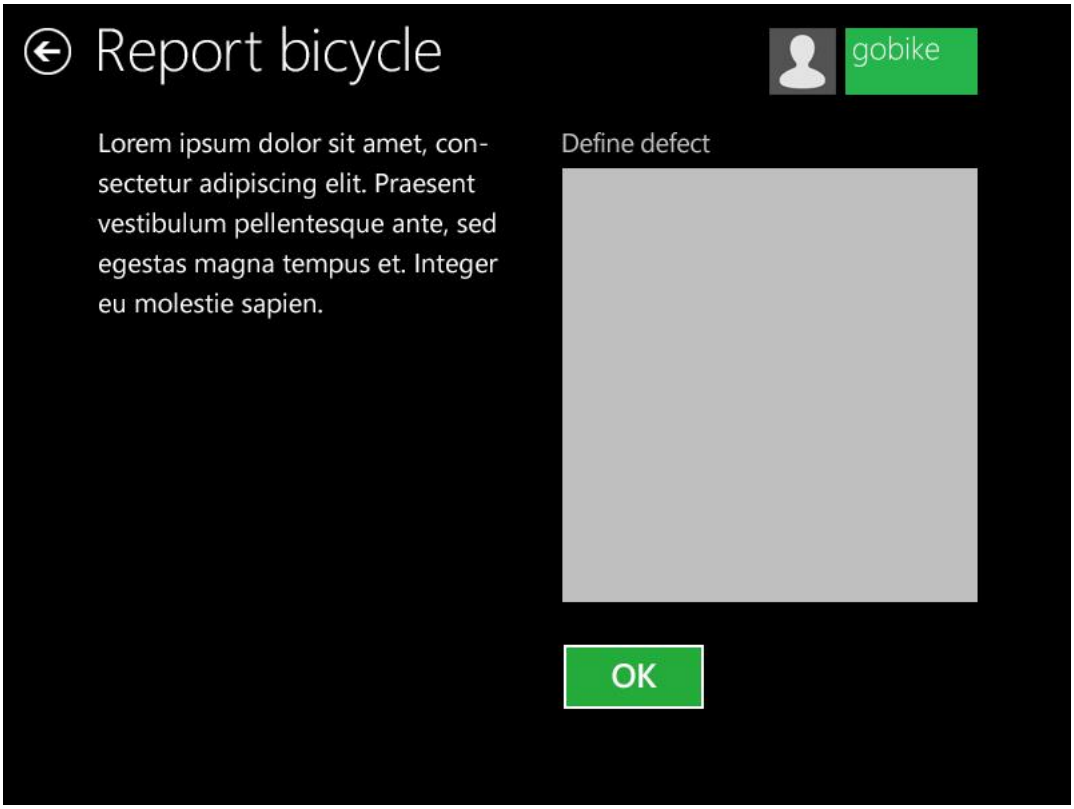


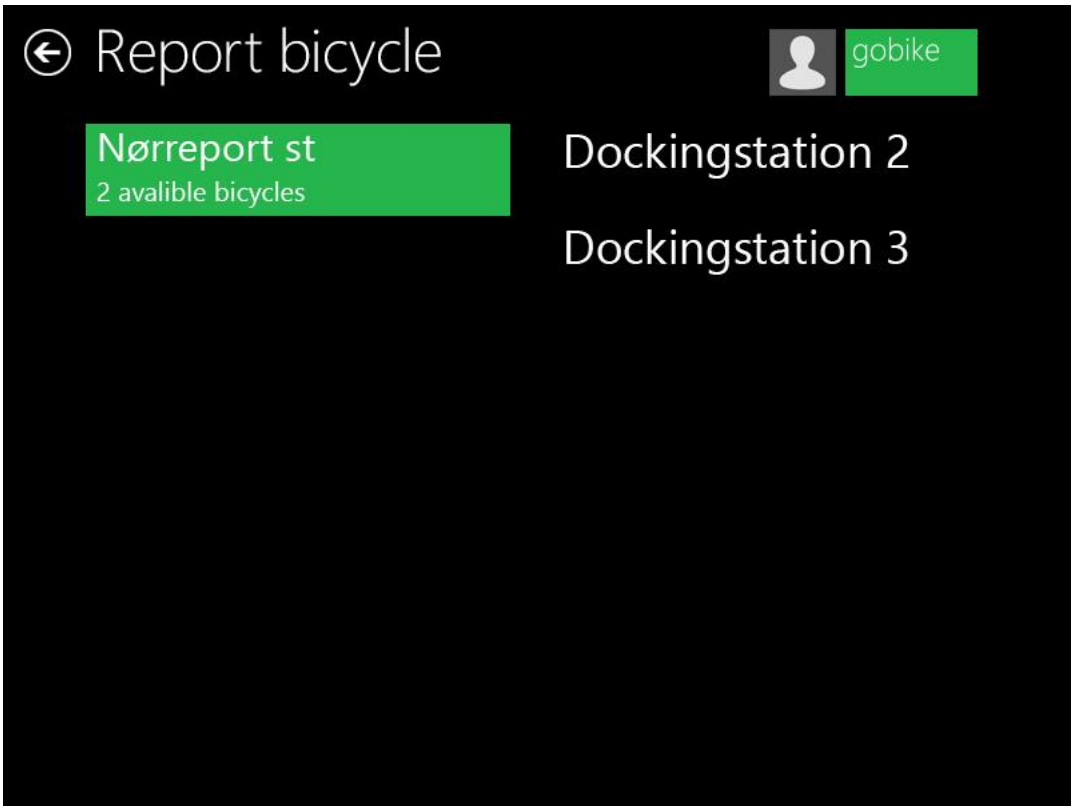

gobike
Unlock bicycle


Unlock bicycle
gobike
PIN code
Confirm
1
2
3
4
5
6
7
8
9
0

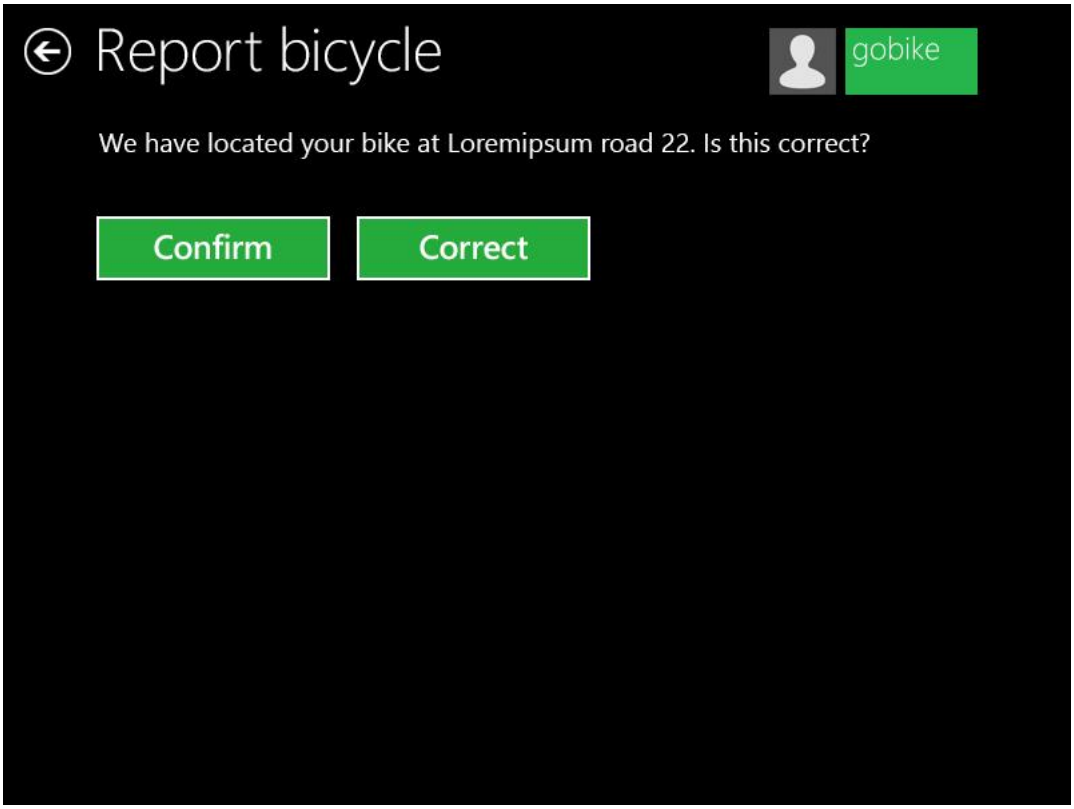
5.2.4. Report defect bicycle

In docking station

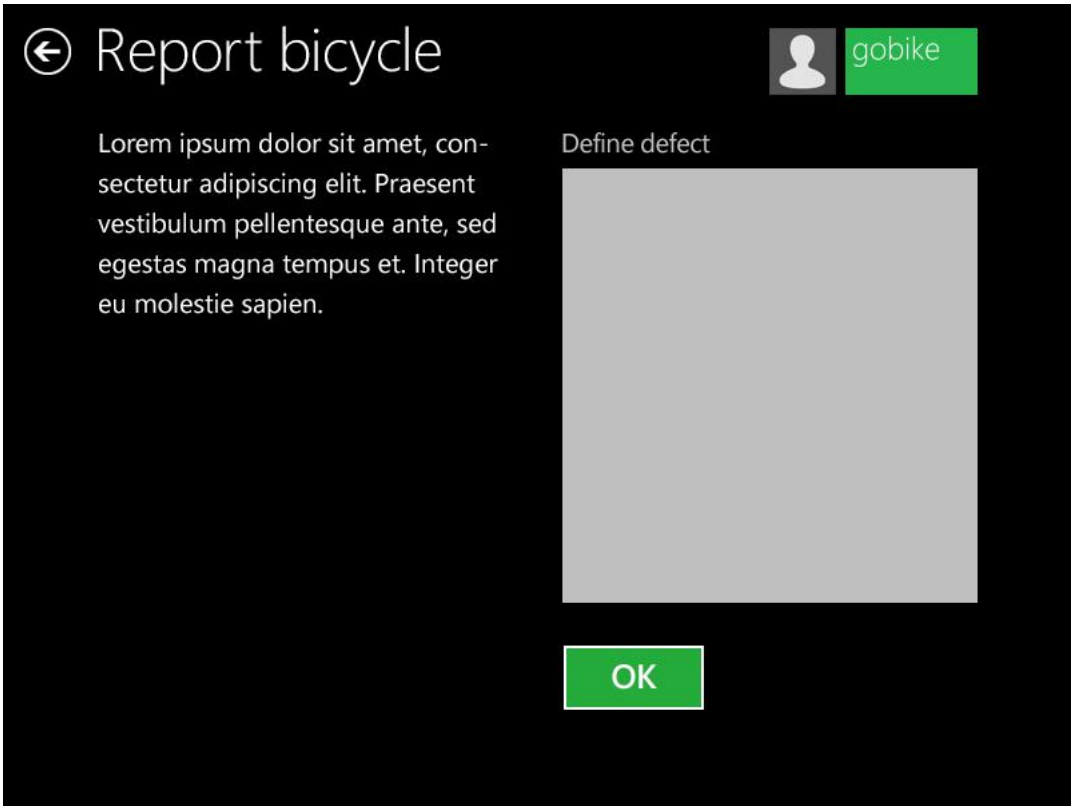




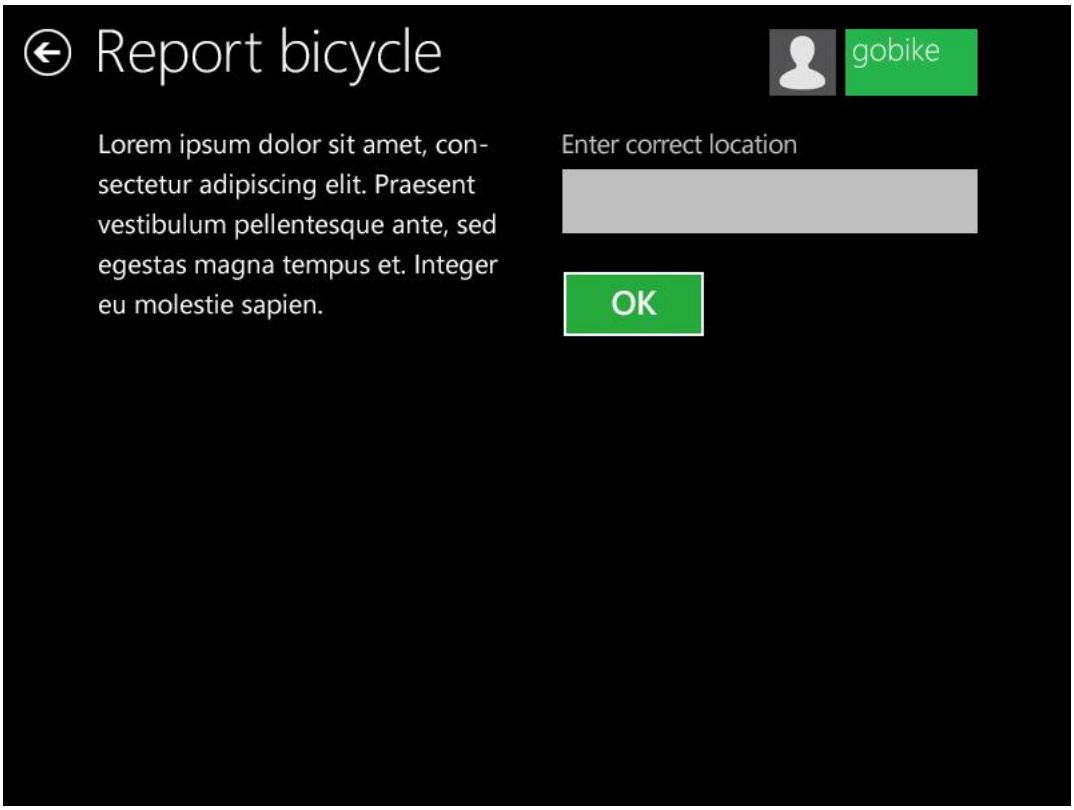
Not in docking station

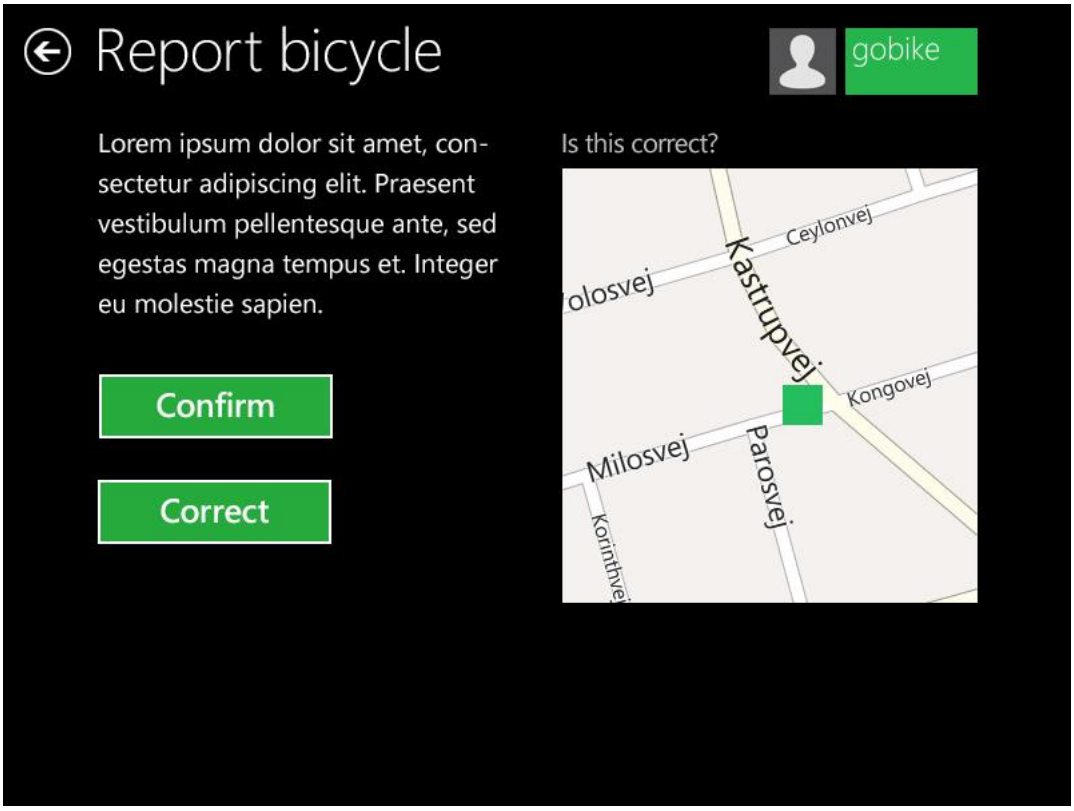


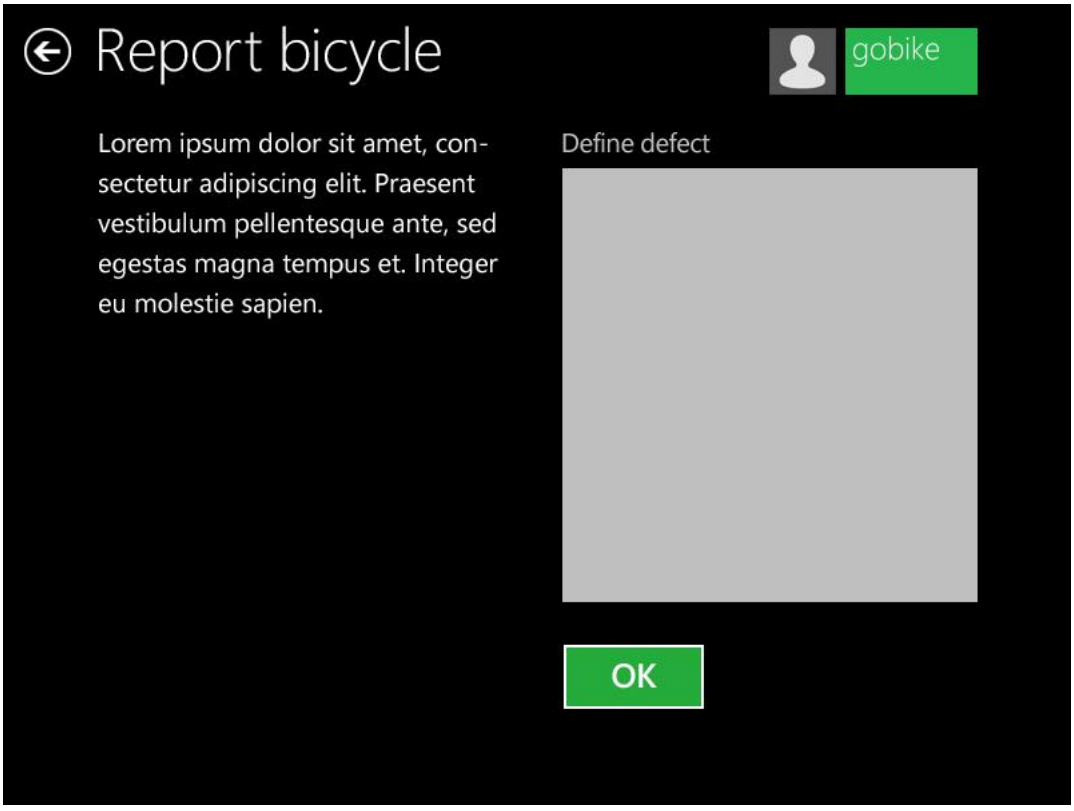
Correct location



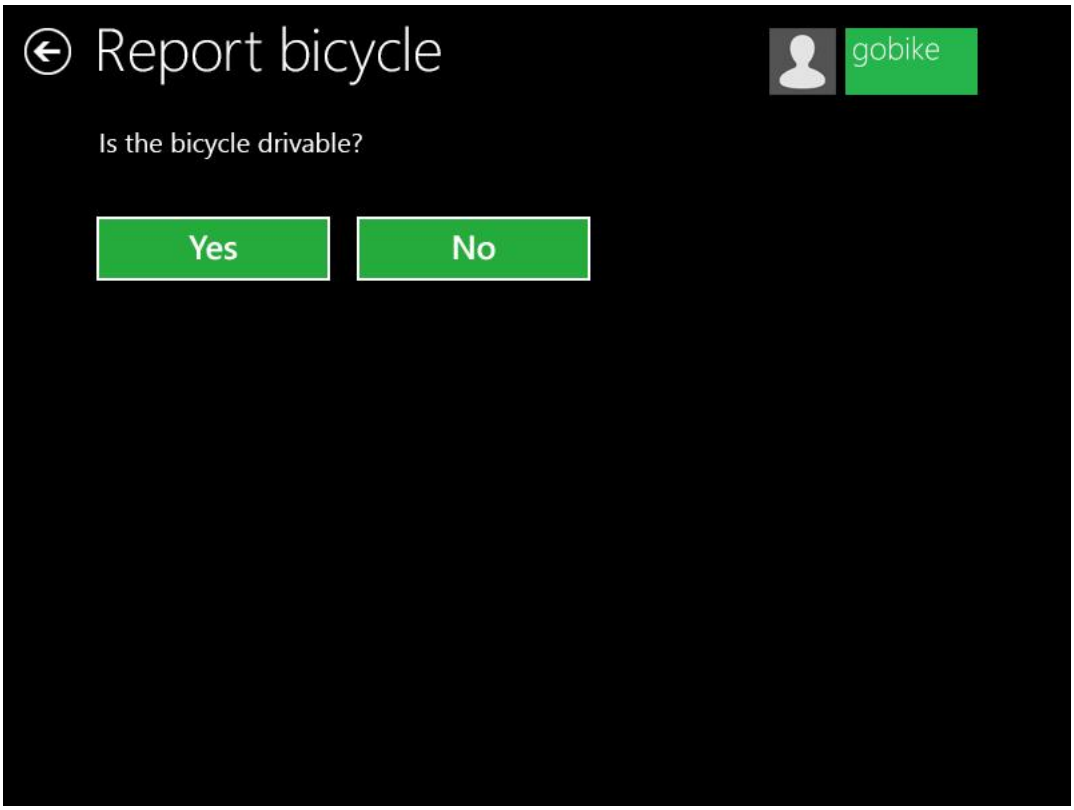
Incorrect location

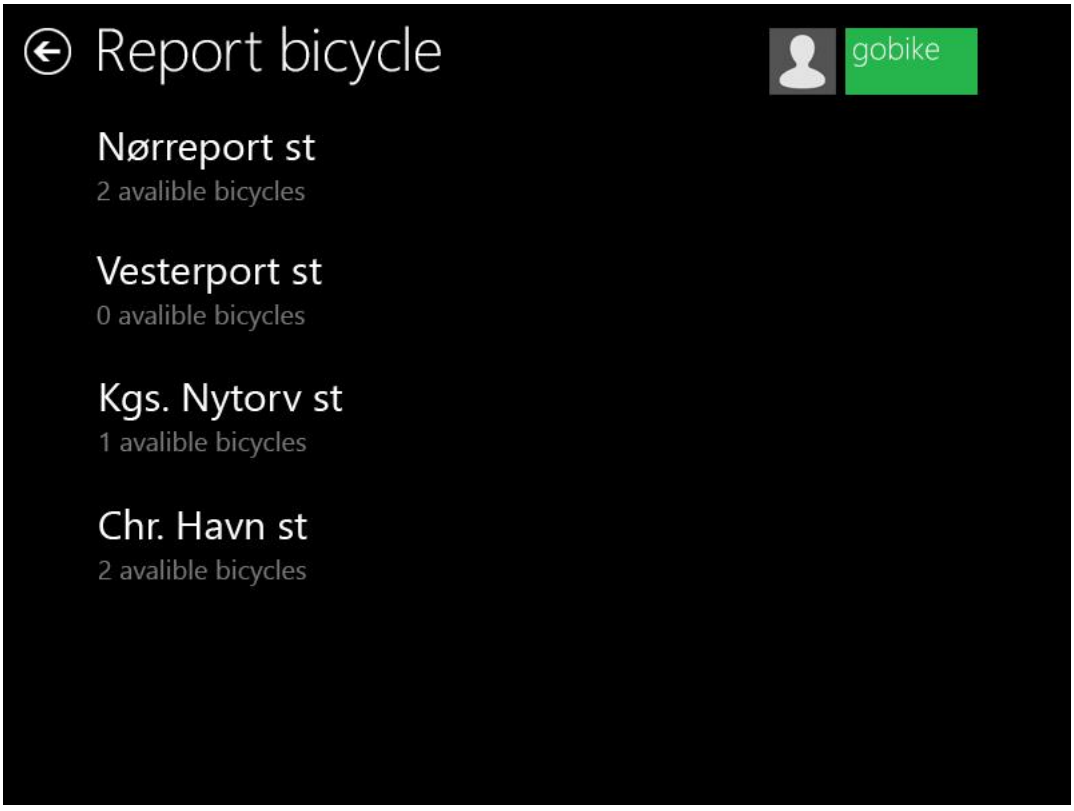


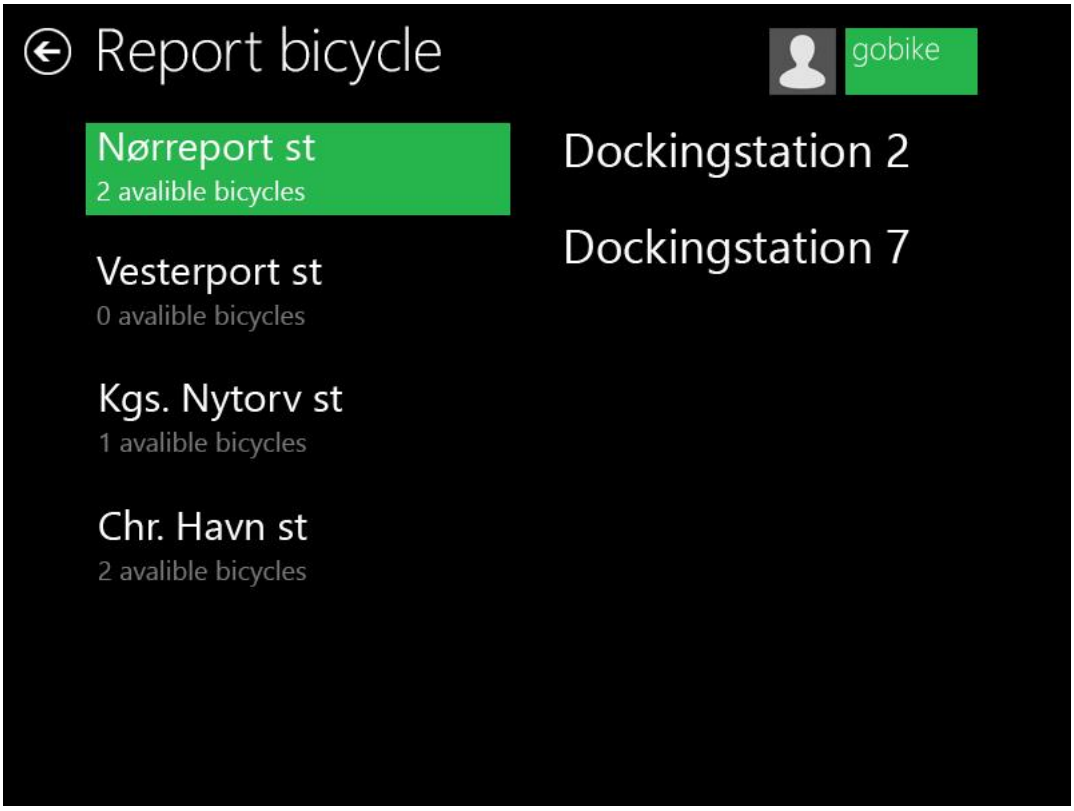

Report bicycle
gobike
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Praesent vestibulum pellentesque ante, sed egestas magna tempus et. Integer eu molestie sapien.
Confirm
Correct
Is this correct?
Ceylonvej
olosvej
Kastrupvej
Kongovej
Milosvej
Parosvej
Korinthvej

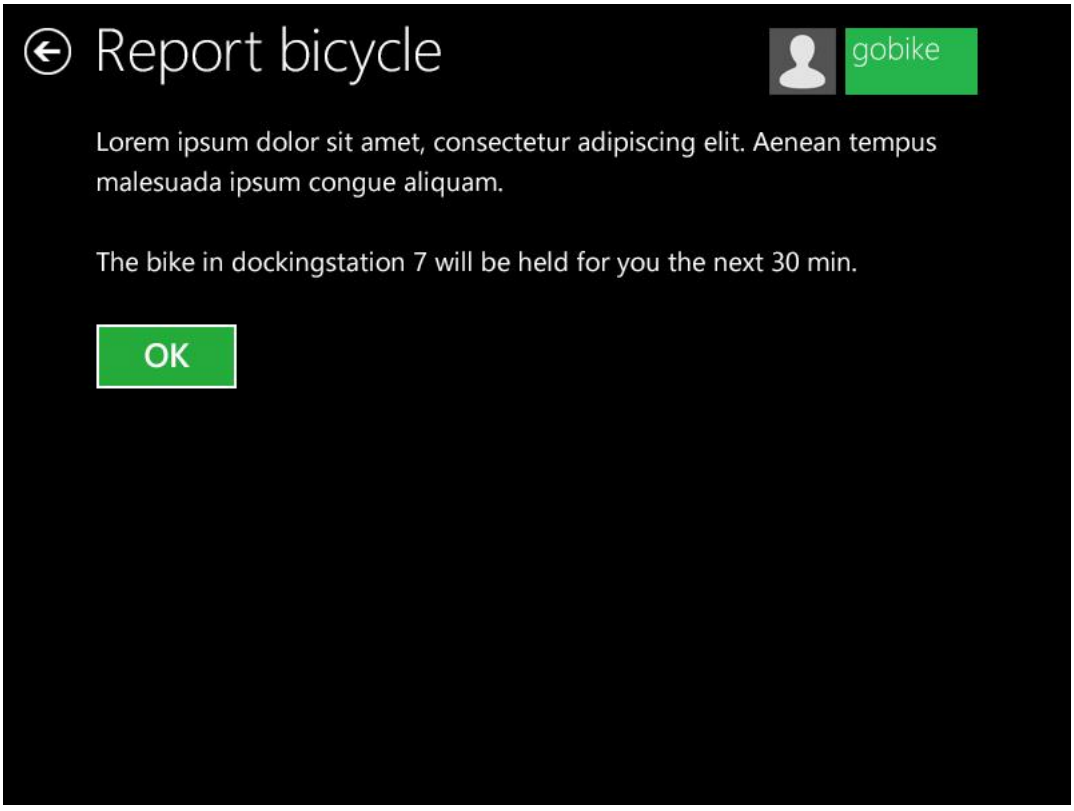

Report bicycle
gobike
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Praesent vestibulum pellentesque ante, sed egestas magna tempus et. Integer eu molestie sapien.
Define defect
OK

Drivable

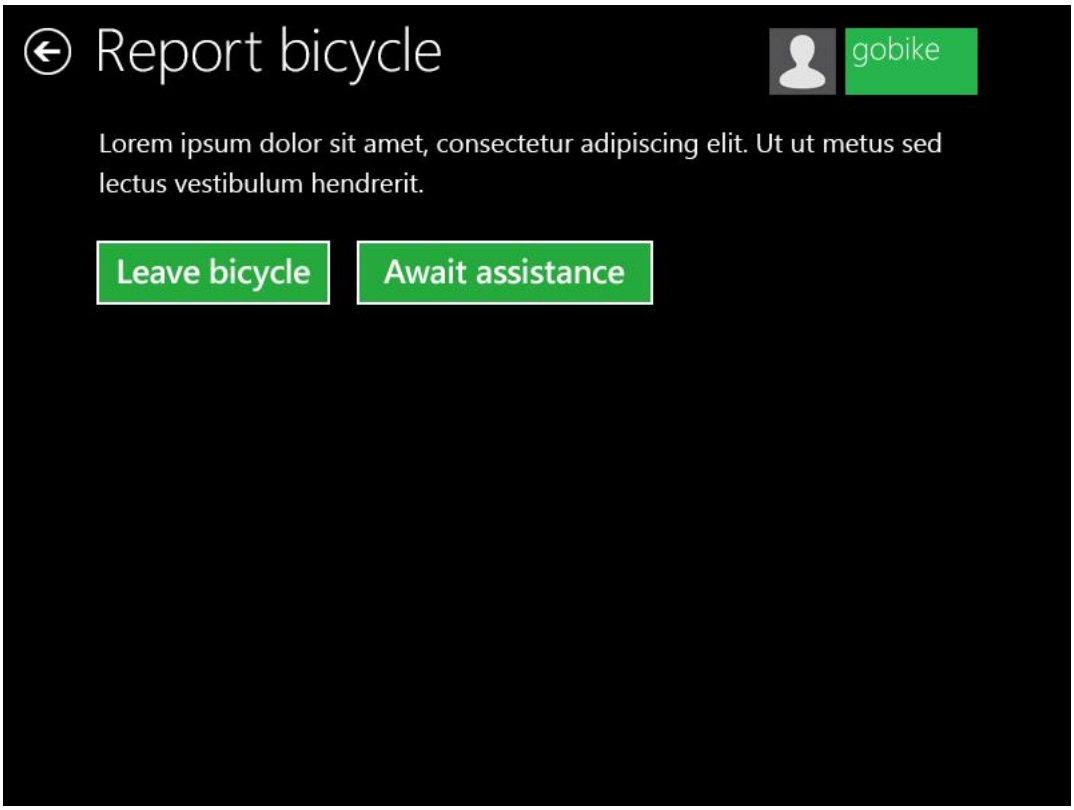

Report bicycle
gobike
Is the bicycle drivable?
Yes
No


Report bicycle
gobike
Nørreport st
2 avalible bicycles
Vesterport st
0 avalible bicycles
Kgs. Nytorv st
1 avalible bicycles
Chr. Havn st
2 avalible bicycles

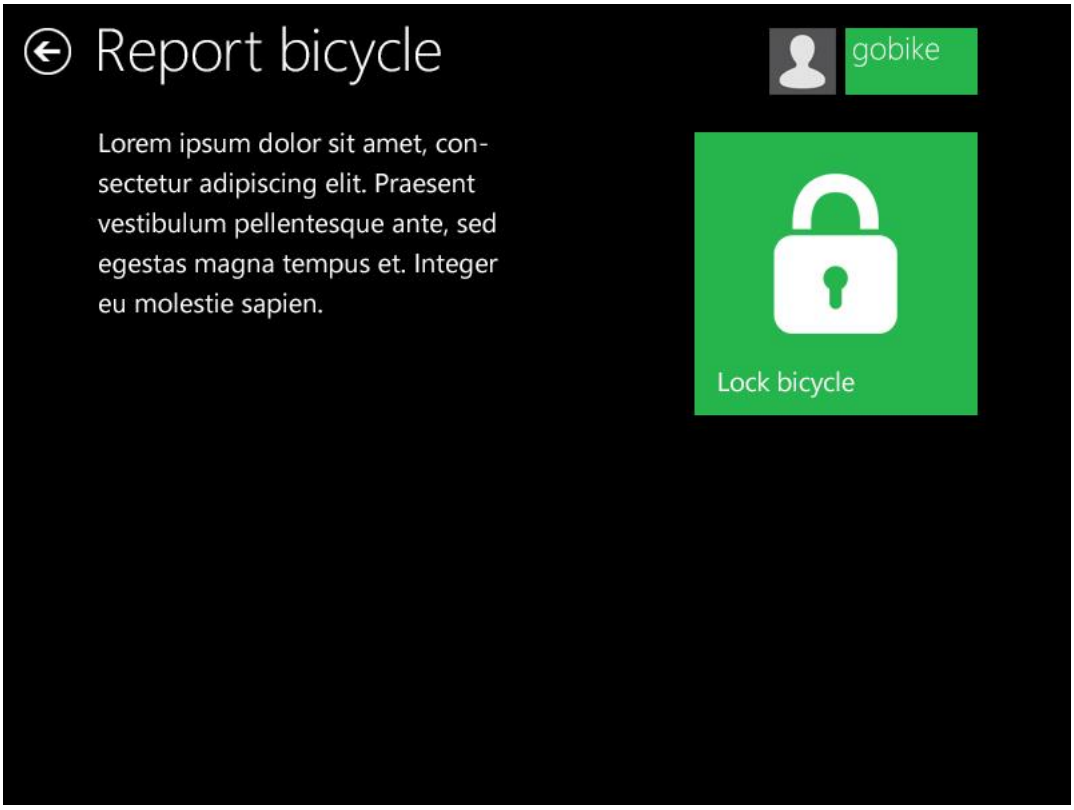

Report bicycle
gobike
Nørreport st
2 avalible bicycles
Vesterport st
0 avalible bicycles
Kgs. Nytorv st
1 avalible bicycles
Chr. Havn st
2 avalible bicycles
Dockingstation 2
Dockingstation 7


Report bicycle
gobike
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean tempus malesuada ipsum congue aliquam.
The bike in dockingstation 7 will be held for you the next 30 min.
OK

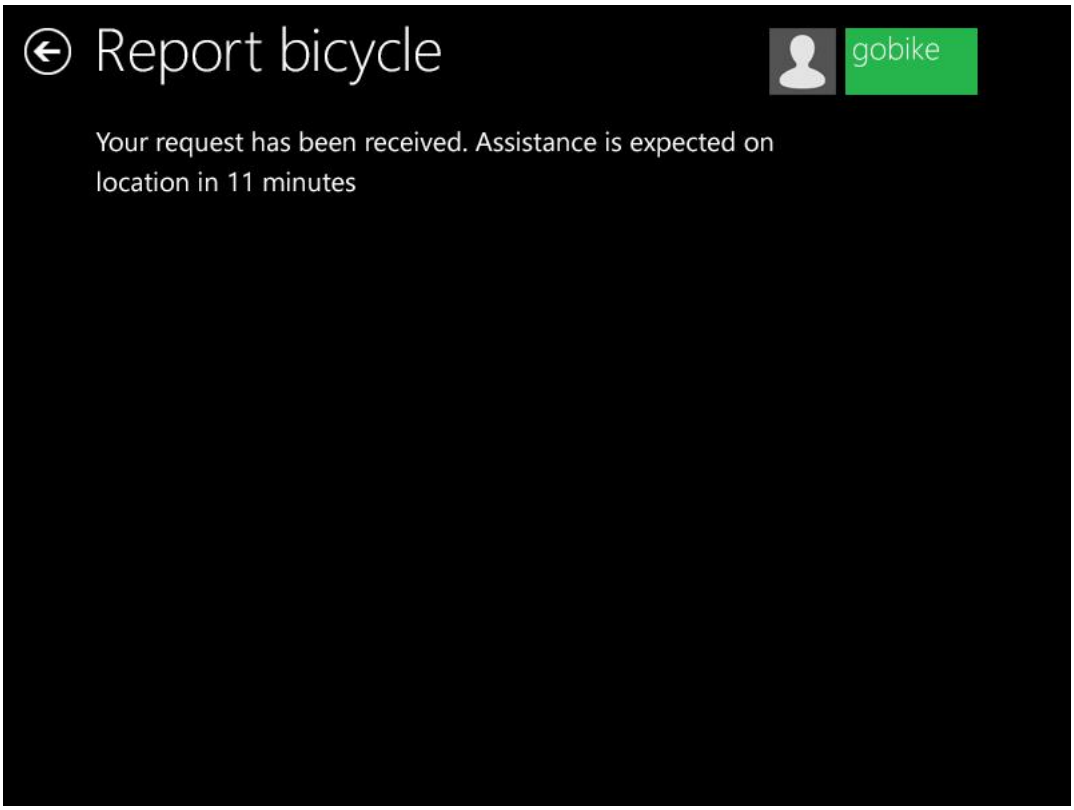
Not drivable



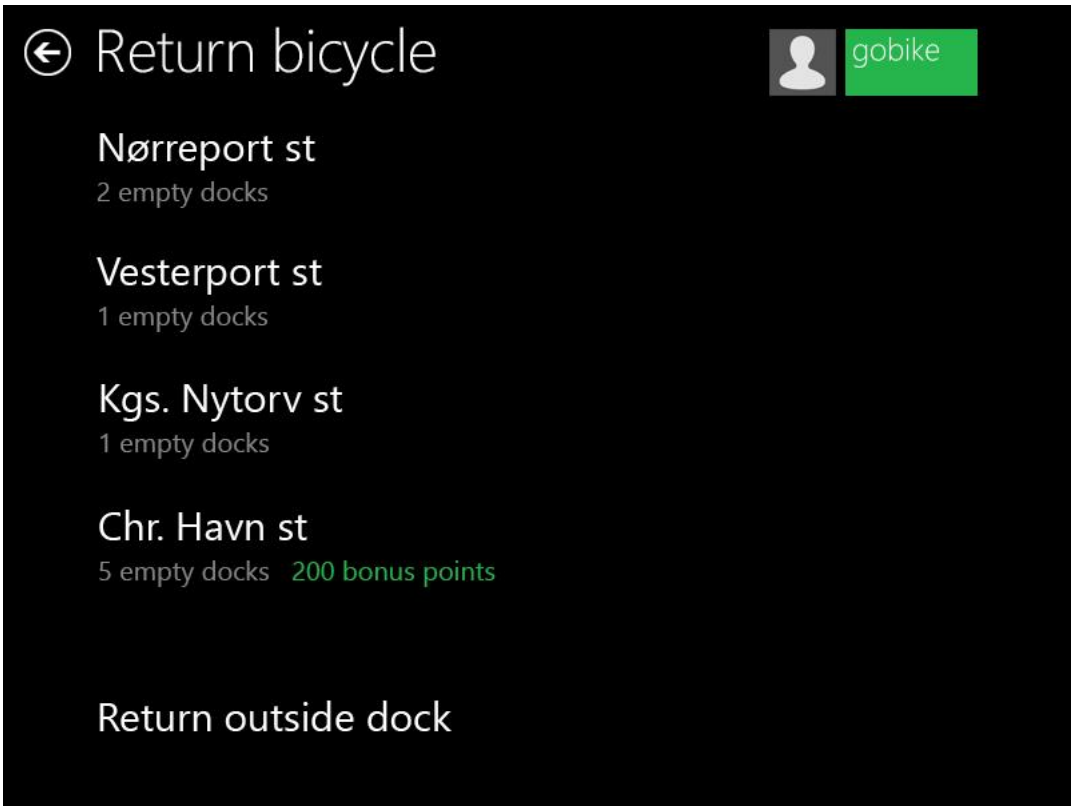
Leave and lock

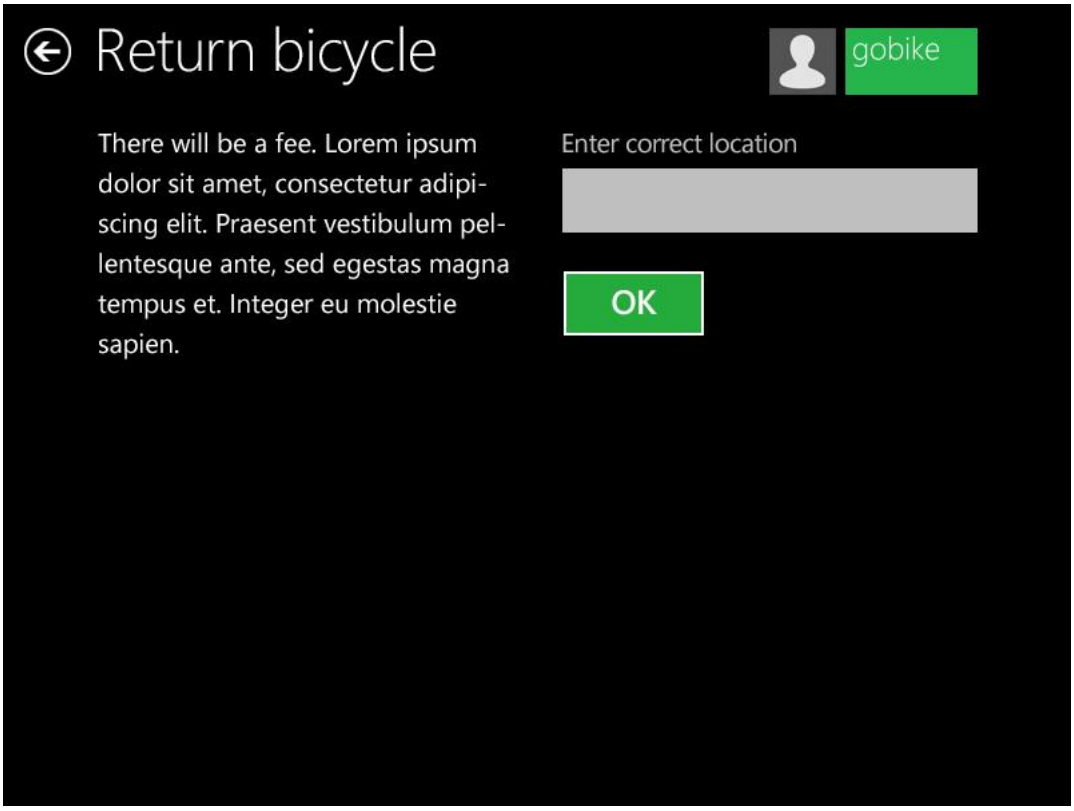


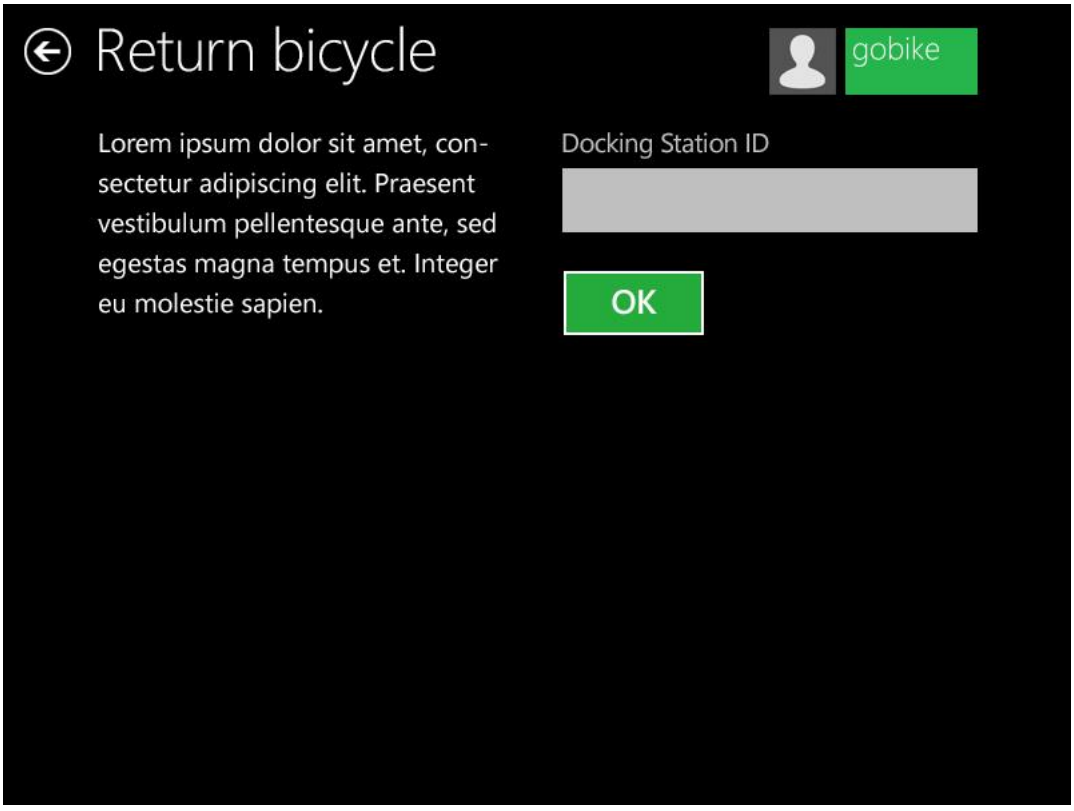
Await assistance

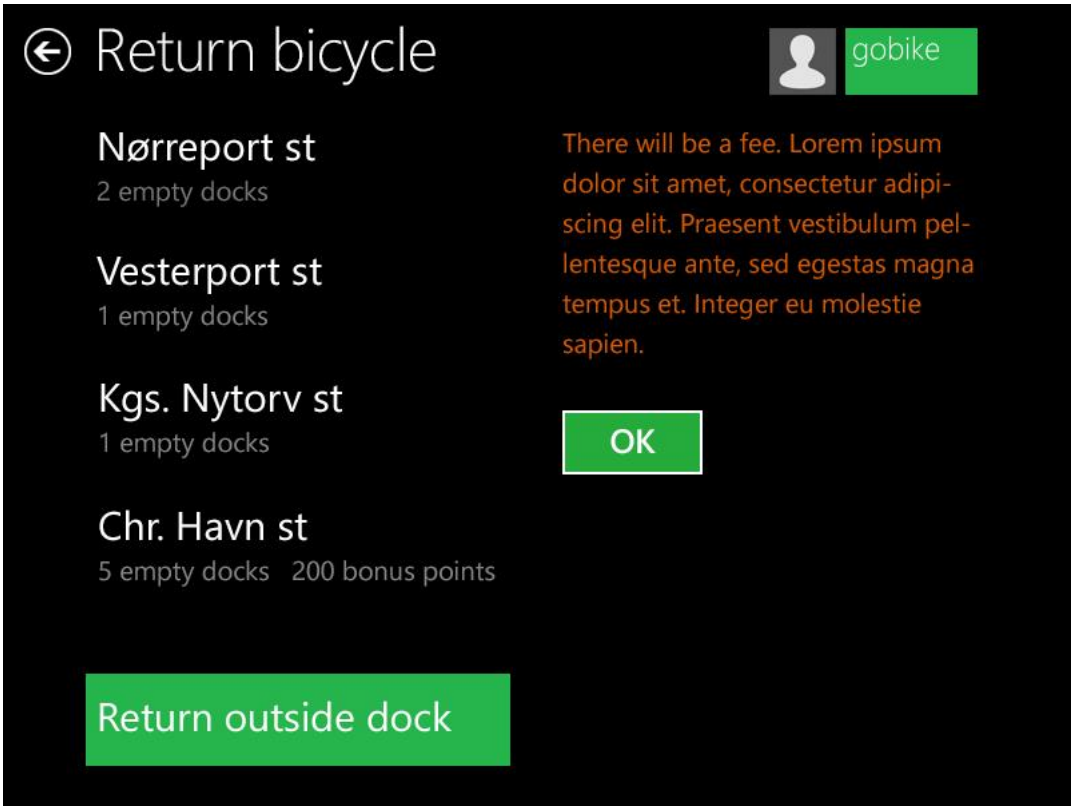


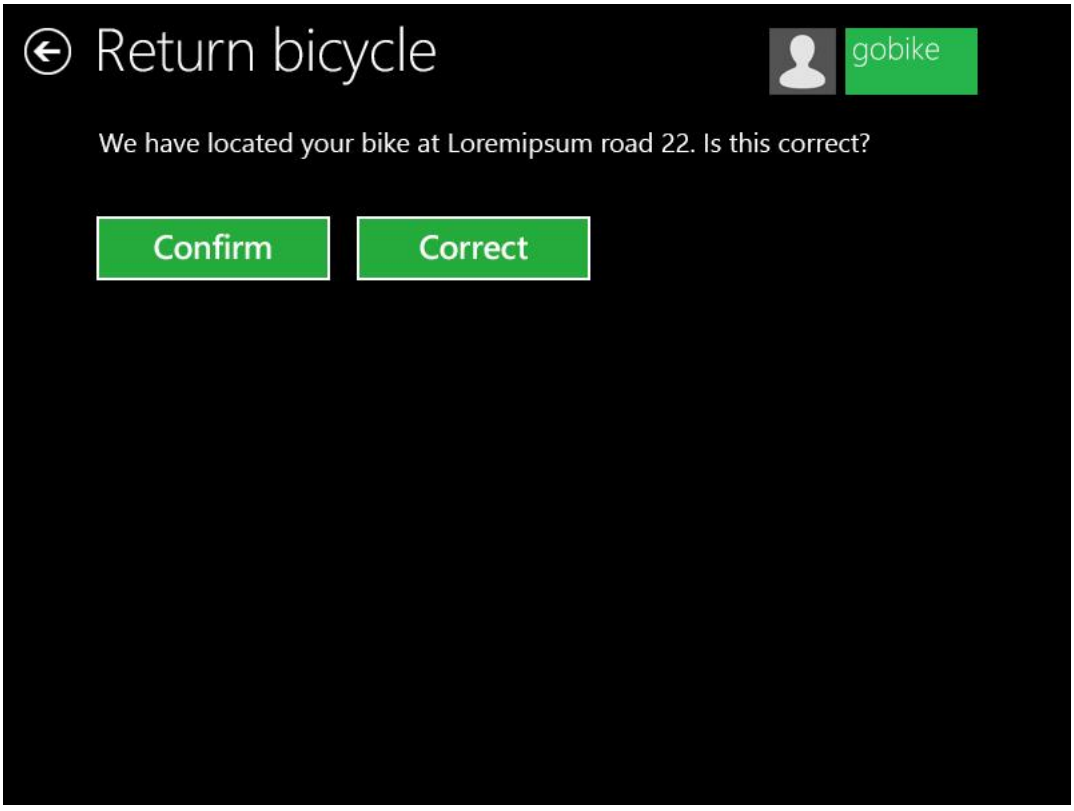
5.2.5. Return bicycle

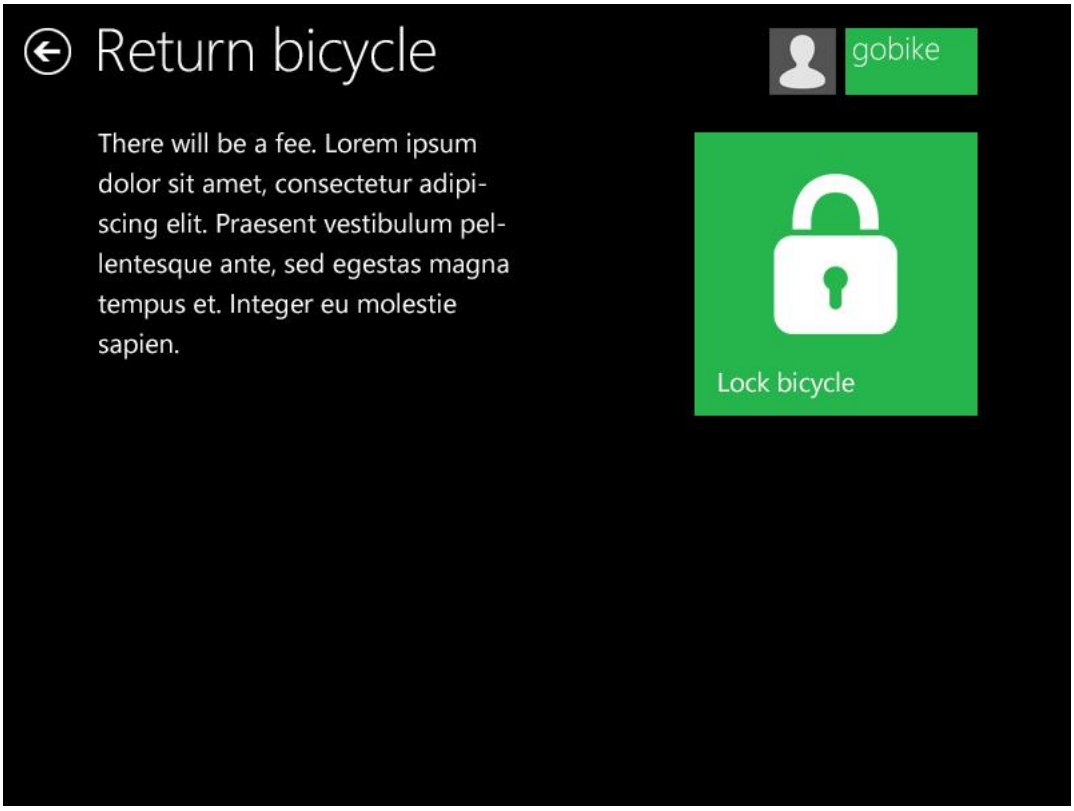


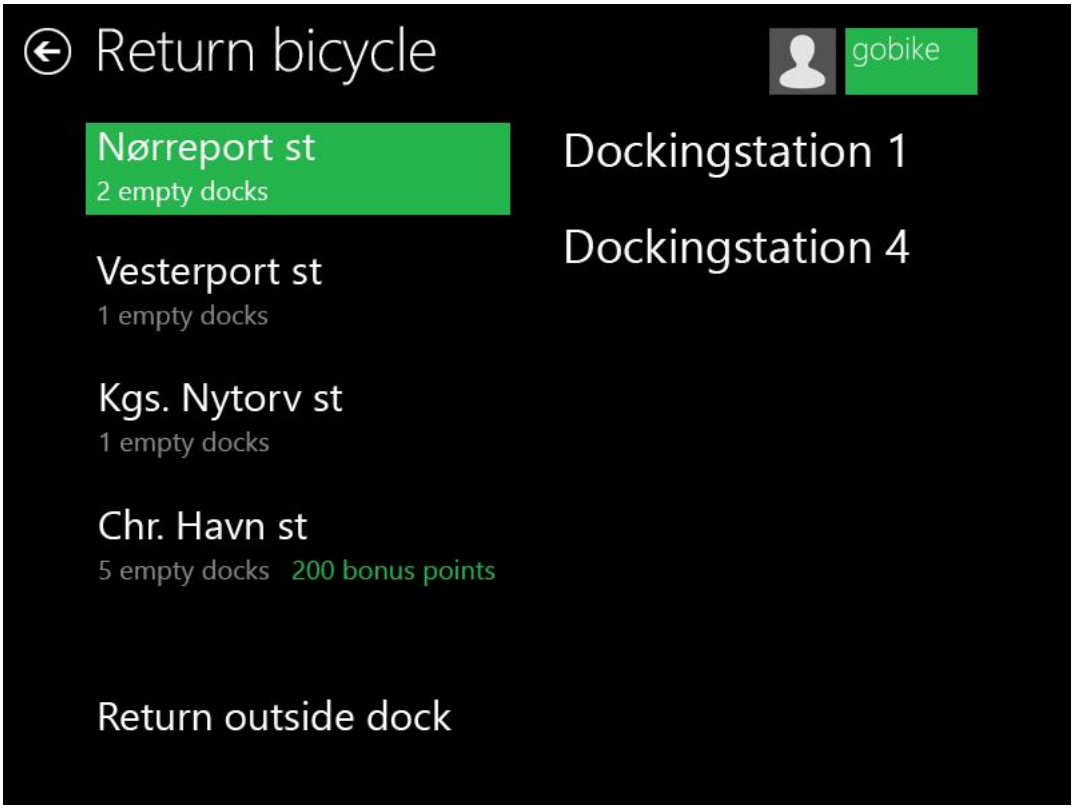

Return bicycle
gobike
There will be a fee. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Praesent vestibulum pellentesque ante, sed egestas magna tempus et. Integer eu molestie sapien.
Enter correct location
OK

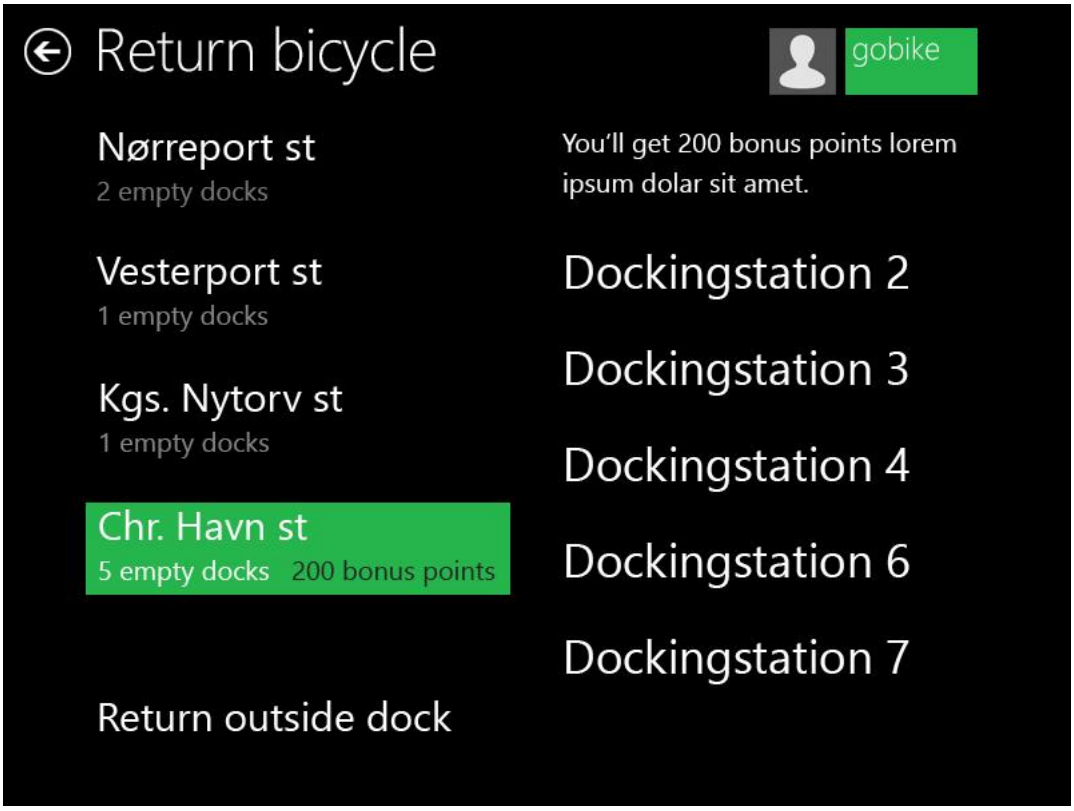

Return bicycle
gobike
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Praesent vestibulum pellentesque ante, sed egestas magna tempus et. Integer eu molestie sapien.
Docking Station ID
OK

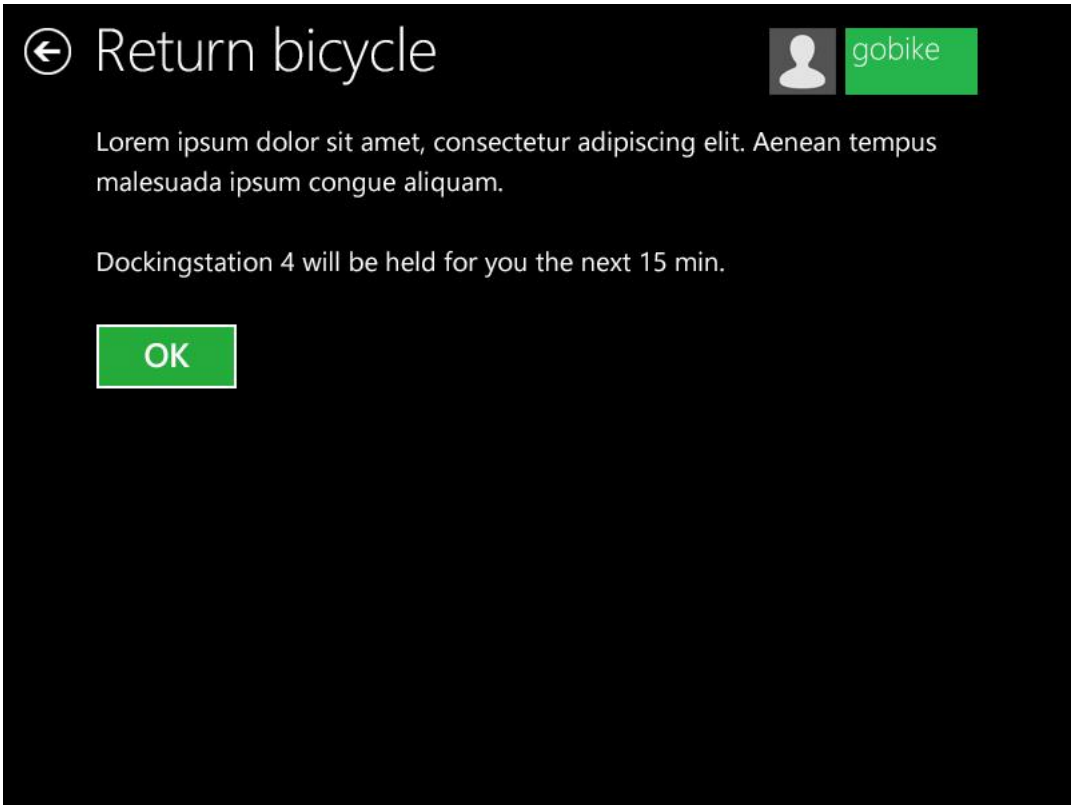

Return bicycle
gobike
Nørreport st
2 empty docks
Vesterport st
1 empty docks
Kgs. Nytorv st
1 empty docks
Chr. Havn st
5 empty docks 200 bonus points
There will be a fee. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Praesent vestibulum pellentesque ante, sed egestas magna tempus et. Integer eu molestie sapien.
OK
Return outside dock


Return bicycle
gobike
We have located your bike at Loremipsum road 22. Is this correct?
Confirm
Correct


Return bicycle
gobike
There will be a fee. Lorem ipsum dolor sit amet, consectetur adipi-scing elit. Praesent vestibulum pel-lentesque ante, sed egestas magna tempus et. Integer eu molestie sapien.
Lock bicycle


Return bicycle
gobike
Nørreport st
2 empty docks
Vesterport st
1 empty docks
Kgs. Nytorv st
1 empty docks
Chr. Havn st
5 empty docks 200 bonus points
Return outside dock
Dockingstation 1
Dockingstation 4

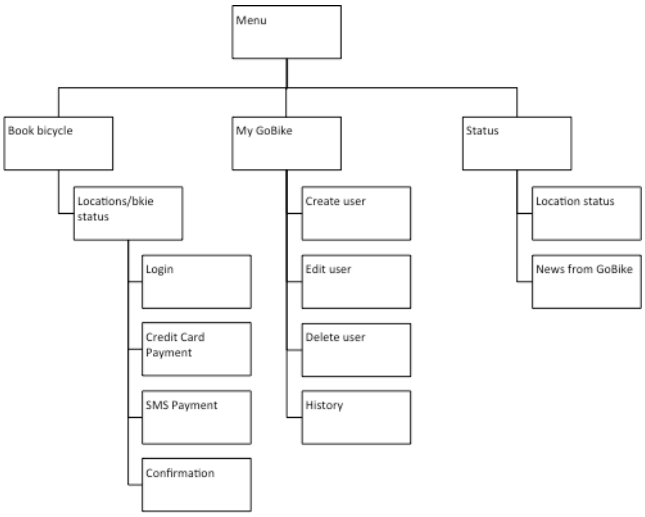

Return bicycle
gobike
Nørreport st
2 empty docks
Vesterport st
1 empty docks
Kgs. Nytorv st
1 empty docks
Chr. Havn st
5 empty docks 200 bonus points
Return outside dock
You'll get 200 bonus points lorem ipsum dolar sit amet.
Dockingstation 2
Dockingstation 3
Dockingstation 4
Dockingstation 6
Dockingstation 7


Return bicycle
gobike
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean tempus malesuada ipsum congue aliquam.
Dockingstation 4 will be held for you the next 15 min.
OK


Bicycle returned
gobike
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean tempus malesuada ipsum congue aliquam. Consectetur adipiscing elit. Aenean tempus malesuada ipsum congue aliquam.
Share on Facebook

