This thesis is the product of three master students at Aalborg University in the period medio 2006 to medio 2007. The thesis concerns the research field of Human Computer Interaction within the focus of Information Systems. With focus on Information Systems and an interest in the use of mobile devices in different types of mobility, we design and evaluate a prototype supporting the case of hitchhiking. We would like to thank our thesis supervisor Jesper Kjeldskov for collaboration on this thesis.

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1 Introduction

Within the last few years, the public interest for car-navigation systems has increased. Following the price-drop on these devices, the everyday consumer has become interested in making it easy to navigate through unknown territory, like foreign cities or something as simple as finding the nearest tank station. So far car navigation-systems has been the only popular consumer-product, that has utilized location aware technology like GPS-receivers to let the consumer use information about his surroundings to help in everyday activities.

This is about to change, as the GPS technology becomes cheaper and industries like mobile phone manufactures have started to get interested in implementing the technology in their future products. A major player in the field of consumer electronics is Nokia, and they foresee that within the next year, many of the mobile phones that are produced will provide the user with location aware technologies like GPS. Nokia have just released one of their most advance phones N95 that besides other advanced features, have a GPS-receiver embedded. This merged with a map-based interface, gives the user as much information about surroundings, as the existing car navigation systems. (Evans, 2007)

For a technology to become a success and used in a broader sense, it has to somehow make a task easier or more effective to perform, and it has to be useful in more than one way. One of the ways a technology can expand very quickly is to give easy access for users to customize and create new ways to use this technology. One of the companies that have attained this is Google, with their products like Google Maps and Google Earth. Both applications are maps-based and available for the public to modify and to add their own spatial data. Furthermore Google Maps can be implemented on a website which opens enormous perspectives for user generated maps that implement ideas that is even now unknown territory.

The combination of location aware technologies like GPSs and spatial data platforms like Google Maps is what characterizes the field of Location-based services (LBS). They are services that utilize the location of a mobile device to deliver relevant information to the mobile user, about its surroundings, e.g. where the nearest seafoods-restaurant is located (Virrantaus, 2001).

The use of new services for mobile devices, gives possibilities for more advanced interactions on these devices, as opposed to now where the most complex interaction is writing an SMS while on the go. Mobile devices also support office applications like Outlook which are more advanced, but these applications are based on the use of a business man, which at some part of the day checks his email and use the needed time to reply or consider the provided information. This tendency for more advanced applications puts some limits on the users' interactional capabilities. The advancement has gone even further by the possibility of utilizing the location of the device, opening for further advancements in the possibilities in functionalities of mobile devices. Car navigation systems, has now merged to mobile phones, enabling the user of a GPS enabled mobile phone to

get directions in suburban areas. This navigational system can furthermore advance and include bus routes and time tables, and maybe even provide spatial information about the bus moving augmented on the map. The possibilities provided by the merging of mobile devices and LBS are maybe only the beginning, which we as usability professionals finds highly interesting based on the new possibilities of user interfaces and interaction with these. Being usability researchers these possibilities inspire us to look closer at the user of mobile devices in different contexts.

1.1 Project focus

The focus of this thesis is the how different mobile contexts influence on the use of a LBS. The term Mobility covers the situation when a person interacts with a device on-the-go. Based on our interest of examining the possibilities of using technologies such as Google Maps in a LBS, we want to examine the aspects of using a LBS when changing your mobile situation, for instance when changing not only your current location, but also changing the platform you access the LBS with. We use already established terms to describe the different types of mobility a person can be in, inspired by Kristoffersen & Ljunberg's (Kristoffersen, et al., 1999). The focus of the thesis is formalized in the next section.

1.2 Research question

This section covers the structure the project together with the research question that is foundation of the structure. The thesis covers 9th and 10th semester of Informatics, where the 9th semester were an investigation of the case of hitchhiking, that is analyzed in chapter 4. The remainder of the chapters in this thesis covers activities that were conducted during the 10th semester. This entails that structure of the thesis basically is the same as the project structure which is illustrated in Figure 1.

The following research question is based on the motivation and the project focus described in the previous sections, and it outlines what we want to answer during this thesis:

> ***"How can a Location-based service be designed to support the three types of mobility: Wandering, travelling and visiting, and the transitions between these?"***

We chose split the this research question into four subparts, to make it more clear to our selves which activities were to be carried out in order to answer the research question. The research methods (Wynekoop, 1990) used in answering the subparts is listed in Table 1.

Research Question	Research Object	Research Method	Research Purpose
Characterization of current research	Literature	Survey research	Describing Understanding
Characterization of mobile use case	People	Field study	Describing Understanding
Design of cross-platform LBS system	System	Applied research	Engineering Understanding
Interaction with and perception of LBS	System	Laboratory experiments Field studies	Evaluating Understanding

Table 1: Research methods used to answer subparts of research question.

The following explains the purpose of four subparts and how they were approached, in more detail.

1.2.1 Subpart of research question #1

We wanted to examine the research already conducted in the area of LBS, HCI and Mobility in combination, and this led to the first subpart of the research question:

> ***"What characterizes current research in Location-based services with regards to the three types of mobility: Wandering, travelling and visiting, and the transitions between these?"***

This question was addressed through a literature-review, concerning the most influential conferences and journals in the field of HCI and LBS. It was conducted in respect to the types of mobility, and resulted in a range of articles, that served as our basic knowledge of the area in the other activities in the thesis. Chapter 3 covers the answering of this subpart.

1.2.2 Subpart of research question #2

We wanted to design a prototype for a specific use case, to be able to test the prototype in a realistic setting. This led to the next subpart of the research question:

> ***"What characterizes a specific mobile use case that involves wandering, travelling and visiting, and transitions between these?"***

We ended up interviewing nine people in relation to the use case of hitchhiking, to reveal the current practice of the area. The interviews were analyzed with the mobility types and their transitions in mind. Chapter 4 covers the answering of this subpart.

1.2.3 Subpart of research question #3

As the main research question states, we wanted to examine how a LBS can be designed, which led to a more technology-based subpart:

"How can a cross-platform Location-based service on Google Maps be designed to support wandering, travelling, visiting and transitions between these?"

The final prototype was a LBS containing four interfaces, that operated on three different platforms, utilizing Google Maps and Google Earth. It furthermore supported the use case of hitchhiking. Chapter 5 covers the answering of the question

The resulting prototype design incorporated elements from this analysis albeit in a new use case involving LBS, which simplified the case and made it more interesting in the focus of this thesis. The resulting prototype contained several interfaces that were to be used on different platforms in each of the mobile contexts.

1.2.4 Subpart of research question #4

It was the intention to evaluate if the prototype supported the mobility types and the transitions. This led to the final subpart of the research question.

"How do users interact with and perceive a cross-platform Location-based service supporting wandering, travelling, visiting, and transitions between these?"

The evaluation of the prototype was meant to provide data about how test persons perceived the transitions between types of mobility and how they interacted with the prototype. The prototype was evaluated in a real setting with 20 test persons, divided in to two groups, each testing different parts of the prototype. The data from the evaluation was analyzed and this resulted in several findings concerning the answer to this subpart. The evaluation process is described in chapter 6 and the analysis and findings of the evaluation in found in chapter 7.

In the end the four subparts helped in answering the research question. This answer can be found in chapter 8 in the conclusion. The next chapter describes the theoretical framework, including our understanding of the concept of mobility and a description of location-based services.

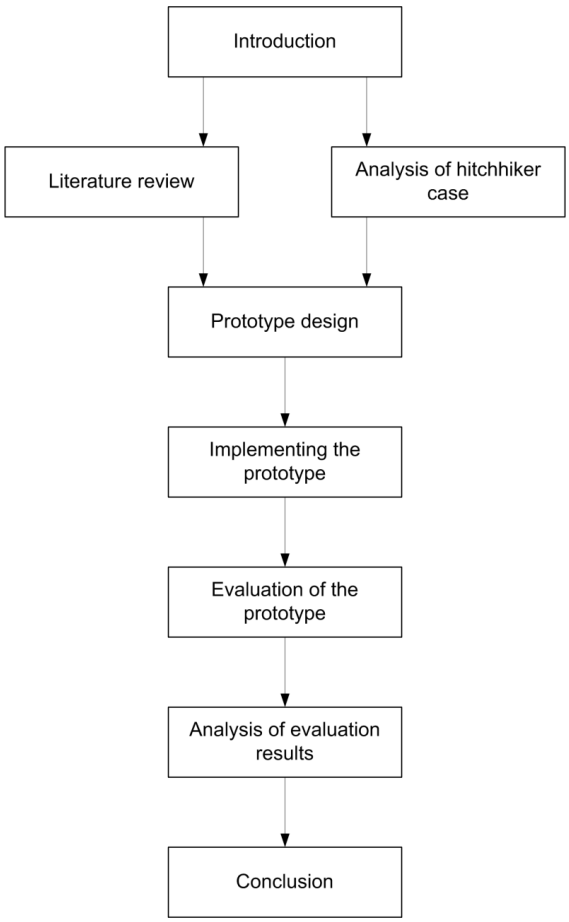

Figure 1: The structure of the thesis.

2 Theoretical framework

This chapter covers the theoretical foundation for this project and the primary source in forming the research question:

> ***"How can a Location-based service be designed to support the three types of mobility: Wandering, travelling and visiting, and the transitions between these?"***

As mentioned in section **Error! Reference source not found.** a part of the research question is about designing a LBS. Before doing so we want to give an introduction to the concept of a LBS to create a common understanding of the concept. The introduction can be found in the following section 2.1. The second part of the research question is considering the three types of mobility, which we will discuss our use of in section 2.2.

2.1 Introduction to Location-based services

The definition of LBS according to (Virrantaus, 2001) is the following:

> *"LBSs are services accessible with mobile devices through the mobile network and utilizing the ability to make use of the location of the terminals. Major part of the future Internet services is expected to be LBS's."*

Location-based services are said to be spatio-temporal real-time services, which means that you are able to dynamically determine the location of a given moving mobile device. The development of these types of services started as the mobile telephone and other mobile devices became common in the public domain, but built upon principles that are a lot older and referred to as GIS (Geographic Information Systems). GIS is a system for showing advanced spatial information on a map. A simple example of spatial information could be e.g. how bus-stops are located on a map of Aalborg, where the spatial property is how these are individually located in relation to each other. GIS is usually not intended for the public domain, but used by "professionals" and developed for user groups with extensive knowledge about GIS like e.g. geologists. Nevertheless GIS contributes to the research field of LBS (Virrantaus, 2001 s. 69). GIS can contribute LBS's with spatial data, but in order for a LBS to work, there have to be a certain location aware mobile device that the LBS runs on. Furthermore, the mobile device can include an Internet connection that serves as the connection between the mobile device, and the spatial data/map information provided by some service provider.

A location-based service consists of several components that all sums up to a location-based service. As an illustration see Figure 2. First of all, a LBS needs an application running on a device, where the device almost always is some kind of mobile device. This includes devices such as mobile phones, PDAs and laptops or specialized devices like a car navigation system.

A second requirement of a LBS, is the awareness of location of the mobile device that carries the LBS application. There are different ways to acquire this location, the most commonly used device is a

GPS (Global Positioning System)-receiver that gets its coordinates from GPS-satellites, and is capable of providing the current location of the device all over the world. Furthermore there exists positioning system based on WLAN, Bluetooth or by means of the cellular network.

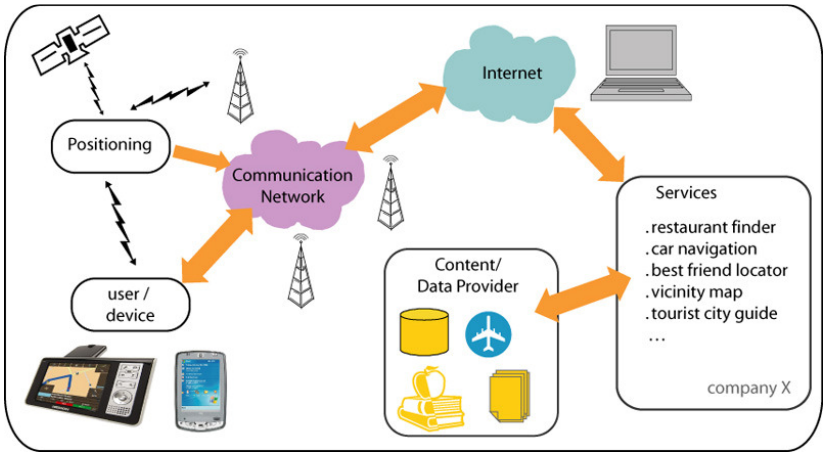

Figure 2: An example of how a LBS works. (Steiniger, 2006)

With the mobile device running an application, that receives coordinates from the GPS-receiver, you are able to tell where you are on, for instance a map. But in order to tell more than just your position on this map, you need some kind of communications network, which enables the mobile device to be connected to a service provider that supplies the application with location specific information. There are various types of mobile communication networks that are capable of supplying the mobile device with an Internet connection. There are the older and slower connections like GPRS, GSM or more recently introduced 3G and WLAN. Lately devices supporting a new long ranging type of WLAN, namely WiMAX has been introduced to the market. All mentioned networks are usable in a LBS (Virrantaus, 2001 s. 67).

The last part of Figure 2 is the service and content provider. Normally the service provider is same as the content provider, in that they supply the geographical base data used in a map-based LBS application. But in some cases the services and content provider is separated. This is the case with Google Maps API and Google Earth that are two free geographic map- services. In the case of Google Maps API, it gives the user a map of the world, with roads and city names plotted into it. It is now free for the user to use this map-service, and supply this with spatial data which the user is able to apply. Google's own version of Google Maps does however give the user some functionality, in form of a search-function on addresses and firms in the US.

2.2 The concept of mobility

This section introduces our understanding of mobility that is a large part of what we want to investigate through this thesis.

One aspect Location-based Services is the concept of being able to access information about your surroundings, when you mobile while making use of your location. Being mobile is to a large extent characterized as when a person is walking around with some kind of mobile device, such as a mobile phone. This is also a part of how we understand mobility, but to explain how we understand mobility as a whole we introduce the mobility types from the article (Kristoffersen, et al., 1999).

The motivation for Kristoffersen & Ljungberg for writing the article was the lack of a categorization of different kinds of mobility. The term mobility was vague, and covered a broad spectrum of devices, and use hereof. (Kristoffersen, et al., 1999)The purpose of the article was to benefit the research fields which, they thought were in need of a framework of concepts to discuss and design IT in mobile settings. In order to do this, they introduced three types of mobility; visiting, wandering and travelling, which captured the possibilities of mobility situations. As an illustration of this, see Figure 3.

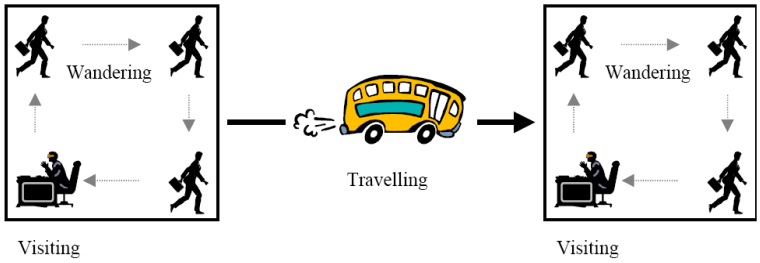

Figure 3: The three types of mobility: wandering, travelling and visiting. (Kristoffersen & Ljungberg, 1999)

We adopted these types of mobility to some extent, in our own understanding of mobility. However we modified them to fit the purpose of this thesis that is designing a LBS-prototype and evaluate how test persons perceive and interact with this prototype.

Our primary focus in respect to defining the types of mobility was the different interaction possibilities and constrains that lies in a mobility type. These include which context it is used, which interactional devices is used, and how information is represented through these devices. To make the interaction in the mobility types as unique as possible we chose to distinct them from each other in several ways. First of all we modified the modality/technology table of (Kristoffersen, et al., 1999), as seen in Table 1. This modification implied a clear distinction of the technologies used in the mobility types. Only mobile devices, such as mobile phones and PDAs are used in wandering. Portable devices, such as laptops are used in travelling and visiting is characterized by stationary PCs, and other non-moveable devices.

Mobility type/Technology	Mobile	Portable	Desktop
Wandering	X		
Travelling		X	
Visiting			X

Table 1: Modified modality/technology table from (Kristoffersen, et al., 1999)

Our characterization of the mobility types are as follows:

2.2.1 Wandering

We characterize wandering as the situation of walking around while using a mobile device such as a mobile phone or a PDA. Kristoffersen & Ljungberg defines wandering as walking around in a local area, such as a building. We on the other hand do not distinct the situation of walking around inside a building while writing a SMS to a friend, with the situation of strolling in downtown and writing a SMS simultaneously. The context is different, but we argue that the interaction possibilities are the same. The only condition of wandering, that has to be fulfilled is that the person is walking while using the mobile device.

2.2.2 Travelling

The mobility type of travelling occurs when a person travel in a vehicle, while interacting with a portable device. This vehicle can be a train, car, bus or any other means of transportation that is not a person walking. There are many ways to travel, and to interact during travelling. It depends on which vehicle is used, and the how much attention the travelling person is able to direct towards the device. A person may be driving a car, and focusing most of his attention on the road. In this case the interaction possibilities with a device are limited. On the other hand a passenger in a car is also travelling, but do not need to concentrate on driving while using a device.

2.2.3 Visiting

We characterize the mobility type of visiting as the situation, where a person uses a stationary PC. We do not, as (Kristoffersen, et al., 1999) do, distinct the term stationary with visiting, because they both involve using a stationary PC. We do not see any difference in when a person is visiting somewhere while using a desktop PC, and using the desktop PC at home. The only difference is the amount of time used at the different locations. Another argument is the technological advances which in the last years have made it possible to access your applications from any visiting location, with an Internet connection and a browser. Haselhoff (Haseloff, 2005) argue that there are two types of mobility types: Basic and temporary. The basic types are equal to the mobility types of Ljungberg, whereas the temporary happen during the basic mobility types. A person is in their definition able to wander, while in visiting. We agree with this viewpoint, but because our focus is very interaction-based, we do not want to confuse the terms more than necessary. Hence we define visiting as the situation where a person sits using a stationary PC.

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3 Literature-review

This chapter covers the conducted literature-review. Section 3.1 describes the motivation behind the literature-review, which is followed by section 3.2 that outlines the method used in selecting conferences and journals, on which the literature-review was to be conducted. A description of the literature-review can be found in section 3.3, and section 3.4 gives a thorough description the papers of interest found through the literature-review. In section 3.5 the mobility types are characterized based on the papers found and finally the subpart of the research question is answered in section 3.6.

3.1 Motivation

This chapter describes the process of answering following subpart of the research question:

> ***"What characterizes current research in Location-based services with regards to the three types of mobility: Wandering, travelling and visiting, and the transitions between these?"***

To answer this, we conducted a literature-review of the research done in the recent years concerning location-based services with respect to the three types of mobility: wandering, travelling, visiting and the transitions between them.

3.2 Method

We chose to conduct the literature-review with two areas in mind: LBS and HCI. The latter is the obvious chose, and the former, location-based services, was selected because of the research question. We used (Webster, 2002) as an inspiration to the shape the literature-review, who describes this as being an essential feature of any academic project.

We were only interested in what characterizes current research regarding to LBS and the three types of mobility. We reasoned that if we reviewed research done within the last five years, we had the most viable research. The main reason for this limitation was the advances in mobile devices, them being GPS and Internet enabled in the recent years, and thus making only recent research interesting to us.

Typically a paper is submitted to an outlet with an abstract and keywords making it easy for anyone else to get an idea of what the paper concerns. The keywords are chosen by the researcher based on which topics he thinks the paper concerns, but the paper may concern other areas that the researcher isn't aware of, and he may also use keywords that aren't the commonly used. This makes it difficult to conduct a literature-review on keywords alone.

We chose to review the articles, not as much in concern to the keywords of the article, but instead reading and selecting them in a more inductive process. If it wasn't possible to decipher if an article was relevant by reading the title, we read the abstract of the article. Did the abstract not make it

more explicit if the article was relevant, the introduction, findings and, if necessary, other parts of the article, was read.

Since a part of what we looked for was HCI, we found it obvious to look at the most important outlets in this field of research, this being CHI and TOCHI. As a more specialized outlet of HCI we chose Mobile HCI. This was due to the probability of that this conference included articles concerning LBS since it concerns mobile systems, and the aspect of HCI made it highly relevant to us. Since LBS is a new field of research, and an offspring of GIS we choose Journal of GIS as well, to see if this field of research had some interesting considerations. Last we looked at Journal of Personal and Ubiquitous Computing, because it concerns the use of mobile devices in general, and focuses on new ways to use technology in enhancing human capabilities. Hence our initial thought was that this journal included papers concerning HCI, and in some degree LBS.

The following is a list of the chosen outlets:

Mobile Human Computer Interaction Springer-Verlag (2001-2004) ACM (2005-2006)
Conference on Computer-Human Interaction, CHI, ACM
Transactions on Computer-Human Interaction TOCHI, ACM
Journal of Personal and Ubiquitous Computing, Springer-Verlag
Journal of Geographical Information Systems, ACM

It was in these conference proceedings and journals we chose to conduct the literature-review described in the next section.

3.3 Conducting the literature-review

Starting the literature review we made a rough selection of the papers, by scanning titles of papers excluding those which we were certain was of no interest to us. If we were uncertain about a title, we had a look at the abstract, and then decided if we needed to look deeper into the paper or discard it. This left us with 78 papers, as can be seen in Table 2.

	Number of papers	Number of read abstracts	LBS + HCI	Mobility-papers
CHI	473	54	23	**12**
TOCHI	88	67	8	**1**
Journal of GIS	116	13	0	**0**
Mobile HCI	339	82	29	**28**
Ubicomp	247	66	18	**11**
Total	**1263**	**282**	**78**	**52**

Table 2: Paper distribution in outlets

Having found the papers of interest, we started to look for the different types of mobility. In order to do this we had to look deeper into the papers, looking for the development or implementation of

a system. This system should then be used in some kind of setting where a user interacts with the system, and hence fit our criterion of being at least one of the mobility types. The results of the review of the papers can be seen in Table 3 below, which is split up in each of the three types of mobility on one axis, and the five outlets we have chosen on the other. As the table shows, there are no papers in Journal of GIS. This is due to the papers in this outlet is very GIS specific, focusing on algorithms and representation of GIS data, rather than developing and evaluating systems of our interest.

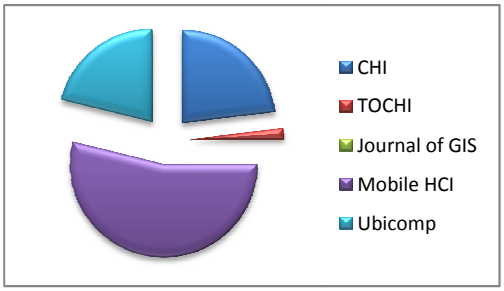

Figure 4: Distribution of mobility papers in the different outlets

As the table below depicts the spread of the different types of mobility is uneven. Wandering is heavily populated by 49 papers out of 52, whereas travelling has 4 out of 52, and visiting 10 out of 52. Another observation is the distribution of papers in the different outlets, in which we can conclude that Mobile HCI has the most papers with 28 out of 52, and CHI has 12 out of 52, as depicted in Figure 4. These outlets have papers which cover different types of mobility, as opposed to UbiComp which has 11 uniquely in wandering. The papers referenced in the table can be found in section 12.

Outlet/Mobility	Wandering	Travelling	Visiting
CHI	[2] [37] **[21]** **[11]** [23] **[17]** [40] [19] **[34]** **[6]**	[25] **[34]** **[6]**	**[21]** **[11]** **[17]** **[34]** [27] **[6]**
TOCHI	[7]		**[7]**
Mobile HCI	**[41]** [15] [8] [38] [9] [16] [20] **[13]** [35] [1] **[46]** [4] [30] [49] [31] [36] [43] [12] [3] [51] [50] [5] [52] [26] [45] [29] [22]	[18]	**[41]** **[13]** **[46]**
UbiComp	[33] [24] [14] [28] [32] [42] [10] [39] [47] [44] [48]		
Journal of GIS			

Table 3: Distribution of papers, in the different outlets, based on mobility type

What is important to notice in the table above is the reoccurrence of the same paper in more than one mobility type, which is the case in 9 of the papers, marked in **bold**. These reoccurrences is of

great importance to us, since it marks the possibility of transitions between two or more types of mobility. To reflect this importance we will describe these papers, to examine if the researchers have any considerations or takes different measures to cope with the transitions. And at the same time describe what characterizes the types of mobility dealt with in the chosen papers.

3.4 Selected papers containing mobility types

In order to be able to answer the research question, we will now look deeper into the paper and extract information about which mobility types can be found in the papers and if there are any transitions between them. We will make a small summary of the paper and give a description of how at least two of the mobility types are represented.

The reference information of the papers are formatted with **[#]** as the first sets of characters referencing to the table above containing the list of papers, after this a list of authors, year of publication, title and a reference to the bibliography of the thesis.

> **[46] Schmidt-Belz B. and Hermann, F.** 2004, User validation of a nomadic exhibition guide [Journal] // Proc. Mobile HCI. (Schmidt-Belz, 2004)

In this paper a guide is developed for PDAs to support a user in attending an exhibition fair. The researchers focus on providing nomadic support for the guide; it should support similar functionality between desktop and mobile client providing a consistent interface, and at the same time make best use of each platform. This paper has a lot of considerations about supporting the user in visiting the fair, and has made an effort in designing the guide to support the user in this. Based on this the researchers focus a lot of effort on considerations about the design, which we find interesting in respect to our in focus.

A part of the system developed in the paper is a planning guide provided by a desktop PC which puts the user in a visiting type of mobility. The other part of the system is based on a mobile device putting the user in the wandering type of mobility, these two interfaces is closely related as the following description shows. To support the user the guide should provide navigation and spatial information of the fair. Prior to visiting the exhibition the user specifies which exhibition stands he would visit hence creating a route to follow on the exhibition. This is done on the desktop PC since as the researchers' states:

> *"This requires a good visualization of the tour planner, as is feasible on the desktop but not on the small screen mobile client." (Schmidt-Belz, 2004 p. 92)*

This shows the researchers' considerations about the rather complex task of planning a tour on a mobile client. This interface creates an overview of the exhibition providing the user with the necessary information in planning a route. To support the nomadic property of the system the researchers express some considerations about making a consistent interface between the desktop and mobile client.

"The concepts used on desktop and mobile client need to be equivalent to facilitate users' roaming between both platforms" (Schmidt-Belz, 2004 p. 88)

The researchers exclaim that a system that spans over different interfaces need to be somewhat equivalent to support the users transitions between these. Since the systems implements a map the researchers also has some considerations about how this kind of information is provided on a mobile device:

"For small screens, complex spatial structures like a tour path must be simplified and generalized, especially in small scale." (Schmidt-Belz, 2004 p. 90)

This clearly states that the researchers are aware of, and addresses, the issue of representing complex information on a small screen form factor. The assistant was created based on considerations like the ones just pointed out. It was implemented on a PDA, using the WLAN at the exhibition as a means to provide positioning in the interface.

When the user is planning the tour of the fair he is in the visiting type of mobility, where the interface provides him with a good overview of the extensive information needed to plan such a tour. The tour created in visiting is then transferred to the PDA when the user is about to visit the fair, and is then used as a guide when the user is walking around on the fair putting the user in the wandering type of mobility.

The researchers address the transition between the two interfaces by having considerations as the ones just pointed out, and use this in their design considerations. Because as they state:

"The mobile is not a downscaled web portal but a specialized support to fit the mobile situation. The challenge is to design both interfaces for a homogeneous look and feel, as far as possible" (Schmidt-Belz, 2004 p. 94)

This shows that the researchers express the need to be aware of and make considerations when developing a system that needs to be implemented on different types of devices. The system developed in this paper is differentiated into two systems; one system for overview and another for mobile interaction.

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[6] Bell, M. and Chalmers, M. and Barkhuus, L. and Hall, M. and Sherwood, S. and Tennent, P. and Brown, B. and Rowland, D. and Benford, S. 2006, *Interweaving mobile games with everyday life.* (Bell, 2006)

The researchers create a location-based game called Feeding Yoshi which is a long-term, wide-area game. The players are equipped with a Wi-Fi sensing PDA, in order to find Yoshi's. These Yoshi's have different locations where the user can pick them up, and needs to eat different food where each type of food has a different location. The users then need to find Yoshi's and need to feed them in order to get points. To make the game competitive users are grouped into teams. The

teams can monitor each others' current point score on a webpage during the course of the game which is one week.

The game is implemented on a PDA which the player carries around utilizing a Wi-Fi internet connection and GPS connectivity characterizing it as the wandering type of mobility. The players of the game are playing it differently. Some collect Yoshi's and food for it on the way to work, during lunch breaks, as an evening activity or as exercise. Yoshi's and food is open and closed Wi-Fi access points respectively, which gives the players the ability to learn the best conditions for finding what is needed, like e.g. a business district of a city. Since it is a long-term game the players adopt different gaming styles to collect points. Some walk around inner cities, other use a bicycle or bus to locate new fruits to harvest. This versatility in gaming modes gives us reason to characterize this part of the game as being wandering and travelling types of mobility, even though it is the same system the users interact with.

A small part of the system is on a webpage. This provides the user information of other teams' current progress through the course of the game. A user enters collected points at his leisure to reflect and update the current score of the team. We find this to be in the visiting type of mobility.

There is a transition between two types of mobility in this paper. Players of the game adopt different game styles; either walking around, using a bicycle, bus, train or as a passenger in a car, changing the ways to play the game, which characterizes the travelling type of mobility. Being on a bicycle enables the player to stop and collect food for a Yoshi; this gives some freedom playing the game. If the player is on a bus he can monitor where it would be optimal to collection points, and can give the PDA his full attention, which would not be advisable on a bicycle. Some of the players even invented something they called "Drive-By-Yoshi" where one person was behind the wheel, and another was monitoring if any Yoshi's or food came up, and then told the chauffeur to stop. The players stated that this way of playing was only possible in small streets with little traffic.

These changes in game styles prove that there is a difference in how to use a mobile device depending on e.g. the environment like if it was raining or being in a populated area. Some game styles also required the players' full or partial attention, depending on e.g. if he was riding a bicycle which would also limit the possibility of interaction with the device.

The researchers observe this behavior but do not address it. They have implemented a beep when a Yoshi or a fruit is discovered, enabling the user to focus attention on walking rather than looking at the device all the time thus giving a hint of their considerations about the users need to look elsewhere. We find that the researchers of this paper have no explicit considerations about transitions between types of mobility. Nevertheless we see a transition in the description of the users' ability to go from wandering to travelling and vice versa.

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[11] Brown, B. and MacColl, I. and Chalmers, M. and Galani, A. and Randell, C. and Steed, A. (2003), Lessons From The Lighthouse: Collaboration In A Shared Mixed Reality System. (Brown, 2003)

This paper concerns the evaluation of a shared mixed reality system for multiple user types of visitors of a museum using different types of technology. One visitor is at the museum in person, walking around using a PDA to communicate with two mediated visitors. This one visitor is in the wandering mobility type and must share his attention between the physical environment and the PDA in order to communicate with the mediated visitors. The mediated visitors are users who're physically located elsewhere and through technology they are interactive visitors at the museum. The mediated visitors are using a desktop PC and they are in the visiting type of mobility.

The systems connect the three museum visitors in a virtual world that relates to the physical layout of the museum. This means, all three users can see a virtual location of each other which resembles a physical location in the museum, even though only one user is physically at the museum. This allows the users to focus on the same piece of art at the same time and share information and experience through verbal communication.

The wandering mobility type is characterized by the shared attention of physical surroundings and virtual users represented on the PDA. Only the user in the wandering mobility type is faced with complexities in the physical world and his task is thereby of higher complexity than that of the users in the visiting mobility type. All three users are equipped with a headset and microphone supporting their verbal communication. The wandering user must concentrate on a number of issues during his stay at the museum. He must avoid bumping into other physical museum visitors or objects and at the same time relate his virtual and audible information to the physical world to know where the mediated users are. This is e.g. used in order to ensure that all three users focus on the same piece of art during a discussion of it.

The wandering user has the most limited interface whereas the visiting users are expected to have the optimum tangible interaction devices. The wandering user must relate the limited interface to the physical world and all users must cooperate in order to obtain equal perception of the museum.

The visitors do not shift between mobility types; hence there are no transitions between types of mobility. Still, the users may need to relate their mobility type to other users' mobility types.

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[34] Ludford, P.J. and Frankowski, D. and Reily, K. and Wilms, K. and Terveen, L. (2006), Because I carry my cell phone anyway: functional location-based reminder applications. (Ludford, 2006)

This paper explores the functionality of LBS' by developing a Location-Based Reminder system which is developed for a GPS enabled mobile phone. This kind of system is e.g. used for being reminded to pick up groceries when near a supermarket. The user of this reminder system is in the wandering type of mobility carrying the mobile phone around with the need to periodically share attention on the physical environment with the phone. To be able to provide this kind of functionality the system must be aware of the location, and the user needs to specify where and what to be reminded of. This planning of reminders is done in a web browser and then transferred to the mobile phone.