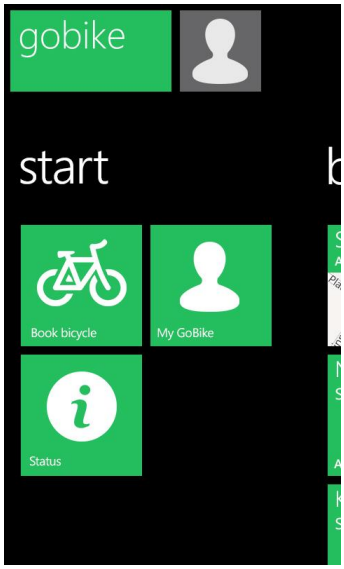
6. Smartphone

6.1. Information Architecture

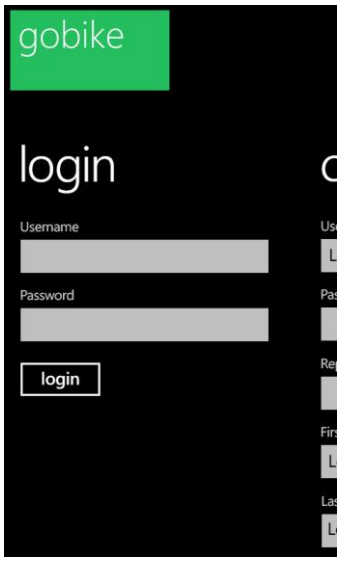


6.2. Visual mock-ups

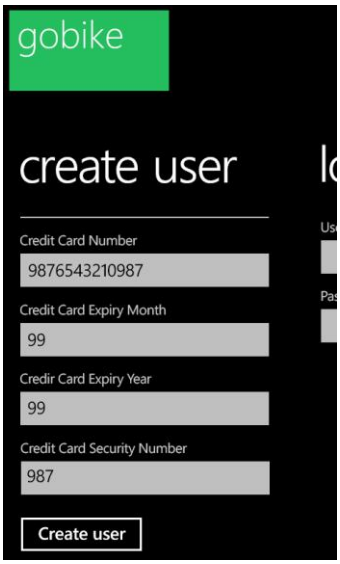
6.2.1. Main menu

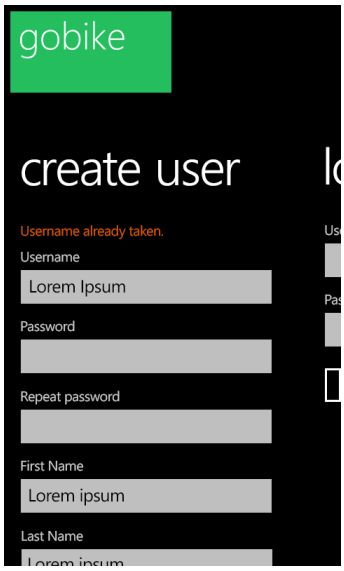


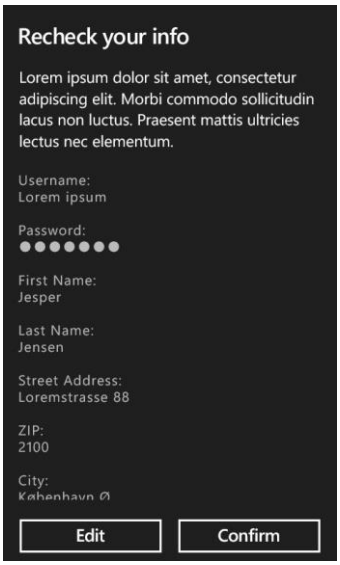
6.2.2. Create profile



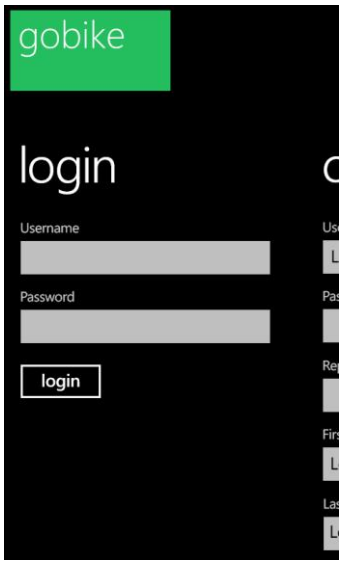


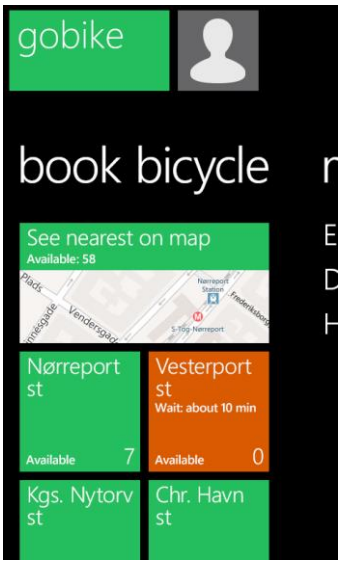


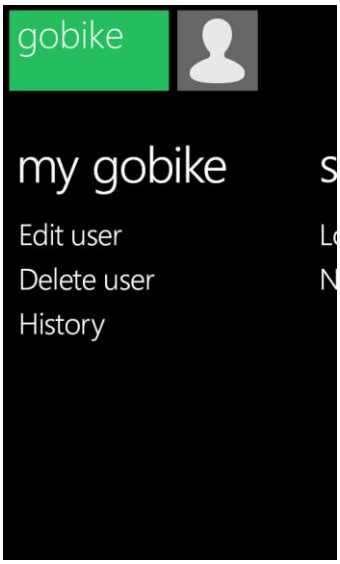


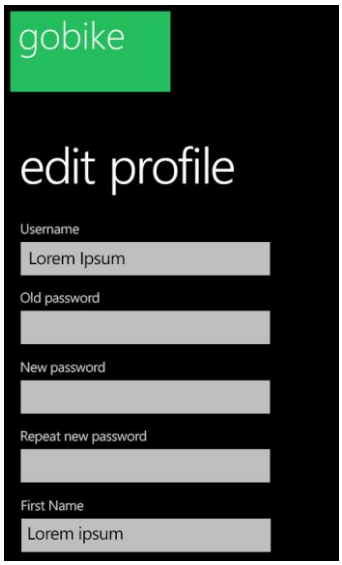


6.2.3. Edit profile

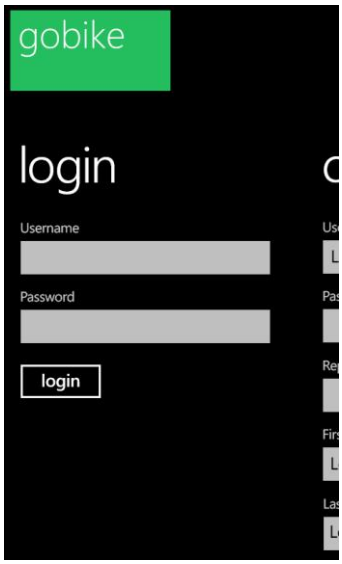


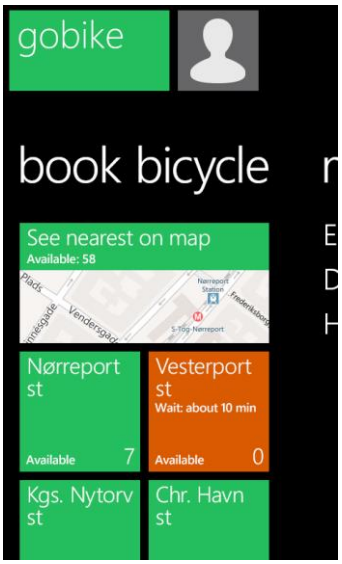


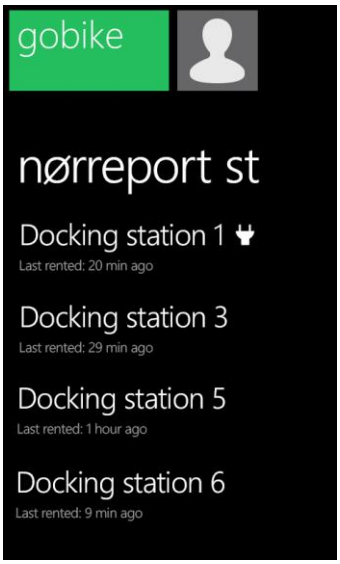


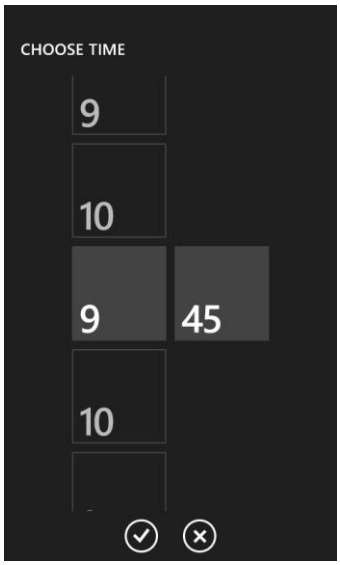


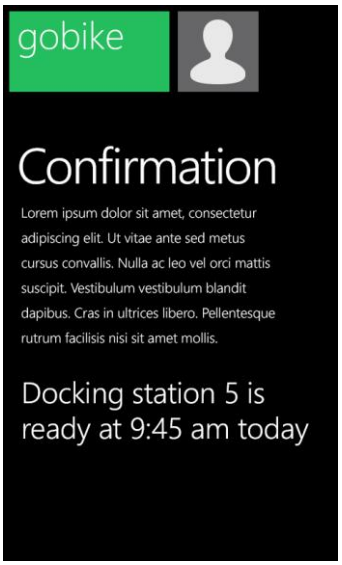
6.2.4. Book bicycle

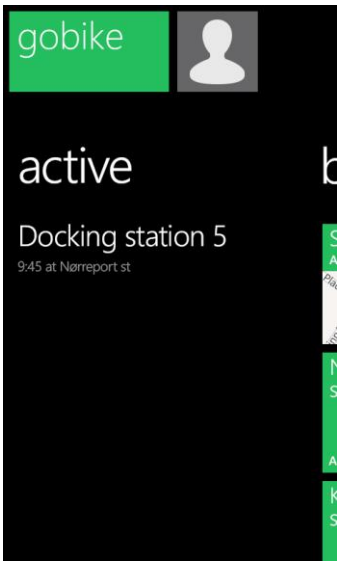




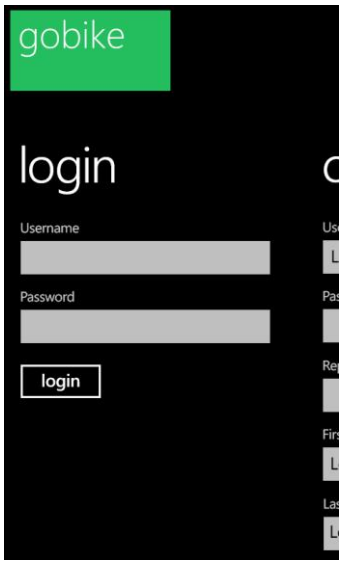


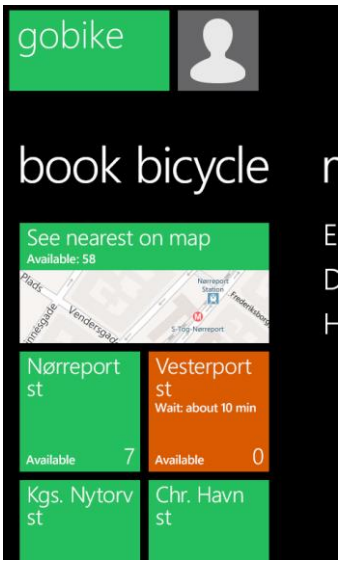


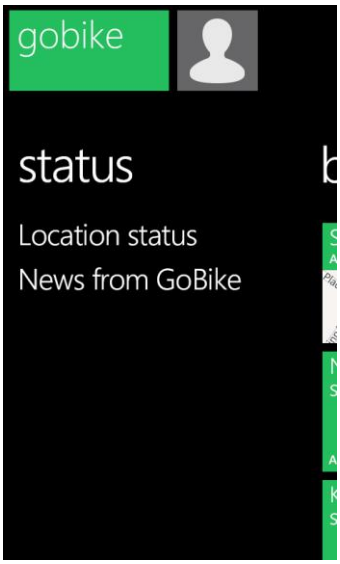


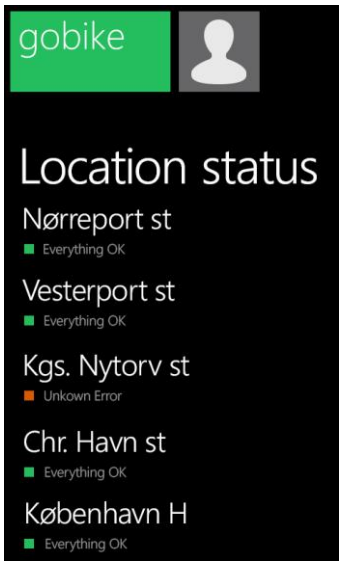


6.2.5. Location status

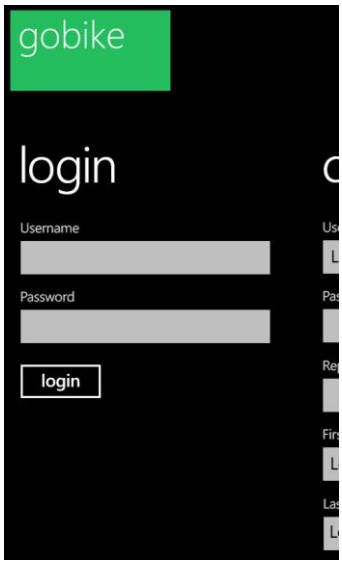


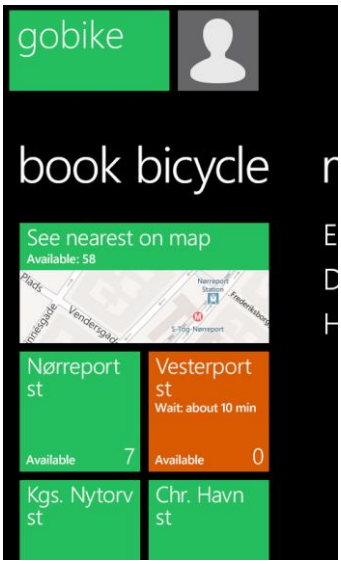


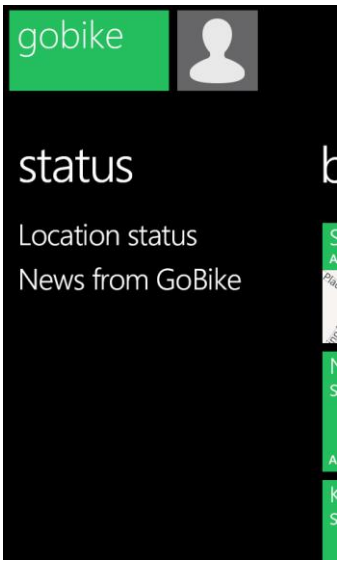




6.2.6. News from GoBike



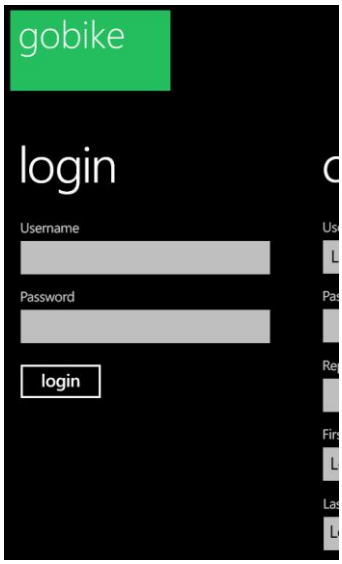


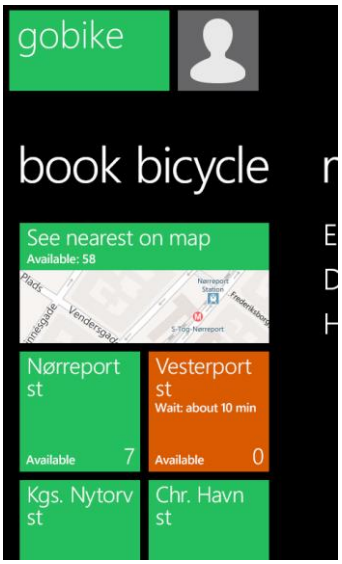


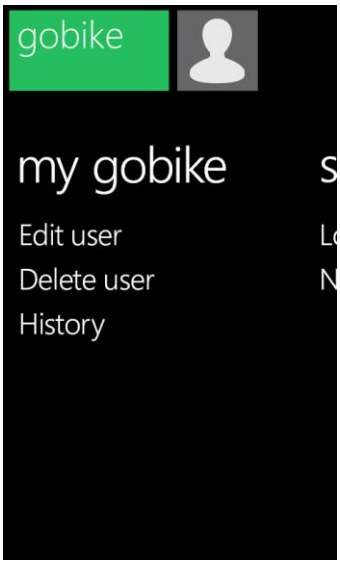




6.2.7. History


gobike
login
Username
Password
login


gobike
book bicycle
See nearest on map
Available: 58
Nørreport st
Available 7
Vesterport st
Wait: about 10 min
Available 0
Kgs. Nytorv st
Chr. Havn st


gobike
my gobike
Edit user
Delete user
History


gobike
History
12th may 2012
Rented from: Vesterport st
Returned at: Nørreport st
Price: 46 kr.
Time: 1 hour
10th may 2012
Rented from: Kgs. Nytorv st
Returned at: Kgs. Nytorv st
Price: 76 kr.
Time: 1.5 hour
1st may 2012
Rented from: Vesterport st

7. User Interaction Flows

7.1. Create user

7.1.1. Description

Flow for new users signing up for GoBike. Flow includes follow up by membership programme owners, should such apply.

The flow requires interaction with the CRM system for:

1. Check for duplicant users/user info
2. Storage of users
3. Assignment of membership programme where applicable

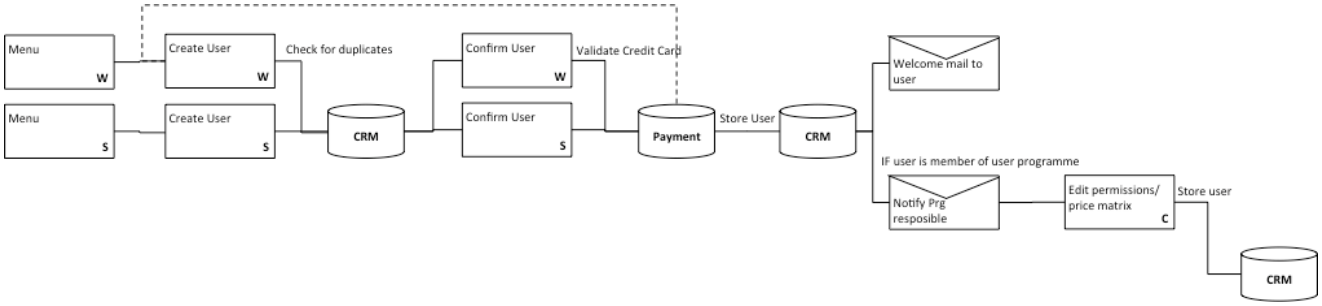
The flow requires interaction with payment system for:

1. Validation of Credit Card

The Create User flow is to be done using following channels:

a. Web
b. SmartPhone
c. Tablet

7.1.2. Flow



7.1.3. Screens

Manu

Description

Menu item for start of flow.

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
Create user		

Create user

Description

Form for user to provide required information to the system.

Fields

Mandatory fields:

Label	Type	Description
Username	Text	Must be unique
Password	Pasword	
First Name	Text	
Last Name	Text	
Street Address	Text	
ZIP	Text	
City	Text	
Country	Combo	Combo where number of countries >1, otherwise preselected for Denmark
Mobile Phone	Number	Syntax "## ## ## ##" (should follow relevant input patterns per country)
E-Mail	Text	
Birthday	Date	Syntax "dd/mm yyyy"
Gender	Radio Button	Values: Male/Female
Credit Card Type	Combo	Includes relevant options per country
Credit Card Number	Number	
Credit Card Expiry Monty	Number	
Credir Card Expiry Year	Number	
Credit Card Security Number	Number	

Optional fields:

Label	Type	Description
Avatar Image	Image	Image associated with user. If no image is selected, a default image is displayed (male/female version)

Buttons

Label	Type	Description
Create User		

Confirm user

Description

Repeat the information stated by user in previous step for confirmation.

Fields

Following fields are to be displayed on the confirmation page:

Label	Type	Description
Username	Text	
Password	Pasword	
First Name	Text	
Last Name	Text	
Street Address	Text	
ZIP	Text	
City	Text	
Country	Combo	Combo where number of countries >1, otherwise preselected for Denmark
Mobile Phone	Number	Syntax "## ## ## ##" (should follow relevant input patterns per country)
E-Mail	Text	
Birthday	Date	Syntax "dd/mm yyyy"
Gender	Radio Button	Values: Male/Female
Credit Card Type	Combo	Includes relevant options per country
Credit Card Number	Number	
Credit Card Expiry Monty	Number	
Credir Card Expiry Year	Number	
Credit Card Security Number	Number	

Label	Type	Description
Avatar Image	Image	Image associated with user. If no image is selected, a default image is displayed (male/female version)

Buttons

Label	Type	Description
Confirm		Submits user creation request
Edit		Reverts to previous step, allowing user to edit information

Edit permissions/memberships

Description

Programme Managers option to assign memberships to a user. This is done in the CRM system.

Fields

Non-editable fields:

Label	Type	Description
Username	Text	
Password	Pasword	
First Name	Text	

Last Name	Text	
Street Address	Text	
ZIP	Text	
City	Text	
Country	Combo	Combo where number of countries >1, otherwise preselected for Denmark
Mobile Phone	Number	Syntax "## ## ## ##" (should follow relevant input patterns per country)
E-Mail	Text	
Birthday	Date	Syntax "dd/mm yyyy"
Gender	Radio Button	Values: Male/Female
Credit Card Type	Combo	Includes relevant options per country
Credit Card Number	Number	
Credit Card Expiry Monty	Number	
Credir Card Expiry Year	Number	
Credit Card Security Number	Number	

Label	Type	Description
Avatar Image	Image	Image associated with user. If no image is selected, a default image is displayed (male/female version)

Buttons

Label	Type	Description
Store		Stores user in CRM
Create membership		Creates new membership option

7.2. Edit User

7.2.1. Description

This flow describes editing an existing user account – by the user. It relies on the same fields and information as the "Create User Flow" (as described in section **Fejl! Henvisningskilde ikke fundet.**) however, process requires login (to identify user) and is less complex than the creation of user.

Only interaction is with CRM system, unless credit card details are modified. In such case, revised credit card must be validated through the payment system.

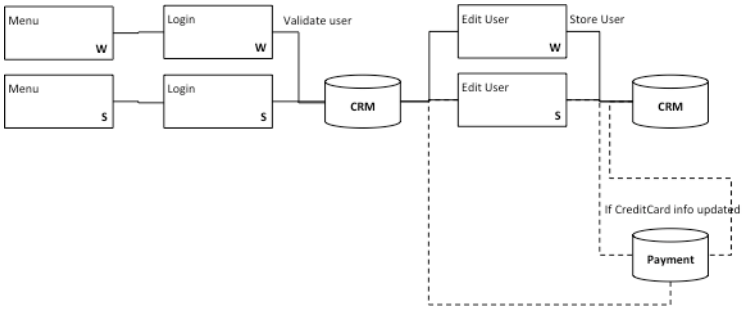
The flow requires interaction with payment system for:

1. Validation of Credit Card

The Create User flow is to be done using following channels:

a. Web
b. SmartPhone
c. Tablet

7.2.2. Flow



7.2.3. Screens

Manu

Description

Menu item for start of flow.

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
Edit user		

Login

Description

Standard user login form. Used throughout all applications.

Fields

Label	Type	Description
Username	Text	
Password	Password	

Buttons

Label	Type	Description
Login		
Sign up		Redirects to Create User flow

Edit user

Description

Opens up a screen with all user information fields in editable mode. User can modify and store afterwards.

If user updates/modifies fields with Credit Card information, new information must be validated through the payment provider. A loop for this is included in the flow.

Fields

Label	Type	Description
Username	Text	
Password	Pasword	
First Name	Text	
Last Name	Text	
Street Address	Text	
ZIP	Text	
City	Text	
Country	Combo	Combo where number of countries >1, otherwise preselected for Denmark
Mobile Phone	Number	Syntax "## ## ## ##" (should follow relevant input patterns per country)
E-Mail	Text	
Birthday	Date	Syntax "dd/mm yyyy"
Gender	Radio Button	Values: Male/Female
Credit Card Type	Combo	Includes relevant options per country
Credit Card Number	Number	
Credit Card Expiry Monty	Number	
Credir Card Expiry Year	Number	
Credit Card Security Number	Number	

Label	Type	Description
Avatar Image	Image	Image associated with user. If no image is selected, a default image is displayed (male/female version)

Buttons

Label	Type	Description
Save		Stores user information
Cancel		Returns to menu
Reset		Resets all fields to last saved content

7.3. Book bicycle

7.3.1. Description

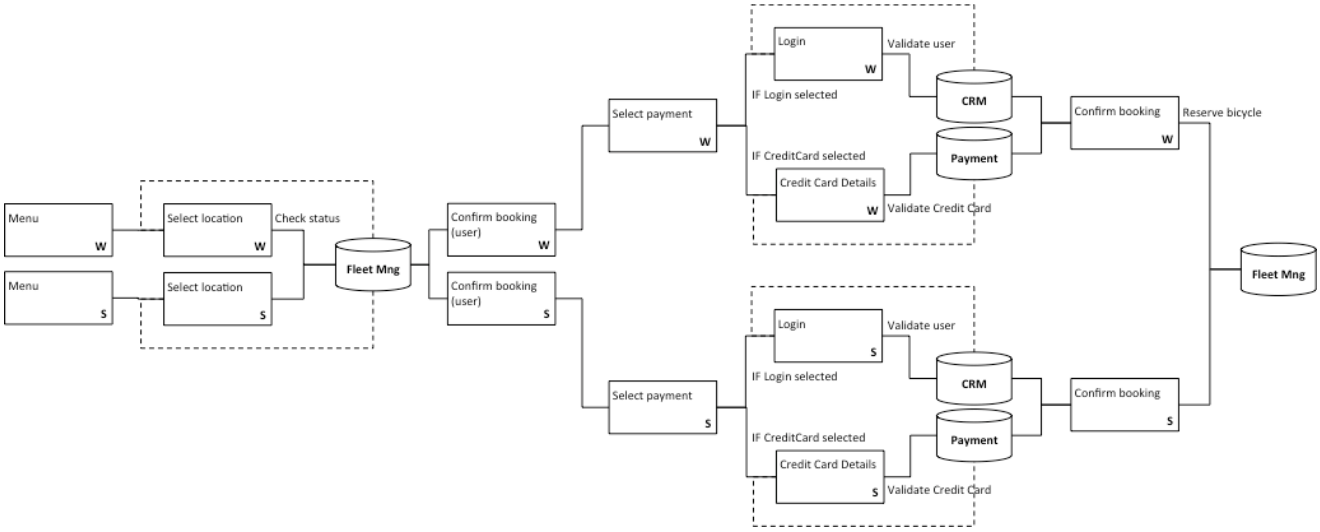
This flow describes the process during which a user makes a booking/reservation for a bicycle at a certain time. Depending on approach, most GoBike systems will be involved during this process.

Bookingwise, it is required to have a parameter-driven limit defining how long in the future a booking/reservation can be met. Such parameter may also refer to the payment plan/membership, should the user be associated with such.

The flow will make usa of the following systems:

1. Fleet Management – for
    a. status check of relevant GoBike stations
    b. Reservation of bicycle when booking completed
2. CRM – for user validation, where login is used as ”payment”
3. Payment – for credit card validation, where login is not used.

7.3.2. Flow



7.3.3. Screens

Menu

Menu item for start of flow.

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
Book bicycle		

Select location

Description

The location selection defines the GoBike stations to display during the booking process. If booking is made using a smartphone where GPS position is available, this shall be used. Otherwise, locaiton selection must include an initial definition of present location.

The screen shall display the 10 nearest GoBike stations to current locations – and further display the number of available bicycles at these GoBike stations. Where applicable and at empty GoBIke stations, an estimated waiting time shall be displayed.

It shall be possible to make pre-bookings of bicycles in empty locations, ensuring systems will hold the first incoming bicycle for the user. In such cases, user shall be informed about any other users having made such pre-bookings prior to the actual user.

Locations shall be displayed in a list. A map, displaying all locations – and where applicable, current position – shall be possible to load from the list overview.

Location selection may consist of multiple steps. Each of these steps are displayed in section **Fejl! Henvisningskilde ikke fundet.**.

Fields

Label	Type	Description
Location	Combo	
Range	Number	Max distance to display locations from current location. Unit is ”km”
Date	Date	Default=now()
Start Time	Time	Booking start time
End Time	Time	Booking end time

In addition to the above listed fields, appropriate fields per GoBike station, bicycle etc. Are to be included.

Buttons

Label	Type	Description
”Location”		One button/tile per GoBike station
Map		Displays GoBike stations on a map
Return		Returns to menu

Confirm booking (user)

Description

Following all relevant selections during previous (section 0) selected parameters/info are displayed for the user for final confirmation.

Fields

Label	Type	Description
Location		
Date	Date	Default=now()
Start Time	Time	Booking start time
End Time	Time	Booking end time
Bicycle ID		ID of the selected bicycle
Docking Station ID		ID of the selected Docking Station
Payment matrix		Where applicable

Buttons

Label	Type	Description
Confirm		
Cancel		

Select payment

Description

Final confirmation of booking is done with payment/login as event trigger. There are two options:

1. Login – identify user as GoBike member
2. Credit Card payment – will make reservation of funds on user credit card. Booking is not confirmed until credit card is validated.

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
Login		Primary button
Credit Card		Primary button
Cancel		Secondary button

Login

Description

Where user selects ”login” during step 0 this step applies.

User enters credentials which are validated against GoBike CRM.

Fields

Label	Type	Description
Username	Text	
Password	Password	

Buttons

Label	Type	Description
Login		
Reset		
Cancel		
Forgot password		Starts password retrieval flow (secondary button)

Credit Card Details

Description

Where user selects ”credit card” during step 0 this step applies.

Credit Card validation is performed against the Payment system.

Fields

Label	Type	Description
Credit Card Type	Combo	Includes relevant options per country
Credit Card Number	Number	16 (or applicable) digit credit card number
Credit Card Expiry Monty	Number	
Credir Card Expiry Year	Number	
Credit Card Security Number	Number	
Credit Card Name	Text	User name on Credit Card

Buttons

Label	Type	Description
Confirm		
Reset		
Cancel		

Confirm booking

Description

Following login or credit card validation, booking is confirmed displaying all relevant details. Further a ”thank you for booking ” notice is displayed.

Fields

Label	Type	Description
Location		
Date	Date	Default=now()
Start Time	Time	Booking start time
End Time	Time	Booking end time
Bicycle ID		ID of the selected bicycle
Docking Station ID		ID of the selected Docking Station
Payment matrix		Where applicable

Payment method	Credit Card / Username

Thank you text:

”Your booking is now confirmed. Details are as follows:”

Buttons

Label	Type	Description
OK		

7.4. Release bicycle

7.4.1. Description

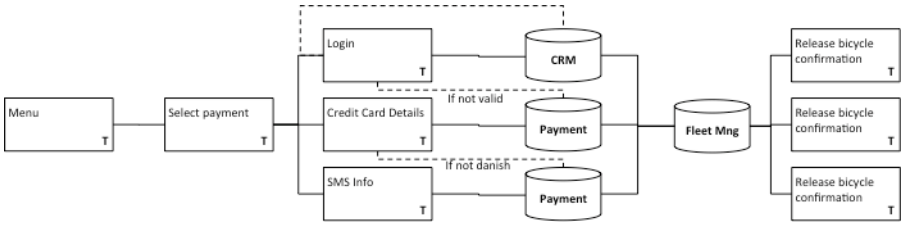
This flow describes the process for releasing a bicycle from a docking station at a cycle station. The user interaction is done using the Tablet PC on the bicycle.

The system will – depending on payment method – interact with the following GoBike systems:

1. CRM – For user validation, where payment is login
2. Payment – Where payment is credit card or SMS

Finally, any status change in status for docking station and/or bicycle, will be reported to the Fleet Management system.

7.4.2. Flow



7.4.3. Screens

Menu

Menu item for start of flow.

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
Release bicycle		

Select Payment

Description

Selection of payment method

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
Login		Allows existing users to login
Credit Card		Allows non-existing users to perform credit card payment
SMS		Allows non-existing users to perform payment using SMS

Login

Description

Login screen for existing users

Fields

Label	Type	Description
Username	Text	
Password	Password	

Buttons

Label	Type	Description
XX		XX

Credit Card Details

Description

Credit Card details for payment using credit card

Fields

Label	Type	Description
Credit Card Type	Combo	Includes relevant options per country
Credit Card Number	Number	16 (or applicable) digit credit card number
Credit Card Expiry Monty	Number	
Credir Card Expiry Year	Number	
Credit Card Security Number	Number	
Credit Card Name	Text	User name on Credit Card

Buttons

Label	Type	Description
Confirm		
Reset		
Cancel		

SMS Info

Description

Description of SMS payment process, including relevant docking station ID and bicycle ID

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
OK		

Release bicycle confirmation (login)

Description

Confirmation screen after succesful user login. Shall state the following text:

”Dear [Username],

You are now succesfully logged into GoBike and your bicycle is being released. Have a nice trip.”

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
OK		

Release bicycle confirmation (credit card)

Description

Confirmation screen after succesful credit card validation. Shall state the following text:

”Your credit card has been succesfully validated and your bicycle is being released. Have a nice trip.”

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
OK		

Release bicycle confirmation (SMS)

Description

Confirmation screen after succesful SMS payment. Shall state the following text:

”Your payment has been received and your bicycle is being released. Have a nice trip.”

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
OK		

7.5. Return bicycle

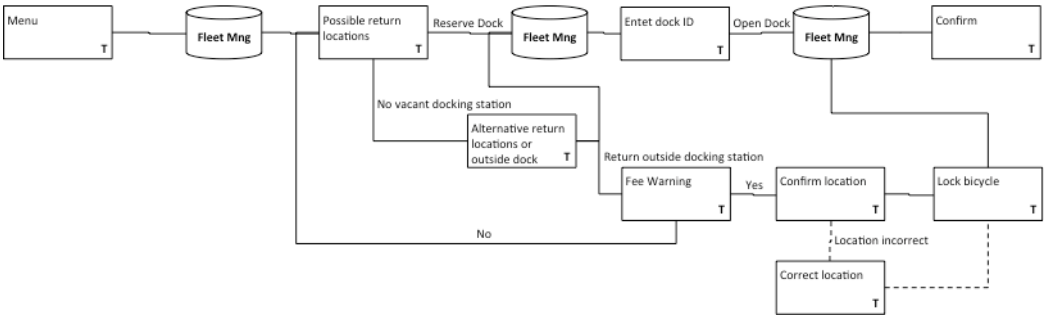
7.5.1. Description

This flow descirbes the process when a user wishes to return a rented bicycle. It incorporates numerous selectable return locations, with incentive where applicable.

It also incorporates the option to return a bicycle outside of a docking station (subject to separate fee).

It utilizes the Fleet Management system for look-up of vacant docking stations and for reporting a bicycle returned.

7.5.2. Flow



7.5.3. Screens

Menu

Menu item for start of flow.

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
Return bicycle		

Possible return locations

Based on bicycle location, a list of possible return locations are displayed – including number of vacant docking stations at each location. Clicking a location will result in a list of vacant docking stations. User can select one of these, which will then be reserved for 15 minutes until user reaches location.

Each location may have an incentive associated with it, allowing user to ”contribute” to the re-distribution of bicycles. Such incentive is listed on a per location basis.

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
N/A		

Alternative return locations or outside dock

If user, and thus bicycle, is registrered to be in a bicycle station with no vacant docking stations – or if this is selected by the user – a list of alternative locations is displayed. Each of these locations may have an incentive associated with it. Such incentive is als olisted.

User may also select to leave bicycle outside docking station, which will invoke the appropriate workflow.

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
N/A		

Fee warning

Note: Only appropriate when return outside docking station.
When return outside docking station is selected, the tablet will display a warning to the user, stating the associated fee (if applicable).

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
Accept		
Cancel		

Confirm location

Note: Only appropriate when return outside docking station.
User is requested to confirm the identified location (based on GPS info).

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
Confirm		
Correct		
Cancel		

Correct location

Note: Only appropriate when return outside docking station.
If detected locaiton is incorrect, user can correct it (by typing address – in version 2 by using the map)

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
OK		
Cancel		

Lock bicycle

Note: Only appropriate when return outside docking station.
WHen left outside docking station, bicycle must be locked to be returned. User is requested to do so using the normal locking procedure.

Fields

Label	Type	Description
Pincode	Password	
Confirm pincode	Password	

Buttons

Label	Type	Description
Lock bicycle		
Cancel		

Enter dock ID

To make sure a user utilizes the correct docking station, the Return Bicycle flow requests the user to enter the ID of the Docking Station. Entering this ID will open the docking station – further ensuring that no obsolete bicycles are inserted into any docking station.

Fields

Label	Type	Description
Docking Station ID	Text	

Buttons

Label	Type	Description
OK		
Cancel		

Confirmation

Confirmation screen displayed once the user has succesfully returned a bicycle. The screens includes information about the trip/lease (i.e. period, price etc.). Further, the screen includes an option to share the trip onto users Facebook wall (only available for registrered users).

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
OK		

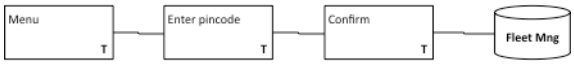
7.6. Lock bicycle/Unlock bicycle

7.6.1. Description

This flow is identical for the locking and unlocking process. Mock-ups are also identical except for the menu.

This flow interacts with the Fleet Management system, which monitores all locked bicycles.

7.6.2. Flow



7.6.3. Screens

Menu

Menu item for start of flow.

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
Lock bicycle		Respectively
Unlock bicycle		Respectively

Enter pincode

Allows the user to enter – and repeat – a pincode for locking the bicycle. On unlock, pincode is only entered once.

Fields

Label	Type	Description
Pincode	Password (numerica)	
Repeat pincode	Password (numerica)	Only applies to locking flow

Buttons

Label	Type	Description
Confirm		

Confirm

Confirmation screen, stating either:

”Bicycle has been locked.”
or
”Bicycle has been unlocked”

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
OK		

7.7. Report defect bicycle

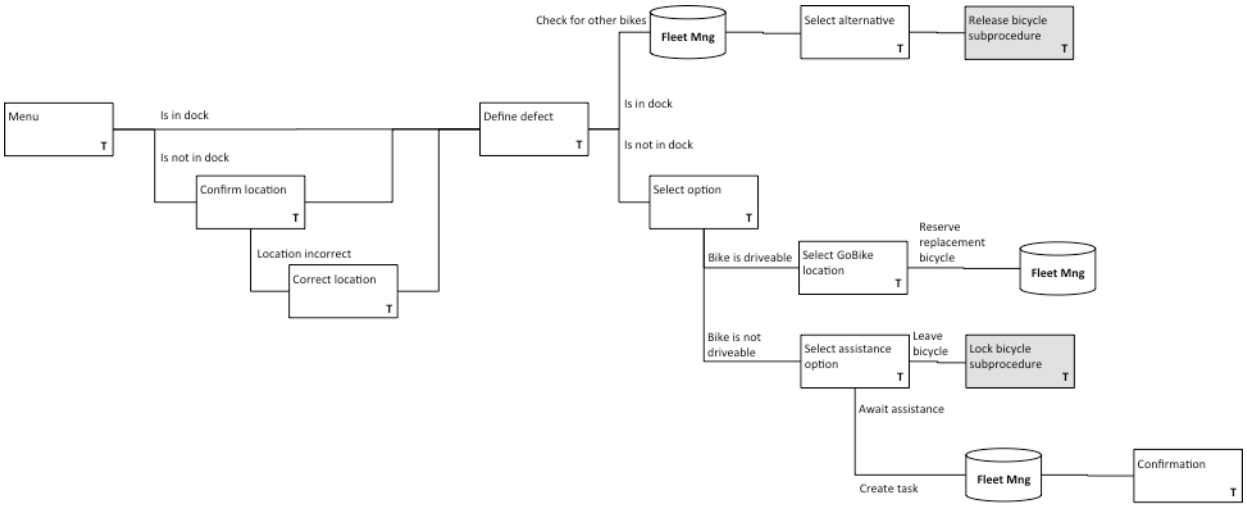
7.7.1. Description

This flow describes the process for reporting a defect bicycle – it being in a docking station or on the go. It takes into consideration whether the bicycle is drivable or not.

The flow interacts with the Fleet Management system for:

1. Checking for replacement bicycles
2. Checking for GoBike locations with vacant docking stations
3. Locking of bicycle
4. Creation of repair/maintenance task

7.7.2. Flow



7.7.3. Screens

Menu

Home screen menu item, allowing user to start the reporting flow.

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
Report bicycle		

Confirm location

If bicycle is registrered to not be in a GoBike docking station, GoBike will check current location based on GPS coordinates and request user to confirm location.

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
Confirm		
Correct		Allows the user to enter the correct address (please see section 0)

Correct location

If current location registrered by GoBike is not correct (see section 0) user is requested to enter the correct address.

Fields

Label	Type	Description
Enter correct location		If possible a GPS validation will be made

Buttons

Label	Type	Description
OK		

Define defect

Based on a depictiation of a bicycle, user selects the area of defect. This information is used for:

1. Statistical purposes
2. To create the correct task in the Fleet Management system for the Service/Repair team

User is not requested to provide detailed information as to the defect – simply to define the area.

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
OK		

Select option

User is offered two options:

1. Await assistance and get a new bicycle
2. Leave bicycle where-is and proceed on foot

If ”await assistance” is selected, an estimated waiting time will be calculated.
If ”leave bicycle” is selected, bicycle locking procedure will be started.

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
Leave bicycle		
Await assistance		

Select GoBike location

If the bicycle is driveable, the user is offered the option to go to the nearest GoBike location, where a replacement bicycle will be reserved and ready.

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description

N/A

Select alternative

Selection of alternative bicycle in selected GoBike location.

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
N/A		

Confirmation

Confirmation page, displaying either reserved alternative bicycle, waiting time for assistance etc.

Fields

Label	Type	Description
N/A		

Buttons

Label	Type	Description
OK		

Bilag B.B:

Security analysis and commercial considerations.

(Appendiks A til Løsningsbeskrivelse)

Final

13. oktober 2012

gobike

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1. Document history

This document is issued under document management. For further information see PID Section: 15.1 Dokumentstyring.

1.1. Revisions history

Revisions date	Author	Version	Change history
17/07/2012		1	Initial document, "Appendix 2"
12/09/2012	PSA	2	Text copied into GoBike standard template.
13/11/2012	PSA	3	New front page. Introduction updated.

2. Introduction

This document is appendix B to the document: "Løsningsbeskrivelse".

The document is an answer to the requirement [118: Min. Req 2.18].

3. Security analysis and commercial considerations

This document provides a preliminary security analysis in relation to the general level of security required in connection with the bike sharing system and its data, the operation of the System, etc.

Gobike will ensure that this risk analysis is updated on a continuously basis and in case of changes during the course of the program.

3.1. Definitions

The following commonly used terms for security and security properties (main categories) are used in this document:

3.1.1. Availability

Availability concerns assurance that access to data is not lost and that authorised users can gain access to the System and system components etc. when they wish.

3.1.2. Integrity

Integrity concerns assurance that data are complete and correct, including authentic and genuine. Integrity also includes assurance that the System, as a whole, functions as defined and that it contains the Hardware and Software components that it should contain.

3.1.3. Confidentiality

Confidentiality ensures that unauthorized persons do not gain access to information and data to which they are not entitled to have access. It is important, for example, to ensure confidentiality in connection with the protection of sensitive personal data, financial data, business data, etc.

3.1.4. Authenticity

Authenticity means assurance that information comes from the stated or assumed sources (e.g. a sender). Authenticity also means assurance that, for example, Software and equipment have not been tampered with.

3.1.5. Non-repudiation

Non-repudiation means assurance that a person who has carried out a transaction digitally with another person cannot later succeed in repudiating the transaction. In the paper world, non-repudiation is traditionally assured by means of signatures.

3.2. Assets and general level of security

As a basis for deciding on the desired level of security and the general and specific requirements concerning security in the Gobike system, an assessment has been carried out of the commercial importance the participating customers are expected to attach to securing the system's assets.

The table below shows this assessment. In the table, the bike sharing system's main assets are related to the commercial consequences – expressed as costs – of lack of security or shortcomings in security in the form of loss of availability, confidentiality and integrity.

Identified area		Costs as a consequence of loss of:		
		Availability H M L	Confidentiality H M L	Integrity H M L
The infrastructure (Network)		M	H	H
Back office system		M	L	H
The database		M	M	H
Equipment	Bikes	M	L	L
	Docking stations	M	L	L
	Payment system	H	L	L
	Tablet	H	L	L
Monitoring system		L	L	M
Transaction data		M	L	H

L: No or few costs
M: Medium costs
H: High costs

The list should not be regarded as a complete list of assets in the finished System, but as a list of some of the most important main assets that it has been relevant to analyse with respect to security.

It should also be noted that the extent of a given failure of availability, integrity or confidentiality can vary greatly (for example, from a single Unit to all Units in the System). The assessments,

both in the above table and in the following tables in this section are based on an event of moderate extent.

3.2.1. Availability

Lack of availability of the entire System, i.e. the System cannot be used at all, is assessed as follows:

To what extent is it judged that lack of availability could:	Length of time in which the System is not available:	Assessment
affect the possibility of making important managerial decisions?	> 10 min.	1
	> 1 hour	1
	> 1 Day	1
	> 1 week	1
inflict heavy costs?	> 10 min.	1
	> 1 hour	2
	> 1 Day	3
	> 1 week	3-4
result in loss of business?	> 10 min.	2
	> 1 hour	3
	> 1 Day	3
	> 1 week	3-4
affect or ruin the System's public image?	> 10 min.	1
	> 1 hour	2
	> 1 Day	3
	> 1 week	4
lead to statutory liability?	> 10 min.	1
	> 1 hour	1
	> 1 Day	1
	> 1 week	1
lead to heavy costs to re-establish the System after a breakdown?	> 10 min.	1
	> 1 hour	1
	> 1 Day	1
	> 1 week	3

No effect = 1
Minor damage = 2
Serious damage = 3
Survival of the business threatened = 4

The assessment shows that lengthy loss of availability would generally cause a financial problem and an image problem for the bike sharing system. However, it should be noted that many small failures or dropouts would also seriously damage the customers' faith in the System.

It is therefore important to build a high degree of fault tolerance into the System precisely to ensure availability and thereby obviate the risk of such failures.

3.2.2. Integrity

In this context lack of integrity means primarily unauthorised or accidental alteration of the System's data that could affect the validity and completeness of the System in the following ways:

To what extent is it judged that lack of integrity in important areas could:	*Assessment*
affect the possibility of making important managerial decisions?	2
result in fraudulent transactions?	3-4
impair or ruin the System's public image?	3 *
result in increased costs for the bike sharing system?	3 *
lead to statutory liability to pay compensation?	3 *

No effect = 1
Minor damage = 2
Serious damage = 3
Survival of the business is threatened = 4

*) If the damage is very extensive, the assessment will be 4

As will be seen from this, the integrity of the System is extremely important, and specific precautions must be taken to secure it.

3.2.3. Confidentiality

In this context lack of confidentiality means unauthorised access to all or some of the System's data that could affect the entire System in the following ways:

To what extent is it judged that lack of confidentiality concerning significant information could:	Assessment
result in loss of competitive advantages?	2
result in actual losses?	2
impair or ruin the System's public image?	2-3
result in increased costs for the bike sharing system?	1
lead to statutory liability?	2

No effect = 1
Minor damage = 2
Serious damage = 3
Survival of the business is threatened = 4

As will be seen from this, the data that are processed and stored in the System are not considered to be particularly sensitive. However, certain personal data must necessarily be protected in accordance with the rules of the Danish Act on Processing of Personal Data.

3.2.4. Authenticity

Description to be added.

3.2.5. Non-repudiation

The Gobike system performs and records economic transactions on behalf of end-user as well as the participating customers. Thus, the bike sharing system must provide all relevant logging, audit trails, and proof etc., required in relation with all transactions.

Furthermore, the system performs economic transactions with different companies, third-parties, etc. In this relation, the Gobike system may need non-repudiation and other security features, possibly based on software and/or guidelines from these external parties. Besides this, it is expected that there is no need for powerful non-repudiation facilities in the Gobike system.

Rammeaftalens bilag B: Løsningsbeskrivelse

Final
05 oktober 2012

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1 Dokument historik

Dette dokument er omfattet af dokumentstyring. For mere information se Projektinitierings-dokumentets (PID) afsnit: 15. 1 Dokument styring.

1.1 Revisions historik

Revisions dato	Forfatter	Version	Ændrings beskrivelse
07/08/2012	KKL	0.9	Initialt dokument
22/08/2012	PSA	1	Alle afsnit er opdateret. Der er tilført flere nye elementer.
12/09/2012	PSA	2	Kommentarer fra DSB implementeret se kommentar ark. Bilag E1 ændret til F1. Nye elementer tilføjet i afsnit: 5.6. Data sikkerhed 6.1.5 Livstidsanalyse, cykel; 6.3.3. Installations konfigurationer 6.3.5; 7.2.1 Ønsker og idéer 9.8. Vandalisme 10. Erhvervsløsning Ændrede afsnit: 9.7. Strøm (Modregning i GoBikes Bonus).
24/09/2012	PSA	3	Ændrede afsnit: 10. Erhvervsløsning: Priser flyttet til Rammeaftalens appendiks F1: Pris bilag. 6.1.4. Farve 6.3.3. Installations konfigurationer (Option 10.4 L219) Farve bestemmes ved første ordre. Nye afsnit: 5.3. Systemets brugere 5.4. Penge flow 5.5. Dataflow 12. Loyalitetsprogram Kommentarer fra DSB implementeret se kommentar ark.
28/09/2012	PSA	4	Kommentarer fra DSB implementeret se kommentar ark. Afsnittet: Definitioner er flyttet for at give bedre flow og standardisering alle dokumenter.
11-10-2012	PSA	5	4a: 6.1.1 og 6.1.3. ”Opgradering til el-cykler” (Opdateret jf. forhandlings møde 10-10-2012). 6.3.4 Temporære Docking stationer (Opdateret) 6.3.5 Design og holdbarhed, Docking point (oversat) Version 5: 6.1.3 El-cykler og Logo på elcykler (Referencer opdateret -> Bilag F1a) F1 ændret til F1a (Kommuner) henholdsvis F1b (Erhverv). ”9.7. Strøm” Afsnit opdateret og beregninger flyttet til Bilag F1a (7.3). 5.1.7. Fleet Service Management (Reference til 9.2.1 tilføjet). 9.3. Vedligehold SLA krav flyttet til SLA dokument (Appendiks D). 9.8. Vandalisme SLA krav flyttet til SLA dokument (Appendiks D). 11.1.3. GoBike Bonus (”vil” er ændret til ”kan” overalt.)

			11.1.4. GoBike Tours ("vil" er ændret til "kan" overalt.) + Reference til rammeaftalen. 12. Loyalitetsprogram Præcisering af aftalte begrænsninger samt ("vil" er ændret til "kan" overalt.)
29-10-2012	PSA	6	Afsnit 9.9 Tyveri slettet eller flyttet til Appendiks D: SLA Afsnit 9.4 opdateret: Option 10.2 End user support function (1st line support). Afsnit 2.1.1 og 2.1.3 verificeret ingen ændring i forhold til option 10.3 Other types of bicycles Afsnit 5.1.3 og 7.1.1 verificerer ingen ændring i forhold til option 10.9 Booking
31-10-2012	PSA	7	Definition of a full station: 7.1.4. Specifikke funktioner (tilføjet): Ny funktionalitet (krav) tilføjet: [R349] Return fee.
02-11-2012	KHL, DSB	8	Ændringer med versionsmarkering
05-11-2012	PSA	9	Accept af samtlige ændringer. 2.3 Definitioner: Referencer til andre dokumenter fjernet. Reference til Rammeaftalen bibeholdt.
9-11-2012	KHL, DSB	Final	Lukket til kontrakt med Gobike – Lukket til samarbejdsaftale

2 Indledning

Dette dokument er GoBikes Løsningsbeskrivelse som er bilag til Rammeaftalen mellem Cykel DK og GoBike Aps.

Nye appendix:
A: Systems description & user interaction - 220812.pdf
B: Security analysis

2.1 Formål

Formålet med nærværende dokument er at beskrive alle dele af løsningen på et overordnet niveau. Dokumentet vil besvare følgende spørgsmål:

- Hvad sigter projekt på at opnå,
- Hvilke brugere vil GoBike systemet servicere,
- Hvilke systemellementer indgår i GoBike leverancen,
- Hvilke serviceydelser og funktionalitet vil blive leveret.
- Hvilke leveringspakker (software funktionalitet) er planlagt.

2.2 Afgrænsning

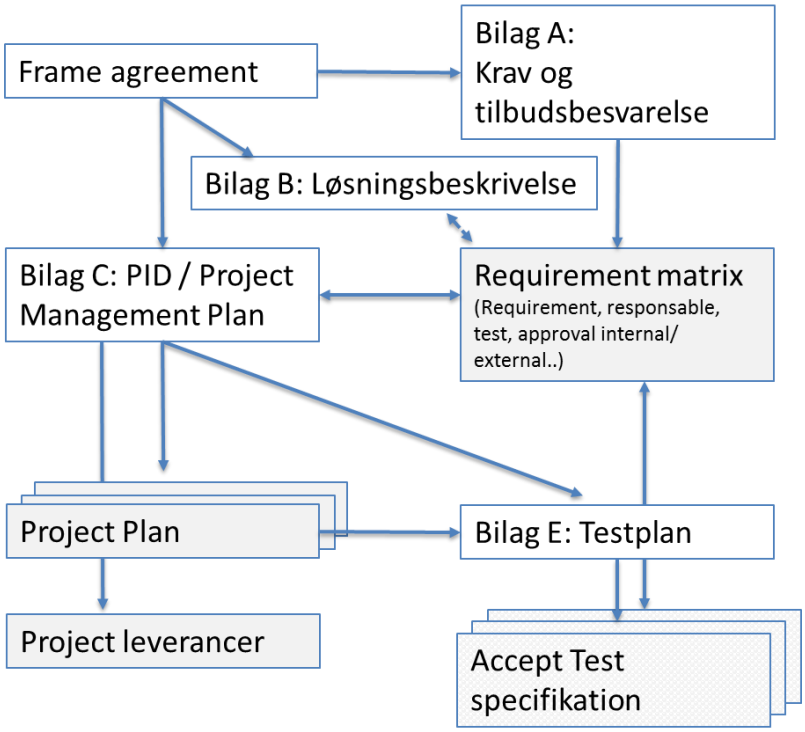
Beskrivelsen i nærværende dokument er på et relativt højt abstraktionsniveau. De tekniske detaljer vil blive udførligt beskrevet i Proof-of-Concept dokumentationen.
Nærværende dokument er et bilag til Rammeaftalen mellem Cykel DK og GoBike Denmark, og er derfor et blivende kontraktdokument. Der er ikke planlagt nogen opdatering af dokumentet efter indgåelse af Rammeaftalen. Dokumentationen, som vil blive udarbejdet i forbindelse med Proof-of-Concept aktiviteten, får en højre detaljeringsgrad og vil blive opdateret med de designvalg, som løbende aftales mellem parterne. Det vil derfor ikke give mening, at vedligeholde nærværende Løsningsbeskrivelse. (Se PID afsnit: 5. Specifkationsfasen)

2.3 Definitioner

Termer anvendt følger definitionerne i Rammeaftalen.

2.4 Dokumentationsstruktur

Illustrationen nedenfor viser det overordnede sammenhæng mellem nærværende dokument og projektets øvrige vigtige dokumenter. En liste indeholdende de projektdokumenter, der forventes anvendt i projektets levetid, er listet i Projektinitieringsdokumentets (PID) afsnit: 15.4 Dokumentliste.



Figur 1: Sammenhæng mellem Løsningsbeskrivelse, PID, Rammeaftale og andre dokumenter.

2.5 Læsevejledning

Dokumentet er overordnet opdelt følgende dele:

- Indledning som afsluttes med dette hovedafsnit,
- Afsnit: 3 Business case – Projektets visioner (parternes fælles vision for projektet),
- Afsnit: 4 Ledelsesresume, som giver en overordnet beskrivelse af projektet og projektets leverancer,
- Afsnit: 5 – 7 Systemelementer, funktionalitet og softwarepakker, der beskriver Gobike systemet,
- Afsnit 8 Installation der beskriver de forskellige installationsalternativer (hvordan "cykelstativerne" også kaldet docking stationer kan opstilles). Bemærk at Installationsprocessen er beskrevet i Projektinitieringsdokumentets (PID) afsnit: 7. Installation og vil derfor ikke blive behandlet her,
- Afsnit 9 Drift, der beskriver GoBikes driftsydelser, og
- Afsnit 10 Erhvervsløsning, beskriver forskellige løsninger for virksomheder.
- Afsnit 11 Produktudvikling, der beskriver videreudviklingen af GoBike systemet.
- Afsnit 12 Loyalitetsprogram, som beskriver hvordan GoBike foreslår at fastholde kunderne.

De enkelte afsnit kan læses uafhængigt af hinanden. Hvis læseren allerede har kendskab til projektet og til systemkonceptet og søger teknisk information, kan man med fordel gå direkte til afsnit: 4.3 Flere detaljer om GoBike systemet
Der er i vid udstrækning anvendt krydsreferencer i teksten. Krydsreferencerne er alle mærket ”Se afsnit:” efterfulgt af afsnitsnummer og overskrift. Krydsreferencerne er ”klik-bare” i Pdf- (klik) og Word (ctrl+klik) udgaven.
Eksempel på krydsreference: Se afsnit: 4.3 Flere detaljer om GoBike systemet.

3 Business case – Projektets visioner

Visionen bag by- og pendlercykelløsningen er at fremme cyklen som transportmiddel i urbane miljøer over hele Danmark.

Danmark er i forvejen en af verdens førende cykelnationer. Denne position ønskes fastholdt og udbygget i en ambitiøs proces, hvor hvert element der indgår i at cykler fra A til B konstant bliver analyseret og optimeret.

Målet er, at implementere ét fælles by- og pendlercykelsystem i Danmark, som kan anvendes på tværs af kommunegrænser, at tilbyde let tilgængelige cykler i forskellige varianter være som et middel til at øget transporteffektiviteten og samtidig aflaste bil- og bustrafikken, at minimere behovet for parkeringspladser, og at reducere de mange spildte timer i kø samt reducere forurening fra diesel- og benzinmotorer.

By- og pendlercyklerne skal være let tilgængelige og nemme at bruge for alle, både private og virksomheder, med udgangspunkt i det fælles koncept, som alle de deltagende kommuner, transportmyndigheder og trafikselskaber via samarbejdet i Cykel DK er blevet enige om. For at opnå dette skal det nye by- og pendlercykelsystem opfylde:

Brugernes krav, ved:

- at tilbyde bedre mulighed for problemfri rejse på cykel fra punkt A til B i danske byer,
- at gøre det nemmere for brugerne at benytte kombinationen af cykel og kollektiv trafik,
- at man på sigt kan betale den samlede rejse med offentlige transportmidler hvori pendlercyklerne indgår,
- at cyklerne fås i varianter, der passer til det konkrete behov. Det kan være med eller uden elektrisk assistance, det kan være med lad til transport af varer/bagage og det kan over tid også være små elektriske biler med plads til 2 – 3 passagerer og plads til varer/bagage.

Cykel DK og de offentlige trafikselskabers effektivitetskrav, ved:

- at øge antallet af brugere af offentlig transport, da det bliver nemmere at komme til og fra stationerne,
- at øge brugertilfredsheden,
- at skabe bedre argumenter for at lade bilen stå og i stedet anvende den offentlig transport, hvori cyklen er en integreret del,
- at øge indtægterne,
- at reducere antallet af cykler i togene.

4 Ledelsesresume



I dette afsnit sammenfattes GoBike systemets muligheder på både kort sigt og hvad der er muligt på længere sigt. GoBikes mål er ganske enkelt: Vi vil have folk ud og opleve byen og dens rum. Vi vil have folk ud af bilerne og op på cyklerne og ind i de offentlige transportmidler.

Det tror vi gøres bedst ved at tilbyde integrerede oplevelser, der gør det nemt og enkelt for brugeren at realisere – cyklen og den offentlige transport skal være en naturlig forlængelse af hinanden. Kan vi samtidig gøre selve "rejsen" interessant og relevant, så er det vores overbevisning at vi kan få brugerne til at tage cyklerne til sig.

Kort sagt er GoBike bycykler på en helt ny måde. Vi sætter den enkelte bruger i centrum – og hvor moderne teknologi udnyttes til det yderste. Alle GoBikes cykler er udstyret med en fastmonteret integreret Tablet PC, der konstant er på internettet og endvidere er udstyret med GPS. På den måde kan vi give folk relevante informationer og oplevelser hvor de er, når de er der. Samtidig kan vi gøre rejsen – og planlægningen af rejsen – så simpel og effektiv som muligt.



Det er vores ambition at bringe folk fra en passiv informationssøgen bag skærmen til en aktiv Informationsoplevelse på cyklen. Ved at stille informationsdatabaser til rådighed via selve cyklen, og gøre indholdet af disse databaser til en integreret del af cykelturen, kan vi ændre hele den måde brugeren opfatter cyklen på. Fra at være et "simpelt" enkeltstående transportmiddel, hvor brugeren selv skal træffe en mængde valg og foretage planlægning, kan brugeren nu overlade dette til GoBikes system. Dermed kan brugeren fokuseres på det der er væsentligt: Turen og oplevelserne.

Den lokale bruger, der er bosiddende i området, vil opleve øget bekvemmelighed og en sikkerhed for levering, da cyklen kan reserveres hjemmefra – eller fra telefonen. Ruter kan planlægges på forhånd, undervejs – eller genbruges. Billetkøb til offentlige transportmidler vil på sigt også kunne ske via systemet.

Turisten vil få en helt ny måde at opleve byen på. Baseret på interesser og præferencer kan GoBike sammensætte en unik tur rundt i byen – en tur, der er optimeret til *netop* den pågældende turist. Turen krydres med eksponering af indhold fra relevante turistdatabaser – og på den måde vil byen præsenteres på den optimale måde. Samtidig er integrationen med offentlige transportmidler med til at gøre oplevelsen simpel og overkommelig for en bruger, der ikke færdes hjemmevant i danske bymiljøer.

GoBikes løsning er således en optimal kobling mellem byen og brugeren. Brugeren behøver ikke aktivt at opsøge informationer – vi præsenterer de relevante informationer på det relevante tidspunkt fra den relevante kilde.

4.1 GoBike systemets elementer

Fra slutbrugerens synspunkt består systemet af ganske få dele:

- Websiden hvor der også er mobil adgang, hvor cykler kan reserveres, hvor abonnent og brugerens data kan opdateres.
- Cyklen udstyret med en integreret Tablet PC, hvor igennem al kommunikation mellem bruger og system foregår,
- og en docking point (cykelstativ, hvor cyklen kan parkeres og fastlåses).

Den samlede leverance inkludere en del flere systemelementer, som alle er beskrevet i de følgende afsnit af dokumentet. Det drejer sig blandt andet om IT infrastruktur, installation af systemet til drift, vedligeholdelse og systemovervågning samt nivellering af cykler og kundeservice. Ligeledes vil systemets data- og pengestrømme blive beskrevet.

4.2 Organisation og projektledelse

GoBikes system leveres af GoBike Denmark Aps sammen med en række velrenommerede underleverandører. For mere information se Projektinitieringsdokumentets (PID) afsnit: 9. GoBike, virksomhedspræsentation og nøglekompetencer. I PID er det også beskrevet, hvordan et installationsprojekt gennemføres.

4.3 Flere detaljer om GoBike systemet

I de følgende afsnit beskrives de tekniske detaljer. Den tekniske beskrivelse er delt op i følgende delafsnit:

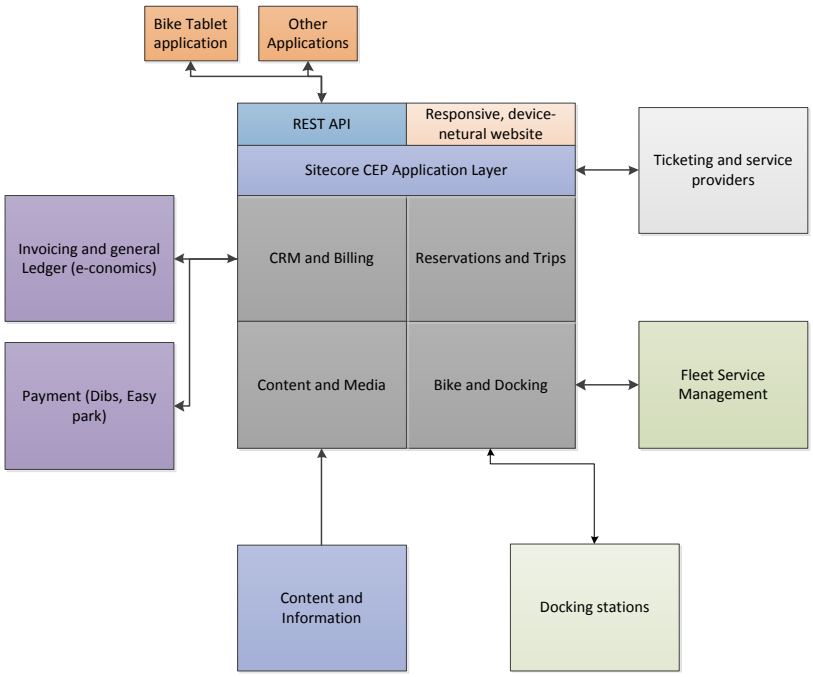
- Afsnit: 5 Systemoverblik, der giver et overblik over hvordan de enkeltes systemelementer agerer i forhold til hinanden. Dataflow og penge strømme er også beskrevet.
- Afsnit: 6 GoBikesystemet, infrastruktur og systemelementer, der beskriver de enkelte systemelementer, herunder også installationsalternativer.
- Afsnit: 7 Funktionalitet, der beskriver hvilke funktionalitetspakker der er defineret,
- Afsnit 8 Installation, der beskriver installationsalternativer. Installationsprocessen er beskrevet i Projektinitieringsdokumentets (PID) afsnit: 7. Installation,
- Afsnit 9 Drift, der beskriver GoBikes driftsydelser, og
- Afsnit 10 Erhvervsløsning, beskriver forskellige løsninger for virksomheder.
- Afsnit 11 Produktudvikling, der beskriver videreudviklingen af GoBike systemet.
- Afsnit 12 Loyalitetsprogram, som beskriver hvordan GoBike vil fastholde kunderne.

5 Systemoverblik

Dette afsnit beskriver GoBikes systemer på et relativt højt abstraktionsniveau. Formålet er at give læseren en overordnet forståelse af GoBike systemernes system ellementer.

5.1 GoBike backoffice

Den centrale GoBike applikation vil blive bygget på standard web-teknologi komponenter, som gør det muligt at implementere state-of-the-art web-browser applikationer samt smartphone applikationer ved hjælp af et sikkert REST API. Den overordnede systemarkitektur afbildes således:



Figur 1: GoBike backoffice applikations elementer

Som det fremgår af Figur 1: GoBike backoffice applikations elementer, består løsningen af et antal hovedkomponenter. Disse komponenter er beskrevne i det efterfølgende.

5.1.1 SQL database

Løsningen baseres på et skalerbart MS SQL Server-database setup, som er enkelt at vedligeholde i store platforme med krav om høj tilgængelighed. MS SQL Server-setup vil danne generelt database-grundlag under alle system komponenter.

5.1.2 Bike & Docking System

En væsentlig del af applikationen håndterer en database over cykler og docking stationer. En cykel eller en dockingvpoint kan her både aktiveres og de-aktiveres. Det er også her at status for den enkelte cykel og docking point lagres.

Programmet er forberedt til at understøtte forskellige typer af køretøjer - og kan derfor håndterer både manuelle og elektriske cykler samt andre køretøjstyper, hvis nødvendigt.Denne database er det centrale element og interagerer i realtid med Fleet Service Management system (Flådestyringssystem) som ekstern komponent. Denne database anvendes også til at beregne fejlrate og tilgængelighed som specificeret i SLA (Service aftale).
I afsnit: 6. GoBikesystemet, infrastruktur og systemelementer findes beskrivelse af Bike & Docking System mv.

5.1.3 Reservation & Trips

Som en anden vigtig komponent er Reservation & Trip komponenten. Denne del af løsningen indeholder fleksible reservationsmuligheder samt information om allerede gennemførte ture.
Denne del af platformen er bygget op tæt omkring en skalerbar datamodel til lagring af et større antal små poster: da et stort antal tilgængelige tidsvinduer og ture forudses. Allerede udførte ture vil blive gemt (GPS positionsbestemmelse med oplysninger om den lejede cykel – hvorfor det er muligt at lokaliser ruten og angive punkter af interesser på turen) enten internt eller eksternt, afhængig af det tilknyttede Fleet Management System. De udførte ture vil blive arkiveret efter en periode.
Den givne datamodel kan være segmenteret per cykler og har derfor ikke ekstraordinære skalaproblemer.

5.1.4 CRM & Billing

CRM & BIlling håndterer lagring af brugere, sessioner og tur-ID til faktureringsformål. Denne onlineplatform vil ikke håndtere kassekladde, skat, moms eller andre finansielle oplysninger. Det vil kun indeholde køb (for online købshistorik) samt oplysninger om brugeradfærd og kontooplysninger. Anførte funktionaliter/oplysninger som ikke er indeholdt vil håndteres af GoBike's ERP system.
Denne del vil håndtere betalingsmatricer, for at kunne beregne den korrekte pris for den specifikke kunde og bruger.

5.1.5 Content & Media

For at kunne vejlede brugerne af websitet (til planlægningsformål) samt cykelbrugeren under en tur, vil løsningen have oplysninger om en lang række punkter af interesse i regionen.
Dette indhold vil blive distribueret fra andre kilder og enten lagret i GoBike platformen eller renderet i realtid fra eksterne kilder. For at integrere indholdet løbende i forhold til GPS-oplysninger i løbet af en rute, vil alle POI (steder af særlig interesse) oplysninger blive geo-kodet og lagret i et geo-kodet søgeindeks for at kunne udføre kombinations forespørgsler baseret på geografisk placering samt brugerens udtrykte interesser. Indekset vil også kunne udføre fritekst forespørgsler mod indeks, hvilket primært er til brug for hjemmesiden, for turplanlægningsformål.

5.1.6 Invoicing & General Ledger

Med henblik på kassebog og regnskab, vil platformen integrere en tredjeparts finansiel platform. GoBike påtænker anvendelse af e-conomics platformen. På grund af den generelt abstraherede

datamodel, vil ERP systemet dog kunne erstattes på et vilkårligt tidspunkt, uden påvirkning af den resterende del af GoBike system-setup. GoBike vil ikke udvikle en regnskabsplatform - men anvende standard software allerede tilgængeligt på markedet. Dette sikrer endvidere efterlevelse af revisionskrav.

5.1.7 Fleet Service Management

For at kunne udføre service på cykel og docking stationer, vil GoBikes applikationsplatform i Danmark integrere Falcks Fleet Management system (Sirius). Sirius-systemet vil håndtere alle de rapporterede hændelser og planlægning af fysiske besøg, servicering af cykler og docking stationer - og vil kommunikere meddelelser og tilstande for disse med GoBike platform (fx "ude afdrift", "Docking point i brug").

GoBikes platform vil give Sirius information om placering og rapporterede fejl i forhold til cykler eller docking points, hvis dette fx rapporteres af en bruger. Sirius anvendes i GoBike systemarkitekturen som et issue-system, hvor GoBike's øvrige systemkomponenter kan oprette incidents, der således efterfølgende varetages af Falck's eksisterende system-logik. Parametre for, hvornår en incident oprettes håndteres i GoBike's interne systemer.
Se også beskrivelsen af funktioner for automatisk nivellering i afsnit 9.2.1 System features.

5.1.8 Docking stationer

Interface til docking stationerne styrer dem ved cykeludlejning og kan give status information om den aktuelle docking station.

5.1.9 Payment

Slutbrugerne samt B2B kunder kan betale for GoBike tjenester på en lang række forskellige måder. Online, er kreditkort-baserede køb håndteret gennem standard betaling gateways (fx Easypark, Pensio, Nets o.a.). Kreditkortbetalinger og validering er standard tjenester og kan overføres til andre gatewayudbydere, hvis det skønnes nødvendigt. Platformen vil også integrere overtakserede SMS betalinger samt "dial-up" telefonregning.
Den abstraherede systemarkitektur tillader et antal leverandører af sådanne services. I Danmark påtænker GoBike bl.a. at anvende Easyparks platform, som kan tilbyde både SMS og dial-up (Voice interaktiv platform) opkrævning af afgifter fra brugerne.

5.1.10 Content and Information

For at give brugerne en behagelig oplevelse ved planlægning og udførelse af deres cykelture, kan GoBike integrere en række tjenesteudbydere med relevant information for brugerne.
Visit Danmark og Wonderful Copenhagen / Visit Copenhagen er vigtige kilder til information.
Restaurant og begivenhedsindeks som fx AOK, iByen eller MitKBH kan også indarbejdes for hændelsesbaseret information.
De forskellige services kan blive integreret i GoBikes applikationsplatform for at kunne give relevante oplysninger videre under en rejse.

Integrationen foregår via et abstraheret integrationslag, der som mediator fungerer som ”tolk” mellem GoBike’s datastruktur og –model og den eksterne informationskildes. Derved kan yderligere informationskilder tilføjes uden påvirkning af de resterende GoBike systemer.

5.1.11 Ticketing & Service Providers

For at gøre cykel løsningen mere attraktiv og dermed for at øge brugen af cyklerne, vil platformen også være åbent for integration med en række billet- og andre tjenesteudbydere:

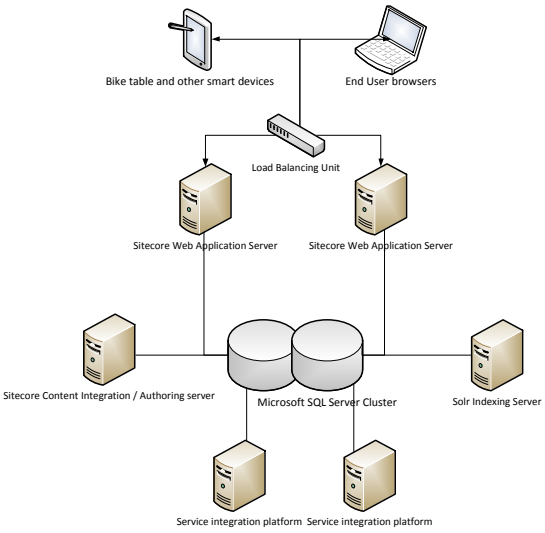
- Integration til DSB og Metro billetteringssystemer for køb af person- og cykel billetter til ture med togene.
- Køb af entré og andre relevante elementer i en slutbrugers tur gennem byen.

5.1.12 Slutbrugernes adgang fra en række forskellige teknologiske grænseflader

Den primære adgang til GoBikes system er den på cyklen fastmonterede tablet PC
Se afsnit: 6.2 Tablet PC for yderligere information.
Den sekundære adgang er den web-baserede hjemmeside. Denne adgang kan anvendes til planlægningsformål, oprettelse af bruger, reservation, m.v Browserens interface kan også anvendes til erhvervsadgang samt personlig opfølgning, vise ture og købsoplysninger samt ting som visning af ruten taget på en bestemt tur.

5.2 Teknisk hosting af platformen

For at understøtte den ovennævnte platform med høj tilgængelighedskrav og høj kapacitet, vil GoBikes platform bygge på bedste praksis og strategier fra en række store internet-platforme.
Hosting platform vil være opbygget som følger (Højt abstraktions niveau):



Figur 2: System konfiguration, Hosting platform

Platformen vil blive baseret på en Sitecore CEP platform. CEP (Customer Engagement Platform) som indeholder et CMS, en web-udviklingsplatform, en stærk e-mail marketing platform samt en Digital Marketing Platform. CEP-platformen har stærke muligheder i bruger personalisering og brugerprofil

skabelse - hvilket gør GoBike platform i stand til at opbygge viden om brugernes interesser baseret på deres opførsel under planlægningsfaser.

5.2.1 Database struktur

Der anvendes en Microsoft SQL Server 2012 cluster. Indholdet og ”medie encyklopædi” vil være placeret på Sitecore CMS-databaser, mens cykel-og docking status opdateringer samt reservationer og ture vil blive behandlet i tilpassede databaser. CRM og fakturering vil blive baseret på standard Profil databaser fra Microsoft. NET udvidet med de nødvendige faktureringsoplysninger.
For fuld-tekst og geografisk indeksering vil GoBike integrere Sitecore søgeløsning - en søgeplatform baseret på Apache Solr - et stærk open source-baseret søgeindeks til både fuld tekst, metadata og geografisk indeksering.

5.3 Systemets brugere

Brugerenes interaktion vil blive beskrevet i dette afsnit.

Følgende bruger roller er identificerede:

”End users”

- Slutbruger som lejer og bruger cykler,

”Business End Users”

- Erhvervsbruger som opretter og vedligeholder aftaler for en gruppe Slutbrugere,

”Product Managers”

- Produkt manager som definerer prisstrukture, rabatordninger mv. i system set-up,

”GoBike administration”

- Driftsmedarbejdere som overvåger driften,

”GoBike Service Team”

- Service medarbejdere som modtager service ordre,
- Installationsfolk som tilslutter nyt udstyr.
- Kundeservice som modtager opkald fra slutbrugere

”Book keeping”

- Bogholderi, Opfølgning, statistik og regnskab

De forskellige brugergrupper har forskellige adgang til de enkelte GoBIke front-og back-end-systemer. Adgang kan kort beskrives som følger:

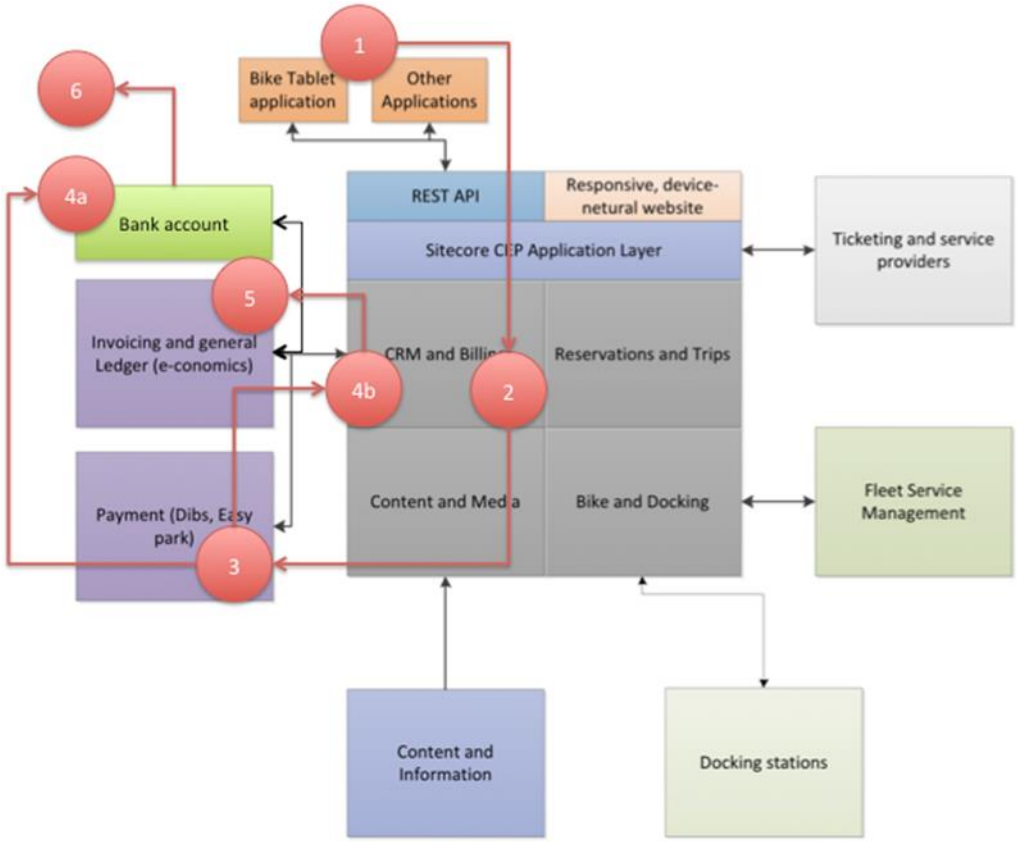
System	*Bruger rolle*	*System adgang*
Bike & Docking	GoBike Administration	Overvåge cykel position og status. Monitor docking station status. Overvåg adfærd og bevægelsesmønstre. Beregn nivellerings behov. Oprette opgaver for service-og nivelleringsteam. Administrer cykler og docking stationer i og ude af drift mønster.
Bike Tablet App	End Users	Som beskrevet i appendiks A.
	GoBIke Administration	Som beskrevet i appendiks A.
	GoBike Service Team	Fjernbetjening af tablet software: Fx ”lås” og ”lås-op” af cykel.
Content & Media	GoBike Administration	Editerer indhold på www.gobike.dk Som beskrevet i appendiks A.
	Product Managers	Kampagne specifik og relevant indhold på www.gobike.dk. Adgang kan være direkte til Sitecore CMS backend med begrænset område adgang eller via integration til Product Manager indhold kilder.
CRM & Billing	Book keeping	Bruger data, Leje og transaktions log.
	GoBike Administration	Bruger information (abonnenter). Leje og Transaktion historie. Opret brugere. Rediger brugere. Slet brugere. Opret brugergrupper. Rediger brugergrupper. Slet brugergrupper. Tildel brugere til brugergrupper. Slet brugere fra brugergrupper. Opret pris matrix. Redigere pris matrix. Slet pris matrix. Tildel pris matrix til brugergruppe. Slet pris matrix til brugergruppe. Opret profilering tag. Rediger profilering tag.
	Product Managers	Som GoBike administration. Se ovenfor.
DMS	GoBike Administration	Opret profilering regel. Rediger profilering regel. Slet profilering regel. Opret profilering event. Rediger profilering event. Slet profilering event.
ERP	Bookkeeping	Full adgang.
	GoBike Administration	Fuld adgang.
Payment Gateway	Bookkeeping	Transaktions log. Tilbageør transaktion. Gentag transaktion. Frigiv betaling.
	GoBike Administration	Fuld adgang.
Reservation & Trips	GoBike Administration	Booking overblik. Booking historie. Trip oversigt (anonyme). Opret booking. Rediger booking. Slet booking. Opret booking regel. Rediger booking regel. Slet booking regel. Tur statistikker.
	Product Managers	Som GoBike Administration. Se ovenfor.
Website	Business End Users	Fuld læseadgang. Opret egne brugere. Rediger egne brugere. Slet egne brugere. Tildel egne brugere til brugergruppe. Slet egne brugere i brugergrupper. Egne brugerstatistikker (leje per

System	Bruger rolle	System adgang
		bruger / gruppe / måned, ture osv.). Faktura overblik. Opret booking. Rediger booking. Slet booking.
	End Users	Fuld læseadgang (mindre beskyttede områder, når de ikke er logget ind). Opret booking. Rediger booking. Slet booking. Leje historie (log). Faktura overblik. Faktura betaling. Opret bruger. Ret bruger info. Slet bruger.
	GoBike Administration	Fuld adgang. Se: appendiks A.
	Product Managers	Fuld adgang. Se: Appendiks A.
	GoBike Service team	Kontrolleret fuld adgang. Se: Appendiks A.

5.4 Penge flow

Betalinger til GoBike følger samme flow, uanset betalingsmetode. Men starten af flowet varierer afhængig af, om brugeren er en registreret bruger, med månedlige betalinger eller en ad hoc-bruger som betaler med kreditkort for en enkelt ydelse.

Hvis brugeren er en ad-hoc bruger, vil flow indledes via ”docking” af cyklen. Hvor bruger er en registreret bruger med periodisk betalinger, vil flow initieres af hændelser i CRM & Billing system. Det samlede Betaling og penge flow kan illustreres således:



Figur 2: Betalings og penge flow.

Betalingen følger nedenstående trin:
Bemærk at ERP-systemet beskrevet nedenfor er et standard bogholderi system i figur 2 ovenfor kaldet: ”Invoicing and general ledger”.

5.4.1 Trin 1 - Docking (tilbage levering af cykel)

Ved returnering af en cykel (”docking”), aktiverer GoBike betalingen af lejen. Dette sker automatisk og / eller manuelt afhængigt af bruger scenariet.

5.4.2 Trin 2 - Beregning af fakturering
Baseret på brugerens data og status (registreret bruger, ad hoc bruger etc.) vil CRM & Billing Systemet beregne fakturering for lejemålet. Hvis brugeren er en registreret bruger, vil der normalt ikke blive opkrævet betaling - kun en log af leje perioden, vil blive gemt i CRM & Billing system. Denne registrering vil blive medtaget i den journalisering for ERP-systemet og vil blive brugt til dokumentation relateret til månedlig fakturering. Hvor ad hoc-bruger, vil det tilhørende gebyr beregnes, og betaling initieres via kreditkort.

5.4.3 Trin 3 - Credit Card validering
Ved leje start bliver brugerens kreditkort valideret og en ”token” udstedt af betalingsgateway. Dette sikrer, at GoBike har adgang til reserverede midler ved lejeperiodens afslutning. Ved returnering af cykel, bliver denne token valideret gennem porten og en logisk værdi returneres til CRM & Billing System. Ved succes, vil beløbet blive trukket og overført til GoBike bankkonto (trin 4a). En registrering vil også blive registeret i CRM & Billing System (trin 4b).

5.4.4 Trin 4 - Registrering og overførsel
Se beskrivelse af trin 3.

5.4.5 Trin 5 - Journal i ERP-systemet
Mindst en gang dagligt, vil alle transaktioner blive sendt som posteringer i ERP-systemet. Sådanne poster omfatter ad hoc-betalinger og abonnement betalinger. Hver registreret bruger vil have en konto i ERP-systemet.

5.4.6 Trin 6 - Eksterne betalinger
Med den aftalte hyppighed mellem GoBike og Cykel.dk (se under afsnit), vil betalingerne blive udstedt fra GoBike bankkonto til Cykel.dk bankkonto. Overførte beløb vil være lig med leje indtægt, abonnement indtægter m.v. med fradrag af GoBikes bonus ifølge specifikation. Alle betalinger til Cykel.dk vil blive registreret i ERP-systemet.

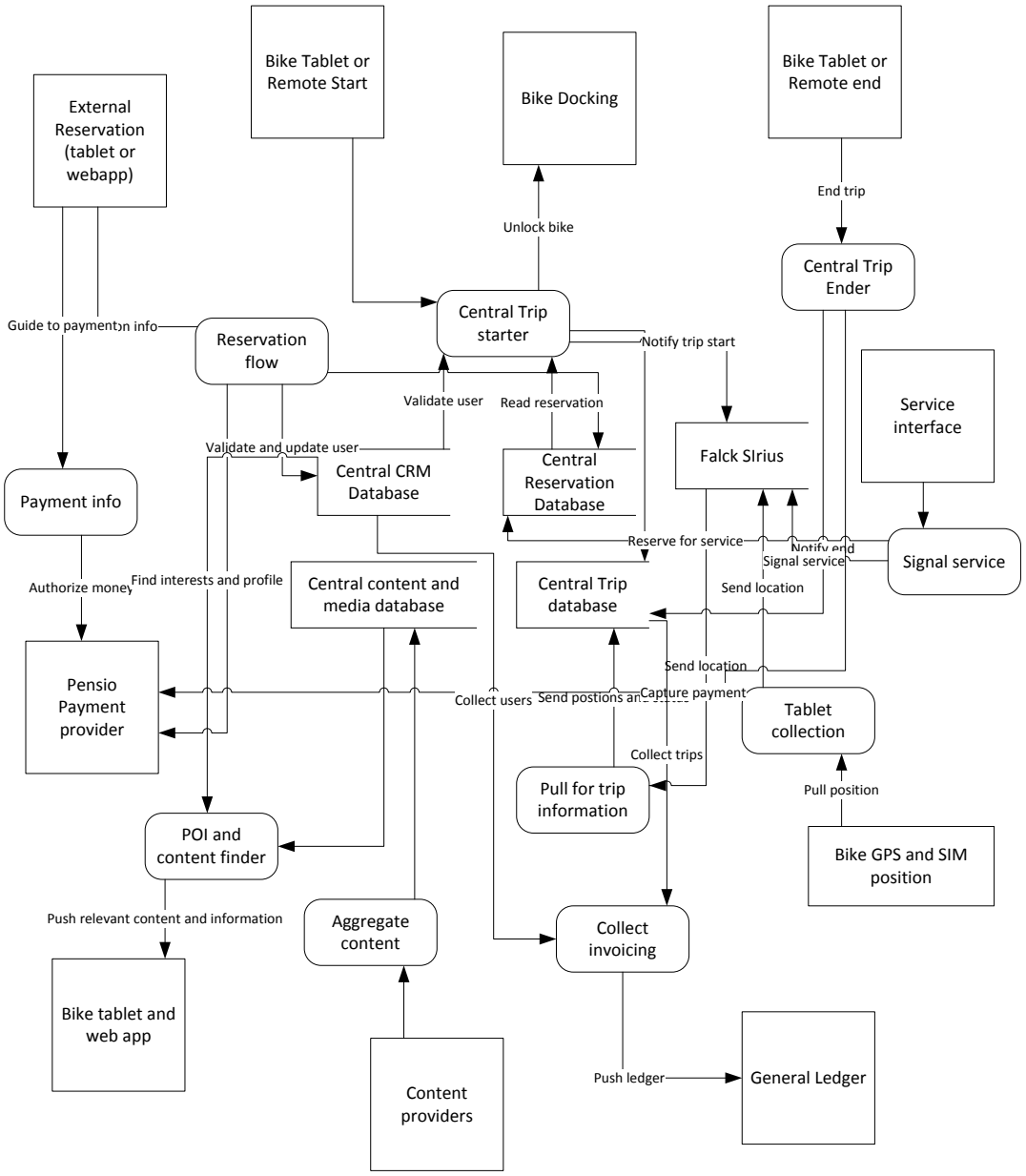
Moms og andre eksterne omkostninger vil blive gennemført på en lignende måde, dog baseret direkte på ERP-systemet.

Enhver ekstern betaling, uanset modtageren eller udløsende begivenhed, initieres via bogholderisystemet (ERP-systemet), og konteres dermed på de relevante konti.

5.4.6.1 Betalings cyklus
GoBike vil ved udgangen af hver måned beregne betalingen til Cykel DK. Denne beregning vil være klar senest den 10. i hver måned. Når beregningen er godkendes af Cykel.dk skal Gobike sikre at betalingen bliver udført senest den 60 dage herefter.

5.5 Dataflow

I dette afsnit beskrives dataflow mellem komponenterne i løsningen, på et relativt højt abstraktions niveau.



Nogle af de vigtigste datastrømme vil blive beskrevet i det følgende - mens detaljer kan ses ovenfor.

Reservationsflowet vil anvende data fra slutbrugere indtastet på eksterne enheder (web side) eller cyklens tablet. Oplysningerne vil blive gemt i reservationsdatabase og betaling vil blive forhånds-godkendt gennem betalingsudbyderen.

En tur vil blive startet og afsluttet i to centrale processer. Normalt startes og stoppes turen fra cyklens tablet - men også fjernbetjent start / stop er mulig.

Har en bruger reserveret en cykel, vil en tur startet af denne bruger, flytte en reservation til en tur og Falck Sirius systemet vil blive underrettet om start og stop og betaling blive fanget ved afslutningen af turen.

Under en tur vil tabletten indsamle GPS-positionsdata og sendte dette til Falck Sirius programmet. Herfra vil oplysningerne strømme ind i den centrale applikation samt til slutbrugere gennem GoBikes web applikationer.

5.6 Data sikkerhed

GoBikes udvikling, implementering og drift sker I overensstemmelse med ISO27002/DS484:2005. Som eksempel beskrives nedenfor udvalgte områder.

5.6.1 Drifts sikkerhed

Driftssikkerhed opnås ved implementering på et certificeret data center, hvor dater sikkerhed er en integreret del af servicen.

5.6.2 Risk analyse

En speciel risiko analyse er gennemført for yderligere information se: Appendiks B: ”Security analysis and commercial considerations”.

6 GoBikesystemet, infrastruktur og systemelementer

Se system overblik ovenfor afsnit: 5 Systemoverblik
I det følgende vil løsningen blive beskrevet med udgangspunkt i de enkelte systemelementer:
Hardware:

a. Cyklerne (som er beskrevet i afsnit: 6.1 Cyklerne)
b. Tablet PC – som hver cykel er udstyret med (som er beskrevet i afsnit: 6.2 Tablet PC)
c. Docking points og Docking stationer – parkeringspladserne (som er beskrevet i afsnit: 6.3 Docking stationer)

Hver for sig er disse komponenter innovative – men, det er kombinationen af dem, der gør løsningen unik. Et eksempel på samspillet mellem Cykel, Tablet PC og docking point.

6.1 Cyklerne

GoBikes cykler produceres af spanske Urbikes (www.urbikes.com) som har specialiseret sig i netop cykler til udlejningsbrug. Design, materialer og produktion er resultatet af en årelang designproces, efterfulgt af hårde prototype- og kundetests. Dette har bl.a. betydet en række optimeringer og modificeringer igennem processen – alt sammen med to klare mål for øje:

- At sikre den optimale driftsstabilitet.
- At sikre den optimale komfort for kunden.

Cyklerne er modulært opbyggede – og i simplicitetens tegn består de af ganske få moduler, der enkelt lader sig udskifte. Skulle der konstateres nedbrud, vil GoBikes serviceteam i langt de fleste tilfælde kunne foretage en reparation på stedet inden for få minutter.



Dækkene er garanteret punkterfrie – Urbikes har sågar patenteret deres tilgang til punkterfrihed. Samtidig tilbyder dækkene samme komfort som et normalt, luftfyldt dæk.

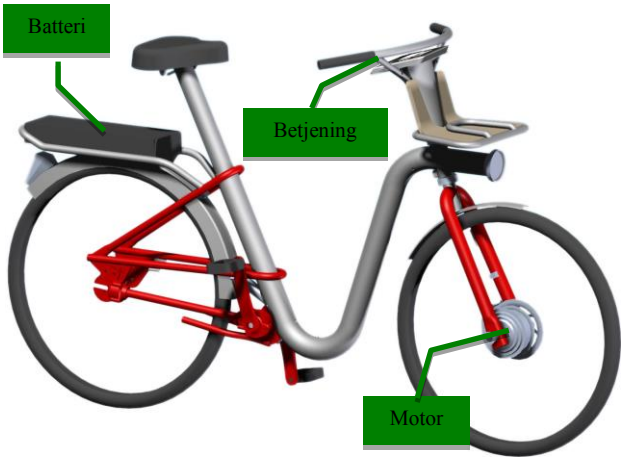
En række innovative løsninger kendetegner også GoBikes cykler:

- Al kabelføring sker inden i stellet.
- Kardantrækket har ingen udvendige dele.
- Lyset er indbygget i stellet.
- Sadelhøjden justeres med gas-assistance – som kendt fra kontorstole. Ved justering af sadelhøjde justeres samtidig vinkel (automatisk) til styr, således brugeren får den optimale sidde-position.
- Cyklerne er forberedte til opgradering til el-cykler. Kun tre ”moduler” skal udskiftes. Al kabelføring er foretaget på forhånd. Se afsnit: 6.1.3 Opgradering til el-cykler.

Cyklerne er udført i 100% aluminium. Det samme er fælge og øvrige løsdele. Det medfører en optimal modstandsdygtighed overfor det danske klima.



Manuelle cykler
GoBike cyklen er udført som unisex model I aluminium og udstyret med kardantræk. Kabelføring, lys m.v. er monteret *I* stellet, for at modvirke vandalisme. Sadel justeres via gastryk – og ved justering af sadel justeres automatisk vinkel I forhold til styret for at opnå optimal ergonomisk siddeposition. Dækkene er punkterfrie – garanteret I 15.000km. Cyklen er udstyret med lasteplatform både for og bag.



El-cykler
GoBikes løsning – såvel cyklerne som docking stationerne – er forberedt for opgradering til el-cykler. De ”manuelle” cykler opgraderes enkelt ved montering af kun 3 yderligere dele: Batteri (monteres på bageste lasteplatform), motor i forhjul (erstatter den eksisterende tromlebremse) samt betjeningsgreb på styret.
Opladning foregår ved parkering i docking points – disse er fra start strømførende og forberedte til elcykler.

6.1.1 eCykler
I løsningen udviklet til Danmark, er der indeholdt en mulighed for også at leverer el-cykler. Anvendelseserfaringer fra disse cykler kan danne grundlag for evaluering af yderligere opgraderinger.

6.1.2 Produktion
GoBike lægger stor vægt på at beskytte miljøet. Derfor har ikke alene de materialer der anvendes, men hele produktionsprocessen, en række miljøcertifikater.
Der anvendes pulverlakering på cyklerne, hvilket er stærkere og langt mere skånsomt for miljøet end vanlig lakering.

Design, udvikling og produktion af cykler og tilknyttet hardware foretages af spanske Urbikes (www.urbikes.com). Selskabet har i en årrække arbejdet målrettet på udvikling af det optimale

koncept til bycykler. Fokus på komfort, holdbarhed og tilsvarende dyder. Men, også hvorledes løsningerne passes ind i de lokalområder, hvor de skal eksistere på lige fod med byens liv.
Det er der kommet en række innovative løsninger ud af, som alle er integreret i GoBike's løsning.
Som beskrevet i afsnit: 7.2 Fremtidsvisioner fortsætter denne fokusering på at ville levere de optimale bycykelløsninger også i fremtiden – dels med forædling af eksisterende løsninger, samt udvikling af nye der komplimenterer de eksisterende installationer.

Den anbefalede løsning er seneste generation af Urbikes cykeludvikling, og giver således optimal fremtidssikring. Der vil i perioden ske en række opdateringer af løsningen – hvoraf langt størstedelen vil ske som softwareopdateringer på den monterede Tablet PC. Disse opdateringer er alle indbefattet af serviceaftalen.

6.1.3 Opgradering til el-cykler

Hvis der anskaffes elektriske cykler og de implementeres fra starten testes de i tre måneder. I perioden kalkuleres på følgende nøgletal som danner grundlag for under hvilke økonomiske vilkår der kan erhverves yderligere elektriske cykler og/eller manuelle cykler kan/skal opgraderes.
Nøgletallene vil bl.a. være følgende:

- Antal udlejninger i forhold til de manuelle cykler.
- Udlejningsperiode i forhold til de manuelle cykler.
- Antal kørselsafstand i gennemsnit og i forhold til de manuelle cykler.
- Merprisen som brugeren betaler for elektriske cykler frem for manuelle cykler, holdt op imod merprisen for anskaffelse og drift af elektriske cykler.

I forbindelse med fremskaffelsen af det økonomiske grundlag for elektriske cykler, er det aftalt at der kan påsættes et logo på det eBiken's batteri.

6.1.3.1 Eksempler på sponsor logos placering på eBikes



Figur 3: Placering af sponsor logo på eBike batteri.

Bemærk at batteriets overflade kan varierer. Her er overfladen riflet. GoBikes valg af batteri type kan have indflydelse på ovefladen.

Se også afsnit:
9.7.1 Strømforbrug
Rammeaftalens bilag F1a: Kontrakt priser: afsnit 7.3 Afregning af strømforbrug.

6.1.4 Farve
Alle cykler leveres i samme farve. RAL kode bestemmes af Cykel DK i forbindelse med første ordre.

6.1.5 Design og holdbarhed, cykel
Nedestående afsnit er oversat fra engelsk se Frame Agreement Appendiks A.

6.1.5.1 Stel:
- Uni-sex aluminium enkelt rørs stel.
- Indvendig forstærkning, som sikre opslidning på grund af metal træthed.
- Rust sikker.
- Torsion sikker. Forbedret køreegenskaber og komfort.
- Indeholder kabler og elektronik. Sikring mod fugt, skidt og vandalisme.
- Lav vægt. Total ca. 15kg.
- Integrated LED light. Vandalisme beskyttet.
- 10 års garanti.
- LED garanti 10.000 timer.

6.1.5.2 Fremdrift:
- Aksel drevet.
- Ingen fedtet kæde.
- Bedre end kæde, fordi der er meget lille vedligeholdelse og ingen beskidt tøj.
- Mere hærværk sikker
- Ingen udvendige bevægelige dele.
- 8 års livstidstids garanti.
- Pedaler 2 år levetids garanti

6.1.5.3 Hjul:
- Punkteringsfri dæk. Garanteret 15,000 kilometer / 400 dage
- Køreoplevelsen som normale dæk med slange.
- Hærværk forebyggende. Kan ikke afmonteres uden brug af specialværktøj.
- Aluminium fælge. ingen rust
- 26 tommer hjul. Kombiner komfortabel og stabil kørsel.
- Tromle bremse (front). Meget lav vedligeholdelse
- 8 års levetids garanti

6.1.5.4 Forgaffel:
- ”Heavy duty” forgaffel.
- Indeholder kabler til lys, elektronik og motor (E-Urbike)
- Ankre cykel i docking point og forbinder til kommunikation og opladning via docking.
- 8 års levetids garanti

6.1.5.5 Sadel:

- Komfortabel ”unisex” sadel.
- Let justerbart med en hånd ved håndtag.
- Ren sæde højdejustering. Ingen fedtede og / eller rustne dele.
- Seat stempel udviklet af Urbikes. Flydende højde positioner mellem lav og høj position.
- Tilgængelig for brugere fra 1.50m op til 2,05 m
- Automatisk ergonomisk justering for hver bruger.
- Sæde: 8 år livstidsgaranti
- Sadel pind: 4 års levetids garanti

6.1.5.6 Styr:

Ergonomisk design. Tillader komfortabel lige siddestilling. (rygproblemer)
Holder tablet pc.
Danner en solidt stykke. Ikke kan fjernes uden brug af specialværktøj. hærværk forebyggende
Basket er blevet ændret til ladning platform. Mere modstandsdygtige og giver større størrelse belastninger (som dokumentmapper), der skal transporteres.
På bagsiden også en last platform er tilføjet til tunge læs og valgfrie for barnestole.
Styr 8 år levetid garanti.
Håndbremse forhjul 2 år levetids garanti

6.1.5.7 Batteri

- Batteri: 18 måneder

Garantien som beskrevet ovenfor er basseret på normal daglig brug I urbant miljø og ved regulær vedligeholdelse.

6.2 Tablet PC

Et af de unikke elementer i GoBikes løsning er den Tablet PC, der er integreret i hver cykel. Ikke alene eliminerer dette nødvendigheden af "kiosker/salgsterminaler" ved hver GoBike docking station – med tiden, giver det også brugeren en lang række yderligere fordele, som:

- Navigation (ruteplanlægning og turn-by-turn navigation)
- Realtidsoplysninger om togafgange – samt integration til billetsystemer
- Realtidsoplysninger om aktiviteter i området
- Realtidsoplysninger om ledige cykler og docking–stationerTilgang til en lang række databaser med relevant information i realtid (Wonderful Copenhagen, VisitDenmark etc.).

GoBike forestår løbende videreudvikling af funktionalitet på Tablet PC'en – og en lang række funktionaliteter er p.t. i roadmap. Beskrivelse af funktionalitet i basisløsningen kan findes i afsnit: 7.1 Aktuel roadmap.

Byen og dens interesseorganisationer får via Tablet PC'en en kanal, hvor der kan kommunikeres én-til-én med brugeren på cyklen. Relevante informationer af enhver art vil kunne eksponeres overfor brugeren – på tidspunkter og geografiske placeringer, hvor dette er relevant.

Fra GoBikes perspektiv er Tablet PC'en på cyklerne med til at give en fremtidssikring. Løsninger og services vil konstant udbygges, således disse til stadighed understøtter kundernes ønsker og krav.
Et eksempel på brug af Tablet PC'en findes i Appendiks A: Systems description & user interaction.



GoBike tablet
GoBike Tablet er udstyret med en trykfølsom skærm, som giver en enkel betjening for brugeren (og som lader sig oversætte til flere fremmede sprog. Elektronikken er monteret I en vandtæt, brudsikker kasse – der igen er designet som en integreret del af cyklen, således tablet'en sikres optimalt mod vandalisme og tyveri.

Figur 4: Eksempel på industri PC.

6.2.1 Tablet hardware

Tablet-pc'en er en speciel udviklet PC med 7" trykfølsom 9/16skærm. Tablet'en er en industri -PC som er udviklet med komponenter efter militær standard. Den har fx et udvidet temperatur område (-10 +60°).

6.2.2 Road-map
Softwaren som installeres på Tabletten vil videreudvikles i projektets levetid. På nuværende tidspunkt er de første 3 software versioner planlagt.
Se afsnit: 7.1.2 Tablet

6.3 Docking stationer
Et væsentligt element i løsningen er selvsagt de "stationer" hvor cyklerne kan lejes og parkeres. I GoBikes løsning er antallet af bevægelige dele nedbragt til et absolut minimum – ligesom formen og monteringen af selve docking point gør vandalisme vanskelig.

Alle docking points er tilsluttet strømnettet og oplader cykler (lys og Tablet PC) og el-cykler. Selve denne opladning foregår automatisk via tilslutninger på forgaflen, når en cykel placeres i docking point. Brugeren skal ikke foretage noget specielt for at påbegynde opladning. GoBike kan hele tiden monitorere status på opladning, således det sikres at en cykel ikke udleveres til ny kunde, uden denne forinden er tilstrækkeligt opladt.

Alle docking points er, ligesom cyklerne, konstant tilsluttet internettet. Dermed kan GoBike levere real-tids informationer til kunderne om, hvor der er ledige cykler – og hvor der er ledige docking stationer og Docking points, når en kunde ønsker at returnere en cykel.



Figur 5: Docking point. Docking point er normalt monteret på et modul. Her ses et nærbillede af et docking point.

6.3.1 Installation af Docking stationer
Installationer i forbindelse med GoBikes løsning, falder naturligt samme med omgivelserne. De docking points der anvendes til "parkering" af cyklerne, er monterede på jorden – hvorigennem de også er kabelført tilsluttet strømnettet.
På alle cykler er monterede Tablet PC, hvilket overflødiggør behovet for en decideret kiosk til betaling m.v. – dette foretages direkte på cyklen.

En enkelt GoBike cykel og docking point kræver kun 36cm i bredden. Dermed kan cykler parkeres i rækker eller flettes sammen med front mod hinanden.
Docking points kan installeres i moduler af 4 henholdsvis 7 cykler på flere uafhængige positioner inden for samme område. Modulerne kan også installeres i ubrudte rækker.

Nedenfor ses visualiseringer af GoBike stationer - på Frederiksberg, og foran Hovedbanegården i København.



Figur 6: Eksempel på anvendelse af monteringsplader. Bemærk at der er en fejl på billedet til venstre konfigurationen med 5 cykler tilbydes ikke.

6.3.2 Fysiske dimensioner

De eksakte dimensioner for GoBike installationerne kan findes i nedenstående. Alle mål er anført i meter.

6.3.3 Installations konfigurationer

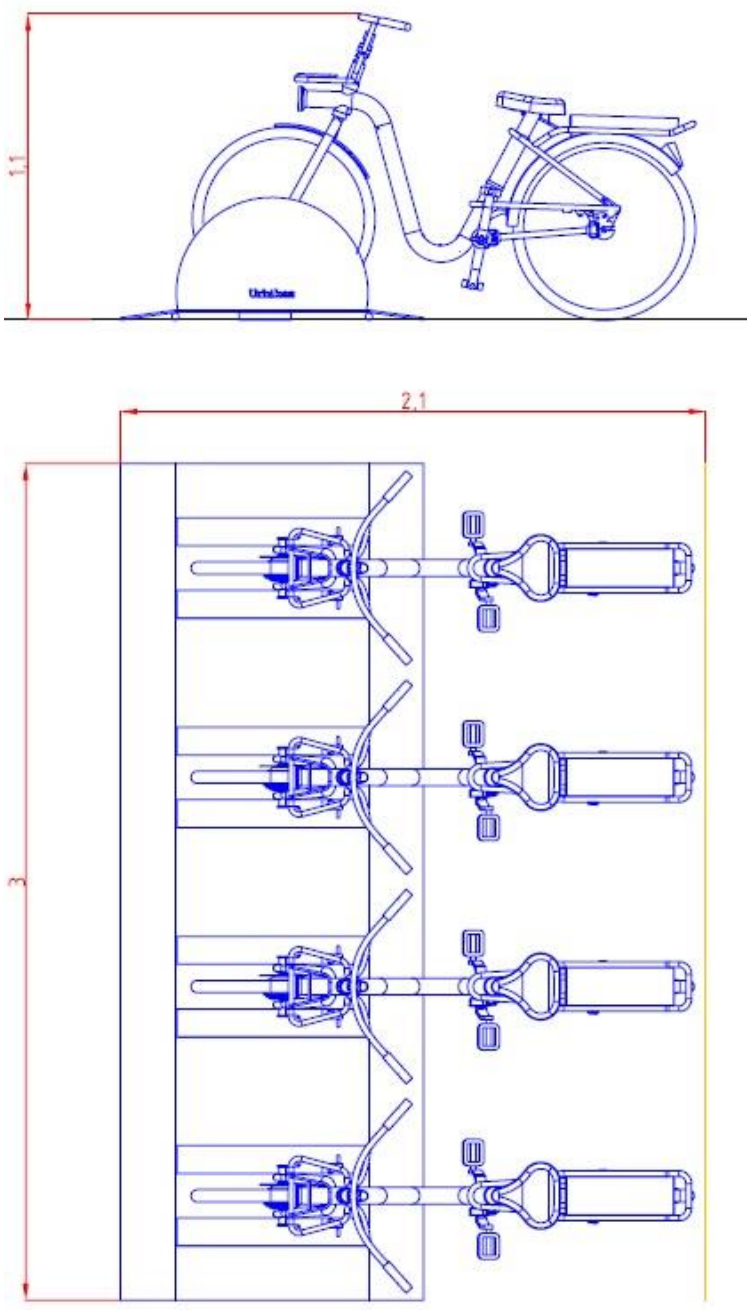
Docking points leveres i moduler med 4 eller 7 docking points i hver modul.
Docking points leveres i 2 varianter:

- Hvor cyklerne står i en række på den ene side (4 docking points),
- Sildeben, hvor cykler kan parkeres fra begge sider (7 docking points).

I begge tilfælde kan modulerne sættes i en serie (række) hvor hvert modul har 4 eller 7 pladser.
De forskellige installationskonfigurationer er prissat i Rammeaftalens Bilag F1a Kontrakt priser.

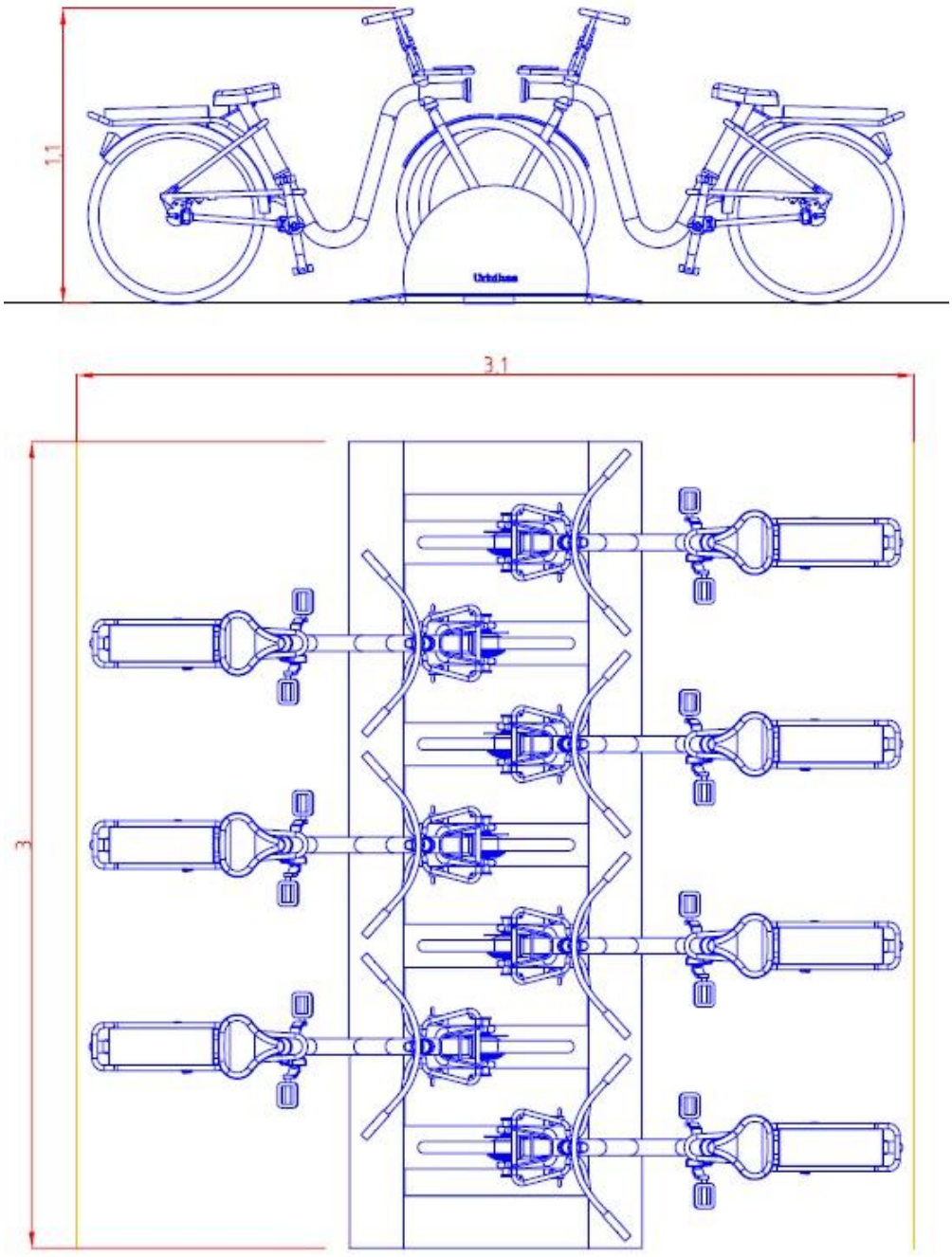


6.3.3.1 Docking point modul 4 cykler i en række



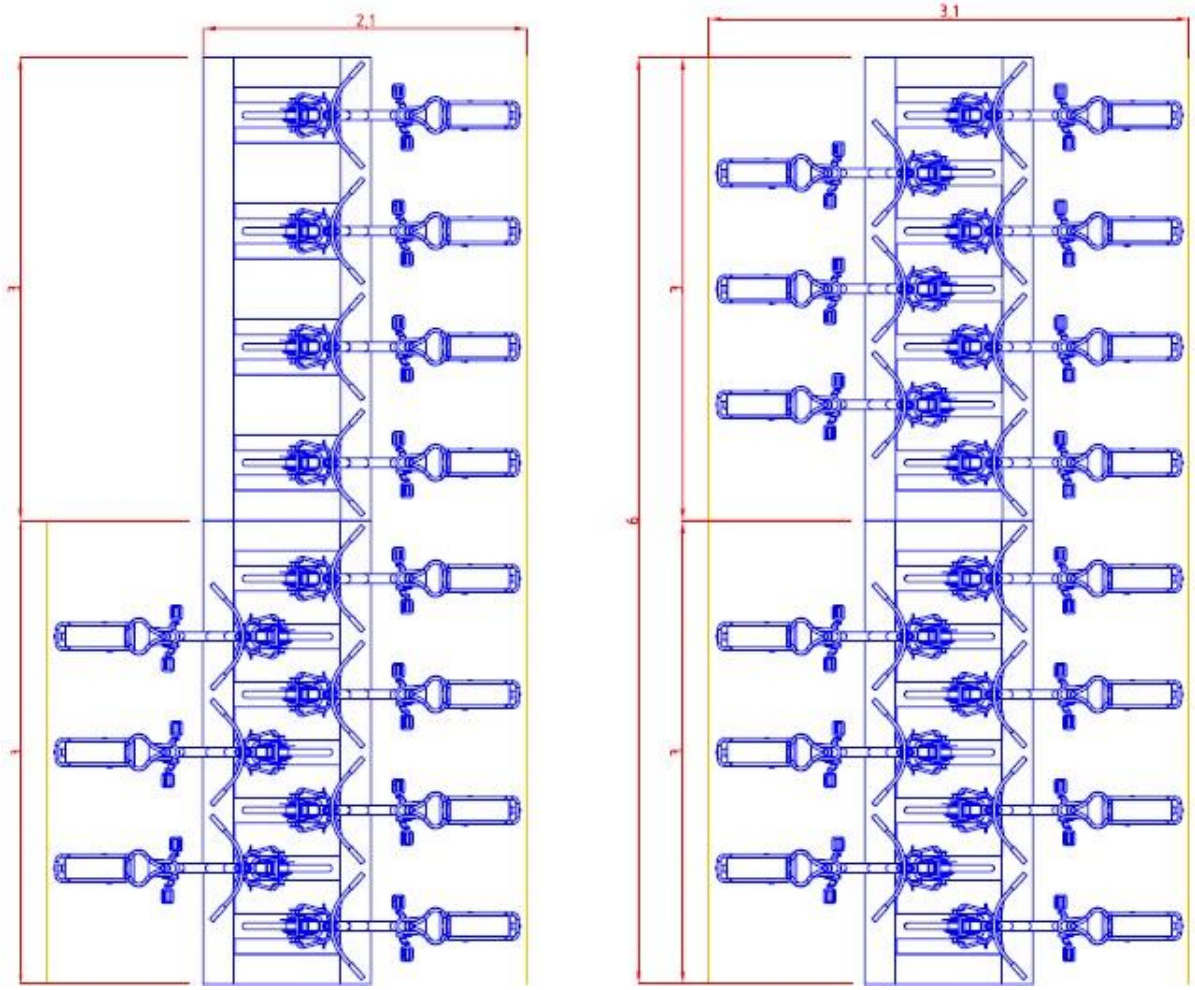
Figur 7: Docking modul med 4 cykler i en række. Mål i meter.

6.3.3.2 Sildeben to rækker 7 docking points



Figur 8: Docking modul med 7 cykler i to rækker (sildeben). Mål i meter.

6.3.3.3 Eksempel på hvordan modulerne kan kombineres



Figur 9: : Docking moduler i kombination. Mål i meter.

6.3.4 Temporære Docking stationer

De tilbudte docking point moduler (modul med 4 eller 7 docking points) kan anvendes umiddelbart som temporære docking stationer. I denne konfiguration vil modulerne blive leveret med et kraftigt gummikabel og et standart CE 230V stik.

Modulerne er selvkonfigurerende og vil være i drift umiddelbart efter strøm tilslutning. Fra bruger synspunkt vil stationerne have samme funktion som stationære docking stationer.
Installationsmæssigt er der tale om:

- Placer modulet
- Afhængig af underlaget kan modulet befæstes som beskrevet under installation eller blot placeres løst på underlaget
- Tilsluttes strøm



Figur 10: Brug af temporære installationer.

Prisen for denne løsning findes i Rammeaftalens Bilag F1a Kontrakt priser.

6.3.5 Design og holdbarhed, Docking point

Nedestående afsnit er oversat fra engelsk se Frame Agreement Appendiks A.

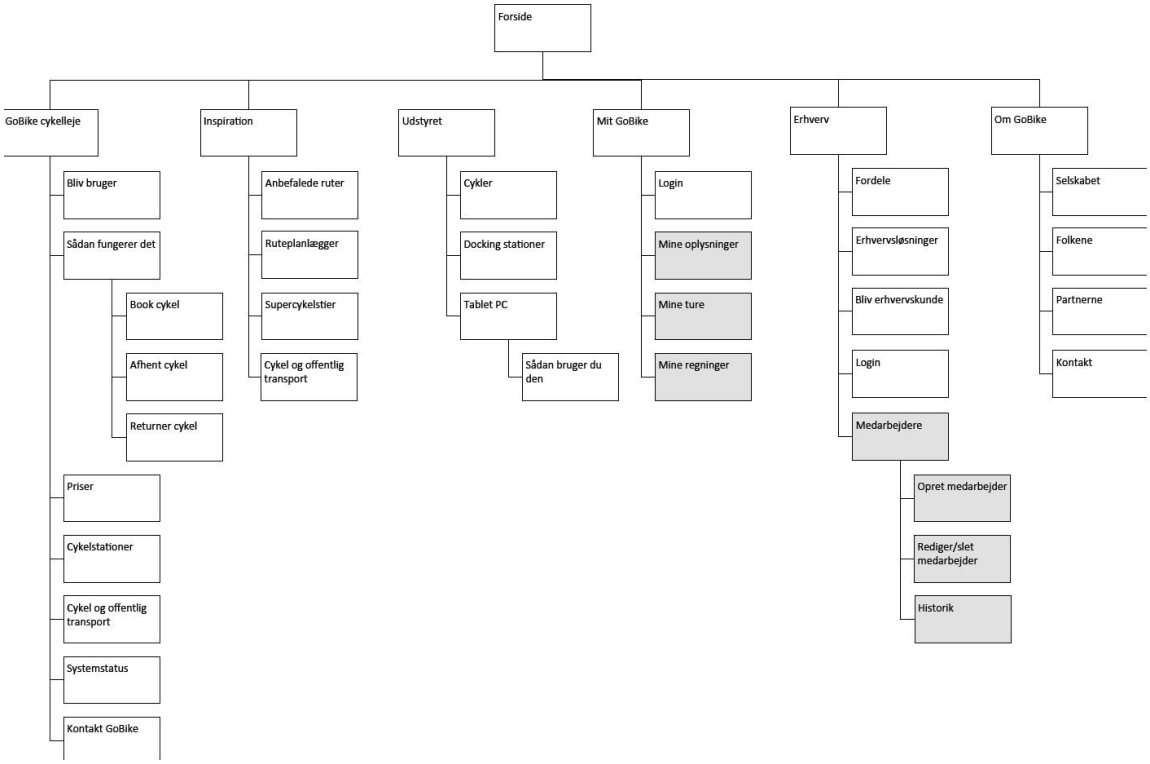
6.3.5.1 Docking point:

- Nem adgang til parkering af cykel, uden behov for at løfte cyklen.
- Det er ikke muligt at parkere private cykler I "stativet".
- God plads udnyttelse (Høj cykel ratio/m2)
- Ingen udvendige bevægelige dele.
- Alle dele er beskyttet mod vejrlig.
- Individuelle docking points. Hvis én fejler, vil de resterende stadigt fungere.
- Lavt vedligeholdes behov.
- Nem nedtagning af docking point moduler.
- Docking point hus med 8 års garanti.
- Docking lås 4 års garanti (Meget konservativt!)

Garantien som beskrevet ovenfor er basseret på normal daglig brug I urbant miljø og ved regulær vedligeholdelse.

6.4 Web

Som beskrevet i afsnit: 5.1.12 Slutbrugernes adgang fra en række forskellige teknologiske grænseflader, indgår der en ”Device neutral webpage” i leverancen.



Figur 11: Præliminær web struktur diagram

7 Funktionalitet

Dette afsnit er delt op i 2 delafsnit:

- Beskrivelse af Basispakken som leveres i forbindelse med den første Pilot test. Pakken er en komplet løsning, som er velegnet til den første idriftsættelse samt aktuelle Roadmap for udvidede funktionaliteter. Cykel DK og GoBike beslutter i fælleskab, hvornår disse funktionaliteter sættes i drift.
- Fremtidsvision. Her beskrives en række muligheder som vil kunne implementeres i fremtiden, men som ikke på nuværende tidspunkt er fuldt ud analyseret og specificeret.

7.1 Aktuel roadmap

Se informationer om leveringsdato og processer i PID dokumentet (afsnit: 7.4 Installation og 14. Hoved tidsplan). De følgende oversigter beskriver den aktuelle roadmap for GoBike frontend systemer. Informationsarkitektur samt user interaction flows fremgår af GoBike User Interaction dokumentet.

7.1.1 Smartphone

	Basisversion	Version 2	Version 3
Opret konto (registrer bruger)	■		
Rediger bruger	■		
Slet bruger	■		
Historik (tidligere ture og faktureringer)	■		
Lokationsoversigt	■		
Cykeloversigt (ledige/optagede)	■		
Lokationsstatus (driftsstatus)	■		
Nyheder fra GoBike	■		
Book cykel	■		
Betaling SMS	■		
Eventoversigt		■	
Tilbudsoversigt		■	
Ruteplanlægger			■
Opret grupper			■
Spil og spil-status			■

7.1.2 Tablet

	Basisversion	Version 2	Version 3
Opret konto (registrer bruger)	■		
Frigiv cykel	■		
Betaling Credit Card	■		
Betaling Login (registreret bruger)	■		
Betaling SMS	■		
Lås/åben cykel (ved parkering)	■		
Rapporter defekt - i docking station	■		
Rapporter defekt - uden for docking station	■		
Rekvirer assistance	■		
Returner cykel	■		
Lokationsoversigt	■		
Incitamentslokationer & -programmer	■		
Returner i docking station	■		
Returner uden for docking station	■		
Ruteplanlægning			
Lokationsbaseret		■	
Motivbaseret			■
Turn-by-turn navigation		■	
Eventoversigt		■	
Tilbudsoversigt med navigationsintegration			■
Integration til tredieparts informationsdatabaser		■	
Integration til offentlige transportmidler			
Afgangsoversigt		■	
Billetkøb			■
Gruppekørsel (flere brugere om samme rute)			■
Spil - enkeltperson		■	
Spil - gruppe			■
Gruppeevent, brugeroprettet			■
GoBike Radio			■
Firmafunktioner			
Branding - logo etc.		■	
Firmaspecifkke funktioner (i.e. Medarbejderoversigt)			■
Facebook integration (post to Facebook)	■		

7.1.3 Web

	Basisversion	Version 2
Infosektion	■	
Systemstatus	■	
Lokationsstatus	■	
Opret bruger	■	
Rediger bruger	■	
Slet bruger	■	
Ruteplanlægger (v. 1.0 - uden tablet integration)	■	
Ruteplanlægger (v. 2.0 - med tablet integration)		■
Historik - ruroversigt		
Dato, tid, længde	■	
GPS tracking - kortvisning		■
Fakturaoversigt	■	
GoBike Erhverv		
Opret firma		■
Opret medabejder		■
Rediger medarbejder		■
Slet medarbejder		■
Medarbejderhistorik		■

Note:
”Nyheder fra Gobike” med i basisversion og ”Gobike Radio” version 3 er en del af ”Option 10.1 End user community” indholdet er ikke defineret på nuværende tidspunkt. Læs mere i afsnit: 12 Loyalitetsprogram.

7.1.4 Specifikke funktioner

I dette afsnit beskrives specifikke funktioner som ikke er beskrevet i Rammeaftalens appendiks A men som leveres som en del af løsningen:

7.1.4.1 Req. 2.53 Gebyr for returnering cykel

Som udgangs punkt er der ikke noget gebyr for aflevering af cykel (hvis det sker i et docking point). Følgende gebyrer for tilbagelevering af cykel, udenfor docking point, skal etableres:

1. Gebyr for at ”aflevering” af cykel uden for docking stations området.
2. Gebyr for at ”aflevering” af cykel indenfor docking stations området, men uden for en docking punkt (hvor der er ledige docking point).
3. Gebyr for at ”aflevering” af cykel indenfor docking stations området, men uden for en docking punkt (hvor der ikke er ledige docking point).

Alle gebyrer kan være i en værdi mellem 0 og 999 kroner.

7.2 Fremtidsvisioner

For GoBike slutter et cykelprojekt ikke når cyklerne er leveret – det er faktisk der det starter. Der er brugt årevis på at udvikler cyklerne – og den udvikling stopper aldrig. Allerede på nuværende tidspunkt er flere nye cykeltyper på tegnebrættet – og de vil naturligvis passe direkte ind i eksisterende GoBike docking points.

Gennem GoBike's tablet PC indsamles løbende en række oplysninger om brugerne, deres adfærdsmønstre og præferencer. Disse oplysninger evalueres løbende – og baseret på disse evalueringer planlægges kontinuerlig videreudvikling af systemer og løsninger.

7.2.1 Cyklerne

Den -leverede GoBike er manuel, men er forberedt til opgradering til el-cykel. El-cykler har inden for de seneste 3 år fire-doblet søgeinteressen på Google.

Det er samtidig GoBikes forventning, at netop el-cykler vil medvirke positivt til at få endnu flere til at vælge kombinationen af cykel og offentlige transportmidler eller som et validt alternativ til biltransport – bl.a. fordi man kan nå frem til arbejdspladsen uden væsentlige fysiske udfoldelser. El-cykler åbner samtidig op for en helt ny brugergruppe – en gruppe, for hvem anvendelse af en normal cykel ville være forbundet med for store fysiske udfoldelser.

Et andet eksempel på GoBikes videreudvikling af cykelvarianterne er et konstateret ønske om en decideret Cargo-cykel. Denne er i dag på tegnebrættet og forventes at kunne lanceres i løbet af 2013.



Funktionelt og teknisk vil kommende GoBike cykler naturligvis være på samme høje niveau, som de nuværende. Det vil sige, de vil være udstyrede med Tablet PC'ere og være forberedte til el-cykler.

7.2.2 Software og applikationer

I afsnit 7.1 Aktuel roadmap ovenfor er vist et eksempel på den software GoBike leverer. De viste eksempler er dog blot et stærkt begrænset udvalg af den samlede funktionalitetspakke.
Funktionaliteten udvides løbende – og erfaringer fra brugerundersøgelser, adfærdsmålinger m.v. danner grundlag for prioritering af disse. Prioriteringsmæssigt vil funktioner der understøtter kunden i brug af produkterne have førsteprioritet, og vil forestå løbende udvikling.
Sekundær prioritet har funktionalitet, der understøtter byer og interesseorganisationers eksponering af indhold på platformen.

Tertiære prioriteter omfatter øvrige funktionalitet – herunder periferifunktionalitet. Indenfor falder denne kategori eksempelvis:

- Aktivitetsskabende spil – orienteringsløb, Tour de GoBike (lav dit eget løb mod vennerne, planlæg ruten rundt i byen – og se hvem der kommer først) m.v.
- Temature – eksempelvis i forbindelse med events i området (Distortion, Kulturnat m.v.).
- Firmaspecifikke funktionaliteter – målrettet større kunder, der ønsker speciel funktionalitet for medarbejdere eller virksomheden.

7.2.2.1 Ønsker og idéer

GoBike vil vedligeholde en liste med ønsker og idéer som er indsamlet som beskrevet ovenfor.
Listen vil blive prioriteret i samarbejde med Cykel DK.
Prioritering af listen er et fast punkt på driftsmøderne. Se Rammeaftalens bilag C: PID afsnit: 8.7.1. Driftsmøder

8 Installation

Processen omkring installation er beskrevet i Projektinitieringsdokumentets (PID) afsnit: 7. Installationsfasen.

Beskrivelsen i dette dokument er begrænset til en oversigt over installations optioner (alternativer): Se afsnit: 6.3.3 Installations konfigurationer ovenfor.

9 Drift

I dette afsnit beskrives den planlagte driftsorganisation og de enkelte driftsleverancer.
Ledelse af driften af GoBike systemet og forhold omkring hvordan Installationsfasen afsluttes og Driftsfasen startes er beskrevet i Rammeaftalens Appendiks C: PID afsnit 7 (installation) og 8 (drift).
I planlægningen af driften er der særlig fokus på at minimere den miljøpåvirkning som drifts- og vedligeholdelses aktiviteterne udgør. Læs mere i Rammeaftalens Appendiks C: PID Afsnit: 13. Kvalitets- og miljøstyring om hvordan vi sikre at dette mål sikres.

Det antages at lejecykler i det offentlige rum, vil blive udsat for såvel vandalisme som tyveri. GoBike har taget fornødne forhåndsregler for at imødegå disse problemstillinger. De driftsmæssige aspekter er beskrevet i afsnit: 9.8 Vandalisme og 9.9 Tyveri.
Alle cykler og docking stationer serviceres og vedligeholdes af GoBikes service provider (feks. Falck).

Driftsleverancen er beskrevet i følgende afsnit:

- 9.1 Overvågning
- 9.2 Nivellering (redistribution)
- 9.3 Vedligehold
- 9.4 Kundesupport og Call center
- 9.5 Software opdateringer
- 9.6 Regnskab – System element
- 9.7 Strøm
- 9.8 Vandalisme
- 9.9 Tyveri
- 9.10 Social ansvarlighed

De enkelte overskrifter er ”klick-able”.

9.1 Overvågning

System overvågning er en integreret del at GoBikesystemet.

9.1.1 Systemfeatures

Opsamlet data fra drift vil blive brugt fremadrettet til at optimere overvågningsalgoritmer og specielt ”early warning” algoritmer. Med henblik på at sikre og optimerer:

- den oplevede driftskvalitet,

- driftskvalitet som specificeret i SLA og
- miljøpåvirkning.

Overvågningsalgoritmerne tager sigte på at overvåge den aktuelle fordeling af cykler og at detektere en unormal driftssituation og evt. fejl.

9.1.1.1 Fejl detektering

Udover traditionel fejldetektering vil systemet indeholde en række overvågningparametre så som kan detekterer fejl, som ellers ikke ville være opdaget. Systemet vil fx overvåge:

- Unormalt højt antal meget korte udlejninger pr cykel.
- Unormalt lavt brug af specifikke cykler eller doking-stationer.
- Udsving i rapporteret udlejningsfrekvens.
- Udsving i rapporteret antal kreditkortvalideringer.

9.1.2 Operationel overvågning

Et eventuelt nedbrud konstateres omgående af GoBikes systemer, der konstant overvåger status og position på alle cykler.
Signaler fra cyklen overvågningssystem sendes til GoBikes ekspeditionscentre (Falcks over-vågningscenter), der er bemandet 24/7.

Ekspeditionscentert reagerer inden for minutter på signaler indikation af, at operationer skal udføres. Ekspeditionscentrets personale reagerer i overensstemmelse med skriftlige instrukser og problemstillinger og udsender service-ordrer til teknikerne, der hvor operationer skal udføres. Ordrer sendes til teknikerne elektronisk, og vil blive vist på pågældendes tablet på få sekunder.

Ekspeditionscenter står for den samlede overvågning af software, hardware og teknikere.

9.2 Nivellering (redistribution)

Nivellerings aktiviteter tager sigte på at sikre en fornuftig fordeling af Cykler i GoBike systemet. Fordeling af cykler sker dels ved brugernes hjælp som beskrevet i afsnit 9.2.1 System features, og dels ved fysisk at flytte cykler når der opstår behov for det som beskrevet i afsnit: 9.2.2 Operationel nivellering nedenfor.

9.2.1 System features

9.2.1.1 Bruger incitamentsprogram

GoBike's systemer indeholder et incitamentsprogram, der aktivt kan opfordre brugere til at returnere cykler på GoBike lokationer, hvor det er mest hensigtsmæssigt. Notifikation herom vil ske direkte på den på cyklen monterede Tablet PC.

9.2.1.2 Fleet management

GoBikes system implementerer et udvidet "asset og fleet management" system til overvågning af cykler og docking stationer. For så vidt angår: Status og fysiske geografiske koordinater. Systemet vil blive anvendt til at:

- Optimerer driften af systemet.
- Sikre overblik for det operationelle personale.
- Automatisk fejlmelding.
- Dokumenterer overholdelse af SLA.

Disse mål opnås ved at anvende systemets driftsstatistik og løbende driftsdata til at aktiverer nivellering af cykler. Processen er fuld automatisk basseret på hændelse styring.
Hændelsesstyringen defineres af en række parametre, hvor bl.a. geografiske områder kan oprettes.

9.2.1.3 Optimering af GoBike systemet i installationsfasen
Erfaringer og driftsdata fra systemet vil blive anvendt i planlægning af nye GoBike installationer, ved flytning og udbygning af eksisterende installationer.
Se beskrivelsen i PID (Version 2) Afsnit: 7.3.2 Input til installationsdokumentationsprocessen.