When the user is planning reminders like e.g. a to-do list, he can either do it on the mobile phone or in a web browser on a desktop PC. Using the desktop PC, the user is in a visiting type of mobility, specifying at which location and time he needs to be reminded of something. The researchers developed a webpage to support this because of the slow and tedious process of texting on a mobile phone. This shows the researchers considerations about what is optimal doing on a desktop PC rather than the mobile phone. When in the visiting type of mobility the user has the time and mental energy to plan such a task, along with the tactile interfaces like a keyboard, mouse and a large screen to pin-point locations for the reminders. There are no environmental factors at play at the desktop PC, as opposed to making a reminder in the spur of a moment if a user suddenly needs to create a reminder, while being in a car or being outside without a place to sit, being in the travelling or wandering type of mobility respectively.

Having specified reminders on the desktop, the user can do his everyday chores, and when coming to a place of interest of a reminder, he gets a beep from his mobile phone with the specified reminder. The user is then in the wandering type of mobility, constrained by the need to put his attention elsewhere, and by environmental issues like rain and wind, or physical navigation e.g. walking. As on the webpage the user can, create, view or edit reminders whenever he wants to. The reminder system is non-obtrusive since it gives a beep, which gives the user the indication of a reminder has been triggered, enabling him to read it at his leisure.

Furthermore it is possible to use the system when in the travelling type of mobility since it is possible to drive while at the same time get a reminder passing a supermarket. It is, although the same system that is used in the two types of mobility.

The difference between using the system described in the paper, in the respect to travelling and wandering types of mobility, is the limitations in attention. When in wandering the user can give the system attention and interact with it, because he can stop wandering almost instantly. When travelling the user can potentially drive a car, and hence have very limited attention on the system, due to the safety-critical domain of driving a car.

The paper does not concentrate on interaction with the system nor has any considerations between them. They do although implement a web page to ease the burden of texting on a mobile phone, which shows that they have some untold considerations about the transition.

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[13] Cheok, A.D. and Fong, S.W. and Goh, K.H. and Yang, X. and Liu, W. and Farzbiz, F. and Li, Y. 2003, Human Pacman: A Mobile Entertainment System with Ubiquitous Computing and Tangible Interaction over a Wide Outdoor Area. (Cheok, 2003)

Human Pacman is an interactive game based on the traditional game of Pacman. In this interactional game of Pacman the players are in the physical world this being Pacman and ghosts. These players run around on a course in the physical world thus being in the wandering type of mobility. As in the traditional game, Pacman needs to pick up all the yellow dots to end the game, and can collect

super powers that enable him to shun ghosts. To support the physical players, the researchers have introduced a helper, sitting in front of a desktop PC being in the visiting type of mobility, to guide the player being Pacman away from the ghosts and tell where hidden fruits are located.

In order to create a mixed reality the researchers introduce Augmented Reality (AR) to the game. This enables the physical players to see an interface with objects and different game specific information, augmented on the real world, through a Head Mounted Display (HMD). The players then run around in the physical world chasing each other, collecting virtual objects being in the wandering type of mobility. The physical players can choose if they want to use this interface, or VR mode to play the game, which create what they call a Pac-World. The VR mode is a 3D mapping of the physical course of the game created to interconnect the real world with a virtual world. This world creates a link between the physical players; Pacman, ghosts, and the virtual players located away from the physical course of the game.

Being in the wandering type of mobility while utilizing the HMD, creates an interface upon what the player sees in the real world. This kind of interface gives the user the possibility to get game information and at the same time focus attention on walking or hunting Pacmen/Ghosts. This enables the user to quickly shift attention back and forth between the interface and the real world. This benefits the user in navigating without bumping into other persons or objects.

The helpers to the Pacman and the Ghosts is playing in the aforementioned Pac-World sitting in front of a desktop PC hence being in the visiting type of mobility, and participating via the VR part of the game. This player can see the physical player's location relative to each other, and can e.g. guide Pacman away from the Ghosts. The helper can see virtual objects that are hidden to Pacman, and can act as a guide to him.

The researchers of this paper are focusing on technical considerations of making a mixed reality game; this can be due to the rather complex task of creating such a game, and the interconnectivity of several different devices. This focus means that they don't have any considerations on the shift between the different modes of the game; hence there are no transitions between types of mobility.

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[17] Crabtree, A. and Benford, S. and Rodden, T. and Greenhalgh, C. and Flintham, M. and Anastasi, R. and Drozd, A. and Adams, M. and Row-Farr, J. and Tandavanitj, N. and others. 2004*, Orchestrating a mixed reality game 'on the ground'.* (Crabtree, 2004)

[7] Benford, S. and Crabtree, A. and Flintham, M. and Drozd, A. and Anastasi, R. and Paxton, M. and Tandavanitj, N. and Adams, M. and Row-Farr, J. 2006, *Can you see me now?* (Benford, 2006)

These two papers concerns the same mixed reality game, called Can You See Me Now (CYSMN), and we will therefore characterize it as the same paper, authored by the same researchers.

The researchers of this paper create a mixed reality game, in which one part is based in the physical world, and the other is purely in a virtual world. What they create is a rather simple well-known game of Catch, with a twist; they divide the players of the game into two worlds. The catchers is running around in the real world trying to catch the virtual players via an interface on a PDA, and the virtual players are running away from the catchers in the virtual world. The virtual players are able to follow the audio channel from the catchers who can be collaborating in catching a specific player, and the virtual players can only text each other through the interface.

The catchers are running in a virtually fenced of area of a city, characterizing them as being in the wandering type of mobility. They use a PDA which is Wi-Fi Internet and GPS enabled, and has a map interface showing buildings and the virtual player's current location in the virtual world. This information is then used to catch the virtual players. The catchers collaborate in catching these players by means of walkie-talkies, providing a channel for fast communication without the need to text on the PDA. To catch the players the catcher needs to be within five meters of the virtual players' avatar.

These catchers are in the real world running around in a city catching virtual players enabled by the system, being in the wandering type of mobility. There lies some environmental and navigational constraints in this part of the game. The catchers are chasing virtual players, which can run across streets with heavy traffic without the need to stop for traffic. Whereas the catchers either need to go to an intersection and wait for the pedestrian crossing to become green, or cross the street compromising the catchers' safety. At the same time the catcher needs to give his attention to the PDA monitoring the virtual players' movements. This worst case scenario of the wandering type of mobility, gives a picture of how attention can sometimes be safety-critical.

The interface to the virtual players is a 3D model of the area the catchers is in, developed for a desktop PC characterizing the player as being in the visiting type of mobility. In this world the players are able to see other players and the catchers which are hunting them as models. The model of the map is rather crude, with no information of e.g. streets or traffic. The players learn that when moving across streets the catchers takes longer crossing the street, and reason that this is due to heavy traffic.

The researchers focus on connectivity issues related to that of GPS and Wi-Fi, and not in the interaction or transitions between the interfaces. There are no considerations between types of mobility in this paper.

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[21] Flintham, M. and Benford, S. and Anastasi, R. and Hemmings, T. and Crabtree, A. and Greenhalgh, C. and Tandavanitj, N. and Adams, M. and Row-Farr, J. 2003, *Where on-line meets on the streets: experiences with mobile mixed reality games.* (Flintham, 2003)

This paper is partly based on the paper of the game CYSMN, which is described in the section above (Crabtree, 2004). The other part of the paper is the development of another system called

Bystander; a person is on a route hunting a mysterious person through a city getting clues from a person sitting at a computer an *online performer*. This online performer then trigger events for the player to follow, based on the players current location utilized by a GPS.

The two systems which this paper is based on, is quite similar. A person is somewhere on the streets, and another person is sitting in front of a desktop PC; characterized as being in the wandering and visiting type of mobility respectively. There is a shared map between the participants of the systems, but no transitions between the types of mobility of a single person.

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[41] Pospischil, G. and Umlauft, M. and Michlmayr, E. 2002, Designing LoL@, a Mobile Tourist Guide for UMTS. (Pospischil, 2002)

In this paper the researchers develop a Local Location Assistant which is a mobile tourist guide for the city of Vienna. This assistant provides the user with a map of Vienna along with pre-specified Point of interest's (Poi's). The researchers split the use of the assistant into two scenarios; one where the user sits in a hotel room about to go on sightseeing in Vienna, and plans a route to visit Poi's, and the second scenario being actually walking the route. These two scenarios can be split up into visiting and wandering types of mobility respectively. The assistant is implemented on a laptop, but mimics a mobile phone in screen resolution.

In the first scenario the user needs to plan a route to visit interesting attractions in the city of Vienna, this is done in a stationary location e.g. a hotel room hence being in a visiting type of mobility. An elaborate guide, on the assistant, guides the user through various attractions and provides information about these attractions enabling the user to see if it is of interest. This information includes factual information, multimedia presentation and a map with a route to the attraction thus providing the user with spatial information. After adding Poi's to the route the user can then begin the tour of Vienna.

In the second scenario the user starts walking the pre-specified route, thus being in the wandering type of mobility. The assistant utilize a user-centric map with the Poi's plotted in, to give the user a spatial overview of the route, which is one of two zoom levels. What characterizes this type of mobility is the users' ability to follow a route through a city, requiring spatial abilities in order to navigate around. The user needs to focus his attention on the device and at the same time concentrate on environmental issues like traffic on roads and nut bumping into others.

The researchers address some issues of using a mobile device in a wandering environment; the user can be in a potentially uncomfortable environment because of e.g. rain, cold or being in a frightening neighborhood. They further address issues like the user might be stressed because he is lost and has an urgent need for information (Pospischil, 2002 p. 144).

A specific design consideration for wandering is the use of color design for icons. They careful design the colors to support the elderly and farsighted, by using colors with big contrast. An additional

feature in the use of these colors is the support of interaction in direct sunlight, where colors with big contrast can be differentiated.

To support map interaction while in wandering, the researchers has some design considerations to support the users. They create an overview map of Vienna where the user can create an overview, of the Poi's, as opposed to the closer view where he can follow his route. This design consideration is founded in the need to overcome the limitations of a small display.

The researchers have considerations about the change of going from visiting- to a wandering type of mobility. These considerations are about when a user has to review large amount of information, and hence needs to have the possibility to create an overview of this information. This need for overview calls for the visiting type of mobility, since the user is able to create an overview due to the large screen and tactile devices. This is a deliberate choice for the researchers, since the device in wandering is too limited in this kind of interaction. The information provided by means of the visiting type of mobility, is then used in wandering hence the transition between two types of mobility.

3.5 Characterization of the three types of mobility

Having reviewed the papers we found interesting through our literature-review we have gained knowledge of current research within Location-based services with respect to types of mobility. We now present this accumulated knowledge in a summary, divided into the three types of mobility and the transitions between them.

3.5.1 Visiting

This type of mobility is characterized in the literature by users being in front of a desktop PC, interacting with this in a stationary position. This interaction is utilized by tactile devices, as keyboard, mouse and a large screen estate providing the user with optimal interaction possibilities. The system provided in visiting is often a part of a larger system, where this system is functioning as an interactional device creating an overview for the user in interacting with the other system.

Some papers concern the development of systems where the visiting interface is used as an organizational tool, planning e.g. routes or tours. This planning activity can include gathering information from different sources or creating an overview on a map interface. The reason for using the visiting interface for these tasks is the need for an overview hereby meaning a large screen and tactile devices.

In games the visiting part is used to gain access to web pages of various complexities ranging from typing in scores to navigating on a map relative to other users. It is also used to represent some part of a game in a 3D world, where the user interacts with other users through this world.

Some systems in visiting are location aware. This property is implemented in such a way that the user is acting in another world like a virtual world or acting in another location. This location can be represented on a web page where the user can move around by clicking on e.g. a map, or by moving around the virtual world by means of tactile input.

Different types of communication is provided through visiting like e.g. audio, video or text.

3.5.2 Travelling

Travelling type of mobility is characterized in two papers out of the nine, as being when a user is interacting with a device while being on the move in some kind of transportation like for example bicycle, car, train or bus. This device is portable and can be used in different settings, making constraints in what interaction is possible, depending on which setting the user is currently in. Where e.g. bicycling limits the user to use one hand to interact, and focus some attention on the road to keep on cycling. The same issue is present in a car where the user can check for changes in the interface when idling at a junction or by the side of the road. Some users used devices in busses and trains, which gave the possibility of focusing attention on the interaction, without fatal consequences.

3.5.3 Wandering

Wandering is characterized in the literature by being a type of mobility where the user is utilizing some kind of device, while moving around. These devices can have different sizes and means of interaction, the devices used in the papers are mobile phones and PDAs. Common for most of these devices is that they are location aware mostly by means of GPS, enabling them to provide the user with a current location or provide the users' location to another system. To further improve this connectivity some devices are Internet enabled, providing a connection from the device to another system.

When working with LBS enabled devices in wandering, these are often provided by a map either to support the user in moving around, or move in relation to other users or objects. The map provides the user with spatial information, and potentially using this information to provide the user with information about the users' current location. This current location can then be used by the system to e.g. trigger an event, based on specifications provided by the user, to remind the user to pick up groceries. This is just one example of how a location aware system can be utilized in the literature.

More complex scenarios, than location aware systems, arise when users are moving relative to other moving users. This scenario can be seen in the game of CYSMN where the runner moves around in the physical world, chasing virtual players through the interface provided by his device. This requires the user to move in relation to where the other users' are currently moving around in order to catch them.

When walking around, or running as in CYSMN, while interacting with a device the user must be aware of his surroundings since this interaction requires some attention from the user, which takes away attention from the surroundings. This creates the possibility for the user to walk into other

pedestrians or in the worst case scenario walk out into traffic with fatal consequences, as addressed by the authors of CYSMN.

Some researchers were aware of the limited interaction possibilities provided in wandering, and made efforts to support this by simplifying the information due to these limitations. The limitations found in wandering were the limited screen size; the tedious process of texting on a mobile phone and that it can be hard to see what is on the screen in direct sunlight.

3.5.4 Transitions between the three types of mobility

In the papers we observed a few transitions between the three types of mobility. Some of these were considerations from the author's; others were observed by us but not addressed or considered in the paper.

Researchers introduce concepts like roaming or nomadic support, which are specific design considerations to support the transitions between two types of mobility. Roaming is an abstraction of being aware that the user go from one system to another, and should be able to observe changes he has done in one interface, in another. The researchers that made considerations in regard to nomadic support, made specific design considerations where complex information were presented to the user in visiting, and then a simplified form of the information gathered were presented to the user while in wandering.

In the game of Yoshi some users adopted a, from the researchers side, unintentional style of the game. Users were meant to walk around and discover Yoshi's hence being in wandering. Some users adopted different game styles though. Instead of wandering some started to use a bike or car to get around faster, and hence gather more points. This change is a transition between wandering and travelling, utilizing the same device in two types of mobility. The attention needed on the device proved to be an issue when being in travelling while driving a bike since this activity requires attention. When driving the users choose a designated driver, while the other kept his full attention on the device. This transition was only observed by the authors, whereas we emphasize this to be a transition.

3.6 Answering the research question

We started with the purpose to answer the research question:

> ***"What characterizes current research in Location-based services with regards to the three types of mobility: Wandering, travelling and visiting, and the transitions between these?"***

We have conducted a literature-review of the most interesting outlets in a time span of the last five years, and found nine papers which included two or more types of mobility out of a total of 1263 papers. We will now characterize the three types of mobility and the transitions between them based on these nine papers.

Visiting is being characterized in the papers by supporting the user in creating an overview of information. This type of mobility has been used to plan tours of exhibitions where large amounts of information are being reviewed by the user to plan the tour. Visiting was furthermore used when the user entered a mediate world and acted on other users movements here.

Travelling is characterized as the user being on the move by some kind of transportation while interacting with a device, which can be bicycling, driving a car or sitting in a train or bus. There are differences in the users' limitations in interaction with devices, ranging from full to partial attention. To support the user in limiting the attention on the device to a minimum other types of feedback like a beep can be used. The device is location aware by GPS or positioning by wireless access points. The presence of this type of mobility is very limited in the current literature, only present in two out of the nine papers.

Wandering is characterized in the papers as being a type of mobility where a user is utilizing a mobile device e.g. a mobile phone or a PDA in an outdoor setting. Examples hereof are the interfaces for Yoshi or CYCMN. The user is interacting with the device while walking around which can be a limiting factor in the interaction. These limitations include; avoid complex information due to the small screen, texting is limiting in the interaction and sunlight can obscure the display. While walking and interacting at the same time, the user is limited by the need to focus attention on the surroundings e.g. walking or navigating. The devices are GPS enabled and sometimes Internet enabled.

We found it interesting that we found only one paper which had explicit considerations in respect to the change between two types of mobility. Most papers do not address nor has any explicit considerations about the transitions, but we have located a few implicit considerations. One transition was characterized by using the same device between wandering and travelling, where the user went from walking to bicycling. This transition is characterized as change in the way a user interacts with a device, due to the need for attention elsewhere. This focus on the attention needed to interact with a device while doing other things was only addressed in one paper.

Transitions were also evident between visiting and wandering. These were characterized by researchers' concept of nomadic support between interfaces. Specific design considerations were implemented to support the transitions between interfaces e.g. the need to create an overview of information in visiting, and then get a simplified representation of the same information in wandering, using the advantages that lies in the two types of mobility.

4 Understanding the use case of hitchhiking

This chapter describes the analysis of interviews conducted, to understand the use case of hitchhiking in relation to types of mobility. In section 4.1, the motivation behind this analysis is outlined, followed by the method, in section 4.2 used to collect and to analyze empirical data. Section 4.3 introduces the case of hitchhiking and describes the interviews conducted in relation to the collection of empirical data. The rest of the chapter concerns the analysis. Each mobility type is analyzed in relation to the driver and the hitchhiker respectively, from section 4.4 to section. Last each transition between the mobility types is analyzed, from section 4.8 - 4.11.

4.1 Motivation

The overall research question of this thesis concerns the design of a location-based system supporting the three mobility types visiting, wandering and travelling and the transition between them. To answer this we have chosen to investigate the design of a LBS supporting the case of hitchhiking. This chapter introduces our understanding of the case in relation to the three mobility types and the transitions between them in order to answer the following subpart of our research question:

> ***"What characterizes a specific mobile use case that involves wandering, travelling and visiting, and transitions between these?"***

During our 9th semester we worked extensively with understanding the case. From this we knew a great deal about the hitchhiking context as a whole, but less about what were essential in the three mobility types and transitions between them, in the case of hitchhiking. We therefore conducted this analysis of our case data with the three mobility types and the transitions between them in mind.

4.2 Method

We analyzed the data from a strict perspective of the three mobility types and the transitions between them, to ensure that the analysis reflects the research question. This entailed a structure of the chapter determined by the mobility types and transitions and each aspect is described in separate sections.

The empirical data is primarily based on interviews of hitchhikers and administrators of a hitchhiking website. To characterize the individual mobility types we analyzed and reflected upon possibilities and limitations of these in respect to the data. The characterizations of the transitions between mobility types are also a result of data analysis but with a higher degree of interpretation and reflection. This is due to the fact that the transition concept is difficult to interview users about since

no current technology used in Denmark support mobility type transitions in the context of hitchhiking to our knowledge.

4.3 Introducing the case

During our 9th semester we conducted a thorough investigation of the case hitchhiking in Denmark. Hitchhiking is a result of overly crowded highways and expensive transportation. The reason people choose hitchhiking is based on a variety of reasons. These range from the economical gain of sharing the expenses of gasoline to everything from having company on the road to environmental concerns like decreasing the amount of traffic on the road.

In the US congested highways has been a problem for years and as a result the Americans have made so called "Diamond lanes" which may be occupied only by vehicles with at least one passenger besides the driver . Diamond lanes tend to be less crowded and as gasoline prizes go up the incitement increases towards travelling multiple persons per car. Time and money is saved this way and at the same time the environment is spared. This has made the ride sharing activity quite popular among co-workers who live in close range of each other and have the same destination.

Organized hitchhiking is usually anchored to some service provider like a website. Here drivers can announce that they plan to travel from A to B at some given date and time. Other people then search among these posts and figure out if they need to drive themselves or if they can get a lift with somebody else. This takes regular hitchhiking to another level of organized ride sharing.

We examined the largest hitchhiking websites in Denmark to better understand the case in Denmark. The three websites found were as follows:

- Pendlernet.dk
- Gomore.dk
- Turen.dk

We found gomore.dk to be the largest in terms of users and this website by far has the most activity among their users. Pendlernet.dk is a part of a governmental instance and is the oldest of its kind in Denmark. Because of the governmental involvement it is linked with other governmental instances like municipalities. Turen.dk is very small and has the least amount of activity. Users found on this site seem to use gomore.dk as well see appendix 13.6.

We discovered that the website gomore.dk had appeared in various media like Rabatten. This fact in combination with the amount of announced rides on the website convinced us that gomore.dk was the most interesting hitchhiking website in Denmark. We therefore chose to focus on gomore.dk and contacted the daily administrator of the site. We subsequently interviewed Jens LeBeck Broholt who is the daily leader at gomore.dk's office in Aarhus see appendix 13.6.

We learned from this interview that gomore.dk has 12.000 users and that gomore.dk advertise at concerts in order to encourage people to use hitchhiking instead of ruining the infrastructure at concert areas. They expressed that the users of hitchhiking are very loyal towards the service and

the company gomore.dk. When asked to put up posters at universities and public places a significant number of the users volunteered.

4.3.1 Functionality of a hitchhiking website

Hitchhiking websites are build upon input from users who, when entering information, creates data for other users. In order for a site to provide this kind of service and make sure the users feel secure about using it, every users has to create an account on the site and fill out a profile. In this way users can read other users' profiles, and check out the information provided. Profile information cover everything from phone number, name, age and gender to comments about themselves and perhaps the license plate on their car to make it easier for hitchhikers to find them in traffic. The more detailed a profile is the more other users can read and hereby decide whether to contact this person or not.

When a driver wants to announce a ride on the website, he must specify a range of information like departure place and time, destination, a price for the passenger to pay and how many seats are available. When a ride is announced on the website it becomes visible to users who can search among all rides in order to find one that matches their own plans.

Contact between users is based on email and phone numbers. The website only provides the link of making users visible to each other and everything from here on must be addressed through communication between the participants.

4.3.2 The process of interviewing hitchhikers and our involvement

In this section our process of conducting interviews with hitchhikers is described. This is done to make the reader aware of our involvement of being hitchhiking users ourselves which has contributed greatly to our understanding of the case. The interviews is found in appendix section number 13.6.

We conducted four interviews with hitchhikers. One of them can be seen in Figure 5. The interviews were carried out in the real context of hitchhiking since we acted as hitchhiking members ourselves. We did this by using the various hitchhiking websites to arrange rides as all passengers do. During our phone call with the drivers we made them aware of our intentions which were to conduct interviews in a context as close to the case as possible. The four interviews were carried out during rides in Denmark and we thereby gained important knowledge about what it's like to be a hitchhiking user. This enabled us to reflect and interpret the case in relation to the research question to a higher degree than if we had performed e.g. phone interviews. Acting as hitchhikers during our interviews forced us to be users in the three mobility types as well as the transitions between them.

We performed additional interviews with people who were using hitchhiking websites but had not tried hitchhiking yet, as well as a business man who had no experience with hitchhiking. We did this to extend our base of data with opinions on limitations and possibilities in using hitchhiking as well as getting reflections on our suggested design of a LBS supporting the case.

In the following section the characterization of the three mobility types is introduced.

Figure 5: Interview with driver that uses gomore.dk

4.4 Characterization of visiting, travelling and wandering

In our investigation of the hitchhiking context, we used the largest and most popular Danish hitchhiking website, gomore.dk, and their users as basis for gathering our data.

In this analysis we focus on the characterizations of each mobility type as well as transitions between them. Transitions are often identified when the user in one mobility type must rely on data entered or found in another mobility type. We focus on what is possible and what is not, since we feel this is what characterize the different mobility types in relation to our thesis. We therefore

consider it a significant difference whether the user is relying on own memory, other peoples statements or raw unaltered data.

The following sections present a division of our understanding and knowledge of a hitchhiking context into the three mobility types. Following the mobility types we address the characterization of the transitions between mobility types. All sections are divided into an introduction with common characteristics and then separated into the driver's and the passenger's perspectives.

4.5 Visiting

This section presents the characteristics of the visiting mobility type in a current hitchhiking case. First we take a look at the mobility type from the drivers perspective, presenting what type of technology is often used here and what kind of interaction relating to hitchhiking is possible. We then focus on the passenger and address the same issues here.

The technology used here is almost always some sort of personal computer, used to access the gomore.dk website. The website provides the user with an overview of announcements and requests for rides, and herein lies all interaction with the company gomore.dk. In current practice, the average user is not considered to be able to gain access to this webpage in any other mobility type than visiting. The webpage provide the initial contact between participants and allow users to seek among requests and lookup other users' profiles for additional personal or travelling information. Communication happens through e-mail or telephone and a large number of the interviewed users express that they require verbal contact in order to evaluate whether they find the other participant trustworthy based on their voice.

The users are usually expected to be working with the computer as their primary objective, but this may not always be the case. The user may be concerned about other things as well, which influence the amount of focus on the computer and degree of concentration one can expect. Often, when a user is working with a computer it is considered as the primary interaction focus but phones, employees and the surroundings may have an impact on the attention. This means the user might be a bit challenged in his interaction, but overall it is not considered a particular issue in relation to the visiting mobility type in a hitchhiking case. The computer may wait for user input or push information onto the interface. Generally the user is in control of the working flow but some applications can require time specific interaction or in other ways take part of the control away from the user.

The visiting mobility type usually presents the user with good tangible interaction possibilities through a variety of devices which makes interaction in this mobility type intuitive. A large computer screen allows for good overview of the application used. The context is often a home or office which suggests good ergonomics in terms of physical placement and reflections on screen.

4.5.1 The driver's perspective

The driver must schedule a ride on beforehand, to be able to announce it to other members of the hitchhiking website. This means, the driver must know pretty much everything about his or her ride prior to announcing it. This includes start and destination point, time of departure, number of possible passengers to come along, expectations to economics and the like. All information is posted to the website, and from here on the driver awaits passengers to initiate contact. This can be done by mail or phone, allowing a conversation to happen while the driver is still in a visiting mobility type. It is also possible for the driver to search the website for passenger profiles, who have announced that they need a ride from A to B. If the route is a match, the driver can initiate contact to the passenger in the same manner as before. When the driver leaves the visiting mobility type, and thereby the computer, he must remember the route information published to the web to be able to communicate with possible passengers in other mobility types. This is due to the fact that gomore.dk is considered a visiting-only technology as of today's average user. This reveals information about what happens to the data the driver enters on gomore.dk, when a shift in mobility type happens. Either he must remember what was initially posted, or he must write it down to support his memory in the travelling mobility type. Alternatively he may forget partial information like what was entered as suggested price per passenger, and he now relies on either a guess or asking a passenger if one should initiate contact. This may lead to a differentiated price between two or more passengers.

To sum up, we now know that the following points characterize the visiting mobility type for the driver:

- All interaction with gomore.dk happens here, including ride planning and checking other user's profiles.
- Communication can occur with passengers being in a visiting, wandering or travelling mobility type.
- The driver is responsible for remembering the published announcement when changing mobility type.
- The driver is primarily in control of the interaction, he has the best tangible interaction devices and has a good overall view of e.g. a map because of a large screen and minimum reflections.

4.5.2 The passenger's perspective

The passenger, like the driver, is considered to be using a personal computer in this mobility type to access gomore.dk. On the webpage the primary task a passenger can perform is to search among the announcements from drivers to see if a route matches the user's travelling intentions. If none found, the passenger may create an announcement of his own, allowing drivers to see this and hence can be contacted by drivers.

The passenger will often use the webpage to get an overview of travelling possibilities, and contact drivers to make a deal. Where the driver fills out information about his ride and then logs off and is assumed to change mobility type, the passenger can search among rides and continue contacting different drivers until a satisfactory agreement has been made. The passenger therefore has more control of when interaction or communication happens. At least when the passenger has not created a post saying he is looking for a ride.

As with the driver, practically all planning happens in the visiting mobility type. When the passenger leaves the visiting mobility type, he may or may not rely on data from the visiting mobility type. If the passenger has successfully come to an agreement with a driver while in the visiting mobility type, it is expected that all that's left to do is wait until time is right and then move on to either a wandering or travelling mobility type. In this shift in mobility type, the passenger might rely on information from a mail of phone conversation and may therefore need to remember certain details like where to meet the driver, the looks of the car and a phone number. Perhaps even the license plate. As with the driver, we now know that the passenger is expected to remember information from the visiting mobility type when meeting the driver in a non-visiting mobility type.

To sum up, we now know that the following points characterize the visiting mobility type for the passenger:

- Practically all interaction with gomore.dk is expected to happen here.
- Communication can occur with drivers being in a visiting, wandering or travelling mobility type.
- The passenger may have to remember details from this mobility type when moving on to a wandering or travelling mobility type.
- The passenger is primarily in control of the interaction, he has the best tangible interaction devices and has a good overall view of e.g. a map because of a large screen and minimum reflections.

4.6 Wandering

This section covers the wandering mobility type for driver and passenger in the hitchhiking case. As mentioned in the visiting section, the average user is not expected to be able to lookup and browse around the website gomore.dk in this mobility type. This means, only usual communication means such as a phone are used and the user may rely on information entered, altered or found doing his interaction with the website gomore.dk in the visiting mobility type.

When wandering, the user is not expected to have full attention on a device, such as a mobile phone. The surroundings are assumed to be of relative complex and continuously changing structure, such as walking around in heavy traffic or in a shopping mall. This means the user must be in control of the interaction, if any such is required, since it is unknown how often and at what pace the user is able to interact with technology. This may be simple interaction such as talking on the phone or more complex like using a PDA. The user may be physically limited to using one hand only

or in others ways be challenged in his ability to physically interact. The form factor of a device in this mobility type is often very small which complicates interaction. The screen is expected to be small and buttons may be arranged and shaped in a non-standard layout.

4.6.1 The driver's perspective

Since the driver does planning in the visiting mobility type and driving in the travelling mobility type, little is expected to be said about the wandering mobility type. In many cases one could assume that a driver will not enter the wandering mobility type at all. In this case, the user will go from using the computer and announcing his ride, possibly continue working in the visiting mobility type and then at some point of time shift to the travelling mobility type and initiate his ride. It is however also very likely that the user will enter the wandering mobility type at some point of time after having announced a ride. Here, the obvious situation of a ride scheduled several days prior to departure comes to mind.

When in the wandering mobility type, the user is expected to be receiving requests from passengers based on the announcement. Passengers may contact the user by phone, and passengers can be in any mobility type. In order to do meaningful communication with a passenger, the driver must be aware of the details published about his ride. This means the driver must remember data from the visiting mobility type or otherwise help himself by carrying this information in written form. In current practice it is up to the driver, to know what has been published on the webpage.

To sum up, we now know that the following points characterize the wandering mobility type for the driver:

- The driver may not be in the wandering mobility type at all.
- Communication can occur with passengers being in a visiting, wandering or travelling mobility type.
- The driver must remember details about his ride from the visiting mobility type.
- Interaction may be difficult because of challenging surroundings and small form factor.
- Interaction is expected to be of varying priority depending on the context.

4.6.2 The passenger's perspective

In today's practice, the passenger cannot do much new communication in the wandering mobility type, unless information has been retrieved about several rides in the visiting mobility type. This means, the passenger is limited to making phone calls based on driver profiles found during the interaction with the website in the visiting mobility type. When being in the wandering mobility type in relation to the hitchhiking case, the passenger is expected to be looking or waiting for a ride.

This ride is based upon a finding in the visiting mobility type, and therefore the passenger need to remember this information when being in the wandering mobility type. It is often the case that the passenger has already phoned or mailed the driver when the ride was discovered on the webpage.

In this case the passenger might rely on quite a few details from the visiting mobility type; Where to meet, when to meet, what car to find etc. If no communication has happened, the passenger is expected to be in possession of a phone number of the particular driver or drivers in question. In this situation, information must be stored in memory on the go, or written down during the phone call. It is also possible that the passenger receive an incoming phone call from a driver due to a passenger announcement on the website. Again, the passenger must know what was published.

To sum up, we now know that the following points characterize the wandering mobility type for the passenger:

- Communication can occur with drivers being in a visiting, wandering or travelling mobility type.
- The passenger must remember details about ride(s) from the visiting mobility type and his own announcement if such has been published.
- Interaction may be difficult because of challenging surroundings and small form factor.
- Interaction is expected to be of varying priority depending on the context.

4.7 Travelling

This section presents the characteristics of the travelling mobility type for the driver and passenger. In this mobility type, the users are not expected to be interacting with the website gomore.dk and overall this type of mobility involves the least amount of mediated communication between passengers and drivers.

When users are in a travelling mobility type, interaction possibilities and limitations differ quite a lot between passengers and drivers. Beside of the common context of being in some kind of moving vehicle, the driver and passenger can pay attention towards completely different aspects. The driver is very limited and operating in a safety critical domain whereas the passenger is significantly less restricted while not interfering with the driver's primary task. The form factor of interaction devices is very different from driver to passenger.

4.7.1 The driver's perspective

In this mobility type, the driver is not expected to be looking for passengers through technology, if any seats should by chance be available. Theoretically the driver could have noted phone numbers of passengers in the visiting mobility type, and then phone the passengers while he's on the road. In this example the driver again rely on contact information gathered in the visiting mobility type. However it is expected that if the driver whishes to initiate contact, he will do so in a non-travelling mobility type due to safety and ease.

Passengers being in any type of mobility can contact the driver by phone while he's on the road. The only information the driver might have to remember from the visiting mobility type is the initial price per passenger. Every other common detail should be derivable from current time, place and so on.