9.2.2 Operationel nivellering
Det er GoBikes servicepartner (fx Falck), der varetager nivellering af cykler mellem forskellige lokaliteter. GoBikes systemer informerer automatisk servicepartneren, når der er behov for nivellering mellem to eller flere lokaliteter – og baseret på adfærdsmålinger, er systemerne i stand til at forudsige overfyldte eller tomme lokaliteter, og således iværksætte nivellering allerede inden eventuelle problemer opstår.

9.2.2.1 Planlægning
Der reageres på signaler fra overvågningssystem omkring flytning af cykler. Forholdsordre udsendes via eget IT system, til nærmeste servicevogn. Omfordeling vil for det meste blive gennemført uden for myldretiden for, at undgå gener (fremkommelighed), og begrænse miljø påvirkningen (reducere luft- og støjforurening) så meget som muligt.

9.2.2.2 Geografisk organisering
GoBike vil anvende driftsstatistik og driftsdata genereret i Fleet management systemet som beskrevet ovenfor. GoBike vil optimere nivellering af cykler basseret på erfaringer og data fra driftssystemet. Nivellering af cykler vil således blive planlagt for hver kommune, basseret på en generisk model og en analyse af lokale forhold, herunder en vurdering af om brug af lokale partnere vil give en forbedret drift af GoBikes løsning.

9.3 Vedligehold
GoBikes serviceorganisation vil i aftaleperioden sikre, at hele systemet er vedligeholdt.
I det følgende beskrives vedligeholdelses organisationen og de enkelte typer vedligeholdelse.
Vedligeholdelse tider og andre SLA krav er beskrevet i Rammeaftalens appendiks D: SLA.

9.3.1 IT Systemer
GoBike anvender blandt andet et af Falck udviklet managementsystem. Systemet anvendes i dag desuden til at udføre 600.000+ serviceopgaver om året i hele Danmark.
Den planlagte service bliver lagt ind i en fast servicefrekvens for hver cykel og fordeles over året iht. SLA (Rammeaftalens appendiks D). Hver servicebil har en konstant liste af opgaver, som udføres dagligt, kun afbrudt af ad hoc arbejde samt eventuelle flytninger af cykler.
Kontrolcentralen kan via systemet til enhver tid se, hvor de enkelte servicebiler befinder sig, og kan derfor altid allokere nærmeste ledige bil til en ad hoc opgave.

9.3.2 Præventivt vedligehold
Samtlige cykler oprettes i servicestyringssystem. Opgavernes tildeles en deadline.
Servicestyringssystemet overvåges af kontrolcentral. Hvis en deadline overskrides, fremkommer de

på en liste hos kontrolcentralen, som reagerer ved at tage kontakt til den pågældende servicebil. Er denne ikke i stand til at løse opgaven rettidigt, allokeres opgaven til en ledig servicebil.

9.3.3 Korrektiv vedligeholdelse

Efter information om nedbrud indgår dette på vanlig vis i Falcks planlægningsarbejde for kørende services. Der ombygges en række Falck køretøjer, således disse medtager reservedele og/eller ombytningscykler – og dermed er i stand til at varetage langt de fleste reparationer på stedet. Kan dette ikke ske bringes cyklen til et servicecenter, hvor reparation udføres og testes inden cyklen returneres til drift. Kørsel indgår som en naturlig del af det allerede eksisterende Falck kørselsmønster – og dermed under hensyntagen til miljøhensyn.

9.3.4 Reparation af Cykler

Småreparationer, som kan udføres indenfor en halv time, udføres på stedet.
Ved større reparationer føres cyklen til nærmeste GoBike værksted eller anden lokal samarbejdspartner for reparation. Nedbrud af cykel rapporteres til vores kontrolcentral via telefonisk opkald fra kunde, eller via log fra cyklen. Kontrolcentralen tildeler straks opgaven til nærmeste servicebil via en elektronisk servicerapport til medarbejderens tablet. Medarbejderen udfylder rapporten på sin tablet og afslutter opgaven, hvorved servicesystemet automatisk opdateres.

9.3.5 Reparationer af Docking points

Nedbrud af docking points rapporteres til kontrolcentralen via telefonisk opkald fra en bruger, via Tablet PC'en eller via log fra docking points. Kontrolcentralen tildeler straks opgaven til nærmeste servicebil via en elektronisk servicerapport til medarbejderens tablet. Medarbejderen udfylder rapporten på sin tablet og afslutter opgaven, hvorved servicesystemet automatisk opdateres.

Eventuelle defekte dele udskiftes på stedet. Arbejdet udføres af autoriserede elektrikere.
I tilfælde hvor i kontraktperioden er behov for arbejde udført af elselskabet vil dette rekvireres direkte af Falck, i henhold til procedurer aftalt mellem SEAS og Falck. Arbejde af denne karakter vil indgå i Elselskabets standard planlægningsprocedurer.

9.4 Kundesupport og Call center

For at sikre unødig udkørsel håndteres "first level" support via et telefonnummer, som bliver besvaret af dansk- og engelsktalende medarbejdere.
Call centeret besvarer slutbrugerne opkald eller e-mail, når de har spørgsmål vedrørende brugen af systemet, betingelser og betalinger samt problemer med cykler i leje perioden.
Alle opkald og emails registeres og der føres statistik. Call centeret anvender en hjælp database som opdateres løbende.

9.5 Software opdateringer

Opdatering af software på Tablet PC sker i perioden 24:00-05:00. Under opdatering vil cyklen være låst og utilgængelige for booking.
Software opdateringer sker altid ifølge aftale med Cykel DK. Herunder også hvordan udrulning gennemføres (fx trindvis udrulning så ikke alle cykler blokeres samtidigt).

9.6 Regnskab – System element

Følgende ydelser er identificeret:

1. Integration til betalingskort udbydere og abonnement styrring mv. (GoBike Backoffice) SLA rapporter fra Sirius.

2. Opsætning og bogføringsvejledning (Beskrivelse af regnskabssystem).
3. Revisionspåtegning af opsætning, implementering og Bogføringsvejledning.
4. Bogholder funktion (Manpower) i driftsperioden
5. Revision af årsregnskaber i driftsperioden.
6. Inkasso service.

Se også Rammeaftalens Bilag F1a Kontrakt priser.

9.7 Strøm

Tilslutningen af docking stationerne til strømnettet foretages således kapaciteten er tilstrækkeligt til en eventuel fremtidig opgradering til el-cykler.

9.7.1 Strømforbrug

M-Urbike (standard cykel): 0 W. Lys etableres ved hjælp af nav dynamo.
Tablet: Estimat: 2,3 W driftsforbrug.
Masterdocking: Ca. 2,3W driftsforbrug.

9.7.2 Afregning af strømforbrug

Vedr. afregning af strømforbrug se afsnit 7.3 i Rammeaftalens Bilag F1a: Kontrakt priser.

9.8 Vandalisme

GoBike udbedre skader som følge af vandalisme som en del af den løbende driftsaftale.
Fjernelse af graffiti og andre SLA krav er beskrevet i Rammeaftalens appendiks D: SLA.

9.9 Tyveri

Vedr. Erstatning af cykler se Rammeaftalen afsnit 10.
Erstatningspriserne findes i Rammeaftalens prisbilag (Bilag F1a).
Vedr. SLA se Rammeaftalen Appendiks D: SLA

9.10 Social ansvarlighed

Gobike partner Falck har forpligtet sig til at opfylde kravene i Info.req. 5A.1.1 Social klausul.
Det betyder, at mindst 50% stillinger, der anvendes til vedligeholdelse og rengøring af cykler samt nivellering af cykler i København og Frederiksberg, bliver fyldt med medarbejdere fra social grupper som defineret.

10 Erhvervsløsning

I dette afsnit beskrives en erhvervsløsning som vil blive etableret. Løsningen skal analyseres og beskrives i detaljer i forbindelse med proof-of concept testen.

Erhvervsløsningen består af en webside (se afsnit: 6.4 Web og 5.3 Systemets brugere) og et regelsæt som er defineret i dette afsnit.
I det følgende anvendes erhverv og virksomhed om alle typer virksomheder og organisationer som ønsker at tilslutte sig løsningen.
GoBike systemet tilbyder to Erhvervsløsninger, som kan kombineres:

- Abonnementsordning for virksomhedens ansatte til GoBike systemet.
- Etablering af docking stationer ved virksomheden med tilhørende docking stationer og cykler.

En virksomhed kan tilmelde sig en virksomhedsløsning fra Gobike portalen eller fra DSB WorkPlus portal (det er i sidste ende den samme procedure). Begge løsninger administreres samme webside. Her kan virksomheden også administrere virksomhedens brugere.

De to løsninger er beskrevet i det følgende:

10.1 Abonnementsordning for virksomheden

Der kan etableres ordninger som tilbyder GoBike abonnementer til virksomheden på gunstige vilkår. Abonnement for virksomheder svarer til et privat abonnement. Den eneste forskel er, at abonnementet faktureres til en virksomhed og ikke en enkeltperson, og at priserne på fakturaen er angivet uden og med moms. Abonnementer faktureres forud og brug faktureres bagud ved udgangen af måneden. Efter tilmelding vil virksomheden modtage en e-mail med et link til sin brugerkonto hvorfra den kan styre virksomhedens abonnementer og overvåge brugen.

Abonnement management, på hjemmesiden, giver muligheder for at virksomheden kan:

- Skift brugeradgang passwords
- Genererer en midlertidig adgangskoder til systemet via mobiltelefon (sms). Start dato / tid kan indstilles og adgangskoden giver adgang, og er gyldig i 3 timer. Lejen vil blive opkrævet som normalt ikke-abonnement brug på virksomhedens faktura. Den mindste afgift er altid ”Erhvervsbasis pris” (se Rammeaftalens bilag F3) uanset om adgangskode anvendes eller ej.
- Tilmelding af ekstra abonnementer

Der tilbydes Abonnement med præference for

- Normal cykler
- eBike hvis tilgængelig (Til højere priser).

10.2 Etablering af docking station ved virksomheden

Denne løsning omfatter de samme funktioner som beskrevet ovenfor. Men med flere tilgængelige muligheder. Ved etablering af en eller flere docking stationer ved/omkring virksomheden består løsningen af følgende elementer:

- Docking station(er) som placeres ved virksomheden. Det vil også være muligt at opstille ekstra docking stationer ved naturlige trafikknudepunkter, i det omfang virksomheden kan få relevante myndigheders tilladelse til opstillingen.
- Et antal cykler

10.2.1 Docking stationer
Docking stationer som etableres som en del af en Erhvervsløsning kan anvendes af både virksomhedens registrerede brugere og af andre slutbrugere.
Der etableres mindst 2 docking stationer pr kontraheret cykel. Antallet af docking stationer rundes op til nærmeste modul størrelse. Se afsnit: 6.3.3 Installations konfigurationer.
Virksomheden som bestiller opstilling af docking station(er) er forpligtet til at stille el-tilslutning til rådighed. Installations omkostninger og El-forbrug afholdes af virksomheden.

10.2.2 Cykler
Virksomheden køber retten til brug af et antal cykler. Men ikke til specifikke cykler. Denne sondring er vigtig for etablering af en grøn løsning: Hvor alle cykler kan anvendes vilkårligt.

10.2.3 Funktionalitet
Adgangen / reservation af virksomhedens cykler kan administreres inden for følgende modeller:

- Reserveret i specifikke timeslots. I definerede perioder fx 16:00-16:45 er det kun virksomhedens registrerede brugere som kan anvende cykler som er parkerede i virksomhedens docking station(er).
- Eksklusivt: Kun virksomhedens brugere kan anvende cykler i virksomhedens stativer (docking stationer). Hvis der er plads i virksomhedens stativer kan vilkårlige bruger parkere cykler i docking stationen (typisk besøgende til virksomheden).
- Uden begrænsning: Alle slutbrugere kan anvende cykler som er parkerede i virksomhedens docking stationer.

10.2.3.1 Reserveret
Virksomheden vil automatisk blive tilmeldt antallet af "gebyr-fri"-abonnementer svarende til antallet af indkøbte cykler. Denne type af abonnementer har ingen faste omkostninger (Betales gennem cykel hardware prisen). Kun brug faktureres med XX kr. excl moms pr brug (se Rammeaftalens bilag F3).
Virksomheden kan købe ekstra "normale" abonnementer, som beskrevet i løsningen ovenfor. Der er ingen begrænsninger på antallet af abonnementer, og de faktureres til virksomheden sammen med den månedlige hardware gebyr. Abonnementer og hardware faktureres forud og brug faktureres ultimo måneden.

En virksomhed kan tilmelde dig en løsning fra Gobike portalen eller fra DSB workPlus portal.
Efter tilmelding vil virksomheden modtage en e-mail med en aftale, der omfatter installationsomkostninger og en implementeringsplan. E-mailen indeholder et link til virksomhedens konto, hvor det første skridt for virksomheden vil være at acceptere kontrakten, driftsudgifter og implementeringsplan.
Efter accept selskabet vil få adgang til kontoen hvorfra den kan styre virksomhedens abonnementer og overvåge brugen.
Abonnement management muligheder for virksomheden:

- Skift brugeradgang passwords

- Indstil morgen og eftermiddag reservation slots for "gebyr-fri" abonnementer. Reservation slot er altid 45 minutter, og standardindstillingen er 08:00 på placering A og 4:00 PM ved placering B. Placering B er altid virksomhedens docking station og placering A kan afgøres af selskabet. Standard er den nærmeste togstation. Reserverede slots vil låse cykler for de gebyr-gratis abonnement og garanterer adgang til en cykel for virksomhedens medarbejder. At cyklen er låst til en bestemt virksomhed bliver vist på cyklens display. Dette gælder dog kun hvis alle cykler på en lokalitet er reserveret til en specifik virksomhed.
- Midlertidige adgangskoder via mobiltelefon. Start dato / tid kan indstilles og få adgang til passwords er gyldig i 3 timer. Adgangskoder vil blive opkrævet som normalt ikke-abonnement brug på virksomhedens faktura. Afgiften er altid ”Erhvervspris brug, docking stationer ved virksomheden” (se Rammeaftalens bilag F3) uanset om adgangen kode bruges eller ej
- Tilmelding af ekstra abonnementer

Gobike er forpligtet til at sikre, at mindst 90% af selskabet cykler til firma brug i reservation slots på hverdage, idet der altid rundes ned til hele antal cykler.

Gebyr-fri abonnementer kan bruge cykler fra overalt i systemet og omkostningerne er altid det samme - XX kr excl moms pr forbrug(se Rammeaftalens bilag F3).

Selskabet kan med tilfældige intervaller blive vist på alle cykler. Eksponering kan fx afhænge af antallet af cykler, som selskabet har købt.

10.2.3.2 Eksklusivt
Den eksklusive brug er begrænset til de cykler som til hver en tid er parkeret i virksomhedens docking stationer.

10.2.3.3 Uden begrænsning
Er tiltænkt handel og service virksomheder som ønsker at etablere docking stationer på deres ejendom eller udenfor forretning, til brug for kunder og medarbejdere.

10.2.3.4 Virksomhedens logo
Brug af virksomhedens logo i det antal ”logiske” cykler som er kontraheret / reserveret. Logoet kan fx vises: når cyklen bruges af en af virksomhedens medarbejdere.

10.3 Priser og øvrige vilkår
Gobike er ansvarlig for kreditrisiko evaluering og CVR-opslag.
Prisen på de to løsninger findes i Rammeaftalens prisark (Bilag F1b).

10.3.1 Tyveri og hærværk
Der er mulighed for at aftale specielle vilkår hvis løsningen placeres i områder med højre niveau for hærværk og tyveri end normalt.

10.3.2 SLA (Service Level Agreement)
Der tilbydes som udgangspunkt ikke garanti for tilgængelighed af virksomhedens ansatte, udover den almindelige garanti som gives systemets slutbrugere.

10.3.2.1 Nivellering

Som udgangspunkt tilbydes ikke Nivellering og SLA garanti som for docking stationer placeret på offentlige pladser. Service niveauet sikres her gennem brugerstyring: Hvis der fx mangler cykler i virksomhedens docking stationer vil vilkårlige brugere kunne parkere cykler.
Afhængig af virksomhedens placering vil der kunne tegnes et abonnements som sikre tilgængelighed. Se ”Nivellering Plus service” i Rammeaftalens prisark (Bilag F1b).
Bemærk at det vil være normalt at docking stationerne er tomme 18:00-07:30 og fyldte /overfyldte 9:00-15:00.

11 Produkt udvikling

Fremtiden og samarbejdet om den videre udvikling. GoBike er en åben, ambitiøs og kundedrevet virksomhed. Vi er lydhøre overfor alle områder der øger slutkundetilfredsheden og som optimerer effektivitet, produktivitet og gensidig lønsomhed. I samarbejdet med Cykel DK søger vi et tæt, åbent og fordomsfrit samarbejde. De fælles ambitioner omkring udnyttelse af det fulde potentiale omkring by- og pendlercykler er store. Den optimale udvikling af løsningerne sker i tæt samarbejde imellem Cykel DK og GoBike, men også via samarbejde med udvalgte interessenter i form af kommunerne, turistorganisationerne, trafikselskaber, interesseorganisationer m.fl.

GoBike vil løbende fremlægge ny muligheder og driftserfaringer for, på det grundlag, at debattere hvordan erfaringerne kan anvendes positivt i den videre udvikling imod de fælles mål.

11.1 Videreudvikling af systemet og tilknyttede services

Potentialet i GoBike løsningen er stort og ambitionerne om at udviklet løsningerne til perfektion er tilsvarende store. Vi inddeler dem internt i GoBike i fire områder.

11.1.1 Køretøjer og docking points

GoBike vil udvikle sin portefølje af køretøjer i de kommende år. Vi vil tilføre cykler og elektriske køretøjer, der matcher de behov og motiver som brugerne har. Det betyder cykeltyper til kortere afstande, andre typer til længere afstande via fx supercykelstierne ind og ud af København, Cargo-cykler til fragt at varer, ligesom små el-biler hvor der er tag over passagererne og plads til bagage vil være relevant for både private, virksomheder og turister.

11.1.2 Tablet PC´er med indhold og services

GoBike er først på markedet for by- & pendlercykler med integreret Tablet PC. Udviklingen på tablet PC´er og de relaterede apps til afvikling på Tablet PC´en er meget intens og dette vil fortsætte i de kommende år. GoBike vil fastholde sin first-mover position og konstant optimere på både de fysiske tablet PC´er, men i høj grad også på anvendelsen af dem i form af brugervenlighed og indhold i form af services der hjælper brugeren effektivt fra punkt A til B.

Tablet PC´en på GoBike cyklerne med indhold vil blive udvikling, men GoBike vil supplere sine tilbud til også at omfatte Apps til downloads på egne SmartPhones og Tablet PC´er, således at de mange services, der udvikles også vil kunne anvendes på andre køretøjer og på private cykler. Det vil betyde, at mange af de services som kunderne sætter pris på når de kører rundt på en GoBike cykel, også vil kunne hentes i en App store, og dermed kunne give kunderne nogle af de samme fordele de dage de cykler på deres egen private cykel.

11.1.3 GoBike Bonus

GoBike kan udvikle et omfattende fordelsprogram for loyale kunder. Vores løsninger kan blive en integreret del af transporten for mange pendlere både privat og arbejdsmæssigt. Vi kan udvikle et fordelsprogram, som motiverer kunderne til at kommen igen og igen og med konstant høj kundetilfredshed. Hvis det aftales at implementerer GoBikes fordelsprogram vil det blive udviklet i tæt samarbejde med Cykel DK og øvrige relevante interessenter.

11.1.4 GoBike Tours

GoBike kan udnytte Tablet PC´en til at guide turister effektivt rundt i urbane miljøer. Dette er en af de helt unikke muligheder med Tablet PC´en integreret i GoBike køretøjet. GoBike kan udvikle et tur-program hvor GoBike Tour-guides cykler turister rundt i byerne. Mange byer har meget at vise frem, men ofte er det langsommeligt at komme rundt til fods, bus/biler besværligt og ofte også begrænset i forhold til at komme tæt på attraktionerne. Med GoBike Tours, kan friske og dygtige tour-guides kører turister rundt i byerne og supplere de informationer som tablet pc´en indeholder, med personlig tilstedeværelse, inspiration og assistance.

GoBike Tours kan samarbejde med turistorganisationerne i de enkelte byer/regioner, således at mobiliteten på manuelle og elektrisk drevne cykler/små el-biler vil blive udnytte til at få sikret at besøgende til den aktuelle by, får en god oplevelse ved at komme effektivt rundt i byen.
Bemærk, at denne løsning ikke vil blive implementeret uden forudgående aftale mellem parterne jf. Ramme aftalen og appendiks F1.

11.2 Driftsmøder

Udviklings road map gennemgås på driftsmøder, hvor også kommuner kan få indblik og give kommentarer. Driftsmøder se PID afsnit 8.7.1 Driftsmøder.

11.3 Advisory Board

GoBike er ikke en cykel-virksomhed. Vi er en service virksomhed. Vi servicerer kunder der skal effektivt fra A til B. GoBike løsningerne indgår som en integreret del af byerne og komplementerer i høj fra også bus, tog og privat bil transport, ved at være "the last mile" køretøjet fra stationerne og centrale parkeringspladser til endemålet for den enkelte rejsende.

For at sikret at udviklingen af GoBike bliver optimal for kunderne, ønsker GoBike at etablere et advisory board, hvor erfaringerne og nye muligheder konstant vurderes af et kvalificeret og fortroligt forum. Cykel DK inviteres med til at deltage i dette GoBike Advisory Board som mødes 2 - 4 gange årligt.

Gobike og Cykel DK vil sammen tilsikre at der er repræsentanter fra de relevante fagområder og interesseorganisationer så Advisory Board samlet kan sikre en løsning som kunderne vil værdsætte og respekterer.

12 Loyalitetsprogram

Under sloganet: Gobike - Sjovt - Sundt & Effektivt gennem byen kan Gobike udvikle et loyalitetsprogram med det formål at øge brugen af systemets cykler.
Det er aftalt at programmet kun kan gennemføres efter godkendelse fra Cykel DK. Samt at programmet:

- alene må anvendes til at tiltrække flere brugere.
- Ikke må indeholde nogen form for aktiviteter som giver GoBike indtjening (ud over en potentiel højre bonus betaling).

12.1 Fordel at være fast kunde

Gobike ønsker at gøre det attraktivt at være tilbagevendende kunde hos Gobike. Vi kan derfor opbygge et loyalitetsprogram, der tilbyder konkrete fordele for kunderne, både når de kommer igen og når de henvise andre brugere til at prøve Gobike løsningerne.
Fordelsprogrammet kan omfatte tiden før, under og efter rejsen på Gobike cykler og alle relevante kommunikationskanaler kan blive taget i anvendelse.
Programmet kan:

- Tiltrække nye brugere

  Der kan blive udviklet kommunikation og incitamenter til at prøve Gobike cykler og i den forbindelse, at give sig til kende som bruger. Det kan være ved at første tur er gratis, eller det kan være ved at tilbyde førstegangsbrugere særlige gode tilbud på turen. Målet er at få navn, e-mail og retten til at maile brugeren med nye tilbud og/eller informationer.
  Det vil endvidere være en fordel, at opfordre venner og bekendte samt den virksomhed man er ansat i, til at prøve Gobike løsningerne. Programmet vil belønne den der henviser, hvis henvisningen resulterer i en ny bruger.

- Servicere kunderne

  Vi kan servicere og give brugertilpassede oplevelser, herunder tilbyde unikke services:

  - GPS, kort og relevante informationer under brug af cyklerne
  - Spil,
  - Kondiprogrammer,
  - GoBike radio og nyheder fra Gobike.

- Fasthold kunder - Opfordre til at prøve igen

  Gobike kan udvikle et fordelsprogram der giver støre og støre fordele jo mere man benytter Gobike løsningerne. Loyalitetsprogrammet vil i vidt omfang blive udviklet i samarbejde med både Cykel.dk og andre interessenter som vil have fordel af at Gobike løsningerne bliver udnyttet optimalt.

12.2 Synlighed via merchandise:

I forbindelse med bearbejdningen af både potentielle og faste kunder kan Gobike i samarbejde med samarbejdspartnere også tilbyde kunderne diverse merchandise i form af remme til bagage, T-shirts, tasker der kan sættes på cyklerne, hjelme, regnslag m.v.

13 Appendiks

13.1.1.1 A: Systems description & user interaction
Dokument navn: Systems description & user interaction - 220812.pdf

13.1.1.2 B: Security analysis
Dokument navn: Security analysis.pdf

Bilag C: Projektinitieringsdokument

(Project Management Plan)
9. november 2012
Final

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1 Dokument historik

Dette dokument er omfattet af dokumentstyring. For mere information se afsnit: 15.1 Dokumentstyring

1.1 Revisions historik

Revisions dato	Forfatter	Version	Ændrings beskrivelse
09/11/2012	PSA	8	Kontrakts version

2 Indledning

Nærværende dokument er Projektinitieringsdokumentet for GoBike – Cykel DK projektet.

2.1 Formål

Formålet med nærværende dokument er at definere GoBike – Cykel DK projektet og at danne et solidt grundlag for styring, opfølgning og succesfuld implementering af projektet. Dokumentet vil besvare følgende spørgsmål:

- Hvad sigter projekt på at opnå?
- Hvordan vil projektet blive styret?
- Hvem vil være involveret, og hvad er deres ansvar?
- Hvordan og hvornår vil det ske?

Det er formålet at give et klart billede af de endelige mål og resultater samt begrænsninger og antagelser, som har indflydelse på de ansvarlige for projektet. Dette dokument beskriver alle væsentlige elementer for at danne et fundament for projektet, herunder mål, forretningsmæssige fordele og risici, kvalitetsforventninger, omfang og tidsrammer med mere.

For at sikre et godt overblik og forenkle opdatering af projektets dokumentation vil de dokumentationselementer, som forventes at blive opdateret hyppigt, blive refereret i selvstændige dokumenter.

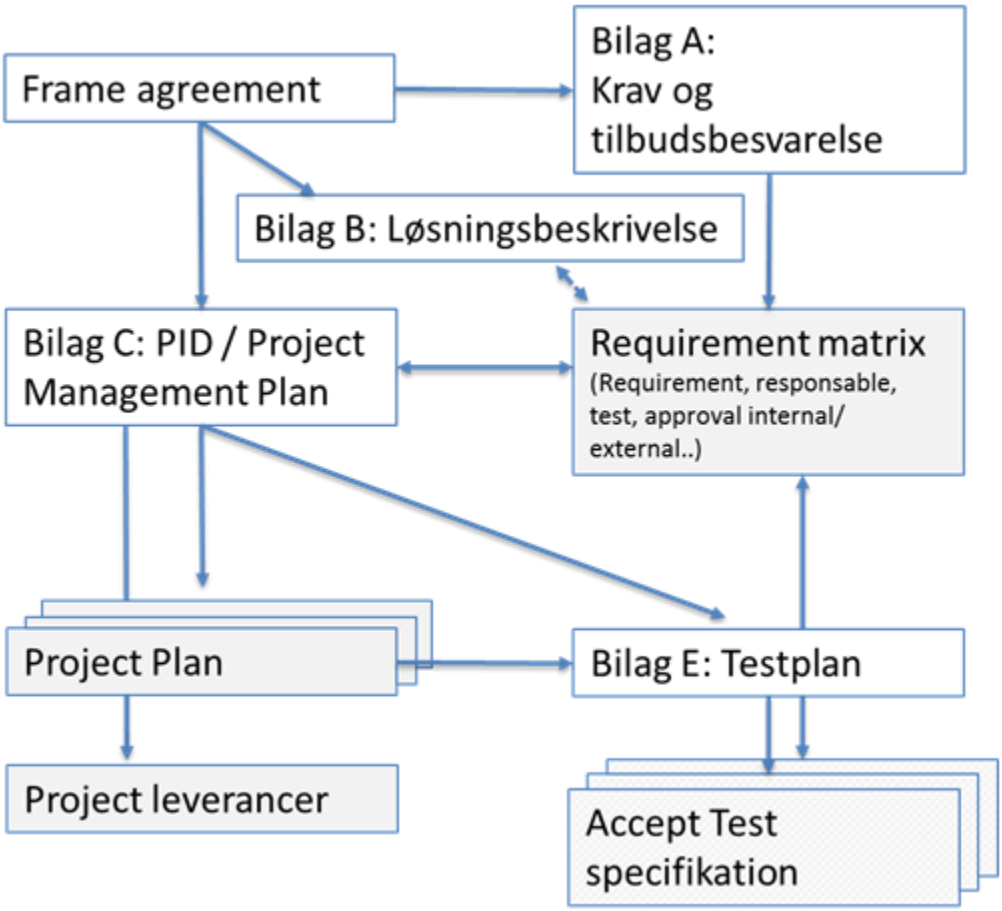
2.2 Afgrænsning

Fasen der dækker forhandlingerne af rammekontrakten (Framework Agreement) er ikke beskrevet i nærværende dokument. Alle beskrivelser er derfor baseret på og gælder fra det tidspunkt, hvor der foreligger en underskrevet rammekontrakt mellem Cykel DK og GoBike.

2.3 Definitioner

Termer anvendt følger definitioner i rammeaftalen.

2.4 Dokumentationsstruktur



Figur 1: Sammenhæng mellem PID, kontrakt og andre dokumenter.

Overstående illustration viser den overordnede sammenhæng mellem dette dokument og projektets øvrige vigtige dokumenter. Illustrationen er ikke komplet: fx mangler installationsdokumentationen eksplicit.

Projektplan og projektleverancer referer implicit til bl.a. installationsdokumentation.

En liste, som indeholder alle projektdokumenter som forventes anvendt i projektets levetid, er listet i afsnit: 15.4 Dokumentliste.

2.5 Opdatering af PID

GoBike og Cykel DK vil løbende vurderer behovet for opdatering af dokumentet. Konkret vil det bliver vurderet ved hver fase overgang. Se afsnit 12.3 Håndtering af faseovergange

2.6 Læsevejledning

Dokumentet er overordnet opdelt i fem logiske dele. Hver del kan bestå af et eller flere afsnit (kapitler):

- Indledning som afsluttes med dette hovedafsnit.
- Businesscase (dvs. parternes fælles vision for projektet)
- Beskrivelse af projektets fire faser (Specifikation, Udvikling, Installation og Drift): I afsnit 4 beskrives sammenhængen mellem de fire faser og i afsnit 5-8 beskrives de fire faser mere detaljeret: For hver fase beskrives fasens processer.
- I afsnit 9-10 beskrives Cykel DK's og GoBikes organisering og den fælles projekt organisation.
- Projekt styring. I sidste del (som starter i afsnit 11) beskrives, hvordan de generiske projektdiscipliner (projektstyring, risikostyring, planlægning osv.) håndteres i projektet.

Dokumentet kan læses kronologisk. Læsere med fokus på organisering af projektet kan med fordel starte med at læse afsnit 9 og 10.

Der er i vid udstrækning anvendt krydsreferencer i teksten. Krydsreferencerne er alle mærket "Se afsnit:" efterfulgt af afsnitsnummer og overskrift. Krydsreferencerne er "klik-bare" i Pdf- (klik) og Word (ctrl+klik) udgaven. Eksempel på krydsreference: Se afsnit: 1 Dokument historik

3 Business case – Projektets visioner

Visionen bag by- og pendlercykelløsningen er at fremme cyklen som transportmiddel i urbane miljøer over hele Danmark. Danmark er i forvejen en af verdens førende cykelnationer. Denne position ønskes fastholdt og udbygget i en ambitiøs proces, hvor hvert element der indgår i at cykle fra A til B konstant bliver analyseret og optimeret.

Målet er at implementere ét fælles by- og pendlercykelsystem i Danmark, som kan anvendes på tværs af kommunegrænser, at tilbyde let tilgængelige cykler i forskellige varianter som et middel til at øge transporteffektiviteten og samtidig aflaste bil- og bustrafikken, at minimere behovet for parkeringspladser, og at reducere de mange spildte timer i kø samt reducere forurening fra diesel- og benzinmotorer.

By- og pendlercyklerne skal være let tilgængelige og nemme at bruge for alle, både private og virksomheder, med udgangspunkt i det fælles koncept, som alle de deltagende kommuner, transportmyndigheder og trafikselskaber via samarbejdet i Cykel DK er blevet enige om. For at opnå dette skal det nye by- og pendlercykelsystem opfylde:

Brugernes krav, ved:

- at tilbyde bedre mulighed for problemfri rejse på cykel fra punkt A til B i danske byer,
- at gøre det nemmere for brugerne at benytte kombinationen af cykel og kollektiv trafik,
- at man på sigt kan betale den samlede rejse med offentlige transportmidler hvori pendlercyklerne indgår,
- at cyklerne fås i varianter, der passer til det konkrete behov. Det kan være med eller uden elektrisk assistance, det kan være med lad til transport af varer/bagage og det kan over tid også være små elektriske biler med plads til 2 – 3 passagerer og plads til varer/bagage

Cykel DK og de offentlige trafikselskabers effektivitetskrav, ved:

- at øge antallet af brugere af offentlig transport, da det bliver nemmere at komme til og fra stationerne, at øge brugertilfredsheden,
- at skabe bedre argumenter for at lade bilen stå og i stedet anvende den offentlige transport, hvori cyklen er en integreret del,
- at øge indtægterne,
- at reducere antallet af cykler i togene

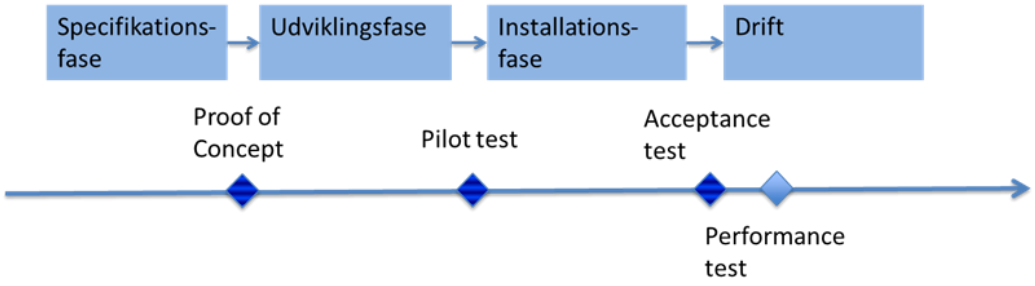
4 Projekt tilgang – Projektets faser

Projektet er et innovativt udviklingsprojekt efterfulgt af en serie installationsprojekter. Det første installationsprojekt vil blive præget kraftigt af udviklingsprojektet.

Parterne er enige om at udviklingsprojektet såvel som udrulning/installationsprojekterne styres efter Prince2. På områder som ikke er dækket af Prince2 anvendes ISO 9001 og alm. anerkendte projektstyringsmetodiker og værktøjer.

4.1 Projektets faser

Projektet beskrives med fire hoved faser (stages): Specifikation, Udvikling, installation og drift. Hver fase har flere delfaser / processer.



Figur 2: Projektets faser

Projektets faser beskrevet i afsnit:

5. Specifikationsfasen
6. Udviklingsfasen
7. Installation
8. Drift

Specifikations- og Udviklingsfasen gennemføres kun engang. Installationsfasen gennemføres derimod én gang for hver tilsluttet kommune eller organisation og Drift er en løbende proces, som starter når installationsfasen er afsluttet første gang.

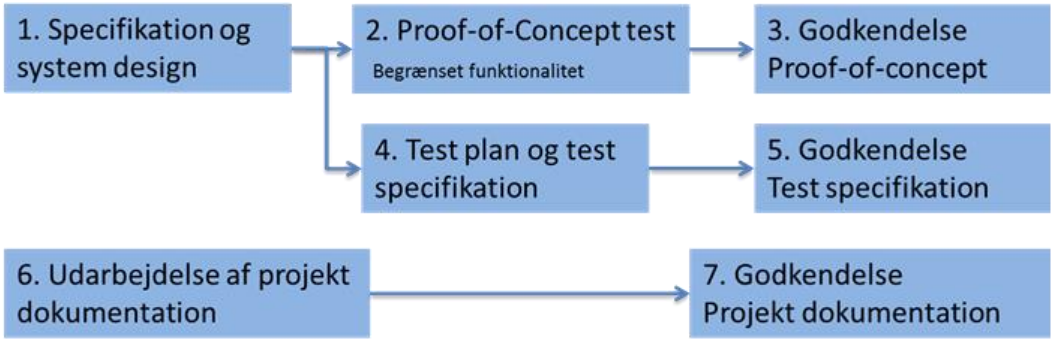
Specifikationsfasen er startet, men formelt ligger kontraktformulering forud for specifikationsfasen. Kontraktformuleringen er en forudsætningen for nærværende dokument og er derfor ikke beskrevet.

5 Specifikationsfasen

I specifikationsfasen vil alle kontraktens krav blive transformeret til en beskrivelse af hardware features og software funktioner. I denne fase vil testdokumentationen for projektet også blive udarbejdet.

Fasens hovedformål er, at der opnås:

- Godkendelse af proof-of-concept
- Godkendelse af testdokumentation
- Godkendelse af projektdokumentation



Figur 3: Specifikationsfasen. Se alle faser i afsnit: 0
Projektets **faser**

Specifikationsfasen gennemføres kun en gang i projekt forløbet. I det følgende er fasens processer beskrevet.

5.1 Specifikation og system design

I specifikationsprocessen, som er startet i juli 2012, gennemgår GoBikes udviklingsteam alle kontrakt- og interne projektkrav og udarbejder på denne baggrund alle nødvendige interne og eksterne specifikationer, user flows og mock-ups mv.

5.2 Proof-of-concept

Proof-of-concept er primært en teoretisk præsentation på papir af systemet (koncept) med fysiske demo elementer: Endeligt udstyr og mock-ups således at der kan skabes et overblik over den fulde løsning. Proof-of-concept testen vil blive udført så alle projektets interessenter kan få fuldt indblik i projektets løsninger.

Proof-of-concept testens proces og acceptkriterier vil blive aftalt i Testplan og testspecifikationer processen beskrevet nedenfor. Se afsnit: 0 Testplan og testspecifikationer.

5.3 Godkendelse af Proof-of-Concept test

I et udviklingsforløb er det normalt, at der er tilbageløb til designprocessen flere gange i udviklingsfasen. Det vil naturligvis også gælde for dette projekt, men formelt set afsluttes specifikationsfasen når Proof-of-concept er godkendt. Ændringer som aftales efter godkendelse af Proof-of-concept håndteres som beskrevet i afsnit: 0
Ændringshåndtering [Change management].

5.4 Testplan og testspecifikationer

I denne proces udarbejdes en test plan som beskriver sammenhængen, omfanget, metoder og ansvarsfordeling for samtlige test aftalt i kontrakten. For hver test udarbejdes en test specifikation (test script).

Først udarbejdes og godkendes en Test Plan.

GoBike vil anvende følgende proces for udarbejdelse af testdokumentation. Processen tager sigte på at sikre en effektiv proces, hvor GoBike vil præsentere den planlagte teststrategi, metode og indhold for Cykel DK forud for endelig udarbejdelse af de første test specifikations udkast. Cykel DK har således mulighed for, på et tidligt stade, at påvirke processen:

- GoBike indkalder til en testdokumentations kick-off workshop.
- Teststrategi, metode og indhold vil blive debatteret på bagrund af et oplæg udarbejdet af GoBike. Oplægget vil bestå af den godkendte test plan og en gennemgang af projektets kontraktuelle tests.
- GoBike udarbejder et testdokument baseret på rammekontraktens krav og input fra kick-off workshoppen.

Processen anvendes for alle testdokumenter, og gentages en gang for hver test: Hardware-, Pilot-, Flow-, Accept- og Driftsprøve. Flere tests kan behandles på samme møde.

5.5 Godkendelse af testspecifikationer

Samtlige testdokumenter skal godkendes af Cykel DK. Dokumenterne styres og godkendes jf. processen beskrevet i afsnit: 15 Dokumentation.

5.6 Projektdokumentation

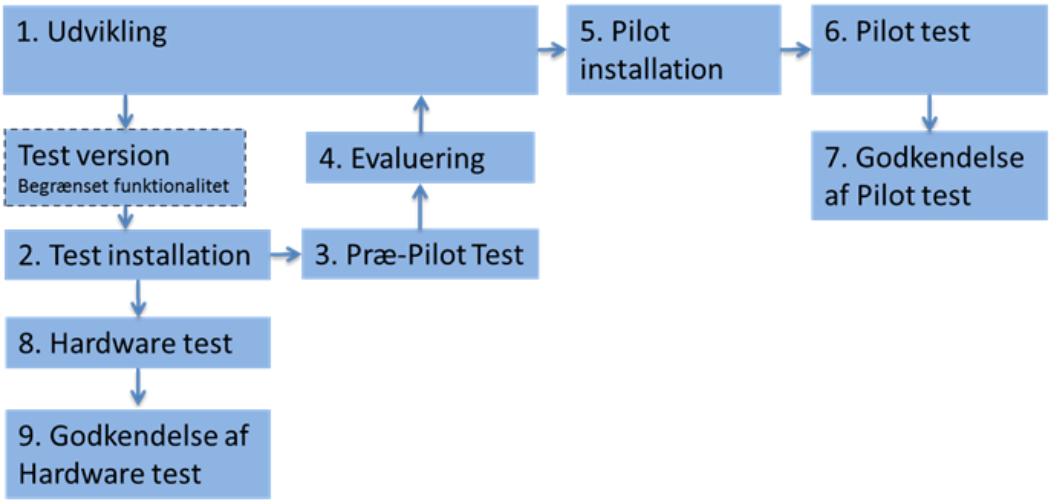
I denne proces udarbejdes de nødvendige skabeloner og anden generisk projektdokumentation. Rapporteringsskabeloner og SLA dokumentation vil også blive udarbejdet i denne proces. Se liste i afsnit: 15.4 Dokumentliste.

5.7 Godkendelse af projektdokumentation

Samtlige test dokumenter skal godkendes af Cykel DK. Dokumenterne styres og godkendes jf. processen beskrevet i afsnit: 15 Dokumentation.

6 Udviklingsfasen

I udviklingsfasen vil alle elementer i GoBike systemet blive udviklet og testet.



Figur 4: Udviklingsfasens processer Se alle faser i afsnit: 0
Projektets **faser**

Udviklingsfasen gennemføres kun en gang i projektforløbet.
Med henblik på at sikre et godt projektforløb, hvor uklarheder, misforståelser og andre problemer håndteres så tidligt som muligt, er der planlagt et præ-pilot forløb som beskrevet nedenfor.

6.1 Testinstallation

GoBike vil etablere en testinstallation, som kan anvendes til intern integrationstest og præ-produktions tests og demonstration af GoBike systemet.
Testinstallationen vil også blive anvendt til bl.a. Hardwaretesten og Præ-pilottesten som beskrevet nedenfor.

6.1.1 Udviklingsprocessen

Udviklingsprocessen følger GoBikes principper og processer som er beskrevet i [kravbesvarelsen til appendiks7]. I udviklingsprocessen vil der blive gennemført en række test både på modulniveau og i form af integrationstest mv. Disse test er bl.a. beskrevet i GoBikes besvarelse af appendiks 7 [kravbesvarelsen].
Nærværende beskrivelse er begrænset til de test, der gennemføres som en del af kontrakten. De gennemføres med det formål at dokumenterer, at GoBike har leveret de aftalte features og den aftalte funktionalitet.

6.2 Præ-pilot

Formålet med præ-piloten er at gennemføre en præliminær pilot test for at sikre og afprøve:

- Alle parter får overblik over den endelige løsning, så tidligt i forløbet som muligt.
- Afprøve test specifikationerne.
- Afklare og afprøve roller i pilot testen.
- Afklare om kritisk funktionalitet lever op til Cykel DK's forventninger.
- Større mulighed for korrigerende handlinger tidligt i forløbet.

Der vil ikke blive udarbejdet særskilt test specifikation for præ-pilottesten. Præ-pilottesten vil blive gennemført basseret på godkendt test dokumentation for pilottesten. De områder som ikke kan testes (fordi funktionaliteten ikke er færdig udviklet eller fordi interface til BackOffice drift ikke er tilgængeligt) vil være listet forud for testens gennemførsel.

Testen gennemføres på samme måde som pilottesten. Se afsnit: 0
Pilottest og
0
Testplan og testspecifikationer.

6.3 Evaluering af præ-pilot

Formålet med evalueringen er at opsamle erfaringerne fra Præ-pilottesten således at fejl i software og testprocesser kan korrigeres forud for den officiel Pilottest. Der er ingen godkendelses procedure knyttet til Præ-pilottesten, men testresultatet vil blive håndteret på samme måde, som for de kontraktlige test.
Se afsnit for yderligere information: 0
Pilottest

6.4 Pilotinstallation

Pilotinstallationen er den første installation i projektet. Der installeres et mindre antal docking-stationer til brug for Pilottesten. Mindst 10 % af den aftalte projekt installation vil være tilgængelig for pilot testen.
Pilotinstallationsprocessen følger installationsprincipper og installationsprocessen beskrevet i afsnit: 0
Installations dokumentation og 0
Installation.

6.5 Pilottest

Pilottesten udføres som beskrevet i testdokumentationen. Dokumentationen udarbejdes i specifikationsfasen i processen:
Testplan og testspecifikationer.
Se afsnit: 0
Testplan og testspecifikationer

6.6 Godkendelse af Pilottest

Godkendelse af pilottesten afslutter Udviklingsfasen formelt. Udviklingsfasen vil naturligvis fortsætte med evt. fejlretning og på længere sigt udvidelser.

Ændringer efter godkendelsen følger processen beskrevet i afsnit: 0 Ændringshåndtering [Change management].
Når Pilottesten er godkendt starter Installationsfasen. Se afsnit: 7 Installation.

6.7 Hardwaretest

Hardwaretesten udføres så tidligt så muligt og før start af Pilottesten.

6.8 Godkendelse af Hardwaretest

Godkendelse af Hardwaretesten er forudsætning for produktionsstart af cykler og docking-points. Derfor vil forsinkelse af denne test have fatale konsekvenser for tidsplanen. Det skal derfor undersøges om en evt. partiel test og godkendelse kan reducere denne risiko.

7 Installationsfasen

I dette afsnit beskrives de processer som knytter sig til udrulning af GoBike systemet til en kommune eller anden organisatorisk enhed. Vi har valgt at kalde denne fase for Installation, men der knytter sig også en række andre aktiviteter til denne fase.

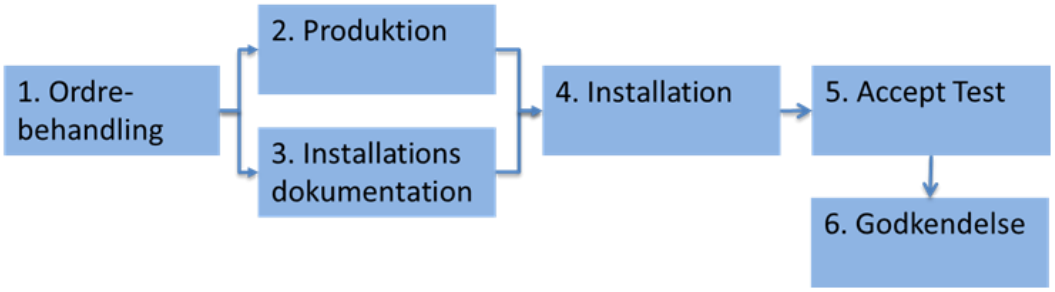
Aktiviteter forud for start af installationsfasen

Forud for denne fase vil normalt være en uformel drøftelse mellem ordregivers (kommunen eller organisationen), Cykel DK og GoBike. GoBike vil i denne fase tilbyde rådgivning medhensyn til bl.a.:

- egnede placeringer af GoBike lokaliteter (Cykel stationer),
- antal dockingstationer pr lokalitet,
- udrulningsstrategi,
- budget overslag,
- besvarelse af spørgsmål osv.

Installationsfasens processer

Installationsfasen gennemføres en gang for hver tilsluttet kommune / organisation.



Figur 5: Installationsfasens processer. Se alle faser i afsnit: 0
Projektets **faser**

Installationsfasen omfatter 5 processer som beskrives i dette afsnit:
0
Ordrebehandling
0
Produktion
0
Installations dokumentation
0
Installation
7.5 Accepttest
7.6 Godkendelse

Hele processen er beskrevet i afsnit: 7.7 Generisk installationsplan (skabelon) som anvendes til at etablerer en installationsplan for en given kommune eller organisation ved udvidelse af systemet.

Simplificeret proces
Der vil formentlig blive behov for en simplificeret proces som kan anvendes når en virksomhed bestiller en GoBike lokalitet (dockingstationer) og et antal cykler. Når erfaringer er indsamlet fra de første installationer vil en simplificeret proces blive beskrevet og implementeret.
Standard betingelser
Alt installations arbejde udføres jf.kontrakt

Læsevejledning for de følgende afsnit
Læsevejledning: Afsnit 7.7 Generisk installationsplan (skabelon) kan med fordel læses parallelt med installationsafsnittet i det følgende.

7.1 Ordrebehandling

I denne proces afklares alle aspekter som er nødvendigt for både ordregivers (kommunen eller organisationen) og leverandøren kontraktindgåelse i henhold til den aftalte ordreafgivelse (Rammeaftalens bilag G) og betingelser i rammekontrakten.

7.1.1 Processens anvendelse

Denne proces anvendes når:

1. En kommune eller en virksomhed ønsker at tilslutte sig GoBike systemet.
2. En kommune eller en virksomhed, ønsker at udvide et system med ekstra cykler / dockingstationer eller udskifte nedslidte cykler.

7.1.2 Inputs til ordrebehandlingsprocessen

Der vil typisk være en dialog mellem ordregivers (kommunens / virksomhedens) projektleder og GoBikes projektleder forud for ordregivers bestilling.
Processen starter dog først formelt når en kommune eller organisation fremsender en officiel forespørgsel jf. proces 1 Bilag G.

Normalt vil Kommunen, Cykel DK og Gobike gennemføre besøg på de ønskede lokaliteter jf. proces 2 Bilag G.

7.1.3 Ordrebehandlingens outputs

Process 3, Appendix G

På baggrund af den præliminære bestilling udarbejder GoBike en detaljeret installationsplan for ordren, baseret på den generiske installationsplan beskrevet i dette dokument. Se afsnit: 7.7 Generisk installationsplan.

GoBike leverer følgende dokumenter til ordregiver:

- Ordrebekræftelse med leveringstider, vigtigste milepæle, specifikation af leveringsomfang og aftalte priser.
- Projekt plan (Installationsplan).
- Beskrivelser af evt. afvigelser fra generisk projektplan og PID (f.eks. ved meget små eller meget store ordre, underleverandørvalg mv.).
- Forudsætninger og ordregivers forventede deltagelse (hvis afvigelser fra PID).
- Evt. anden relevant information j.f Afsnit 2.3 i Appendix G.

GoBike forventer at denne proces tager ca. 20 arbejdsdage.

7.1.4 Godkendelse af GoBikes tilbud

Når Ordregiver har fremskaffet alle nødvendige tilladelser og evt. opdaterede tegninger [proces 4 Appendiks G] og når Ordregiver har sendt en endelig ordre afgivelse basseret på GoBikes tilbud [proces 5 Appendiks G].

Fremsender GoBike en endelig ordre bekræftelse [proces 6 Appendiks G].

Der efter vil typisk blive afholdt et opstartsmøde for at afklare specifikke installationskrav og andre implementeringsdetaljer.

7.2 Produktion

Dette trin omfatter den faktiske fremstilling og levering af alt udstyr ifølge den aftalte ordre.

7.2.1 Input til produktionsprocessen

Produktionen igangsættes når der foreligger en godkendt ordrebekræftelse.

7.2.2 Leveringstid fra frabrik

Under normale omstændigheder er leveringstid af udstyr er 120 arbejdsdage. Den nøjagtige leveringstid vil afhænge af mængden og levering af visse kritiske komponenter (f.eks. tablet hardware). Produktion og produktkontrol og kvalitetssikring sker i slutningen af fremstillings-trin og før levering.

7.2.3 Leveringstid fra GoBike lager i Danmark

Leveringstid fra GoBikes lager i Danmark vil under normale omstændigheder være afsluttet inden for 5 arbejdsdage.

Lagerkapacitet

GoBike vil opretholde et lager af Cykler og Dockingstationer som er tilstrækkeligt til at opfylde krav til Installationsplan og aftalens SLA. Derudover vil GoBike etablerer et stødpude lager med henblik på at sikre en hurtig start af nye installationer.

Opbevaring og lagring af dockingstationer.
En del af dockingstation lageret vil blive opbevaret på GoBikes installationsparter's lager. GoBike leverer docking stationer direkte til den valgte underleverandør.

Opfølgning
GoBike vil løbende holde ordregiver orienter om evt. ændringer i leveringstid.

7.2.4 Output fra produktionsprocessen
Hardware (dockingpoints, installationsmanual, cykler, tablets).

7.3 Installations dokumentation
Dette trin omfatter: Planlægning og dokumentation af installationsaktiviteter.

7.3.1 Forudsætninger for at starte processen
Installationsplanlægningen igangsættes formelt, når der foreligger en godkendt ordrebekræftelse.

Ordregiver (kommunen eller organisationen) udpeger projektleder ("single point" kontaktperson), som kan tilvejebring de nødvendige oplysninger, tegninger, instruktioner osv.

Installations kick-off møde
Processen starter med et installations kick-off møde, hvor ordregivers projektleder og GoBikes installationschef mødes for at aftale installationsprocessen.

Det er GoBikes erfaring, at der er en betydelig kalender risiko forbundet med planlægning af installationsarbejdet og i at gennemføre installationsbeskrivelser (modtage input, forberede output og få godkendelse). Dette gælder specielt ved større antal installationslokaliteter.

Er der tale om et større antal installationslokaliteter, foreslår GoBike at opdele dette arbejde i flere pakker over en aftalt tidsperiode. Hvor hver pakke fx består af dokumentation af 50 installations lokaliteter. På denne måde vil ordregiver (kommunen eller organisation) og GoBike vil være i stand til at arbejde effektivt og sikre fremdrift i parallelle forløb. GoBike vil tage initiativ til at drøfte dette i planlægningsfasen (på installations kick-off mødet).

Dagsorden - Installations kick-off møde

- Velkomst, introduktion og Præsentation runde.
- GoBikes præsentation af installationsforløb.
- Introduktion til [20] Installationsdokumentations check liste. Se afsnit: 15.4 Dokumentliste
- GoBikes tilbagemelding på det modtagne materiale.
- Spørgsmål
- Aftale af det videre forløb.
- Evt.

7.3.2 Input til installationsdokumentationsprocessen

Dokumentation input fra ordregiver (forudsættes leveret sammen med ordreform):

- Ordregiver (kommunen) vil være ansvarlig for at leverer korrekte og fyldestgørende oplysninger, tegninger mv. for hver enkelt lokalitet. Dette omfatter - men ikke begrænset til - oplysninger om eksisterende installationer, mulig strømforsyning, overflade osv.
- Hvis der på en udpeget lokalitet /placering er byrumsinventar eller andre kendte hindringer for anvendelse af lokalitet /placering skal det i materialet fremgå om ordregiver selv vil stå for fjernelsen af hindringen eller om flytningen/fjernelse foretages af GoBike efter regning.
- Ordregiver (kommunen) vil give instrukser til leverandøren om krav om positionen og arrangement af udstyret på hver enkelt lokalitet.
- Alle oplysninger og materiale skal afleveres til leverandøren i elektronisk format. Tegninger skal gives i dwg eller lignende elektronisk format.
- Leverandøren er ikke ansvarlig for fejl i de dokumenter, der leveres af ordregiver eller mulige konsekvenser af fejlagtige oplysninger leveret af ordregiver.
- Andre instruktioner, fx ved behov for fysiske anlægsbesøg i forbindelse med installationsplanlægningen.
- Information om evt. andre planlagte anlægsarbejder på de givne lokaliteter.
- Information om evt. udført kabler træk udført i forbindelse med andet anlægsarbejde, som kan (eller er planlagt til at kunne) anvendes til GoBike installationen.

Andre inputs:

- GoBikes erfaringer og data analyse fra eksisterende installationer, anvendes til at sikre optimale placeringer i dialog med ordregiver (Kommune / Organisation).

Fælles fysiske anlægsbesøg (hvor både Ordre givers repræsentant og GoBikes installations manager deltager) planlægges normalt kun til de største og mest komplekse lokaliteter. Alle andre installationslokaliteter vil blive fastlagt ved hjælp af en simpel dialog og dedikerede installation projektmøder.

Se checkliste til brug ved udarbejdelse/godkendelse af input fra ordregiver (kommunen): Installationsdokumentations check liste.

7.3.3 Installationsdokumentation

GoBike vil starte processen når ordregiver har leveret nødvendigt kortmateriale mv. som beskrevet ovenfor. Se afsnit: 0
Forudsætninger for at starte processen.

Dette trin omfatter indledende undersøgelse af lokaliteter og evt. tilknyttede kundekrav og inkluderer fremstilling af alt nødvendig dokumentation (installationstegninger m.v.) til at udføre den fysiske installation af GoBike systemet.

I denne proces er det vigtigt at ordregivers projektleder er tilgængelig for uddybende spørgsmål og løbende projektmøder, hvor der kan følges op på leverancerne mellem ordregiver og GoBike.

7.3.4 Dokumentationsoutput fra leverandøren

GoBikes installationsteam organiserer alle indkommende filer og registrere alle installation sites informationer.

GoBikes installationsteam udarbejder en beskrivelse pr. installationslokalitet, som vil omfatter blandt andet alle relevante oplysninger relateret til lokaliteten samt en installationstegning (Skala 1:100). Hver installation beskrivelse vil også omfatte et omkostnings ark med installation omkostninger i henhold til rammekontrakten og eventuelle yderligere omkostninger, som skal dækkes af ordregiver.

<u>Installationstegninger</u>
Formatet af de reviderede tegningerne vil blive baseret på formatet af de modtagne tegninger, hvilket betyder, at opdatering af tegningerne vil blive returneret i samme format som det modtagne format. Alle nye tegninger vil blive leveret i elektronisk format.

<u>Særlige forhold</u>
Ved særlige forhold vedr. undergrunden som opdages i forbindelse med installationsplanlægning vil GoBike tage initiativ til at drøfte alternativ placering eller udarbejde individuel aftale om ekstra betaling.

7.3.5 Installationsdokumentation godkendelse

GoBike vil fremlægge en beskrivelse for hver enkelt installationslokalitet til godkendelse af ordregiver. Planlægningen af Installationsfasen er basseret på at en effektiv dialog mellem GoBike og ordregiver, derfor er planlægningen basseret på, at installationsdokumentationen godkendes inden for 5 arbejdsdage fra modtagelse.

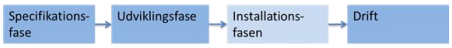
Sammen med Kommunens godkendelse af installationsdokumentationen fremsendes også gravetilladelse for den berørte lokalitet.
I forbindelse med godkendelsesprocessen kan der også aftales review møder hvor spørgsmål og detaljer kan behandles.

7.4 Installation

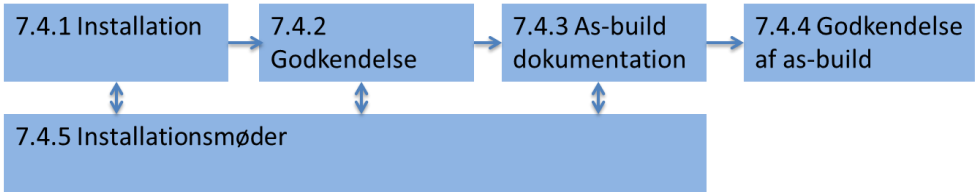
Alt installations arbejde udføres som beskrevet i Rammeaftalen afsnit 8.1 og detaljeret i det følgende.

Forudsætninger for at starte Installationen
GoBike kan ikke starte noget installationsarbejde, før ordregiver har godkendt installationsdokumentationen for den pågældende lokalitet.

Risici
GoBikes underleverandører har stor erfaring i udførelse af arbejde af denne karakter – uanset vejrlig og øvrige forhold. Det vurderes således, der ikke er nogen specifikke risici forbundet med arbejdets udførelse, i forhold til tilsvarende installationsarbejde.



Figur 6: Den samlede installations fase.



Figur 7: Installationsfasen er inddelt i ovenstående installations processer

I det følgende er installationsfasens processer beskrevet.

7.4.1 Installationsprocessen

Dette trin omfatter den fysiske installering af GoBike systemet og består bl.a. af:

- Udgravning, optagelse og udlægning af fliser, asfaltering etc.
- Lægning / trække af strømkabler og dækbånd.
- Installation af dockingstationer (Docking-point) og grundplader (inklusive fundament når det er nødvendigt).
- Tilslutning af strømkablet og datakommunikationskabler til den indbyggede stik på bundpladen af hver docking-point.

Arbejdet med etablering af lokationerne udføres under GoBikes ledelse af underleverandører.

Installationsarbejdet omfatter fastgørelse af enkelte docking stationer eller enheder bestående af en gruppe docking stationer og tilslutning til strømnettet. Docking stationerne er de samme for både standard cykler og eCykler.

GoBikes installationsteam organiser installationsprocessen for den enkelte lokalitet. Processen består af flere trin som udføres af forskellige faggrupper. Installationsarbejdet på en lokalitet afsluttes med en installationstest. Som verificerer, at det enkelte docking-point fungerer, og at der er kontakt til backoffice systemet.

Gravearbejde
Der estimeres i gennemsnit 40 meters afstand fra dockingstation til nærmeste tilslutningsmulighed til strømnettet. Er afstanden længer end 40 meter vil ekstra omkostningerne blive faktureret særskilt jf. Rammeaftalens prisblad (Appendiks F1 Kontraktpriser).

Kabelføringen mellem docking stationer som kræver tilslutning til strømnettet og strøm tilslutningsmulighed nedgraves til frostsikker dybde.

Eventuel overfladebelægning fjernes så skånsomt som muligt, således denne i videst muligt omfang kan reetableres efter endt monteringsarbejde. Er der tale om asfaltbelægning vil denne genetableres efter endt monteringsarbejde.

Montering af den enkelte docking station eller gruppe af dockingstationer. Docking stationerne fastgøres til underlaget. Fastgørelse sker demontering af beskyttelseskapsel. Under denne er der monteringshuller der tillader fastgørelsen. Selve fastgørelsen foretages – afhængigt af underlaget – ved hjælp af specialbolte med en længde mellem 12 og 30 cm. Inden fastgørelse sikres underlagets beskaffenhed, således monteringen ikke svækkes med tiden. I tilfælde hvor forstærkning af underlaget er nødvendig, foretages dette inden fastgørelse.

Stationsjord
Det er en forudsætning at GoBike lokaliteterne placeres uden for områder hvor "Stationsjord" er påkrævet. Hvis installationer ønskes indenfor "stationsjord" områder vil GoBike fakturere de ekstra omkostninger til sikkerheds jording, efter gældende regler, efter regning. Dette skal forinden godkendes af ordregiver.

Test af den enkelte docking station
Efter tilslutning til strømnettet gennemtestes den enkelte docking station, således fuld funktionsdygtighed er tilsikret.
Funktionsdygtige dockingstationer klarmeldes i GoBikes backoffice system.

7.4.2 Installationsgodkendelse (den enkelte lokalitet)

Denne proces omfatter:

- Godkendelse af installationslokaliteter (accept til ibrugtagning).

Formålet med godkendelse af installationen på lokalitetsniveau er at skabe overblik over status for den enkelte lokalitet: Ordregiver godkender installationsarbejdet udført af GoBikes installationsteam eller der udarbejdes en mangelliste.

Godkendelsen sker på baggrund af en "Installation godkendelsesprocedure" som udarbejdes før start af første installation. Proceduren beskriver alle test der skal udføres med henblik på at validere at installationen fungerer korrekt inden for rammerne af det globale projekt. Disse tests udføres i tilstedeværelsen af ordregivers projektleder, eller dennes repræsentant og omfatter:

- Visuel inspektion af udstyr installeret, herunder aftale om as-build tegning skal udføres eller om installationstegning er fyldestgørende.
- Funktionstest af hvert stykke udstyr.
- Registrering af udstyrsreferencer (type, serienummer, ...).
- Funktionstest af forbindelse til netværket og backoffice.
- Dokumentation af resultaterne af disse afprøvninger.

Hvis ordregiver ønsker det kan denne verifikation udføres alene af GoBikes medarbejdere eller ved stikprøve.

Efter afslutningen af dette trin, er de berørte lokaliteter klar til systemaccept og dermed overdragelse til ordregiver.

7.4.3 As-build
GoBike udarbejder ”as-build” tegninger for de lokaliteter, hvor installationen afviger fra installationstegningen. Formatet af denne tegning vil blive baseret på formatet af de modtagne tegninger.

7.4.4 Godkendelse af As-build tegninger
Når as-build tegningerne er udfærdiget skal de godkendes af ordregiver.

7.4.5 Installations møder
I installationsfasen er det vigtigt, at ordregivers projektleder er tilgængelig i tilfælde af uforudsete udfordringer. I denne fase vil der også blive afholdt ugentlige projektmøder, hvor der kan følges op på leverancerne mellem kunde og leverandør.

7.5 Accepttest
Accepttesten omfatter alle software funktioner i leverancen og består af:

- Flowtest
- Funktionstest

Accepttesten er begrænset til elementer og delsystemer som introduceres første gang i GoBike systemet. Ved støre udvidelser eller ændringer gennemføres hele

testen igen. Det aftales forud for ændringernes implementering i hvilket omfang testen skal udføres.
Testspecifikationen for de to test udarbejdes i
Testplan og testspecifikationer processen i Specifikationsfasen. Se afsnit: 0 Testplan og testspecifikationer.

7.6 Godkendelse

Dette trin omfatter:

- Godkendelse af samlet installation af dockingstationer beskrevet i afsnit: 0
- Installationsgodkendelse, alle lokaliteter.
- Godkendelse af leveret udstyr (cykler, mv.) beskrevet i afsnit: 7.6.2 Godkendelse af leveret udstyr.
- Godkendelse af leveret software og andre ydelser, beskrevet i afsnit: 7.6.3 Godkendt accepttest.

Der er ikke nogen obligatorisk rækkefølge for godkendelsesprocessen. Når disse tre trin er gennemført afsluttes Installationsfasen.

7.6.1 Installationsgodkendelse, alle lokaliteter

GoBike fører en statusliste over all installationslokaliteter. Når samtlige planlagte lokaliteter er installeret og godkendt jf. beskrivelsen i afsnit: 0 Installationsgodkendelse (den enkelte lokalitet), godkendes den samlede installations leverance.

7.6.2 Godkendelse af leveret udstyr

Denne proces omfatter normalt kun cykler, som leveres og tages i brug, når en del eller hele GoBike systemet er sat i drift.

7.6.3 Godkendt accepttest

Accepttesten godkendes på baggrund af den førte test protokol. Hvis test resultatet er indenfor kravene defineret i appendiks 7 er accepttesten godkendt uden yderligere formaliteter.

7.7 Generisk installationsplan (skabelon)

Den generiske installationsplan omfatter alene Installationsfasen og anvendes som en skabelon når GoBike systemet bestilles til en ny kommune eller anden ordregiver.

Se afsnit: 7. Installationsfasen
Den generiske installationsplan er beskrevet i det følgende. Skabelonen vil blive brugt som grundlag for udarbejdelse af Gantt projektplan i MS Project.

Dette afsnit har 3 dele:

- 7.7.1 Opgaveliste: Som oplister de væsentligste opgaver installationsfasen.
- 0
- Gantt-diagram (Projektplan) Som beskriver planlægningsværktøjet som leveres til den enkelte ordregiver (kommune).
- 7.7.3 Eksempel på konkret plan.

7.7.1 Opgaveliste

I opgavelisten er de vigtigste opgaver opregnet i en tabel. Følgende oplysninger findes i tabellen:

- Beskrivelse af aktiviteten i flere detaljer.
- Arbejdstid i arbejdsdage: Det er den tid, GoBike forventer GoBikes og/eller ordregivers personale behøver til at fuldføre opgaven. Den mindste enhed, der anvendes, er en arbejdsdag f.eks. godkendelse af dokumenter defineres som en arbejdsdag: Læsning og godkendelse af en dokument vil måske tage under en time, men indsamling af oplysninger og andre relaterede opgaven kan varierer.
- Oversigt over ansvars fordeling (beskrevet nedenfor).