The driver is very restricted in his interaction possibilities because he is operating in a safety critical domain and must acknowledge his primary task of driving the vehicle safely and with regards to the law. He is though able to multitask from time to time when traffic is less congested or if he's making a stop. It is therefore mandatory that interaction with a device in a car is totally user controlled and thereby making sure it is always the driver who decides the moment of interaction. When designing a system that requires attention from the driver, one must acknowledge that system interaction will always be of secondary or less priority to the driver. Audible response may be particularly desired over visual since the driver's sense of hearing is not as committed to driving as is the visual sense. In general, it's best to do as little interaction while driving as possible. The form factor of possible interaction devices is expected to be a mobile phone or PDA-size. The driving context may cause continuously changing reflections and light conditions resulting in potentially bad screen visibility.

To sum up, we now know that the following points characterize the travelling mobility type for the driver:

- All operations happen in a safety critical domain.
- If contacted by passengers few details must be remembered from the visiting mobility type.
- Communication can occur with passengers being in a visiting, wandering or travelling mobility type.
- Interaction should be limited to a minimum and it is mandatory that the driver is in complete control of interaction flow.
- Interaction possibilities are very limited and audible response may be preferred over visual.
- Form factor and visibility may be less optimal.

4.7.2 The passenger's perspective

When the passenger is travelling in relation to the hitchhiking case, it is considered as being on a ride with a driver found via the webpage gomore.dk. Therefore the passenger need not interact or phone anybody, given that the current ride is the only or last of a sequence. This will most often be the case since most people using the hitchhiking service do it for reasons like going to work in the morning or getting home in the afternoon. These trips will often be with a single driver, since it can be complicated to arrange multiple rides to succeed each other due to traffic, late changes in schedules etc.

If the passenger needs a ride later on, either immediately after the current ride or at some later time, communication with the future driver will happen through a phone call given that the passenger does not change mobility type. This means that once again the passenger needs a phone number found on the webpage and hence in the visiting mobility type. When arranging to meet the next driver while driving, it requires good memory to remember all details if none is written down.

In this case data must be remembered in order to use them in another mobility type, even though the shift in mobility type may be from travelling to travelling. Lastly it is also possible that a future driver contacts the passenger by phone, and again the passenger must remember what is agreed upon for a future mobility type.

The passenger is significantly less restricted in his interaction possibilities than the driver. While not interfering with the driving, the passenger can do lots of things in the vehicle. One may carry a laptop along or devote full attention to interacting with some device. In the case that the passenger is in possession of a laptop with access to the web, interaction with a website like gomore.dk can occur almost as in the visiting mobility type. Only must the passenger still respect the driving context and there may be physical differences like screen size between interacting with a laptop in a car and a desktop or laptop computer in an office. In relation to the hitchhiking case, the average user is not expected to be able to hook up a laptop with Internet access and we therefore don't consider this event. The expected form factor varies between a mobile phone and a laptop computer. The context of driving may cause continuously changing reflections and light conditions. Again, interaction with a device in a car must still obey the overall objective of not interfering with the driving. Audible response may be annoying for the driver and even though sound may be preferred if the driver is doing the interaction, this may not be the case if the passenger is interacting and the driver doesn't know what is going on.

To sum up, we now know that the following points characterize the travelling mobility type for the passenger:

- The passenger must respect the safety critical domain.
- Communication can occur with drivers being in a visiting, wandering or travelling mobility type but it is considered most likely that the driver is visiting.
- The passenger may need to remember data from this mobility type when shifting to another mobility type.
- Form factor is expected to be a mobile phone or PDA.

4.8 Characterization of transitions between mobility types

This section present what kind of transitions exists in relation to the hitchhiking case and how they relate to the three mobility types; visiting, wandering and travelling. A transition is to be thought of as a change. When a user shifts mobility type it often involves some kind of change. The transition reflects what happens when shifting from one mobility type to another. On the one hand lots of physical difference occurs as context, interaction possibilities and form factor changes. On the other hand the data that is represented by the interaction device(s) may change. The latter is of particular interest to us, since our overall aim in this thesis is to investigate how we can design to support the three mobility types and the transitions between them. Our design aim is software based with respect to the hardware we have access to, and our focus of interest is to a higher degree on the

user's perception and understanding of what happens in the system than on e.g. form factor. This means, that our main focus in mobility type transitions lies in how data are represented and the users' perception of this.

There exist six superior transitions between the mobility types. These are as follows:

- From visiting to travelling and travelling to visiting
- From travelling to wandering and wandering to travelling
- From wandering to visiting and visiting to wandering

In the context of hitchhiking there are a number of these transitions that does not seem to occur during regular situations and therefore it makes little sense to address these transitions. In the hitchhiking case, most interaction takes place in the visiting mobility type regardless of the user type. Depending on the situation a transition will follow towards travelling or wandering. There is no specific pattern of which mobility type follows another, but the most regular mobility shifts happen from visiting to either travelling or wandering. If any other transition follows, it will most probably be to a non-visiting mobility type. We can now list the most regular transitions between mobility type expected to occur in a hitchhiking case:

- From visiting to travelling
- From visiting to wandering
- From wandering to travelling

These three transitions are considered the most regular in the hitchhiking case, and we will therefore take a closer look on each one of them to investigate the characterizations.

4.9 From visiting to travelling

This transition occurs when either a driver or passenger leaves the visiting mobility type and get on the road in some vehicle. There are a number of shared occurrences between driver and passenger that characterize this transition. The transition indicates that the user has shifted from a stationary to a moving context which entails differences in relation to interaction possibilities as well as the physical environment.

A fundamental characteristic of the visiting mobility type is the user's ability to grasp an overview of e.g. a map. This is primarily because of a large screen and control of interaction flow. Also, the user can devote full attention to the computer. These characteristics change as the mobility type changes since fundamental characteristics of the travelling mobility type is limited attention to the device and a smaller form factor. Thus this becomes characteristics for the transition. Another common transition characteristic is the fact that once the user leaves the visiting mobility type, no more interaction with the website gomore.dk is expected due to technical limitations.

In visiting, the user is expected to be ergonomically satisfied and be able to interact with a desktop or laptop computer using all possible tangible devices to optimize interaction. This changes when

the user becomes travelling and a range of limitations apply. The most fundamental difference between visiting and travelling is the transition from a safe user controlled environment to a safety critical context.

4.9.1 The driver's perspective

As described in the driver section of the visiting mobility type, visiting is where all planning happens. This limits the user's possibilities of finding new passengers on his own once he gets on the road. Where planning and announcing rides are possible keywords for describing website interaction in the visiting mobility type, waiting for reply is primarily what takes place in the travelling mobility type.

Information found during visiting is now actively being used during the travelling mobility type. To be able to do so, the user is required to remember information seen in the visiting mobility type and recall this during travelling. This represents a change in interaction and behavior which is a characteristic of the transition.

The form factor changes from a desktop computer or laptop to a mobile phone. This practically unable the driver from using a dynamic map service especially due to the small screen and changes input layout. During visiting lots of interaction is assumed whereas in-vehicle interaction is preferred to be as limited as possible due to the drivers main priority; Driving the vehicle. This means the transition represent a change in priority of interaction with a device. Also the context becomes more interfering with interaction due to continuous reflections, noise and the like.

The change in preferred amount of interaction also changes the preference of visual feedback during visiting to audible feedback when travelling since the hearing sense is not expected to be as busy during driving as is the visual sense. During visiting it is not crucial for the user to be in absolute control of interaction flow whereas this is mandatory during the safety critical context in the travelling mobility type. This represents quite a big difference in interaction from visiting to travelling and is a fundamental characterization of the transition.

To sum up, we now know that the following changes characterize the transition between visiting and travelling for the driver:

- Information found or created during visiting may be needed in travelling and hence the driver must remember this information.
- Form factor changes from computer to mobile phone.
- Interaction freedom changes drastically from non-limited to safety critical.
- The user's interaction priority of a device changes from primary to secondary or less and control of interaction flow is now mandatory.
- From expected preference of visual feedback to audible response.

4.9.2 The passenger's perspective

The characteristics of the transition from visiting to travelling are less significant from the passenger's perspective, than what we have seen in the driver's perspective. This is due to that fact that the most significant characteristic of the transition is a limitation on the driver because of the shift into a safety critical domain of which the driver is responsible. The characteristics of the transition for the passenger are smoother since lots of interaction possibilities from the visiting mobility type are still possible during travelling. Whether visual or audible feedback is preferred is based on the driver's demands. This signifies a change during the transition, since passengers in the visiting mobility type is expected to be non-restricted in audible feedback by the environment.

The form factor changes less than it does for the driver since passengers are able to interact with devices ranging from a mobile phone to a portable computer. It is expected that screen size may become smaller as well as varying loss of tangible interaction devices. In some cases the passenger may be able to ignore the driving context while not interfering with the driver and in other cases the passenger may have to assist the driver or in other ways be forced to devote attention to the context. This limits the passenger in his interaction freedom and possibilities and is a characteristic of the transition. In relation to this, interaction may change from the visiting style of practically no limits, to a preference of minimum requirements to user interaction. On the other hand, if the passenger can almost ignore the driving context, interaction can be somewhat similar to that of the visiting mobility type.

The passenger's need for communication may change significantly as a result of this transition. In visiting the main points is finding and locating drivers and exploring opportunities. During travelling it is expected that communication has happened, since a driver has picked up the passenger, and the passenger may not need another ride. In the visiting mobility type the passenger collects information and in the travelling mobility type this information has been used and resulted in a ride.

If a passenger plan to catch another ride after the current, he will rely on information found during the visiting context. The transition does not change from which mobility type drivers can contact the passenger, although visiting will be the expected mobility type of a contacting driver.

To sum up, we now know that the following changes characterize the transition between visiting and travelling for the passenger:

- Form factor may change from computer to everything from mobile phone to laptop.
- Interaction freedom change from very free to respect for safety critical environment and the driver's demands.
- Expected preference of visual or audible feedback is depending on the driver.
- The passenger may rely on information remembered from the visiting mobility type.
- Minor changes in requirements to degree of user control of the interaction flow.

4.10 From visiting to wandering

This transition share many characteristics with the above described transition "from visiting to travelling". Again, the user has left the somewhat stationary and planning-based mobility type and shifted into a context of being in motion most of the time. This entails that the user must now focus on the surrounding environment to a higher degree than in the visiting mobility type. This transition reflects the one shift in mobility where characteristics based on driver and passenger is closest related.

The context of wandering is expected to be of varying complexity and thus force the user to make interaction with a device a secondary priority. This change of priority is a fundamental characteristic of the transition. At the same time, the user is shifting from the most communication-based mobility type to one of the least which can be considered a positive thing, since interaction becomes of lower priority. Additionally the interaction focus changes from planning to either waiting for response or initiating contact. The priority change entails another characteristic, namely that the user must now be in total control of interaction flow, since it is unknown at what time and pace interaction is possible. This again relates to another characteristic, since the expected preference of visual feedback may change into a varying preference, which is highly context depending.

As with the transition "from visiting to travelling" a fundamental characteristic is the change from grasping the overview in the visiting mobility type to turning this information into use during wandering. The level of attention the user is able to devote to interaction with a device changes quite a lot. The visiting to wandering transition represents a change in the priority of interaction from the user's perspective. During visiting the user is expected to be largely in control of the situation both in terms of the context as well as the interaction with a computer. During wandering, this is bound to change when the context becomes far more complex as the user is moving around in a mall or the like. Here many dynamic changes in the surrounding may interfere with the user's primary focus of getting somewhere and interaction with a device becomes of lower priority which is a fundamental characterization of this transition.

When the user shifts mobility type from visiting to wandering, no more interaction with the website is expected to occur due to technical limits.

The transition represents a change in the form factor. From using a computer during visiting, the user is expected to be using a mobile phone during wandering. This means, ergonomics and tangible input devices changes in a way that is usually considered a limitation of interaction possibilities as well as ease of use.

4.10.1 The driver's perspective

The very first thing to notice as a characteristic of this transition when seen from the driver's perspective is the fact that the driver may not be in the wandering transition at all in relation to the

case. This has very significant impact on the transition, as it may never occur. However, when this transition occurs, interaction with a device must happen in respect to the context.

Based on the shared characteristics mentioned in the above section, the transition reflects a change in the amount of interaction wanted and possible. During visiting lots of interaction is expected and possibly wanted, whereas significantly less interaction is expected to be preferred during wandering. This change may be a result of the transition itself, since the driver is not expected to be actively looking for passengers during the wandering mobility type. If communication is established with a passenger, the transition must enable the driver to use information from the visiting mobility type during wandering. It is therefore a characteristic of the transition that some information must be preserved during the mobility type shift.

To sum up, we now know that the following changes characterize the transition between visiting and wandering for the driver:

- The transition may not occur.
- Information found or created during visiting may be needed in wandering and hence the driver must remember this information.
- Form factor changes from computer to mobile phone.
- The user's interaction priority of a device changes from primary to secondary or less and control of interaction flow is now mandatory.
- From expected preference of visual feedback to varying preference.

4.10.2 The passenger's perspective

As with the driver, this transition reflects a change in the amount of possible and wanted interaction, and again a minimum degree of interaction may be preferred. Due to the nature of the hitchhiking case, it is expected that the passenger is going to establish the contact. It is therefore expected, that the passenger is either waiting for response during the wandering mobility type and thereby rely on information from the visiting mobility type, or will contact a future driver during wandering. In either case, the transition is characterized by a requirement of preserving information from visiting to wandering.

To sum up, we now know that the following changes characterize the transition between visiting and wandering for the passenger:

- Form factor changes from computer to mobile phone.
- From expected preference of visual feedback to varying preferences.
- The user's interaction priority of a device changes from primary to secondary or less and control of interaction flow is now mandatory.
- The passenger may rely on information remembered from the visiting mobility type.

4.11 From wandering to travelling

This transition reflects the shift in mobility type from wandering around to being in some vehicle. Both user types enter the context of a safety critical domain, which is to be respected above anything else.

The transition is characterized by a change that happens in the expected focus of contacting other users. During wandering both driver and passenger are expected to seek or await contact whereas in the travelling mobility type, they are both primarily expected to be done communicating with other users in respect to future rides.

In both mobility types the context is varying and may interfere with interaction or physical movement. The user may rely on information during travelling that is known from wandering or perhaps from visiting.

4.11.1 The driver's perspective

The greatest change that happens as a result of this transition has a major influence on the driver. From being wandering around and having to concentrate on the context in order to get somewhere, the domain now changes into safety critical and faulty actions now have severe consequences. As described above and in the transition between visiting and travelling, this is the most crucial part of the transition.

During wandering it is mandatory that the user has control of interaction flow but the result of slightly violating this is not considered very significant in comparison to the consequence of a violation during travelling. The transition from wandering to travelling imposes the least change in form factor for the driver of all covered transitions. In fact form factor may not change at all, since mobile phones are widely used during both wandering and travelling.

To sum up, we now know that the following changes characterize the transition between wandering and travelling for the driver:

- The driver may rely on information during travelling remembered from wandering.
- Consequence of violating user control of interaction flow becomes fatal and interaction freedom is now limited.
- Form factor is not expected to change.

4.11.2 The passenger's perspective

Where the driver becomes significantly more restricted in his actions during this transition, it is somewhat opposite for the passenger. During wandering the driver and passenger have similar conditions and possibilities but as mobility type changes into travelling things differ.

An interesting characterization of this transition is the fact that the passenger actually becomes able to interact to a higher degree during travelling. From only being expected to use a mobile phone in the wandering mobility type the passenger is now able to operate anything from a mobile phone to a portable computer. While working with respect to the driver's demands and the safety critical domain, the passenger is able to interact in a degree that resembles that of the visiting mobility type. This is the only transition that we cover during this chapter, that involves a change into increased interact ability. This also means that an increased degree of user interaction freedom characterizes the transition.

During wandering the preferred mediated response from a device is expected to vary depending on the current context. The transition into travelling entails that this fact is no longer entirely up to the passenger, since some mediated response can conflict with the driver's primary objective in the safety critical domain.

To sum up, we now know that the following changes characterize the transition between wandering and travelling for the passenger:

- The passenger may rely on information from wandering during travelling.
- All actions must happen in respect to the safety critical domain and the driver's demands.
- The preferred mediated response now becomes depending on the driver.
- Form factor changes from mobile phone to everything from phone to laptop computer.
- Degree of interaction freedom increases.

The description of this transition ends the characterizations of mobility types and transition. In the following section we will sum up and explain how this analysis of characterizations has answered the research question for this chapter.

4.12 Summary

In this section we summaries the most important findings from the previous sections in Figure 6. They form a basis for the supportation of the use case of hitchhiking in the design in chapter 5.

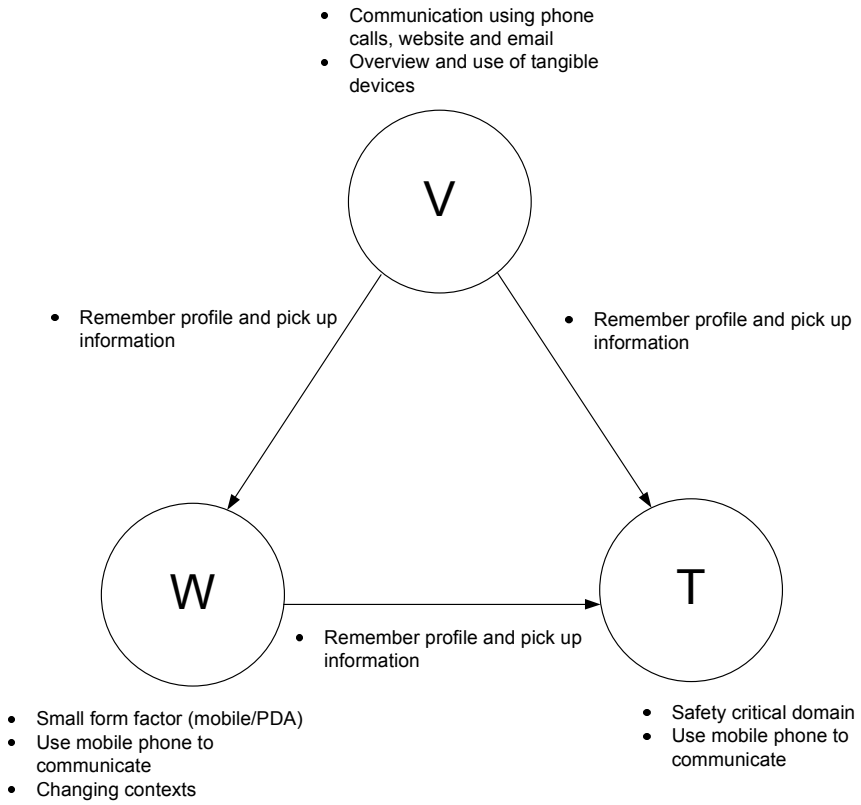

Figure 6: The characteristics of the different mobility types, and the transitions between them.

4.13 Answering the research question

The analysis of our empirical data from the perspective of mobility types and transitions has led us to answering the following subpart of the overall research question:

> ***"What characterizes a specific mobile use case that involves wandering, travelling and visiting, and transitions between these?"***

The most important characteristic of the use case of hitchhiking is the support of mediated communication between the participants, namely drivers and passengers.

The visiting type of mobility is considered a starting point in terms of the sequence of communication. It is considered a planning mobility type in the use case of hitchhiking, and supports the foundation for communication between users of the service through a website. The drivers' communicate by creating announcements through the web that serve to provide the passengers with an overview. Drivers publish information and passengers choose with whom to establish communication.

The wandering type of mobility is characterized by a continuous changing context and communication happens by phone only. When wandering, drivers are in an intermediate state between providing information during visiting and driving in the travelling type of mobility. Passengers on the other hand may be faced with the complex tasks of location a driver by relating volatile verbal spatio-temporal information to the surroundings, in case of an unfamiliar meeting point.

The travelling type of mobility is characterized by a safety critical domain which overrules all events. We have found that there are huge differences in the ability and freedom of interaction for driver and passenger. The driver can do very little and the passengers' interaction can resemble that of the visiting mobility type. This finding suggests that the travelling mobility type term may not be sufficient to describe both the passenger and the driver. The driver is in control of whether to pick up a passenger or not when a passenger is in the wandering type of mobility.

The transitions between mobility types are characterized by the requirement of the user to preserve information from the one mobility type to the next. Transitions impose changes in context, the need and possibilities of interaction and the user's preferred type of mediated response. The user's priority of interaction often changes and the degree of required control of interaction flow changes as the context and form factor changes. The transitions often reflect a change from grasping the overview and initiating communication to make use of and act according to this spatio-temporal information. This is entailed by the fact that transitions in the use case of hitchhiking often initiate from the visiting type of mobility and thereby the user change from being stationary to be on the move.

5 Designing the prototype

This chapter introduces the design of the prototype, iHitch, to be used in the evaluation. The chapter has three main topics: Prototype descriptions, design considerations and implementation of the prototype. Section 5.1 describes the motivation behind the design of the prototype. This is followed by section 5.3, which is a short description of iHitch, to explain the concept of the prototype. Section 5.6 covers the context scenarios used in designing the prototype. Next, in section 0, a thorough description of each of the interfaces in iHitch, followed by section 0, that concerns the overall considerations on which the design of iHitch is based. Finally in section 5.7, the technologies used in the implementation are explained.

5.1 Motivation

This chapter describes the process of answering the following research question:

> ***"How can a cross-platform Location-based service on Google Maps be designed to support wandering, travelling, visiting and transitions between these?"***

In chapter 4 we outlined the analysis of the specific use case of hitchhiking, with respect to the mobility types of wandering, travelling and visiting. The result of this analysis was a list of characteristics concerning the changes in context and the interaction possibilities, of each of the mobility types and the transitions between these. To answer the aforementioned research question we used the findings from this analysis and literature review, together with our motivation to try to implement new technologies in existing use cases.

5.2 Method

We designed the prototype mainly with what Rogers defines as a technology-inspired approach. We wanted to explore the potential of combining the customizable map-interfaces Google Maps and Google Earth with technologies, such as mobile phones and GPS-receivers into a LBS, that supported the hitchhiking case. We investigated which possibilities; these technologies presented us with and used them to design the prototype, together with the findings from the hitchhiking analysis and the literature review previously conducted. We argue that the technology-inspired design is a valid approach in our case, because the goal with the design and implementation of the interfaces was not to get a fully working hitchhiking-system, hitchhiking was merely the use case in which the prototype was set. It was neither the purpose to test for usability-problems in the prototype. Instead iHitch was to serve as a tool, with which it was possible to answer the research question of the evaluation, described in chapter 7. Consequently iHitch was designed to support retrieval of how test persons interact with and perceive a LBS hitchhiking-system.

A result of the activities mentioned above is the context scenarios in section 0. They combine the current hitchhiking use case with, the technology.

In the next section outlines the overall goal with the prototype iHitch.

5.3 Description of iHitch

The main purpose of iHitch is to support the communication between hitchhikers, who wants to get a lift somewhere and drivers who are willing to pick up hitchhikers in exchange for money or companionship. Both drivers and hitchhikers use iHitch as the means of accomplishing their goals. They both have to log in to iHitch using a browser on a desktop PC, to get iHitch started. After logging in they are both met with a map-based interface containing relevant information about other profiles in the system. In the hitchhiker-interface, the profiles on the map are drivers, who are available to pick up hitchhikers.

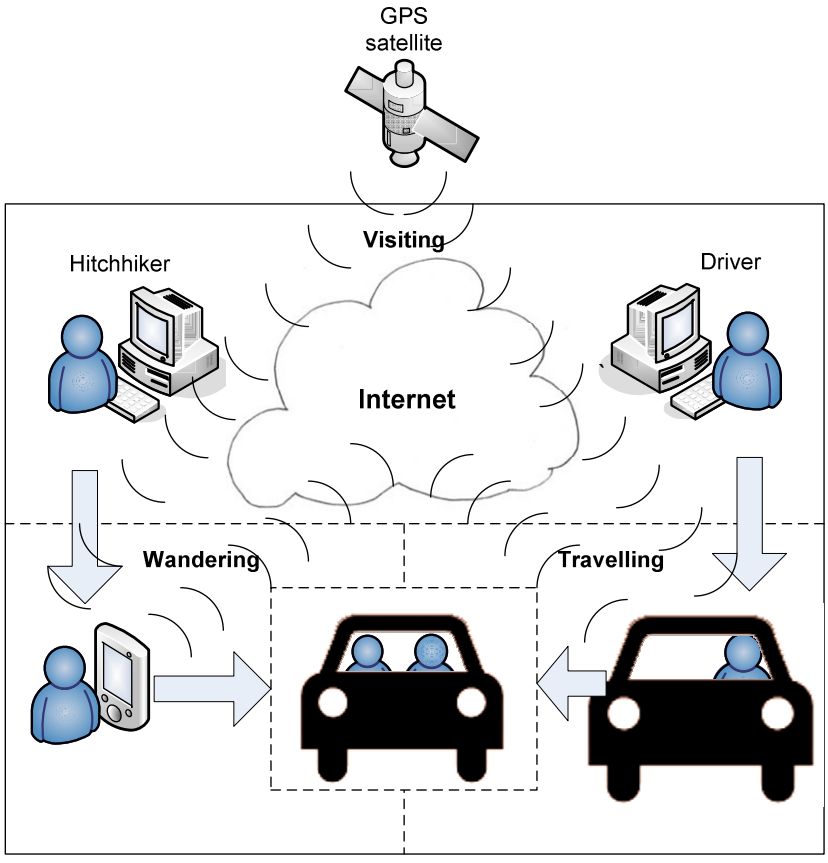

Figure 7: Conceptual model of new use case.

The driver-interface on the other hand depicts the hitchhiker-profiles, who want to get a lift. If the user (hitchhiker or driver) finds a profile that seems to fit the needs of the user, he sends a request through iHitch, and awaits a reply that confirms the lift. At some point the user feels that he has contacted a sufficient number of profiles in iHitch, and wants to start his journey. The driver starts his car, together with the car interface to iHitch, where it is possible to see where to pick up hitchhikers, with whom he has made an appointment. The hitchhiker, on the other hand, uses a mobile phone with iHitch, and start walking to the agreed pick-up point. Through iHitch it is possible to see when the driver arrives, and make new appointments with other drivers, if necessary. The driver likewise has the opportunity to contact new hitchhikers, as long as they are near his route.

5.4 Context scenarios

The context scenarios outlined in this section is a product of the hitchhiking use case presented in the last section, and the conceptual model in Figure 7. They each represent a typical use of the system for driver and hitchhiker respectively.

According to (Reimann, 2003), creating context scenarios is an iterative process and serves to capture the non-verbal dialog between user and product during interaction. The purpose of our context scenarios was to make it explicit which functions were to be incorporated in the design and which functions were more important than others. Through the design process the scenarios changed slightly, adapting to the technical possibilities and limitations. In the end the scenarios also served as an iterative process of determining the final focus of the evaluation, described in chapter 6.

5.4.1 Driver scenario

John is at home and expects to be attending a business meeting in another city, within a couple of hours. He would like to have some company along with him on his trip and decides to log into iHitch on his computer. There are a lot of available hitchhikers on the map, but he is only interested in the hitchhikers along the route to his destination. He previously entered into iHitch how long a detour he is willing to take, to pick up an available hitchhiker. He therefore enters his current address and the address of his destination and expects iHitch to show him the most optimal route to his destination, if he wants to pick up a number of hitchhikers. The route is now depicted on the map and he chooses to contact a couple of the hitchhikers along the route, to ask if they want to ride with him. He awaits a response on the requests, but it is nearly time for him to take off, so he decides to transfer his information to the iHitch device in his car. He hopes that he will get an answer to his requests in the car.

John now sits in his car, and he turns on the car interface of iHitch, and he start driving. He is presented with a list of the hitchhikers along his route, including the two he has already contacted. Furthermore the touch screen features a map showing his route and

his current position on the route. After a short period of time, iHitch presents him with a message from the hitchhiker, Julie, closest to his current position. Julie has accepted his request and not long thereafter he sees her in the side of the road, in the same place, where her position is marked on the map in iHitch.

After picking up Julie, John starts driving again, and he receives another message through iHitch, saying that the other hitchhiker, he previously contacted at home, has accepted his request. iHitch tells John, that the hitchhiker, Jens, has moved to another position, than the one John was presented with at home. John chooses to see the new position of Jens, and decides to pick him up anyway.

After picking up Jens, John receives a message, telling him that an uncontacted hitchhiker Birgitte requests a lift from him. John agree to pick her up, because he can see that she is near his route.

After picking up Birgitte, John wants to fill out the last seat in the car and chooses to contact Mette that is near his route, through iHitch. Mette agrees to be picked up, and the car is now full. John proceeds to his destination, dropping off his passengers at their respective destinations.

5.4.2 Hitchhiker scenario

Anne sits at home and wishes to visit her friend, who lives in another city. She has used iHitch before, to hitchhike to other cities, so she logs into the system, and expects to see a map with the available drivers plotted on it. She zooms in on the map, to see which cars are driving through her area and if their route brings them past her friend's house. Fortunately there is a driver, Gitte, who fits her requirements, and she instantly contacts her. She expects to get positive feedback on her request, so she decides to find the point on the driver's route that is closest to her own location, because she knows that this is the pickup point. She graps her mobile phone and starts to wander off.

On her way, she starts iHitch on the mobile phone and a list of profiles is displayed, including the profile of Gitte, who she contacted at home. She immediately hereafter receives a message from Gitte, telling her that Gitte has accepted her request. iHitch tells Anne that Gitte is 5 minutes from the pickup point, which gives Anne enough time to walk over there. She can't remember where the exact pickup point is and therefore selects Gitte's profile in iHitch to get a map, with the pickup point plotted on to it and continues to walk.

She arrives, and after a few minutes, Gitte picks her up. Unfortunately Gitte has changed her plans and is not going as far as she first intended. So after awhile Anne is dropped off, and she now has to find another driver, that is willing to escort her to her friend's house. She starts iHitch again and the list of profiles contains the profiles that are relevant for her to travel with, if she wants to go from her current location to the

area near the friend's house. The list is sorted after when the drivers are in Anne's area, so she selects the profile, Tom, at the top of the list. Tom's map shows her that she has to walk for awhile to get to the calculated pickup point, but if she speed up, she is going to make it. While she is walking she sends a request to Tom. A few minutes later Tom sends a message accepting to give her a lift to her friend's house.

After visiting her friend Anne wants to go home, so she turns on iHitch on her mobile phone again. She enters her home address in iHitch and the profile list is updated to contain the profiles that are relevant. She chooses to contact the profile on the top of the list, but soon hereafter receives a message from this profile rejecting her request. The next person on the list is a couple of hours away, and Anne decides not to contact her yet.

After a while she receives a message from a profile that hasn't been on her list before now. His name is Johnny and he offers to drive her to her home address. Anne accepts the offer and Johnny picks her up ten minutes later.

5.5 Prototype description

This section presents the four interfaces of the prototype: Two for the visiting mobility type and the interfaces for travelling and wandering respectively.

5.5.1 Visiting

The two interfaces for the visiting mobility type are both based on a map. They are basically represented in the same way, but the difference lies in what is represented: The driver interface contains the available hitchhikers and the hitchhiker interface displays the available drivers.

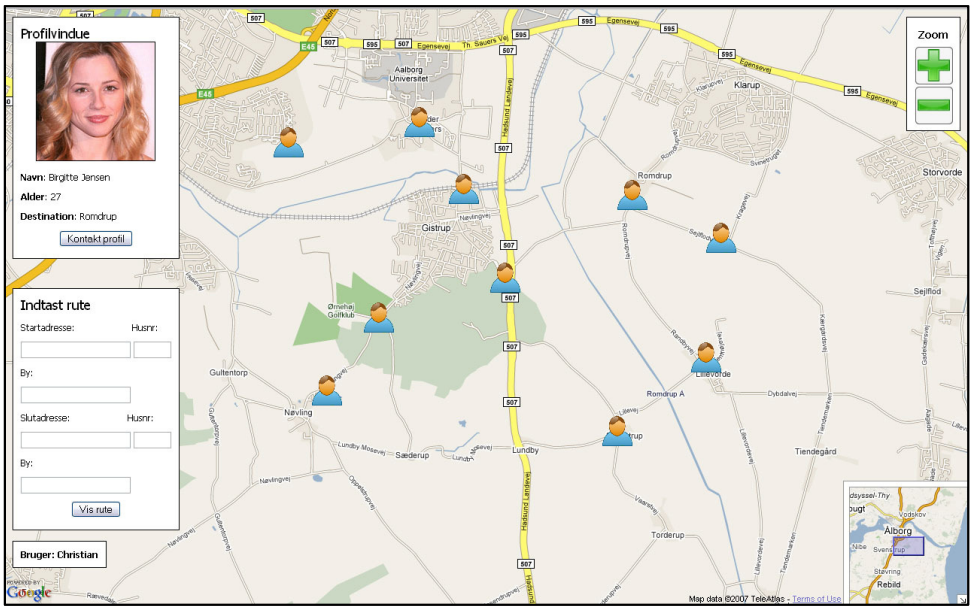

Figure 8: Driver visiting interface

5.5.1.1 The driver interface description

The first thing the test person is met with is a login screen which allows the test person to type a username and a password. By entering the right username and password in these fields and pressing "Log ind" the screen changes to the one seen in Figure 8, which primarily is a map of Denmark. It is possible to zoom using the zoom-buttons in the top right corner of the screen, or the scroll-wheel on the mouse. Panning is done either by dragging the map holding the mouse-button or using the miniature-map in the bottom right of the screen. The left part of the screen contains the profile-window and a box, enabling the user to enter a departure- and a destination address and get route between the two addresses displayed. Zooming in on the map reveals icons that symbolize the hitchhikers that are available, as seen on Figure 9. A hitchhiker is available, when he has turned on his mobile version of iHitch, and set his status to "Available for pick up". The driver now has two options: he can either get the profile-information of a hitchhiker by pressing one of the hitchhiker icons, or he can choose to enter his departure and destinations address, and filter out some of the profiles. When entering his route, the route is displayed on the map, as shown in Figure 9, with a black line. The route is calculated, such that it takes the driver passed some of the hitchhikers that are near the shortest route from departure to destination. The four blue hitchhiker-profiles in Figure 9 are all positioned such that they meet this criteria. The grey icons are all hitchhikers that are too far away from the current route, but besides the color change nothing has happened.