<u>Oversigt over ansvarsfordeling</u>
De tre kolonner: "Initierer", "Udføre" og "Godkende" anvendes til angivelse af hvem, der er ansvarlig for de tre aktiviteter: ”C” for Ordregiver og ”G” for GoBike.
Bemærk: Alle referencer til faser- og procesbeskrivelser er ”klik-bare”.

	Installationsplan		Answarsfordeling		
Id	**Opgave beskrivelse**	**Arbejds-dage**	**Initierer**	**Udføre**	**Godkende**
1	GoBike modtager ordre (ikke bindende). [1]	0	C	C	G
2	0 Ordrebehandling	Note: Alle overskrifter er grå!			
3	Ordre behandling og planlægning	8	G	G	
4	Ordregiver og GoBike Start-up møde, besøg på installationsstedet.[2]	1	G	C,G	
5	Planlægning af Installationsfase [3]	20	G	C,G	
6	Tilladelser og Godkendelse (Endelig Ordre) [4-5]	20	C	C	G
7	Levering af ordrebekræftelse [6]	1	G	G	
8	Ordrebehandling afsluttet [6]	0			
10	0 Produktion				
11	Produktion cykler	120	G	G	
12	Produktion docking-points I	50	G	G	
13	Produktion docking-points II	50	G	G	
16	0 Installations dokumentation				
17	Installations kick-off møde	1	G	C,G	
18	0 Input til installationsdokumentationsprocessen	0	C	C	G
19	0 Installationsdokumentation, udarbejdelse	1 dpl	G	G	
20	Dokumentation til godkendelse	0			
21	7.3.5 Installationsdokumentation godkendelse	5	C	C	C
22	Dokumentation godkendt	0			C
23	0 Installation				
24	0 Installationsprocessen	2 dpl	G	G	G
25	0 Installationsgodkendelse (den enkelte lokalitet)	0,2 dpl	G	G,C	C

	Installationsplan		Answarsfordeling		
Id	**Opgave beskrivelse**	**Arbejds-dage**	**Initierer**	**Udføre**	**Godkende**
26	0 As-build	0,5 dpl	C,G	G	C
27	0 Godkendelse af As-build tegninger	5	G,C	C	C
28	As-build godkendt	0			C
29	7.5 Accepttest				
30	Flowtest	1-10 Note 1	G	C,G	C
31	Funktionstest	1-10 Note 1	G	C,G	C
32	7.6 Godkendelse				
33	0 Installationsgodkendelse, alle lokaliteter	1	G		C
34	7.6.2 Godkendelse af leveret udstyr	1	G		C
35	7.6.3 Godkendt accepttest	1	G		C
36	Installationsfasen afsluttet	0			

Noter:
Dpl: Dage per lokalitet.
Note 1: Afhænger af om der er indført nye elementer eller funktioner.
Se afsnit: 7.5 Accepttest.

7.7.2 Gantt-diagram (Projektplan)

Gantt-planen vil blive leveret til ordregiver i forbindelse med projektplanlægningen. Den vil indeholde:

- Alle planlagte aktiviteter (primære aktiviteter og delaktiviteter).
- Varighed (Standard kalender tid angivet i arbejdsdage). Bemærk at varigheden kan variere på nogle aktiviteter baseret på installerede mængder og årstid (Perioder med frost og Ferieperioder).
- Fra dato og Til dato for alle aktiviteter.

De fleste aktiviteter i skabelonen (ovenfor) og i Gantt-planen anvender referencer til faser- og procesbeskrivelser, dermed er der sporbarhed mellem de to planer.
Se afsnit: 7.7.3 Eksempel på konkret plan

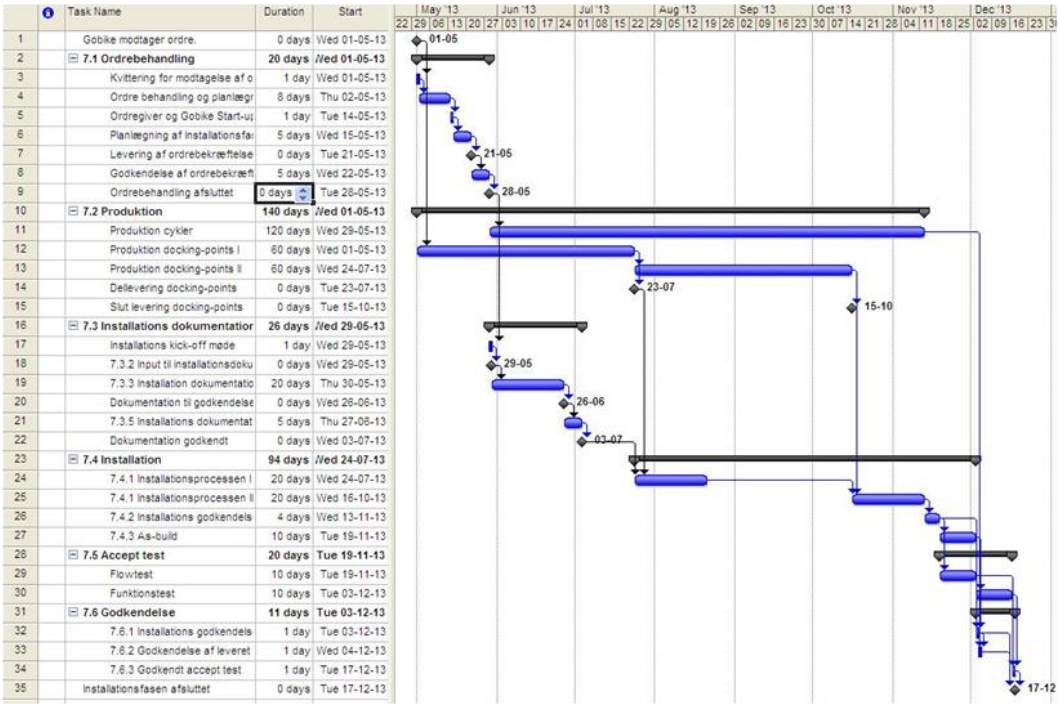
7.7.3 Eksempel på konkret plan

Nærværende plan er udarbejdet som et eksempel på brug af den generiske installationsplan med følgende forudsætninger:

Mindre installation i en kommune

Der har været en dialog mellem GoBike og Kommunen eller organisationen, der afgiver en ordre den 1/5/2013.

Ordren er på 20 docking-stationer med 10 docking-points på hver station og 100 cykler.



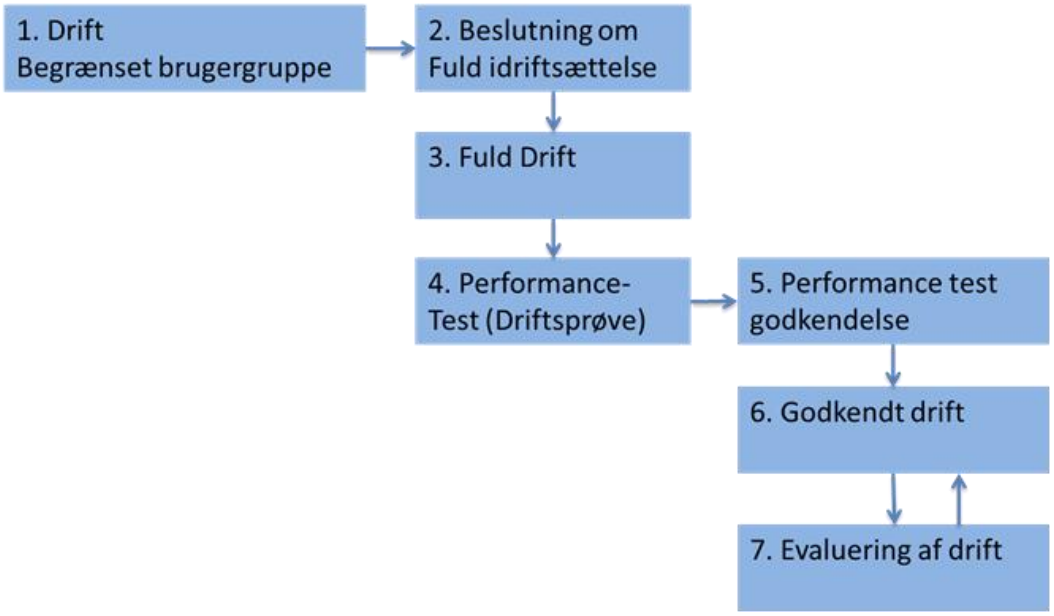
	Task Name	Duration	Start
1	Gobike modtager ordre.	0 days	Wed 01-05-13
2	**7.1 Ordrebehandling**	**20 days**	**Wed 01-05-13**
3	Kvittering for modtagelse af o	1 day	Wed 01-05-13
4	Ordre behandling og planlægr	8 days	Thu 02-05-13
5	Ordregiver og Gobike Start-u	1 day	Tue 14-05-13
6	Planlægning af installationsfa	5 days	Wed 15-05-13
7	Levering af ordrebekræftelse	0 days	Tue 21-05-13
8	Godkendelse af ordrebekræft	5 days	Wed 22-05-13
9	Ordrebehandling afsluttet	0 days	Tue 28-05-13
10	**7.2 Produktion**	**140 days**	**Wed 01-05-13**
11	Produktion cykler	120 days	Wed 29-05-13
12	Produktion docking-points I	60 days	Wed 01-05-13
13	Produktion docking-points II	60 days	Wed 24-07-13
14	Dellevering docking-points	0 days	Tue 23-07-13
15	Slut levering docking-points	0 days	Tue 15-10-13
16	**7.3 Installations dokumentatior**	**26 days**	**Wed 29-05-13**
17	Installations kick-off møde	1 day	Wed 29-05-13
18	7.3.2 Input til installationsdoku	0 days	Wed 29-05-13
19	7.3.3 Installation dokumentatio	20 days	Thu 30-05-13
20	Dokumentation til godkendelse	0 days	Wed 26-06-13
21	7.3.5 Installations dokumentat	5 days	Thu 27-06-13
22	Dokumentation godkendt	0 days	Wed 03-07-13
23	**7.4 Installation**	**94 days**	**Wed 24-07-13**
24	7.4.1 Installationsprocessen I	20 days	Wed 24-07-13
25	7.4.1 Installationsprocessen II	20 days	Wed 16-10-13
26	7.4.2 Installations godkendels	4 days	Wed 13-11-13
27	7.4.3 As-build	10 days	Tue 19-11-13
28	**7.5 Accept test**	**20 days**	**Tue 19-11-13**
29	Flowtest	10 days	Tue 19-11-13
30	Funktionstest	10 days	Tue 03-12-13
31	**7.6 Godkendelse**	**11 days**	**Tue 03-12-13**
32	7.6.1 Installations godkendels	1 day	Tue 03-12-13
33	7.6.2 Godkendelse af leveret	1 day	Wed 04-12-13
34	7.6.3 Godkendt accept test	1 day	Tue 17-12-13
35	Installationsfasen afsluttet	0 days	Tue 17-12-13

Små ordrer vil kunne leveres med ca. 7 mdr. levering tid, større (>30 sites) på ca. 9 mdr.

8 Drift

Denne fase starter efter den første godkendte installation, og fortsætter i resten af projektets levetid.

Når det installerede GoBike system er klar til at tages i brug, leverer GoBike det aftalte antal cykler til de pågældende lokaliteter. Dette sker normalt i forbindelse med godkendelsen af installationen.



Figur 8: Driftsfasens processer. Se alle faser i afsnit: 0
Projektets **faser**

Partiel idriftsættelse, som beskrevet i proces 1 og 2, anvendes bl.a. i forbindelse med idriftsættelse af de første kommuner, men kan også anvendes fx i en introduktionsperiode, hvor der normalt ikke vil være brug for alle cykler fra starten.

Det vil i nogle situationer være naturligt at gå direkte i Fulddrift (i så fald udelades proces 1 og 2).

8.1 Begrænset drift

Begrænset drift inkluderer typisk ikke hele det planlagte system. Formålet med en begrænset driftsperiode er typisk:

- at opnå tidlige driftserfaringer forud for egentlig driftsstart i stor skala,
- at komme i gang så tidligt så muligt, med en del af systemet, hvis hele systemet ikke er færdiginstalleret.
- at træne alle involverede parter i driftsrutiner af systemet så tidligt så muligt.

Det tilstræbes at denne driftsperiode gennemføres så den svarer til endelig drift – blot i mindre skala.

8.2 Fuld idriftsættelse

Når systemet og de involverede parter er klar til fuld idriftsættelse, aftales en endelig driftsstartsdato. Det er typisk Cykel DK som, i tæt samråd med den aktuelle kommune og GoBike, beslutter hvornår systemet skal sættet i fuld drift.

8.3 Fuld drift

Fuld drift omfatter alle systemets elementer. Følgende processer skal være klar til drift, før det samlede system kan idriftsættes:

- IT-systemer
- Daglig nivellering af cykler.Vedligeholdelse af cykler og dockingstationer
- Procedure ved flytning af stationerTelefon support
- Administration af system
- Økonomistyring
- Måling og rapportering (SLA)
- Anden rapportering

De enkelte processer beskrives i detaljer i forbindelse med SLA specifikation og rapport udarbejdelse. Se afsnit:0
Projektdokumentation.

8.4 Driftsprøve

Indholdet af Driftsprøven beskrives i testplanen og Driftsprøvens specifikationen, som udarbejdes i Specifikationsfasen. Se afsnit: 0
Testplan og testspecifikationer.

I driftsprøve perioden vil GoBike dagligt opdaterer en driftsprøverapport med en daglig konklusion. Den endelige driftsprøverapport vil bestå af en sammenfatning og de enkelte dagsrapporter. Driftsprøven gennemføres kun ved afslutning af den første installationsfase. Det vil dog være naturligt at gennemfører driftsprøven efter større software- eller strukturændringer.

8.5 Driftsprøvens godkendelse

Driftsprøven godkendes, når alle beskrevne krav er opfyldt.

8.6 Godkendt drift

Denne proces svarer til processen 0
Fuld drift beskrevet ovenfor.

8.7 Evaluering af drift

Det er aftalt at driften evalueres løbende. Dette sker på baggrund af de månedlige SLA rapporter og andre drifts input (erfaringer fra drift og vedligehold, driftsanalyser, bruger tilbagemeldinger og brugerundersøgelser).

8.7.1 Driftsmøder

GoBike tilbyder at afholde driftsmøder en gang månedligt. Hvis Cykel DK vurderer at det er formålstjenligt kan møderne holdes med støre interval fx som kvartals møder.

Standard dagsorden

- Gennemgang af driften siden sidste driftsmøde
- SLA rapporter
- Planlagte aktiviteter i perioden frem til næste driftsmødeGennemgang af kendte fejl (Se afsnit: 12.2.2 Projektsoftware fejlstatusliste).
- Nye ønsker til fremtidige software pakker
- Prioritering af ønsker og ideer
- evt

8.7.2 SLA

Det er aftalt at SLA aftalen revurderes efter hhv. 3 og 6 måneders drift.

9 GoBike, virksomhedspræsentation og nøglekompetencer

I det følgende opsummeres GoBikes overordnede mål i forbindelse med den danske by- og pendlercykelløsning. GoBike er derefter præsenteret gennem en kort virksomhedspræsentation.

9.1 GoBikes, vision, mission og målsætning

Det er GoBikes vision og målsætning at:

- Levere et førsteklasses landsdækkende by- og pendlercykelsystem med væsentlige fordele for såvel erhvervslivet i byerne, turismen, den offentlige transport som for borgerne i Danmark.
- Forbedrer fleksibiliteten, effektiviteten og pålideligheden af en sammenhængende transportløsning, hvor cyklen er integreret som et naturligt element af offentlig transport.
- Levere et system som er åbent for integration med andre relaterede systemer.
- Udnytte by- og pendlercykelløsningen til kommerciel anvendelse inden for andre og nye forretningsområder.
- Optræde som en professionel leverandør med solid økonomisk og organisatorisk styrke til at deltage i et langt og krævende kontraktuelt forløb.
- Eksporterer den innovative og banebrydende danske pendlercykelløsning til andre udenlandske byer.

Se Kvalitetsmål og miljømål i afsnit: 13 Kvalitets- og miljøstyring

9.2 Virksomhedspræsentation

GoBike er en virksomhedskonstellation, der med den ønskede kombination af kompetencer og ressourcer er i stand til, sammen med GoBike A/S og de i Cykel DK deltagende kommuner og trafikmyndigheder, at identificere og sikre implementering af den løsning, der på bedste vis lever op til de danske krav og forhold.

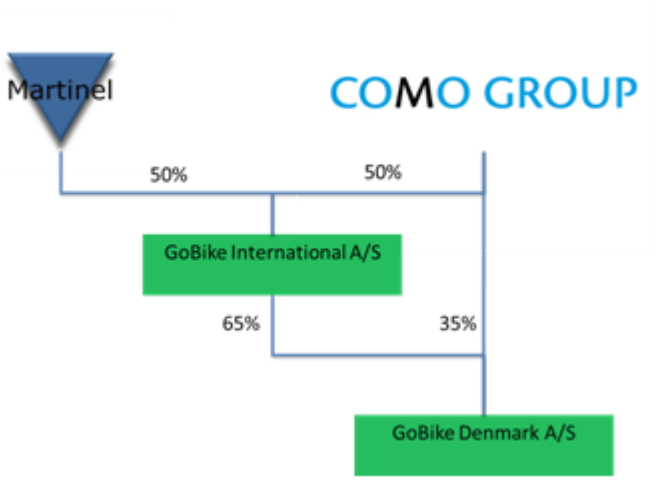
GoBike A/S ejes 65 % af GoBike International A/S og 35 % af COMO GROUP som er NetInnovation A/S moderselskab. GoBike Internationale ejes ligeligt imellem danske COMO GROUP og hollandske Martinel. Se organisationsdiagram nedenfor.

I forbindelse med indgåelse af aftalen imellem Cykel DK og GoBike A/S, vil ejerkredsen i GoBike blive udvidet og kapitalgrundlaget styrket, så det matcher de ambitioner og forpligtelser vi har på både kort og lang sigt.

COMO GROUP og Martinel, har indgået juridisk bindende aftaler om at stille begge virksomheders ressourcer og kompetencer til rådighed for GoBike og

dennes kommende kunder. Derudover er der indgået strategiske samarbejdsaftaler med en række samarbejdspartnere.

Underleverandørerne har hver især dokumenteret erfaring fra produktion, installation og drift af elektricitet (SEAS-NVE), betalingsløsninger (Easypark, Nets, Pensio) og landsdækkende serviceløsninger (Falck). De enkelte underleverandører bidrager således med kompetencer på hver deres fagområde og udgør tilsammen en homogen konstellation.



Figur 9: Ejer struktur bag GoBike Denmark A/S

Herefter følger en nærmere præsentation af virksomhederne bag GoBike-konstellationen.

9.2.1 COMO GROUP

COMO GROUP er NetInnovation moderselskab som ejes og ledes af en række erfarne forretningsudviklere, der primært investerer i og opbygger virksomheder, som er Innovative med internettet som strategisk omdrejningspunkt.

Den aktuelle by- og pendlercykelløsning placeres i et datterselskab, der hedder GoBike. GoBike-konceptet har fra starten haft ”Cycling the Internet” som ”DNA”.

De mange års erfaring i IT branchen hos ejerne af NetInnovation har været baggrunden for, at vi har kunnet designe og udvikle en kompleks by- og pendlercykelløsning, hvor den nyeste cykelteknologi kombineres med en tablet pc løsning, som understøtter brugeren på en hel ny og innovativ måde.

9.2.2 Martinel

Martinel har arbejdet med offentlige parkeringsløsninger i mange år. Da mange der parkerer biler på større parkeringspladser har et behov for at komme videre

frem til bestemmelsesstedet og tilbage igen, fandt man at by- og pendlercykelløsninger ville være et godt supplement. Martinel har over de sidste år analyseret by- og pendlercykelmarkedet internationalt og har indgået en distributionsaftale med Urbike i Spanien.

Martinel tager alt sin erfaring på offentlige parkeringsløsninger og på by-og pendlercykelområder samt aftalen med Urbike med ind i GoBike International, hvor det er ambitionen at forfine GoBike løsningerne og sælge den internationalt.

9.2.3 Samarbejdspartnere

GoBike arbejder sammen med en række samarbejdspartnere. Se afsnit: 10.2.3Underleverandører og samarbejdspartnere.

9.3 GoBikes nøglekompetencer

9.3.1 Brugervenlighed

Vigtigst af alt er at GoBikes system bliver let tilgængeligt, så brugerne hurtigt tager det til sig: GoBike samarbejder med Microsoft og en række eksperter i brugervenlighed for konstant at optimere på simpel og effektiv navigation for brugerne på alle systemets platforme.

9.3.2 Fremtidssikret

GoBikes løsning består af standardkomponenter der er både kan og vil bliver udviklet både sammen og hver for sig.

9.3.3 Implementering og ibrugtagning

GoBikes virksomhedskonstellation er ikke alene ideel til at håndtere et vellykket, trinvist nationalt implementeringsprogram, men løsningen er også designet med udgangspunkt i netop denne tankegang.

9.3.4 Åbenhed

Hele GoBikes løsning er baseret på åbenhed: I både Barcelona, Danmark og Holland udvikler GoBike og deltager aktivt i en proces med henblik på integration af en række forskellige leverandører og systemer.

9.3.5 Sammenfatning

- GoBike er en virksomhedskonstellation bestående af konsortiemedlemmer, der hver især har bevist, at de med succes kan implementere nationale systemer, der involverer mange forskellige myndigheder, operatører og transportformer.
- GoBike har en innovativ løsning, som anvender teknologi på en helt ny måde til at optimere oplevelsen og effektiviteten gennem anvendelsen af cykler i urbane miljøer. Tablet Pc'en er under fantastisk udvikling i disse år, hvorfor

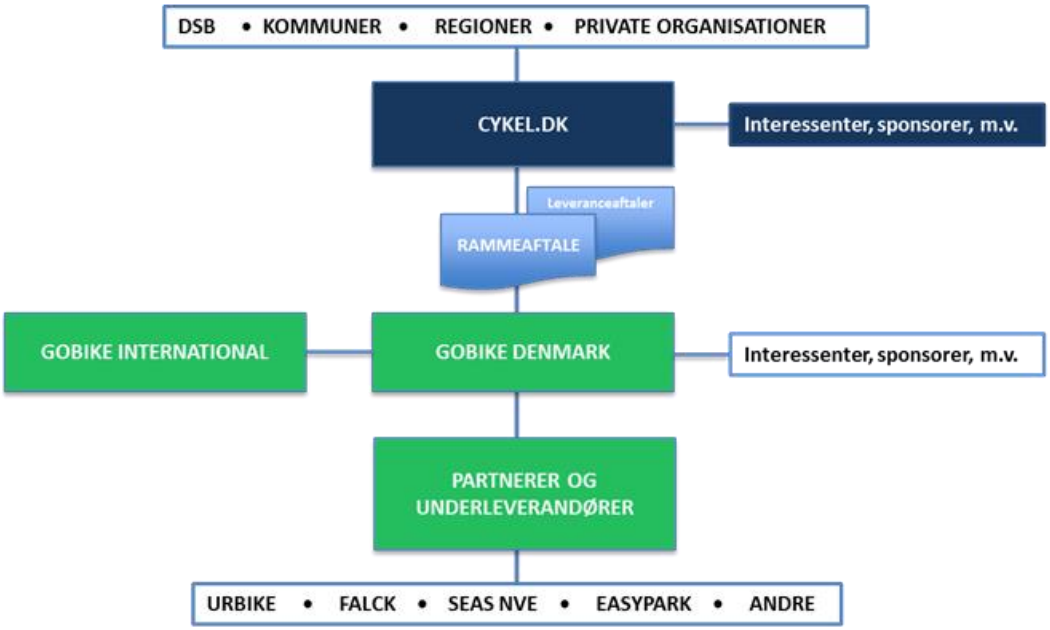
løsningen løbende kan og vil blive opdateret med ny funktionalitet til fordel for brugerne.

- GoBike har udviklet et koncept, som kombinerer offentlige ejede cykler med virksomhedsbetalte cykler og dockingstationer. Dette vil sikre en større udbredelse af løsningen, hvilket betyder at cyklerne kommer helt tæt på brugerne, da virksomhederne forventes at købe cykler og dockingstationer til montering direkte ved virksomheden. Virksomhedernes cykler kan også anvendes og parkeres på offentlig grund, da de vil være fuldstændigt integrerede med den overordnede cykelløsning.

GoBike har den tilstrækkelige viden til at identificere og sammen med Cykel DK at styre de væsentlige risici og omkostninger som, både direkte og indirekte, vil opstå i projektet.

10 Projektorganisering og rollefordeling

I dette afsnit beskrives Cykel DK's og GoBikes projekt organisation, og hvordan de to organisationer samarbejder.



Figur 10: Organisatorisk struktur Cykel DK GoBike.

10.1 Cykle DK's projekt organisation

Cykel DK formidler kontakten mellem leverandøren og nye kommuner/erhvervskunder, der ønsker at få adgang til By-og pendlercykel løsningen. Cykel DK deltager i opstartsarbejdet.

Cykel DK indgår herefter en samarbejdsaftale med kommunen/erhvervskunden og står også for at indhente tilbud hos leverandøren.

Når et samarbejdet er udrullet i en ny geografisk zone vil Cykel DK danne rammen for opfølgning ved regelmæssige driftsmøder.
Rolle: Godkender i fasen med overordnet implementering.
Cykel DK stiller med ressourcer til Forvaltningsgruppen.

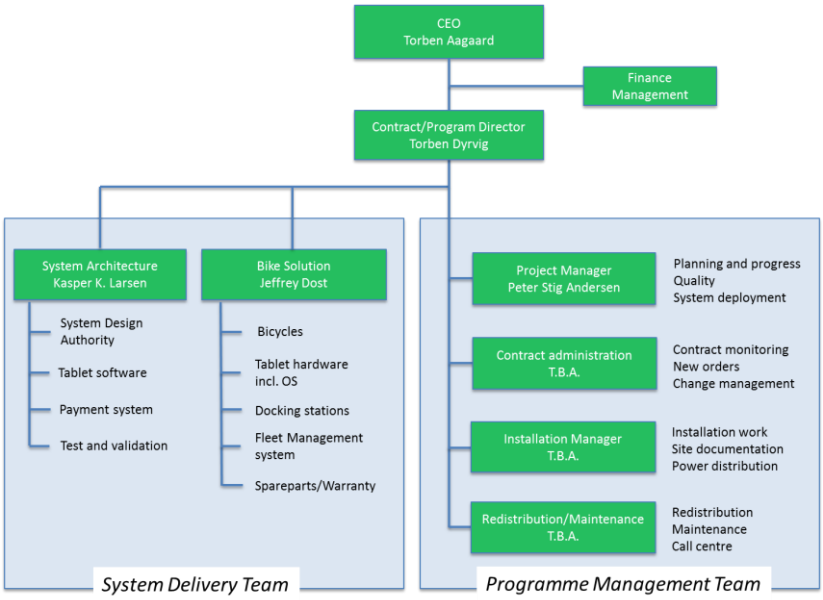
10.2 GoBikes organisation

GoBike er et nyetableret selskab med den mission at designe, etablere og drive en ny innovativ cykeldelingsløsning med en høj udlejningsfrekvens ved hjælp af et unikt fokus på slutbrugernes behov. Læs mere om GoBike i afsnit: 9. GoBike, virksomhedspræsentation og nøglekompetencer

For at dække alle fagområder, og for at opretholde høje kvalitetsstandarder, så har GoBike etableret et team af eksperter som mestre disse forskellige discipliner.

10.2.1 Organisation

Nedenstående diagram viser GoBikes projektorganisation, der får det overordnede ansvar for implementering, drift og vedligeholdelse af den danske GoBike løsning. Alle ressourcer er identificeret, selv om nogle endnu ikke kan offentliggøres (TBA). Dette vil ske senest på datoen for indgåelse af rammeaftalen.



Figur 11: GoBike organisation 9/08/2012

CEO Torben Aagaard
Den administrerende direktør (Torben Aagaard) har det overordnede kommercielle ansvar for gennemførelsen af projekter. Han vil blive direkte involveret i at sikre finansieringen af projekterne, at håndtere kunderelationer samt øvrige kommercielle interesser.

Contract / Program Director Torben Dyrvig Nielsen.
Kontrakt og Program Direktør (Torben Dyrvig) vil være den primære grænseflade overfor kunderne. Han har ansvar for en vellykket projektgennemførelse. Han er ansvarlig for alle kontraktmæssige opgaver, der skal gennemføres som en del af rammeaftalen.
Han er blandt andet ansvarlig for følgende aktiviteter:

- Overordnet projektstyring og -ledelse, både internt og i forhold til kunden og de lokale partnere.
- Definition, implementering og ledelse af projektorganisationen.
- Forvaltning af rammeaftalen, ordrer, tekniske tidsplaner og kvalitetssikring.
- Gennemførelse af og opfølgning på risikostyring.
- Generel koordinering af arbejdet.

I denne egenskab udsteder og modtager han alle aftaleretlige, kommercielle og tekniske dokumenter, og sikrer at de er tilgængelige for de forskellige partere.

Systemchef, Software Kasper K. Larsen
Systemchef (Kasper K. Larsen) er Designmyndighed for den samlede løsning og ansvarlig for softwaren leverancerne. Denne rolle omfatter bl.a. følgende aktiviteter:

- Definition af den samlede tekniske løsning og systemet funktionalitet.
- Udarbejdelse af systemets specifikationer.
- Sikring af teknisk koordinering og verifikation af systemdesign fra designfasen indtil systemet er i drift.
- Realisering af tværgående aktiviteter på systemniveau:
    - System Konfigurationsstyring.
    - Systemintegration og validering.
    - Test-og systemvalidering.
    - Arbejdspakke definitioner.

Han vil også være ansvarlig for udarbejdelse af dokumentation i forbindelse med softwareudvikling og -drift.

Systemchef, Cykelløsning Jeffrey Dost

Systemchef for cykelløsningen (Jeffrey Dost) er ansvarlig for hele hardware-løsningen, herunder blandt andet cykler, tabletter og dockingstationer. Rollen omfatter bl.a. følgende aktiviteter:

- Definition af hardware-løsning og teknisk krav til bl.a. pålidelighed.
- Produktionsstyrring af udstyr, reservedele og delkomponenter.
- Sikring og opfølgning af underentrepriser.
- Samordning af underleverandørernes produktioner.
- Kontrol og accept af udstyr hos underleverandørerne (factory acceptance).

Han vil også være ansvarlig for udarbejdelse af dokumentation vedrørende hardwareudvikling, test og vedligeholdelse samt uddannelse af vedligeholdelsespersonale.

Project manager Peter Stig Andersen
Projektlederen (Peter Stig Andersen) er ansvarlig for dag-til-dag teknisk projektledelse og opfyldelsen af alle planlagte milepæle.
Han er blandt andet ansvarlig for:

- Konsolidering af alle indikatorer og sammenfattende rapporter, der er nødvendige for løbende projektopfølgning:
    - Projektets tidsplan.
    - Projektindikatorer og udarbejdelse af statusrapporter.
    - Ledelsesopfølgning.
    - Implementering og koordinering af arbejdet.
- Organisering af projektmøder med Cykel DK og andre involverede parter i projektet.
- Project Management Plan opfølgning.
- Organisering af tekniske koordineringsmøder med Cykel DK og interne projektmøder.
- Organisering af godkendelsesprocesser.
- Kvalitetssikring af det udførte arbejde, sikring overholdelse af tidsplaner og ikke mindst opdatering af:
    - Kvalitetssikringsplaner.
    - Tidsplaner.
    - Risikostyringsrapporter.

Kontraktadministrator (TBA)
Kontraktadministratoren (TBA) er ansvarlig for dag-til-dag opfølgning på kontraktmæssige spørgsmål i tilknytning til rammeaftalen og ordrer med kunderne samt kontraktforholdet med GoBikes partnere og underleverandører. Rollen vil sørge for, at alle kontraktmæssige forpligtelser vil blive overvåget og opfyldt af alle involverede parter.

Kontraktadministratoren bistår Kontrakt og Programdirektøren med at forberede forhandlingerne om ændringer eller udvidelse af rammeaftalen.

Installation Manager (TBA)
Installationschefen (TBA) vil være ansvarlig for alle installationsarbejder. Installationschefen vil være ansvarlig for:

- Planlægning og dokumentation af installation af udstyr.
- Udføre "site-survey" og modtage de nødvendige godkendelser (kundeansvar).
- Koordinering af installationsarbejder med Cykel DK.
- Teknisk opfølgning på installationsstedet.
- Ledelse af installationsunderleverandører.
- Sikre etablering af strømforsyning til alle lokaliteterne.

Nivellering og vedligeholdelses manager (TBA / Falck)
Nivellering- og vedligeholdelseschefen (TBA / Falck) er ansvarlig for alle arbejder i tilknytning til den daglige drift, overvågning og vedligeholdelse af GoBike systemet. Selv om GoBike har valgt at udlicitere dette ansvar til FALCK, vil deres organisation ses som en integreret del af GoBikes Delivery Management Team.
Nivellering og vedligeholdelseschefen vil blandt andet være ansvarlig for:

- Organisere nivellering på en optimeret måde der opfylder de aftalte serviceniveauer.
- Lede nivelleringsaktiviteter i de forskellige geografiske områder.
- At overvåge den samlede drift.
- Administrerer den lokale vedligeholdelsesorganisation for at sikre, at cykler og dockingstationer fremtræder i god vedligeholdt stand og således at de aftalte serviceniveauer er opfyldt.
- Opfyldelse af Socialansvarlighedskrav.

10.2.2 Andre roller
Der er derudover identificeret roller som Kvalitetssikringsansvarlig og miljøstyringsansvarlig. Se afsnit 13. Kvalitets- og miljøstyring.

10.2.3 Underleverandører og samarbejdspartnere

GoBike er ansvarlig for det arbejde, der udføres af underleverandører på samme måde, som hvis GoBikes egen organisation havde udført arbejdet. GoBike vil sikre, at alle underleverandører overholder kravene i rammeaftalen.

De vigtigste underleverandører, der er involveret, er anført i nedenstående tabel:

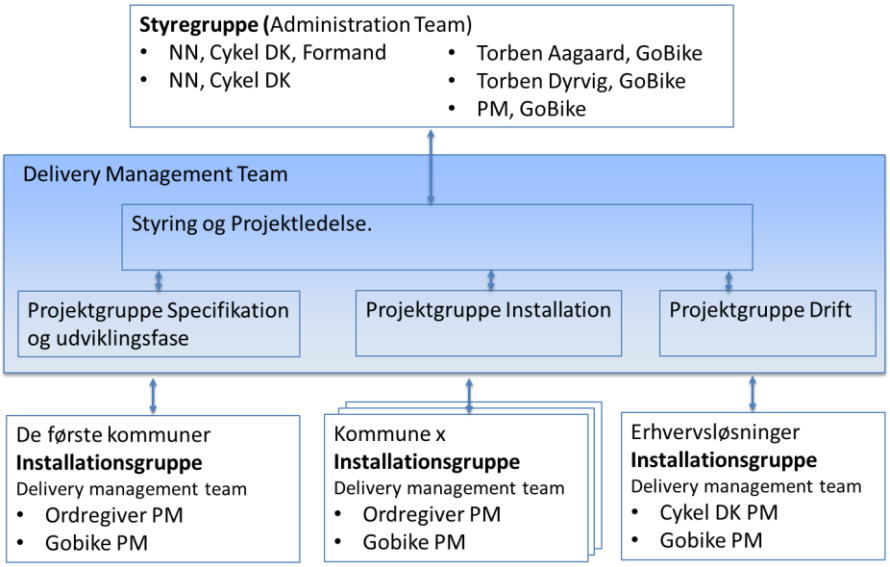
Underleverandør	Aktivitet	Samarbejdsform
Urbike/Modular	Design og fremstilling af cyklen løsning	Underleverandør
I+D3/Advantech	Levering af tablet hardware	Underleverandør
Alpha Solution	Levering af softwareløsning	Underleverandør
Falck	Vedligeholdelse, reparation og nivellering af cykler.	Underleverandør
Seas NVE	Leverandør af Grøn strøm	Underleverandør
Easypark	Leverandør af lokale betalingsløsninger Håndtering af korttransaktioner	Underleverandør
TBD	Installation af Dockingstationer	Underleverandør

10.3 Projektledelse

Ledelsesstrukturen er etableret med basis i udbuddets krav.
Ledelsesstrukturen er baseret på en fælles Forvaltningsgruppe, hvor både Cykel DK og GoBike er præsenteret.

GoBike implementerer en Lean struktur på projektgruppe niveau i "Delivery Management Team", hvori projektleverancen vil blive leveret og godkendt af Cykel DK's repræsentanter.

Eskalering af projektemner, konflikter og risici som ikke kan håndteres på et lavere niveau er beskrevet i afsnit: 11.2.3 Rapportering, Risikostyring og 12.2.3 Emne eskaleringsprocedure samt 0
Ændringshåndtering [Change management].



10.3.1 Styregruppe

Styregruppen er projektets højeste beslutnings- og ledelsesorgan. Styregruppen agerer på strategisk niveau og fastlægger langsigtet strategier. Styregruppen følger op på fremdrift, økonomi, kvalitet, risiko og sikre kommunikation og samarbejdet i projektet.

Cykel DK fører referat og forbereder agenda m.v. for styregruppen.

10.3.2 Delivery Management team

Delivery management teamet består af Projektstyringsgruppe og 3 projektgrupper. Hver gruppe bemandes med relevante projektdeltagere fra Cykel DK og GoBike. Alle grupperne er ikke nødvendigvis aktive i samme periode og der vil sandsynligvis være personsammenfald i flere grupper. Hver gruppe har en GoBike

Projektleder som ansvarlig for at rapporterer til Delivery managements projektledelse.

Når der holdes projektmøder er det Cykel DK's ansvar at der føres referat af møderne.

Delivery managements Projektledelse
I denne gruppe leverer GoBike, projektets daglige ledelse. I denne gruppe holdes fremdriftsmøder hvor Cykel DK's projektleder og GoBikes Projektleder er faste deltagerer.
Ledelsesdokumentation, skabeloner, projektplaner etc. leveres i denne gruppe til godkendelse.
Delivery management teamet referer til Styregruppen.
Det er aftalt at Delivery managements Projektledelsen har mandat til at ændre projekts leverance (fx antal) inden for +/- 10 % uden forudgående godkendelse fra Styregruppen.
Reference: R33o: Req. 18.4 Changes within the tolerance limits of an Order.

Specifikation og udvikling
I denne gruppe leverer GoBike systemspecifikationer og testdokumentation til godkendelse. Denne gruppe står også for gennemførelse af aftalens testaktiviteter.

Installation
I installationsgruppen leveres generisk installationsdokumentation til godkendelse.

Drift
I driftsgruppen leverer GoBike driftsdokumentation til godkendelse. Når drift starter vil denne gruppe holde månedlige driftsmøder.

10.3.3 Installationsgrupper
For hver kommune eller gruppe af kommuner skal der oprettes en gruppe, som får ansvaret for fremdriften af installationsprojektet. Gruppen refererer til Delivery management teams projektledelse.

GoBike har ansvar for at sikre fremdrift i installationsarbejdet og sikre at alle installations-projektets aftaler overholdes. GoBike vil imidlertid være stærkt afhængige af at kommunernes leverancer til projektet leveres som aftalt. Evt. forsinkelser i ordregiver eller dennes repræsentanters leverancer, kan naturligvis fører til forsinkelser i GoBikes leverancer.

10.4 Interessent- og aktørhåndtering
Det foreslås at repræsentanter fra interesseorganisationer og andre interessenter er repræsenteret i et vejledende styrelsesorgan (et såkaldt Advisory Board).
Se afsnit 11.3. Advisory Board i løsningsbeskrivelsen.

11 Risikostyring og identifikation af muligheder

Omhyggelig styring af risici vil bidrage væsentligt til en vellykket gennemførelse af projektet. Risikostyring er derfor en integreret del af ledelsesprocessen. Risikostyring fokuserer på tidlig identifikation af risici i alle projektets faser.

11.1 Formål, risikostyring

Det primære mål er at sikre, at projektet gennemføres som planlagt af Cykel DK og GoBike ved at identificere og imødegå de risici, der vil være forbundet med gennemførsel af projektet.

Sekundært vil risikostyring øge gennemsigtigheden i forhold til projektets risici for alle deltagne parter.

11.2 Risikostyringsproces

Projektets risici bliver identificeret i en ensartet og sammenhængende proces i hele projektorganisationen. Dette gør det muligt for projektledelsen at rapportere om risici på styregruppeniveau og på projektniveau.

Risikostyring er basseret på følgende grundlæggende principper:

- Alle deltagere i projektet har ansvar for at rapporterer risici og ny opdagede muligheder, dette skal gøres til projektledelsen.
- Alle projektets medlemmer skal medvirke til at identificere, vurdere og reducere risici inden for hver af deres individuelle discipliner og ansvarsområder.
- Risikostyring vil blive udført pragmatisk og effektivt med fokus på at opnå projektets overordnede mål.
- Ejerskabet af risici forbliver så tæt som muligt på de operationelle ledelsesniveauer.

Risikostyringsprocessen er følgende:

- Etablering af risikostyringsorganisation.
- Etablering af risikoregister. Se [37] Risikoregister i afsnit: 15.4 Dokumentliste
- Opfølgning, opdatering og rapportering af risikostyringsarbejdet til Styregruppen.

11.2.1 Risikostyringsorganisation

GoBike kar ansvar for risiko styring i projektet. Risikostyring er dog en fælles aktivitet som gennemføres af projektledelsen (Se afsnit: 0
Delivery Management team) og hvor både Cykel DK og GoBike er ansvarlige for processen.

Projektledelsen vil enten selv implementerer risikostyring eller uddelegere risikostyringsaktiviteterne til en eller flere af projektets deltagere.

11.2.2 Etablering og vedligeholdelse af Risikoregister

Der afholdes risikostyringsmøde ved projekters start, hvor alle kendte risici identificeres. I projektets levetid afholdes risikostyringsmøder mindst hver 3 måned (i starten oftere) med repræsentanter fra alle projektets arbejdsgrupper. Se [37] Risikoregister i afsnit: 15.4 Dokumentliste

Dagsorden (Kvartalsmøder)

- Gennemgang af status for identificerede risici. Opdatering hvor relevant.
- Identifikation og klassificering af nye risici.
- Vurdering af kvaliteten af risikooplysninger (proces og data).

11.2.3 Rapportering, Risikostyring

Projektledelsen rapporterer direkte til Styregruppen. Rapporteringen vil indeholde:

- Risikoregister.
- Vurdering af kvaliteten af risikostyringsdata.
- Eskalering af risici som kræver styregruppens håndtering.
-

11.3 Klassificering af risiko

Risici klassificeres for opnå klare og ensartede vurderinger af risici. Hver enkelt identificeret risiko klassificeres og kvantificeres i risikoklasser for sandsynlighed og konsekvens (tab i tid, funktionalitet og penge).

Kvalifikation af risici anvender en let modificeret ”Risman metode”:

11.3.1 Kvalifikation af sandsynlighed:

Klasse	Sandsynlighed
1	< 5 %
2	5 – 25 %
3	25 – 50 %
4	>50 %

11.3.2 Klassifikation af tid, funktion og økonomi:

Klasse	Konsekvens (Tid)	Tab af funktionalitet eller feature	Økonomiske tab
0	Ingen	Ingen	Ingen
1	< 2 uger	Lille midlertidigt tab. Ingen blivende tab	< DKK 350.000
2	2-4 uger	Midlertidigt tab. Ingen blivende tab	DKK 350.000 – 750.000
3	4-8 uger	Blivende men acceptabelt tab	DKK 750.000 – 7.500.000
4	> 8 uger	Blivende ikke acceptabelt tab	> DKK 7.500.000

Baseret på denne klassificering kan der prioriteres med hensyn til de relevante risikostyringsforanstaltninger, der skal træffes. Når der ikke er nogen virkning i tid, funktionalitet eller penge, anvendes klassen i "0".

11.3.3 Risikoniveau beregning

Formelen til beregning af risikoniveau er følgende:
Risiko niveau = sandsynligheden klasse * sum (konsekvens tid + funktions tab + økonomisk tab).

11.3.4 Eksempel

Sandsynlighed = klasse 2;
Konsekvenser i tid = klasse 1;
Tab af funktionalitet = klasse 3;
Økonomisk tab = klasse 4;
Risiko niveau = 2 x (1 + 3 + 4) = 16.

11.3.5 Toleranceniveauer

I risikostyring anvendes fire toleranceniveauer:

Risiko niveau	Tolerance niveau	Beskrivelse af tolerance niveau
4 til 8	Acceptabel	Lille indflydelse på opfyldelse af projektets mål
9 til 16	Ikke acceptable	Større indflydelse på opfyldelse af projektets mål
17 til 24	Kritisk	Signifikant indflydelse på opfyldelse af projektets mål
25 til 48	Top kritisk	Uoverskuelig stor indflydelse på opfyldelse af projektets mål

Se [37] Risikoregister i afsnit: 15.4 Dokumentliste

12 Projekt- og Kontraktstyring

I dette afsnit beskrives de styringsredskaber som vil blive anvendt til ændringshåndtering og emnehåndtering i løbet af projektets levetid.

12.1 Ændringshåndtering [Change management]

Projektet anvender et ændringshåndteringssystem som er beskrevet i nærværende afsnit. Det er udarbejdet i overensstemmelse med ISO9001 og anerkendte projektstyringsprincipper.

Ændringshåndteringsprocessen er en formel proces som etablerer skriftlige aftaler om ændringer.

12.1.1 Omfang og begrænsninger

Ændringshåndteringssystemet bruges når der aftales ændringer til:
Rammeaftalen, her under aftalens produkter og ydelser [R325 M.req 18.1],
En ordre [R328 M.req 18.2].

Ændringshåndteringssystemet anvendes Ikke til:

- Løbende ændringer af installationer (oprettelse af nye / flytning af eksisterende / demontering af eksisterende docking-stationer) [R332 M. req 18.3] . Se afsnit: 12.1.9 Løbende ændringer.
- Anmodninger om ændring af dokumenter, medmindre disse ændringer initieres af ændringer som er dækket af processen.
- Dokumentversionsstyring er beskrevet i afsnit: 15 Dokumentation.

12.1.2 Ændringshåndteringsprocessen

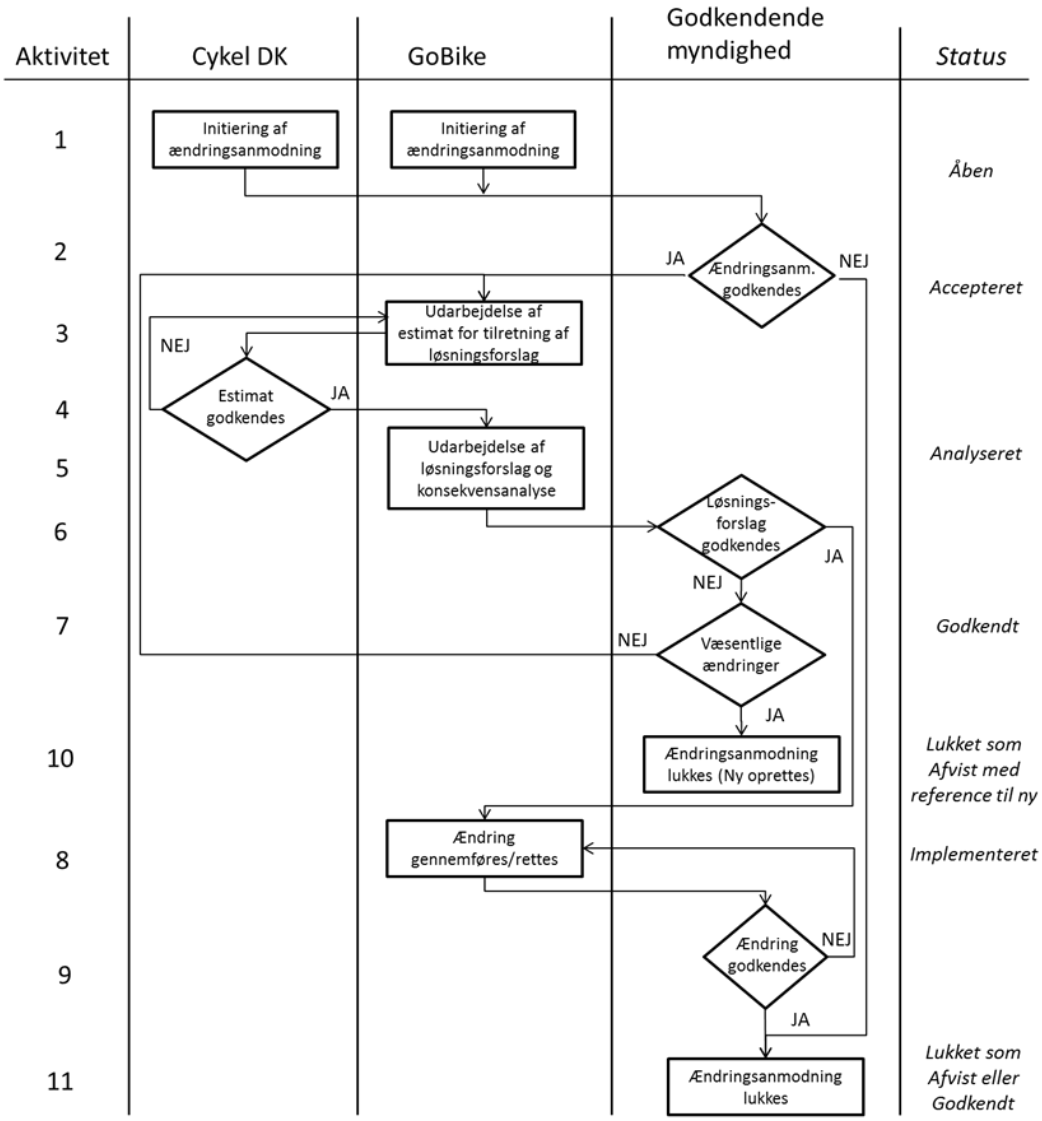
Beskrivelsen af ændringshåndteringssystemet er inddelt i følgende afsnit:

- Generisk ændringsstyringsproces: En generel beskrivelse af ændringshåndteringsprocessen og tilhørende dokumenter:
- Godkendende myndighed, som beskriver kompetence forhold.
- Ændringsanmodning
- Ændringslog
- Ændringer af hardware- eller software design.
- Uenighed: Hvordan eskaleres uenighed om ændringer

Sidste afsnit beskriver: Løbende ændringer, som ikke er en del af ændringshåndteringsprocessen.

12.1.3 Generisk ændringsstyringsproces

Processen beskriver hvordan en ændringsanmodning håndteres og hvornår ændringsanmodningen skifter status.
Alle ændringsanmodninger håndteres i et ledelsesoverblik i form af en ”Ændringslog” som indeholder status på alle igangværende og lukkede ændringsanmodninger.



Figur 12: Ændringshåndteringsprocessen. Processen er beskrevet nedenfor. De 10 hovedaktiviteter som er beskrevet nedenfor refererer til aktivitetskolonnen.

GoBikes projektleder og systemarkitekt samt Cykel DK's projektleder deler ansvaret for, at ændringshåndteringsprocessen følges: fra en ændringsanmodning initieres, til ændringen og dokumentationen af at ændringen, er udført og godkendt.

Ændringshåndteringsprocessen består af følgende 10 hoved aktiviteter:

1. Ændringsanmodning initieres af Cykel DK eller GoBike. En ændringsanmodningsformular anvendes til dette formål. Ændringsanmodningsformularen opdateres gennem ændringsanmodnings livscyklus og tilføjes relevant information og dokumenter undervejs, således at den indeholder alle beslutninger og anden historisk information. [R340 M.req 18.9 a]
2. Relevant myndighed (se afsnit: 12.1.4 Godkendende myndighed) vurderer om ændringsanmodningen kan godkendes. Hvis ændringsanmodningen afvises lukkes den med status: Afvist (10).
3. Hvis ændringsanmodningen accepteres skal GoBike estimere omkostningerne ved at udarbejde et ændrings forslag. [R338 Req. 18.7a].
4. Cykel DK godkender (5) eller forkaster budgettet. Hvis budgettet forkastes skal cykel DK motivere hvorfor budgettet er forkastet og komme med forslag til hvordan ændringsanmodningen kan forenkles. Baseret på dette udarbejder GoBike et fornyet tilbud (3).
5. GoBike udarbejder et løsningsforslag og evaluerer forslagets konsekvenser i form af evt. ændringer i tidsplan, funktionalitet, omkostninger og konsekvenser for det samlede system. GoBike anvender checklister for at sikre, at alle relevante aspekter bliver vurderet [R336: Req. 18.6] [R344: Req. 18.9] [R345: Req. 18.10].
   Herunder vurderes det også i hvilken udstrækning accepttest og evt. andre tests skal gennemføres som følge af ændringen [R342 Info req. 18.2].
6. Godkendende myndighed behandler løsningsforslaget. Hvis ændringen vedrører rammeaftalen eller systemdesignet skal Styregruppen (”Administration management team”) godkende ændringen. Vedrører ændringen en installation skal den relevante Installationsgruppe godkende ændringen. Se afsnit: 12.1.4 Godkendende myndighed
   [R339: M.req 18.8] Betaling for udarbejdelse af ændringsdokumentationen bortfalder hvis ændringen gennemføres. Cykel DK betaler således udelukkende for gennemførsel af ændringen. [R337: Min. req.18.6]
7. Hvis løsningen ikke godkendes fordi Cykel DK ønsker væsentlige ændringer lukkes ændringsanmodningen og en ny initieres. [R338: Min. req.18.7c]. Ændringsanmodning lukkes (10) med reference til den nye ændringsanmodning. Er der tale om mindre ændringer udarbejder GoBike uden ugrundet ophold et tilbud på ændringen [R338: Min. req.18.7a].
8. Gennemførelsen af den aftalte ændring baseres på skriftligt samtykke fra Cykel DK eller ordregiver og GoBike. I forbindelse med implementeringen af ændringen opdateres rammeaftale og/eller projektdokumentation.
9. Godkendelse af de aftalte ændringer som beskrevet i ændringsforslaget. Hvis ændringen ikke godkendes rettes fejl (8).
10. Ændringsanmodning lukkes og materialet arkiveres. Ny Ændringsanmodning oprettes.
11. Ændringsanmodning lukkes og materialet arkiveres.

12.1.4 Godkendende myndighed

For ændrings håndtering gælder følgende særlige forhold:
Hvis ændringen vedrører en ordre og er indenfor Leverance gruppens mandat kan Cykel DK og GoBikes projekt ledelsen godkende ændringen. [R330 Req. 18.4]
I alle andre tilfælde og hvis ændring vedrører Rammeaftalen eller systemdesign skal Styregruppen godkende ændringen. [R327 Req. 18.2] [R331 Req. 18.5]

12.1.5 Ændringsanmodning

Ændringsanmodningsskabelonen bruges til at sikre at alle nødvendige informationer er til rådighed. Følgende informationer skal bl.a. mindst fremgå:

- Dato (oprettelse, ændring)
- Organisation som anmoder om ændring,
- Kontakt person,
- Ændrings titel/overskrift,
- Kort beskrivelse af ændringen,
- Referencer til Udbud (Kravsbesvarelse) og relaterede dokumenter og
- Prioritet.

Referencer:
[Dokument type: 35] Ændrings anmodning (Change request). Se Afsnit: 15.4 Dokumentliste.
Udarbejdes i specifikationsfasen. Se afsnit: 0
Projektdokumentation.

12.1.6 Ændringslog

GoBikes projektledelse vil føre en ændringslog over alle igangværende og afsluttede ændringsanmodninger.
[36] Ændringslog. Se Afsnit: 15.4 Dokumentliste. Kravs reference: [R326 req. 18.1]

12.1.7 Ændringer til hardware- eller softwaredesign og systemopgraderinger.

Ændringsproces følger den generiske model.
Ændringer i systemets design involverer tre trin i evalueringen:

- En præ-analyse og kvalitetssikring af ændringsanmodning udføres af GoBikes projektteam.
- Analyse af teknisk konsekvenser og økonomi af designmyndigheden. Det vurderes bl.a. om ændringen vil medføre ændringer i responstider.
- Gennemførelsen kræver normalt overholdelse af den aftalte test- og valideringsprocedure, hvor det vurderes, hvilke konsekvenser ændringen vil have på dokumentation og gennemførsel af disse processer. Ved alle ændringer skal der gennemføres performance målinger (respons time) i lighed med de målinger som gennemføres ved accepttest.

Når evalueringen er gennemført beskriver GoBike konsekvenserne af den ønskede ændring.

12.1.8 Uenighed

Ændringer som der ikke kan opnås enighed om på projektledelsesniveau, eskaleres videre til Styregruppen (”Administration management team”).
Kan styregruppen ikke enes om en løsning, og har styregruppen etableret et "Dispute Review Board” eskaleres sagen til dette ” Dispute Review Board”. Ellers følges reglerne som beskrevet i R341: Req. 18.7 Disagreement, independent third party.
[Reference: Rammeaftalens appendiks A, Apendiks 18: Req 18.7 Disagreement, independent third party].

12.1.9 Løbende ændringer

Da disse ændringer er rutinemæssige procedurer og opstår som følge af ordregivers behov, er der ikke er nogen formel evaluering mellem Ordregiver og GoBike.
De udførte ændringer aftales som service ordre. Ændringerne sker som en del af driftsprocessen: Se afsnit: 0
Fuld drift.
Ændringerne udføres til priser som anført i rammeaftalens prisblad (Appendiks F1).
Kravs reference: [R332 M. req. 18.3] og [R333 M. req. 18.4]

12.2 Emnestyring (Issue management)

Projektledelsen vil fører et register over emner, som skal håndteres i forbindelse med projekteksekvering.

12.2.1 Projekt emneregister (Issue log)

Et eksempel på Emneregister ses nedenfor.

Id	Overskrift	Beskrivelse	Ansvarlig	Status
1	Fortrydelsesret ved internethandel	Cykel DK skal søge Forbruger ombudsmanden om: Fravigelse af 14 dages fortrydelsesret ved internet handel.	NN, Cykel DK	Identificeret
2				

12.2.2 Projektsoftware fejlstatusliste

Fra Præ-pilot testen og indtil projektet afsluttes føres en software fejlstatusliste, hvor alle kendte fejl listes med status. Listen opdateres mindst forud for hver officiel testsession.

12.2.3 Emne eskaleringsprocedure

Hvis et problem ikke kan afklares i en installationsgruppe eller arbejdsgruppe eskaleres det til Projektledelsen i ”Delivery management team”.
Emner og problemer som der ikke kan opnås enighed om på projektledelsesniveau, eskaleres videre til Styregruppen (”Administration management team”).

12.3 Håndtering af faseovergange og aftalemilepæle

Faseovergange og aftalemilepæle håndteres således:

- 30 kalenderdage før milepælen udarbejder projektledelsen en godkendelsesformular, som opregner hvilke forudsætninger, der skal være opfyldt (godkendte dokumenter, tests og projektleverancer) for at milepælen kan godkendes af Cykel DK.
  Se [3] Milepæl/Faseovergangsgodkendelsesform og [4] / Milepæl/Faseovergangsgodkendelsesrapport i afsnit 15.4 Dokumentliste
- Cykel DK godkender eller kommenterer dokumentet efter den aftalte procedure (Se afsnit: 15.3 Dokumentgodkendelse).
- Når Godkendelsesformen er godkendt og alle forudsætningerne opfyldt udsteder projektledelsen en Godkendelsesrapport (samme dokument nu udfyldt med relevante referencer).
- Når Godkendelsesrapporten er godkendt af Cykel DK, medfører det at milepælen automatisk er godkendt.
- Cykel DK og GoBikes projektledelse vurderer i fællesskab om der er behov for opdatering af PID og evt. andre projektdokumenter.

12.4 Godkendelsesprocedure (leverance sign-off)

Følgende leverance typer er identificeret:

- Dokumentation. Se afsnit: 15.3 Dokumentgodkendelse.
- Test leverance og hardware leverance anvendes et relevant "leverance godkendelses dokument". Se afsnit: 15.4 Dokumentliste
- Faseovergang/milepæl Se afsnit: 12.3 Håndtering af faseovergange og aftalemilepæle

12.5 Rapportering

GoBikes projektledelse vil ved afslutning af hver måned i projektets levetid (så længe der pågår installationsprojekter) udarbejde en [34]Fremdriftsrapport. Fremdriftsrapporten er en grafisk rapport, som viser fremtidige milepæle med farve markering:

Milepæl	Status
Status ukendt	
Før aftalt tid eller til tiden	
Op til 10 arbejdsdages forsinkelse	
Op til 20 arbejdsdages forsinkelse	
Mere end 20 arbejdsdages forsinkelse	

Status "Ukendt" anvendes typisk:
hvis der er mere end 6 måneder til aftalt levering og status er normal (forventet til tiden), ved re-planlægning som følge af aftalte ændringer.
Se afsnit: 14.3 Opfølgning.

12.6 Kommunikationsplan

Rapportering fremsendes til Styregruppen og relevant kommune.
Der er ikke aftalt anden rapportering.

13 Kvalitets- og miljøstyring

I dette afsnit beskrives hvordan kvalitets- og miljøstyring er implementeret i projektet.
I det følgende beskrives hvilke standarder som anvendes som udgangspunkt for planlægning af kvalitetssikring og miljøstyring af projektet. GoBikes kvalitetsstyringspolitik er beskrevet, efterfulgt af en beskrivelse af de kvalitetssikringstiltag som er planlagt for projektet.

13.1 Standarder

Projektet vil blive gennemført i henhold til ISO 9001 (Kvalitetsledelse) og ISO 14001 (Miljøledelse). Der er ikke planlagt certificering efter disse standarder.

13.2 Kvalitetssikring

Kvalitetssikringen af projektleverancen vil blive baseret på GoBikes kvalitetspolitik og målsætning som beskrevet nedenfor. Som en del af kvalitetssikringen udarbejdes også testplaner og testspecifikationer. Testaktiviteterne er beskrevet sidst i dette afsnit.

13.2.1 GoBikes kvalitetspolitik

GoBikes vision og mission er beskrevet i afsnit: 9.1 GoBikes, vision, mission og målsætning
Det er GoBikes politik at levere innovative løsninger, som mindst lever op til kunde- og brugerkrav og forventninger.

13.2.2 GoBikes kvalitetsmål

Gennem målinger, interne og 2. parts audits vil GoBike løbende forbedre:
Kvaliteten af de leverede hardware-, software- og driftsydelser.
Effektiviteten i processer og ressourceforbrug.

13.2.3 Kvalitetssikringsplan for projektet

GoBike vil udarbejde en Kvalitetssikringsplan, som vil blive brugt internt i GoBike for at sikre, at GoBikes kvalitetspolitik og målsætning overholdes. Kvalitetssikringsplanen vil blive udarbejdet på engelsk og er ikke en projektleverance.

13.2.4 Testaktiviteter

I projektet er der planlagt en række testaktiviteter. Test aktiviteterne kan deles i to grupper:

- Interne tests som planlægges og gennemføres af GoBike og/eller GoBikes underleverandører for at sikre kvalitet i det leverede produkt.
- Test specificeret i udbuddet som gennemføres sammen med Cykel DK som gennemføres for at dokumenterer overensstemmelse mellem det aftalte og leverede produkt. I denne gruppe falder også Præ-pilottesten, som ikke er specificeret i udbuddet. Se afsnit: 0
- Præ-pilot.

GoBike vil beskrive test processen i [6] Test Plan som udarbejdes i Specifikationsfasen.
Bemærk: Version 1 af [6] Test Plan udkommer dog sammen med PID version 2.

13.3 Miljøstyringsplan

Dette afsnit beskriver miljøstyringsplanen for udvikling og drift af projektet.
Ved projektets start vil GoBike udpege en Miljøprojektansvarlig, som referer direkte til GoBikes Programdirektør. Den Miljøprojektansvarlige vil have ansvar for etablering og implementering af en miljøhandlingsplan (EAP - Environmental Action Plan).
Miljøhandlingsplanen vil blive basseret på GoBikes miljøpolitik som beskrevet i afsnit: 13.3.1 GoBikes miljøpolitik.
De vigtigste ansvarsområder, som den Miljøprojektansvarlige har, er listet herunder:

- Analyse og efterlevelse af kontraktens miljøkrav.
- Etablering og implementering af en miljøhandlingsplan.
- Etablering og vedligeholdelse af plan for miljøopgaver.
- Bistå projektledelsesteamet ved fortolkning og anvendelse af standarder, procedurer og instruktioner der skal anvendes.
- Validering af kontraktlige dokumenter vedrørende miljømæssige emner.
- Sikring af overensstemmelse mellem alle produkter og tjenester, der skal leveres, og de miljømæssige krav.
- Deltagelse i formelle vurderinger.
- Ved underentreprise tilsikre at de miljømæssige krav transparent bliver rettet til underleverandøren, og at kravene efterleves (fx gennem audits).

13.3.1 GoBikes miljøpolitik

GoBikes miljømæssige tilgang er beskrevet i GoBikes miljøpolitik.

- GoBike vil udvikle virksomheden gennem forretningsstrategier, som i videst muligt omfang, tager hensyn til de potentielle virkninger på miljøet.
- GoBike opnår sine miljømål ved at holde personale involveret, velinformeret og uddannet hensigtsmæssigt.
- GoBike ved, at mange ressourcer er begrænsede, så der stræbes efter at finde alternativer, hvor det er muligt at genbruge så meget som det er praktisk muligt og bortskaffes så lidt som nødvendigt.
- GoBike forpligter sig til at designe, fremstille og markedsføre produkter, tjenester og faciliteter ved hjælp af sunde produktvalg.
- GoBike overholder alle miljølovens krav, og vil stræbe efter bedste praksis og højere mål, især med hensyn til forebyggelse af forurening.
- GoBike overvåger og foretager regelmæssige undersøgelser af vores miljømæssige resultater – for at sikre, at der leves op til de erklærede forpligtelser og løbende forbedring af miljøindsatsen.
- GoBike vurderer, overvåger og hvor det er muligt, reduceres virkningerne, af aktiviteterne på det lokale og generelle miljø til et minimum.

- GoBike vælger og styrer sine underleverandører og entreprenører efter samme retningslinjer.

13.3.2 Miljøhandlingsplan (EAP - Environmental Action Plan).

Miljøhandlingsplan (EAP - Environmental Action Plan) vil blive udarbejdet på engelsk og er ikke en projektleverance.

14 Projektplan

Projektplanen omfatter: Design, Udvikling, og hovedmilepæle for Installation af de første kommuner og slutter med officiel idriftsættelse. Projektplanen er opbygget på basis af forudsætningerne beskrevet i nærværende dokument, samt Software release versioner som beskrevet i Løsningsbeskrivelsen.
Planen er bygget op omkring hovedmilepælene listet nedenfor.
Der er udarbejdet en gantt plan [20b] Projektplan, som er gældende ved rammekontraktens indgåelse.

14.1 Hovedmilepæle

Følgene hovedmilepæle er identificeret.