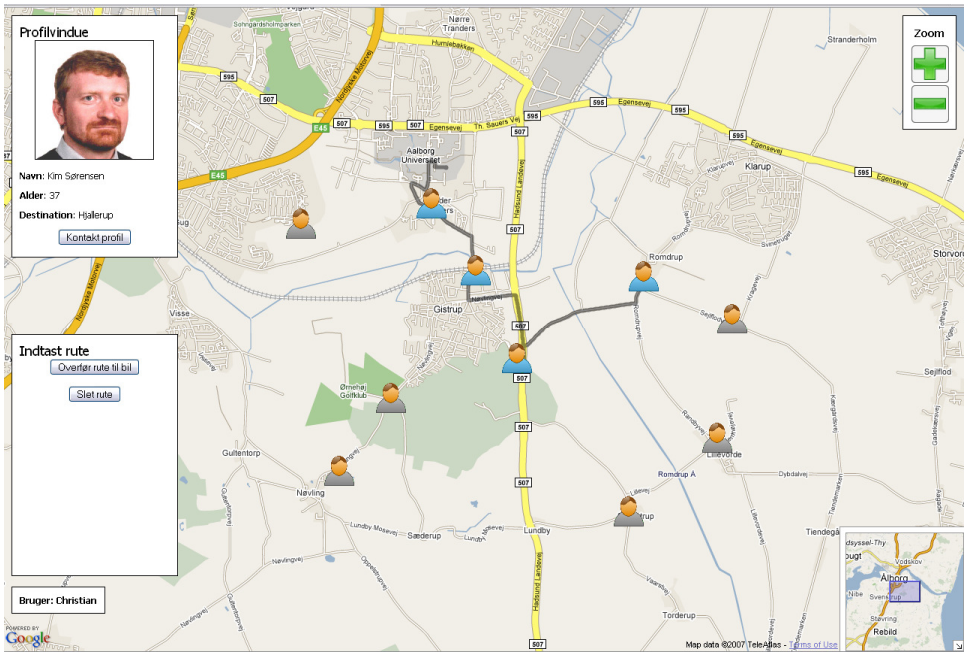

Figure 9: The route displayed after entered addresses

All icons on the map can be clicked, to display the profile-information of that hitchhiker. This changes the profile-window in the top left corner of the window, to the selected hitchhiker-profile. The profile-window contains information name, age and destination. Furthermore the test person has the ability to contact the selected profile. This is done by pressing a button in the profile-window. The function of the button changes according to the contact-status of that hitchhiker, which can be in either; not contacted, awaiting response or request rejected/cancelled. The two different button-states can be seen in Figure 10. When the test person wants to contact the hitchhiker he presses the “Send anmodning”-button. A confirmation-box is displayed, asking the test person, if he wants to go forward and contact the selected hitchhiker, and if the test person acknowledges this, a request is send to the hitchhiker. The color of the icon, changes to yellow, to indicate that the test person awaits a response from the hitchhiker. If the hitchhiker chooses to accept the request, a pop-up box tells the test person that this is the case and the color of the icon changes to green. A pop-up box also appears if the hitchhiker chooses to reject the request and the color of the icon changes to red.

When the test person has contacted a number of hitchhikers along the selected route, he has the possibility to transfer the route- and contact information to his car-interface of iHitch. It is not a

requirement that the hitchhikers have responded on the requests yet, if the test person wants to go right away, without waiting for response. He just clicks “Overfør rute til bil” to transfer the information. He also has the option to delete his entered route.

5.5.1.2 The hitchhiker interface description

There is a great resemblance between the driver interface and the hitchhiker interface in visiting. But instead of finding available hitchhikers to pick up, it is the goal of this interface to give an overview of the currently available drivers. The main difference is the way the drivers are represented in contrast to hitchhikers. Every available driver is represented with a car icon, as shown in Figure 11. Moreover the route of a driver is depicted in a random color. The black route on Figure 11 depicts a driver that has set his status to available, but currently has not started his trip yet. The current position of each of the drivers is continuously updated based on a timed interval.

The profile-window also changes in comparison to the driver interface, since it now includes a picture of the driver’s car in order to make it easy for the hitchhiker to recognize it.

When the test person wants to leave the desktop interface and continue using the mobile interface instead, he presses the “Log ud”-button in the bottom left corner of the screen.

Figure 10: Different variations of the profile-window. The leftmost is displayed, when no contact has been initiated, the rightmost is displayed when a request has been send.

Figure 11: Hitchhiker visiting interface

5.5.2 Travelling

The travelling interface of iHitch, is meant to be accessed by a driver in a car via a touch-screen. It is presummed that the driver prior to using the travelling interface has entered a route into iHitch and possibly made a number of appointments with hitchhikers. However it is not mandatory for the driver to have pre-made appointments before using this interface.

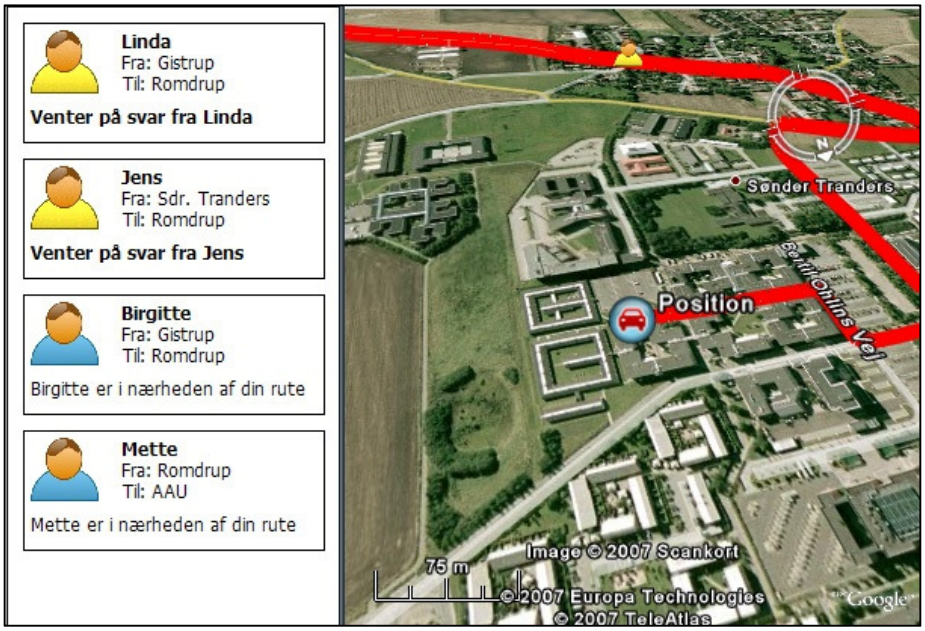

Figure 12: The start screen in the travelling interface

The interface starts up together with the car and an example of the start-screen is visualized in

Figure 12. The route and the appointments entered by the driver at the visiting interface are visible in the travelling interface. The map in the right side of the screen is solely based on air photos where roads and cities are depicted. Besides this the map shows the current postion of the driver together with the route and the hitchhikers that are near the route. When the driver starts his trip, the position of the car-icon moves accordingly on the map.The eft side of the screen contains a list of all the hitchhikers near the route. Each hitchhikers has an iconic and a textual representation corresponding to the communication-status they are in. As seen in

Figure 12, there are four hitchhikers in the list, two of them where the driver awaits a response on a previously sent request, and two hitchhikers, that the driver has not yet been in contact with. When the driver wants to get a more detailed view of a hitchhikers profile, they press one of the profiles, which replaces the hitchhiker list, with a profile-window as seen in Figure 13.

Figure 13: Show profile position in travelling interface. The map contains two icons, one icon for Linda's previous position and one for her current position. This is a special case.

The profile-window basically offers the same information, as the visiting driver interface, together with the some functionality that also shows some similarity with the functions in the visiting interface. The only exception is the ability to see a hitchhiker's position on the map. When the driver presses the button "Vis Lindas position" in Figure 13, the interface shows Linda's position like it is depicted on the map. The slightly tilted camera moves from centering on the position of the car, to an overview of the area where Linda is positioned. Furthermore the map shows that Linda has moved from the position she had when the driver contacted her through the visiting interface, to a new position. At any time during the trip, it is possible for hitchhikers to contact the driver, which results in a text message in iHitch. An example of a message from a hitchhiker can be seen in Figure 14. The driver is directed to that hitchhiker's profile, when pressing "OK", where he has the possibility to accept or reject the request.

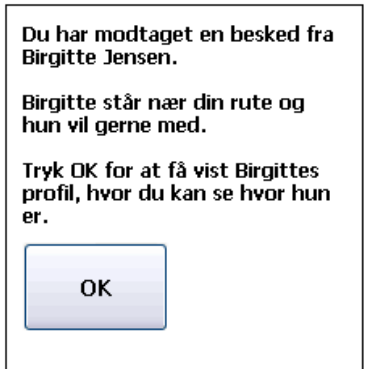

Figure 14: Message from hitchhiker displayed in travelling interface

A message also appears when a hitchhiker accepts a request from the driver, and the status of the hitchhiker changes to accepted (green). As the contacted hitchhikers gets picked up, they disappear from the profile-list, but it is possible that new hitchhikers will appear, if some close to the route wishes to get picked-up. When the driver reaches his destination, and turns off iHitch, the route disappears from the system, and it is no longer possible for hitchhikers to contact the driver through iHitch.

5.5.3 Wandering

The wandering interface is meant to be used by a hitchhiker that prior to this has used the visiting interface to contact drivers, in order to request a lift. It is also possible to use this interface independent of the visiting interface, as it basically delivers the same functionality. It is possible to send and receive requests and access profile-information about drivers that are relevant to the hitchhiker.

The main window of the interface is depicted in Figure 15.a. It resembles the profile-list in the travelling interface. When the user turns on iHitch, the list contains the drivers that the hitchhiker has made appointments with previously, together with the drivers, whose route come within a certain radius of the hitchhiker. This radius is predefined by the hitchhikers and depicts the distance that the hitchhiker is willing to wander, to get a lift. Each profile in the list has an indication of when the driver arrives at the point on his route, where the hitchhiker is closest to it, based on the current location of the hitchhiker. This time indication changes dynamically, and gives the hitchhiker a feeling of when he has to be ready and look for the car of the driver.

Besides the list of profiles, the main window presents the hitchhiker with the possibility to specify or change his current destination. The destination informs the drivers that are using iHitch of where the hitchhiker wants to travel, and this may result in a request from a driver to the hitchhiker, that offers to give him a lift.

Every profile in the list of profiles has some information attached, which is accessible when choosing one of the profiles. As an example of this Figure 15.b shows the profile-information of Jens Vindestrup.

Figure 15: Screenshots of wandering interface showing Profile list (A), Profile window (B) and Show Map (C).

It is basically the same information as in the visiting interface. Choosing "Vis rute" displays the map depicted in Figure 15.c. This is the pick-up point that is the point closest to the driver's route, from the hitchhiker's current location. It is the same pick-up point on which the time indication in the profile list is based. Besides the pick-up point, the map indicates the route of the selected driver.

The profile window also contains the possibility to send a request to the driver, or to cancel an appointment made previously. When a driver replies on a request, a message is displayed, and the status-color of that driver changes. A message is also displayed when a driver offers the hitchhiker a lift.

5.6 Design considerations

We chose a technology-inspired approach to design the prototype, which meant that we had to investigate which possibilities that lay in the in combining the map-based tools like Google Maps and Google Earth with technologies like GPS, to create a cross platform LBS, which is one part of the research question for the design. Simultaneously with the investigation of technologies, we constructed context scenarios and paper prototypes to further explicate the functionality of the design. The context scenarios, described in section 5.4, is based on the findings from the analysis in chapter 4. While a great help in the design iHitch, they also helped answering the part of the research question, that concerns the wish to answer how to support the mobility types in a LBS. The third activity, which the final prototype design is based on, is the paper prototypes, depicted in

Figure 16. They helped to establish a quick overview of the form factor of the three platforms: desktop PC, mobile phone, in-car portable computer, and how to use the space of the different screens in the best possible way.

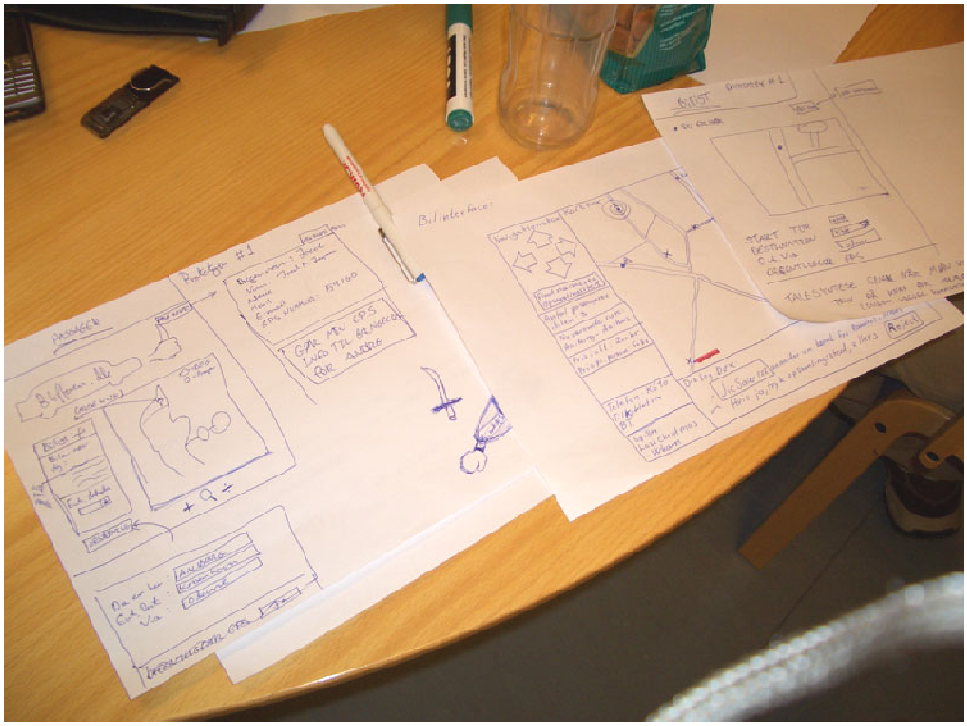

Figure 16: Paper prototypes

The three mobility types are characterized by three types of platforms: Mobile phone in wandering, touch screen in travelling and a desktop PC in visiting. This clear distinction in devices used in the different mobility types are based on the fact that we wished to provoke the test persons to think about what happened when they experienced the transition from one mobility type to another. We have therefore designed to differentiate the user interfaces on the devices as much as possible, i.e. by representing underlying data in different ways.

The purpose of iHitch was not to support the whole scenario of hitchhiking, but only the central parts of hitchhiking. The analysis of hitchhiking described in chapter 4, revealed that great part of the hitchhiking scenario is the communication between the drivers and the hitchhikers. This communication mainly occurs through a website, or mail and phone calls. We therefore designed towards providing communication between the drivers and hitchhikers across the three types of mobility.

Another main design consideration was regarding to the need to distribute information across the three types of mobility. As it is described in chapter 4, both hitchhikers and drivers relied on their own recollection to remember information in and between the mobility types, both in regard to the user's own information but also concerning other users' information. We have supported the users in this task through the profile information of the different users of iHitch, which is implemented in all three types to mobility. A more thorough description of the profile information is found in section 5.6.1.2.

The last main consideration we wanted to support with iHitch was the wish to make other users of hitchhiking visible to a user in iHitch. This consideration is primarily based on iHitch being a LBS. In the existing use case of organized hitchhiking, there is no indication of where other relevant users are located, in relation to the user' current position. This makes it hard to use organized hitchhiking in an ad-hoc situation. We therefore designed iHitch to support this, by using spatial-temporal information about other users of the system.

Based on the knowledge gathered from our understanding chapter and literature-review, we choose to design a part of the interface based on a desktop PC and hence be in visiting. The purpose of the interface resembles the existing use case of hitchhiking, in that it provided the user with an overview of the currently available ride opportunities. We designed two different visiting interfaces, one supporting hitchhikers and another supporting drivers.

We made the interface in visiting as simple as possible to support the user's ability to create an overview of available users and the possibility to contact these users. The main consideration in the design of the wandering interface was, that it had to be as simple as possible, because of the form factor of the mobile phone, but it still had to supply the hitchhiker with an overview of the drivers that were relevant to him. These considerations were based on the knowledge acquired from the literature-review, where one of the articles claimed, that the mobile interface should not be a downscaled version of the desktop interface. Instead it has to be a specialized mobile version of the desktop interface, but still resembles the desktop interface. We chose to bring the information of possible drivers up front in the main window to provide the overview of nearby drivers, together with the possibility to change the destination.

As with the wandering interface, the travelling interface is a simpler version of the desktop interface. It was still meant to be easy to communicate with the relevant hitchhikers. Therefore a profile list like the one in the wandering interface is present in the travelling interface as well. While the communication with the hitchhikers is a great part of the interface, this interface also has to make it clear where the contacted hitchhikers are going to be picked up. To support this, the main window contains a dynamic map with the driver route and hitchhikers plotted onto it.

5.6.1 Elements supporting the transitions

We have implemented use of redundant elements across the mobility types to support the transitions. This section explains each of these elements in detail.

5.6.1.1 Icons

The icons represent the position of the different available profiles on the map, on both the passenger and the driver interface. They are very essential in the way we want to support the transition between the different interfaces, because the color of each icon shows the current status of the profile, with respect to the communication between the test persons and the profiles in the system. A color explanation for the icons on the driver interface can be seen in Figure 17.

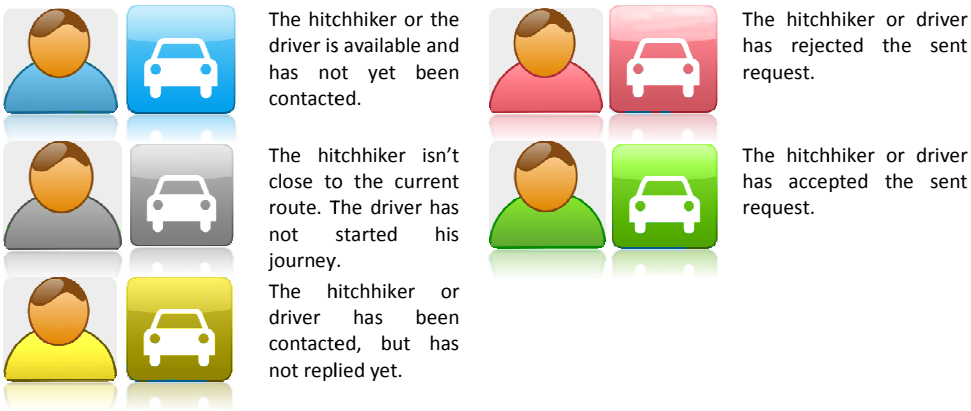

Figure 17: Color explanation of icons in iHitch

Per default the icons are blue, which means no communication has been established between the test person and the user represented by that particular icon. When the test person choose to contact one of the profiles, the color of the icon changes to yellow, which symbolizes that the test person has contacted the profile and is waiting for a reply on the request. When the test person receives a positive acknowledgement on the request, the icon turns green an there are now established a bi-directional agreement between the test person and the profile. The green color also appears when the test person accepts a request from a profile. In the case that one of the participants in this communication chooses to reject or cancel the request, the icon of the profile turns red.

The colors of the icons are meant to make it easy for the test person to figure out the current status of the profiles in the system. At the same time it is essential to the test, because the icons and their color representation are some of the information that is presented to the test persons on all of the interfaces. They are meant to show if the test persons perceive that they are looking at the same information (profiles and their status) whether they interact with it through the two desktop interfaces or on the mobile phone or in-car touch screen.

5.6.1.2 Profile information

Besides the color of the icons, profile information is one of the things that are used in the prototypes to support the transitions between the mobility types. As mentioned earlier in this section, the profile information in iHitch, is a product of the analysis in chapter 4. We wanted to support the remembrance of information from one context to another. The profile information also serves to reassure that the users are who they say they are. In the current organized hitchhiking case, a phone call serves as way of checking this, as described in chapter 4.

The profile window consists of a picture of the profile, together with the name, age, current destination and the possibility to contact the profile. If a user already has been contacted, this communication can be aborted. Furthermore the hitchhiker visiting interface contains an image of the car in which the profile is driving.

Through the desktop assignments the test person is forced to investigate the profile information of several users on the map. In this way we want to investigate if the test person uses the profile information from the desktop interface to recognize the same profiles on the mobile/car interface.

There are slight differences in what profile information is presented on the different interfaces. The car and mobile phone interfaces contains smoker information about if the profile, which lacks in the desktop interface. Furthermore the hitchhiker visiting interface displays the car of the profile, and this information is not present in the mobile interface. The slightly different profile information is meant to spawn some kind of wondering to the user, to make them reflect of whether it is the same data they are manipulating through the two interfaces.

5.6.1.3 Routes

The colored lines shown in Figure 11 are the different routes of the available drivers. They are meant to give the test persons a way to figure out if the drivers are travelling close to their own position, and help the test person to realize if the driver travels near the test person's desired destination. The routes are also meant to give some spatio-temporal information about the distance between the driver and the test person's position, because the icon of the drivers moves along the routes.

Because of our intention of making the interfaces as different as possible, the same temporal information is to be found in the mobile interface, but with a different representation. The estimated number of minutes it will take the driver to reach the position of the test person is displayed in the profile list to the right of each profile. Information about departure and destination for each user in the profile list can be found by clicking the user and thereby enter a submenu displaying the full profile information. This submenu also contains the option for the hitchhiker to show a screenshot of where the nearest point to a drivers route from the hitchhiker's current location is.

To support the transition between the visiting interface and the travelling interface, the test person has to press a button "Overfør rute til bil" when he wants to save the information from visiting in

iHitch. When the test person starts the travelling interface, the first thing he sees is a part of his selected route from the visiting interface on a map, with an icon representing the car's position. This way he should recognize the route, and think that it is the same spatial-temporal information he is manipulating.

5.7 Implementing the prototype

5.7.1 Visiting

As the research question states, we were interested in using Google Maps as basis for implementing the prototype. This is true for the two visiting interfaces, where we used Google Maps API as a basis. This lets the programmer use regular JavaScript as a way of customizing Google Maps in any desired way. Furthermore Google Maps API is free and can be implemented on any user specified webpage. The API includes premade Javascript classes and functions, which makes it easy to alter the way Google Maps looks. We used these classes to alter the way icons look and the changing the colors of these runtime. We furthermore used the incorporated Geocoder to calculate a line between two coordinate sets. The Geocoder returns an array of coordinate sets that draw the shortest path along roads on the map. We used this to display the routes of the drivers in the hitchhiker visiting interface, and to move the car-icons correctly along these routes. We were not satisfied with the movement of the car icons, because the distance varied between the coordinates that made up the route. We therefore decided to implement a formula that cut the individual polylines of the route up in smaller pieces, that all were of the same length. This resulted in a smoother movement of the icons.

One of possibilities the driver has in the visiting interface is to enter two addresses in "Indtast rute" and a route between these two addresses are drawn. We used the aforementioned Geocoder together with a database containing coordinates on all addresses in North Jutland to accomplish this. This worked fine, but we ended up using a premade route, which was not created with the Geocoder, because it was only possible to get the "the shortest path"-route from the Geocoder. We wanted a route that was calculated, such that the driver was

Besides JavaScript and Google Maps API, we used CSS to create the different boxes in the visiting interfaces, such as the profile window. The calls to the database were conducted using PHP.

5.7.2 Travelling

The travelling interface runs on the regular laptop, with a touch screen attached as an external monitor and interaction device. Like Google Maps, Google Earth needs to be connected to the Internet to retrieve the images that make up the map. Since it was not possible to connect the laptop to the Internet, the high resolution images in the area of which the evaluation was going to take place, was preloaded before the tests were conducted. Furthermore a local database and a web server on the laptop were needed, to cope with the PHP calls required in the interface.

The travelling interface is based on Google Earth primarily, as shown in Figure 12. In contrast to Google Maps, Google Earth is in 3D. This means that it is possible to change viewpoint, which gave us the opportunity to focus on the most important objects on the map. We used the program Geepeeyes together with a GPS receiver to get the current position of the car into Google Earth. Geepeeyes tracks the distance travelled in the car and changes the viewpoint in Google Earth to follow the GPS receiver's current position and direction. The Geepeeyes point of view is the main view of the system.

The test person uses the left column to interact with the interface. As for the two other interfaces, this is a regular PHP-page, running in a browser. Some of the functionality, changes the content and viewpoint of Google Earth. The changes in Google Earth are done with KML-files that loads and disables the current KML-files running in Google Earth. This is the case when the user presses "Vis position", where the Geepeeyes KML-file is disabled and a KML-file showing the current profile's position is loaded.

Every time a test person receives a message from one of the hitchhikers along his route, or a hitchhiker changes color it is done using dedicated button on the laptop, to update the interface.

5.7.3 Wandering

The wandering interface runs on a mobile phone with mobile Internet, using the browser of the phone as the software platform. The interface is a set PHP-pages which contains links to each others. The profile-list-page is updated every 10 seconds, but only mobile phones with an OpenWave-browser supports updating properly. We therefore equipped the test person with a Samsung-phone that uses this browser.

We equipped the test supervisor with a second mobile phone that also had Internet and a browser. This enabled the test supervisor to access a homepage containing a list of links. These links each updated the PHP-page on the test person's mobile phone, when a profile icon needs to change color, or some other dynamic event needs to update the interface and database. Every time the test person receives a message, this is the test supervisor doing this, via his mobile phone. Furthermore the list of profiles and the time indication of the profiles is updated by the test supervisor, when some assignment has been completed by the test person.

5.8 Answering the research question

The design process conducted through this semester has led us to answering the following subpart of the main research question:

> ***"How can a cross-platform Location-based service on Google Maps be designed to support wandering, travelling, visiting and transitions between these?"***

The design of iHitch is made to support elements of the use case of hitchhiking involving new technology, with the overall focus of supporting the three types of mobility and transitions between them. The design supports selected elements of the case because the prototype is a tool for our evaluation. The main consideration of the design is to support the communication between the users of the system. Since we have designed to support our evaluation, the support of the three types of mobility is very distinct and consists of different interfaces in order to provoke users to reflect upon the differences and similarities.

The visiting type of mobility is supported by making use of the characteristics of stationary desktop PC interaction. The detailed map, supplied by Google Maps, is the main source of interaction and supports the user's overview of spatio-temporal information. Two interfaces were designed to support the visiting type of mobility because two different transitions are supported in the prototype, and both utilizing the visiting interface at first. This reflects the support of elements in the use case of hitchhiking, since the visiting interfaces are specializations in relation to driver and hitchhiker.

The interface supporting the travelling type of mobility is based on Google Earth to provide a significant difference in relation to the visiting interface and to support the surroundings of the user by using aerial photos as the map. The map is meant to support the user's overview of spatio-temporal information, integrated on the map as icons. Map navigation is supported by a case oriented approach based on profiles representing hitchhikers. This supports the travelling type of mobility by limiting map navigation to the essentials of the case based on simple interaction.

The interface supporting the wandering type of mobility is designed to be as simple as possible to properly support the form factor and the characteristics of the mobility type. An essential element of the case is supported, because the main interaction is based on the drivers that are near the location of the user.

The extensive differentiation of the interfaces supporting the three types of mobility is a consequence of our focus of designing to support evaluation of the prototype in relation to the mobility types and transitions.

The transitions between the three types of mobility are supported by redundant elements across all interfaces, based on user profiles, status indications and spatio-temporal information. The login functionality is designed to support the user's cognitive link to the spatio-temporal information shown in the interface. The transitions are supported by providing the user with a reaction in a non-visiting type of mobility that is a consequence of the user's action in the visiting interface. This pattern is supported by the traffic light metaphor of the status colors.

6 Evaluation

This chapter describes the evaluation of the prototype in the last chapter. This chapter only concerns the considerations in relation to conducting the prototype evaluation. The findings from the evaluation are found in chapter 7. This chapter includes the motivation behind the evaluation, which is found in section 6.1. Hereafter the method used in conducting the evaluation is described in section 6.2. The last section 6.3 in this chapter concerns the test setup, including the setup of field- and lab experiments, together with a description of the test persons and the test runs.

6.1 Motivation

This chapter presents the evaluation of the prototype described in the design chapter. The purpose of the evaluation is to answer the following research question:

> ***"How do users interact with and perceive a cross-platform Location-based service supporting wandering, travelling, visiting, and transitions between these?"***

In the design of the prototype we have made different interfaces for each type of mobility and incorporated some events to support the transition between them. These events were made to support the evaluation of the test person's perception of the transition during the test. Some events may make sense and some may cause confusion but the point is to make people reflect upon what is happening and why.

The research question of this chapter seeks to explore what happens during usage of the prototype. We answer this question by empirical research. In this exploration of usage we focus on investigating how users interact with and perceive the prototype and the support of the three types of mobility and the transitions in between. We controlled things by having all test persons perform a series of tasks but interaction and perception is unique to the single test person and this is what we find interesting in our evaluation.

6.2 Method

As described in the design chapter our prototype consists of four different interfaces for four different parts of the evaluation. The evaluation was based on the context scenarios found in the design chapter which means that the evaluation was split into two parts, namely a driver and a hitchhiker part. Each part of the evaluation made use of two interfaces of the prototype and thereby included one transition. The chapter is structured as follows:

- **Evaluating the driver's interface.** The test person made use of the driver's part of the visiting interface as well as the travelling interface of the prototype. The transition supported is from visiting to travelling.

- **Evaluating the hitchhiker's interface.** The test person made use of the hitchhiker's part of the visiting interface as well as the wandering interface of the prototype. The transition supported is from visiting to wandering.

The evaluation was task based to ensure that all test persons were asked to perform the same sequence of interaction. The tasks were read aloud to the test person one by one by the test supervisor. Each task was discussed if any uncertainties existed and the test person was encouraged to say as much as possible about his interaction and perception of what was happening during the test. Overall the test supervisor was in control of the flow and asked the test person questions based on the list of tasks.

Each test consisted of two parts since two types of mobility were supported. First a lab experiment was performed to simulate the visiting mobility where the test person was introduced to the system as a whole and to this particular interface in detail depending on whether the scenario was a driver or hitchhiker. The test person was asked to fill out a questionnaire about his use and knowledge of GPS devices, interactive maps such as Google Maps and Earth and give an indication of his opinion on his sense of locality. The questionnaires can be found in the appendix on page 130.

In the lab there were no significant differences in the way the driver and hitchhiker tests were performed. Both were based on encouraging the test person to think aloud and continuously explain his interaction and perception of what was happening. We emphasized that the test person should explain his expectations to an event prior to interaction and reflect upon the event afterwards. If not, the test supervisor asked questions in order to make the test person reflect upon this.

In the field there was a range of differences between driver and hitchhiker tests. The primary difference was whether the test person was in the car using a touch screen or walking around using a mobile phone. Interaction was recorded using cameras and screen recorders, which is outlined in the test setup section below. The test persons were encouraged to think aloud and explain in detail what they saw on the screen. This was especially true in the wandering type of mobility, since it was difficult to record the screen of the mobile phone. We were not in complete control of the environment in the field tests where traffic, weather and noise had a significant influence on the tests and required the test person's attention from time to time.

When the lab and field tests were done, a qualitative interview was performed to make the test person reflect upon the whole experience. Some parts of the test were recapped by the test supervisor in order to make the test person recall the situation and relate it to what else has happened during the test. This was often occurrences relating to the perception of the transition between the mobility types.

6.3 Test setup

This section describes the test setup and what we did to ensure data collection. There exist three different setups that reflect each type of mobility.

6.3.1 Lab setup for the visiting type of mobility

First we take a look at the setup of the visiting type of mobility. This was a lab setup using the Usability lab at Aalborg University. We controlled the environment and no outer elements were allowed to interfere with the test. The test consisted of interaction in front of a desktop computer where three cameras recorded the test from different angles and a screen recorder captured the computer screen. All cameras were stationary during the test since no physical movement was part of the test. We argue that the lab tests were quite similar to the way field tests of this type of mobility would have been performed. As described in the theoretical framework we interpret the term visiting as being stationary, and interaction in this mobility type was solely web based and performed in front of a computer. This made interaction in the lab pretty similar to interaction in e.g. the test person's own living room – only, in the lab we controlled the environment. Things become more complex when we move on to describing the field studies.

The test person was sitting in front of a desktop computer equipped with a mouse, keyboard and a large screen. There were no interaction devices that the test persons were not already familiar with from regular computer usage. The recordings were combined into a layout showing the three camera angles and the computer screen as Figure 18 shows.