Milepæl	Reference	Dato
Rammekontrakt (Framework agreement)	Dette er T0 alle datoer er beregnet med udgangspunkt i denne dato.	15/10/2012
Ordre, De første kommuner	0 Ordrebehandling	15/10/2012
	0 Ordrebehandling afsluttet	30/11/2012
Start af Proof-of-concept	0 Proof-of-concept	22/10/2012
Godkendt Proof-of-concept	5.3 Godkendelse af Proof-of-Concept test Kontrakt milepæl: Cykel DK har exit mulighed.	29/10/2012
Godkendt projektdokumentation	0 Godkendelse af projektdokumentation	01/12/2012
Godkendt testdokumentation	5.5 Godkendelse af testspecifikationer	01/02/2013
Hardware test	0 Hardwaretest	19/03/2013
Start Præ-pilot test	0 Præ-pilot	19/03/2013
Godkendt installationer for pilot og post pilot (ca. 25 lokaliteter)	0 Installationsgodkendelse (den enkelte lokalitet)	22/04/2013
Start Pilot	0 Pilottest (5% af leverancen I drift til test formål)	15/08/2013
Godkendt Pilottest	0 Godkendelse af Pilottest Kontrakt milepæl: Cykel DK har exit mulighed. (50 % af leverancen i drift)	30/09/2013
Godkendt Installation	0 Installationsgodkendelse, alle lokaliteter	30/09/2013
Godkendt Pilottest, Version 2	0 Godkendelse af Pilottest (Version 2)	15/09/2013
Godkendt Pilottest, Version 3	0 Godkendelse af Pilottest (Version 3) (100 % af leverancen i drift)	01/11/2013
Godkendt Accepttest	7.6.3 Godkendt accepttest Kontraktmilepæl: Bodsbehæftet.	15/01/2014
Godkendt Driftsprøve	8.5 Driftsprøvens godkendelse	15/03/2014

	Kontraktmilepæl: Bodsbehæftet.	

Ovenstående plan er beregnet med udgangspunkt i underskrift af Rammekontrakt og første ordre (De første kommuner). Hvis underskriften forsinkes, vil alle de angivne datoer ovenfor rykkes tilsvarende.

”Procent leverance i drift” referer til del leverede og idriftsatte antal cykler i forhold til den samlede ordre.

14.1.1 Udrulning af cykler i de første kommuner

Note om fasevis udrulning: Efter accepttest udrulles projektet med en given hastighed: Enten vælger Cykel DK at sætte alle cykelstationer og alle cykler i drift af en gang. Eller også aftales der en fase vis udrulning fx over en måned.
Det der er aftalt beskrives her, når det er besluttet: Senest ved accept test godkendelse.

14.2 Projektplan

Der vil blive udarbejdet og vedligeholdt to typer planer:

- Installationsplan pr. ordregiver. Se eksempel i afsnit: 7.7.3 Eksempel på konkret plan.
- Projektplan som omfatter projektets øvrige aktiviteter. Projektplanen vil dog inkludere hovedmilepælene for installationsplanerne for de første kommuner. Som beskrevet ovenfor.

14.3 Opfølgning

GoBikes projektleder vil mindst to gange månedligt gennemføre en planopfølgning. En gang om måneden vil der blive udarbejdet en fremdriftsrapport. Se afsnit: 12.5. Rapportering.

15 Dokumentation

GoBikes projektkontor (PMO) opretter et dokumentarkiv for rammekontrakten og et arkiv for hver ordre/installation (kommune eller organisation).

15.1 Dokumentstyring

Dokumentarkiverne, de enkelte dokumenter og dokumentversioner styres og kontrolleres i overensstemmelse med ISO 9001.
Skabeloner og arkiverne oprettes i Specifikationsfasen (rammekontrakten) og i Installationsfasen (installationsarkiv).

15.2 Dokument Versionsnummerering

Dokumentversioner nummereres fortløbende. Første frigivne version er altid version ”1”. Dokumentversioner nummereret “1a, 1b”, har ”draft” status og kan derfor ændres uden formel ændringskontrol.
Når et dokument udgives bliver det nummereret fortløbende. Følgende nummerering er eksempler på gyldig nummerering: 0a, 0b, 1, 2, 3, 3a, 3b, 4.
I eksemplet er 0a og 0b udkast versioner forud for første frigivne version 1 og 3a, 3b, udkast versioner forud for frigivne version 4.

15.3 Dokumentgodkendelse

En stor del af den udarbejdede dokumentation leveret af GoBike kræver Cykel DK’s og/eller ordregivers (kommune eller organisation) formelle godkendelse. Se listen i afsnit: 15.4 Dokumentliste. Sidste kolonne specificerer organisationen, som skal godkende dokumentet.

Da flere projektopgaver afhængigt af ordregivers godkendelse, så er det vigtigt, at godkendelsesprocessen udføres så gnidningsløst som muligt. GoBike har derfor udarbejdet en projektdokumentliste nedenfor, dette for at understøtte ordregivers planlægning af dokumentgodkendelsesprocessen.

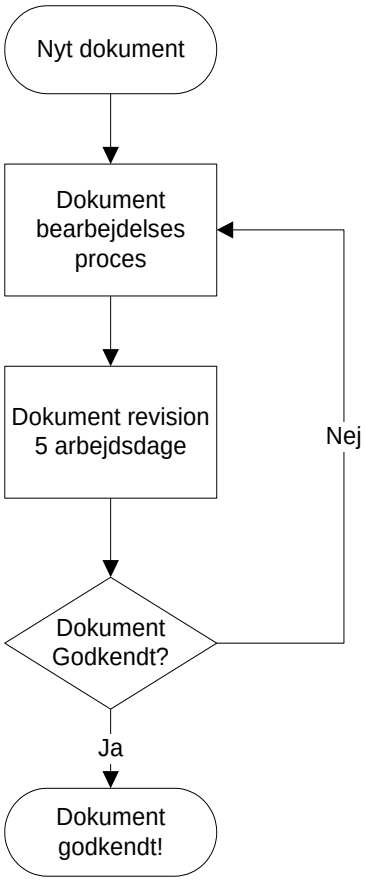
All planlægning forudsætter at alle involverede parter overholder denne procedure.

15.3.1 Dokumentgodkendelsesproces

Den formelle leverance og gennemgang af dokumenter er følgende:

- Når et dokument er udarbejdet kontrolleres dokumentet af GoBike for at sikre fuldstændighed og overensstemmelse med kontrakten og andre godkendte dokumenter.
- Alle dokumenter vil blive leveret elektronisk i en standardiseret form, hvor den aftalte modtager skal kvittere for modtagelsen af dokumentet.
- Cykel DK / Ordregiver gennemgår dokumentet og fremsender eventuelle kommentarer eller en godkendelse af dokumentet til GoBike inden for 5 arbejdsdage.

- GoBike stiller en dokument ”review formular” til rådighed til dette formål.
- Cykel DK kan ”Godkende”, ”Godkende med kommentarer” eller ”Afvise med kommentarer”.
- GoBike analyserer Cykel DK / ordregivers kommentarer og opdateret dokument fremsendes til Cykel DK / ordregiver.
- GoBike vil, i projektets levetid opretholde en projektdokument status list indeholdende status på alle udstedte og planlagte dokumenter.



Projektdokumentlisten findes nedenfor.

15.4 Dokumentliste

Formålet med projektdokumentlisten er at opregne alle de dokumenter, der forventes udarbejdet som en del af projektets gennemførelse.
Listen indeholder alle dokumenter som udarbejdes til en ordre. Flere af dokumenterne vil dog kun blive leveret én gang fx Hardwaretest dokumenterne. Andre dokumenter vil blive udarbejdet flere gange fx bygningstegninger (én pr. lokalitet).
Listen er ikke endelig, da der kan opstå behov for andre dokumenter under projekteringen.

Kolonne beskrivelse
Godkendelse:
C: Cykel DK
K: Ordregiver, Kommune eller Virksomhed

Type id	Dokument navn	Udarbejdes i proces	Godkend-else
	PID – Project management plan	Nærværende dokument.	C
0	Dokument status liste. Status listen vil blive udarbejdet ved start af ny ordre basseret på denne præliminære liste.	0 Ordrebehandlingens outputs 15.1 Dokumentstyring	C, K
1	Document review form	0 Projektdokumentation	C
2	Document approval form	0 Projektdokumentation	C
3	Milepæl-/Faseovergangsgodkendelsesform	0 Projektdokumentation	C
4	Milepæl/Faseovergangsrapport	0 Projektdokumentation	C
5	Test tidsplan Hvis den ikke inkluderes i hoved tidsplanen og installations skabelons plan.		
6	Test plan Beskriver test strategi for hele projektet. Kort beskrivelse af alle og tilhørende accept kriterier mv.	0 Testplan og testspecifikationer	C
7	Proof-of-Concept, Accept kriterier	0 Testplan og testspecifikationer	C
8	Proof-of-Concept test script (Use case)	0 Specifikation og system design	C
9	Proof-of-Concept, Test rapport	0 Proof-of-concept	C
10	Pilot test, Test script	0 Testplan og testspecifikationer	C
11	Pilot test, Test rapport	0 Testplan og testspecifikationer	C
12	Hardware test, vandalisme test script	0 Testplan og testspecifikationer	C
13	Hardware test, vandalisme test rapport	0	C

Type id	Dokument navn	Udarbejdes i proces	Godkend-else
		Testplan og testspecifikationer	
14	Hardware Funktionel test script	0 Testplan og testspecifikationer	C
15	Hardware Funktionel Test rapport	0 Testplan og testspecifikationer	C
16	Flow-test script	0 Testplan og testspecifikationer	C
17	Flow-test, Test rapport	0 Testplan og testspecifikationer	C
18	Service Level Agreement specifikation (measurement specification)	0 Projektdokumentation	C, K
19	Bestillingsformular (Project ordre) Bilag G	0 Projektdokumentation 7.1.2 Inputs til ordrebehandlingsprocessen	C K
20 a	Installationsplan (Project plan)	0 Ordrebehandlingens outputs	K
20 b	Projektplan Projekt plan som omfatter: Design, Udvikling, og hoved milepæle for installation af de første kommuner	PID proces	C
21	Installationsprincipper Dokument som beskriver hvilke principper der anvendes ved projektering og senere installation. Principperne beskriver bl.a. afstandskrav, Docking- points individuelle placering, site Konfiguration mv.	0 Projektdokumentation 0 Input til installationsdokumentation sprocessen	C, K
22	Installationsdokumentations check liste. Checklisten anvendes som reference til at kontrollerer at alle nødvendige informationer for et givent installationssted er modtaget. Ordregiver kan anvende cheklisten til at sikre at GoBike får alle nødvendige informationer i en pakke.	0 Projektdokumentation 0 Input til installationsdokumentation sprocessen	
23	Omkostnings ark, installation omkostninger (per site)	0 Projektdokumentation 0 Dokumentationsoutput fra	C K

Type id	Dokument navn	Udarbejdes i proces	Godkend-else
		leverandøren	
24	Installation Tests procedure Check liste som anvendes af GoBikes installationsteam for at sikre at den enkelte lokalitet er testet forud for klar melding.	0 Projektdokumentation 0 Installationsgodkendelse (den enkelte lokalitet)	C
25	Installation godkendelsesprocedure Dette dokument er Afleveringsdokumentet. Det indeholder en kort beskrivelse af godkendelsesproceduren i form af en check-liste. Det benyttes ved overdragelsen On Site – hvor modtager skriver under på at anlægget er udført i henhold til krav osv. Og derefter underskriver for modtagelse.	0 Projektdokumentation 0 Installationsgodkendelse (den enkelte lokalitet)	C
26	Installation site drawing	0 Input til installationsdokumentation sprocessen	K
27	Installation site drawing, As build	0 Dokumentationsoutput fra leverandøren	K
28	Operations report (Monthly service level report)	0 Projektdokumentation (skabelon)	C
29	Driftsprøve specifikation	0 Testplan og testspecifikationer	C
30	Driftsprøve rapport (Daglig)	8.4 Driftsprøve	C
31	Driftsprøve rapport (Konklusion)	8.4 Driftsprøve	C
32	Accept test specifikation	0 Testplan og testspecifikationer	C
33	Accept test Report	7.5 Accepttest	C
34	Fremdriftsrapport	14.3 Opfølgning	
35	Ændringsanmodning (Change request)	0 Projektdokumentation (skabelon)	C
36	Ændringslog	0 Ændringshåndtering [Change management]	C
37	Risikoregister	11. Risikostyring og identifikation af	C,G

Type id	Dokument navn	Udarbejdes i proces	Godkend-else
		muligheder	
38	IT Risiko analyse	0 Specifikation og system design [R118 Min Req 2.18]	C

16 Uddannelse

Der er ikke nogen træning eller uddannelseskomponent inkluderet i dette projekt. Der er imidlertid identificeret behov for træning på to områder.

16.1 Systemkendskab

Der er behov for viden om GoBikes system for at Cykel DK's medarbejdere kan deltage aktivt i bl.a. Pilot, Accept og Driftsprøve.
GoBike har planlagt, at der under forberedelse og gennemførsel af præ-pilottesten er afsat tid til et kort introduktionsforløb. Derfor er det vigtigt, at Cykel DK's projektteam sikrer at de medarbejdere, som skal repræsentere Cykel DK i de officielle test planlægger at deltage i Præ-pilottesten.
Se afsnit: 0
Pilottest

16.2 Intern uddannelse driftspersonale

Når omfanget er kendt, så vil GoBike etablere et træningsforløb for GoBikes egen driftsorganisation. Denne træning er ikke omfattet af projektet og er derfor ikke beskrevet nærmere.

17 Videreudvikling af systemet og tilknyttede services

Fremtidsvisionerne for projektet er beskrevet i Løsningsbeskrivelsens sidste afsnit.

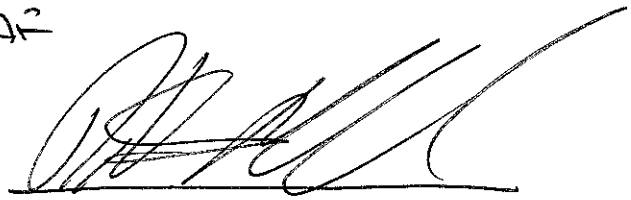
Service Level Agreement

Projekt version

4. januar 2013

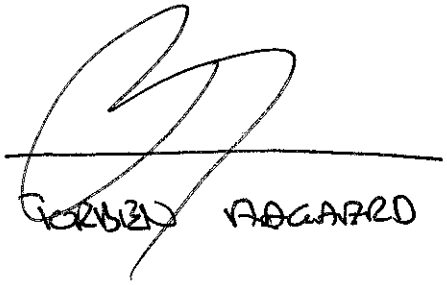
AFTALE GODKENDT AF

CYKLER NN



NIKLAS MARSCHALL

GOGIKE



GORDON ADGARD

Indholdsfortegnelse

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1 Dokument historik

Dette dokument er omfattet af dokumentstyring. For mere information se appendiks C: PID afsnit: 15.1 Dokumentstyring.

1.1 Revisions historik

Revisions dato	Forfatter	Version	Ændrings beskrivelse
		6	Alle korrektions mærkninger fra 5b accepteret.
30/11/2012	PSA	6b	Post-rammeaftale-underskrifts-version: Opdatering af all definitioner fra A.11 Alle krav fra A.11, A.12 og A.13 burde være overført og oversat. Nyt afsnit: 9. Krav Sporbarheds matrix. En stor mængde tilføjelser og sletninger. Alt er ændrings markeret
10/12/2012	PSA	7	Definitionen Funktionel cykel: Det er tilføjet at Tablet computeren skal være funktions dygtig. Alle forslag (fra version 6b_KHL) er indarbejdet. Proces afsnit slettet. Ny matrix i afsnit: 10. Krav Sporbarheds matrix
20/12/2012	PSA	8	Kommentarer fra KHL Mail 19/12/2012 indarbejdet
04/01/2013	PSA	9	Kommentarer modtaget fra DSB 4/01/2013 12:21 indarbejdet.

Noter:

1. Regnearkets (appendiks B) tekster er ikke oversatte. Hvis vi lige bliver enige om oversættelsen i dette dokument først så kan det hurtigt opdateres.
2. Regnearkets (appendiks B) indeholder ikke beregning af de SLA krav som ikke er bods behæftet. Disse opdateringer leveres ifølge aftale når nærværende dokument er godkendt.

2 Indledning

Nærværende dokument er "Service Level Agreement" for GoBike – Cykel DK projektet.

2.1 Formål

Formålet er, at definere det serviceniveau GoBike skal leverer i driften af Bycykel projektet. Samt at definere bodsbetaling når der leveres ringere serviceniveau end aftalt.

Kundens mål er, at slutbrugeren som en daglig bruger af cykel-dele-system oplever, at alle væsentlige dele af systemet fungerer optimalt i den daglige transport, hvilket betyder:

- Cykler og docking point er til rådighed når der er behov
- Systemet er godt vedligeholdt og velfungerende
- Hardwaren fremstår indbydende og ren
- IT-systemet er robust og understøtter hurtige svartider

Denne SLA manual er udarbejdet basis af Rammeaftalens appendiks:

- Appendix 9: Vedligeholdelse
- Appendix 11: Service level agreement
- Appendix 12: Compensation
- Appendix 13: Incentives (Dette er dog primært beskrevet i Rammeaftalens bilag F1a)

SLA manualen danner basis for et regne ark som kan håndterer alle parametre i aftalen således at den månedlige bodsberegning kan automatiseres. SLA manualen skal således anvendes, til at sikre, at det er muligt på en overskuelig måde at opbygge og revidere beregningerne. SLA manualen skal også afklare hvordan situationer som afviger fra normalen, skal håndteres.

2.2 Afgrænsning

Bonusbetaling og definition af en udlejning, som udløser bonus, er beskrevet i Rammeaftalens appendiks F1a.

2.2.1 København og Frederiksberg og lignende systemer.

Nærværende beskrivelse gælder for Københavns og Frederiksberg Kommune og for systemer etableret i tilknytning til disse kommuner. Beskrivelse gælder også lignende systemer etableret i andre landsdele, med mindre de størrelsesmæssigt eller udstrækningsmæssigt afviger væsentligt.
Se også begrænsninger beskrevet i appendiks F1a: Prisliste.

2.2.2 Systemer med andre geografiske forhold

GoBike vil tilbyde vedligeholdelse og drift af GoBike systemet i alle dele af Danmark, men forbeholder sig ret til at vurdere de enkelte projekter og følgelig tilbyde et serviceniveau som tilpasses til lokale- og geografiske forhold.

2.2.3 Virksomhedsordninger

GoBike vil også tilbyde vedligeholdelse og drift af GoBike systemer for private og offentlige organisationer i tilknytning til systemer etableret af landets kommuner. I forbindelse med etablering af

de enkelte systemer vil GoBike vurdere de enkelte projekter og følgelig tilbyde et serviceniveau som tilpasses til virksomhedernes krav samt lokale- og geografiske forhold.

2.2.4 Proces ved nye ordrer

I forbindelse med ordrebehandlingen (Se PID afsnit: 7.1 Ordrebehandling) aftales det i hvilket omfang og på hvilke betingelser den nye kommune eller gruppe af kommuner kan indgå i SLA aftalen (Se Rammeaftalens appendiks F1a: Prisliste).

2.3 Dokumentationsstruktur

Nærværende dokument er appendiks D til Rammeaftalen.
En liste, som indeholder alle projektdokumenter som forventes anvendt i projektets levetid, er listet i Rammeaftalens appendiks C: PID afsnit: 15.4 Dokumentliste.

2.4 Opdatering af dokumentet

GoBike og Cykel DK vil løbende vurdere behovet for opdatering af dokumentet. Konkret vil det bliver vurderet når nye Kommuner tilsluttes systemet.

2.5 Læsevejledning

Dokumentet er overordnet opdelt i følgende dele:

- Indledning som sluttes med dette afsnit.
- 3 Definitioner
- 4 IT system
- 5 Vedligeholdelse
- 6 Kunde support
- 7 Redistribution
- 8 Rapportering
- 9 Bodsberegning
- 10 Krav Sporbarheds matrix
- 11 Noter for systemudvikling og set-up
- 12 Appendiks

Der er knyttet 3 appendiks til dette dokument:

- Appendiks A: Månedlig SLA rapport – skabelon. Det er tanken, at de månedlige SLA rapporter udarbejdes efter denne skabelon. Dette dokument er beskrevet i PID (Project management plan)[id 28].
- Appendiks B: Regneark – Bodsberegnings eksempel. Når systemet sættes i drift vil et database udtræk genere input til dette regneark. Database udtrækket vil reflektere den faktiske drift. Regnearket bruges til at beregne opfyldelsesgraden af SLA kravene.
- Appendiks C: Liste over prioritet 1 docking stations. Dette bilag bruges til at kategorisere prioritet 1 og prioritet 2 stationer. Det er endnu ikke afklaret om data skal bruges i database udtræk eller, om denne funktionalitet skal indarbejdes i regnearket. Appendiks C udarbejdes senest i forbindelse med godkendelse af installation.

Der er i vid udstrækning anvendt krydsreferencer i teksten. Krydsreferencerne er alle mærket "Se afsnit:" efterfulgt af afsnitsnummer og overskrift. Krydsreferencerne er "klik-bare" i Pdf- (klik) og Word (ctrl+klik) udgaven.
Eksempel på krydsreference: Se afsnit: 1 Dokument historik

2.6 Identificerede problemstillinger

Følgende problemstillinger blev identificeret under kontrakt forhandlingerne:

- Langelinie: Bod ved stor gennemstrømning fx krydstogt skibe vil ofte tømmes i flere timer ad gangen. Hvordan kan denne håndteres? Prioritet 3 docking station?

Gobike og Cykel DK er enige om at der ikke på indeværende tidspunkt er facts nok til at komme med et kvalificeret forslag. Såfremt dette senere viser sig at være et problem vil parterne i fællesskab etablere en løsning.

3 Definitioner

Termer anvendt følger definitionerne i Rammeaftalen.

Definitioner som knytter sig til Service level aftalen er listet herunder.
Udover de definitioner som er listet herunder, skal de definitioner som er beskrevet i appendiks 11 også listes. Alle definitioner konfigureres i systemet.

3.1.1 Req. 11.1 - Definition af normal driftsperiode

Den normale driftsperiode dækker perioden, hvor systemet er tilgængeligt og velfungerende til normal brug for brugerne.
Den normale driftsperiode er defineret ved: hele dagen (00.00-24.00) 7 dage om ugen (mandag-søndag inkl. helligdage).

3.1.2 Req. 11.2 - Definition af spidsbelastningsperiode / myldretid

Spidsbelastningsperiode defineret som: alle ugens dage fra 7:00 til 9:00, samt 15:00-18:00.

3.1.3 Req. 11.3 - Definition af cykel tilgængelighed

En cykel vil blive anset som Tilgængelig, når den er:

1. i brug af en slutbruger,
2. parkeret i et docking point og klar til udlejning (ikke markeret defekt),
3. parkeret i et docking point, men forudbestilt (Pre-booked), jf. Option 10,9

3.1.4 Req. 11.4 – Docking point utilgængelighed

En docking point er utilgængeligt, hvis det ikke kan bruges til enten returnering eller frigivelsen af en cykel, når det kræves af slutbrugeren.

3.1.5 Req. 11.5 – Måling af tilgængelighed

Tilgængelighed måles 24 timer om dagen, 7 dage om ugen eksklusive perioder med planlagt vedligeholdelse.

3.1.6 Req. 11.7 – Tom station

En dockingstation er en "tom docking station", når der ikke er fuldt funktionelt cykler parkeret på dockingstationen. En tom station kan have en eller flere cykler parkeret, som er mærket som defekte.

3.1.7 Req. 11.22 - Måling af en tom station

Antallet af minutter, i hele minutter, at hvert docking station er tom, skal måles over en dag fra 00.00-24.00. For at undgå tvivl, skal minutter ikke begynder at tælle, før en docking station har været tom i et helt minut.

3.1.8 Req. 11.8 - Definition af en fuld station

En dockingstation er en "fuld docking station", når der ikke er nogen tomme docking points på den relevante docking station og den første kunde returnerer en cykel uden for et docking point.

3.1.9 Req. 11.26 - Måling af en fuld station

Antallet af minutter, i hele minutter, at hver dockingstation er fuld, skal måles i løbet af en dag. For at undgå tvivl, skal minutter ikke begynder at tælle, før en docking station har været fuld i et helt minut.

3.1.10 Req. 11.9 - Definition af svartid

Svartid er perioden fra brugeren sender sin kommando til resultatet er synligt og brugeren kan sende en ny kommando. En kommando er et tastetryk eller et museklik. På web-baserede tjenester udføres alle målinger på serveren uden internet transaktionstid.

3.1.11 Req 11.13 – Defekt cykel

En cykel anses for at være defekt, når:
1. En slutbruger, kundens personale, eller en leverandør medarbejder meddeler kundecentret at cyklen kræver reparation eller
2. En cykel automatisk identificeres som havende en fejl i systemet. For eksempel hvis den returneres inden for fem (5) minutter, tre (3) gange i træk.

3.1.12 Req 11.14 – Funktionel cykel

En cykel anses funktionel, når en kvalificeret mekaniker har i undersøgt og kvitteret for, at den er sikker og fungerer korrekt, og når den er blevet returneret til et docking point. Det betyder, at følgende elementer skal være i orden:

- drivkæden for korrekt funktion og smøring,
- styret korrekt centreret og strammet
- dæk korrekt pumpet og kontrolleret for defekter, og slid,
- bremser kontrolleret for slitage og korrekt funktionsdygtig stand,
- sadel for korrekt funktion, slid
- gear skiftere for korrekt funktion;
- funktionelt lys,
- velfungerende skærme, fri for fejl og for meget slid,
- sikre, at alle andre cykeldele uden begrænsning, er korrekt fæstnet og at
- cyklen er ren
- Tablet computeren er funktionsdygtig.

4 IT system

It systemet skal leve op til følgende SLA krav:

- Oppetid
- Reaktions tid (Responce time)

Med hensyn til tilgængeligheden så er systemet opdelt i to kategorier: back-end-system og slutbruger-vendte system. Det slutbrugerenvendte system er defineret som den del af systemet, som slutbrugerne oplever. Back-end system, er defineret som den resterende del af systemet. Hvor intet andet er beskrevet, gælder kravene for det samlede system.
Systemet er ude af drift, når en væsentlig del af brugerbase kan ikke udføre deres arbejdsopgaver som normalt.

4.1 Req. 11.42 – Måling af driftseffektivitet (oppetid)

Tilgængelige driftstid inden for en periode beregnes som periodens samlede længde (Aftalte driftstid) minus den samlede længde af driftsstop, som leverandøren er ansvarlig for. Operationen effektivitet i systemet vil blive målt i alt, og er beregnet på denne måde:

Tilgængelige driftstid = Aftalte driftstid - driftsstop, som leverandøren er ansvarlig for.

Driftseffektivitet = (Tilgængelige driftstid x 100%) / Aftalte driftstid

Det er aftalt at følgende årsager til driftsstop medregnes "tilgængelig driftstid" og i "aftalt driftstid":
1. Brugerens omstændigheder, dvs fejl i brugerens materiel (som ikke er leveret af GoBike).
3. Eksterne fejl som følge af force majeure
6. Fejl i de data, der indtastes af brugerne (især af produkt manager)
9. Planlagt vedligeholdelse

Det er aftalt at følgende årsager til driftsstop er årsager som leverandøren er ansvarlig for:
2. Eksterne fejl, dvs en mindre blackout
4. Fejl i en slutbruger-faced klient, herunder brugergrænseflade
5. Svigt i kommunikation mellem klient og back-end
7. Leverandørens forhold, dvs svigt i hardware eller basis-software
8. Program fejl
10. Utilstrækkelig hardware kapacitet

4.1.1 Req. 11.43 - Månedlige opgørelser

Leverandøren skal beregne driftseffektiviteten (oppetid) på månedsbasis (kalendermåned) og rapporterer beregningen.

Se afsnit: Se afsnit: 8. Rapportering og 9.2. Beregning af driftsbod

4.1.2 Req. 11.44 - Driftseffektivitet til administration system (back-end)
Back-end systemet skal ses som et 8-16/5 system, som skal være tilgængelig i den almindelige åbningstid fem (5) dage om ugen. Leverandøren skal tilvejebringe et administrationssystem med en driftseffektivitet på 95%.

4.1.3 Req. 11.45 - Operationel effektivitet for front-end.
Det bruger vendte systemskal ses som et 24/7/365 system, der er til rådighed 24-timer, 7-dage om ugen, 365 dage om året. Leverandøren skal levere et frontend-system med en operativ effektivitet på 99%.

Praktiske forhold
Vedligeholdelse, opgraderinger, service pakker osv. vil blive udført uden for det aftalte drifts tid mål.

GoBike kan ikke holdes ansvarlig for nogen tredjepart (tredjepart defineres i denne forbindelse som: personer eller organisationer som ikke er en del af GoBikes leverance organisation) indvirkning på GoBike systemer, system infrastruktur eller hardware infrastruktur, herunder strømsvigt, forkert håndtering, fejl ikke registreret under testfaser mv.

GoBike accepterer ansvar for fejl indberettet som en del af den testcyklus og pre-launch fasen. Desuden vil GoBike øjeblikkelig indlede korrektion fejl der opstår eller identificeres på et senere tidspunkt. Fejl er i denne henseende - som nævnt - bliver defineret som fejl i GoBike leverancen. Ethvert tredjeparts påvirkning skal ikke betragtes som en GoBike fejl.

4.2 Reaktionstid
De målinger som kan udføres automatisk vil blive implementerer således at de løbende kan evalueres.

Da nogle af denne type måling er vanskelig eller umulige at udføre automatisk, da målingen vil være ressource krævende og da målingerne næppe vil varierer uge efter uge vil disse målinger kun blive udført ved officielle test, samt på Cykel DK's forespørgsel.
I forbindelse med design af systemet vil det blive beskrevet hvilke målinger der foretages automatisk og hvilke som skal udføres manuelt.
Reference: Info. 11.4

Alle målinger skal udføres "server-side".

4.2.1 Req. 11.31 – Målinger i spidsbelastningsperioder
Alle målinger foretages i spidsbelastningsperioder med det faktiske antal brugere, idet det antages, at belastningen er inden for de definerede grænser.

4.2.2 Req. 11.32 – Målopfyldelse
De tider, der er angivet nedenfor, skal opnås i 95% af målingerne.

4.2.3 Req. 11.33 - Målinger i spidsbelastningsperioder
Alle tidsmålinger skal foretages en gang om ugen i spidsbelastningsperioder.

4.2.4 Req. 11.34 Skrivehastighed
Når man bevæger sig fra et felt til det næste, skal brugerens skrive hastighed ikke være langsommere end 0,2 sek.

4.2.5 Req. 11.35 - Flytning fra et skærmbillede til det næste
Når man bevæger sig fra et skærmbillede til det næste, skal data være synlig, og skrive mulig, inden for den mentale skiftetid på 1,3 sekund.

GoBike vil sikre, at systemet tillader sideskiftshastighed som angivet, hvor programmer lagres direkte på GoBike tablet PC, kan GoBike ikke holdes ansvarlig for tredjeparts-applikationer og applikationer, der er lagret på ekstern storage (dvs. eksterne servere, hvor data-transmission er påkrævet). Hastighed kan variere - og muligvis overskride de fastsatte grænser fx i situationer med ekstrem kulde og / eller lavt batteriniveau situationer, hvor CPU vil reducere driftshastighed i sådanne forhold.

4.2.6 Req. 11.36 – Opslag i drop-down lister
Opslag i "drop-down lister" skal tillade valg fra listen inden for den mentale skiftetid på 1,3 sekund.
Se afsnit: 4.2.5 Req. 11.35 - Flytning fra et skærmbillede til det næste

4.2.7 Req. 11.37 - Rapporter der anvendes hyppigt
Rapporter bruges hyppigt skal være synlig i den mentale skiftetid på 1,3 sekund.

GoBike vil overholde den fastsatte grænse i applikationer gemt lokalt. Hvor internet kommunikation er involveret, kan GoBike ikke holdes ansvarlig for forbindelsens hastighed.

4.2.8 Req. 11.38 - Rapporter brugt lejlighedsvis
Rapporter bruges lejlighedsvis skal være synlig inden for 20 sekunder.

GoBike vil i almindelighed overholde de specificerede grænser. Men GoBike forbeholder sig ret til at overskride den angivne grænse, hvor rapporter indeholder en kompleksitet over "normale forventninger" og / eller hvor tredjepartsdata er indeholdt i rapporten.

4.2.9 Req. 11.39 - Data fra eksterne systemer
Data fra eksterne systemer skal overføres og vises inden for 20 sekunder. For et stykke tid efter dette, skal dataene være tilgængelige så hurtigt som andre data.

GoBike vil gøre data fra eksterne kilder tilgængelige inden for 20 sekunder startende fra når disse data er tilgængelige for GoBike's systemer. Måling lavets ikke af anmodning, men fra modtagelsen.

GoBike systemer vil cache data lokalt, hvor det er hensigtsmæssigt at for at øge driftshastighed.

4.2.10 Req. 11.40 – Login
Login skal kunne gennemføres på 10 sekunder.

Målinger skal udføres "server-side".

Det måles om en bruger bliver valideret på server-side indenfor 10 sekunder fra modtagelse af anmodning.
Hvis tredjepart validering skal måles, skal tidsforbruget i forbindelse hermed ikke medtages i målingen.

4.2.11 Req. 11.41 - Gentagen login

Gentagen login, hvor brugeren midlertidigt har forladt systemet skal være afsluttet inden for 4 sek.

Målingen udføres som for Login.

5 Vedligeholdelse

Dette afsnit beskriver de krav som er defineret i bilag A, appendiks 9 – "Maintenance" og appendiks 11 – SLA.

5.1 Req. 11.10 - Cykel tilgængelighed - dagligt minimum

Det mindste antal cykler til rådighed må ikke falde til under 90% af det aftalte antal cykler i løbet af dagen i perioden fra den 1. marts til den 31. december og 80% i perioden fra den 1. januar til den 28. februar.

5.1.1 Måle metode

Alle cykler har et unik serienummer.
Antal cykler registreres med serienummer når de returneres af en bruger eller returneres efter reparation i et docking point. Hvis en cykel meldes defekt eller registreres defekt ved inspektion rejses et "repair needed flag" mod cyklens serienummer. Det mindste antal serienumre, uden "repair flag" som er registreret i løbet af dagen anvendes.

5.1.2 Forebyggende aktiviteter

Dette sikres gennem vores cykel overvågningssystem, samt ved visuel inspektion af vores teknikere. GoBike vil overvåge og måle dette ved hjælp af GoBikes overvågningssystem, som giver forebyggende alarmer til GoBikes service team. Er der risiko for at antallet af cykler falder under det aftalte niveau, vil yderligere cykler fra bufferlager blive indsat i omløb, for at opretholde mere end 90% / 80% tilgængelighed.

5.2 Req. 11.11 - Cykel tilgængelighed - spidsbelastningsperiode / myldretid

90% af den aftalte antal cykler skal være til rådighed i spidsbelastningsperioder / myldretid i perioden fra den 1. marts til den 31. december og 80% i perioden fra den 1. januar til den 28. februar.

5.2.1 Målemetode

Måles som Req. 11.10 - Cykel tilgængelighed - dagligt minimum. Det mindste tal registeret i de to perioder anvendes.

5.3 Req. 11.12 - Reparation af cykle

Når en cykel er markeret som defekt, skal det enten: fjernes, repareres eller udskiftes af leverandøren, inden firetyve (24) timer.

5.3.1 Forebyggende aktiviteter

Leverandøren vil registrere, måle og rapporterer overholdelsen af dette krav i vedligeholdelses-programmet.
Ved større reparationer (når en cykel ikke kan repareres på stedet men ombyttes) føres cyklen til nærmeste GoBike værksted eller anden lokal samarbejdspartner for reparation indenfor 24 timer.
Gennemsnitlige responstid: 45 minutter.

5.4 Info. 11.1 Driftseffektivitet for funktionelle cykler

Leverandøren skal redegøre for, hvordan det kravet om at 90% (80%) af cykler skal være tilgængelig i normal tid og 90% (80%) i myldretid vil blive sikret.

5.4.1 Forebyggende aktiviteter

Dette sikres gennem vores cykel overvågningssystem, samt ved visuel inspektion af vores teknikere.

GoBike vil overvåge og måle dette ved hjælp af GoBike systemer, som vil give forebyggende alarm til GoBike. Hvis antallet af tilgængelige cykler kommer under det fastsatte niveau vil yderligere cykler fra buffer lager blive indsat i omløb, for at opretholde> 90% (80%) tilgængelighed.

5.5 Req. 11.15 - Docking point tilgængelighed - daglig minimum

Det mindste antal docking point til rådighed, må ikke falde under 95% af den aftalte antal docking point, hele dagen.

5.6 Req. 11.16 Reparation og udskiftning af docking point

Ved defekt skal et docking point enten:
1. Repareres eller
2. Udskiftes

Inden for 24 timer efter identifikation af tab af funktionalitet.
Responstid: Reparation udføres så vidt muligt samme dag.

5.7 Req 9.1 hardwaren skal fremstå vedligeholdt og ren

GoBike er ansvarlig for at sikre, at de forskellige hardware (cykler og docking point) altid fremstår vedligeholdt og rene.

5.8 Req. 9.3 - Fjernelse af graffiti

Det er Leverandørens ansvar for at fjerne graffiti på alle hardware-dele inden for 24 timer efter registreringen.

Større graffiti-hærværk fjernes så hurtigt som muligt efter det er konstateret og rapporteret. Der er aftalt følgende strategi for fjernelse af graffiti:

5.8.1 Cykler

Hvis cyklen ikke er fejlmeldt af brugeren kan hærværk kun konstateres i forbindelse med eftersyn eller nivellering. Konstateres der væsentlig graffiti eller anden hærværk i denne forbindelse vil cyklerne blive taget ud af drift straks det opdages.
Hvis cyklen er fejlmeldt af brugeren, typisk i forbindelse med andet hærværk, vil cyklerne blive taget ud af drift efter de retningslinjer, som er beskrevet for fejlbehæftede cykler.
Cykler bliver altid afrenset, også for mindre graffiti, i forbindelse med planlagt service.
Efter afrensning sættes cyklen i drift i forbindelse med den næste nivellering af cykler, dvs. normalt indenfor 24 timer. I perioden med større graffiti hærværk (dvs. mere end 1% af det totale antal cykler pr dag), hvor cyklen er ude af drift på grund af graffiti tæller den ikke med i SLA opgørelsen. Antallet af Graffiti tilfælde bliver rapporteret særskilt i månedsrapporten.

5.8.2 Docking stationer

Hvis graffiti hærværk ikke er anmeldt af brugere eller andre kan graffiti hærværk kun konstateres i forbindelse med eftersyn eller nivellering af cykler. Konstateres der graffiti eller andet hærværk i denne forbindelse, vil graffiti blive fjernet når det opdages, hvis det er muligt uden speciel udstyr. Normalt vil det dog kræve speciel udstyr og faguddannet personale. I så fald vil graffiti-hærværk blive anmeldt til GoBikes leverandør med speciale i graffiti-fjernelse. Graffiti vil i denne forbindelse blive fjernet i løbet af 5 arbejdsdage.
Hvis graffiti hærværk er anmeldt af brugere eller andre vil GoBikes graffiti-fjerner leverandør sikre at graffiti blive fjernet i løbet af 5 arbejdsdage.
Mindre graffiti fjernes, i forbindelse med fjernelse af større hærværk som beskrevet ovenfor. Hvis der ikke har været anmeldt graffiti fjernes det ved halvårlige eftersyn.

5.9 Tyveri

En cykel ophører med at medregnes i " Cykel tilgængelighed", når denne ikke har kunnet spores via GoBike's systemer i 24 timer.

Ultimo hvert kvartal laves en opgørelse over hvor mange cykler der i kvartalet er registreret som forsvundne. Manglende cykler erstattes ved kvartalsafslutning i videst muligt omfang med nye cykler fra GoBikes bufferlager. I tilfælde, hvor svindet overstiger bufferlageret, og Cykel DK bestiller ekstra cykler, afgives hasteordre til UrBike, hvorefter de indsættes så hurtigt som muligt. GoBike fakturerer for ny tilførte cykler i henhold til gældende prisliste og betalingsbetingelser (Ramme aftalens bilag F1a).
En cykel medregnes i " Cykel tilgængelighed" så snart denne (igen) indsættes i cirkulation.

6 Kunde support

I dette afsnit beskrives krav til kunde service. (Bilag A, appendix 10 – Options 10.2)
Uddrag fra kravet er flyttet til SLA-bilaget, da de indeholder specifikke servicemål for kundesupport:

Servicemedarbejderne skal være i stand til at løse slutbrugerens anmodning bedst muligt i første forsøg og dermed undgå, at slutbrugeren bliver sendt videre i systemet uden held.

Leverandøren skal kunne registrere anmodninger fra slutbrugere dag og nat (24/7/365).

Serviceniveau:

- Telefonopkald skal besvares indenfor tres (60) sekunder.
- E-mail skal besvares indenfor fem (5) arbejdsdage.
- Ovennævnte standard skal opfyldes af leverandøren i mindst firs procent (80%) af alle henvendelser i hver kalendermåned.

7 Redistribution

Dette afsnit beskriver krav beskrevet i:

- Bilag A, appendix 11 – SLA
- Bilag A, appendix 10 (Option 10.3 Booking).

7.1 Generelle krav

I dette afsnit beskrives krav som gælder overordnet for andre SLA krav.

7.1.1 Req 11.20 - Klassifikation af Prioritet 1 og Prioritet 2 stationer

Op til 25% af de valgte docking stations lokaliteter, vil blive klassificeret som en "prioritet 1" baseret på Cykel DK's vurdering af placeringens betydning for det samlede system, defineret som omfanget af anvendelsen. De resterende lokaliteter vil blive klassificeret som "Priority 2".

Alle lokaliteter vil blive klassificeret tredive (30) dage forud for det operationelle driftsstarts dato [Godkendt accepttest] Dette sker normalt i forbindelse med installationsgodkendelse (Se PID afsnit 7.6.1 Installationsgodkendelse, alle lokaliteter). Status for hver placering vil kunne revideres i hele kontraktperioden. Kunden skal give Leverandøren med tredive (30) kalenderdages varsel forud for enhver ændring af klassificeringen af lokaliteter.

Lokaliteter som ligger i udkanten af et system bør normalt klassificeres som prioritet 2.

De til en hver tid gældende klassificeringer er listet i appendiks C.

7.1.2 Req. 11.21 Forpligtelse til at indlede en omfordeling

Gobike skal overvåge den geografiske placering af cyklerne og skal på eget initiativ foretage den daglige omfordeling af cykler i hele systemet i forhold til prioriteringen Cykel DK har oplyst i sin klassificering af lokaliteterne.
Gobike vil løbende tage initiativ til dialog hvis det viser sig, at der er behov for ændringer for at optimere driften eller skabe bedre brugeroplevelser. Dette sker naturligt i den månedlige drifts rapportering. Se afsnit: 8.1 Driftsrapport.

7.2 Specifikke krav til Booking

Dette afsnit beskriver de specifikke krav til redistribution.

7.2.1 Option 10.9 – Booking af cykel (Forudbestilling).

Serviceniveau:
100% af bookede cykel skal være til rådighed for slutbrugeren

7.3 Tomme stationer

For at undgå en situation hvor "Tomme stations" fører til bod selv om det skyldes, at alle cykler er udlejet er det aftalt at bodsberegningen suspenderes i perioder, hvor mere end 50% af alle cyklerne i systemet er udlejet.

7.3.1 Req 11.23 – Tomme stationer ved dagens begyndelse

Hver dag klokken 07:00 må ingen docking station være tom.
Måles i procent. Kravet er opfyldt når 100% af alle dockingstationer, ikke er tom.

7.3.2 Req. 11.24 - Tomme stationer i løbet af dagen

For at forenkle beregningen er dette krav delt i to krav: 11.24a og 11.24b.

Req. 11.24a
I perioden mellem 07:00-18:00 må en docking station, ikke være tom mere end fire (4) timer (240 minutter) i alt.

Req. 11.24b
I perioden mellem 18:00 til 07:00 må en docking station, ikke være tom mere end otte (8) timer (480 minutter).

GoBike overholdelse klasse 1 og svar på krav:
Dette sikres gennem vores cykelovervågningssystem, samt visuel inspektion af vores teknikere.
GoBike vil overvåge og måle dette ved hjælp af GoBikes overvågningssystem.

7.3.3 Req. 11.25 - Tomme prioritet 1 stationer i løbet af dagen

Prioritet 1 placeringer (Docking Stations) må ikke være tom i myldretiden i en enkelt periode længere end halvfems (90) minutter.

For at forenkle beregningen er dette krav delt i to krav:
Req. 11.25a Morgen myldretid
Req. 11.26b Aften myldretid

Definition på myldretid: 3.1.2 Req. 11.2 - Definition af spidsbelastningsperiode / myldretid

GoBike overholdelse klasse 1 og svar på krav:
Dette sikres gennem vores cykelovervågningssystem, samt visuel inspektion af vores teknikere.
GoBike vil overvåge og måle dette ved hjælp af GoBikes overvågningssystem.
Væsentlige begivenheder og arrangementer af enhver art, som kan have indflydelse på det normale behov for cykler, vil ikke blive inkluderet i overvågning. GoBike og kunden over forpligtet til at oprette og vedligeholde en gensidig arrangementskalender, så GoBike kan træffe forebyggende foranstaltninger.

7.4 Fulde stationer

Forebyggende foranstaltninger

Dette sikres gennem vores cykel overvågningssystem, samt visuel inspektion af vores teknikere. GoBike vil overvåge og måle dette ved hjælp af GoBikes overvågningssystem.
Væsentlige begivenheder og arrangementer af enhver art, som kan have indflydelse på den normale behov for cykler, vil ikke blive inkluderet i overvågningen. GoBike og kunden er forpligtet til at oprette og vedligeholde en gensidig arrangementskalender, så GoBike kan træffe forebyggende foranstaltninger.

7.4.1 Req. 11.27 – Fulde stationer ved dagens begyndelse.

Hverdag klokken 07:00 må ingen docking stationer være fulde.
Måles i procent. Kravet er opfyldt når 100% af alle docking stationerne ikke er fulde.

7.4.2 Req. 11.28 - Fulde stationer i løbet af dagen

I perioden mellem 07:00-18:00 må en docking station, ikke være fyldt mere end 8 timer (480 minutter) i alt. I perioden mellem 18:00 - 07:00 må en docking station, ikke være fyldt mere end fire (4) timer (240 minutter) i alt.

7.4.3 Req. 11.29 - Fulde prioritet 1 stationer i løbet af dagen

Prioritet 1 placeringer (dockingstationer) må ikke være fuld i myldretiden i en enkelt periode længere end halvfems (90) minutter.

For at forenkle beregningen er dette krav delt i to krav:
Req. 11.29a Morgen myldretid
Req. 11.29b Aften myldretid

Definition på myldretid: 3.1.2 Req. 11.2 - Definition af spidsbelastningsperiode / myldretid

7.5 Req. 11.30 Kvalitetskontrol af serviceniveauet for redistribution.

Efter de første tre (3) operationelle måneder, kan Cykel DK og kommunerne revurdere serviceniveauet for distribution og foretage ændringer til det for bedre at opfylde slutbrugerens behov. Det konkrete serviceniveau med hensyn til tomme og fulde dockingstation (Req. 11.22 -. Req 11.30) vil således i sidste ende blive justeret for bedre at imødekomme efterspørgslen.

Det skal være muligt for Cykel DK at revurdere og ændre serviceniveauet for omfordeling på årsbasis for at opfylde efterspørgslen.

Skulle Cykle DK beslutte at ændre serviceniveauet for distribution, vil cykler overvågningssystemer og skriftlige servicevejledning ændres i overensstemmelse hermed. Enhver større ændring, der er fastsat af kunden kan være genstand for en revision af de tilknyttede gebyrer.

8 Rapportering

Den månedlige SLA rapport vil rapporterer serviceniveau for alle krav. De bodsbehæftede så vel som ikke bodsbehæftede krav.

8.1 Driftsrapport

I vedlagte rapport skabelon (Appendiks A til dette dokument) er det beskrevet hvordan der rapporteres på det enkelte krav. I appendiks B (et regne ark) viser hvordan opfyldelsen af de bodsbehæftede krav beregnes. De ikke bodsbehæftede krav vil blive beregnet og rapporteret på samme måde og efter samme principper.

8.1.1 Frekvens og deadline

Driftsrapporten udkommer senest den 14. i den følgende måned [Info. Req. 11.5].

8.1.2 Indhold

Inden driftsrapporten udsendes, anvendes nedestående (Info 11.5) som check liste, således at alle relevante aspekter af driftssituationen afdækkes.

Info 11.5: Driftsrapporten skal indeholde dokumentation for:

- Løbende sporing af målinger af kommunikationsforbindelser og udførelse af operation
- Analyse af statistikker om svartider, tilgængelighed og belastning
- Overordnet beskrivelse af status og udvikling
- Rapportering på alle serviceniveauer og forslag til ændringer, som, hvis nødvendigt skal iværksættes for at forbedre serviceniveauet
- Kapacitetsudnyttelse - hvor mange cykler er i brug blandt slutbrugerne
- Afvigelse i drift, det vil sige uddrag fra fejl log
- Oplysninger om potentielle fejl, reaktionstider, årsag og fejl rettelse i måleperioden
- Konstant gennemgang af konsekvenser på ydelsen i forbindelse med Cykel DK eller Gobikes planlagte ændringer til systemet landskab, funktionalitet og forbrugsmønster.
- Kan opgøres pr kommune eller en gruppe af kommuner

Req 11.48

- Ved SLA afvigelse: Forslag til forbedringer for at sikre at SLA krav overholdes.

8.1.3 Godkendelse af rapport

Cykel DK, skal inden for 5 arbejdsdage efter modtagelsen af rapporten godkende eller kommenterer rapporten. Hvis rapporten ikke godkendes, vil rettelser blive implementeret i den næste rapport, med mindre andet aftales.

8.1.4 Audit

Cykel DK kan udføre audit af Service level rapporteringen jf. Req 11.46.

8.2 Rapportering ved manglende opfyldelse af SLA

Ved manglende opfyldelse af SLA anvendes følgende check liste (Req. 11.48):

- Gobike udarbejder et skriftligt forslag til forbedringer. Forslaget skal være modtaget af Cykel DK senest 3 arbejdsdage efter Gobike har konstateret, at service level ikke kan opfyldes.
- Forslaget skal godkendes af Kunden
- Gobike skal kunne mødes med Cykel DK inden for 4 dage efter Cykel DK's modtagelse af forslaget med henblik på diskussion og godkendelse af forslaget.
- Initiativerne må ikke pålægge nogen ekstra omkostninger for Cykel DK eller den berørte kommune.

8.3 Maintenance and operation meeting

I forbindelse med i idriftsættelse aftales hvordan samarbejdet omkring systemet styres, herunder frekvensen for drift- og vedligeholdelsesstatusmøder.
Reference: Req 9.4

9 Bodsberegning

Dette afsnit beskriver bodsberegning, på baggrund af Rammeaftalens Bilag A12 – "Compensation"
Alle målinger, bortset målinger vedr. IT system, foretages på dagsbasis (Req. 11.47).

9.1 Bodsberegnings krav

Req. 12.1 Bodsberegning rapport

a) For redistribution, tilgængelighed af cykler og docking point, skal den operationelle effektivitet måles hver dag.
b) Leverandørens samlede bods skal beregnes hver måned for hver kommune, eller hvor dette er aftalt specifikt, per bestilling, hvor flere kommuner deler en ordre.
c) For it-systemet, skal Leverandørens samlede bod beregnes hver måned for hele systemet.
d) Leverandøren skal beregne boden størrelse. Cykel DK kan lejlighedsvis kontrollere beregningerne.

Kundens krav til Leverandørens Operating honorar for sanktioner skal betales af leverandøren til kunden kvartalsvis, baseret på de tre foregående kalendermåneder.
Se afsnit: 8. Rapportering og 9.2. Beregning af driftsbod

Req. 12.2 Driftseffektivitet for cykler tilgængelighed – dagligt minimum

Følgende bodsberegning gælder for serviceniveau af driftseffektivitet for cykler 'tilgængelighed (req. 11.10):

Bod beregnes således: Sommer Vinter	 Under 85% Under 75%	 85,0%-88% 75,0%-78,0%	 88,0%-90,0% 78,0%-80,0%
Cykel tilgængelighed - daglig minimum Det mindste antal cykler til rådighed må ikke falde til under 90% af den aftalte daglige cykel behov i løbet af dagen i perioden fra den 1. marts til 31. december og 80% i perioden fra den 1. januar til den 28. februar.	3 point per 1%	2 point per 1%	1 point per 1%

Eksempel:
I et scenario, hvor det er aftalt, at 3,500 cykler skal være til rådighed, men hvor i en sommer måned i gennemsnit kun er registreret 2,940 cykler, eksisterer en operationel effektivitet på 84%.
Leverandøren skal straffes for den pågældende måned med 540 point i alt, efter følgende beregning:
3,150 cykler = 90% operationel effektivitet
2.940 cykler = 84% operationel effektivitet
((90% - 84%) x 3 point) x 30 dage = 540 point

Beregninger og points skal opgøres pr. dag og herefter sammentælles pr. måned.

Req. 12.3 Driftseffektivitet for cykel tilgængelighed – myldretid.

Følgende bodsberegning gælder serviceniveauet på operationel effektivitet til cykler tilgængelighed i myldretiden (req. 11.11):

Bod beregnes således: Sommer: Vinter:	Under 85% Under 75%	85,0%-88% 75,0%-78,0%	88,0%-90,0% 78,0%-80,0%
Cykel tilgængelighed - myldretiden 90% af den aftalte daglige cykel antal skal være til rådighed i spidsbelastningsperioder i perioden fra den 1. marts til den 31. december og 80% i perioden fra den 1. januar til den 28. februar.	6 point per 1%	3 point per 1%	2 point per 1%

Req. 12.4 Driftseffektivitet for docking points – dagligt minimum.

Følgende bodsberegning gælder serviceniveauet på operation effektivitet for docking point i løbet af hele dagen:

Bod beregnes således:	Under 90%	90% - 93%	93,1% – 94,9%
Req. 11.15 i SLA vedrørende docking point 95% tilgængelighed hele dagen	3 point per 1%	2 point per 1%	1 point per 1%

Req. 12.5 Driftseffektivitet for betalingsmaskiner – dagligt minimum.

Følgende bodsberegning gælder serviceniveauet på driftseffektivitet for betalingstjenester maskiner hele dagen:

Penalty occurs when	Under 85%	85,0%-88%	88,0%-90,0%
Req.11.18 SLA vedrørende betaling maskine 90% tilgængelighed hele dagen.	30 point per 1%	20 point per 1%	10 point per 1%

Req. 12.6 Driftseffektiviteten for re-distribution (Tomme docking stationer)

Følgende bodsberegning gælder serviceniveauet på operationel effektivitet til omfordeling (req. 11.24):

Bodsberegningen gælder:	Op til 1 time	Op til 2 timer	Op til 3 timer eller mere.
Req.11.24 Tomme stationer i løbet af dagen I perioden mellem 07:00-18:00 må en docking station ikke være tom mere end fire (4) timer (240 minutter) i alt. I perioden mellem 18:00 til 07:00 må en docking station, må ikke være tom mere end otte (8) timer (480 minutter).	10 point	20 point	30 point

Eksempel:
Req. 11.24a Docking stationer må ikke være tome mere end 4 timer (7:00-18:00)

I et scenario, hvor alle stationer i gennemsnit er tomme i otte (8) timer om dagen, bliver leverandøren for den pågældende dag, straffet med 60 point, efter følgende beregning:

Over 4 timer = 30 point for de første 3 timer + 30 point for 4. time = 60 point per dag.

Det er usandsynligt, at alle stationer i gennemsnit vil være tom nøjagtig samme tid, for en hel måned. Men hvis det sker, at alle stationer i gennemsnit er tomme i 8 timer hver dag i en hel måned, så bliver beregningen:

Pr. måned: 60 point x 30 dage = 1,800 point

Req. 12.7 Driftseffektivitet for redistribution (Tomme Proritet 1 stationer).

Følgende bodsberegning gælder serviceniveauet på operationel effektivitet for redistribution (req. 11.25):

Bodsberegning:	Op til 30 minutter	Op til 45 Minutter	Op til 1 time eller mere.
Req.11.25 in SLA regarding Tomme prioritet 1 stationer i løbet af dagen Prioritet 1 placeringer (Docking Stations) må ikke være tomme i myldretiden i en enkelt periode længere end halvfems (90) minutter.	10 points	20 points	30 points

Dette krav er i beregningerne delt i 2 krav:

- Req 11.25a Morgen myldretid
- Req 11.25b Aften myldretid

For definition af myldretid se: 3.1.2 Req. 11.2 - Definition af spidsbelastningsperiode / myldretid

Eksempel:
Req. 11.25b Prioritet 1 Docking stationer må ikke være tome mere end halvfems minutter

I et scenario, hvor alle Prioritet 1 stationer i gennemsnit er tomme i tre (3) timer i aften myldretiden, (dvs. i 90 minutter ud over det tilladte) bliver leverandøren for den pågældende dag, straffet med 60 point, efter følgende beregning:

30 point for de første 60 minutter + 30 point for de følgende 30 minutter = 60 point per dag.

Beregninger og points skal opgøres pr. dag og herefter sammentælles pr. måned (Se afsnit:9.1.a).

Det er usandsynligt, at alle stationer i gennemsnit vil være tom nøjagtig samme tid, for en hel måned. Men hvis det sker, at alle prioritet 1 stationer i gennemsnit er tomme i 3 timer hver aften myldre tid i en hel måned, så bliver beregningen:

Pr. måned: 60 point x 30 dage = 1,800 point

Req. 12.8 Driftseffektivitet for redistribution (Fulde stationer)

Følgende bodsberegning gælder serviceniveauet på operationel effektivitet for redistribution (req. 11.28):

Bodsberegning:	Op til 1 time	Op til 2 timer	Op til 3 timer eller mere
Req. 11.28 in SLA Fulde stationer i løbet af dagen I perioden mellem 07.00-18.00 må en docking station ikke være fyldt mere end 8 timer (480 minutter) i alt. I perioden mellem 18,00 - 07:00 må en docking station ikke være fyldt mere end fire (4) timer (240 minutter) i alt.	10 point	20 point	30 point

Dette krav er i beregningerne delt i 2 krav:

- Req 11.28a Dag 07.00-18.00
- Req 11.28b Nat 18.00-07:00

Hvis SLA kravet overskrides med mere end 3 timer tillægges yderligere 30 points for den 4. time og for hver af de efterfølgende påbegyndte timer.

Req. 12.9 Driftseffektivitet for redistribution (Fulde Prioritet 1 stationer)

Følgende bodsberegning gælder serviceniveauet på operationel effektivitet for redistribution (req. 11.29):

Bodsberegning:	Op til 30 minutter	Op til 45 minutter	Op til 1 time eller mere
Req. 11.29 Fulde prioritet 1 stationer i løbet af dagen Prioritet 1 placeringer (docking stationer) må ikke være fulde i myldretiden i en enkelt periode længere end halvfems (90) minutter.	10 point	20 point	30 point

Dette krav er i beregningerne delt i 2 krav:

- Req 11.29a Morgen myldretid
- Req 11.29b Aften myldretid

For definition af myldretid se: 3.1.2 Req. 11.2 - Definition af spidsbelastningsperiode / myldretid

Req. 12.10 Driftseffektivitet for IT system

Den følgende bodsberegning gælder for serviceniveauet på operationel effektivitet:

Bodsberegning:	Under 94,5%	94,5%-97,5%	97,5%-99,0%
Req. 11.45 in SLA. Operationel effektivitet for front-end Det bruger vendte system skal ses som et 24/7/365 system, der er til rådighed 24-timer, 7-dage om ugen, 365 dage om året. Leverandøren skal levere et frontend-system med en operativ effektivitet på 99%.	9000 point per 1%	6000 point per 1%	3000 point per 1%

Målingen foretages på månedsbasis (Req. 11.47).

9.2 Beregning af driftsbod

Dette afsnit skal opdateres med alle krav specificeret i Req. 12.1

Baseret på den månedlige bodsberegning, summeres det samlede antal point som følge af manglende opfyldelse af de bodsbelagte serviceniveauer som beregnet nedenfor. Antallet af point bestemmer bodens størrelse på den måde, at jo større antal point svarer til større bod.

Bodsberegningen i forbindelse med manglende opfyldelse af serviceniveauet definerer en procentdel af leverandøren samlede Operating honorar i henhold til bilag ~~15 Priser~~ F1a Rammeaftalens priser. Bodens størrelse kan som maksimum udgøre 75% af Leverandørens samlede driftsomkostninger.

Hvis bodsberegningen tre gange i hele aftaleperioden beregnes til 50% eller mere vil dette blive betragtet som en væsentlig misligholdelse.

Bonusmodel 3 er valgt med følgende parameter for driftsbod:
For hver 100 point bliver betalingen for driftsydelsen reduceret med: 0,05%

9.2.1 Beregning af driftsbod, eksempel

Nedenfor ses et eksempel for beregningerne af point pr måned og deres udmøntning i bod

Example

	Service level	Measured SL	Difference compared to SLA	Points / unit	Points / day	**Points / month**
Req.11.10 Bicycles availability the whole day (80% and 90%)	**90**	88	2	2	4	**120**
Req. 11.11 Bicycles availability during peak hours (80% and 90%) [7.00-9.00 and 15.00-18.00]	**90**	88	2	3	6	**180**
Req. 11.15 Docking points availability during the whole day	**95**	94	1	1	1	**30**
Req. 11.24a Docking stations shall not be empty more than 4 hours (6.59-18.00) [Hours]	**4**	11	7	30 for the first 3 hours and 30 for the 4th hour	150	**4500**
Req. 11.24b Docking stations shall not be empty more than 8 hours (18.01-7.00) [Hours]	**8**	13	5	30 for the first 3 hours and 30 for the 4th hour	90	**2700**
Req. 11.25a Priority 1 docking stations shall not be empty for a single period longer than 90 [minutes] (7.00-9.00)	**90**	120	30	30 for the first hour and 30 for the 2nd	10	**300**
Req. 11.25b Priority 1 docking stations shall not be empty for a single period longer than 90 [minutes] (15.00-18.00)	**90**	180	90	30 for the first hour and 30 for the 2nd	60	**1800**
Req. 11.28a Docking stations (ds) shall not be full more than 8 hours (07.00-18.00)	**4**	3	0	30 for the first 3 hours and 30 for the 4th	0	**0**
Req. 11.28b Docking stations (ds) shall not be full more than 4 hours 18:00 - 07.00	**4**	17	13	30 for the first 3 hours and 30 for the 4th	330	**9900**
Req. 11.29a Priority 1 docking stations shall not be full for a single period longer than 60 [minutes] (7.00-9.00)	**90**	120	30	30 for the first hour and 30 for the 2nd	10	**300**
Req. 11.29b Priority 1 docking stations shall not be full for a single period longer than 60 [minutes] (15.00-18.00)	**90**	180	90	30 for the first hour and 30 for the 2nd	60	**1800**
Req. 11.45 Operation efficiency of 99,0 % for front end	**99**	99	0	3000	N/A	**0**
Total points / month						**21630**

Se eksempel på hele beregningen i appendiks A: "Regneark – Bodsberegnings eksempel" i fanen "SLA Calculator".

10 Krav Sporbarheds matrix

Alle krav i Appendiks A9, A11 og A12 er evalueret i forbindelse med udarbejdelse af dette dokument.

ID	Specification	Reference
Info. 9.1	Optimisation of the maintenance	Kravet knytter sig alene til besvarelse af udbuddet.
Info. 9.2	Description of procedure for maintenance	Kravet knytter sig til besvarelse af udbuddet. Samt til dette samlede dokument.
Info. 9.3	The suppliers organisation of the maintenance	Udgået
Info. 9.4	Local organisation for maintenance	Udgået
Req. 9.1	The hardware must appear well maintained and clean	5.7
Info. 9.5	Operation and maintenance of hardware	Kravet knytter sig alene til besvarelse af udbuddet.
Req. 9.2	Suggestions for replacement of hardware	Kravet knytter sig alene til besvarelse af udbuddet.
Info. 9.6	Replacement or repair	Kravet knytter sig alene til besvarelse af udbuddet.
Req. 9.3	Removal of graffiti	5.8
Info. 9.7	Procedure for removal of graffiti	Udgået
Info. 9.8	Service window	Kravet knytter sig alene til besvarelse af udbuddet.
Req. 9.4	Maintenance	8.1 og 8.3
Info. 9.9	Seasonal fluctuations	Udgået
Req. 9.5	Winter storage	Udgået
Req. 10.9	Option: Booking af cykel	7.2.1
Req. 11.1	Definition of regular operation time	3.1.1
Req. 11.2	Definition of peak hour	3.1.2
Req. 11.3	Definition of bicycle availability	3.1.3
Req. 11.4	Definition of docking points unavailability	3.1.4
Req. 11.5	Measurement of availability	3.1.5
Req. 11.6	Definition of payment machine availability	Kravet er ikke relevant medmindre det aftales at Gobike skal levere betalings maskiner (kiosk).
Req. 11.7	Definition of an empty station	3.1.6
Req. 11.8	Definition of a full station	3.1.8

ID	Specification	Reference
Req. 11.9	Definition of response time	3.1.10
Req. 11.10	Bicycle availability – daily minimum	5.1
Req. 11.11	Bicycle availability – peak hours	5.2
Req. 11.12	Repair of bicycle	5.3
Req. 11.13	Requiring repair	3.1.11
Req. 11.14	Functional bicycle	3.1.12
Info. 11.1	Operational efficiency for functional bicycles	5.4
Req. 11.15	Docking point availability – daily minimum	5.5
Req. 11.16	Repaired or replaced docking points	5.6
Info. 11.2	Operational efficiency for functional docking points	Kravet knytter sig alene til besvarelse af udbuddet.
Req. 11.17	Repaired or replaced payment machines	Kravet er ikke relevant medmindre det aftales at Gobike skal levere betalings maskiner (kiosk).
Req. 11.18	Payment machine availability – daily minimum	Invalid
Req. 11.19	Payment machine availability – peak hours	Invalid
Info. 11.3	Operational efficiency for functional payment machine	Invalid
Req. 11.20	Classification of Priority 1 and Priority 2 stations	7.1.1
Req. 11.21	Obligation to initiate redistribution	7.1.2
Req. 11.22	Measurement of an empty station	3.1.7
Req. 11.23	Empty stations at the beginning of the day	7.3.1
Req. 11.24	Empty stations throughout the day	7.3.2
Req. 11.25	Empty priority 1 stations throughout the day	7.3.3
Req. 11.26	Measurement of a full station	3.1.9
Req. 11.27	Full stations at the beginning of the day	7.4.1
Req. 11.28	Full stations throughout the day	7.4.2
Req. 11.29	Full Priority 1 stations throughout the day	7.4.3
Req. 11.30	Quality check of the service level for redistribution	7.5
Req. 11.31	Measurements in peak load periods	4.2.1
Req. 11.32	Achievement of goals	4.2.2
Info. 11.4	Measuring response time	4.2
Req. 11.33	Measurements in peak load periods	4.2.3
Req. 11.34	Typing speed	4.2.4
Req. 11.35	Moving from one screen to the next	4.2.5

ID	Specification	Reference
Req. 11.36	Lookup in drop-down lists	4.2.6
Req. 11.37	Reports used frequently	4.2.7
Req. 11.38	Reports used occasionally	4.2.8
Req. 11.39	Data from external systems	4.2.9
Req. 11.40	Login	4.2.10
Req. 11.41	Repeated login	4.2.11
Req. 11.42	Measurement of operational efficiency	4.1
Req. 11.43	Monthly statements	4.1.1
Req. 11.44	Operational efficiency for the administration system (back end)	4.1.2
Req. 11.45	Operational efficiency for the front-end	4.1.3
Info. 11.5	Documentation of service levels	8.1.1 og 8.1.2
Req. 11.46	Control of service level	8.1.4
Req. 11.47	Period of measurement	9.1
Req. 12.1	Penalty statement	9.1
Req. 12.2	Operational efficiency for bicycles' availability – daily minimum	9.1
Req. 12.3	Operational efficiency for bicycles' availability - peak hours	9.1
Req. 12.4	Operational efficiency for docking points during – daily minimum	9.1
Req. 12.5	Operational efficiency for payment machines – daily minimum	9.1
Req. 12.6	Operational efficiency for redistribution (Empty stations)	9.1
Req. 12.7	Operational efficiency for redistribution (Empty Priority 1 stations)	9.1
Req. 12.8	Operational efficiency for redistribution (Full stations)	9.1
Req. 12.9	Operational efficiency for redistribution (Full Priority 1 stations)	9.1
Req. 12.10	Operational efficiency for the IT system	9.1
Req. 12.11	Fulfillment of milestones	9.2

Følgende Krav er ikke behandlet yderligere:

11 Noter for systemudvikling og set-up

Dette afsnit er præliminært da intern afklaring er nødvendigt.