The lab is characterized by the cameras in the ceiling and two large reflection windows allowing one-way see through only. The test person had his back turned towards the reflection windows and no cameras were directly visible in front of his view. A portable microphone was located next to the monitor to ensure clear audio recording. The test supervisor was seated next to the test person and they both focused on the computer screen.

Figure 18: A still shot of the recordings of a driver's test

6.3.2 Field setup for the travelling type of mobility

This setup was very customized in contrast to the plain setup in the lab. During the entire test, the test person was sitting at the passenger seat of a car and interacted with a touch screen in front of him, mounted on the dashboard. The test person was not driving the vehicle even though we were testing a driver's interface. This is due to the focus of our test which is to evaluate the interaction and perception of the prototype in relation to the three mobility types and transitions between them. The focus is not to evaluate the test person's ability to interact with the prototype while driving.

A designated driver was driving the vehicle without any contact with the test person. The test supervisor was located on the seat behind the driver and monitored what happened on the touch screen in the front. It was only the test supervisor who communicated with the test person. On the right back seat behind the test person, a laptop computer was located. This was used by the test supervisor to apply the wizard of oz events when appropriate.

The touch screen was connected to the laptop computer and received data from here. A GPS receiver unit was located on top of the car with a magnet and was connected to the laptop by wire

through the sun roof. The touch screen was very sensitive to changes in light conditions and to prevent this we mounted a deflector shield using cardboard and duct tape around the device. Figure 19 shows the inside of the vehicle with the deflector shield and touch screen visible. The vehicle was a station car which allowed us to mount a camera on a tripod in the back and set the zoom level to record the interaction of the touch screen. The test person was equipped with a portable microphone connected to the camera. The laptop utilized a screen recorder and captured the digital signal on the touch screen.

Figure 19: The deflector shield and touch screen inside the test vehicle

Despite the deflector shield some tests were influenced by bright sunlight and others by rain. This had an impact on the visibility of the touch screen.

6.3.3 Field setup for the wandering type of mobility

This setup had the largest number of uncontrolled environmental factors. The test person was walking around outdoor paying attention to a mobile phone and interacting with the system on it. Walking next to the test person was the test supervisor and a camera man. There were no communication between the camera man and any of the others.

The tests were heavily influenced by the weather and sometimes the test person had to stop walking because of very strong wind. We did however encourage the test person to keep walking since it is a part of the wandering mobility that one does not always have resources to focus on the device because of the surroundings when moving. The test person was holding a mobile phone in one hand, and a few test persons also held an umbrella in the other hand. Figure 20 shows a test person interacting with the mobile phone and the test supervisor and camera man.

Figure 20: A test person (left) interacting with the mobile phone

The supervisor continuously encouraged the test person to describe in detail what happened on the mobile phone, in order to ease the analysis of the data in case it was difficult to see what was going on, on the mobile phone. This proved to be very helpful since recording the display of the phone proved very difficult using a handheld camera. The cameraman was equipped with a mobile microphone that was able to capture all speech.

The test supervisor was also carrying a mobile phone used to activate the wizard of oz events during the test. Figure 21 shows the very simple interface of the test supervisor mobile phone.

Figure 21: The interface on the test supervisor's mobile phone used to evoke wizard of oz events

6.3.4 Test persons

We have evaluated the driver and hitchhiker scenarios with ten test persons in each scenario. The 20 test persons were primarily students and a large part of them have the same background as us, namely educated in informatics. Eight of the ten driver test persons were informatics students and the last two were psychology and humanistic informatics students. This created a certain bias since a large amount was of the same background. We argue that informatics students might have easier understanding a computer system than the average hitchhiker. Informatics students might also be better at reflecting about the system as a whole. The first argument counts for less usability problems whereas the latter suggests a higher level of abstraction in the results.

Two out of the ten hitchhiker test persons were informatics students and additionally two were informatics graduates. Three others were engineering students, two were computer scientist students and the remaining was a radiography student. The hitchhiker test persons consisted of a greater mixture of backgrounds than those of the driver tests but there was still a heavy overweight of males and students with technical expertise in comparison to the average users of hitchhiking.

6.3.5 Conducting the tests

This section introduces the details of the sequence of events during the tests. As mentioned earlier these were highly inspired by the context scenarios found in the design chapter.

6.3.5.1 The test scenario of the driver

During the visiting type of mobility, the test person was using the desktop computer and acting according to the tasks given by the test supervisor. The list of task can be found in the appendix on page 129 and we encourage the reader to review these if interested. We do not consider the interaction with the desktop computer to be of too complex degree to understand given the description in the design chapter combined with the list of tasks. We therefore move on to explain the test in the travelling type of mobility which is of greater complexity.

The test person was guided to the front passenger seat of the car and instructed in how to behave in order to avoid interference with the driving, the deflector shield or the recording angle. Again, we encourage the reader to review the list of tasks for this test in the appendix on page 126. The test person was initially allowed to press a few buttons to understand how much pressure was to be applied to the touch screen in order for it to work to exclude these kinds of issues from the results.

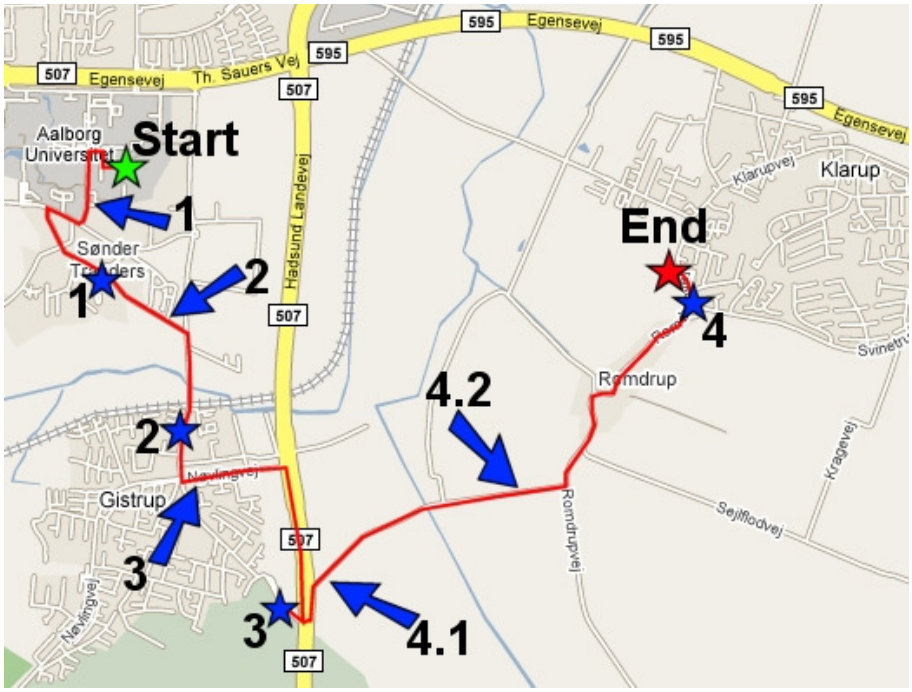

Figure 22: The route of the driver tests

Figure 22 shows an overview of the route of the test. The figure contains a number of stars and arrows indicating deliberate points of action during the tests. These points map directly to the tasks of the test, and stars indicate that a hitchhiker was picked up at this location and arrows indicate whenever something happened on the interface. This was either a task that required the test person to interact or it an event triggered by the test supervisor in a wizard of oz style. Arrows and stars are numbered to indicate which star is affected by the interaction that happens at an arrow with the same number attached to it. Start and end is also marked with stars and text.

The rides began at the start star and when the vehicle hit the point of arrow one a message popped up on the touch screen saying that Jens had accepted the test person's request. This was where an icon on the interface changes color from yellow to green to indicate the change in agreement. The test person was asked to tell the chauffeur when to stop, in order to pick up Jens who was located at star one.

At arrow two a message popped up on the touch screen telling the test person that Linda had accepted his request but she had moved since he sent it. The test person was able to zoom to a view of Linda's current and previous position and hereby determine to pick her up or not. The task was to pick her up and the test person was asked to tell the chauffeur when to stop. Linda was located at star number two.

At arrow three a new message popped up. Now the test person received unexpected information since Birgitte contacted him. The information said she was close to his route and she would like a ride. The test person was able to zoom to her position to investigate this before deciding whether to pick her up or not. The task was to pick her up and again to tell the chauffeur when to stop. Birgitte was located at star number three and a small detour had to be made in order to pick her up.

At arrow 4.1 the test person was asked if he could find any hitchhikers in the system, that he had not had any contact with. The hitchhiker Mette was present and represented by a blue icon since no communication had occurred. The test person was asked to send a request to Mette, once she was identified. At arrow 4.2 the test person received an acknowledgement on his request from Mette. Again the test person was asked to inform the chauffeur to stop at Mette's location which is indicated by star number four on the figure.

At this point the test was formally done and the test person was asked to play with the system on the way back to the university if interested. The driven route was approximately 10 kilometers long.

6.3.5.2 The test scenario of the hitchhiker

As with the description of the driver's test scenario the list of test tasks should provide the reader with a reasonable idea of the sequence of events during the visiting type of mobility here. We

therefore move on to describing the wandering part of the tests. Figure 23 shows a similar layout as we have seen in the above section.

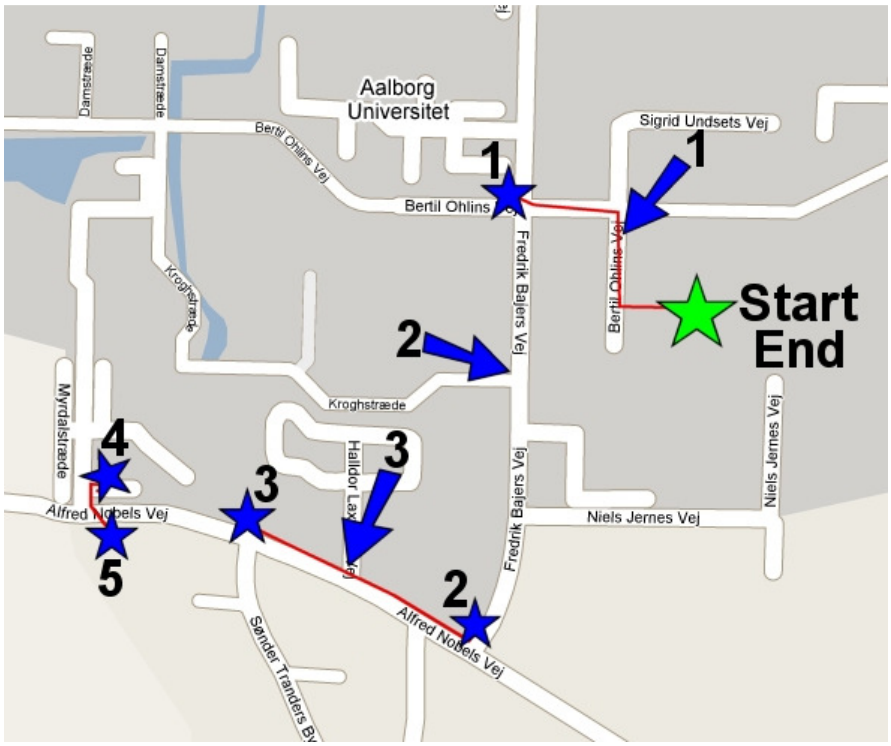

Figure 23: The layout of the hitchhiker tests

The test scenario of the hitchhiker began the same place as the one for the driver did. The layout is a bit different that the equivalent of the driver since the route has not been fully drawn in order to avoid crowding the figure with information. The tests began and ended the same place as which depicted with the largest star and the attached Start and End text. The red lines illustrate where the hitchhiker was walking and stars show where the hitchhiker was either picked up or dropped off.

At the beginning of the test, the test person were equipped with the mobile phone and instructed in which buttons to use to ensure interaction happened with our prototype only and not the main software on the phone. The test person was asked to find out where to meet with Linda. We began walking towards the first star and the test person was encouraged to keep walking while interacting with the mobile phone. At arrow number one a message popped up saying that Linda had accepted the test person's request for a ride. Star number one indicate where the test person met with the driver, Linda, and got in the car. At arrow number two Linda told the test person that she had changed her route, and was turning left instead of right at the upcoming 3-way intersection. At star number two the test person was dropped off since his destination was in located to his right and

Linda turns left. The test person walked from star number two to star number three indicated by the red line.

Immediately after being dropped off, the test person was asked to begin walking towards his destination and try to find an alternative ride through the mobile phone interface in the meanwhile. The task was to contact a driver named Jens and as the test person arrived at arrow number three, a popup on the mobile phone said that Jens had accepted the test person's request for a ride. The test person was asked to find out where to meet Jens.

Arriving at star number three, the test person got picked up by Jens who was coming from the south on "Sønder Tranders Bygade" and turned left on "Alfred Nobels Vej". The test person was driven from star number three to star number four which is pretty close to his destination of Klingenberg. Jens took off and continued west on "Alfred Nobels Vej".

At star number four the test person was asked to find out how to get back to the university. A destination was chosen on the mobile phone and a request for a ride was sent to a driver named Birgitte. Birgitte chose to reject the request and the test person was asked to begin walking towards the university while trying to find an alternative. The red line going out from star number four indicates the walking. Shortly after receiving Birgitte's rejection a new popup showed up on the mobile phone. A certain Johnny had sent a proposal to the test person, offering a ride. The test person was asked to find out who Johnny was and accept his offer. As the test person reaches star number five, Johnny pulled over and picked him up. Johnny was coming from the west on "Alfred Nobels Vej" and headed towards the university. At this point the test was over and we drove back to the end point at the university. The final route was approximately 1.5 kilometers long.

In the following chapter we present how we structured our data analysis and our findings.

7 Findings

This chapter contains the evaluation of our empirical data. First the structure of the data analysis is described followed by an affinity diagram. The remainder of the chapter describes the different levels of the affinity diagram in detail.

7.1 Structuring the data analysis

We use the method of creating an affinity diagram to structure our data analysis. Affinity diagramming is a part of the contextual design method developed by Hugh Beyer and Karen Holtzblatt (Beyer, 1998). Affinity diagramming is a method for extracting common themes and patterns from the root data by working inductively. The method provides us with a tool to go from audio and video material to a diagram consisting of the most important knowledge from our data based on themes and patterns (Beyer, 1998 s. 154-163).

Creating an affinity diagram is done as a bottom-up process, focusing on the raw data first and inductively getting to higher levels of abstraction based on identified themes and patterns. The point is to let the actual data form the categories instead of grouping data by predefined categories based on our assumption of the contents of the data. In the creation of our affinity diagram we first reviewed the 20 hours of audio and video material and noted whenever something interesting happened that we felt were able to tell us something about how the users interacted with and perceived the system. We also noted usability problems and issues of map perception and interaction. We kept the notes categorized by the mobility types and ended up with some 1100 non-unique notes for further information see appendix 13.5.

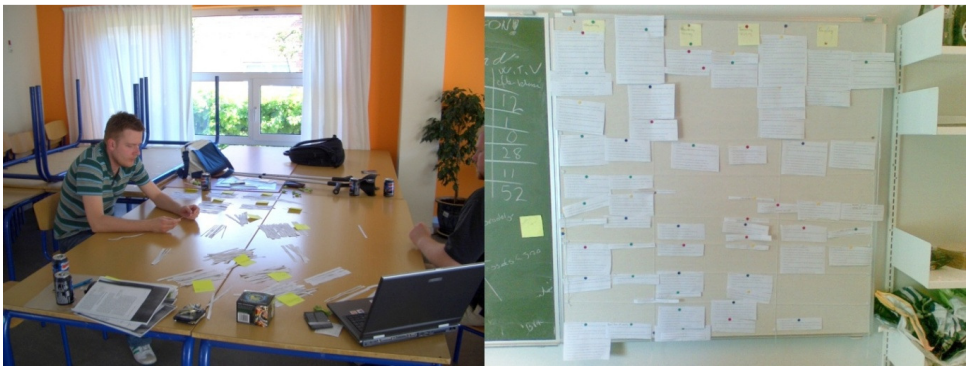

Figure 24: The process of categorizing notes (left) and the overview of categorized notes (right)

We then reviewed all notes in one mobility type at a time to find patterns and common themes. Some themes were identified across several types of mobility and some were not. This is also where we categorized certain observations or statements as being characterizations of transitions. If a note

was not considered useful it was discarded. It is advised not to let more than four notes form a category in order to extract as many aspects of the data as possible(Beyer, 1998 p. 161). The resulting notes were mapped on a board divided by mobility types and transitions on the one axis and the identified categories on the other. The right side of Figure 24 shows a photo of this and Table 4 shows a graphical representation of the same to provide an overview. Table 4 is weighted in grayscale to show the propagation of the notes forming each category in relation to mobility types and transitions. The hatched areas indicate that no notes were present. Light grey indicate a few notes, dark grey indicate an average amount of notes and black areas indicate many notes. This provided us with an overview of our data from which we created the higher abstractions in the affinity diagram.

	Wandering	Transition	Visiting	Transition	Travelling
Relation between real and virtual world					
How can other users interact with iHitch?					
Relation between the position of users					
Who is close to my route?					
Profile information					
Significance of icons					
Context dependent interaction					
Map interaction					

Table 4: Propagation of notes in relation to mobility types and transitions

The process of identifying themes and patterns in the notes is seen on the left side of Figure 24 and an overview of categories divided by mobility types is seen in the right side.

Figure 25: The process of creating the affinity diagram

We listed all categories independent of the mobility types and grouped them by themes in the notes. This was a highly iterative process redone several times and formed the levels of the affinity

diagram in a bottom up process. Figure 25 shows the process of creating the affinity diagram where categories were reorganized as patterns evolved. The yellow post-its are the categories and on the right picture the small red and yellow post-its are higher levels of abstraction based on groupings of the lower level. We initially created the groupings by discussing similarities of the categories by the name of the category. Over time several of these patterns changed as we discussed the similarities of the categories.

We ended up stepping back and consulting the notes that form the categories once again, to discover new patterns through the themes in the notes. This led to a different categorizing of the identified categories and the addition of an extra level in the affinity diagram. Table 5 shows the affinity diagram in its final form.

Level 4	Level 3	Level 2	Level 1
Spatio-temporal perception	Relation between real and virtual world	Relation between real and virtual world	Understanding time indication in relation to own and other users' position
			Discovering inconsistency in the interface
			Confusion about why the other users know where I am going
			Differences in which mobility type gave the best overview
			Different opinions on whether the user's own location was important in visiting
			GPS has a positive effect on spatial perception
	Relation between test users and other users	How can other users interact with iHitch?	What do other users know about me?
		Relation between the position of users	Overview is important
			Linking virtual information to physical locations
			Understanding where to meet
			Expectations across mobility types
		Who is close to	Specifying a destination has an

		my route?	impact on the list of drivers
			The users do not understand how the list of drivers is compiled
Mobility interaction	Understanding and recognizing other users	Profile information	Recognition of profiles across mobility types
			Photos improve remembrance
			Transitions cause changes in profile information
			Sending a request
			The picture of the car
		Significance of icons	The icons supported transitions between types of mobility
			The icon colors created a sense of what other users were able to do
	Interaction in and between contexts	Context dependent interaction	Shared attention
			The user finds it difficult to use the device, due to reflections on the screen
			Other types of feedback
			Form factor
		Map interaction	Form factor has an impact on the overview
			Spatial representation on map or aerial view

Table 5: The affinity diagram

In the remainder of this chapter we describe the contents of the categories that form the affinity diagram. The description is structured by the top level categories which are individually followed by the contents of the lower levels. Figure 26 shows the structure of the sections beginning with the first level 4 category *Spatio-temporal perception*. This category is followed by the level 3 category *Relation between real and virtual world* and so on through the hierarchy of categories.

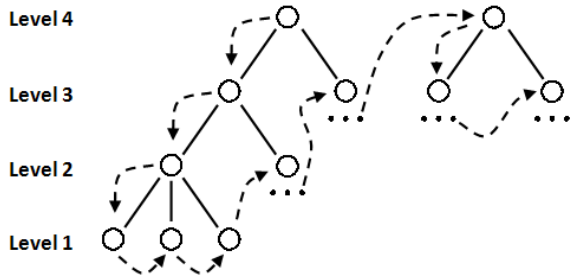

Figure 26: The structure of the sections describing the affinity diagram

7.2 Spatio-temporal perception

This high level abstraction consists of *Relation between test users and other users* and *Relation between real and virtual world*. As can be deferred by the titles, this abstraction consists of the users' perception of spatio-temporal information in relation to other users and between the real and virtual world.

7.2.1 Relation between real and virtual world

This is a reflection of our findings in respect to users' perception of our system and whether this is in accordance to what happens in the real world.

When a test person is presented to a part of a complex system, he creates a mental model of how the system works in general, and makes use of this model in his perception of the system. His understanding of the system can change through interaction if he encounters a mismatch between what is happening and his expectations of this. The mental model is created by adopting lessons learned through interaction with the system based on a mix of "learning by doing" and "trial and error".

The test persons understand the system based on what they know about the concept of hitchhiking, and use this knowledge to create a mental model of what they think the system is capable of. If the design of the system differs from the test person's mental model he may be confused. This is an interesting finding in the relation between the real and the virtual world: If one of the worlds differs from the other it is a possible source of confusion.

The interface supporting the visiting type of mobility proved to support the test users' understanding of spatio-temporal information. The representation of moving vehicles and stationary hitchhikers was found intuitive and supported the test persons in relating the dynamic location of drivers to their own position in time and space. This representation of spatio-temporal information through a map interface effectively creates a relation between the virtual and the real world.

7.2.2 Relation between real and virtual world

This section is one of the more explicit categories about the relation between what is created in the virtual world in relation to the real world. This relation is subject to much confusion and considerations for the users based on what is happening in iHitch. This is due to the rather provocative way we have designed iHitch, to force the test persons to think about what is happening, and why this is happening. See section 5.6 for a more detailed description of the design considerations.

7.2.2.1 Understanding time indication in relation to own and other users' position

A fundamental part of iHitch is the spatio-temporal functionality supporting the hitchhiking. Being a hitchhiking system the users need to see their own position and others' position preferably in relation to each other. The need to see others in the system is a main part of the system. Since it should map the real world, users' position should move accordingly to the movements they are doing in the real world, and hence be relative in time. This functionality was implemented in the interface by different means in the three types of mobility, which lead to different observations and considerations by the test persons' part.

In visiting the map is the main interaction. In this interface dummy drivers are moving along routes and the hitchhiker can contact them to arrange a ride. This provides the test person with a way of self-estimating when the driver is near the test persons, which can be hard to calculate given a distance from the drivers' current location to the hitchhikers' location taking into consideration the expected speed of the driver. Due to this rather complex calculation test persons expressed a wish for a time estimate for when the driver was close to the hitchhiker, provided explicitly in the interface.

When in wandering the test persons were presented with a list of possible drivers, driving close by the hitchhiker. The information provided by this list is an icon depicting the current status of the driver in respect to virtual handshaking with the hitchhiker, the name of the driver and a number of minutes shown in parentheses. The time information in the parentheses proved to be a subject of confusion for the test persons. The number is an estimate of when the driver will be near the hitchhiker on the driver's route to his destination. This information was hard for some test persons to decipher, and a variety of perceptions were expressed. Some test persons expressed that it was odd, that the time indication of each driver did not change as the test progressed in time. Others observed the number of minutes once and did not seem to reflect upon the lack of change over time. Whether the minute number represented the estimated time of arrival on the passengers location or somewhere else was less clear. Most users guessed it had to do with their own position but a single user did not understand the minute number at all and remained confused.

7.2.2.2 Discovering inconsistency in the interface

During the tests some test persons discovered some inconsistencies in the interface. Some of these inconsistencies were implemented by us on purpose, as described in the design chapter, in order to see the reactions from the test persons. These inconsistencies were found in travelling and wandering types of mobility in relation to visiting.

In travelling the test person was assigned to tell the chauffeur to stop when the car was next to a hitchhiker and then pick him up. When a hitchhiker has been picked up the icon representing the hitchhiker stayed in the same place on the map. Some test persons expressed that this was odd since the hitchhiker should be in the car. Some though it was just odd that the icon did not disappear and others believed the iconic representation on the interface should reflect the physical behavior of the test person. This tells us that some test persons had such an insight of iHitch that they expected the hitchhiker to carry a similar system as the one in the car and be GPS enabled. This finding showed us that some test persons gained quite an insight into the system, and most of them wanted the hitchhiker to be removed from the map when he had been picked up to ensure consistency with the real world.

One deliberate inconsistency in the travelling interface was the order in which the hitchhikers were positioned in the list. This confused most test persons, since it this did not reflect the order in which the hitchhikers were picked up. The test persons perceived the list of hitchhikers as a sequence of events in consistency with what happens in the real world. When this sequence did not reflect the sequence of event in the real world, the test persons expressed their confusion.

During the tests of the wandering interface we experienced a few delays when the test supervisor executed a wizard of oz event. This resulted in situations where the test person had just been dropped of by a driver, but the driver was not removed from the list of currently available drivers on the interface. The test persons that experienced this reacted very different to this behavior. Some thought it was nice that the driver they had just met was available for a ride again, even though the driver had just driven away in the opposite direction of the test person's new destination. Others were puzzled why the driver was still on the list, since this would either mean a violation of consistency between the system and the real world or that the driver would turn around and come by them again. We interpret this as skepticism because it did not comply with the test persons' mental model of iHitch.

7.2.2.3 Differences in which mobility type gave the best overview

When in the visiting type of mobility some test persons' expressed that it was easy to get an overview of drivers. This was in respect to where they were currently driving, and get an idea of when they would pass by the test person.

In wandering this information was represented by different means. To create an overview in the interface of this type of mobility, the system provided the test person with a list of drivers, along with a figure in minutes. This change in how the information was represented between the two types of mobility, triggered different expressions from the test persons. Some found this

representation easy to decipher and welcomed the change due to the explicit information that they found in the time-estimate on when the driver was close to the hitchhiker. Others found this representation confusing, going from a map with moving icons relative to one's own location, coming to a list of profiles with a number in minutes.

7.2.2.4 Different opinions on whether the user's own location was important in visiting

The first assignment the test supervisor gave the test persons in visiting was to roughly locate the test person's current location from an overview of Denmark. The test person should zoom in on Aalborg and then locate Aalborg University. This assignment was given to evaluate the test person's sense of location and to test his ability to navigate on a map. Test persons' expressions about the lack of the representation of their own location proved to be different. Some did not care whether their own location was on the map, perhaps due to their good sense of locality. Others found that they would like their own location to be present making it easier to locate themselves. If their own location was present the mapping between this location and to the route of the driver would be easier to create, hence improve the test persons' ability to see the relation between the real world and the virtual world.

7.2.2.5 GPS has a positive effect on spatial perception

The GPS implementation in the travelling interface proved to be easy to understand. The test persons were able to see the movement of the car real time on the map interface provided by Google Earth, and could map e.g. the buildings they could see on the aerial photos to that of the real world. The test persons expressed that this created a very credible mapping from the virtual to the real world. Some test persons noted that the GPS was very precise and others noted that the position of the car icon on the map was lagging a bit behind the position in the real world. This tells us that the perception of the GPS functionality was very clear to the test persons.

7.2.3 Relation between test users and other users

This category concerns the mutual relation between test users and other users. During our evaluation of iHitch we found a variety of interesting observations relating to this category.

The spatio-temporal information that iHitch provided in the three types of mobility, proved to be a complex structure for the test persons to understand. Test persons were presented with different types of spatio-temporal information in the three types of mobility. The most complex was the wandering type of mobility, where the test person was walking and at the same time had to relate the movement of other users to his own position. This information was presented on a small screen with a limited overview. The test person was not in control of the situation since he depended on whether he had the sufficient time to get to a certain location in order to get a ride. This calls for a good overview in order to perceive and consider this complex information. We found that the interface in the wandering type of mobility did not provide the sufficient overview and especially lacked a map capable of providing dynamic information.

In the interface supporting the travelling type of mobility, the vehicle was the dynamic moving object and most hitchhikers were stationary. The location of the vehicle was centered on the map of the interface and we found that this supported the test persons in understanding spatio-temporal information. The test persons were primarily in control of the situation since they were in motion and had the ability to stop or cancel an appointment with a hitchhiker. It proved to be relatively easy for the test persons to understand this representation and thereby relate the position of others users to the position of their own.

The interface supporting the visiting type of mobility provided the test users with a good overview of either drivers or hitchhikers. Drivers were moving along routes and the test users were able to relate the movement of drivers to their own position in time and space. Hitchhikers were stationary and the spatial representations of these were found intuitive although the test users lacked time specific information.

The complexity of understanding spatio-temporal information provided in the three types of motilities, differed among the test persons. Wandering proved to be the hardest to understand due to the complexity of moving objects relative to the test person's own movements, represented by static information. The visiting interface was the easiest to understand since the test person was static and the objects represented in an intuitive way that provided a sufficient overview.

We were encouraged by the test persons to supply additional spatial information besides GPS positioning, to create a stronger link between the virtual and the real world. Physical address information of a hitchhiker's location would enable the test person to lighten his attention on the interface and increase attention on the physical surroundings.

7.2.4 How can other users interact with iHitch?

This section present and discuss the issues of how the test persons perceive the system as a whole. This reflects the test person's view of what is not visible – known as "the other end of the system". What happens in the part of the system that test persons use is a consequence of what other users can do in order to interact with the test person through the system. The way test persons perceive this differs quite a lot and the test persons have different opinions on what other users are able to see and do in "their part of the system". This section concerns the test person's perception of what other users can do in the system and how this may influence on the test person and his interaction.

7.2.4.1 What do other users know about me?

There exists a range of areas where the test persons are unable to perceive how the system is organized as a whole. These areas concern the other users of the system, namely passengers and drivers depending on the mobility type in question. During wandering and travelling the test persons are confused about what degree of profile information about themselves is visible to the other users. The test persons have been made aware that their counter users have some kind of system as well, but they do not really know anything about it. This is made explicit by the test persons during

wandering as they tell us that they do not believe they have entered a destination at any time – this including the visiting mobility type – and even though, the driver knows this information as they get picked up.

The test persons' perception of this is an expression of their insight of the system and the context. They have not at any time entered a destination in any part of the system and yet the drivers know their destination. The reason for this hassle is that the test supervisor has told the test person his initial destination verbally, and hence it has not been entered into the system by the test person themselves. This tells us that the test persons perceive this as information they can use in their selection of drivers, but not as information that is transmitted to the drivers when a request is sent. When the test person has not entered some information into the system it would seem they think the system should not know about it.

Not all test persons are puzzled by this behavior. Most seem to think it is either logical that drivers know their initial destination or maybe they just don't consider why this is. It would seem that test persons that are troubled by the drivers' knowledge about their initial destination also have difficulties understanding the list of drivers. They are puzzled why these drivers appear and do not know that the list contains drivers whose route at some point will pass by the passenger. In relation, some test persons are confused why the drivers know their physical location when they get picked up. The test persons have not been informed that we simulate a GPS unit in the mobile phone and some are able to guess this but most are either puzzled about it or don't seem to reflect upon it.

It is the case in both visiting, wandering and travelling that the test persons assume the other users have some kind of system but there exist a great deal of confusion about what the other users can actually see and do through this system. The test persons are equally divided into two groups by the understanding of whether other users can see the test person's profile or not. This reflects a significant difference in the perception of the system as a whole. Some think only the information they sent to other users can be visible while some think the other users can see some kind of profile of the test user, just like the test persons can.

In the wandering mobility the test persons are contacted by a certain "Johnny" at the end of the test. Johnny is not on the list of drivers and he initiates contact to the test person. Practically all test persons are initially confused about this Johnny. Why does he contact me when he is not on the list and how does he know anything about me? These are the most common reactions to Johnny's request.

Johnny is included to test the users' perception of other users in the system. Johnny is a driver who has just powered up his device, entered a route and contacted the first passenger – namely the test person. The results show that some test persons eventually guess the correct scenario although the majority remains confused. It is unclear to nearly all test persons how Johnny's request popped up on the mobile phone and why. They have a hard time relating him to the drivers on the list until they see he has been added to the list when they accept his offer. This makes the test persons wonder,

what information is broadcasted about them and they express a feeling of not being in control of the interaction.

7.2.5 Relation between the position of users

This section covers the test users' perception of how their physical location is used in the system to relate them to other users and their location. This area has proven to be very complex and many test persons are puzzled about the issue.

7.2.5.1 Overview is important

There are many different perceptions of the relation between the test person's own physical location and the amount of spatial information presented in the different interfaces of the mobility types.

Some users note that they would like an indication of their own physical position on the map while in the visiting mobility type, whereas others say this doesn't matter. This may relate to whether the test person is familiar with the physical location and surroundings or not and it is of importance to the subject in order to relate spatial information like routes and drivers to the current position. This matters since practically all interaction and perception during visiting is based on spatial information and relation to the test person's physical location.

Some test persons state that the map does not support their overview in a sufficient way when in a non visiting mobility type. This is true both in wandering and travelling, but we consider the problem to be of highest degree in the wandering mobility type due to the smallest form factor and non-interactive map. A great number of test persons explicitly state that they would expect the map on the mobile phone to be zoom able. The map is a static snapshot which surprise most test persons. The snapshot shows the area near the user and a small part of the driver's route. Most test persons express that it is very difficult to derive information from the map and there are no interaction possibilities to improve the situation.

During the test in the travelling mobility type, the test persons are asked not to perform any map interaction and hence do not try to change the zoom level. Some of the test persons think the zoom level in the car is bad when they try to find out where a passenger is located in relation to the car. The system zooms too close to the passenger and doesn't include the position of the car if the distance is above a certain amount. This is not a problem if the car is close, but most test persons wish to get an overview as early as possible, and they state this as a problem. It is not a problem for those of the test persons that are familiar with the area, but impose a feeling of unnecessary trouble to them. This makes some test persons feel they must pay more attention to the interface than if they were able to grasp the overview by a zoom level of their preference.

7.2.5.2 Linking virtual information to physical locations

In the non-visiting mobility types the test persons have a range of suggestions they feel will ease their interaction and increase the value of the system. During wandering the users strongly suggest an indication of their physical location on the map since it is very difficult to find out what's what. Some test persons point out, that the map is mostly used in unfamiliar locations and therefore should help the user to as high a degree as possible.

In the travelling type of mobility the test persons suggest that the position of passengers could be displayed as a physical address and not only a GPS position on the map. They tell us, that this would make it easier to navigate since it allows the user to lower the attention on the device. When you are driving on some road it is easier to find a location by the number of a house than having to continuously refer to a device and relate the spatial information shown here to the physical surroundings.

Test persons who are familiar with the area have significantly less difficulties relating virtual spatial information to the physical surroundings. This is though, primarily observed in the travelling type of mobility where the map contains a lot of information since it's based on photos from the air, rather than plain 2D graphics like on the desktop in the visiting mobility type. Some users like this and others dislike it. Users familiar with the area are able to grasp the overview in the visiting type of mobility and put this into use in the travelling mobility type. We observe this through their high ability to figure out where a passenger is located in the landscape of the map in the car even before the position of this particular passenger has been shown on the map.

In the travelling type of mobility the test user is presented with a situation where a passenger has changed location since the user contacted her from the visiting type of mobility. The fictional passenger "Linda" has moved some 100 meters up the road and we wish to examine the test person's perception of what Linda's current and former position express. The event is triggered by a popup when Linda accepts the user's request and he is informed about the change. Some think it is strange that the passenger has moved and others complain that the information shows up very late since Linda is not far from the position of the car. Almost all test persons choose the functionality of showing the position of Linda on the map but a few just choose to pick her up anyway. The change in position has rather different effects on the users. A few users don't seem to reflect greatly of this and assumes that Linda will show up as an icon on the map at some point of time. Most users choose to check up on Linda's new position because they want to make sure she has not moved too far away from their route. Some of these test persons actually tell us, that the new position of Linda is better from their point of view, since it is closer to the route. It is a bit difficult to see the two positions on the map due to zoom level and reflections on the screen and we are surprised to find, that some users are able to quickly identify that the change is a positive thing. Some users indicate that they understand the relation of Linda's previous position as her location seen in the visiting mobility type and that she has now moved. Others don't seem to understand the whole change of position situation and just accepts that she's probably located where the green icon is on the map. Overall many test persons are a bit puzzled why this event happened in the first place.

7.2.5.3 Understanding where to meet

This issue relates to the understanding of where the test person is supposed to find a passenger or driver. In the visiting mobility type some test persons expressed that they would like to point out on the map, where to meet with the driver. They were puzzled how the driver would be able to find them as they were not told that the mobile phone would simulate a GPS. A few of the test persons reasoned that a GPS might be part of the mobile phone as things became clearer during the test.

In the wandering mobility type lots of test persons were confused about the map. On the map there is a blue dot that represent where it would be optimal to meet up with the driver based on the position of the driver and the passenger. This proved very difficult to derive and many test persons thought the blue dot indicated the position of the driver. Some observed that it did not move and reasoned that it might be a proposed meeting point. Others thought it represented them selves. Knowledge of the area proved to be very essential in understanding this representation since users familiar with the area was able to relate the map to their position and thereby determine e.g. whether the blue dot was them or not. We were not particularly surprised that this event was difficult to understand since the map was very little self explanatory and no interaction was possible. Some users ended up thinking the blue dot was a meeting point chosen by the system and others thought it was selected by the driver. Both expressed the urge to be able to decide this themselves.

7.2.5.4 Expectations across mobility types

This section presents a number of occurrences that were not expected. These occurrences reflect how the transitions between mobility types were perceived by the test persons.

In the visiting mobility type the test users are presented to a range of passengers scattered around the local area. Some of these passengers were grayed out as the route was entered because they are too far away. We did not have any intentions to encourage interaction with these passengers and they were not present in the travelling mobility type. When asked, a few test persons replied that it would be confusing if these passengers were present on the list in the left side of the car interface. All test persons expressed that they considered the grey passengers as not important or no longer interesting. We therefore were very surprised to find that two of the test persons made an extensive attempt to locating the grey passengers on the map in the car. After the test was complete we had some spare time while travelling back to the university, and the test persons were told to play with the system if they were interested. This is where two users navigate the map for several minutes trying to find the grey passengers. They conclude that they cannot and assume the grey ones are not present on the map. They express that this is a surprise to them.

The test persons clearly expected that the users in the system were exactly the same as seen in the visiting type of mobility. When this was not the case, the test persons expressed their disappointment and surprise. This is very interesting because we did not encourage the users to search the map and it expresses the users' wish to understand the possibilities and limitations of the system. Only two test persons behaved this way which is primarily because it was not a part of the test itself, and reflects their wish for understanding the system.

When the test persons shift mobility type from visiting to wandering they express their expectation of what the mobile interface will be capable of and what they think they are supposed to do with it. Most users expect that they will be able to see some of the drivers they have seen during visiting and some kind of information telling them how to get to Linda, with whom they have an appointment. Some expect Linda to answer their request and some are uncertain whether they will receive response from Linda. The expectations vary and it is not clear to the test persons what the mobile phone will be able to do. A single test person expects *only* to be guided to Linda – and nothing else. This makes him quite confused when the interface shows up with three drivers and not only Linda as he would expect. He express that he perceived the visiting type of mobility as planning what to do and the wandering mobility type as where to carry out what was planned during visiting. Most other test persons are not sure what is going to happen during the wandering mobility type but they expect more than just being guided to Linda. Others express that they expect the mobile to be able to do pretty much the same as the desktop.

A few users tell us that they expected to choose a point to meet the driver during visiting. As they shift mobility type into wandering they feel they lack some interaction since they don't know where to meet with the driver. As described above, the map in the wandering mobility type includes a representation of the suggested meeting point which is perceived very differently by the test persons and causes quite some confusion.

7.2.6 Who's close to my route?

This section covers the test users' perception of what the representation of other users in the system means to them. It is limited to cover the visiting and wandering mobility type since the issue is a reflection of the test persons' perception of whether drivers in the system are shown because they will drive closely by the passenger or if it is the group of all drivers – or something else.

7.2.6.1 Specifying a destination has an impact on the list of drivers

Nearly half the test persons think that the list of drivers is updated or changed when they specify a new destination in the system. They believe the list is compiled as a result of the information entered which is the point but it is not implemented and thereby does not have any effect.

One test user thinks that specifying a destination changes something in the representation of his profile at the other users. After specifying a destination Johnny contacts him and offers a ride. Johnny is, as previously described, not on the list until his request is received and the user therefore reasons that specifying a new destination has caused him to be visible to Johnny. Still, the user is confused about where Johnny is in relation to his own position.

7.2.6.2 The users do not understand how the list of drivers is compiled

There exists a range of understandings of the list of drivers in the wandering mobility type. Some users think drivers are on the list because they will drive closely by the user at some point of time. Others are puzzled about the issue and do not know if the drivers will come near the user at any

time. Finally a few users are not able to tell why drivers are on the list. This shows the users' ability to reflect upon the system in relation to the task of getting somewhere and the perception of the system differs a lot. Some users show a high degree of understanding of the system since they believe the list is based on their location in relation to the drivers' routes and others are puzzled. The differences in this perception tell us that it is complex to interpret the list of drivers based on the limited information provided.

One user point out as a reflection, that it would be useful if the list of active drivers was available in the visiting type of mobility as well. The user thinks the list is easier to interpret in terms of when a driver is near the test person and thereby helps to gain an overall view of the situation.

The following section concerns the second category of level one in the affinity diagram.

7.3 Mobility interaction

This high level abstraction consists of *Understanding and recognizing other users* and *Interaction in and between contexts* where the first category concerns elements in the interaction that supports the transition between types of mobility. The second category concerns the environmental constraints that lies in interaction in mobility types.

7.3.1 Understanding and recognizing other users of the system

This category is an abstraction of findings in our evaluation, regarding interaction with other users of the system. Different measures were taken during the design phase to support the transitions between the three types of mobility. The effects of these design considerations are within this category.

When working with different interfaces, there can be a rather big difference in how these interfaces are connected, designed and interacted with. As an example we can look at a file structure represented in windows explorer which represent one representation of some information, where the dir command in command prompt represent the same information just in another way. What is important is that the user recognizes that it is the same information just represented in another way. This relates to the test persons' ability to understand that the other users of the system are represented in different ways in the different types of mobility.

Different kinds of elements were implemented in iHitch to support the transitions between the three types of mobilities. The elements consisted of visual and textual elements merged together creating a strong bond which the user could recognize. We made two observations regarding these elements in respect to supporting the transitions: The users' recognition of static and active elements. Static elements were static visual and textual elements which the users recognized in the transition between types of mobility. Visual elements were found to be good at supporting

transitions due to the recognizability these provide. Visual elements can be supported by textual information or vice versa, merging it into one element and creating a connection between the two. In the transition between two types of mobility test users remembered this connection and noticed if the element had changed during the transition. This suggests a strong degree of recognizability in transitions.

Active elements were visual elements that reflected a change by changing color when the user interacted with the underlying functionality of the element by contacting another user. The test person interacted with an element in one type of mobility and got a reply from the same element, represented in another way, in another type of mobility. Active elements represent some action in one type of mobility followed by a reaction in another type of mobility. This functionality of active elements made a strong connection between types of mobility, hence supporting the transitions between these. We conclude that the design attempts in supporting the transitions between the three types of mobility succeeded through the use of static and active elements since the test persons recognized these from one type of mobility to another.

7.3.2 Profile information

This section describes how users understand the information related to each profile of users in the system as well as their own. The profile information contains common personal information and some travelling information as well. There exist differences in both representation and contents of profile information in the different interfaces used in the different mobility types. Profile information is specifically designed to support the user in understanding the transition between the mobility types, and results therefore often reflect the test persons' ability to link a specific profile to something they've seen before.

7.3.2.1 Recognition of profiles across mobility types

A large number of the test persons are able to remember profiles from visiting to another mobility type. The factors they use to create the link differs a bit, since some test persons does not remember the names of profiles, but use icon color and photos or travelling information. One particular test person used names only to identify profiles. This is interesting since others were unable to distinguish profiles based on their names only. There appears to be differences in the cognitive references used to link a profile to something seen before.

One test person notes, that there is a link between what has been done during the visiting mobility type, and his interaction possibilities for a given profile during the wandering mobility type. The situation emerges during wandering and he finds there is a difference in the interaction possibilities for the user he has contacted during visiting in comparison to the other users in the system. Only one test person states this explicitly but none other seem surprised by the differences. The differences are identified as the options of contacting a user or canceling an appointment already made. See section 4.5.1 for a description of these options.

7.3.2.2 Photos improve remembrance

There are three things the test persons use to link a specific profile seen in one mobility type to a profile seen in another mobility type: Icon color, photo and name of the subject.

Several test persons have expressed that they remember a user in the system based on the photograph. This has even entailed that the test person has remembered spatial information about the user, which is not a part of the profile information, based on the photo alone. This is especially true in the transition between visiting and travelling where the test person remembers the specific user's placement in the field based on the photo.

In the wandering mobility type things differ a bit, where a single test person even state that the photo of a specific profile is not the same as the one he saw in the visiting type of mobility, even though this is not correct. There is a great difference in the user's expression of their value of the photo in wandering and travelling. Test persons in the travelling type of mobility are very happy about having the photo whereas many test persons in wandering dislike the amount of profile information. They explain that they are not interested in age and photos – they just want to know where to find this user. This behavior may be a result of a more complex interaction primarily because of a smaller form factor in wandering. It may also reflect that being a passenger in this scenario is more complex than being a driver.

7.3.2.3 Transitions cause changes in profile information

There are a very large amount of the test persons who spot differences in the profile information. Once they have identified a certain user by either photo, name or something else they are able to tell that the smoker information is new when in wandering or travelling and that this did not exist in visiting. Most test persons react very surprised towards this change and it is very clear that they did not expect changes in profile information which they also point out explicitly. They note that the information should be present in the interface of the visiting type of mobility to maintain consistency and because the information is useful here.

7.3.2.4 Sending a request

Some test persons expects to be able to send a message when they choose to send a request to another user in order to either pick the user up or request a ride. Others do not seem to expect this and express that "now the request has been sent to X". The system provides a very limited amount of feedback as only the icon color changes. This means that some of the test persons have a preliminary perception of the interaction flow and therefore expects to be able to write a message. These test persons explicitly state that they are surprised and that they feel something is missing. They are not in control of which information has been sent to the other user, and they clearly dislike this situation. Most users are concerned about factors like time and whether they lack a virtual handshake. Half of the test persons say they are unsure whether they are waiting for a reply or are expected to do something. The rest assume that they are waiting for a reply. This later becomes clear to everyone when an accept of their request is received during the wandering mobility type. Several test persons expressed their happiness because of this event, as it increased their feeling of

being in control of the interaction with the system. Some were a bit puzzled of whether to expect a response while others were irritated that they did not know.

7.3.2.5 The picture of the car

Some test persons note that they saw a picture of the car they are looking for when they sent a request to the driver in the visiting mobility type, but during wandering this picture is not available. There are divided opinions on this subject. Some test persons think the car picture would be nice in the wandering mobility type since this is where they need it as a link from virtual information to real world context. Some don't reflect upon the issue and one particular test person note that the car picture would be of no use to him and only take up space in the small mobile interface. It would seem that this particular test person does not consider a situation where it would be difficult for driver and passenger to find each other and thereby does not care. In contrast to this statement, another test person expressed a wish for the license plate to be included in the profile information, to ease the process of locating the driver in question among other vehicles.

7.3.3 Significance of icons

This category is concerns the test persons' understanding of the icons which is one of the fundamental aspects of supporting the transitions between mobility types.

7.3.3.1 The icon colors created a sense of what other users were able to do

The colors of icons are primarily based on a traffic light metaphor as described in the design chapter section 5.6.1.1. The test persons' perception of this differed a bit. Many were able to predict a traffic light behavior in the change of icon colors when a color change from blue to yellow occurred. Even though the blue color is not a part of the traffic light, most test persons expressed that they perceived yellow as a pending state indicating that something was not completed. A few test persons were not sure what the yellow color meant until they saw the change to green in a non-visiting type of mobility.

The test persons expressed that the awaiting state of the yellow color signified that either they had to do something or they were waiting for someone else to do something. Most test persons perceived this as waiting for another user to answer their request. This tells us, that the test persons were considering what other users of the system were able to do and expresses an insight of the system.

A few test persons discovered inconsistency in the travelling interface as a result of their perception of the icon color. For a short while during the travelling tests, the profile list in the left side of the interface consisted of yellow and blue icons but on the map a green icon was visible in the corner. It was difficult to see and required a high degree of concentration and overview to spot it. A few test persons noticed this and expressed their surprise since they were able to link the green icon on the map to a profile in the left side with a yellow icon.

7.3.3.2 The icons supported transitions between types of mobility

The icons were supposed to represent a connection to the real world. In the visiting type of mobility there were two kinds of icons, namely cars and persons. These icons were also used in the wandering and travelling types of mobility in order to create a connection between visiting and wandering, and visiting and travelling respectively. The test persons expressed that this connection made sense and that the pictographic icons coupled with the color and names made it relatively easy to recognize users across mobility types.

The traffic light metaphor was also expressed to be valuable in understanding that profiles in a non-visiting type of mobility were the same as the ones in visiting. When test persons received the first acknowledgement in a travelling or wandering on a request made during visiting, they expressed that they were now certain of the meaning of the yellow color and that this virtual handshake linked the profiles across the mobility types. An action during visiting created a reaction in another type of mobility and this was expressed to be a strong indication of the connection between the interfaces. Some test persons expressed their happiness when the green color was discovered, since they had been in doubt whether the yellow color signified a pending state or not. When the green color was seen, no doubt was present any longer.

Some test persons expressed that it was easier to comprehend the status colors in the wandering type of mobility than in the visiting type of mobility. We think this is due to the activity in wandering, sending and receiving requests and hence changing icon colors often, as opposed to visiting where the only change is from blue to yellow.

During the test of the driver's interface some test persons suggested that it would be nice to have an iconic distinction between the mobility types of the hitchhikers. This distinction should represent whether the hitchhiker was out wandering or sitting at a desktop in visiting. The former represented by a desktop icon and the latter by a thumbs-up icon.

7.3.4 Interaction in and between contexts

This category relates to the physical and environmental constraints that exist when working with mobile interaction devices and Location-Based Services in multiple types of mobility.

One of the most important factors in this category is how users' are interacting with mobile devices while being in either travelling or wandering. These types of mobility limit the test users' capabilities since they were in motion while interacting with the device. Some test persons found it stressing to share attention on a device and act in accordance to the physical surroundings at the same time.

We found that the test persons requested other types of feedback than visual like a beep or vibration. This functionality would enable the test person to only focus on the device when attention was required.

When interacting in an outdoor setting some natural environmental factors can be at play. It can be sunny or cloudy which may have an effect on the users' ability see what is displayed on the device.

The temperature can become a factor in relation to how long a user can hold a device in his hand if for instance it is very cold. We found the weather to be a factor in our field tests which affected the test persons' ability to interact with the device. Other factors include the form factor of the mobile device the user is interacting with. If the form factor is small, then so is the screen, leaving the user with a potential problem in creating an overview of e.g. a map. The interface supporting the wandering type of mobility was found to lack the ability to provide an overview of dynamic spatial information.

When interacting in wandering and travelling the above mentioned factors can be at play due to the context in which the device is used, which can effectively limit the user in his interaction. This finding tells us that when designing for mobile devices, the designer needs to make some considerations regarding which use situations the user will be in when interacting with the device.

7.3.5 Context dependent interaction

This section addresses the context dependent issues that arose during the evaluation. The findings in this section are a result of the way the evaluation was conducted, using field studies to study the wandering and travelling mobility types. This introduced some environmental factors that affected the way the test persons used and interacted with the prototype.

7.3.5.1 Shared attention

One of the main issues regarding constraints of context is shared attention between e.g. navigation, driving or walking. This issue arose in wandering and travelling where the test person must share his attention with iHitch and the mentioned factors. In contrast the context of visiting is stationary entailing that iHitch has the user's full attention.

During travelling the test person was sitting in the passenger seat of the car with attention on iHitch. The test person had to make some considerations in order to interact with iHitch and at the same time answer questions from the test supervisor, and solved tasks involving spatio-temporal considerations. These factors contributed to, that some of the users feet stressed during the test. Some users expressed that they thought the test scenario was stressing, others expressed that they had a hard time concentrating on reading the text in the interface due to these factors. Users also expressed concerns about, that there was too much text to read, while considering the information the text provided at the same time. This all indicated that it was a problem for the test person to share attention between iHitch, and the surroundings while there were environmental factors at play.

In wandering, the test person wandered around in the streets, while at the same time interacting with iHitch on the mobile phone. This proved to be hard for some test persons which were evident in the test. During the test we urged the test persons to walk while they interacted with the mobile phone, which proved to be quite hard for the test persons. They interacted, focusing attention on the mobile phone, but had a hard time concentrating on walking at the same time. This showed us that some persons can multi-task while others find it hard to do multiple things at the same time. This were also evident when the test persons saw the map showing the pick-up point since they

thought it was hard to read. This particular issue forced some test persons to stop wandering altogether to read the map, focusing full attention on the mobile phone. We can conclude that the interaction with iHitch takes up a great deal of attention, which makes it hard for some test persons to conduct other task e.g. walking or navigating, simultaneously.

7.3.5.2 The user finds it difficult to use the device, due to reflections on the screen

When the test person is in the field, using either the mobile phone or the touch screen in the car some environmental factors can be at play limiting the interaction. In travelling the test person is sitting in the passenger seat using a touch screen interacting with iHitch, and in order to do this he needs to see what happens on the screen. We experienced that this could be hard for the test person to do. Sometimes the sun shone at the display making it difficult for the test person to see what was happening, or a reflection from a bright sweater or t-shirt created so much light at the screen, giving the same result. The test persons either used a hand or a piece of cardboard to shield out the light, if it shone too brightly. This factor also proved to be an issue when test persons were using the mobile phone for interaction during the test. Test persons needed to find the right angle of the screen, or shield out the sunlight with e.g. a hand, in order to see what was on the screen. This is a well-known fact of using TFT-screens in bright daylight, making it a technical issue. Nevertheless it is a highly relevant issue in interacting with mobile devices in an outdoor setting.

Furthermore we experienced other environmental factors during our tests regarding the weather conditions. While conducting some of our tests with the mobile phone, there was heavy rain and strong wind, effectively limiting the test person in interacting with the device since he carried an umbrella in one hand shielding the device from rain.

7.3.5.3 Other types of feedback

When being in wandering some of the test persons expressed wishes for other types of feedback. This was due to the current feedback of text messages only; forcing the test person to look at the screen periodically to see if there were any changes. This could be remedied by e.g. a beep or vibration on the mobile phone, since some test persons expressed a desire to put the mobile phone in their pocket and warm their fingers, due to the cold weather during the test. Some test persons also expressed that when idling with the phone, they felt the urge for putting it in their pocket because this is what they would do under regular usage.

The same issue was present in travelling, where test persons were interested in looking out on the scenery, not paying attention to iHitch. Some test persons also paid so much attention on the 3D world of Google Earth, that a change in the left side of the interface was overseen for about 60 seconds. This lack of attention on the interface gave the test person very little time to consider the information on the interface. A beep or another audible feedback was also a wanted functionality from the test persons' side in this situation.

7.3.5.4 Form factor

Some test persons expressed considerations about the form factor, and how this had an impact on interaction with iHitch. Being in wandering the test person used a mobile phone which had a small

screen compared to the desktop PC in the visiting type of mobility. It was expressed by some test persons that this small screen limited the overview of what happened in iHitch, and the small size made it hard to for the test persons to use the system.

7.3.6 Map interaction

This section consists of findings due to the map interaction which was extensively used in our test. Test persons were assigned several tasks which involved map interaction. The maps served as a big part of the visiting and travelling interface, and a lesser part in the wandering interface.

7.3.6.1 Form factor has an impact on the overview

We used different types and sizes of maps in the interfaces, which were reflected in the tests. In visiting the map provided an excellent overview of the system, which the comments from test persons also showed us. During the test in wandering the test person interacted with the mobile phone, hence a small form factor, which had an impact on how the map functioned to create an overview. The test persons were not able to zoom in or out on the map provided by the mobile phone interface. This limiting functionality in map interaction gave us feedback from the test persons, expressing the need of zoom functionality to create an overview of the test person's current surroundings. Furthermore it was hard for the test persons to navigate with the map provided by the mobile phone, due to the rather complex information this map consists of on such a small screen. The form factor in travelling provided the test persons with a large enough screen for them to get an overview of the area and understand the current location of the car.

7.3.6.2 Spatial representation on map or aerial view

Google Maps were used in visiting where the test person utilized tactile interaction devices, and full attention on the interface. The mouse which were provided as an interaction device, made navigation on the map very smooth, and were only limited by lack of experience with this type of map e.g. test persons which weren't aware of the ability to click and drag on the map. As the test persons expressed this type of map provided a good overview of the various information that were represented on it.

To create a rather big contrast we used Google Earth to represent information in travelling. This interface was in many aspects different than the map representation in visiting. This map utilized satellite images, were tilted 45 degrees and furthermore user-centered following the test person when driving. This gave the test person less control over the map since direct interaction was discouraged by the test supervisor. Test persons expressed comments about the satellite images that were both positive and negative. On the positive side was the mapping between landmarks e.g. approaching a city driving along a barren road, and seeing the same landmarks in the interface. This enabled the test person to map where hitchhikers were standing on the map, and then map it to the real world using landmarks. On the negative side the lack of control and configuration of e.g. zoom level and tilt level were expressed to be an irritating factor for the test persons. Furthermore it was sometimes hard for test persons to create the mapping between the map and the real world, since

roads could be covered by objects e.g. trees or shadows of tall buildings, making it hard to see it. These issues in the travelling interface made some test persons express that they would rather use the visiting interface. Some test persons expressed that the interface might be challenging to use in a drivers context.

The map used in the wandering interface, was a screenshot created from Google Maps altered manually by placing a blue dot where there should be a meeting-point. This map proved to be insufficient in creating an overview for the test persons, because of the size and the need to represent complex information on this small size map.

7.4 Answering the research question

This section answers the following subpart of the research question, concerning the evaluation of iHitch:

> ***"How do users interact with and perceive a cross-platform Location-based service supporting wandering, travelling, visiting, and transitions between these?"***

Test users interacted with and perceived iHitch on a variety of levels in the three types of mobility.

We found that the interface supporting the visiting type of mobility was quite intuitive and provided the test users with sufficient overview in order for them to understand the spatio-temporal information presented. Most users possessed prior knowledge with virtual map interaction and this is the main reason that the visiting interface was found intuitive.

The interface supporting the travelling type of mobility was found to provide the test users with an intuitive representation of spatio-temporal information because the interface supported the dynamic movement of the vehicle. We found that centering the map on the location of the vehicle supported the test users' perception and understanding of the surrounding spatio-temporal information such as hitchhikers and the physical environment.

The interface supporting the wandering type of mobility was found to be complex to understand. It was found difficult to understand the representation of other users of iHitch in relation to the test user. The dynamic movements of other users in relation to the movement of the test user were not reflected dynamically in the interface. It was found difficult to understand this static representation of dynamic movement and the test users were found to be stressed due to their lack of controlling the pace of the test because they had to meet the drivers' time demands.

Visual and textual elements were found to complement each other in the test users' perception of other users of iHitch and to support the transition between visiting and a non-visiting type of mobility. Static elements were found to support the transitions based on the test users' remembrance of icons, colors and text or a combination. When an element was expected to be static by the test persons, and this element was slightly altered during a transition, it was found to

be surprising and unexpected by the test persons. We argue that this is a consequence of the system violating the test users' mental model of how they perceive the system.

Active elements were found to support the transitions between mobility types. The test users expressed the understanding of a connection when an action during the visiting type of mobility was followed by a reaction in non-visiting type of mobility. The combination of static and active elements was found to be a strong support of transitions due to the increased amount of similarities between multiple types of mobility.

8 Conclusion

To conclude this thesis we will now answer our main research question:

> ***"How can a Location-based service be designed to support the three types of mobility: wandering, travelling and visiting, and the transitions between these?"***

In order to answer this question we made four subparts consisting of specialized questions on which the structure of the thesis is based. Through the thesis we answered the questions one by one.

In the literature-review we found that 52 out of 1263 papers within the research area of HCI and mobile devices concerning Location-Based Services support at least one type of mobility in terms of our interpretation of the mobility term as described in chapter 3.

Out of the 52 papers concerning development of Location-based services, four of the papers were concerned with supporting the travelling type of mobility and ten of the papers were concerned with supporting the visiting type of mobility. The remainder supporting the wandering type of mobility.

A very limited amount of research within the field of HCI and mobile devices concerned Location-Based Services involving two or more types of mobility. Nine of the 52 papers concerns two or more types of mobility and only one address the issue of transitions between types of mobility explicitly. In one other paper a transition is observed by the authors but the issue is not further addressed. We can conclude that current research in Location-Based Services does not focus on transitions between types of mobility and only limited on the single types of mobility. We consider the large overweight of papers concerning the wandering type of mobility to be a consequence of the outlets chosen, since they primarily describe mobile devices.

In our investigation of the use case of hitchhiking we found that the most important element to support is the communication between participants. The visiting type of mobility was found to be characterized by supporting planning tasks and creating foundation for communication. The wandering type of mobility was found to be characterized by a continuously changing complex environment and a technical limitation of communication support to be mobile phones only. The travelling type of mobility was found to be characterized by a safety critical domain and huge differences in interaction possibilities and focus of attention of drivers and hitchhikers. The term travelling was found to be insufficient in describing the characteristics of both the driver and the hitchhikers when in a vehicle.

The characteristics of transitions in the use case of hitchhiking were to demanding of the users' ability to remember information, and to reflect a change in the use of this information. Transitions from visiting to a non-visiting type of mobility changed the context from planning and creating overview of information into making use of this, often spatio-temporal, information.

We designed the prototype iHitch to support a technologically extended use case of hitchhiking by including GPS functionality and map interaction. iHitch is designed as a tool for our evaluation and not as a system supporting the entire case. The design consists of very different interfaces supporting the three types of mobility with the purpose of making test persons reflect upon patterns and similarities of the data contents provided by the interface across types of mobility. We hereby designed to support our evaluation of the test persons' perception and understanding of transitions between types of mobility.

We evaluated iHitch based on two context scenarios depicting the actions of a driver and a hitchhiker in the use case of hitchhiking. A finding indicated that the interface supporting the visiting type of mobility provided the test persons with a sufficient overview and navigational interaction possibilities. This was mainly due to the large map, simple interface and familiarity with virtual map interaction among the test persons. Few findings specifically concerned the interface of the visiting type of mobility which is a consequence of our design and evaluation approach. The interface was utilized as a means to provide the test persons with information used to evaluate the recognizability of this information during transitions.

A finding suggested that the interface supporting the travelling type of mobility provided less spatio-temporal information than the test persons expressed as optimal. The interface was designed with a focus of simplicity in respect to the safety critical domain entailing limitations in interactability. The test persons requested a higher degree of support of the link between information on the interface and the physical surroundings like more names of roads and specific address information of hitchhikers. The map based on aerial photos was less supporting of the user's spatial overview than the map of the visiting interface, but at the same time it supported the user's ability to relate specific elements on the map to the physical surroundings. This is a result of our design of supporting the evaluation of test persons' perception of the different interfaces. The test persons were able to understand the representation of spatial information on the map and relate this information to the physical surroundings.

A number of suggestions to improve the interface supporting the travelling type of mobility were revealed. These include audible feedback to support a change in information on the interface in order to allow for less attention on the interface. It was expressed by test persons that the interface was considered complex and contain too much information to properly support a driver while he is driving a vehicle.

The interface supporting the wandering type of mobility was very difficult to understand for the test persons. This interface was designed with the focus of making it the most simple and clear of all interfaces of iHitch. The static representation of spatio-temporal information was unable to support the test persons in understanding and relating this to the real world physical surroundings in relation to the test person's own location and the location of drivers. Some of the test persons became stressed during the test as a result of them being unable to understand the representation of spatio-temporal information and their lack of control of the situation since they were dependent of the movement of the drivers. We found that the test persons requested support for a dynamic

map to increase support for spatio-temporal information. We can conclude that the wandering type of mobility is not as limited by the small form factor on a mobile phone and the case of being a hitchhiker as our design suggests.

The use of redundant information across types of mobility supported the test persons' perception of transitions. It was very individual to the test persons if they saw the textual or iconic elements as the better supporter of transitions. Passive elements like profile information based on a variety of categories were found to support the transitions. Active elements based on actions and reactions across types of mobility were found to support the test persons in relating the data contents of the interfaces to that equal of another type of mobility and hence support the transitions. We conclude that the combination of passive and active elements enhance the user's understanding and recognition of working with the same data across multiple types of mobility.

9 Limitations

This chapter describes the limitations of the thesis.

In the evaluation tests of the driver interface, the test persons acted as passengers in the car and not as drivers. This was a deliberate choice based on our focus. We did not focus on evaluating the test users' ability to interact with and perceive the system while sharing attention between the system and driving the vehicle safely. Our focus of the evaluation was the test users' ability to interact with and perceive the prototype in relation to their understanding of, that they were represented with and manipulated the same information in multiple types of mobility.

The selection of the test persons created a bias because of an overweight of males and technical oriented students. A broad selection of representatives of the average hitchhiker users might have given us different evaluation results.

The map in the interface supporting the wandering type of mobility was static and did not provide any means of interaction or updates. A dynamic map would possibly have provided a significantly better overview in supporting the test users' perception and understanding of spatio-temporal information. There exist, to our knowledge, no such platform providing us with the proper technological framework to support dynamic maps on the mobile phone. Since our focus of interest is not based on specific technical details, we relied on frameworks like Google Maps services to support map interaction in the interfaces.

10 Summary

This thesis is based on an interest in location aware mobile devices and map service technologies. The main research question of this thesis is:

> ***"How can a Location-based service be designed to support the three types of mobility: Wandering, travelling and visiting, and the transitions between these?".***

Based on this research question, four subparts are investigated and answered through the thesis. The first subpart consists of conducting a literature-review in order to examine the characteristics of current research of Location-based services in regards to the three types of mobility and the transitions between them. We have found that very little research has been made with specific considerations regarding the types of mobility and very few papers concern transitions between mobility types.

The second subpart of the research question consists of investigating the use case of hitchhiking in order to characterize it with regards to the mobility types and transitions between them. We have done so by performing a thorough investigation of the case using interviews and acting as hitchhikers ourselves. We have found that there exist little difference between the perspectives of the driver and the hitchhiker in the visiting and wandering types of mobility. In contrast huge differences were found in these perspectives of the travelling type of mobility and we suggest that the term travelling can not describe both driver and hitchhiker.

The third subpart of the research question consists of the design of iHitch. iHitch is our prototype supporting the use case of hitchhiking, involving location awareness and Google Maps services and designed to support the three types of mobility and the transitions between these. We present a number of design considerations regarding how iHitch supports the three types of mobility and the transitions in respect to the use case.