Krav	Notes
4.1.2 Req. 11.44 - Driftseffektivitet til administration system (back-end)	Måling af dette krav tager sigte på at måle systemets oppetid. Registrering af nedetid sker på bagrund af observationer og manuel gennemgang af system log. Det vurderes ikke muligt at måle dette fuldt automatisk. Se eksempel i SLA rapport
4.1.3 Req. 11.45 - Operationel effektivitet for front-end.	Se ovenstående.

12 Appendiks

12.1 Appendiks A: Månedlig SLA rapport - skabelon

12.2 Appendiks B: Regneark – Bodsberegnings eksempel

12.3 Appendiks C: Liste over prioritet 1 docking stations

(Appendiks C udarbejdes i forbindelse med godkendelse af installation).

Bilag E:
Test Plan

05. October 2012
Final

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1 Document history

This document is subject to document control. For more information see PID section: 15.1 Document Management.

Revisions date	Author	Version	Change description
05-10-2012	PSA	5	Updated based on document review by Anne Mette Hass, on behalf of DSB Comments: 59-61 New heading 6.1.1 and new section 6.1.2 Section 8.9 edited.
05-10-2012	PSA	Final	Til kontrakt

2 Introduction

This document is the Frame Agreement Appendix E: Test Plan for the GoBike - Cykel DK project. The document has been prepared on the basis of Appendix 1 (appendix 7) from 10 July 2012 and document prepared by Anne Mette Hass, Devoteam, presented 24 September 2012 (no date).
For references used in this document see section: 2.4.1 Reference list below. All references are shown in square brackets like this: [Frame Agreement].

2.1 Purpose

The purpose of the test plan is to provide an overview about the test activities planned in connection with development and operation of the GoBike System. Furthermore, the document aims to outline properties of the tests to be performed, such as the Test policy, test strategies, and outline the contents of each of the planned test in the project.
The purpose of the Test Plan is to achieve the following goals:

- Define testing strategies for each area and sub-area to include all the functional and quality (non-functional) requirements. This will be described herein.
- Define bug-tracking procedures: Please refer to [PID Bug status list].
- Identify testing risks: Described herein: See section 3.7 Risk management
- Identify required resources and related information: See next section.
- Provide testing Schedule: The detailed test schedule is not available for the time being. However the overall project schedule, which also provides forecasted dates for approving the various tests, may be found in [PID Schedule].

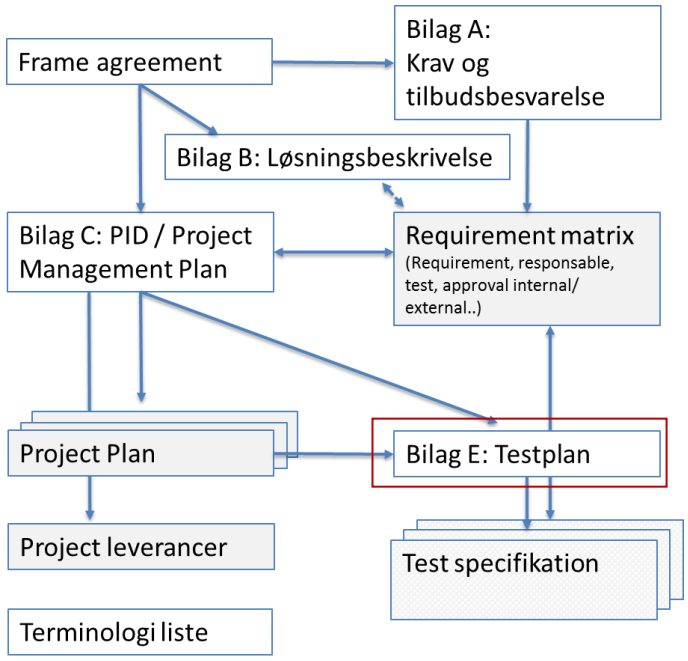
2.2 Scope

The document will focus on test activities as defined in the framework agreement only. In order to demonstrate consistency between the delivered products and the requirements, GoBike shall execute and Bicycle DK shall witness these tests.
Internal GoBike tests will not be discussed in this document.

2.3 Definitions

This document uses the definitions as described in the Framework Agreement section 1 Definitions.

2.4 Documentations structure



Figur 1: Relation between this Test Plan, PID and other contract documents

The figure shows the overall relationship between this document and the project's other important documents.

2.4.1 Reference list

Reference	Description
Frame agreement	Frame agreement between Cykel DK and GoBike.
PID	Frame agreement appendix C: Projektinitieringsdokument (Project management Plan)
PID Bug status list	PID section 12.2.2 Project software Bug Status list
PID Documentation	PID section: 15 Documentation.
PID Installation test	PID Section: 7.4.2; 7.6.1 and 7.6.2
PID Risk management	PID section 11. Shared risk management
PID Schedule	PID section: 14.1 Hoved milepæle (Main mile stones)
PID QA	PID section 13.2 Kvalitetssikring (Quality management)
Solution description: User interaction	Frame Agreement Appendix B: ”Løsningsbeskrivelse” Appendix A: Systems description & user interaction.

All references used in this document are shown in square parenthesis e.g.: [PID].

2.4.2 References to other documents

Project quality management and GoBikes quality policy and objectives are described in [PID QA].
A list that contains all project documents expected to be used in the project life cycle, are listed in the [PID Documentation].

2.5 Updates to the document

GoBike and Bike DK will continually assess the need to update the document.

2.6 System overview

The tests are expected to be done for the following parts of the bike-sharing system:

- Bicycles, standard
- eBike, Bicycles
- Docking stations
- IT-system
- Integrations
- Booking and payment

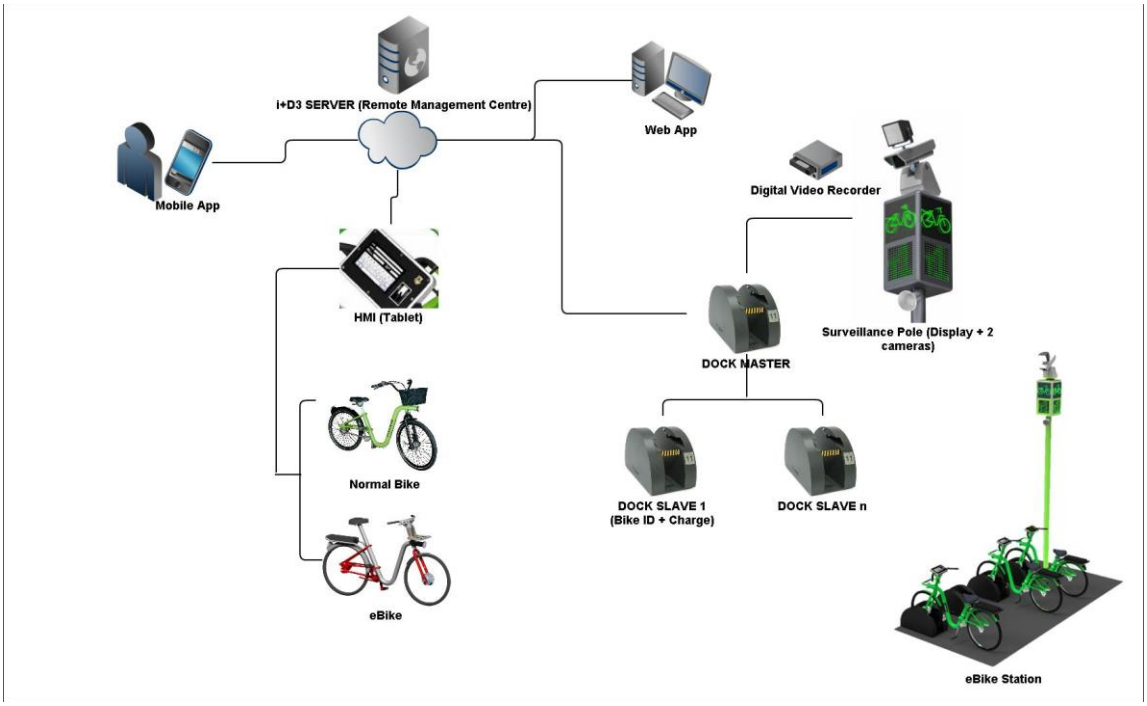


Image 1 Bike-sharing system overview (Note: No surveillance system will be included)

The test object is the bike-sharing system as a whole with all the components interacting.

2.7 Readers guide

The document is generally divided into 6 parts:

- Introduction, ending with this section.
- Section 3: Test Policy and Test Strategy, providing the background information for all tests.
- Section 4 – 8 where the five specific tests assignments will be described.
- Section 9: Acceptance criteria
- Section 10: A "Traceability Matrix" which provides references between the parts of the test documentation and contract requirements.
- Finally, an appendix showing the standard table of contents for a test specification.

3 Test Policy and Test Strategy

All test assignments will be carried out based on GoBikes Quality policy and objectives as outlined in [PID QA].

3.1 Quality Objective

The objective of testing the system is to identify and communicate all issues and associated risks, communicate all known issues, and ensure that all issues are addressed in an appropriate matter.

3.2 Test Methodology

Common work process for all tests: The following process shall be followed for all tests to be executed as stipulated above:

1. GoBike elaborate and issue a test specification for the test in question.
2. Cykel DK approves the test specification or provides comments.
3. The test is scheduled by GoBike in agreement with Cykel Dk.
4. The test is executed as stipulated above. It is a condition to start the test that the test specification is approved.
5. During the test GoBike record and document the test result.
6. If a test takes more than one day: Then all performed test results are summarized at the end of the day.
7. At the end of the test Cykel DK shall inform GoBike about their finding and conclusion: Whether the test is approved or not.
8. At the end of the test GoBike shall issue a test report with the conclusion of the test.
9. The test report shall be approved by Cykel DK or commented.

For the documentation procedures in general please refer to [PID Documentation].

3.3 Organisation

GoBikes partners and subcontractors will be responsible for all tests related to the development process. Whereas, the planning and execution of all tests defined in the frame agreement will be defined, managed and controlled by Gobike. The level of independency will, therefore, not be stated outlined in each individual test, because this is valid for all tests.
Gobike will assign all needed qualified personnel to execute all the tests and to record and document all results. Cykel DK has to provide resources to witness all test activities.

3.4 Standards

The development of this document and test specifications will be inspired by the ISO 29119 (draft status).

3.5 Reuse of test material

All test activities will be carried out in a Danish environment and the working language during the test naturally will be in Danish. However, Gobike expects to be able to reuse the material in other international projects, therefore all test specifications are planned to be elaborated in English. Furthermore, some of the tests might be delivered by technical specialists not speaking Danish. This is especially the case for the Hardware test.

3.6 Configuration management

All test documents will be controlled as defined in [PID Documentation].

3.7 Risk management

All tests will be planned and defined based on an internal risk analysis. Gobike use the same risk methodology internally as described in [PID Risk management].
The risk analysis is among other used to define the test coverage (selection of functionality that must be part of a given test) and the priority of test cases.
The main parameter used in the risk analysis is end-user perception. That is, end user functions will have a much higher test coverage that e.g. functions used by GoBike service staff.

3.8 Test coverage

It is planned to test against all testable product requirements stated in the Frame agreement appendix A. That is, all requirements that defines features or functionality of the delivered products. This is about 150 requirements mainly defined in Bilag A, Appendix 2 of the Frame agreement.
However, the test coverage on some requirements might vary and depend on the risk analysis described above.

3.9 Test documentation

The following documentation will be produced for each test, as applicable:

- Test assignment plan (If deemed necessary by the parties.).
- Test specification
- (Final) Test report.
- Change request.
- Test log (may be part of the test specification or a separate document).
- Test data.

Due to the nature of the project with relatively few requirements no test execution is foreseen to take more than 5 working days. Therefore, the need for test progress reports is not deemed necessary.
All test logs and other test documentation will be version controlled and saved according to [PID Documentation].

3.10 Tools and automatic test

No special tools are identified to be used nor automatic test will be used in any of the outlined tests.

3.11 Frame Agreement, Test activities

The following test assignments are part of the Frame Agreement:

- Proof of concept test
- Hardware Test
- Pilot test
- Acceptance test (Which also includes functions test assignment and flow test assignment)
- Performance test (Which includes a System performance test assignment and an Operation performance test.

4 Proof of concept test

The Proof-of-Concept shall cover essential parts of the offered concept, including the IT-solution and the hardware components. The test will be executed as a workshop where all elements of the solution will be discussed and the concept of the system will be demonstrated. [Reference: 158 Req. 7.1a]
As the project is a development project, several elements of the solution will not be fully operational for testing. The major part of the test will, therefore, be carried out as mock-ups of the offered concept. However, all system elements shall be discussed and complete workflows will be demonstrated.
The workflow will be carried out as close to the final use of the system. Eg. Book a bike, collect the bike, go for a trip, and return the bike. Furthermore, a number of workflows will demonstrate common error situations.
The scope of these tests will be agreed with Customer as well as the test setup.

4.1 Test environment

The test will be executed in a test environment build for the purpose of the test.
The test environment will contain:

- A number of bikes with a tablet computer (Not final version)
- A number of docking stations
- Web mock-up
- Simple server mock-up

[Reference: 158 Req. 7.1d]

4.2 Entry criteria

- The Proof of Concept test assignment shall be executed after contract formation. [Reference: 158 Req. 7.1a].
- Cykel DK shall approve the Test specification prior to execution of the Proof of Concept test assignment.

4.3 Exit Criteria

- The test shall include an evaluated dialogue between Cykel DK and Gobike [Reference: 158 Req. 7.1b].
- Cykel DK shall approve the test when the Accept criteria are met [Reference: 178 Req. 7.13]. The test is complete when the test is approved [Reference: 158 Req. 7.1c].

4.4 Accept criteria

The accept criteria for the Proof-of-Concept shall be agreed between Customer and Supplier before the execution of the test [Reference: 159 Req. 7.2d].
The accept criteria will be agreed and documented in the Test specification for the test assignment.

4.5 Test re-run and regression test

If the first Proof of Concept test assignment is not approved by Cykel DK, then a second test will be performed within 14 calendar days after rejection of the first test [Reference: 159 Req. 7.2a].
If a new test shall be executed, then the scope shall be agreed with the customer.

5 Hardware test

Bike-sharing system is a solution that contains several subsystems (see Image 1 in section: 2.6 System overview). All hardware subsystems will be certified to assure compliance with EU Directives and regulations. That is:

- BiCycle, Mecanical
- BiCycle, Electrical,
- Dockingstation

Bikes (mechanical and electrical powered) will be designed to fulfil the following regulatory frames:
EN 14764: City and trekking bicycles – Safety requirements and test methods

Tablets, (Man machine interface which will serve the rider for different purposes as payment device, navigator, information system, etc.) as subsystem of both type of bikes, will be subdued to the regulatory frame stated above (EN 14764 and EN 15194) and its derivatives. As an electronic subsystem it must satisfy
EMC norms (subject to revision when develop Design Validation Plan for the components)

- EN 61000-3-2, Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current ≤ 16A per phase)
- EN 61000-3-3, Electromagnetic compatibility (EMC) – Part 3-3: Limits – Section 3: Limitation of voltage
- Fluctuations and flicker in low-voltage supply systems for equipment with rated current ≤ 16 A
    - ISO 11451-1, Road vehicles – Vehicle test methods for electrical disturbances from narrowband radiated electromagnetic energy – Part 1: General principles and terminology
    - ISO 11452-1, Road vehicles – Component test methods for electrical disturbances from narrowband radiated electromagnetic energy – Part 1: General principles and terminology
    - ISO 11452-2, Road vehicles – Component test methods for electrical disturbances from narrowband radiated electromagnetic energy – Part 2: Absorber-lined shielded enclosure
    - ISO 11452-3, Road vehicles – Component test methods for electrical disturbances from narrowband radiated electromagnetic energy – Part 3: Transverse electromagnetic mode (TEM) cell
    - ISO 11452-4, Road vehicles – Component test methods for electrical disturbances from narrowband radiated electromagnetic energy – Part 4: Bulk current injection (BCI)
    - ISO 11452-5, Road vehicles – Component test methods for electrical disturbances from narrowband radiated electromagnetic energy – Part 5: Stripline
    - CISPR 25:2008, Vehicles, boats and internal combustion engines - Radio disturbance characteristics – Limits and methods of measurement for the protection of on-board receivers
- Regarding driver information functionality ISO 2575, Road vehicles – Symbols for controls, indicators and tell tales will be considered
- Resistance against impacts will be subjected to test according IEC 60068-2-75:1998, Environmental testing – Part 2: Tests – Test Eh: Hammer tests

- Assuring Protection Grade (IP Code) will be referenced to IEC 60529:1991, Degrees of protection provided by enclosures (IP Code). This IP protection will satisfy the CPH environmental conditions and the Customer requirements. IP66 will be aimed (subject to revision when DVP is designed)

Need for other tests will be assessed based on an analysis of the general Hardware Requirements stated in the Customer specification (Frame agreement Appendix A, Appendix 02).
Durability tests will be performed to assure the warranty period and the resistance of bikes and docks, including their components (Based on certificates).
When required (ie. to guarantee tablet durability), accelerated aging with Arrhenius methodology or equivalent will be carried out and durability test set up and test benches will be designed (Based on certificates).
CE approval will be obtained for all the hardware subsystems which constitute the bike-sharing solution.
Based on the nature of the product the test is foreseen to be a Desk audit of all above stated certificates.

5.1 Test environment

The vast majority, if not all tests, will be carried out by recognized certification laboratories.
However, if need for other tests are defined, then the test will be executed in the test environment build for the purpose of all function and flow test (Pilot-test and Acceptance test).

5.2 Entry criteria

- The Hardware test can start any time after contract formation.
- Cykel DK shall approve the Test specification prior to execution of the test assignment. Note: Regarding certifications, the test specification will contain a list of certifications to be obtained only.

5.3 Exit Criteria

- Cykel DK shall approve the test when the Accept criteria are met [Reference: 178 Req. 7.13]. The test is complete when the test is approved.

5.4 Accept criteria

The accept criteria for the hardware test assignment shall be agreed between Customer and Supplier before the execution of the test.
The accept criteria will be agreed and documented in the Test specification for the test assignment.

5.5 Test re-run and regression test

Re-run of the test is not foreseen. However, a re-run of the test may be agreed among the parties, should the need arise due to lack of approval of the first test or in case of a change request related to hardware.

6 Pilot test

Because Pilot test will be subset of acceptance and flow test the inputs and test techniques will be the same. Take into account that pilot-test cover only normal operation situation.
[Reference 163 Info Req 7.2]

6.1 Test environment

The test will be executed in a test environment build for the purpose of pilot test and acceptance test. Furthermore, the test environment will be used for regression test of new software version to be put in operation after the start of operation.

6.1.1 Test environment

The pilot test includes the full establishment of a smaller number of locations as well as the full establishment of the IT-system and shall be executed as a small Acceptance test with a flow-test.
Regarding the locations a proposal is to cover at least 4 types:
Two locations indoor:

- One location simulation a subway station (a lot of traffic, probably good for stress testing)
- Other location to define with less traffic

Two locations outdoor (If more practical this may also be installed indoor):

- One location in city centre (prefer a place with a lot of traffic, probably good for stress testing)
- Other location to define with less traffic

Each location should have between 10 and 20 docks and the test bikes will be between 10 and 20.

6.1.2 Test in production environment

The production environment will also be available for testing. For general test assignments, this is only an option prior to start of operation. In case the pilot test assignment need to be executed after start of operation, as a basic rule, only the test environment may be used for testing.
However, some specific tests may only, due limitations to test environment and connected customers test environment, be executed in the production environment.
In case, such test is required in the production environment, after start of operation, some restrictions may apply, due to the nature of a live operation system (System security, audit trail, Book keeping legal requirements, and legal limitations on testing using “real money transactions”).
Prior to the start of a test assignment Cykel DK and GoBike will agree on the part of the test assignment that will be executed in the test environment and what part be executed in the production environment.

6.2 Test Specification (Scripts, test cases, test suites, data, …)

A Test Specification document is derived from the Test Plan as well as from the specification documents (Primarily Customer requirements Appendix A, Appendix 2 of the Frame Agreement).
It provides specifications for the construction of Test Cases and includes list(s) of test case areas, test cases, test data, test objectives and acceptance criteria.
An index of one test specification document can be seen in Appendix A of this document.

6.3 Entry criteria

- The Pilot test assignment can start any time after Proof of Concept and must be executed prior to the Accept test assignment [Reference: 161 Req 7.3a]. The Test assignment shall be executed prior to any hardware delivery [Reference: 161 Req 7.3d].
- The software shall be ready for test.
- Cykel DK shall approve the Test specification prior to execution of the test assignment.

6.4 Exit Criteria

- The Supplier's pilot test shall include an evaluated dialogue between Customer and Supplier [161 Req 7.3b].
- Cykel DK shall approve the test when the Accept criteria are met [Reference: 178 Req. 7.13]. The test is complete when the test is approved.

6.5 Accept criteria

The accept criteria for the test assignment shall be agreed between Customer and Supplier before the execution of the test [Reference: 179 Req 7.14].
The accept criteria will be agreed and documented in the Test specification for the test assignment.

6.6 Test re-run and regression test

Gobike can execute three pilot-tests in total within 30 calendar days. In case the GoBike does not get the Cykel DK's approval after the execution of the pilot-test, maximal two additional pilot-tests can be executed. [Reference: 162 Req 7.4a]
The GoBike shall in this case execute a second or possibly third pilot-test within 30 calendar days after the Cykel DK's rejection of the first pilot-test [Reference: 162 Req 7.4b].
In case a second or third test is to be executed the scope of the test will be agreed between the parties prior to the execution of the test assignment.

6.7 Test design

Gobike will use the follow charts developed in specification phase to design test cases.
Example of such user flow charts may be found in [Solution description: User interaction].

7 Acceptance test

The acceptance test contains two main elements: The system integration test assignment and the flow test assignment.
[Reference: 164: Info req 7.3] [Reference: 169: Info req 7.8a]

7.1 System integration test

The purpose of *Systems Integration testing* is to provide information and confidence that the *bike-sharing system* is able to successfully interoperate with other specified systems, and does not have an adverse effect on other systems that may also be present in the live operating environment or *vice versa*. The system shall be able to integrate with the following systems of the Customer:

- DSB's data warehouse
- S-more - DSB's S-tog loyalty program

System integration test includes all test needed to assure the correct integration with data warehouse and loyalty program.

7.2 Flow test, IT, system test

The purpose of *Acceptance Testing* is to confirm that the system meets its customer requirements and to provide confidence that the system works correctly and is usable before it is formally "handed over" to Cykel DK. These tests shall be done after proof of concept test, Hardware test, and pilot test. All the user-flows and situations will be tested. Test procedures and test cases will be produced based on the following process:

- Define user roles (user types) to include in the test. The solution description (Please refer to the Løsningbeskrivelse, Framework agreement appendix B) shows an overview of types of users and their relations and is the reference to define the roles to test.
- Determine what different type of user will do (user-flows), how they will do (scenario, complex interaction with the system).
- Determine if test will be done with real user data or anonymous user data may be used simulate a user.
- Document all test cases.

Regarding the flow test an exhaustive test will be done covering test procedures and high level cases that involves multiple activities with multiple type of users connected end-to-end, trying to vary timing and sequencing and try parallel activities not only in normal operation situation.
The level of essential part to be test, the use of real user data or simulated users as much as the detailed level of test cases will be agreed with the Customer in order to fulfil all the expectations.

7.3 Test environment

Please refer to the description of the test environment in section: 6.1 Test environment.
Test assignments may be carried out in the test environment or in production environment.
Prior to the test assignment Cykel DK and GoBike will agree on the part of the test assignment that will be executed in the test environment and what part be executed in the production environment.
This is also valid for the integration test. An access to DSB test system will be needed to test if communication with bike-sharing system does not have an adverse effect on these systems. Further knowledge about the DSB infra-structure and possible test environment is needed in order to plan this integration test assignment.
However, the tests shall be executed under conditions that to the greatest possible extent correspond to a normal operation situation. [Reference: 172 Req 7.7]

7.4 Entry criteria

- The Acceptance test assignment can start after the Proof of Concept and the Pilot test have been approved [Reference: 170 Req 7.5a].
- Furthermore the installation test specification shall be approved. Please refer to [PID Installation test]. [Reference: 170 Req 7.5b]
- Cykel DK shall approve the Test specification prior to execution of the test assignment.

7.5 Exit Criteria

- Cykel DK shall approve the test when the Accept criteria are met [Reference: 178 Req. 7.13]. The test is complete when the test is approved.

7.6 Accept criteria

The accept criteria for the test assignment shall be agreed between Customer and Supplier before the execution of the test [Reference: 179 Req 7.14].
The accept criteria will be agreed and documented in the Test specification for the test assignment. Note however, the accept criteria defined section: 9. Acceptance criteria apply for this test assignment.

7.7 Test re-run and regression test

Gobike can execute three Acceptance tests assignments. In case the GoBike does not get Cykel DK's approval after the execution of the first Acceptance test assignment, maximal two additional Acceptance tests can be executed. [Reference: 181 Req 7.16]
In case a second or third test is to be executed the scope of the test will be agreed between the parties prior to the execution of the test assignment.

7.8 Test design

Gobike will use the follow charts developed in specification phase to design test cases.
Example of such user flow charts may be found in [Solution description: User interaction].
The test cases used in the pilot test will be extended with test cases that are based on input limits and anomaly handling.

7.9 Data collection

During the execution of the test the following data will be collected and documented:

- Number of requirements in total
- Number of requirements covered by the specification
- Number of requirements executed during the test.
- Number of errors, per category (cf. Section: 9.1 Error categories below).

Furthermore, Names of participants in the testing team and in the witness team will be record on a daily basis (Check-in and out).

8 Performance test

The Performance test determinates the operation and effectiveness of the bike-sharing system. Qualitative attributes such as reliability, scalability and interoperability may also be evaluated.
The performance test is divided in two assignments:

- Performance test of the operational execution. That is measurement of the SLA on a daily basis.
- Performance test of system performance

8.1 Inputs

- Test plan this document
- Agreed SLA, based on Framework agreement appendix A, main focus appendix 7, 8 and 11

8.2 Testing Techniques:

- Daily SLA measurement
- Performance testing e.g. response time measurement.

8.3 Outputs

- Measurement specification (List of response time transaction time etc. to be monitored during the test period. Furthermore, the document will outline how the measurements are executed).
- Archived data and test logs
- Complete test report

During the Performance test the Supplier has the right and duty to continuously optimize the solution's performance and to correct possible defects.

8.4 Entry criteria

- The Performance test assignment can only start after the Acceptance test assignment is accepted by the Customer and the Customer has informed the Supplier about this, however no later than 30 days after the day of hand-over [Reference: 188 Req7.23].
- The Performance test shall stretch over a period of at least 30 calendar days, in which the solution is in full operation [Reference: 190 Req7.23].
- Cykel DK shall approve the Test specification prior to execution of the test assignment.

8.5 Exit Criteria

- Cykel DK shall approve the test when the Accept criteria are met [Reference: 178 Req. 7.13]. The test is complete when the test is approved.

8.6 Accept criteria

The acceptance criteria are as follows:
Performance test of the operational execution:
That is measurement of the SLA on a daily basis:

- The Performance test continues until the agreed service level is kept for 30 successive calendar days or the Customer terminates the Agreement in accordance with the terms on this [Reference: 190 Req 7.25b].

Performance test of system performance:

- The accept criteria for the test assignment shall be agreed between Customer and Supplier before the execution of the test [Reference: 179 Req 7.14].

The accept criteria will be agreed and documented in the Test specification for the test assignment. Note however, the accept criteria defined section: 9. Acceptance criteria apply for this test assignment.

8.7 Test re-run and regression test

Not applicable unless carried out due to Change request.

8.8 Test design

All test cases are transaction time measurements.

8.9 Data collection

There will be no physical test. However, during the test period, data will be collected, that can verify all performance requirements.
Data will be collected either directly by system functions either as analysis of system logs, application logs and similar.

9 Acceptance criteria

All information below is based on the [Frame agreement] Appendix A, Appendix 7: Test.
The acceptance criteria defined below are valid for the Acceptance- and Performance tests.
The acceptance criteria for each test level will be agreed between Customer and Supplier before test execution and during the test specification.
During the acceptance test assignment table shown in section 9.1 with error categories will be taken into account to establish the acceptance criteria.

9.1 Error categories

Category	Description
A	Critical errors Critical errors, where a reasonable circumvention is *not* possible Errors that hinder the use of the solution, including the solutions whole or partly unavailability
B	Serious errors Critical errors, where a reasonable circumvention according to the Supplier's instructions is possible. Errors that hinder the use of the solution, including the solutions whole or partly unavailability.
C	Significant errors Significant errors, where a reasonable circumvention is *not* possible. Errors that prompt inconveniences for the Customer.
D	Normal errors Significant errors, where a reasonable circumvention according to the Supplier's instructions is possible. Errors that prompt inconveniences for the Customer.
E	Less significant errors Errors that do not have an impact or only a trivial one on the solution of the Customer's tasks.

Error	Can be circumvent	Cannot be circumvent
Critical	Category B	Category A
Significant	Category D	Category C

9.2 Test cease

The following rules are defined for the acceptance test assignment and the Performance Test assignments.
The test is ceased if category A-errors are found. The Customer is allowed to cease the test if at least 1 category B- or category C- error or at least 5 category D- error or at least 25 category E- errors are found. [Reference: 176 Req 7.11]

The Supplier shall indicate possibilities to circumvent category-B and category D- errors that have been found. The Customer decides if the indicated possibilities for the circumvention are usable and has the right to cease the test [Reference: 177 Req 7.12].
The Customer shall be able to terminate the Agreement if the Acceptance test fails three (3) times or the Performance test fails three (3) times [Reference 181: Req 7.16].

10 Traceability matrix

The trace ability matrix is used to show where requirements have been taken into account.
The traceability matrices will be elaborated no later than the Pilot test, and maintained though out the project lifetime.

11 Appendix A: List of contents for test specifications

The following default contents will be used for all test specifications, with the exception of Performance test (service level test).

Standard List of contents for test specifications

1. DOCUMENT HISTORY
2. INTRODUCTION
2.1. Purpose
2.2. Scope
2.3. Definitions
2.4. Documentation structure
2.4.1. References to other documents
2.4.2. Updating document
2.5. Reading guide
3. Test group (Repeated)
3.1. Test procedure (Repeated)
3.1.2. Test case (Repeated)
x. TRACEABILITY MATRIX

Bilag F: Kontraktspriser

23. November 2012
Final

Bilag F indeholder underbilagene:

F1a: Rammeaftalens prisliste (kommuner)
F1b: Rammeaftalens prisliste (erhverv)
F2: Slutbrugerpriser

Bilag F2: Slutbrugerpriser

Version final

1 Indledning

Cykel DK har retten til at fastlægge priserne for brug af cykel – og pendlerløsningen overfor slutbrugerne i zone 1. Priserne er blevet fastlagt sammen med Københavns og Frederiksberg kommune.

2 Slutbrugerpriser

Slutbrugerne kan vælge at betale via abonnement eller via kontantforbrug

	Pris pr. måned (abonnement)	**Pris pr. udlejet time**	**Beregning**
Privatkunde	50 kr.	Den første halve time er gratis herefter 4 kr. for hver time, kunden har cyklen til rådighed	Prisen er inkl. moms. Månedlig afregning overfor slutkunden. Måling af forbrug sker for hver påbegyndt time (efter 31. minut) og summeres pr. gang efter aflevering af cyklen (returnering)
	0 kr.	20 kr. for hver time, kunden har cyklen til rådighed	Prisen er inkl. moms. Måling af forbrug sker for hver påbegyndt time. Afregning sker efter aflevering af cyklen (returnering)
Erhvervskunde	N/A	N/A	N/A

Derudover vil slutbrugeren ved gennemførsel af betalingen blive pålagt transaktionsomkostningen. Slutbrugeren vil også blive pålagt en række adfærdsregulerende gebyrer fx for booking, for no show efter booking og for aflevering uden for docking point.

Bilag G: Ordrebilag

Final
22. november 2012

1 Indledning

Dette bilag indeholder en generel beskrivelse af bestillings- eller ordreprocessen af cykel systemet. Ordreprocessen angiver fordelingen af opgaver og ansvar mellem Gobike, Cykel DK og nye kommuner eller store kunder, som ønsker at indgå en aftale om brug af systemet. Ordreprocessen dækker perioden fra Cykel DK's anmodning til Leverandøren og indtil der foreligger en bindende aftale om etableringen af systemet.

Bilaget beskriver to typer ordrer:
1) en indledende Ordre for en kommune (eller en gruppe af kommuner) - type G1 ordre.
2) en yderligere Ordre for en kommune (eller en gruppe af kommuner) - type G2 ordre. En yderligere Ordre finder sted, når en kommune for eksempel ønsker at udvide et allerede eksisterende system eller udskifte nedslidte cykler.

2. Krav til ordreprocessen

Formålet med dette bilag er at sikre:
• Bestilling gennem rammeaftale sker på grundlag af en fast proces
• Cykel DK og Gobike er afstemt i forhold til roller og ansvar
• En fælles opfattelse af, hvornår en ordre er bindende

Derfor er der en lang række aktiviteter og godkendelser fastsat i dette tillæg, som er forudsætningerne for, at en endelig ordre kan foretages. Herved visualiserer bilaget de afhængigheder/forudsætninger, som er forbundet med ordreprocessen.

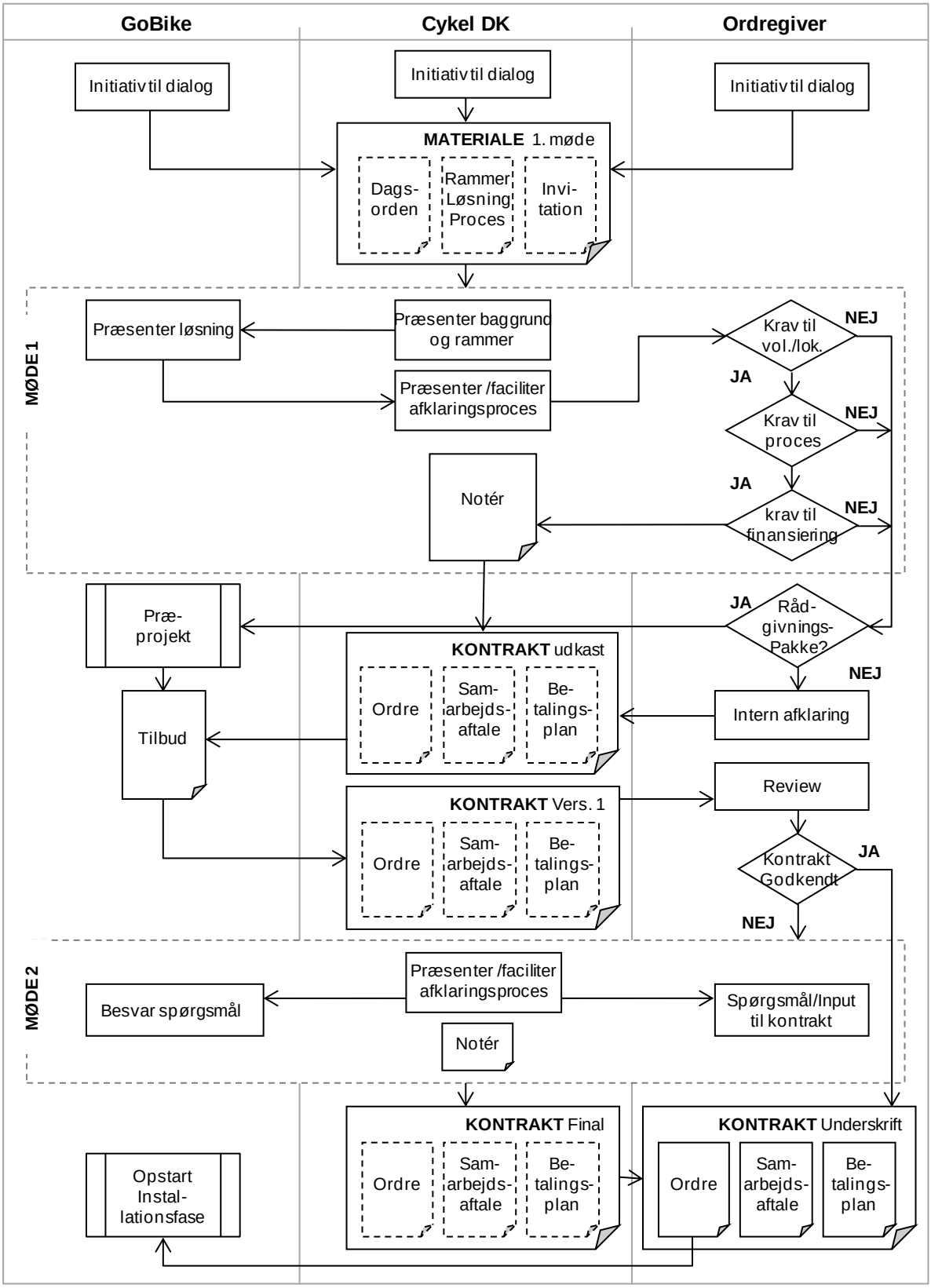
2.1 Skabelon til ordreprocessen

Skabeloner til både indledende ordrer og yderligere ordrer er del af dette tillæg. Skabelonen skal anvendes, når Cykel DK placerer de endelige ordrer.

Processen for nye ordrer er beskrevet nedenfor:

Cykel DK

Generisk proces: Opstartsfase nye ordrer



Generisk proces udrulning af nye ordrer: Opstartsfase
version 1

1.1 Indholdet af Ordreskabelonerne

Følgende bilag skal anvendes til de to typer af ordrer:
1) en indledende Ordre for en kommune (eller en gruppe af kommuner): type G1
2) en yderligere Ordre for en kommune (eller en gruppe af kommuner): type G2

1.2 Indhold Gobikes tilbud

Gobikes bekræftelse af Cykel DK anmodning skal som minimum indeholde en detaljeret beskrivelse af de nedenfor nævnte forhold:

• Beskrivelse af den tilbudte cykel system, herunder bekræftelse på antallet af cykler og steder, tegninger af område / placering
• Prisen på den tilbudte cykel system i henhold til bilag F: kontraktspriser i aftalen
• Tidsplan for etablering af cykel systemet, baseret på en generisk installation plan i henhold til bilag C: PID
• Forudsætninger for tidsplanen (f. ex. hvornår godkendelsen for start af installationen seneste skal være tilgængelig)
• Leverandørens forventninger til kundens rolle og ansvar
• Beskrivelse af nye underleverandører, hvis leverandøren ændrer brugen af underleverandører, jf. bilag A.

Bilag G1: Bestillingsblanket - Initial Orders vedr. [zone]

Cykel DK
CVR nr. [til udfyldelse]
[Adresse]
[Adresse]

Att.: [Kontaktperson]
Mobil: [Til udfyldelse]
E-mail: [Til udfyldelse]

Ovennævnte Parter afgiver hermed følgende bestilling på et Cykelsystem:
Bestillingen afgives på de i Rammeaftale mellem Cykel DK og Gobike anførte vilkår, med mindre andet fremgår specifikt af nedenstående ordre.

1. Volumen på Cykelsystemet

Cykelsystemets enkelte dele	**Antal**
Cykler	[Til udfyldelse]
Docking points	[Til udfyldelse]
Tablets	[Til udfyldelse]
Elektroniske cykler	[Til udfyldelse]

2. Lokationer

Cykel systemet forventes at blive placeret på følgende lokationer (én lokation kan have flere placeringer)

Lokation	**Kort beskrivelse af lokationen og placering hvor cykel systemet skal installeres**	**Vedlæggelse af kort og billeder med markering af området**	**Forventet antal docking points på området**	**Forventet antal cykler**
[Navn på lokation 1]	[Navn på placering 1], [Til udfyldelse]	[ ] Kort [ ] Billede	[Til udfyldelse]	[Til udfyldelse]
[Navn på location 1]	[Navn på placering 2], [Til udfyldelse]	[ ] Kort [ ] Billede	[Til udfyldelse]	[Til udfyldelse]

3. Driftsstart og varighed

Forventet start dato driftsperiode	[dd.mm.åååå]
Godkendt accept test	[dd.mm.åååå]

Forventet slutdato driftsperioden	[dd.mm.åååå]
Forventet slutdato på ordren	[dd.mm.åååå]

4. Specifikke krav

Angivelse af specifikke krav i forbindelse med Cykelsystemet
[Til udfyldelse af bestillerne]

5. Priser

Samlet pris for Cykelsystemet (i henhold til rammeaftalens bilag F):

	Pris DKK	**Rabat**	**Pris DKK**
Kontrakt sum:	[Til udfyldelse]		[Til udfyldelse]

Betalingsplan

Betalingsplan er vedhæftet i separat bilag

Underskrifter:

Cykel DK

…… ….……
For Cykel DK dato
Underskrift og stempel

Cykel DK

…… ….……
For Cykel DK dato
Underskrift og stempel

Cykel DK

…… ……

For Cykel DK dato
Underskrift og stempel

Ordrens modtagelseordre bekræftes herved af
Gobike ApS

…… ……

For **Gobike ApS** dato
Underskrift og stempel

Bilag G2: Bestillingsblanket - yderligere materiel/hardware vedr. [zone]

Cykel DK
CVR nr. [til udfyldelse]
[Adresse]
[Adresse]

Att.: [Kontaktperson]
Mobil: [Til udfyldelse]
E-mail: [Til udfyldelse]

Ovennævnte Parter afgiver hermed bestilling på yderligere materiel/hardware til Cykelsystemet, jf. Bestillingsblanket - Initial Ordre af den [dato]:

1. Yderligere materiel/hardware

Yderligere materiel/hardware	**Antal**
Cykler	[Til udfyldelse]
Docking points	[Til udfyldelse]
Tablets	[Til udfyldelse]
Elektroniske cykler	[Til udfyldelse]

2. Lokationer (Udfyldes kun ved køb af dockingspoints)

Det bestilte materiel/hardware forventes at blive placeret på følgende lokationer (én lokation kan have flere placeringer)

Lokation	**Kort beskrivelse af lokationen og placering hvor cykel systemet skal installeres**	**Vedlæggelse af kort og billeder med markering af området**	**Forventet antal docking points på området**	**Forventet antal cykler**
[Navn på lokation 1]	[Navn på placering 1], [Til udfyldelse]	[ ] Kort [ ] Billede	[Til udfyldelse]	[Til udfyldelse]
[Navn på location 1]	[Navn på placering 2], [Til udfyldelse]	[ ] Kort [ ] Billede	[Til udfyldelse]	[Til udfyldelse]

3. Driftsstart og varighed

Forventet start dato driftsperiode	[dd.mm.åååå]
Godkendt accept test	[dd.mm.åååå]

Forventet slutdato driftsperioden	[dd.mm.åååå]
Forventet slutdato på ordren	[dd.mm.åååå]

4. Specifikke krav

Angivelse af specifikke krav i forbindelse med cykel systemet
[Til udfyldelse af bestillerne]

5. Priser

Samlet pris for det bestilte materiel/hardware (i henhold til rammeaftalens bilag F):

	Pris DKK	**Rabat**	**Pris DKK**
Kontrakt sum:	[Til udfyldelse]		[Til udfyldelse]

Betalingsplan

Betalingsplan fremgår af separat bilag

Underskrifter

Cykel DK

…… ……
For Cykel DK dato
Underskrift og stempel

Cykel DK

…… ……
For Cykel DK dato
Underskrift og stempel

Cykel DK

…… ……

For Cykel DK dato
Underskrift og stempel

Ordrens modtagelseordre bekræftes herved af
Gobike ApS

…… ……

For **Gobike ApS** dato
Underskrift og stempel

Bilag H:
Udfyldt order

25. November 2012
Final

Indeholder dokumenterne:

Initial order FRB_KK_DSB_Final
Betalingsplan_Final
Registreringsskema_samlet_dansk

Order vedr. Frederiksberg og København zone 1

Cykel DK A/S under stiftelse
Hovedbanegården
Banegårdspladsen 5
1577 København K
CVR nr.

Att.:	[Kontaktperson]	KRISTINE LANGELUND
Mobil:	[Til udfyldelse]	24682558
E-mail:	[Til udfyldelse]	KHLANGELUND@S-TOG.DSB.DK

Ovennævnte Part afgiver herrmed følgende ordre på et Cykelsystem:
Bestillingen afgives på de i Rammeaftale mellem Cykel DK og Gobike anførte vilkår, med mindre andet fremgår specifikt af nedenstående ordre.

1. Volumen på Cykelsystemet

Cykelsystemets enkelte dele	**Antal**
Cykler	1260
Docking points	1890
Tablets	1260
Elektroniske cykler	Ikke aktuelt med denne ordre

2. Lokationer

Cykel systemet forventes at blive placeret på følgende lokationer (én lokation kan have flere placeringer)
Udgangspunktet for placering af de 45 aftalte lokationer er bruttolisten på 135 lokationer
Se vedhæftede excelfil_Registreringsskema samlet_dansk

Lokation	**Kort beskrivelse af lokationen og placering hvor cykel systemet skal installeres**	**Vedlæggelse af kort og billeder med markering af området**	**Forventet antal docking points på området**	**Forventet antal cykler**
[Navn på lokation 1]	[Navn på placering 1], [Til udfyldelse]	[ ] Kort [ ] Billede	[Til udfyldelse]	[Til udfyldelse]
[Navn på location 1]	[Navn på placering 2], [Til udfyldelse]	[ ] Kort [ ] Billede	[Til udfyldelse]	[Til udfyldelse]

3. Driftsstart og varighed

Forventet start dato driftsperiode | 01.11.2013 |

Godkendt accept test	15.03.2014
Forventet slutdato driftsperioden	15.03.2022
Forventet slutdato på ordren	15.03.2022

4. Specifikke krav

Angivelse af specifikke krav i forbindelse med Cykelsystemet [Til udfyldelse af bestillerne]

5. Priser

Samlet pris for Cykelsystemet (i henhold til rammeaftalens bilag F):

Betalinger uden inflation	**Pris DKK**	**Rabat**	**Pris DKK**
Kontrakt sum:	42.840.000	n/a	42.840.000

6. Betalingsplan

Betalingsplanen er vedhæftet i separat bilag
Betalingsplanen indeholder fravigelser fra Rammeaftalen vedr. bankgaranti og prisregulering. Der henvises nærmere til vilkårene beskrevet i betalingsplanen.

Underskrifter:

Cykel DK

..... 27/11 2012

For Cykel DK NIKLAS MARCHALL, DIREKTØR dato
Underskrift og stempel

Cykel DK

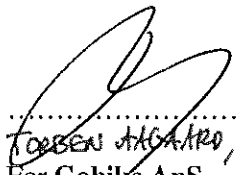
..... 27/11-12

For Cykel DK TORBEN HAGMEN, Bestyrelsesmedlem dato
Underskrift og stempel

Cykel DK

....
For Cykel DK dato
Underskrift og stempel

Ordrens modtagelseordre bekræftes herved af
Gobike ApS



..... 28/11-12
TORBEN HAGARD, CEO .....
For **Gobike ApS** dato
Underskrift og stempel

Betalingsplan

Fremsendes med udfyldt bestilling fra København og Frederiksberg kommune samt DSB

GoBike - Ydelsesbetaling (ekskl. moms)

I DKK	I a%	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Kontraktsum	42.840.000										
- heraf betaling vedr. investeringer	28.080.000										
- øvrige betalinger, som inflationskorrigeres	14.760.000										
- øvrige betalinger, som inflationskorrigeres, %	34,5%										
Akkumuleret prisindeks			100,0%	102,0%	104,0%	106,1%	108,2%	110,4%	112,6%	114,9%	117,2%
Inflation				2,0%	2,0%	2,0%	2,0%	2,0%	2,0%	2,0%	2,0%
Betalinger uden inflation	42.840.000	3.324.165	2.030.835	5.355.000	5.355.000	5.355.000	5.355.000	5.355.000	5.355.000	5.355.000	
Inflation	1.075.500			36.900	74.500	112.900	152.100	192.000	232.800	274.300	-
Betalinger inkl. inflation	43.915.500	3.324.165	2.030.835	5.391.900	5.429.500	5.467.900	5.507.100	5.547.000	5.587.800	5.629.300	-
Fakturering 17. december 2012 - betaling 21. december 2012	3.324.165	3.324.165									
Fakturering 2. januar 2013 - betaling 29. januar 2013	2.030.835		2.030.835								
Fakturering 2. januar - betaling netto 45 dage	9.640.125			1.347.975	1.357.375	1.366.975	1.376.775	1.386.750	1.396.950	1.407.325	-
Fakturering 1. april - betaling netto 45 dage	9.640.125			1.347.975	1.357.375	1.366.975	1.376.775	1.386.750	1.396.950	1.407.325	-
Fakturering 1. juli - betaling netto 45 dage	9.640.125			1.347.975	1.357.375	1.366.975	1.376.775	1.386.750	1.396.950	1.407.325	-
Fakturering 1. oktober - betaling netto 45 dage	9.640.125			1.347.975	1.357.375	1.366.975	1.376.775	1.386.750	1.396.950	1.407.325	-
	43.915.500	3.324.165	2.030.835	5.391.900	5.429.500	5.467.900	5.507.100	5.547.000	5.587.800	5.629.300	-

Fakturering og betaling af 1. krate er betinget af at Københavns Borgerrepræsentation godkender projekt 13. december 2012.
Fakturering og betaling af 2. rate er betinget af at GoBike har afgivet ordre på Tablet hos underleverandør.

Fakturering og betaling af efterfølgende rater er betinget af godkendt acceptancetest jf. kontraktens pkt. 9.2.1.

For denne første ordre på 1.260 cykler er det aftalt at rammeaftalens vilkår om bankgaranti ved forudbetaling fraviges.
Denne fravigelse gælder alene for de første 1.260 cykler. Afgivelse af bestilling på op til 3500 cykler i henhold til den indgåede tillægsaftale til rammeaftalen følger rammeaftalens vilkår om bankgaranti ved forudbetaling.

Bilag H:
Udfyldt order

23. November 2012
Final

Indsættes efter udfyldelse

Conditional Framework Agreement

between

Cykel DK A/S under establishment
Hovedbanegården
Banegårdspladsen 5
DK- 1577 København V
Company Business Register (CVR) No. [...]
(hereinafter referred to as "**Cykel DK**")

and

GoBike ApS
Hovedbanegården
Banegårdspladsen 5
DK - 1577 København V
Company Business Register (CVR) No. 34 72 76 43
(hereinafter referred to as "**the Supplier**")

(individually referred to as a "**Party**" and collectively as the "**Parties**")

on the delivery of a bike sharing system.

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1. Definitions

1.1 **"Agreement"** shall mean this Framework Agreement.

1.2 **"Application"** shall mean an independent programme (e.g. for iPhone, Android or Java), which is downloaded to serve as a local client on the End User's mobile phone.

1.3 **"Availability"** shall for Bikes mean: A Bike is available, if it is placed in a Docking Point, is fully functional, is included in the overview of the End User Portal, is not booked and is not taken out for Maintenance or in any other way cannot be used by the End User.

1.4 **"Back-End System"** shall mean a software- system that enables the Supplier to make Bike rentals and to access and change information regarding the use of the system.

1.5 **"Bike" or "Bikes"** shall mean each of the share bicycles delivered by the Supplier under this Agreement.

1.6 **"Bike System"** shall mean a fully functional bike sharing system including Bikes, Docking Points, Docking Stations, IT system, software programmes, Payment System, support functions and other necessary materials and functions to ensure a professional, up-to date and user-friendly operation. The Bike System includes a full Installation, Operation, Monitoring and Maintenance as described in Appendix A.

1.7 **"Business day"** shall mean any day, including 1 May, except weekends, official Danish holidays and 1 January, 5 June and 24 December.

1.8 **"Channel"** shall mean e.g. mobile phones, websites or Payment Terminals in the city, where the End User can perform a range of different actions such as rental, booking and payment for a Bike.

1.9 **"Change log"** shall mean a list of in process and closed change requests.

1.10 **"Change request agreement"** shall mean a closed change request.

1.11 **"Commercial Rights"** shall mean the right to market and or sell products, services, benefit programs and other customer-oriented types of services as well as advertisements and sponsorships of any kind.

1.12 **"CMS"** shall mean an editorial system (Content Management System), which is provided by the Supplier for editing and publishing on the Supplier's portal and in relation to the offered services on the gateway.

1.13 **"Customer"** shall mean Cykel DK.

1.14 **"Cykel DK"** shall mean a public limited company established under the Danish Company law.

1.15 "Data" shall mean all information related to all delivered versions of the Bike System, including End User Data.

1.16 **"Delivery"** shall mean delivery of the Bike System under the conditions described in clauses 9.2 and 9.4.

1.17 **"Delivery Management Team"** shall mean a team manned by project staff from Cykel DK and the Supplier.

1.18 **"DIBS"** shall mean the abbreviation of the Danish Internet Payment System.

1.19 **"Docking Point"** shall mean an arrangement to which a Bike can be connected – physically or electronically. Docking Points are used when the Bike is not in use. A Docking Point can be part of a Docking Station.

1.20 **"Docking Station"** shall mean a group of Docking Points.

1.21 **"DSB"** shall mean the independent public corporation DSB SOV (Danish State Railways), Company Business Register (CVR) No. 25050053, Sølvgade 40, 1307, Copenhagen K

1.22 **"End User"** shall mean the users of a share Bike, including a public transport passenger, a citizen of the Municipalities, employees of a Major User, tourists, etc.

1.23 **"End User Data"** is an overall term for the data that is logged in the system based on the End User's behaviour (e.g. number of times a bicycle is rented, location, time and period for the rental, basis of settlement and payment method).

1.24 **"End User Price"** shall mean the price the End User pays for the rent of a Bike excluding possible transaction costs to the Payment Provider and excluding additional fees laid down by Cykel DK according to Appendix F1.

1.25 **"ERP-system"** shall mean Enterprise resource planning.

1.26 **"Full Operation"** shall mean all ordered equipment is in Operation and Cykel DK's has given its approval.

1.27 **"Hardware"**, see definition of Material/hardware.

1.28 **"Installation"** shall mean the process for installation of the Bike System as described in Appendix A and C.

1.29 **"Integration Point"** shall mean a technical connection between two or more systems. The integration can be composed partly of data sharing, partly of the user being able to activate functionalities in other system via the system (and vice versa). Typically, an integration point will be used in relation to a connection between the Supplier's system and Cykel DK's other business or IT systems. The Integration Point can e.g. be described in API descriptions, but

can also be part of the work that – in cooperation – is only developed/handled later.

1.30 **"IT System"** shall mean the IT system that handles the operation of the Bike System including all necessary Back-End Systems and front-end systems and Web Portal.

1.31 **"KPI"** shall mean Key Performance Indicator. Is used as a term for success criteria in Appendix A.

1.32 **"Limited Operation"** shall mean a situation where only a limited number of Bikes (in a large order) is in Operation.

1.33 **"Location"** shall mean the physical and geographical areas where one or several Placements of the Bike System can be established.

1.34 **"Maintenance"** shall mean maintenance of the Bike System as defined in Appendix A and C.

1.35 **"Major customer"** shall mean private companies, independent organisations, educational institutions, etc., whether private or public, that wants an agreement regarding the Bike System with regard to their own employees. Major Users can potentially agree on special business models with Cykel DK with regard to prices and standard conditions regarding their own customers/members or employees.

1.36 **"Material/hardware"** is a collective name for the Bike System's physical elements, such as, but not limited to, Bikes, Docking Points, Docking Stations, Payment Terminals, spare parts, tools and possibly means of transport for the redistribution of Bikes.

1.37 **"Mobile Portal"** shall mean an Internet portal accessible for mobile phones.

1.38 **"Monitoring"** shall mean monitoring of the Bike System as defined in clause 12 and Appendix A.

1.39 **"Municipalities"** shall mean the 98 municipalities in Denmark.

1.40 **"NemID"** shall mean a national Danish common digital signature that can be used to log on both to private and public self-service solutions.

1.41 **"Operation"** shall mean operation of the Bike System as defined in clause 10 and Appendix A.

1.42 **"Order"** shall mean Cykel DK's order of the Bike System via the Order Form initiating the Delivery to one or a group of Municipalities. As part of the Order the Parties agrees to a specific Payment Plan.

1.43 **"Order Form"** shall mean the form enclosed as Appendix G for the use of Cykel DK's ordering of either the Bike System.

1.44 **"Order Platform"** shall mean a technical choice between different ways of reserving or initiating rentals of a Bike.

1.45 **"Option Period"** shall mean the possibility for Cykel DK to renew the Term of the Agreement for another period of up to 36 months, cf. clause 33.1.1.

1.46 **"Payment Card"** shall mean Dankort, Visa-card, Visa-electron, American Express, Eurocard, Diners, Maestro, MasterCard, JCB, CUP, which are supplied and administrated via e.g. agreements with Nets (Reference: www.nets.dk).

1.47 **"Payment Plan"** shall mean a specific payment plan for the individual Order.

1.48 **"Payment Possibility"** shall mean a method with which the End User can pay for the use of a Bike. That is by either payment with payment card/credit card or via provider Nets (Reference: www.nets.dk).

1.49 **"Payment Provider"** shall mean a provider of payments with permission according to the Law on Payment Services and Electronic Money *(in Danish: Lov om betalingstjenester og elektroniske penge, lovbekendtgørelse 2011-04-26 nr. 365).*

1.50 **"Payment Machine/Terminal"** shall mean a Tablet or the physical entities placed close to the Docking Stations, where the End Users can rent and pay for a Bike and obtain product information or contact a customer service support employee.

1.51 **"Payment System"** shall mean a fully operational payment system in accordance with the requirements listed in Appendix A.

1.52 **"Peak Hours"** is the term for the time periods when there are most simultaneous Users. Peak Hours are most likely connected with rush hours or events. The term Peak Hours is used in connection with the service levels, cf. Appendix A.

1.53 **"Placement"** shall mean one or several small geographical areas within a Location. A placement can contain one or several Docking Stations.

1.54 **"Price"** shall mean the payment by Cykel DK for the Supplier's services under the Agreement as described in Appendix A.

1.55 **"Racks"**: see definition of Docking Points.

1.56 **"Railway track earth connection"** shall mean physical connection to the railway track.

1.57 **"Redistribution"** shall mean activity carried out to ensure that the Bikes are distributed at all Docking Stations in due time to avoid full or empty Docking Stations.

1.58 **"Right of use"** shall mean an unlimited right for Cykel DK to use the Bike System delivered under the Agreement.

1.59 **"Service Requirements"** shall mean the requirements contained in Appendix A.

1.60 **"Station"** shall mean a train and metro station that is serviced by DSB and/or DSB S-tog and/or Metro.

1.61 **"Supplier"** is the organisation (legal entity or association) with whom Cykel DK enters the present Agreement and who installs and subsequently manages the daily operation of the physical material, such as Bikes, Docking Stations, Payment Terminals and other relevant material to an extent as defined by the Agreement.

1.62 **"Tablet"** shall mean a PC mounted on every Bike, connected to the IT System and containing a touch screen, software etc.

1.63 **"Term of the Agreement"** shall mean the term of the Agreement as stated in clause 33.1.1

1.64 **"Term of the Order"** shall mean the period of up to eight (8) years calculated from the Full Operation where the Supplier is obligated to operate the Bike System for one or a group of Municipalities. The Term of the Order shall be defined by Cykel DK in each of the individual Orders, cf. Appendix G.

1.64.1 **"Web Portal"** shall mean an End User portal accessible via PC, mobile, Payment Terminal, Docking Station to handle End Users' and Major Users' use of the Bike System, including information, booking, payments, support, etc.

2. Subject matter of the Agreement and background

2.1.1 The purpose of this Framework Agreement and its Appendices (hereinafter referred to as the "Agreement") is to lay down the terms and conditions for the trade between the Parties in so far as the Supplier's ongoing deliveries to Cykel DK of a Bike System. The background and visions for the Bike System are further described in Appendix A.

3. Basis of Agreement

3.1 Entire Agreement

3.1.1 This Agreement constitutes the entire and only Agreement between the Parties in relation to the deliveries covered by the Agreement. All other written documents, or oral indications, which have come into existence or been made prior to or after the signing of the Agreement, including in particular contract documents and the Supplier's tender, general terms and conditions of sale and delivery, general practice and similar documents and practices, shall not apply.

3.1.2 During the Term of this Agreement, see Clause 33.1, Cykel DK shall not be considered to have waived enforcement of the terms and conditions of the

Agreement or to have accepted any act contrary to the provisions of the Agreement unless Cykel DK has confirmed such waiver or acceptance in writing, see Clause 3.1.2. In the event of any dispute between the Parties, the Supplier cannot rely on any specific deviation from the terms and conditions of the Agreement as a result of any custom and/or trading practice between the Parties.

3.2 **Modification of Agreement**

3.2.1 Any general modification or specific deviation from the provisions of the Agreement shall be valid only if in writing and signed by the Parties. Any modification is to be made as an appendix or rider to the Agreement.

3.3 **Validity**

3.3.1 In case one or more provisions of the Agreement is found to be invalid, unlawful or unenforceable, this shall have no effect on the validity, lawfulness or the enforceability of the remaining provisions hereof. If a provision is found to be invalid, unlawful or unenforceable, such provision shall, in so far as possible, be replaced by a valid and lawful provision which reflects the intentions of the original provision as nearly as possible and which is enforceable.

3.3.2 In the event that, pursuant to the Danish Act on enforcement of public procurement rules, etc, the Danish Complaints Board for Public Procurement or the Danish courts issue an order directing Cykel DK to terminate the Agreement in whole or in part, Cykel DK shall be entitled to terminate the Agreement without notice to such an extent that Cykel DK is able to comply with such order. If the termination relates to only part of the deliveries comprised by the Agreement or is effective for only part of the Term of the Agreement, see Clause 33.1, the terms and conditions of the Agreement are to continue to apply to the deliveries not comprised by the termination.

3.4 **Scope of Agreement**

3.4.1 Except from the initial orders regarding the Municipalities of Frederiksberg and Copenhagen, included as Appendix H, the Supplier is not guaranteed a minimum delivery under this Agreement and, as a result, the Supplier cannot cancel the Agreement or claim damages or any other kind of compensation if any basic assumption regarding Cykel DK's expected orders etc. made by the Supplier at the time of the conclusion of the Agreement is not fulfilled. That applies irrespective of whether the Supplier's basic assumptions and expectations were, in whole or in part, based on information provided by Cykel DK.

3.5 **Document Hierarchy**

3.5.1 In case of discrepancy between the Agreement, and its Appendices, the Agreement takes precedence over the Appendices.

3.5.2 Appendix A contains the tender requirements to the Bike System and consists of 18 sub appendices 1-18. Strike through text of all the sub appendices are requirements that are no longer considered relevant to the specific solution and is only included for the history sake. Text marked with "Obsolete" is requirements that have been deleted under the tender process. Furthermore, Appendix A and the sub appendices contain the Supplier's remarks to what extent and how the requirements are met, including references to other appendices of the Agreement with description of the process of fulfillment.

3.5.3 Unless otherwise is stated in the individual sub appendix 1-18 the part of Appendix A which contains the Cykel DK requirements, takes precedence over Appendix B-H in the event of any discrepancy. The part of Annex A which contains the Supplier's description of the compliance rate and fulfillment way, shall not take precedence over other Appendices or the Cykel DK requirements of Appendix A. It is the Supplier's responsibility that the Supplier's descriptions in Appendix A including sub appendices 1-18 are fully updated and in accordance with the Supplier's compliance rate and fulfillment way described in other Appendices of the Agreement.

3.5.4 Appendices B, D, E, F and G shall have the same rank, while Appendix C (PID) shall rank below all other Appendices in case of discrepancy. However, the Parties can within the limits set forth in Clause 3.2.1 agree, that Appendix C (PID) shall take precedence over Appendices B and D – G.

4. Conditions of the Agreement

4.1 The Agreement is conditional upon

i) Cykel DK's entering into an agreement with Copenhagen and Frederiksberg Municipality regarding the initial orders contained in Appendix H;

ii) Approval by the City Council of Copenhagen of the initial orders contained in Appendix H and

iii) DSB's decision and joint establishment of Cykel DK A/S

no later than ultimo december 2012.

4.2 It the conditions i) and ii) in clause 4.1 are not achieved with in the time limit this Agreement shall be deemed void and none of the Parties shall have any rights to receive compensation of any kind from the other Party.

5. The Bike System

5.1 The Bike System

5.1.1 The Supplier shall deliver a fully functional Bike System, including Bikes, Docking Stations, IT system, Payment System, etc., and handle the Installation, Monitoring, Operation and Maintenance of the Bike System according to the provisions of this Agreement. The requirements to the Bike System are listed in **Appendix A.** The Bike System is further described in **Appendix B.**

5.2 General terms for the Bike System and Term of the individual Order

5.2.1 The Supplier shall be able to deliver the same model of each delivered Bike System (i.e. the same model of each Bike, Docking Station, Payment Terminal, etc) under this Agreement during the entire Term of the Agreement and the Option Period. However, the Supplier shall be obligated to perform a normal and common update of the Bike System – i.e. in terms of new technologies on the market, etc. – during the Term of the Agreement and the Option Period. Any update shall not lead to any increase of the agreed prices, cf. Appendix A and F and updating shall not inflict any additional costs on Cykel DK. Further, it is a condition that any update is fully compatible with the existing IT System and Cykel DK systems and that the update does not have any negative impact on the operation of the Bike System and the usability hereof. New models of the Bike System shall be approved by Cykel DK.

5.2.2 The Supplier shall have the fully responsibility to Operate, Monitor and Maintain the Bike System during the Term of the individual Order on the specific Location for a period of up to eight (8) years calculated from the Full Operation date for each Order. The length of the Term of the individual Order is decided by Cykel DK by each Order, cf. Appendix G, but cannot exceed eight (8) years calculated from the Full Operation date, unless Cykel DK uses its option to prolong the period according to clause 5.2.4.

5.2.3 During the term of the individual Order, Cykel DK shall be able to order additional Material/Hardware, e.g. Bikes, Docking Stations, Payment Terminals, etc. Additional orders shall be filed by using the form for additional orders, cf. Appendix G. Additional orders shall follow the same principles as the first Order e.g. in terms of prices, cf. Appendix A and F. Deliveries performed on the basis of additional orders shall in terms of Service levels (Appendix D), Compensation (Appendix A) and Incentives (Appendix A) be treated as included in the individual Order. For example, if Cykel DK orders

100 extra Bikes during the Term of an individual Order, the 100 new Bikes shall be added to the amount of Bikes delivered under the Order, which means that service levels, etc. shall apply for the total amount of Bikes delivered according to the Order and the additional order.

5.2.4 During the Term of the Agreement, cf. clause 33.1, Cykel DK shall be granted an option to prolong the Term of each individual Order, implying that the Term of the individual Order, cf. clause 5.2.2, run up to maximum fifteen (15) years in total calculated from the Full Operation date. This option makes it possible for Cykel DK to decide that the Term of each individual Order for all delivered Bike Systems under the Agreement shall expire on the same date. This shall also apply in the event that Cykel DK exercises its option in clause 33.1.1 to renew the Term of the Agreement for another period of up to 36 months.

6. IT System and Website

6.1 IT System

6.1.1 As part of this Agreement, the Supplier shall deliver, operate and support an IT System including a Back-End System to handle the operation of the Bike System. The IT System shall fulfil the requirements listed in Appendix A.

6.2 Web Portal

6.2.1 The Supplier shall deliver a Web Portal as part of the Bike System. The Web Portal shall have all necessary functions towards End users of the Bike System and shall fulfil the requirements listed in Appendix A. The Supplier shall during the development and adjustment of the Web Portal follow the guidelines for design laid down by Cykel DK.

6.3 As part of the negotiations of this Agreement, the Parties shall agree on a time schedule for the development, testing and delivery of the IT System and the Web Portal.