The last subpart of the research question consists of the evaluation of iHitch. The focus of the evaluation is to examine how users interact with and perceive iHitch. This means the users' understanding of a Location-based service supporting the three types of mobility and transitions between them. The evaluation consists of two parts based on the use case of hitchhiking and thereby mimics the actions of drivers and hitchhikers respectively.

We conclude that the test persons are able to understand spatio-temporal information in the interfaces supporting visiting and travelling types of mobility, but not wandering. The wandering interface was found to lack support of dynamic map representation and thereby does not support location-awareness in a proper manner for the users to understand this. The test persons succeeded in understanding the transitions supported by redundant information across mobility types and active elements based on actions followed by reactions across mobility types.

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13 Appendix

13.1 Context scenarios assignments:

Billist - desktop:

1. Du ser en log ind-menu skærmen. Indtast dit brugernavn, som er dit rigtige navn og et kodeord som er ”billist” uden gåseøjne.
2. (Kort af Danmark) Hvad ser du og hvad tror du det betyder?
3. Det er nu din opgave at zoome ind på Fredrik Bajers Vej 7E, altså her hvor vi sidder lige nu, så det er muligt at se vejnavne på vejene i nærheden på kortet.
4. Du ønsker at se profilerne for nogle af de mulige passagerer, der opholder sig i området. Naviger rundt i området for den nuværende adresse og find navn, alder, og destination passagerer.
5. Du ved, at du skal ud og køre en tur fra din nuværende adresse Fredrik Bajers vej 7E, Aalborg Øst til adressen Romdrupvej 122, Klarup indenfor kort tid. Find ud af hvor man indtaster sin tur i systemet og indtast adresseinformationerne førnævnte adresseinformationer.
6. Du vil gerne have to af de mulige passagerer langs ruten med op og køre. Find navnene på de personer der står langs din rute.
7. Du vil gerne have Jens Vindestrup og Linda Nielsen op og køre. Send en anmodning til dem, om de har lyst at køre med. Hvad sker der og hvad tror du det betyder?
8. Nu hvor du har kontaktet nogle af passagererne på din rute, vil du gerne starte din tur, selvom du ikke har fået svar fra de to kontaktede personer endnu. Kan du sige mig hvad du tror du skal gøre nu?
9. Hvad tror du, at der skete da du trykkede ”Overfør til bil”?

Billist - i bilen:

1. Prøv at navigere lidt rundt i systemet, ved at bruge profil-listen i venstre side af skærmen. Hvilke profiler indeholder listen?
2. Find ud af om Jens er ryger.
3. Vi starter bilen og du skal fortælle hvad der sker på skærmen og hvorfor det sker.
4. Du ser nu en meddelelsesboks på skærmen. Hvad fortæller meddelelsesboksen?
5. Tryk OK.
6. Hvad er det sket med profil-listen og hvad tror du det betyder?
7. Det er nu dit job at fortælle chaufføren, hvornår han skal stoppe for at samle Jens Vindestrup op.
8. Du modtager nu endnu en besked. Hvad fortæller den?
9. Vælg at få vist, hvorhen Linda Nielsen har flyttet sig. Hvad tror du det betyder, at hun har flyttet sig?
10. Det er nu dit job at fortælle chaufføren, hvornår han skal stoppe for at samle Linda Nielsen op på hendes nye position.

11. Efter at have samlet Linda Nielsen op, kommer endnu besked. Denne gang fra Birgitte Jensen, som ønsker at komme op og køre. Da Linda skal af samme sted som Birgitte Jensen skal samles op, vil du gerne have hende med. Find derfor ud af hvor Birgitte Jensen står henne.
12. Vælg at samle Birgitte op. Hvad er det sker med profil-listen og hvad betyder det?
13. Det er nu dit job at fortælle chaufføren, hvornår han skal stoppe for at samle Birgitte Jensen op på hendes nye position.
14. Undersøg om der er andre potentielle passagerer nær din rute, du ikke har været i kontakt med. Hvis der er det, så kontakt vedkommende med forspørgelse om, de har lyst at komme med op og køre.
15. Du fortæller chaufføren, hvor han skal stoppe og samle Mette Thisted op.
16. Du kommer til din destination og testen er slut.

Passager - desktop:

1. Du ser en log ind-menu skærmen. Indtast dit brugernavn, som er dit rigtige navn og et kodeord som er "passager" uden gåseøjne.
2. Hvad ser du og hvad tror du det betyder?
3. Det er nu din opgave at zoome ind på Fredrik Bajers Vej 7E, altså her hvor vi sidder lige nu, så det er muligt at se vejnavne på vejene i nærheden på kortet.
    a. Du ønsker at se profilerne for nogle af de mulige billister, der kører i nærheden af dig. Naviger rundt i området for den nuværende adresse og find navn, alder, og destination passagerer.

Passager – mobil:

1. Du skal bevæge dig ud til den rute, som du aftalte du gerne ville med på PC'en. Spørg brugeren "hvad han gerne vil gøre, for at kunne nå hen til sin destination."
    a. Følg brugeren ud til Fredrik Bajers Vej, for at nå hen til ruten, og så blive samlet op.
2. I bliver smidt af ved Alfred Nobels Vej, da chaufføren skal til venstre mod Gistrup i stedet for at køre mod Sdr. Tranders, som oprindeligt var planen, og som ruten også foreskrev på computeren.
    a. Opgaven til brugeren er så at finde en ny rute som kører mod destinationen. Der er en rute som går gennem Sdr. Tranders som I kan nå, og bliver derfor nødt til at gå mod destinationen.
    b. Det er vigtigt at I går samtidig med at brugeren interagere med systemet.
    c. Brugeren skal initiere kontakt med chaufføren i bilen som kommer fra Sdr. Tranders.
    d. I bliver samlet op når I når hen til krydset
3. I bliver smidt af ved rundkørslen der går ind mod Klingenberg, og chaufføren kører ligeud.

    a. Brugeren skal finde en ny chauffør som kommer forbi, som kører mod AAU, da I lige har fået en Pizza og gerne vil hjem. Han finder en ny rute, som ikke har været på listen før, og sender en anmodning om at blive samlet op.
    b. Den sendte anmodning bliver afvist.
4. Brugeren får en inviation om at blive kørt til AAU, hvilket brugeren acceptere.
    a. Og i bliver hentet, og kører så mod AAU, hvor I bliver sat af.

13.2 Test supervisor -guide Wandering

Spørgeskema (5 min):

Gennemgå hvad der skal ske i løbet af den næste times tid. Det kommer til at bestå af fire dele: Spørgeskema, testen foran desktop, testen ude i felten, efterfølgende interview.

Sørg for ikke at fortæl for meget hvad systemet går ud på, da det er bedre at de selv ræsonnere sig frem til det. Dette burde være muligt for dem at gøre, på basis af brugen af Visiting, og at vi siger at de skal hitchhike.

Udlevér spørgeskema og sig at det er et grundlæggende spørgsmål om dig og spørgsmål i relation til de efterfølgende test. Hvis der er nogle spørgsmål til spørgeskemaet, skal de bare sige til.

Tag imod spørgeskemaet og gå over til PC med systemet.

Test 1 – Desktop (15 min):

Gennemgang af systemet:

1. Hvad er formålet med systemet?
    a. Brugeren står for at skulle ud på en mindre tur, og benytter sig gerne af at tomle, da det skåner miljøet, og man sparere lidt penge på det. Systemet muliggører at kontakte andre ligesindede der udbyder køreture, pga. sociale og miljømæssige årsager. Disse ”chaufførere” koordinere deres køreture forinden en køretur, og muliggøre derved for blaffere at kunne anmode om en køretur. Ligeledes kan ”chaufførere” sende invitationer til brugere.
2. Hvad er det vi vil teste (vi vil ikke teste testpersonerne!)
3. Hvordan vi have dem til at opføre sig?
    a. De skal lade som om de er tomlere der gerne vil op at køre med andre.
    b. Forklar tænkehøjt-test, hvis nødvendigt.

    c. Vi filmer dem, men det er kun for at huske hvad der er blevet sagt og ikke andet.
4. Gennemgå de enkelte funktioner og tegn i systemet
    a. Hvordan navigerer man (zoom, pan osv.).
    b. Gå i gang med opgaverne og udlevér tegnbeskrivelse (Hvad betyder, blå, grøn, gul og rød mand)
5. Uddybende spørgsmål omkring desktop-interface
    a. Har du en forståelse af hvad hensigten var med de opgaver jeg stillede eller var der uklarheder?

Test 2 – På gaden (~20 min)

1. Overordnet forklaring af hvad systemet kan, meget overordnet. Spørg hellere test-deltageren hvad han/hun forventer og ræsonnere sig frem til.
    a. Giv brugeren mulighed for at lege rundt i systemet
    b. Spørg til hvad de tænker
    c. Giv dem mulighed for at stille spørgsmål til systemet
    d. Sæt brugeren i gang med opgaverne
    e. Sørg for at spørge ind til hvad brugeren tænker, hvis denne ikke selv ytre det.

Interview (15 min):

1. Gennemgå listen med spørgsmål.
2. Sig tak og farvel.

13.3 Test supervisor - guide travelling

Spørgeskema (5 min):

Gennemgå hvad der skal ske i løbet af den næste times tid. Det kommer til at bestå af fire dele: Spørgeskema, testen foran desktop, testen ude i bil, efterfølgende interview.

Udlevér spørgeskema og sig at det er et grundlæggende spørgsmål om dig og spørgsmål i relation til de efterfølgende test. Hvis der er nogle spørgsmål til spørgeskemaet, skal de bare sige til.

Tag imod spørgeskemaet og gå over til PC med systemet.

Test 1 – Desktop (15 min):

Gennemgang af systemet:

6. Hvad er formålet med systemet?
    a. Hvis man ved at man skal ud og køre en tur og man gerne vil tjene lidt penge til benzinen på at samle folk op, som har meldt sig til systemet. Systemet gør det muligt at kontakte mulige passagerer, samt indtaste den rute man kører, hvilket

resulterer i at systemet beregner de den mest optimale rute at komme fra a til b samtidig med at får samlet så mange så mange mulige personer op.

7. Hvad er det vi vil teste (vi vil ikke teste testpersonerne!)
8. Hvordan vi have dem til at opføre sig?
    a. De skal lade som de er en billist, der er tilmeldt det her system. Men de skal ikke ud og køre bilen selv, dertil har de en chauffør.
    b. Forklar tænkehøjt-test, hvis nødvendigt.
    c. Vi filmer dem, men det er kun for at huske hvad der er blevet sagt og ikke andet.
9. Gennemgå de enkelte funktioner og tegn i systemet
    a. Hvordan navigerer man (zoom, pan osv.).
    b. Gå i gang med opgaverne og udlevér tegnbeskrivelse (Hvad betyder, blå, grøn, gul og rød mand)
10. Uddybende spørgsmål omkring desktop-interface
    a. Har du en forståelse af hvad hensigten var med de opgaver jeg stillede eller var der uklarheder?

Test 2 – I bilen (20 min):

1. Gennemgang af systemet
    a. Forklar forskel imellem desktop og bil-interface, altså måden hvorpå man interagerer og hvad med ser på skærmen (men uden at gå for meget i detaljer).
    b. Lad dem lege (navigere) lidt med systemet.
    c. Spørg ind til, hvad de tror de ser på skærmen (måske noget med hvordan om de forstår hvordan de selv er repræsenteret).
    d. Spørg om de har nogle spørgsmål, inden I går i gang?
    e. Gå i gang med opgaverne.
    f. På vej tilbage fra Klarup, spørg om de forstod hensigten med de opgaver, der blev stillet.

Interview (15 min):

3. Gennemgå listen med spørgsmål.
4. Sig tak og farvel.

13.4 Spørgeskema

Først vil vi gerne sige tak for at du har indvilliget i at deltage i vores eksperiment. Inden vi introducerer dig for hvad vi skal lave i dag, vil vi gerne have at du udfylder dette spørgeskema. Grunden til spørgeskemaet er at give os nogle oplysninger om dig som bruger, der kan give os et

mere nuanceret billede af vores testdeltagere. Hvis du føler at du kan uddybe dine svar yderligere, er du yderst velkommen til at gøre dette hvor du lyster på arket.

1: Hvor gammel er du? _____

2: Køn? _____

3: Nuværende beskæftigelse: _____

4: Uddannelse: _____

5: Anvender du Internet/Wap på din mobiltelefon?

Aldrig _____ Sjældent _____ Ofte _____ Meget_____

6: Anvender du services, såsom e-mail, kalender, messenger, på din mobiltelefon?

Aldrig _____ Sjældent _____ Ofte _____ Meget_____

7: Hvor ofte bruger du en trykfølsom skærm (f.eks. PDA eller DSB billetautomater)?

Aldrig _____ Sjældent _____ Ofte _____ Meget_____

8: Hvor ofte bruger du Google Maps, Krak, De Gule Sider eller lignende tjenester (kort på Internettet)?

Aldrig _____ Sjældent _____ Ofte _____ Meget_____

9: Hvor ofte bruger du Google Earth?

Aldrig _____ Sjældent _____ Ofte _____ Meget_____

10: Har du erfaringer med at bruge GPS[1]?

Ja_____ Nej_____

Hvis ja, så uddyb venligst herunder:

_____
_

_____
_

_____
_

11: Hvordan anser du generelt dine IT-kundskaber?

Begynder_____ Øvet_____ Ekspert _____

12: Har du prøvet at tomle?

Ja_____ Nej_____

13: Har du samlet en blaffer op?

Ja_____ Nej_____

14: Anser du dig selv som have en god stedsans?

Ja_____ Nej_____

[1] Global Positioning Service. Dette er en teknologi der gør bæreren af en enhed, som f.eks. en mobiltelefon, med GPS mulighed for at se hvor denne befinder sig. Dette er ofte en service der repræsentere ens lokation på et kort, og bruger denne information til at udbyde en service, såsom bil-navigation.

13.5 Affinity notes

07.36	TV-01	Han antager først at profil-vinduet er hans egen profil, men tror også godt det kan være profil vinduet en han kan tage med op og køre.
09.13	TV-01	Han synes at profilerne på kortet minder om hans eget profilbillede i hjørnet.
10.30	TV-01	Han antager at ikoner på kortet er passager-profiler og han kan også se at man kan trykke på profil-ikonerne. Han vælger at trykke på et af dem.
10.40	TV-01	Antager at destination i profil-vinduet er der hvor de skal hen.
13.55	TV-01	Synes at farver på profil-ikoner er lidt misvisende. Blå symboliserer frit rum. Den mørke farve virker nedtonet. Synes måske at rød og grøn kunne være bedre.
15.43	TV-01	Har en forventning om at den gule farve betyder det samme som trafiklys. Man har ikke fået bekræftet sin anmodning.

This section of the appendix consists of affinity notes from test persons. The first column is a time code the second column consists of a code, representing e.g. TV as travelling-visiting etc. The number following the dash provided us with information about which test person the note came from.

17.09	TV-01	Han forventer at information om ruten og de foretagne anmodninger til vist på bil-interfacet.

04.27	T-01	Ligge mærke til at kortet bliver opdateret med den rute som er blevet tilbagelagt.
05.10	T-01	Opdager at bil-ikonet på kortet bliver rødt, når bilen ikke kører.
06.05	T-01	Ligger først mærke til at Jens er blevet grøn på kortet, men der går et stykke tid før han ser at det samme er tilfældet i listen.
07.05	T-01	Bruger kortet samtidig med han kigger ud af vinduet til at navigere. Bruger 40-kilometer skilt som pejlemærke.
07.50	T-01	Ser at Jens tekstuelle status er blevet ændret
08.30	T-01	Går ud fra at det grå ikon er Lindas tidligere position
08.45	T-01	Er ikke helt klar over hvad han skal foretage sig, nu Linda har flyttet sig.
11.15	T-01	Bruger langt tid på at trykke på tilbage i Lindas profil vindue. Funktion deaktiveret, hvilket også skaber forvirring hos testlederne. Bliver frustreret. Mener ikke at knappen skulle have været.
15.40	T-01	Virker distraheret af nærheden af golfbanen.
15.50	T-01	Ligger ikke mærke til at profil-listen er blevet ændret til anmodning.
16.30	T-01	Synes ikke at Birgittes ikon på kortet bliver grøn, men ser at hun er det i listen og at hun skal med op og køre.
17.30	T-01	Ligger mærke til vejskilt mod Romdrup.
18.40	T-01	Bruger lidt tid på at finde ud af om der er nogen personer på hans rute han ikke har kontakt. Ser ud til at han læser det på Mettes profil. Ser ikke ud til at han husker det fra desktop.
18.58	T-01	Mener ikke at han er nået til Mette endnu og vælger derfor at se hvor hun er henne.
20.40	T-01	Observerer at bliver kommet til at blive overfyldt, men ser på profil-listen og ser at alle andre skal af i Romdrup og ræsonnerer sig derfor frem til at det ikke bliver et problem.
21.15	T-01	Mener at vi har kørt forbi Mettes position. Mener hun var på gården.
??.??	TI-01	Synes det var svært at se, hvor langt der var til profiler på bil-interface.
??.??	TI-01	Langsomt at få vist position på profiler.
??.??	TI-01	Ikke så godt overblik i bilen, måske bedre med Google Maps på bilinterfacet også. Have en overblikknap til at få vist hele ruten.
??.??	TI-01	Synes ikke det var klart at Maps var i real tid, og manglede generelt tid på Maps-delen, så man kunne se hvornår man skulle samle folk op.

		Comment
06:20	TV-02	Profilvinduet fortæller noget om mig. Jeg kan sikkert taste noget ind, på et tidspunkt.
07:20	TV-02	Prøver at klikke på kortet, for at zoome.
07:50	TV-02	Efterspørger at kunne trække en boks for zoom-vinue
08:30	TV-02	Ikonerne har tilsyneladende også en profil herinde, for de svarer til den firgur jeg har deroppe. De er nok passagerer.
08:55	TV-02	Klikker på ikonerne for at finde profil. Ingen problemer. Gennemgår forskellige profiler.
10:30	TV-02	Trykker enter før han trykker vis rute. Enter virker ikke.
10:50	TV-02	Der er 4 personer jeg kan samle op, hvis jeg vil køre en lille omvej
11:20	TV-02	Første indskydelse er at droppe "ham den nederste" – klikker på Birgittes profil og ombestemmer sig meget hurtigt.
11:40	TV-02	Identificerer de grå – der er zoomet meget ind, så han siger det ikke med det samme. Christian spørger ind til det. De grå er uøkonomiske eller det tager for lang tid at hente dem.
12:50	TV-02	Opdager at Jens bliver gul. Sidder og overvejer hvad det betyder. Resonerer sig frem til, at han nok venter på et svar fra Jens.
13:50	TV-02	Gætter hurtigt at han skal trykke på "overfør..." og snakker om, at der nok er et device der modtager data.
14:00	TV-02	Hvis jeg går ud i bilen nu, så forventer jeg at den rute er der, og når jeg begynder at køre så forventer jeg at, inden jeg når frem til de personer jeg har sendt noget til, at de kontakter mig og så står ude ved vejen eller noget. Hvis ikke, så kører jeg bare forbi.
14:30	TV-02	Savner tidspunkt i forhold til hvor lang tid der går før passagererne er på de positioner ikonerne repræsenterer. Han påpeger, at det kan være de allerede er der, men han ved det ikke. Det kan også være en er på McDonnalds og så vil møde

		mig der (hvor ikonet er).
15:00	TV-02	Det ville også være fornuftigt, hvis jeg ku fortælle hvornår jeg er der, så han ikke bestiller en megaburger på McD og står i kø i lang tid.....
15:35	TV-02	Efterspørger at kunne skrive, at der ikke må komme husdyr med i bilen, rygeinfo, etc. Han sidder og klikker lidt rundt på loginskærmen mens han forklarer.
06:20	T-02	Han går ud fra, han venter svar fra Linda og Jens fordi de er gule. De blå er nogle, han ikke har kontaktet, men de er i nærheden af hans rute.
09:40	T-02	Opdager at Mette er ryger. Bemærker, at den information ikke var til stede på desktoppen.
10:15	T-02	Spørger om han skal se "deres" (passagerernes) ende af systemet. Han antager altså, at de render rundt med et device.
11:50	T-02	Opdager at kortet drejer, når vi kører.
15:10	T-02	Jens er blevet grøn – så har vi kontakt med hinanden. Og han skal med mig. Bemærker, at ikonet på kortet også er grønt.
17:40	T-02	Bemærker at Jens' ikon på kortet flytter sig (øhh, det gør det vist ikke? Måske synsbedrag når ikonet reloades?) og spørger om der faktisk står en person der.
18:05	T-02	Opdager hurtigt, at "Jens er med i bilen"
18:35	T-02	Han undrer sig over, hvorfor Jens' position bliver ved med at være på kortet, efter vi har samlet ham op.
18:40	T-02	Ser at Linda har sendt en accept – umiddelbart læser han ikke, at hun har flyttet sig (tror jeg). Da han ser profilen, læser han op, at hun har flyttet sig. Det er uvist hvornår han opdager det.

19:00	T-02	Vælger at se, hvor Linda er nu.
19:15	T-02	Linda er, så vidt han kan se, stadig på ruten. Det er uvist om han ser begge positioner.
19:40	T-02	Linda er blevet grøn – hun har acceptet.
20:25	T-02	Christian siger ”hun er med” – Peter følger op ”Ja, hun er med. Den er kommet ind” (tekst på skærmen).
21:00	T-02	Der går 10-15 sekundter før han læser beskeden fra Birgitte. Han vælger hurtigt at se hvor hun står.
21:20	T-02	”Hun har jo stadigvæk det der lille... Nu skal jeg jo faktisk køre længere end før”. Det er tydeligt, at han husker hende på profilbilledet (fordi hun er hot).
21:40	T-02	Han vil ikke have Birgitte med, selvom hun ser sød ud – fordi vi skal køre lidt længere, og han tænker benzinøkonomisk.
22:00	T-02	Birgitte bliver grøn, efter han har accepteret at tage hende med. Han nævner, at han også nåede at se, at ikonet på kortet blev grønt.
22:40	T-02	Bemærker, at GPS’en er lidt bagefter.
23:30	T-02	Perspektiverer lidt over, hvornår der står ”x er med i bilen”. ”Skal man holde stille? Hvad nu hvis jeg bare er kørt forbi, og der står hun er med, men det er hun ikke?” Jeg tror ikke det er relevant.
24:20	T-02	Er interesseret i, hvor Mette står, før han tager hende med. Identificerer at det er lige på ruten, samt at hun bliver gul. Bemærker, at det betyder, at han venter på hendes svar.
25:15	T-02	Opdager efter 10 sek at Mette har accepteret, samt at hun er blevet grøn. Han forventer, hun står et sted på kortet – efter få sekundter ser han hende.
26:00	T-02	Bemærker, at han ikke har lagt mærke til at der står ”Xs position” udfor andre end Mette. Der er meget genskind – det nævner han også. Jeg tror kun det er ordet ”position” han har overset.
27:10	T-02	Undrer sig over, at vi ikke skal sætte passagererne af, før testen er slut.

27:30	T-02	Spørger om vi ikke kan slette passagererne fra listen.
29:00	T-02	Vi tager lidt af interviewet på vej hjem. Man har bedst tid og overblik på desktoppen. At der er en der melder sig til (birgitte) i bilen, det kan man godt håndtere, men man kan ikke håndtere, at skulle læse en hel masse samtidig med at man kører. Derfor er det vigtigt med brugerinfo (ryger) på desktoppen.
30:10	T-02	Det skal ikke være chaufførens opgave at tage stilling til, hvorvidt folk er rygere, har dyr med etc. Det skal være nogle information, man har i profilen, så folk tager stilling til det, før de kontakter en billist.
0:45	TI-02	Planlægning på desktop er stille og rolig. Man kommer ofte for sent ned i bilen, og så er det rart at have gjort det på et andet tidspunkt.
1:20	TI-02	Foreslår at få tidsinterval ind som en del af systemet, bl.a. jævnfør ovenstående.
2:00	TI-02	Det virker intuitivt! Tror først profilvinduet er ham selv. Ingen problemer med at afkode at det er de andre, efter at have trykket på en passager.
2:50	TI-02	I første omgang skal man lige vide hvad den gule betyder, men det kommer jo hurtigt.
3:10	TI-02	Meget naturligt, at de bliver grønne.
5:15	TI-02	Det er fint at du kan planlægge en rute, men senere – i bilen – ombestemme dig, eller modtage nye requests.
5:40	TI-02	Profilbilledet hjælper meget – så kan man genkende folk fra desktoppen. Og hvis hun ser sød ud, kan man jo godt tage hende med.
6:20	TI-02	Efterspørger auditiv notits når der kommer en besked.
6:45	TI-02	Efterspørger en ignorer/afvis-knap, hvis man bare er ligeglad og vil fortsætte med at køre uden at tage stilling til en request.

8:10	TI-02	Efterspørger en ”bilen er fuld”-knap, så man ikke får flere requests ind.
9:15	TI-02	Overvejer hvilket interface han foretrækker. Det er ikke umiddelbart klart. Jeg tror han perspektiverer i forhold til, om man planlægger eller ej. Ikke et entydigt svar.
9:40	TI-02	Hjemmefra kender jeg jo området. Det er når jeg skal ud et sted, jeg ikke kender, jeg skal bruge kortet.
13:00	TI-02	Til spørgsmålet om hans opfattelse af, at de to dele af systemet arbejder med samme data: ”Det ville jeg jo sådan set forvente af sådan et system”.
13:30	TI-02	Hvis jeg køber et system med noget Google Maps og inkl et system til bilen, så vil jeg da forvente at de oplysninger jeg har på pc’en svarer til de oplysninger der er i bilen.
13:40	TI-02	Det er fint at have rent 2d kort på desktoppen og luftfoto i bilen, så man kan se hvad det er man kører forbi. Han ”savner” guide-stemmen fra navigationssystemer.
14:20	TI-02	Jeg synes det er et smart system. Det downloader jeg når det kommer på markedet.
Kim - Desktop		
06.50	Tror profilvinduet er eget profilvindue	
09.15	Ved at man skal trykke på ikon for profil-information	
09.20	Ved ikke om det er chauffør el. passager, der er på kortet	
11.36	Kan se at farver på ikoner er ændret. Gætter også rigtigt på betydning af ikonskifte.	
12.20	Tror ikke at ruten er shortest path, men mest optimale rute for at få nogen med op at køre	
14.10	Forventer nye valgmuligheder efter tryk på "Kontakt profil"	
14.30	Forventer at man har sendt anmodning og afventer svar fra modtager, hvis ikon er gult.	
15.02	Trafiklys-metafor.	
16.00	Finder det intuitivt at han får overført rute data, når tryk på "Overført til bil"	
16.50	Forventer rute og passagerdata er overført til bilterminal.	
Kim - Bil		
03.04	Siger at det er det samme som han så på desktop, bare repræsenteret på en anden måde. Genkender de blaffere som han har kontaktet.	

03.27	Vi ved ikke om han kan genkende de blå profiler
05.00	Går ud fra at han skal trykke på profil for at se profil oplysninger
05.20	Han går ud fra at han kan få vist jens' position når han trykker på knappen
06.50	Han registrerer at han ikke ser vores position lige nu men Jens'
07.45	Han ser at position på kortet bliver opdateret og han genkender at ruten på kortet er den samme som på Desktop
09.30	Han er klar over at det er en af de aftaler han lavede inde ved desktoppen, som han har fået svar på
09.50	Han opdager både at jens er blevet grøn i listen og der står "Jens har accepteret"
10.45	Han synes at positionen bliver opdateret rimlig rpæcist. Så han forventer at kunne se Jens på kortet. Ergo har han forståelse for spatial information i relation til "virkelige objekter/personer"
11.15	Han er præcis i forhold til at stoppe bilen på detrigtige sted. Han forventer at han kan se Jens stå i vejkanten (Kigger i den rigtige retning)
11.30	Han opdager at der står at jens er med i bilen.
12.05	Han er klar over at vi venter på et svar baseret på noget der er skete på desktoppen.
14.59	Han siger selvom hun har flyttet sig, vil vi stadig gerne have hende med
16.10	Han siger: "så er det selvfølgelig opdateret med at hun er med i bilen også"
16.57	Han har modtaget en besked fra "én Birgitte jensen". Ergo ved ikke hvem det er.
18.55	Han bruger meget at kigge ud af vinduet og kigge ned på kortet for at finde frem til opsamlingsstedet.
20.15	Han får vist Mettes position for at se om hun er i nærhenden af ruten. Ergo han ved ikke at hun ruten er beregnet ud fra at hun er i nærheden.
Kim - Interview	
03.20	Han mener at når man først har prøvet systemet, så er det let at bruge.
05.00	Han er kommet frem til at dem der er relavante for mig de er på listen over profiler i bilen.
06.40	Opfatter kun kort i bil som overblik og ikke interagerbar, i modsætning til Maps, hvor man også kan interagere.
07.05	Han mener, ud fra tidligere erfaringer at han kun kan interagere med profillisten i bilen. Kun med synlige interaktionsmuligheder
10.40	Han ræsonnerer over forskelle imellem mobilititetstyperne. Foran desktoppen har du meget tid, imens man ude i bilen skal være oppe på mærkerne.
12.00	Han kan genkende bil-interfacet fra andre GPS navigations-systemer.
12.50	Han er klar over at hans position er en ekstra faktor på bil-interfacet, han er mere interesseret i at finde ud af hvor folk er i forhold til ham, i forhold til desktoppen, hvor det var mere hvor ruten i forhold til én selv.
15.25	Han kunne godt tænke sig noget kontrol over kortet på bil-interfacet
17.30	Han kunne godt tænke sig en Gem-knap
18.00	Han vil gerne logge ind i bilen også, da der kunne være flere brugere der brugte bilen.

19.40	Forvirring over hvad ikoner betyder: Passager eller billist.

		Comment
08:15	TV-04	Hvis der havde været flere oplysninger i profilvinduet, kunne han have set om det var ham selv. Det kan også være andre. Uvist.
09:00	TV-04	Enkelt og overskueligt.
10:10	TV-04	Havde måske forventet, han skulle indtaste en rute, i stedet for at zoome ind på FR.Bajers vej. "så jeg skal ikke indtaste en rute... Prøver bare at zoome ind"
10:50	TV-04	Ikonerne tror han, er personer. Måske nogle, der gerne vil samles op. Tror at tryke på ikon vil ændre profilvinduet. Baseret på sideskilningsikonet. Observerer at der ingen kvinder er.
11:xx	TV-04	Han bliver hele tiden ved med at scrolle lidt op og ned, mens han overskuer kortet. Kun få cm, men han bliver ved...
12:00	TV-04	Opdager at der er kvinder i systemet, da han trykker på Linda
13:00	TV-04	Indtaster ruten. Ingen problemer.
13:45	TV-04	Krak har simpliciferet textboksene, men han kan egentlig bedre lide at det er eksplicit, hvor husnr står. Så er man mere sikker på, at den forstår det rigtigt
14:15	TV-04	De personer der ligger på min rute er blevet highlighted. Det er smart. Der er forskel på, hvem der er tæt på. Måske man kan udvidde den parameter, så man også kunne tage andre med. Hvor langt fra ruten man er villig til at køre.
15:35	TV-04	Observerer at Jens er blevet gul. Nu er der sendt en anmodning. Måske noget med, at han skal blive grøn på et tidspunkt hvis han har accepteret... Måske ville det være rart med en tidsangivelse for, hvornår jeg har sendt en anmodning. Perspektiverer i forhold til en lang tur til KBH.
17:50	TV-04	Rart at alt information om ruten er samlet i samme boks.