7. Ownership and rights

7.1 Bikes, Docking Stations and Payment Terminals

7.1.1 The Supplier shall be the beneficial owner of Material/Hardware including Bikes, Docking Stations and Payment Terminals, IT-systems etc. delivered under this Agreement.

7.2 Marketing

7.2.1 Cykel DK shall be the beneficial owner of the Commercial Rights to the Bike System, including spaces for advertising and sponsoring on Bikes, Tablets, Docking Stations, Websites, etc. Cykel DK decides whether, to what extend and how the Commercial Rights shall be exploited, but it is in the common interest of the Parties that the Commercial Rights are used with the objective of maximizing the usage of the Bikes. Cykel DK chose unanimously which sub-supplier Cykel DK wants to perform replacement of logos, etc. Replacement of sponsor logos shall be organised and performed in respect of the Supplier's Operation for the Bike Share System and shall be done without disturbances that can lead to a violation of the Supplier's duties under the Agreement. If the producer of the Hardware wants to include a logo on a physical element of the Bike System, Cykel DK shall approve such logo beforehand. Cykel DK may only refuse such request if there are reasonable grounds for refusal, for example - but not limited to – if the logo conflicts with Cykel DK's Commercial Rights.

7.2.2 Cykel DK shall have the sole rights to market the Bike System to the public, End users, Municipalities, etc. Further, Cykel DK shall have all rights to develop and implement commercial actions and to develop special products for selected groups of customers, etc.

7.2.3 The Bike System delivered by the Supplier comes with a Tablet based IT solution with an integrated screen and software. In addition to necessary user functions such as the handling of payments, information on time and other customer oriented information (hereinafter referred to as "Non-Commerciel Tablet-services"), the Tablet features different possibilities of integrating more dynamic customer oriented services and products into the Bike System such as tourist guides, restaurant guides, traffic information, benefit programs as well as other customer-oriented types of services or products combined with advertising and sponsoring (hereinafter referred to as " Commercial Tablet-services"). Commercial Tablet-services can be based on apps, programs and different technical solutions or standards. According to clause 7.2.1 Cykel DK shall be the beneficial owner of all Commercial Rights connected with such Commercial Tablet-services. The Parties have therefore agreed, that the Supplier technically shall make it possible for Cykel DK to use the different possibilities on the Tablet for example to integrate, market and sell Commercial Tablet-services developed by Cykel DK, DSB, the Municipalities or a third party. In this context it is agreed that the Supplier at the time of the conclusion of this Agreement, shall give Cykel DK, DSB or a third party sub-supplier admittance to sufficient technical information regarding the Tablet to enable Cykel DK, DSB or the third party to develop Commercial Tablet-services to the Tablet, including - but not limited to - information about software and programming. If the Tablet is upgraded, the Supplier shall give Cykel DK, DSB or a third party sub-supplier admittance to sufficient technical information regarding the upgraded Tablet simultaneously with the introduction. Further, the Supplier shall - according to the Parties agreement

regarding the more specific process - integrate services and products on the Tablet when decided by Cykel DK or DSB as well as operate the services and products.

7.2.4 Cykel DK and the Supplier shall co-operate to develop and introduce Non-Commercial Tablet-services on the Tablet in order to maximize the usage of the Bikes. Non-Commercial Tablet-services can in addition to the in clause 7.2.3 mentioned necessary user functions include other user functions and incentives that maximizes the usage of the Bikes and lead to a more efficient operation of the Bike System. Cykel DK shall approve such Non-Commercial Tablet-services beforehand.

7.2.5 If new technologies are introduced, the Supplier is obliged to inform Cykel DK about these technologies as well as its new possibilities in order for Cykel DK (including subsuppliers) to develop new Commercial Tablet-services to the Tablet with the aim of maximizing the usage of the Bikes.

7.2.6 The service which the Supplier must comply with in connection with the development of new technologies for the Tablet as well as the installation and operation, etc. of services and products, is to be determined by a Service level Agreement, which the Parties will enter into on normal commercial terms. The Service Level Agreement regarding Cykel DK's commercial use of the Tablet, shall be entered into before the Suppliers delivery of the Bike System to the Municipalities of Copenhagen and Frederiksberg.

7.2.7 The Supplier's remuneration for allowing a third party (not Cykel DK, DSB or the Municipalities) access to introduce Commercial Tablet-services on the Tablet, including access to the hardware infrastructure and the data platform, are contained in Appendix F.

7.2.8 The Supplier is entitled to refuse integration and operation of Commercial Tablet-services if the Supplier can document that the Commercial Tablet-service will damage the Tablet software or otherwise affect the functionality of the Tablet negatively.

7.3 IT System

7.3.1 Right of use

(a) Cykel DK shall during the term of the Agreement, the Option Period and the Term of the Order have the unrestricted Right of use regarding the IT System.

8. Ordering

8.1 Order Form

8.1.1 Cykel DK's ordering of the Bike System shall follow the principles of the Order Form laid down in **Appendix G**. Cykel DK's orders can include delivery of the Bike System to one or a group of Municipalities. Initial order regarding the Municipalities of Frederiksberg and Copenhagen are included as **Appendix H**. Additional orders of Material/Hardware can be filed by using the form for additional orders, cf. clause 5.2.3 and Appendix G.

8.2 Placing of orders

8.2.1 The Supplier's systems shall be organised in such a way that the Supplier is able to receive Orders electronically either via EDI or in PDF format.

8.3 Order confirmation

8.3.1 The only valid confirmation of an Order accepted shall be a copy of Cykel DK's Order signed by the Supplier by e-mail (and returned to Cykel DK).

8.4 Payment Plan

8.4.1 As part of every individual Order under the Agreement the Partes agrees to a specific Payment Plan for the Term of the Order.

9. Installation, testing and delivery

9.1 Installation

9.1.1 The Supplier shall have the total responsibility for and shall bear all costs regarding the Installation of the Bike System, including any necessary connections to electricity supply. However, the Supplier shall only bear the costs related to the electrical power supply connection, if the connection does not exceed forty (40) meters. If the conditions on the Placement implies that the connection exceeds forty (40) meters, Cykel DK shall bear the costs related hereto calculated pr. meter, cf. Appendix A and E. Further, it is the Suppliers responsibility to enter into agreements with suppliers of electricity etc.

9.1.2 All installation work carried out by the Supplier shall be performed and governed according to the principles set forth in AB 92 § 15 and § 16 (AB92 General Conditions for the provision of works and supplies within building and engineering). Other provisions of AB 92 shall not apply.

9.1.3 Upon the Supplier's reception of an Order from Cykel DK regarding the Bike System, the Supplier shall confirm the Order by e-mail and install the Bike System according to the Plan for Installation as described in Appendix C.

9.2 Testing

9.2.1 As part of the Installation, the Supplier shall perform a proper and appropriate Test of the Bike System before final delivery to Cykel DK. Final delivery of the Bike System requires prior approval by Cykel DK. Rules and procedures for testing and approvals are contained in Appendix A. The Parties Test plan is adapted as **Appendix E**.

9.3 Documentation

9.3.1 All deliveries under the Agreement shall be accompanied by relevant documentation drawn up in the Danish or English languages describing the delivery, including its use and application, maintenance and/or repair. Cykel DK shall be entitled at any time to demand compliance with adequate documentation. Delivery of the Bike System shall not be final before all relevant documentation has been delivered to Cykel DK.

9.3.2 If Cykel DK so requests, the Supplier shall at any time provide documentation for the delivered parts/delivered amount of the delivery. Any failure by Cykel DK to complain is not to be regarded as acceptance of satisfactory delivery.

9.4 Terms of delivery

9.4.1 Delivery shall take place in accordance with the details of the Order, including the agreed delivery times.

10. Operation

10.1 Operation

10.1.1 The Supplier shall have the total responsibility for and shall bear all costs regarding the Operation of the Bike System during the Term of the Order, cf. clause 4.2.2.

10.1.2 Operation includes but is not limited to:

- Redistribution of Bikes – daily distribution of bikes between docking stations in order to ensure supply meets demand to the widest possible extent
- Handling of reservations of Bikes
- Ensuring fully functional Payment Systems
- Replacement of Bikes
- Support

10.1.3 The requirements that the Supplier shall meet in terms of Operation are further described in Appendix A.

10.1.4 Three (3) months after the first Bike System is delivered, the Parties shall evaluate the Operations of the Bike System and make the necessary adjustments in order to optimise the quality of the Bike System and maximize the usage of the Bikes.

10.2 Lost and non-functional Bikes

10.2.1 A Bike is considered as lost, if it has not been registered in the Suppliers system or reported seen for a period of two (2) consecutive months.

10.2.2 Within five (5) days after a Bike is considered as lost, cf. Clause 10.2.1, The Supplier shall notify the loss to Cykel DK. Upon receipt of the notification, Cykel DK decides whether the Bike shall be replaced or not. If Cykel DK decides to have the Bike replaced, Cykel DK shall pay the fixed price for a new Bike according to Appendix F. If Cykel DK decides that the Bike shall not be replaced, the Parties obligations in accordance with this Agreement shall continue as regards to the remaining number of Bikes. If the loss of Bikes is essential, see clause 10.2.5.

10.2.3 It is the responsibility of the Supplier to handle repair or replacement of non-functional Bikes, cf. Appendix A, and other hardware, and the Supplier shall bear all cost related to the repair or the replacement.

10.2.4 The Supplier is obligated to deliver Bikes for replacement within a maximum time limit of 60 days.

10.2.5 If the total amount of Bikes is reduced essentially due to lost and non-functional Bikes, the Parties will take up negotiations concerning the repair or/and replacement of Bikes, as well as the Parties will discuss whether the service level is to be adjusted.

10.2.6 As regards to the Suppliers normal and regular maintenance of the Bikes, see clause 14 and Appendix A.

10.3 Major Events

10.3.1 The Parties acknowledges that some events, for example major cultural activities, city renovations, construction work etc. (hereinafter referred to as "Major Events") can influence the Supplies possibilities of meeting the agreed service level, cf. Appendix D. A Major Event can influence the Suppliers Operation of the Bike System, the availability or demand for Bikes or result in an increased risk of vandalism.

10.3.2 It is the responsibility of the Supplier to identify possible Major Events and come up with possible solutions to avoid possible impact on the Operation of the Bike System.

10.3.3 Whether an event is to bee considered as a Major Event as well as how to obviate the effect on the Operation of the Bike System, including whether the service level shall be deviated from, is to be agreed between the Parties.

10.3.4 If the Supplier takes actions not included in an agreement with Cykel DK, cf. Clause 10.3.3, in order to obviate possible effects of events which the Supplier define as Major Events, the agreed service level, cf. Appendix D, will not be deviated from and the Supplier shall be fully responsible for any violation of the service levels these actions might lead to. However, if Cykel DK finds, that the actions taken were relevant and proportional, the Parties can agree to deviate from the service level.

11. Prices for use of the Bike System, payments and Payment System

11.1 Prices for use of the Bike System

11.1.1 All prices for the use of the Bike System including End User Prices are decided by Cykel DK. The price may vary from one Municipality to another and may be changed from time to time. It is in the common interest of the Parties, that the End User Prices are set with the objective of maximizing the usage of the Bikes.

11.1.2 The Supplier shall in addition to the End User Price be entitled to charge the End User a transaction fee corresponding to the costs to the Payment Provider and without profits for the Supplier either directly or indirectly. However, the transaction fee can maximum amount DKK 2 in average for all End User Payments including payments by international credit card. The Supplier shall at Cykel DK's request deliver a full auditor approved documentation of the above. Information and charging shall appear clearly for the End User and shall be in accordance with relevant legislation, including guidelines set by the Consumer Ombudsman.

11.2 Payments

11.2.1 The Supplier acts in his own name and for his own account. All payments submitted by End Users and all other payments regarding the use of the Bike System are initially transferred to the Supplier. The Supplier files and settles the VAT in his own name and for his own account. The Supplier shall forward documentation for the filing and settlement of VAT from End User payments.

11.2.2 The Supplier calculates the net revenue to Cykel DK on a monthly basis. The amount is calculated as income from End Users less transaction costs and less incentive payment to the Supplier with addition of VAT according to Danish legislation. The statement is forwarded to Cykel DK within 10 days of the

following month. The net revenue is transferred to the Bank account of Cykel DK within 45 days after end of month.

11.2.3 The Parties have agreed on the Payment flow appearing from Appendix A, B and F. Appendix F contains an example on how to calculate the net revenue to Cykel DK

11.3 Payment System

11.3.1 The Supplier shall deliver, operate and support a fully operational Payment System in accordance with the requirements listed in Appendix A. The Payment System includes Payment Terminals. The Payment System shall ensure that all payments are automatically and directly transferred to Cykel DK's accounts as decided by Cykel DK.

11.3.2 The Payment System shall ensure that all End Users receive proper documentation (receipt) for the purchase when using the Bike System. The documentation shall fulfil all relevant Danish legislation and specify the total amount including VAT and with separate specification of VAT.

11.3.3 The Supplier shall ensure – and bear the full responsibility for – the handling of all Credit Card information received by the Supplier or the Supplier's sub-suppliers under the Agreement fulfilling all relevant legal requirements.

12. Monitoring

12.1 The Supplier shall have the total responsibility for and shall bear all costs regarding the Monitoring of the Bike System during the Term of the Order.

12.2 Monitoring includes but is not limited to:

- Automatic, electronic and physical monitoring of critical processes, redistribution of Bikes, payments, reservations, network access, business applications, data, server, etc.
- necessary initiatives and actions regarding failure and defects
- delivery of information and reports to Cykel DK
- monitoring of backup-restore procedure and antivirus/security

12.2.1 The requirements that the Supplier shall meet in terms of Monitoring are further described in Appendix A.

13. Reporting and Cykel DK's access to Data

13.1 Reporting

13.1.1 The Supplier shall report to Cykel DK on a monthly basis according to the principles described in Appendices A and C.

13.1.2 Within reasonable limits Cykel DK shall have the opportunity to require other reports from the Supplier than those listed in clause 13.1.1, cf. Appendix A.

13.2 Access to Data

13.2.1 Cykel DK shall have unrestricted access to all Data, i.e. End User Data, data regarding transactions, lease period, ordering channels, payments and customer behaviour. Data shall be accessible via Excel (version 2003 compatible) and XML. Unrestricted access to Data shall apply during the full term of the Agreement. The user interface for the access shall be standard.

14. Maintenance

14.1 The Supplier shall have the total responsibility for and shall bear all costs regarding the Maintenance of the Bike System during the Term of the Order as further described in Appendix A.

15. Cykel DK responsibilities

Appendix A and C contains a list of Cykel DK responsibilities during the term of the Agreement and the Option Period.

16. Change procedures

The Parties have agreed to the change procedures as further described in Appendix A.

17. Options

17.1 The Parties have agreed to the options as further described in Appendix A.

18. Service Levels

18.1 The Parties have agreed on the Service Levels as further described in **Appendix D**.

18.2 At the time of the conclusion of the Agreement Appendix D have not been finalized. The Parties have agreed that Appendix D shall be finalized by the Parties no later than 31 January 2013. Finalization shall be based on the requirements and principles contained in Appendix A, sub appendix 11, and Appendix D, but the Parties can take up negotiations regarding additional requirements and service levels.

18.3 The Supplier's non-compliance with the Service Levels can constitute a material violation of the Agreement, cf. clause 27.

19. Compensation

19.1 The Parties have laid down principles for compensation in Appendix A and D.

19.2 The compensation shall be calculated on a monthly basis and paid every three (3) months to Cykel DK. Cykel DK shall be entitled to offset the calculated amount, cf. clause 26.

19.3 The Parties have agreed a penance limitation of 10% of the establishment fee, as defined in Appendix F1a, in case of penalty in connection with lacking fulfillment of milestones as defined in Appendix A.

20. Incentives

20.1 The Parties have agreed on the Incentives as described in Appendix A and F1.

20.2 Calculation and payment of incentive payment shall take place as described in Appendix A and F1 and shall be paid out of End User payments as described in clause 11.2.

21. Guarantees and Warranties

21.1 The Supplier warrants that any and all deliveries under this Agreement are in compliance with the requirements specified by Cykel DK and that they are faultless.

21.2 I addition to clause 21.1, the Supplier undertakes the Guarantees and Warranties listed in Appendix A.

21.3 The Supplier shall make a replacement delivery or repair without undue delay and without any costs for Cykel DK.

21.4 If the Supplier does not make a replacement delivery or repair without undue delay, Cykel DK shall be entitled to make replacement purchases from a third party at the Supplier's expense and risk.

21.5 If the Supplier does not take remedial action without undue delay, Cykel DK shall be entitled to have the defects or non-conformity ascertained remedied at the Supplier's expense and risk.

21.6 If Cykel DK discovers any defect or non-conformity during the operation, Cykel DK shall notify the Supplier of such defect or non-conformity. Cykel DK shall be entitled to be credited for the time spent in connection with defect or non-conformity at an hourly rate of DKK 400.00 exclusive of VAT.

21.7 Any replacement delivery of an entire or part of a delivery shall be made in accordance with the terms of delivery of the Agreement, cf. Clause 4 above.

22. Governance

22.1 The Parties have agreed on the principles for governance and cooperation under the Agreement in Appendix A.

22.2 The Parties have during the contractual process produced a PID document, cf. **Appendix C**, that describes the principles for the governance and management of the deliveries and services under this Agreement. The PID is a dynamic document that is updated regularly and adapted, so that it always contains the present procedure agreed by the Parties. The current version of the PID shall be signed by both Parties.

23. Special provisions

23.1 Documentation

23.1.1 All deliveries shall be accompanied by relevant documentation drawn up in the Danish or English languages and describing the delivery, including its use and application, maintenance and/or repair. Cykel DK shall be entitled at any time to demand compliance with adequate documentation.

23.2 Material supplied by Cykel DK

23.2.1 The proprietary right, including all intellectual property rights, to all material, including drawings, designs, specifications, tools and any other data and equipment given to a Party by the other Party shall remain with the Party who gave the material.

23.2.2 Upon a Party's request, the other Party shall return all material given to the Party without undue delay.

23.2.3 A Party shall not be entitled to copy any material supplied by the other Party or to disclose information about such material for any purpose other than the performance of this Agreement.

23.3 **Sub-suppliers**

23.3.1 It is a condition for the Supplier's use of sub-suppliers that the sub-supplier is subject to the same terms and conditions and obligations as the Supplier with regard to the Agreement, including regarding intellectual property rights, material, confidentiality, use of Cykel DK as a reference, etc.

23.3.2 The Supplier accepts full responsibility for products and services provided by sub-suppliers in the same way and to the same extent as if the Supplier itself supplied the products/services.

23.3.3 If the Supplier has been granted a more comprehensive or longer warranty by a third party, including sub-suppliers, on equipment, software or any other products and services included in the delivery, the Supplier shall give Cykel DK the full benefit of such more comprehensive or longer warranty. The Supplier shall loyally assist Cykel DK in claiming and enforcing such warranty obligations against a third party.

23.4 **Insolvent liquidation, etc.**

23.4.1 If the Supplier files for suspension of payments or goes into insolvent liquidation, Cykel DK shall be entitled to terminate the Agreement immediately to the extent the rules of the Danish Insolvency Act permit Cykel DK to do so. If the Supplier's insolvent estate is entitled to adopt the Agreement under the rules of the Danish Insolvency Act, the insolvent estate must, upon enquiry from Cykel DK, notify Cykel DK, within a time limit of five (5) business days, as to whether or not it intends to adopt the Agreement.

24. Environment

Cykel DK is actively working to ensure that no employees or customers are exposed to hazardous substances at work or on trains, and that the impact on the external environment is reduced as far as possible. The Supplier undertakes to have an environmental policy and, during the entire Term of the Agreement, to maintain an officially approved environmental management system (ISO 14001, EMAS or the like), or, alternatively, to be able to produce documentation of an uncertified environmental management system upon request at any time, e.g. the environmental manual or environmental objectives and targets of the Supplier. Cykel DK can, in consultation with its environmental department, impose additional environmental requirements relevant to the specific range of industries and types.

25. Health and safety at work

25.1 A completely safe working environment in terms of safety and health is demanded by Cykel DK. Cykel DK complies with the health and safety at work guidelines OHSAS 18001:2008 and demands similar compliance from its suppliers of goods and services. Therefore, the Supplier shall comply with Cykel DK's health and safety at work policy during the Term of the Agreement. The Supplier has received a copy of the policy. The Supplier shall during the entire Term of the Agreement have a health and safety at work policy formulated. The Supplier shall at all times be able to demonstrate that the Supplier prioritises health and safety at work and works systematically and properly with its own working environment, e.g. by presenting a manual, policy aim and action plans on the working environment.

25.2 Cykel DK can in consultation with its health and safety at work department impose additional working environmental requirements relevant to the specific range of industries and types. The Supplier undertakes to show ability and willingness to cooperate with Cykel DK on health and safety issues generally and locally in the specific situations.

25.3 The Supplier shall loyally inform Cykel DK about new, improved or alternative possibilities in relation to the products/services covered by the Agreement.

25.4 Cykel DK reserves the right to audit the issues described in Clauses 24 and 25 above – e.g. by means of spot checks – in relation to the environment and health and safety at work applicable to all work for Cykel DK and carried out on Cykel DK's area.

26. Prices and terms of payment

26.1 Prices

26.1.1 The Supplier shall bear all costs regarding the Bike System, including all the Suppliers obligations under this Agreement.

26.1.2 For the deliveries and services by the Supplier under this Agreement, Cykel DK shall pay the Prices as described in **Appendix F1.**

26.1.3 Unless otherwise appears from Cykel DK's order, all Prices are net prices fixed in Danish kroner (DKK) exclusive of VAT but inclusive of all charges and surcharges, etc., cf. Appendix A. Cykel DK shall be under an obligation to pay for only products specified in an Order.

26.1.4 All Prices are fixed for a period of 12 months after the signing of the Agreement. After 12 months all Prices, cf. Appendix F1, are subject to an adjustment according to the Danish Net Price Index, regardless of documented changes in

the prices of raw materials, exchange rates, etc. If the Supplier reduces its general list Prices in the period between the date of conclusion of this Agreement and the date of delivery, the Supplier shall be under an obligation to invoice Cykel DK at such lower Price.

26.2 **Terms of payment**

26.2.1 The terms of payment are net 45 days, cf. Appendix F, after Cykel DK's approval of the delivery (according to clause 9.2.1 and Appendix A) and receipt of the Supplier's electronic invoice, cf. Clause 26.2.2 below.

26.2.2 The invoice shall be forwarded electronically and include the purchase order number or, secondarily, the e-mail address of the person who ordered the products in question.

(a) Invoices to Cykel DK shall be as a PDF file to Cykel DK.

(b) As an alternative to (a) above, an EDI invoice may be forwarded.

26.2.3 Partial invoicing will not be accepted.

26.2.4 If Cykel DK receives a faulty invoice or an invoice which does not comply with the requirements stipulated in Clause 26.2.2 above, Cykel DK shall notify the Supplier thereof. Having received such notification, the Supplier shall forward a credit note/new invoice to Cykel DK within five (5) business days. The payment date will be calculated from the date of receipt of a correct invoice.

26.2.5 Any amount which Cykel DK is entitled to claim as a consequence of a delivery or any other delivery from the Supplier may be set off against Cykel DK's payment for the delivery.

26.3 **Prepayments**

26.3.1 All prepayments by Cykel DK is conditional upon the Suppliers issuance of a prepayment bank guarantee fulfilling the following conditions:

(a) The prepayment bank guarantee shall be an "on demand guarantee".
(b) The prepayment bank guarantee shall be governed by Danish Law.
(c) Amounts shall be paid on the basis of the first written demand from Cykel DK in one or more installments, if the Supplier – in Cykel DK's view - does not comply with the Suppliers obligations under the Agreement.
(d) The prepayment bank guarantee shall be maintained until the end of the Term of the Order and shall be written down successively by 1/8 per year (at the end of each year of the Term of the Order).

(e) The prepayment bank guarantee shall be issued by a bank or a credit insurance company with a rating of minimum A- (S&P) / Baa1 (Moody's), corresponding to the current rating of Danske Bank.

27. Remedies for breach

27.1 Termination for breach

27.1.1 Cykel DK shall be entitled to terminate the Agreement in whole or in part if:

(a) Material delay of deliveries occurs;

(b) a delivery has any material defect or non-conformity, either in terms of quality or quantity, and the Supplier has not remedied such defect or non-conformity or made a replacement delivery without undue delay;

(c) the Supplier does not fulfil the acceptance test and the performance test specified in Appendix A;

(d) the Supplier is in any other way in material breach of its obligations under this Agreement.

27.1.2 The Supplier shall be entitled to terminate the Agreement in whole or in part if:

(a) Cykel DK is in breach of its obligations regarding payments under this Agreement and has failed to settle the payment no later than twenty (20) days after the Supplier has given Cykel DK a written notice.

27.2 Cancellation and returning of defective deliveries

27.2.1 If Cykel DK finds that the delivery is not, in whole or in part, in compliance with the specifications in Cykel DK's order or if the delivery, in Cykel DK's opinion, in any other way non-conforms, including not being of a satisfactory quality, cf. Appendix A, Cykel DK shall be entitled to cancel the delivery and return the delivery at the Supplier's expense and risk, and receive a full credit of all costs in this regard, including costs for temporary storage, packaging and any other handling and transport.

27.3 Liability for damages

27.3.1 Each Party is liable for damages to the other Party according to the general rules of Danish law.

27.3.2 Neither Party is, however, liable for any operating loss, consequential damage or any other indirect loss, including but not limited to loss of profit, loss of interest or capital loss, loss of data, faulty data, etc.

27.3.3 The limitation of liability set out in Clauses 27.3.2 does not comprise product liability, see Clause 28.1, any infringement of third-party rights, see Clause 28.2, or gross negligence or wilfulness on the part of the Party liable for damages.

27.3.4 Neither Party is liable for damages to the other Party in the event of termination of the Agreement pursuant to Clause 3.3.1. The Supplier shall be entitled to only ordinary payment of deliveries not affected by such termination. In particular, the Supplier shall not be entitled to claim compensation for loss of turnover or goodwill or any other similar loss resulting from the cessation of the Agreement.

27.3.5 The Parties obligation to pay damages according to the Agreement is limited to a maximum of DKK 10 million.

28. Liability

28.1 Product liability

28.1.1 The general rules of Danish law on product liability shall (in general) apply to all deliveries to Cykel DK.

28.1.2 In case a third party claims product liability from Cykel DK or the Supplier in connection with deliveries under this Agreement, the Party in question shall notify the other Party thereof in writing without undue delay.

28.1.3 The Supplier shall accept being sued before the court of law or arbitration tribunal hearing claims for damages brought against Cykel DK or/and the Municipalities on account of damage allegedly caused by a delivery under the Agreement.

28.1.4 To the extent to which Cykel DK or/and the Municipalities is deemed to be liable according to the rules of Danish or foreign law governing product liability as a consequence of the Supplier's delivery, the Supplier shall be under an obligation to indemnify Cykel DK or/and the Municipalities for any claim, including legal costs.

28.1.5 To the extent to which Cykel DK or/and the Municipalities suffers a loss, as a consequence of product damage to Cykel DK's or/and the Municipalities' property caused by a delivery, the Supplier shall indemnify Cykel DK or/and the Municipalities for any such loss.

28.2 Infringement of intellectual property rights

28.2.1 Cykel DK shall notify the Supplier without undue delay if legal proceedings are brought against Cykel DK claiming infringement of a third party's intellectual property rights in connection with a delivery. Cykel DK shall be entitled to request that the Supplier take over such proceedings and pay any and all costs in this regard. If the decision made in the case prevents or makes Cykel DK's continued use of the delivery difficult, the Supplier shall be under an obligation to secure the right to continued use of the delivery for Cykel DK or stop the infringement of the third party's right by modifying or replacing the delivery at the Supplier's own expense and without costs for Cykel DK.

28.2.2 The Supplier shall indemnify Cykel DK for any loss, including all legal costs, inflicted on Cykel DK as a consequence of an alleged or through legal proceedings established infringement of a third party's intellectual property rights through the use of a delivery under this Agreement.

28.3 **Insurance**

28.3.1 Without it in any way limiting the Supplier's liability, the Supplier undertakes to take out a general liability insurance and product liability insurance with an established insurance company with an insurance sum of minimum DKK 20,000,000 per loss (own risk excess maximum DKK 10,000) including a financial loss insurance with an insurance sum of minimum DKK 1,000,000 (own risk excess maximum DKK 100,000) and to maintain such policy during the entire Term of the Agreement, cf. Clause 33.1 below, + 2 years. At Cykel DK's request, the Supplier shall at all times be able to document the validity of the insurance policy on the aforesaid terms.

28.3.2 The Supplier has taken out general liability and product liability including pure financial loss insurance with the following insurance company:

Chartis (AIG)

Policy number will be forwarded by the Supplier when the Agreement is final according to clause 4.

28.4 **Regulatory requirements**

28.4.1 The Supplier shall be responsible for the compliance with all applicable Danish regulatory requirements and local regulations of the individual Municipality when performing its obligations under this Agreement. This applies to IT, software, Website, all material, Bikes, Docking Stations, Payment Terminals, and all other materials and services under this Agreement.

28.4.2 The Supplier's responsibility in accordance with clause 28.4.1 shall rank before any elements of the Service Requirements of Appendix A not complying with such requirements and regulations.

28.4.3 The Supplier is obligated to investigate local regulations and conditions as necessary and to obtain knowledge on local conditions, i.e. regarding surfaces, accessibility and traffic conditions in areas planned for the Bike System.

28.4.4 To the extent Cykel DK can document that changed regulatory requirements make the completion of the delivery less expensive, Cykel DK shall be entitled to demand a corresponding reduction of the Price.

29. Exemption from liability (force majeure)

29.1 According to this Agreement, the Supplier and Cykel DK shall not incur any liability in relation to the other Party in respect of any circumstances over which the Party in question has no control and which such Party should not, at the conclusion of the Agreement, have taken into account and should not have avoided or overcome. Circumstances prevailing with a sub-supplier shall be regarded as force majeure only if such circumstances are obstacles for the sub-supplier which are covered by the first sentence above and which the Supplier should not have avoided or overcome.

29.2 A delay due to force majeure can be claimed for no more than the number of business days during which the actual force majeure situation lasts. If a time limit for the Supplier is postponed due to force majeure, the payments related to such time limit shall be postponed correspondingly. To the widest extent possible, the Parties shall contribute to the mitigation of the consequences of the force-majeure situation. Force majeure can be claimed only if the Party in question has notified the other Party thereof in writing not later than five (5) business days after the occurrence of the force majeure situation.

29.3 The Party not affected by the force-majeure situation shall be entitled to cancel the Agreement in whole or in part by giving prior written notice of five (5) business days if the agreed delivery date is exceeded by thirty (30) business days as a consequence of force majeure. In case of such cancellation, both Parties shall return any products, documents, etc. received from the other Party as soon as possible and the Parties shall subsequently not have any claims against each other.

30. Confidentiality, use of references etc.

30.1 **Confidentiality**

30.1.1 The Parties and their employees undertake to keep confidential any and all information and knowledge acquired by the Parties about the other Party or any other matter, including the contents of this Agreement, in connection with this Agreement. The Parties' duty of confidentiality shall be of indefinite duration.

30.1.2 Regardless of the stipulations of Clause 13.1.1 above, a Party shall be entitled to disclose information which is otherwise confidential if and to the extent:

(a) so required by applicable law or a decision made by a court of law or a public authority, including the Danish Ministry of Transport, the Danish Transport Authority, Rail Net Denmark and the Danish competition authorities;

(b) the Party finds it necessary and expedient for it to disclose such information to its advisers on the condition that the advisers in question are or become subject to a similar duty of confidentiality;

(c) the information is in the public domain or was rightfully received from a third party.

30.1.3 A Party's disclosure of information in any situations other than those mentioned in Clause 30.1.2 above shall require the other Party's prior, written consent.

30.2 **Use of references etc.**

30.2.1 The Supplier shall not use the name, logo, trademarks, etc. of Cykel DK or DSB or the Municipalities of Copenhagen or Frederiksberg or other Municipalities of Denmark without the prior, written consent of said party.

30.2.2 Furthermore, the Supplier shall not use the Agreement for advertising or reference purposes, including i.a. make public announcements concerning the Agreement, without the prior written consent of Cykel DK.

31. Cykel DK's internal policies

31.1 When working for Cykel DK, the Supplier and its employees shall not be influenced by alcohol or any other drug, and shall respect that the consumption of drugs in any form is prohibited during working hours, including lunch breaks.

31.2 The Supplier, its employees and any sub-suppliers know Cykel DK's Code of Conduct and hereby undertake to comply with the requirements stated therein.

32. Municipalities' policies

32.1 The Supplier shall meet the specific demands with regard to social responsibility, employment policies, etc. of the Municipalities of Frederiksberg and Copenhagen contained in the Initial Orders, cf. Appendix A.

32.2 The Supplier is obligated to enter into discussions with other Municipalities concerning meeting similar and reasonable demands regarding social responsibilities, employment policies, etc. However, the Supplier is entitled to reject these demands if the fulfillments entail disproportionate expenses or organizational difficulties.

33. Expiry of Agreement

33.1 **Term of Agreement**

33.1.1 This Agreement shall be in force from the date of the signing and expire four (4) years from that date (hereinafter referred to as the "**Term of the Agreement**"). The Term of the Agreement may be renewed by Cykel DK for another period of up to 36 months (hereinafter referred to as the "**Option**

Period"). In reasonable time before the expiry of the Term of the Agreement, Cykel DK shall notify the Supplier whether Cykel DK wishes to exercise the option for renewal. The Agreement shall expire automatically without termination at the expiry of the Term of the Agreement and the Option Period, if any.

33.1.2 The Supplier undertakes to execute all Orders placed by Cykel DK, according to the terms and conditions set out in the Agreement, during the Term of the Agreement and the Option Period, regardless of whether or not the delivery is to take place after the expiry of the Term of the Agreement/Option Period.

33.2 **Termination**

33.2.1 Cykel DK shall be entitled to terminate this Agreement at any time by giving written notice of six (6) months, always provided that Cykel DK shall be entitled to terminate the Agreement without notice if controlling interests in the Supplier's business are transferred. The Agreement cannot be terminated by the Supplier during the Term of the Agreement.

33.3 **Exit**

33.3.1 Cykel DK is entitled to terminate this Agreement at any time without further notice if a public authority orders Cykel DK to do so or due to internal decisions taken by the DSB Group. If Cykel DK terminates the Agreement according to this clause, the Supplier shall be entitled to receive compensation for direct and documentable costs which could not have been avoided by the Supplier by taking reasonable actions. The Supplier shall not be entitled to receive compensation in addition to the compensation described in this clause.

33.4 **Consequences of expiry, termination or exit**

(a) **Hand over of knowledge etc.**

The Supplier is for a period of up to twelve (12) months obligated to hand over knowledge regarding the operation of the Bike System. The hand over can include delivery of overviews regarding the Operation, Monitoring and Maintenance, action plans, status in terms of reported defects, maintenance plans and action plans for repair of defects, etc. Assistance may include services to be delivered in the period after Cykel DK has entered into an agreement with another operator of a bike sharing system.

(b) **Return of material and data belonging to Cykel DK**

The Supplier shall immediately and without undue delay return all material, equipment and data, including Material/Hardware and Data, belonging to Cykel DK and material and data, including Material/Hardware and Data. The Supplier cannot exercise any lien on material and data belonging to Cykel DK. The return of material and data shall not inflict any costs on Cykel DK and shall be implemented whether Cykel DK is claimed to be or is in actual violation of the Agreement regardless of the extent of such violation. The

material and data shall be returned in a readable form so that Cykel DK can maintain historical information and perform a successful transfer of the operation to a third party or perform the operation by itself.

(c) **Removal/termination of the Suppliers material/services**

Upon closure of the Agreement, regardless of whether the closure is due to expiration of the Term of Agreement, termination or cancellation, the Supplier is obliged to remove all Material/hardware from the Placements, and Cykel DK is responsible for the re-establishment of the Placements. The removal of Material/hardware must – unless otherwise agreed between the Parties – be finished no later than three (3) months after the closure of the Agreement. In order to ensure that the closure is conducted in a secure and cost-efficient manner, it is the common aim of the Parties, that the removal of Material/hardware and re-establishment of the Placements is carried out in full cooperation.

34. Change of Control

34.1 DSB shall not be entitled to transfer controlling interests in Cykel DK to a third party, if the third party's business is in direct competition with the Supplier's core business. The Supplier shall at any time on DSB's request be obligated to examine a third party presented in writing by DSB and give DSB feedback in writing whether the Supplier finds the third party's business to be in direct competition with the Suppliers core business. If written feedback has not been received by DSB no later than 10 days from the request, this shall calculate as an approval by the Supplier enabling DSB to perform the transfer.

34.2 In case of a transfer of controlling interests according to clause 34.1 DSB shall obtain a declaration from the controlling third party stating that all contractual obligations according to the Agreement will be met and that third party will continue the distribution of the Bike System in good faith. DSB shall bear no risk or responsibility towards the Supplier in case of breach of the declaration.

35. Assignment

35.1 Without the prior, written consent of the other Party, neither Party may, in whole or in part, transfer its obligations or assign its rights under this Agreement to a third party. A Party can withhold such consent only with just cause.

35.2 However, in connection with a reorganisation, conversion, company formation or the like in the DSB Group, Cykel DK shall be entitled to assign its rights and transfer its obligations under this Agreement, in whole or in part, to the unit(s)/company/companies, etc. in which the relevant activities will be placed in the future. Similarly, Cykel DK shall be entitled to divide the Agreement into several parallel agreements, which are each assigned to the relevant

units/companies, etc. Cykel DK's liability for obligations transferred ends upon the transfer.

35.3 The Supplier's use of sub-suppliers shall not be regarded as assignment under this Agreement, as the Supplier continues to have full responsibility for the delivery.

36. Disputes, choice of law and venue

36.1 This Agreement and the mutual relationship of the Parties under this Agreement shall be governed by the general rules of Danish law with the exception of Danish rules of private international law and the Convention on Contracts for the International Sale of Goods.

36.2 Any dispute between the Parties arising out of or in connection with this Agreement, including disputes in connection with deliveries under the Agreement, and which cannot be settled amicably shall be settled by the Copenhagen City Court as the court of first instance.

37. List of Appendices

37.1	**Appendix A**	**Documentation of Requirements**
37.2	**Appendix B**	**Solution Description**
37.3	**Appendix C**	**PID**
37.4	**Appendix D**	**Service Level Agreement**
37.5	**Appendix E**	**Test plan**
37.6	**Appendix F**	**Prices**
37.7	**Appendix G**	**Order Forms - Initial Orders and Additional Orders**
37.8	**Appendix H**	**Initial Order for Frederiksberg and Copenhagen**

38. Contact persons

38.1 Contact persons

38.1.1 With the Supplier:

Torben Aagaard
Tel.: + 45 27 10 77 77
E-mail: taa@gobike.dk

Torben Dyrvig
Tel.: + 45 40 45 14 18
E-mail: td@gobike

38.1.2 With Cykel DK:

[To be inserted after establishment]

Tel.: [to be inserted after establishment]
E-mail: [to be inserted after establishment]

39. Address for communications

39.1 All communications to Cykel DK regarding this Agreement shall be forwarded to the following address:

Cykel DK A/S
Hovedbanegården
Banegårdspladsen 5
DK- 1577 København V

marked: Framework Agreement regarding bike share system

40. Confirmation of Agreement

40.1 This Agreement (and its Appendices) is signed in two (2) identical copies of which each shall be an original. Both Parties have received a copy hereof.

40.2 The below-mentioned signers of the Agreement hereby declare to be authorised to sign for Cykel DK and/or the Supplier in pursuance of their internal rules on power to bind the organisation.

Copenhagen, 26/11 2012
For Cykel DK:

Name, title:
TORBEN AAGAARD,
CHAIRMAN

Name, title:
NIKLAS MARSCHALL,
MANAGING DIRECTOR

Name, title:

Copenhagen, 26/11 2012
For the Supplier:

Name, title:
TORBEN AAGAARD,
CEO

Name, title:

Name, title:

DSB consents to be legally bound by the obligations set forth in clause 34.

Copenhagen 26/11 2012

Name, title:
GERT FROST,
COMMERCIAL DIRECTOR

Name, title:

Bilag F1a: Rammeaftalens prisliste

(Kommuner)
Final
22. november 2012

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1 Dokument information

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1.1 Revisions historik

Revisions dato	Forfatter	Version	Ændrings beskrivelse
13/11/2012	KL	6	Formatteret til Kontrakt
15/11/2012	KL	Final	DSB review
20/11/2012	KL	Final_20112012	Tilpasset forhandling med Gobike d. 20. nov. 2012

2 Generel information

Dette bilag er udarbejdet på baggrund af Rammeaftalen og rammeaftalens appendiks A, bilag 15.

2.1 Indeks

Se framework agreement 26.1.4

2.2 Betalingsbetingelser og betalingsplan

Se afsnit 4.2.4

3 Cykelsystemer – ”Package” 1 og 2

GoBike's løsning tilbydes i to forskellige pakker – med (Full bike system) og uden (Light bike system) nivellering af cykler mellem docking stationer. [Reference Rammeaftalens bilag A, Appendiks 4]

Indhold er nærmere beskrevet i afsnit herunder.

Full Bike System kan alene erhverves af kommuner, hvor:

1. Der erhverves minimum 50 cykler i kommunen
2. Det samlede antal cykler i kommunen, dennes nabokommuner og disses nabokommuner (niveau 2) etc. i en sammenhængende linie andrager minimum 3.500 cykler.

Ved erhvervelse af Light Bike System kan redistribution/nivellering tilkøbes efter aftale.

3.1 Full bike system – package 1

Priser inkluderer:

- Lejeafgift
- Klargøring
- Installation af cykler og docking-stationer
- Test og idriftsættelse som beskrevet i Rammeaftalens bilag C
- Oprettelse i GoBike systemer
- Drift (monitorering, vedligeholdelse, kundeservice, redistribution og opfølgning) i perioden i henhold til SLA (driftsaftalen)
- Vedligeholdelse af cykler og docking points i kontraktperiode
- 1,5 docking point per cykel

Priser inkluderer *ikke*:

- Eventuel forsikring
- Bonus (anført i separat afsnit)
- Renholdelse af lokationer

- Fakturering af debitorer hvortil der efter ønske ikke fremsendes månedsfaktureringer via mail i pdf format. Ønsker Cykel DK at virksomheder skal kunne betale via fysisk fremsendte fakturaer, afholder Cykel DK relaterede omkostninger herunder til print, kuvertering, porto og administration.
- Omkostninger til inddrivelse af manglende betalinger, ud over 3 automatiske rykkere via mail. Påbegyndes incasse procedurer, afholder Cykel.dk alle relaterede omkostninger hertil.

Bemærk:
Omkostninger til EL, kreditkort transaktioner og Bonus er beskrevet i afsnit: 8.3 El forbrug.

3.2 Light bike system – package 2

Priser inkluderer:

- Lejeafgift
- Klargøring
- Installation af cykler og docking-stationer
- Oprettelse i GoBike systemer
- Vedligeholde af cykler og docking points i kontraktperiode
- Drift i perioden i henhold til SLA (driftsaftalen)
- 1,5 docking point per cykel

Priser inkluderer *ikke*:

- Redistribution
- Eventuel forsikring
- Renholdelse af lokaliteter
- Fakturering af debitorer (storkunder)
- Inddrivelse af manglende betalinger (storkunder)

Bemærk:
Omkostninger til EL, kreditkort transaktioner og Bonus er beskrevet i afsnit: 8.3 El forbrug.

4 Full bike systems

I dette afsnit findes priser på GoBike's Full Bike System.

4.1 Cykelversioner

GoBike's cykler findes i to udstyrsvarianter: Basis og Plus.

GoBike Standard	GoBike Basis	GoBike Plus
Terminal løsning for betaling ved hver docking station (Ingen tablet på cykel).	Tablet med standard LCD skærm	Tablet med PixelQi (eller tilsvarende) skærm med fuld læsbarhed i sollys
Kan ikke opgraderes til eBike.	Kan ikke opgraderes til eBike	Forberedt for opgradering til eBike
Kan ikke fortsætte i drift efter 8 år	Kan ikke fortsætte i drift efter 8 år	Kan opgraderes og fortsætte i drift efter 8 år og dermed indgå i aftaleforlængelse
Kan ikke opgraderes til Basis eller Plus. Kræver samtidig køb af min. 3500 cykler.		

Den initiale ordre til den første kommune definerer hvilken version der tilbydes til efterfølgende kommuner, således vil de to af ovenstående varianter udgå efter 31/12 2012.

Gobike anbefaler Plus versionen.

Ydelse	Pris
4.1.1 Cykel	
Standard og Basisversion	Ikke muligt
<10 stk	DKK 8.000/stk/år
-999 stk	DKK 7.000/stk/år
1.000-1.999 stk	DKK 6.000/stk/år
2.000-3.499 stk	DKK 4.250/stk/år
3.500- stk	
Plusversion	Ikke muligt
<10 stk	DKK 8.750/stk/år
-999 stk	DKK 7.750/stk/år
1.000-1.999 stk	DKK 6.750/stk/år
2.000-3.499 stk	DKK 5.000/stk/år
3.500- stk	
Erstatningscykler (Se: Genanskaffelsespriser, min. 10 stk)	DKK 10.750/stk
Basisversion	DKK 11.500/stk
Plusversion	
4.1.2 eBike Cykel	
Basisversion	Ikke muligt
<10 stk	DKK 12.000/stk/år
-999 stk	DKK 11.000/stk/år
1.000-1.999 stk	DKK 10.000/stk/år
2.000-3.499 stk	DKK 8.250/stk/år
3.500- stk	
Plusversion	Ikke muligt
<10 stk	DKK 12.750/stk/år
-999 stk	DKK 11.750/stk/år
1.000-1.999 stk	DKK 10.750/stk/år
2.000-3.499 stk	DKK 9.000/stk/år
3.500- stk	
Erstatningscykler (Se: Genanskaffelsespriser, min. 10 stk)	DKK 17.750/stk
Basisversion	DKK 18.500/stk
Plusversion	
Opgradering af standard cykel til eBike	DKK 8.000/stk
Plusversion	
4.1.3 Docking point	
Erstatning/Efterfølgende bestillinger.	
(Se: Genanskaffelsespriser)	DKK 5.600/stk
1 stk	

Ydelse	Pris
4.1.4 Docking Point Moduler (inkl. Docking point) 4 docking point modul	DKK 22.400/stk
 7 docking point sildeben modul	DKK 39.200/stk
 Øvrige opstillinger	Efter tilbud
4.1.5 Leje af Docking Point Moduler (inkl. Docking points – eksklusiv transport, montering, tilslutning og strøm) 4 docking point modul	DKK 1.000/dag
	

7 docking point sildeben modul (master) DKK 1.500/dag



Leje af cykler samt ændret redistribution ifm leje af docking point Efter tilbud

4.1.6 Driftsomkostning aftaleforlængelse

- Årlige driftsomkostninger efter 8 års drift (aftaleforlængelse)":

Basis løsning	DKK 1464
Plus løsning	DKK 2000
eBike	DKK 3000

4.2 Forudsætninger

4.2.1 Genanskaffelsesprisen

Genanskaffelsesprisen er prisen for en cykel eller docking-station der gælder såfremt en cykel eller docking-station er blevet stjålet, og den derfor skal erstattes af den enkelte kommune / virksomhed, der råder over den aktuelle cykel / docking-station.
Bliver en cykel stjålet, så fortsætter den årlige betalingen uændret. Tegner en kommune en forsikring på stjålne cykler, så kan forsikringsselskabet se hvad det koster at genanskaffe en stjålet cykel.
Ødelægger 3. part en cykel eller docking station er det også denne pris Gobike vil kræve i erstatning.

4.2.2 Opgradering af standard cykel til eBike

Efter opgradering betales års prisen for eBike.

4.2.3 Periode

Alle køb af hardware indeholder 8 års driftsaftale parterne imellem. Driftsperiode regnes fra leverance og ibrugtagning af hardware, jf. Rammeaftalens appendiks C: PID afsnit 7.6 godkendelse.

4.2.4 Betalingsbetingelser og betalingsplan

Ved modtagelse og accept af ordre, faktureres forudbetaling baseret på ordrens kvantum:

-999 stk	25%
1.000-1.999 stk	20%
2.000-3.499 stk	15%
3.500- stk	10%

Det resterende beløb fordeles over en 8-årig periode, og faktureres halvårligt forud. Første efterfølgende fakturering sker ved godkendt acceptancetest jf. kontraktens pkt. 9.2.1.

Alle priser er eksklusive moms. Betalingsbetingelser: Netto 45 dage.

4.2.4.1 Beregnings eksempel

Udbetaling = [Antal] * [Årspris jf. afsnit 4.1] * 8 * [Udbetalingsprocent jf. tabel ovenfor]

Eksempel: Der købes 10 cykler (DKK 8.000/stk/år)
Udbetaling = 10 * 8.000 * 8 * 25% = 160.000 DKK
Halvårlige betalinger = ((10 * 8.000 *8) – udbetaling)/16 = 30.000 DKK

Eksempel: Der købes 3500 cykler (DKK 4.250/stk/år)
Udbetaling = 3500 * 4.250 * 8 * 10% = 11.900.000 DKK
Halvårlige betalinger = ((3500 * 4.250 *8) – udbetaling)/16 = 6.693.750 DKK

4.2.5 Opgørelse af ordre-kvantum

Priser anført i prisliste er baseret på kvantum per ordre. En ordre kan bestå af flere delordrer – flere kommuner samtidigt – men, skal afgives som én ordre. Priser gældende ved ordremodtagelse er gældende for ordren.
Hvis samme kommune eller samme gruppe af kommuner senere tilkøber flere cykler kan dette ske til samme priser som den initiale ordre med opnåede kvantum rabat. Hvis en ordre eller en del af en ordre derved ramme næste rabat trin vil den del af ordren og fremtidige ordre afregnes til det højere rabat trin.

4.2.6 Cykelversioner

Manuelle og elektriske cykler kan kombineres ved ordreafgivelse.

5 Light bike systems

I dette afsnit findes priser på GoBike's Light Bike System.

5.1 Cykelversioner

GoBike's cykler findes i to udstyrsvarianter: Basis og Plus.

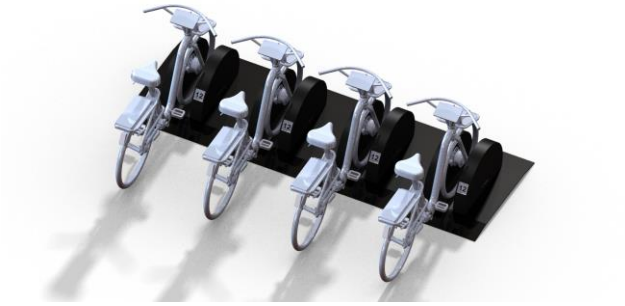
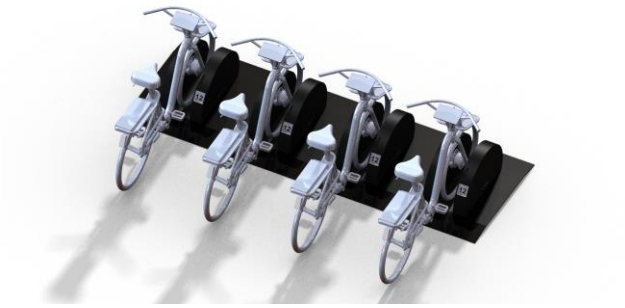
GoBike Standard	GoBike Basis	GoBike Plus
Terminal løsning for betaling ved hver docking station (Ingen tablet på cykel).	Tablet med standard LCD skærm	Tablet med PixelQi (eller tilsvarende) skærm med fuld læsbarhed i sollys
Kan ikke opgraderes til eBike.	Kan ikke opgraderes til eBike	Forberedt for opgradering til eBike
Kan ikke fortsætte i drift efter 8 år.	Kan ikke fortsætte i drift efter 8 år	Kan opgraderes og fortsætte i drift efter 8 år og dermed indgå i aftaleforlængelse
Kan ikke opgraderes til Basis eller Plus. Kræver samtidig køb af min. 3500 cykler.		

Den initiale ordre til den første kommune definerer hvilken version der tilbydes til efterfølgende kommuner, således vil de to af ovenstående varianter udgå efter 31/12 2012.

Vælger Kommune X (første ordregivende kommune) Plus versionen, så vil denne være den fremtidige variant, da cyklerne i løsningen skal kunne krydse kommunegrænser og det derfor er nødvendigt at alle cyklerne er ens konfigureret i forhold til brugerne.

Gobike anbefaler Plus versionen.

Ydelse	Pris
5.1.1 Cykel	
Standard og Basisversion	Ikke muligt
<10 stk	DKK 7.700/stk/år
-999 stk	DKK 6.700/stk/år
1.000-1.999 stk	DKK 5.700/stk/år
2.000-3.499 stk	DKK 3.950/stk/år
3.500- stk	
Plusversion	Ikke muligt
<10 stk	DKK 8.050/stk/år
-999 stk	DKK 7.050/stk/år
1.000-1.999 stk	DKK 6.050/stk/år
2.000-3.499 stk	DKK 4.700/stk/år
3.500- stk	
Erstatningscykler (Se: Genanskaffelsespriser, min. 10 stk)	DKK 10.750/stk
Basisversion	DKK 11.500/stk
Plusversion	
5.1.2 eBike Cykel	
Basisversion	Ikke muligt
<10 stk	DKK 10.700/stk/år
-999 stk	DKK 9.700/stk/år
1.000-1.999 stk	DKK 8.700/stk/år
2.000-3.499 stk	DKK 6.950/stk/år
3.500- stk	
Plusversion	Ikke muligt
<10 stk	DKK 11.050/stk/år
-999 stk	DKK 10.050/stk/år
1.000-1.999 stk	DKK 9.050/stk/år
2.000-3.499 stk	DKK 7.700/stk/år
3.500- stk	
Erstatningscykler (Se: Genanskaffelsespriser, min. 10 stk)	DKK 17.750/stk
Basisversion	DKK 18.500/stk
Plusversion	
Opgradering af standard cykel til eBike	DKK 8.000/stk
Plusversion	
5.1.3 Docking point	
Erstatning/Efterfølgende bestillinger (Se: Genanskaffelsespriser)	DKK 5.600/stk
1 stk	

Ydelse	Pris
5.1.4 Docking Point Moduler (inkl. Docking point) 4 docking point modul	DKK 22.400/stk
 7 docking point sildeben modul	DKK 39.200/stk
 Øvrige opstillinger	Efter tilbud
5.1.5 Leje af Docking Point Moduler (inkl. Docking points – eksklusiv transport, montering, tilslutning og strøm) 4 docking point modul	DKK 1.000/dag
 7 docking point sildeben modul (master)	DKK 1.500/dag



Efter tilbud

Leje af cykler samt ændret redistribution ifm leje af docking point

5.2 Forudsætninger

Forudsætninger beskrevet i afsnit: 4.2 er også gældende for ”Light bike systems”.

6 Installation

Installation og drift er som udgangspunkt inkluderet i GoBike's standardpriser anført i afsnittet herover.

Der kan dog forekomme specielle situationer, hvor der eksempelvis tilkøbes flere docking points end der er inkluderet per cykel (1.5) og/eller hvor disse fordeles over flere men mindre docking stations.

I sådanne tilfælde tilbyder GoBike installation som anført i nedenstående skema.

Omkring installation, er der i GoBike's standardleverance – som er indeholdt i cyklernes årspris – inkluderet installation på lokaliteter med 40 docking points tilsluttet én strømkilde og med sammenhængende monteringsplader. Ønskes en docking station opdelt i flere mindre enheder – med tilslutning til flere strømkilder og/eller med usammenhængende monteringsplader, hvor der kræves gravearbejde pladerne imellem, er dette at betragte som yderligere separate enheder, der tilkøbes separat jævnfør nedenstående oversigt.

6.1 Installations arbejder

Ydelse	Pris
6.1.1 Installation	
Installation af dockingpoints på lokation v. min. 40 stk og max 40m fra strømkilde. Tilslutning til 1 strømkilde.	Inkluderet
<40 docking points per lokation	DKK 1.500/docking point<40
Gravelængde >40m	DKK 1,500/meter
Installation af yderligere docking points på samme geografiske lokation (samme parametre som standardinstallation)	DKK 60.000
Special monteringsforberedelse, fjernelse af byrumsinventar og andre hindringer ifølge aftale	Efter tilbud
6.1.2 Diverse	
El-arbejde	Inkluderet
Tilslutning til én el-måler (fast lokalitet)	DKK 5.000
Tilslutning til yderligere eksisterende el-målere	DKK 700/time
Arbejdsløn	
Arkitekt-rådgivning	DKK 2.500/time
Projektledelse	DKK 1.800/time
Kørsel (levering ab lager – ekskl. Timeløn)	Efter tilbud

6.2 Forudsætninger

Følgende forudsætninger gælder for separat installations arbejde.

6.2.1 Betalingsbetingelser
Alle priser er eksklusive moms. Fakturering sker ved påbegyndelse. Betalingsbetingelser: Netto 45 dage.

7 Bodsberegning
Ved beregning af bod, anvendes 56% af årsprisen.

8 Drifts omkostninger og bonus betaling
I dette afsnit behandles driftsomkostninger og bonus betaling som ikke er dækket af ovenstående priser. Alle priser er eks. moms.

8.1 Kreditkort (transaktionsomkostning)
Gobike er berettiget til at opkræve transaktionsomkostninger hos slutbrugeren i overensstemmelse med rammeaftalens pkt. 11.1.2

8.2 Bonus betaling
I tillæg til driftsomkostninger, modtager GoBike en variabel betaling, baseret på antallet af udlejninger og disses varighed. Bonus fradrages i betalinger fra GoBike til Cykel.dk.
Der er ikke noget loft over den årlige bonus betaling.

8.2.1 Bonus per udlejning
For hver udlejning, hvor cyklen ikke konstateres som defekt, og dermed returneres indenfor 3 minutter, modtager GoBike følgende bonusbetaling:

Ydelse	Cykel	eCykel
Bonus per udlejning	6,00	8,00

8.2.2 Bonus per time
For hver påbegyndt time, modtager GoBike bonus som anført herunder. Beregning af udlejningsperiode påbegyndes efter udlejningens 31. minut, således første halve udlejningstime ikke berettiger til bonus.

Ydelse	Cykel	eCykel
Bonus per time	2,00	2,50

8.3 El forbrug

8.3.1 Brug af grøn energi

I forbindelse med GoBike projektet vil alene anvendes "grøn energi". Strømforbrug afregnes efter gældende dagstakst (p.t. ca. DKK 1,90/kWh). Forbrug af strøm afholdes afCykel DK, men modregnes i time bonus betalinger til GoBike som anført i afsnittet "Modregning af strømforbrug i time bonus betalinger".

8.3.2 Omkostninger ved strømforbrug, standard Cykler

Strøm til tablet PC dækkes at Cykel DK (Kommunerne hvor docking stationen er opstillet), dog således at udgiften modregnes i Time Bonus betalinger til GoBike jvf afsnittet "Modregning af strømforbrug i time bonus betalinger".

8.3.3 Omkostninger ved strømforbrug, eCykler

Cykel DK betaler for det merstrømforbrug som el-motor og relaterede elementer forbruger på de elektriske cykler. Strømforbruget fremgår af den måler som er monteret på hver enkelt lokation. GoBike beregner sig ingen fortjeneste på strøm. Det aktuelle forbrug faktureres direkte af GoBikes EL- leverandør.

I lighed med strømforbrug for manuelle cykler, strømforbrug relateret til drift af Tablet PC, modregnes i GoBikes time bonus. Merstrømforbrug for el-cykler i forhold til manuelle cykler afholdes af Cykel DK og modregnes således ikke i Time Bonus.

8.3.4 Modregning af strømforbrug i time bonus betalinger

Beregning af strømforbrug i time bonus opgøres kvartalsvist, med justering i bonus betalinger det efterfølgende kvartal. Modregning beregnes som følger:

[Strømforbrug]/[Antal udlejninger] = StrømomkostningPerUdlejning

[JusteretTimeBonus] = [Time bonus] – [StrømomkostningPerUdlejning]

<u>Beregningseksempel</u>

Dagspris, strøm: DKK 1,90/kWh

Strømforbrug = 500 kWh, Strømforbrug (500*DKK 1.90) = DKK 950

Antal udlejninger = 2.000

Justering i timebonus = DKK 950 / 2.000 = DKK 0,47 (DKK 0,475)

JusteretTimeBonus = DKK 1,525 = DKK 2 – DKK 0,475

8.4 Samlede driftsomkostninger

De samlede driftsomkostninger udgør 24,3% af årsprisen i 8 år. Se års omkostninger i afsnit 2.1 og 3.1.
Ved samlet køb af 3500 cykler er beregning således:
Årlige driftsomkostninger = 3500 * [omkostning per År] * 24,3 %
Månedlige driftsomkostninger = 3500 * [omkostning per År] * 24,3 % / 12

De månedlige driftsomkostninger anvendes ved beregning af drifts bod jf. appendiks A.

8.5 Reklame materiale, udskiftning af

Ydelse	Pris
Udskiftning af reklame materiale på stel og batteri kasse	Efter regning.

8.6 Kompensation for aflevering af cykel udenfor docking point

Hvis en slut bruger afleverer en cykel udenfor et docking point vil GoBike blive kompenseret med følgende betaling.

Ydelse	Cykel	eCykel
Opsamling af Cykel afleveret udenfor docking stations område.	Slutbruger pris jf. Bilag F2	Slutbruger pris jf. Bilag F2
Opsamling af Cykel afleveret indenfor docking stations område. I situationer hvor der er ledige docking points.	Slutbruger pris jf. Bilag F2	Slutbruger pris jf. Bilag F2
Opsamling af Cykel afleveret eller efterladt udenfor driftsområdet. Herunder, opsamling af cykel genfundet efter at været meldt stjålet.	Efter regning	Efter regning

8.7 Eksempel på beregning af netrevenue til Cykel DK jf. rammeaftalens 11.2

Eksempel på betalingsflow ifbm. Brugerbetaling og Bonus

Kunde

Abonnement	50,00
10 Timer	40,00
Øvrige betalinger fra kunden	30,00
Transaktionsomkostninger	5,00
Betaling	125,00

Go Bike

Betalinger fra kunder

Abonnementsindtægter fra kunder	40,00
Timebetaling fra kunde	32,00
Øvrige betalinger fra kunden	24,00
	96,00
Transaktionsomkostninger fra kunde *)	5,00
Indtægter fra kunder	101,00
Moms	24,00
	125,00

Moms afregnes til Told og Skat iht. gældende lovgivning
Go Bike dokumenterer løbende, at moms afregnes korrekt til Told og Skat.

Indtægter vedrørende transaktionsomkostninger modsvarer Go Bikes transaktionsomkostninger i forbindelse modtagelse af betalinger.

*) Det er forudsat at transaktionsomkostninger er ekskl. moms

Optjent bonus

Bonus 5 udlejninger	30,00
Bonus 10 timer	20,00
	50,00

Transaktionsomkostninger betalt af Go Bike

Transaktionsomkostninger	-5,00
	-5,00

Moms afregnes til Told og Skat iht. gældende lovgivning

Månedlig nettoafregning til Cykel DK

Abonnement, timebetaling og andre betalinger fra kunder		-96,00
Bonus optjent af Go Bike	50,00	
- regulering vedr. strømforbrug	-0,50	49,50
		-46,50
Moms		-11,63
Betaling til cykel DK		-58,13

Go Bike udarbejder månedsopgørelse senest den 10. i den følgende måned.
Betaling fra Go Bike til Cykel DK forfalder 45 dage efter månedens udløb.

Cykel DK

Betaling fra Go Bike

Driftsindtægter cykelsystem	46,50
Moms	11,63
	58,13

Moms afregnes til Told og Skat iht. gældende lovgivning

9 Præ-Projekt konsulent ydelser

GoBike tilbyder, som en del af den samlede pakkeløsning og som beskrevet i afsnit: 4Full bike systems og 5 Light bike systems, rådgivning til Kommuner som har besluttet sig for at starte et by- og pendlercykelløsningsprojekt. Denne rådgivning er beskrevet i Rammeaftalens appendiks C: PID.

For kommuner som endnu ikke har besluttet sig for at implementerer et by- og pendler-cykelløsningsprojekt, tilbyder GoBike, at udføre præ-projekt analyser. Kommuner kan derved få af adgang til GoBikes store og internationale videns base.

Konsulent arbejdet aftales med den enkelte kommune og kan fx omfatte:

- For analyser af kommunens muligheder
- Støtte til udpegning af egnede lokaliteter for docking stationer.
- Arkitektassistance i forbindelse med optimal placering af by- og pendlercykler i byer og ved virksomheder
- Afklaring af optimal systemets dimensionering
- Udarbejdelse af strategi og projekt forslag.

Ydelse	Pris
Præ-projekt Konsulen ydelser	DKK 1.800/ Time

10 Teknisk adgang til tablet PC

GoBike har mulighed for at udvikle og servicere følgende services, som kan stilles til rådighed for Cykel DK eller tredje part. Disse services er beskrevet og prissat neden for. Ydelserne er delt i to områder:

- Leje af content management system til brug for 3. parts content, beskrevet i afsnit **Fejl! Henvisningskilde ikke fundet.**
- Transaktionsomkostninger, beskrevet i afsnit: 10.2

10.1 Tablet infrastruktur

GoBikes tablet PC platform giver mulighed for at eksponere slutbrugeren af cykeldelingssystemet for kontekst-tilpasset markedsføring.

Ydelse	Pris
Leje af Content management system til brug for 3. parts content	DKK 400 /stk/år
Certificering certificerings program for at sikre at indholds leverandører ikke implementerer funktioner og features som potentielt eller faktisk kan blokerer Tablet PC'ens basis funktionalitet.	Efter regning
Konsulent ydelser	DKK 1.800/ Time

10.2 Transaktionsomkostninger

Gobike udvikler, og leverer som en del af løsningen, en række dataplatforme til opbevaring af eksempelvis: Kundedata, cykeldata, transaktionsstyring m.v.
Data i disse platforme betragtes som en del af projektet og stilles til rådighed for alle, som Cykel.dk måtte finde det relevant at give adgang. Tilgang til data sker gennem API der stilles til rådighed af gobike. Gobike vedligeholder løbende dette API som en del af leverancen.

Ydelse	Pris
10.2.1 Data forespørgsel fra Internet (Realtids interface) Eksekvering af forespørgsel om levering af data.	DKK 0,35
Data forespørgsel fra tablet, VPN (Realtids interface) Eksekvering af forespørgsel om levering af data inkl. Kommunikations omk. i tablet data netværk.	DKK 0,49
Ændring af API iht specifikation Tilpasning af API kan ske på foranledning af Cykel.dk. Gobike forbeholder sig retten til ikke at implementere forespurgte udvidelser/ændringer, såfremt disse vil kompromittere den overordnede data model.	Efter regning

Ændring af datastruktur iht specifikation	Efter regning
Se afsnit: 10.2.3 Udvidelse af data model nedenfor.	
Konsulent ydelser	DKK 1.800/ Time

10.2.2 Realtids interface

Eksekvering af forespørgsler til og gennem dette API tilbydes alene i realtid, således data forbliver opbevaret i Gobikes dataplatform. Eksekvering af forespørgsler er forbundet med en transaktionsafgift. Masseforespørgsler og – kopieringer tillades ikke.

10.2.3 Udvidelse af data model

Gobike datamodel kan i visse særlige tilfælde udvides, således eksterne data kan lagres i Gobikes dataplatform. I sådanne tilfælde vil applikationsspecifikke data, der ikke lagres i forbindelse med generel brug af Gobike platforme, lagres i separate tabeller og/eller databaser placeret på Gobikes dataplatform. Det forudsættes at alle data der anvendes af applikationer der afvikles på eller i en Gobike back- eller front-end platform, lagres i Gobike dataplatform.

11 Special tilbud

Overstående priser er GoBikes standard priser aftalt som en del af Rammeaftalen.
Gobike kan yde særlige rabatter i specielle situationer.