17:55	TV-04	Er spændt på, når han kommer ud i bilen, om der er kørselsanvisninger
18:15	TV-04	Han kan ikke helt overskue konsekvensen af ”slet rute” – hvad sker der så med de aftaler jeg har lavet? Annulleres de? Det vides ikke.
19:20	TV-04	Og jeg loggede automatisk ud, kan jeg se
19:25	TV-04	Min helt klare forventning er, at det er sendt til bilen og jeg kan sætte mig derud og starte op, og jeg ikke skal igennem at indtaste en rute igen.
		Testen på desktoppen er slut – nu følger bilinterfacet
00:10	T-04	Jeg kan forestille mig, de bliver grønne på et tidspunkt, når de svarer. Jens ville jeg gerne have stående først, hvis det er ham, jeg skal have med først. Det ville være nemmere, hvis der var mange på listen, at grøn var øverst – dem man skal have med først (dvs også gule).
02:00	T-04	Positionen rykker sig. Den røde streg er svær at se, men jeg kan sagtens se den.
03:10	T-04	GE-problemer, Mads læser ikonforklaringen imens.
04:10	T-04	Han opdager ikke umiddelbart at Jens er blevet grøn.
04:40	T-04	Christian spørger om der er sket noget. Jens er blevet grøn – men han står stadig som nummer 2. Kan ikke huske, om Linda var først på ruten.
05:00	T-04	Har lagt mærke til, at ikonerne også er placeret på kortet – det er super smart. Det er nemmere for ham at indeksere i forhold til vejen og sving. Så ved han, hvor folk er.
05:45	T-04	Holder øje med, om Linda svarer (det har hun ikke gjort)
06:10	T-04	Opdager hurtigt ”Jens er med i bilen – dejligt. Men ellers kunne man måske også have haft en adresse. Så kunne man orientere sig, hvis man ikke kender stedet og lige dytte engang” (det tyder på, han ikke opfatter Jens’

		ikon som udtryk for en GPS-enhed!)
06:35	T-04	”Men jeg går ud fra, jens også har et smart system. Måske med på en PDA. Om ikke andet kan han måske se, hvor jeg er henne”. Vi informerer om, at jens har et smart system.
07:15	T-04	Opdager meget hurtigt, at Linda har svaret. Læser teksten grundigt.
07:40	T-04	Jeg vil gerne se, hvor hun er nu. Det vil jeg meget gerne. Ja, det er smart. Kortet bliver taget fra mig – jeg kan se, hun er lidt længere fremme på min rute, ved den røde streg.
08:20	T-04	Christian: ”hvad betyder de enkelte ikoner i dette tilfælde?” (zoom på lindas 2 positioner) Mads: ”jeg synes hun er blevet grøn. Men umiddelbart vil jeg sige, det er fordi jeg har sagt, hun gerne må komme med. Men kan jeg ikke afvise hun, hvis det er?”
08:51	T-04	Han tager hende med, efter at opgaven er stillet. ”og hun er også blevet grøn, så det er simpelthen perfekt” (her tror jeg ”hun” hentyder til ikonet i venstre side).
09:10	T-04	Christian spørger om noget har ændret sig. ”Bilen skifter mellem rød og grøn. Det er måske når vi holder stille.” Han nævner ikke at der står, at linda er med i bilen.
09:40	T-04	Han er glad for, han ikke skal køre samtidig. Opdager birgittes request (den har stået på skærmen i ca 20 sek).
10:10	T-04	”Altså, hun ser jo sød nok ud. Jeg går heller ikke ud fra, hun er lejemorder”
10:20	T-04	Overvejer om han bare skal tage hende med, eller se positionen først. Ønsker at finde ud af, hvor hun er. Han bemærker også, at den funktion er smart. Han tager hende med uden nærmere overvejelser. Bemærker, at hun er tæt på ruten.
12:00	T-04	Birgitte er med i bilen. Jeg har erfaret, at tekst er noget, jeg koncentrerer mig meget om. Han kunne godt tænke sig, at ikonet i venstre side i stedet blev til en bil, når de var med.
13:30	T-04	Konstaterer at rød/grøn betyder om vi holder stille eller ej.
14:40	T-04	Ved Mette: ”Det betyder lidt for mig, at hun er i nærheden af min rute” (det står der ordret på skærmen) ”men jeg vil godt lige se, hvor hun er henne”

15:05	T-04	”Hun bliver jo gul som hun skal, så nu er min anmodning sendt. Og jeg kan jo også se, at jeg venter på svar fra mette”.
15:30	T-04	Observerer hurtigt Mettes svar.
15:45	T-04	Nu er mette jo blevet grøn, som hun skal. Ser også tekstuel feedback. Bemærker, at det er dejligt med begge dele.
16:50	T-04	Nævner indeksikalitet. Der er meget fnidderfnadder, men det ville nok være nemmere, hvis folk faktisk stod herude. Bemærker, at Mette er kommet med.
19:20	T-04	Han mener, man bruger mange kræfter på at se på kortet.
		Felttesten er slut – nedenstående er interview
0:30	TI-04	Der var ikke noget, der overraskede ham. Opdelingen med kort og interaktion var god.
1:50	TI-04	Rutens optegning: Det var rigtigt nemt at forstå. Nu sidder jeg og tænker på lige linie i forhold til at få passagerer med indenfor en eller anden afstand. Den afstand går jeg ud fra, man kan sætte selv.
3:10	TI-04	Nogle dage har man måske mere tid end andre, og kan lave en detour.
3:30	TI-04	Jeg vil gerne vide lidt mere om folk, før jeg tager dem med.
3:50	TI-04	Jeg er måske for flink, og vil køre folk helt hen hvor de skal. Det dillemma vil jeg ikke stå i, og kører derfor forbi. Interesser og lignende er vigtigt, hvis jeg skulle tage en med til KBH.
5:40	TI-04	Hvis jeg skulle bruge desktopinterfacet i bilen – der er jo overflødige informationer. F.eks. bruger-information (username)
6:50	TI-04	Det kunne være rart, at man ku ændre ruten. Men samtidig bør bilinterfacet ikke blive mere komplekst, så det er svært.
8:00	TI-04	Ikonerne i bilen var en kæmpe hjælp, og det var fedt at de var på kortet. Teksten tager meget opmærksomhed, så ikonerne var meget nyttige. Man behøves egentlig ikke teksten. Et ikon kunne stå og blinke...

09:10	TI-04	Ønsker at kunne indstille diameteren på, hvem der skal inkluderes i ruten
9:50	TI-04	Det var en stor hjælp med ikonet der indikerede bilen.
11:45	TI-04	Jeg ser det som 2 sammenhængende systemer, der komplementerer hinanden. Jeg ser ikke desktoppen som alternativ til bilinterfacet, ser jeg dem som arbejdende sammen. Man skal også passe på, der ikke bliver for stort spring fra desktop til bilen.
12:15	TI-04	Han overvejer lidt, da christian spørger om han kunne forestille sig desktop interfacet, brugt i bilen. Det kunne han egentlig godt, men det er ikke "ja, det er meget klarerer" som så mange andre har sagt.
12:30	TI-04	Jeg synes jo det var rart at den fulgte med (position), og så bliver man jo nødt til at zoome lidt ind (i forhold til desktop), så derfor tror jeg ikke, man kunne bruge view'et fra desktoppen direkte.
12:45	TI-04	Når den fløj til en passager, skulle jeg sidde og holde øje med hvor meget den zoomede, tænke på geografi, hvor mange km er den væk etc, er motorvejen overfor etc. Da kunne den zoome op, så man fik mere overblik. Evt km-angivelse.
13:45	TI-04	Hvis der er en der har skiftet position, kan vedkommende jo være 200km væk, så det vil jeg altid undersøge inden.
14:10	TI-04	Christian: Det stod klart for dig, at det var de samme data? Mads: "Ja, helt sikkert. Ikonerne de hjalp godt med til det. Og så kunne jeg genkende personerne på billederne. Det var også rigtigt godt, fordi det var nærmest der man fik et billede af dem. Navnet betød mindre for mig."
15:00	TI-04	Det fungerede rigtigt godt, den overgang fra desktoppen til bilen. Det var ikke sådan, at jeg tænke hov, nu er alting taget fra mig. I forhold til den opgave at jeg skulle samle folk op, og at det ikke var ruten der var interessant, så fungerede det rigtig fint. De ting man kunne pille ud, var pillet ud. Jeg sad også og overvejede lidt, hvis nu der var 100 personer. Så ville jeg i hvert fald bruge det, at sortere efter hvornår de kommer på ruten.
15:50	TI-04	Han lagde mærke til, at den første han skulle hente, ikke var den første på ruten. Tiden er en vigtigt faktor for ham, at få med i systemet. Hvor langt tid er der, til jeg skal tage stilling til at hente en eller anden. Tiden er næsten aldrig ligegyldig (søndagstur) i dagligdagen.
17:20	TI-04	Det var et spændende system.

		Slut

		Comment
06:00	TV-05	Tror det er hans egen profil i hjørnet. Man kan måske indsætte et billede af sig selv eller trykke på profilen for at indtaste oplysninger.
06:55	TV-05	Antager, at når han indtaster start+slut-adresse, så kan andre se hans rute på et eller andet givent tidspunkt.
08:30	TV-05	Antager at han kan trykke på ikonerne for at se deres profil
10:30	TV-05	"Antager at ruten er den bedste". Udspørges om det er den nemmeste, korteste eller hvad. Det er måske den korteste, men ikke den nemmeste.
11:15	TV-05	Han er i tvivl om, hvorvidt det er en rute vi har indsat, eller om det reelt er den korteste.
11:40	TV-05	Der er en profil i fokus efter han har indtastet en rute. Han antager, at fyren ligger på ruten, men hvem det er, er uvist. Undrer sig over at hans destination er Hjallerup.
12:25	TV-05	At kontakte en profil betyder at tilbyde et lift.
12:45	TV-05	Umiddelbart mener han, de profiler der er på ruten har skiftet farve. Så bliver han i tvivl om de alle var grå eller blå før. Dem der ligger på ruten skiller sig ud nu. De andre er ikke interessante.
14:00	TV-05	Finder det morsomt, at der er 3 der skal til Romdrup den dag. Undersøger alle profiler, og mener det kunne være smart at tage Mette med tilbage til AAU.
15:30	TV-05	Linda har skiftet farve til gul. Undrer sig over, hvorfor der ikke kommer nogle flere informationer. Ved ikke præcist hvor Linda står (adresse, busstop etc).
16:10	TV-05	Han ved ikke hvad der sker, hvis han trykker på Lindas ikon, efter det er skiftet til gult. Der sker ingenting (profilen vises i forvejen).
16:30	TV-05	Gul det er afventende – han kan ikke se, at der er et step mere i kommunikationen med Linda, så han ville foretrække, at hun var grøn nu.

16:55	TV-05	Savner et tidspunkt, efter at have sendt anmodninger til Linda og Jens.
17:00	TV-05	”Nu regner jeg egentlig med, at de står klar når jeg kommer forbi, for jeg kan ikke rigtig gøre mere”
17:20	TV-05	Siger, at han har siddet og tænkt over, hvad ”overfør rute til bil” betyder i et stykke tid nu. Han gætter på, det kan være en besked til linda og jens om, at nu kører han.
17:50	TV-05	Hvis han trykker ”slet rute” forestiller han sig, at ruten forsvinder, at zoomniveau bibeholdes, samt at alle ikoner bliver grå. Som udgangspunkt har man jo ikke nogle med, så derfor mener han, de skal blive samme farve som dem der ikke har betydning for ham p.t. (de grå)
18:55	TV-05	Tanker, før han trykker på ”overfør rute til bil”: ”Det smarte kunne være, nu har jeg ikke fået feedback på, hvor jeg skal samle dem op henne, så når jeg trykker kunne jeg få at vide: Du skal derfra og dertil, på den adresse står jens og på den adresse står Linda og venter. Så kunne man printe det ud, og tage det med i bilen. Det kunne være smart. Med mindre det selvfølgelig røg ned på ens system – hvis man har et ”
19:25	TV-05	Esben: Vi skal ud og prøve et eller andet andet nu. Kenneth: ”Okay, så ville nr 1 for mig nu være, at de informationer blev overført til systemet i bilen. Og det er hvor jeg skal køre fra, hvor jeg skal hen, måske vejvisere, og hvor jeg skal samle folk op henne – og evt tid”.
20:05	TV-05	Han undrer sig over, at han automatisk bliver logget ud. Han ved ikke, om han kan indtaste en ny rute i bilen. Så man kunne måske lige så godt være blevet på kortet – så kunne man slette ruten og lave en til hjemturen etc.
		Slut på desktop-delen. Nedenstående er felttest i bilen
01:30	T-05	Genkender Google Earth og identificerer den røde streg som hans rute
01:50	T-05	De profiler der var gule oppe på desktoppen er kommet herud. De gule står øverst og har ikke svaret mig ang min anmodning om at tage dem med.
02:30	T-05	Og så er der de 2 andre, som åbentbart er åbne for at komme med. Esben: Er det nogle, du kan genkende? Ja, han ved at det er de 2 sidste på ruten.

03:30	T-05	Husker, at Linda ikke er den første på ruten, så går ud fra, at det ikon han kan se på google earth (i horisonten) er Jens. Det passer også med, at det er sønder tranders. (Han er stedkendt)
03:50	T-05	Intiutivt at han skal trykke på en profil
04:10	T-05	Her er så det jeg efterlyste – Jens' position. Trykker på den. Opdager at profilen er ikke-ryger og at det ikke var på desktoppen. Det burde have stået på desktoppen.
5:00	T-05	Kunne godt tænke sig, at zoome ind på jens' position (mere end vores værdi)
05:20	T-05	Efterlyser adresse eller lignende på skrift for Jens' position.
06:10	T-05	Min bil er skiftet farve fra rød til grøn. Samtidig bevæger den sig sgu! Det er smart. Nu kan jeg se, jeg skal til højre om lidt.
06:30	T-05	Den røde linje er ruten fra desktopsystemet. Det har den modtaget deroppe fra. Så det er bare fedt.
06:45	T-05	Jeg har både modtaget mine kontaktpersoner, dem jeg har på ruten og selve ruten fra desktoppen. Så det er jo som det skal være.
07: 10	T-05	Inkonsistens i farven på ruten i forhold til desktoppen.
07:20	T-05	Opdager hurtigt, at jens har svaret på hans anmodning. Opdager at ikonet er blevet grønt. "Skide godt! Det var det vi snakkede om – der manglede noget når han var gul"
07:45	T-05	Men Jens skal med mig nu, så det er som det skal være
08:20	T-05	Kan se jens' ikon på Google Earth.
08:50	T-05	Nu kan jeg godt se det smarte i, at hvis de ikke har svaret på min anmodning, og de ikke står på ruten, så kører jeg bare forbi dem. Og så bliver de bare slettet. Så skal man ikke tænke, og lave en masse aftaler. Det er blafferens ansvar at være der.
09:45	T-05	Opdager at "jens er med i bilen"

10:00	T-05	Vi har netop hentet Jens, og han kan se lindas ikon ude i hjørnet af Google Earth. Han opdager at ikonet er grønt! Det synes han er mærkeligt "for hun er stadig gul her for mig" (i venstre side)
10:10	T-05	Esben: Så du kan se hende? Kenneth: "Ja, jeg tror da det er hende. Nu bliver jeg lidt i tvivl, men øh... Jo, det må være Linda. Hun skulle med lige ved indgangen til Gistrup – men hun har ikke svaret endnu"
10:25	T-05	Nårh, det kommer så her. Hun befinder sig et andet sted, end da jeg kontaktede hende. Han læser teksten grundigt. Det er mærkeligt at hun er et andet sted.
10:45	T-05	Opdager først lindas tidligere position, derefter nuværende. Han er måske den eneste, der hurtigt kan læse "tidligere position". Der er ikke så meget sollys/genskind.
11:00	T-05	"Hun står faktisk endnu bedre for mig, end før". Han tager hende med.
11:45	T-05	Opdager at "linda er med i bilen".
11:50	T-05	Jeg ved ikke, om jeg har brug for den information, at linda er med i bilen... Nu burde de forsvinde. Egentlig også fra Google Earth.
12:10	T-05	Men det var godt, vi fik styr på den gule. Det generede mig lidt.
12:25	T-05	Det er lidt sent, man får at vide, at folk skal med. Man får det at vide 100m før, at hun er skiftet position. Det ville være frustrerende, hvis man kørte selv. Måske der skulle være en svartid, og så ville de forsvinde, hvis ikke de har svaret i tide...
13:20	T-05	Ser birgittes request. Savner auditiv respons. Læser teksten grundigt. Vælger at se hendes position.
13:50	T-05	Hun står ikke på min rute, men jeg kunne køre en omvej (her er det ikke sikkert, han kan se den røde streg ordentligt)
14:00	T-05	Så er min rute så lidt ændret. Han gør chaufføren opmærksom på, at vi skal lidt ligeud i stedet for til venstre.
14:15	T-05	Efterspørger forskel i farverne i forhold til, om en person skal med, eller er med. Savner en rød, nu når vi har set gul og grøn.
14:30	T-05	Man skulle starte med de grå, så skulle dem på/nær ruten være røde, når man kontakter dem bliver de gule og når man får dem med, bliver de grønne (får dem med=accept). Og når man samler dem op, skal de bare

		forsvinde.
15:10	T-05	Så er der grå, der er lidt ligegyldig og ellers rød, gul, grøn.
15:30	T-05	Men ellers så synes jeg, det er skide smart
16:30	T-05	Vi snakkede om at have en rutebeskrivelse... Kortet fungerer faktisk ret godt.
17:30	T-05	Vælger at se hvor mette står. Hun er ved indgangen til Romdrup.
18:25	T-05	Når jeg trykker vis mettes position, bør den zoome ud så jeg kan se mig selv. Lige nu ved jeg ikke helt hvor jeg er i forhold til mette, udover at det er her henne (peger udenfor skærmen) et sted.
18:45	T-05	Prøver at trykke tilbage, for at se om det giver overblik over hans position. Konstaterer så snart GE flyver, at han kommer tilbage til egen position (selvom han ikke kan se bilikonet endnu)
19:05	T-05	Så er mette gul. Så skal hun reagere, inden jeg kører forbi.
19:30	T-05	Efterspørger igen et tidspunkt, hvor der skal være svaret på en request, i forhold til, hvor tæt man er på vedkommende. Lige nu er det lidt stressende for ham.
19:50	T-05	Får mettes svar og trykker OK. Nu er mette klar, når jeg kommer. Hun står og venter.
20:10	T-05	Det her er så underforstået, at jeg skal tilbage til AAU? For det har jeg jo ikke indtastet.
20:30	T-05	De andre skal jo af inde i romdrup, så der ville jeg samle hende op på tilbagevejen.
21:35	T-05	Vi kom aldrig helt hen til mettes position, men der står nu, at hun er med i bilen... Vi har afviget lidt fra vores rute, og det er blevet markeret med grøn (han opdager det nye GPS-track, men ikke at det er på resten af linien)
22:00	T-05	Hvis ikke ruten skulle være optegnet med rød, bør det være den røde farve der indikerer når vi afviger fra ruten (GPS igen)

22:30	T-05	Testen er slut, og han kan lege med systemet. Han annullerer omgående aftalerne med de 2 herrer og lader tøserne være.
22:50	T-05	”Så igen, hvis de bare forsvandt fra skærmen, så kunne jeg ikke trykke på dem nu.”
23:15	T-05	Men en skidegod test, synes jeg. Man har nået meget.
		Slut på felttest. Herefter følger opfølgende interview
1:30	TI-05	Kan en blaffer kontakte en billist? (informerer om birgitte)
2:20	TI-05	Der er et problem med den røde farve, i forhold til det jeg sagde.
2:40	TI-05	Afvist passager – skal den ikke bare slettes? (man kan ombestemme sig)
3:10	TI-05	De skal selvfølgelig fjernes fra kortet, når jeg har samlet dem op.
4:50	TI-05	Når jeg sidder ved pc’en og siger, at der mangler noget når den er gul, så indikerer farven jo at den gør det rigtige.
5:50	TI-05	Kortfunktionen den virker bare. Det er godt. Det er godt, man starter med DK.
6:30	TI-05	Troede først profilvinduet var ham selv. Men det er jo egentlig noget, der venter på at blive fyldt ud. Derfor bør det ikke være der i starten. Eller hedde kontaktprofiler eller noget andet. Så jeg ved, det refererer til nogle andre.
7:30	TI-05	Mener ikonerne skal starte med at være grå.
7:50	TI-05	Hvis der var mange der brugte det, ville ikonerne oversvømme kortet. Måske de første skal dukke op på et senere zoomniveau.

8:25	TI-05	Eller når man har indtastet en rute, så dukker de op. Så kunne dem over en vis radius sorteres fra.
10:10	TI-05	Hvad er det egentlig, jeg skal bruge et kort til? Hvorfor skal jeg zoome ind på aalborg, og så indtaste en rute? (rækkefølgen) Det er primært for at skabe interaktion
10:50	TI-05	Man kunne bare indtaste en rute, og så zoomer den.
12:00	TI-05	Så tanken kunne måske også være, at man lagde sin rute efter hvor folk er? Ja, så giver det jo mening, at de ikke først dukker op efter, man har indtastet sin rute.
12:30	TI-05	Overfør rute til bil: Den er svær at se, hvad der gemmer sig under den.
12:50	TI-05	Efterspørger en liste over hvad man skal. Start der, saml X op der, kør derhen....
13:10	TI-05	Jeg ved ikke hvilke information der ligger i ”rute”, men hvis der stod en liste over informationerne, vidste jeg hvad den overførte.
14:55	TI-05	Perspektiv, hvis vi ikke havde en eksplicit ”overfør rute til bil”-knap. Så ville han ikke vide hvad der skete. Det ville være underlitg. Der må fandme gerne stå for meget. Det skal være til at gennemskue.
15:50	TI-05	Hvis der bare stod gem eller lignende, ville han ikke have en relation til bilen.
16:50	TI-05	Jeg kan godt li den der med at man kan overføre sine data til bilen, men det burde være mere eksplicit, hvilke informationer det drejer sig om.
17:45	TI-05	Slet rute. Hvad sker der så med de gule? Ja, så er det svært at sige, hvad der skal ske med dem.
18:40	TI-05	I det hele taget ser jeg et problem i at lave en aftale. Hvad nu hvis en eller anden skal noget andet. Det er bare et klik, og så har du droppet en. Det er lidt farligt.
20:30	TI-05	Det er lidt stressende når man kører bil, at skulle tage stilling til så meget. Ville folk gøre det? Det tror jeg sgu ikke.
22:15	TI-05	Kortet i bilen var fint nok. Det fungerede ret godt. Og så kunne man følge bilen.

23:00	TI-05	Profilerne bør stå i den rækkefølge, som de kommer på ruten.
24:00	TI-05	Da han ser lindas position ude i periferien: Det kunne måske være en fejl, at hun var grøn. Men det kunne ikke være en fejl, at hun var gul i venstre side! Det er altså det der sker i venstre side, der er det primære (afgørende).
28:00	TI-05	Lindas nye og tidligere position gav ikke mening, før vi informerede ham om, at Linda havde en GPS på sig.
28:45	TI-05	Hvis linda havde flyttet sig langt (mange km) burde der komme en ny anmodning, for det er faktisk en helt ny passager
29:05	TI-05	Det var ikke lysende klart, at det der var i bilen var afhængig af, hvad han havde gjort på pc'en. Det er klart, når det bliver forklaret, men han mener ikke det var lysende klart, før Esben sagde det.
31:00	TI-05	Efterspørger auditiv respons igen.
32:30	TI-05	Han er ikke begrejstret for, at alle blaffere kan skrive til ham. Det bør man kunne indstille – om andre må kontakte mig.
37:00	TI-05	Det er måske unødvendigt, at der først kommer en popup, og så kommer man til profilen.
39:00	TI-05	Ikoner og tekststørrelse er god
41:00	TI-05	Det generede ham, at folks position ikke blev fjernet fra kortet når de var taget med.
44:00	TI-05	Det der med at det drejer, det er lidt fedt. Men det kunne måske også være lidt forvirrende.
49:00	TI-05	Det skal ikke hedde "kontakt profil", men "tilbyd lift" eller lignende.
		Slut

		Comment
08:50	TV-06	Morer sig over at vores login ikke checker noget som helst.
9:10	TV-06	Genkender adressefelter fra andre lignende services. Ingen overraskelser. Zoom etc.
9:40	TV-06	Opdager selv scroll. Forventede lidt, at skulle indtaste en adresse.
10:10	TV-06	Han er bevidst om, hvor han fysisk er, i forhold til kortet.
10:40	TV-06	Ved ikke om ikoner har bedt om at få et lift, eller om de bare er en repræsentation for dem der er tilstede.
11:00	TV-06	Antager ikonerne er passagerer.
11:30	TV-06	Klikker på profiler – logisk interaktion
12:00	TV-06	Gætter sig til en rute hvor han tager til romdrup med et par stykker og tager mette med tilbage. Han er meget stedkendt og ved hvor alle byer ligger, der har noget med profilerne at gøre.
13:20	TV-06	Indtaster adresser, ingen overraskelser.
13:30	TV-06	Den har ikke valgt den mest logiske rute. Systemet er gearet til at få folk med op at køre.
13:55	TV-06	Gætter at Birgitte skal til Romdrup og checker profilen – han har ret. Forventer at ruten er lavet i forhold til at tage passagererne med.
14:15	TV-06	De andre er ikke markerede længere. Måske fordi der er en grænse på, hvor mange jeg kan samle op. Eller også er de for langt fra ruten i forhold til en parameter. Måske begge årsager.
15:10	TV-06	Umiddelbart svært at få en opgave med navne, når han ikke kan se navnene på kortet. Men klikker på profilerne, for han kan huske hvor de er. Ville måske have svært ved at finde dem udfra navne, hvis ikke han havde set dem før.

15:30	TV-06	Kontakter profil. Gul betyder sikkert, han ikke har accepteret endnu. Ventestatus.
15:50	TV-06	Forventer at have sendt anmodninger og venter nu på svar. Ville gerne tage birgitte med også, for hun er jo på ruten.
16:20	TV-06	Det er åbentbart kun muligt at have en rute...
16:40	TV-06	Hvis jeg har et system i bilen, når jeg så logger på derude, så har jeg de data jeg har set her. Men jeg ved jo stadig ikke om de 2 passagere har accepteret, så det er måske lidt dumt at køre derhen nu.
		Testen foran desktoppen er nu slut – nedenstående er fortsættelse i bilen
01:35	T-06	Det er de 4 samme profiler, jeg kunne se på desktoppen. Stadigvæk gule, de 2 vi venter på. Birgitte og mette er blå, og de er ikke med på den her rute.
02:00	T-06	Der er en bil på kortet. Den er nok der hvor vi er nu. Den grønne er vist den tur vi har tegnet ind.
03:30	T-06	Den registrerer at vi kører – den er grøn. Det har jeg ikke rigtig brug for at vide. Men dem der står og venter på mig, kan måske se det
04:10	T-06	Trykker intuitivt på jens for at se profil.
04:50	T-06	Accept modtaget. Opdager han er blevet grøn – også på kortet. Han kan se det hele. Har meget styr på hvad der sker – vi venter stadig på svar fra linda.
06:40	T-06	Informerer chaufføren om, at der ikke er så langt igen. Vi stopper det rigtige sted.
09:30	T-06	Accept fra linda modtaget. Han trykker ok uden at læse teksten, men siger hun ikke er der, hvor hun sagde hun var, da han bliver udspurgt om, hvad der sker.
09:48	T-06	Hun har flyttet sig, så han vil droppe hende, men vælger at se hvor hun er.

10:10	T-06	GE har fløjet hen til Lindas position. Det er ret meget zoomet ind – jeg har svært ved at se hvor det er. (Vi fik en GE-fejl mens vi fløj, så overblikket forsvandt nok) Hans identificerer hendes nye position, men ser ikke hendes tidligere.
10:20	T-06	Tager linda med og satser på, systemet planlægger en ny rute, så vi kommer forbi linda. Han har stadig svært ved at se, hvor linda er (vi er tilbage ved bilens synspunkt)
13:30	T-06	Mener det er overflødigt, at der står at Jens er med i bilen (han siger det ironisk). Som vi kommer tættere på Linda, er det nemt for ham at se, hvor Linda er. Konstaterer at hendes position stadig er på vores rute.
14:20	T-06	Linda er med. Hvorfor er lindas position stadig på kortet?
14:45	T-06	Vælger at tage birgitte med, uden at se hvor hun er! Han kan huske, hvor hun var på desktoppen!
15:20	T-06	Vælger at se Birgittes position (opfordres til det). Han har meget god stedsans og fuldstændig styr på hvor Birgitte er - samt at systemet har planlagt en rute der går lidt for langt, for at vi kan få Birgitte med.
16:35	T-06	Fortæller chaufføren at vi skal til højre (jeg tror han er den eneste der gør det)
17:20	T-06	Undrer sig stadig lidt over, at birgittes position bliver på kortet, når nu hun er kommet med i bilen. Konstaterer at det måske er godt nok, at han kan se hvor hun blev samlet op, men at det kunne blive vist på en anden måde, når hun er med i bilen (andet ikon f.eks.)
17:45	T-06	Antager at Mette nok vil med til Aalborg på et tidspunkt. Det siger han, før han får opgaven.
18:30	T-06	Viser mettes position, men kan godt huske at hun er i Romdrup, fra interaktionen med desktoppen. Mens GE flyver hen til Mette får vi en GE-fejl. Men Nils kan godt overskue det alligevel.
19:00	T-06	Vi mister opdatering af positionen, men det kan Nils abstrahere fra. Han opdager hurtigt at mette er med i bilen (pga vores fejl).
20:00	T-06	Efterspørger en funktion, så han kan skrive til folk at han bliver x antal minutter forsinket. Det er ansporet af, at Linda skiftede position, og derfor kan turen blive længere end først antaget.
20:20	T-06	Opdager at ikonet på GE blinker en gang imellem. Det vil han gerne vide, hvad betyder. Gætter på, det er når systemet opdaterer et eller andet.
21:20	T-06	Testen er slut og han leger med GE. Han smider Jens ud af bilen. Undersøger lindas position – er hun nu i Romdrup? Nej, hun er der hvor jeg samlede hende op. Nu opdager han ”lindas tidligere position”-

		markeringen. Det opdagede han ikke første gang.
		Felttesten er slut – efterfølgende er interview
0:50	TI-06	Troede først, profilen i venstre side var hans egen. Regnede det ud, da han så de andres profiler samme sted.
1:25	TI-06	Det var gennemskueligt. Der var ikke særlig mange funktioner. Hele tiden en der passer til opgaven, så det var nemt. Genkendte interaktion fra lignende programmer/krak/DGS.
2:50	TI-06	Der var bestemt ikke noget, der var svært at lære. Men han gættede sig lidt til farvernes betydning i starten. Tror ikke man kan lave fejl efter første gangs brug.
3:30	TI-06	Første gang han så ikonerne tænkte han på Messenger, hvor de grønne er dem, du kan gøre noget med. Derfor tænkte han, de blå burde have været grønne. Den gule giver sig selv. Det er noget du skal være opmærksom på. Den røde mener han ikke, han fik at se.
4:30	TI-06	Ikoner til at markere køn eller hvor meget de bruger systemet, rating-system
5:20	TI-06	Det undrer ham, at der er mere information under profilerne, ved den mindste platform. Husker på, at ryger-information kun er i bilen samt fra- og destinationsinfo.
5:50	TI-06	Mener det bør være muligt at se ryger-info på desktoppen. Foreslår generelt at kunne se flere information, egne indtastede, ofte benyttede ruter etc
7:20	TI-06	Han havde ikke forventet at systemet gav en rute, der var afhængig af passagerernes positioner. Han regnede med, at han selv skulle markere passagerer, efter at den korteste rute var tegnet op.
8:15	TI-06	Systemet laver nogle valg for ham, og det er han umiddelbart imod – hvis der var mange passagerer, hvilke havde den så valgt? Det ville han hellere selv bedømme. Det passer dog perfekt i denne situation, hvor der ikke er flere end der er.
10:10	TI-06	Systemet kan være med til at fjerne usikkerheden om folks intentioner, idet man offentliggør sig ved at registrere sig.

10:40	TI-06	Han tror det vil komme mere til sin ret i pendler-situationer. Det ser han i forhold til den korte tur vi har kørt, hvor det ikke kan betale sig. I større skala kan han godt se fornuften i det, men han vil nok gå efter at finde folk på fast basis (pendler). Gider ikke altid smalltalke med alle mulige.
12:50	TI-06	Han kunne godt forestille sig, at interfacet i bilen var det samme som det på desktoppen. Det er set i forhold til den specifikke skærmstørrelse. Han vil hellere have mappet end luftfotos.
13:50	TI-06	Det er nok de færreste gange, du vil samle 4 personer op, og i den forbindelse vil desktop interfacet nok være bedre (i bilen) fordi der er mere af kortet og mindre af det, du ikke skal bruge så tit. Det kunne han forestille sig...
14:30	TI-06	Systemet gjorde helt sikkert som han forventede. Det var mere opsætning og visning der var mindre optimal. Interaktion var intuitiv.
15:15	TI-06	Han mener ikke der er den store forskel på indlæringskurven for de 2 kontekster.
16:10	TI-06	Han perspektiverer: GPS positionen fra bilen kunne sendes til desktoppen, så man ku se hvor bilen er... Så kunne den også automatisk zoome derhen.
17:15	TI-06	Det slog ham som noget underligt, at han på desktoppen selv skulle finde ud af, hvor han var henne.
17:35	TI-06	Bilinterfacet var det sværeste at bruge. Men ikke svært. Mus og keyboard er nemt, det andet er en smule mindre nemt.
18:30	TI-06	Om sammenhæng mellem data over de to systemer: ”ja, der var klar sammenhæng. Det sidste jeg skulle gøre, var jo at overføre dataene til bilen. Da du spurgte om hvad jeg forventede der var sket med de data, blev jeg godt klar over at for at det skal fungere, så skal du jo have de samme ting stillet til rådighed på den anden platform. Så ja, helt sikkert. Første gang du ser systemet kan du se, det er de samme personer du har på listen. Men det var ret hurtigt tydeligt at det var de samme informationer man sad med, men det **forventede** man jo også”
20:15	TI-06	Ved afslutning: ”Okay – det var da nemt”.

7th test person

0315	T-07	Observere en liste af profiler, som han mener er på hans rute. Han genkender Linda og Jens, som han stadig ikke har hørt fra. De to andre personer, omtaler

		han som om han ikke burde se, da han ikke har sendt en anmodning til dem endnu
0500	T-07	Observere at Jens ikke ryger, og beskriver hvad han ser i profil vinduet. Han bemærker at han kan annullere anmodningen.
0520	T-07	Nysgerrig og trykker på vis position ved Jens.
0600	T-07	Da han leger med systemet, observere han at der er en profil der er blevet grøn, som ikke burde være grøn endnu
0640	T-07	Han mener ikke at billedet af Mette i bilen, stemmer overens med den der på PC'en
0820	T-07	Observere at bilen bliver grøn når bilen kører
0840	T-07	Ser den røde rute på kortet, og kobler denne med den grå rute på PC'en
0900	T-07	Han er optaget af at snakke om kortet i GE, og at det er svært at se hvor vejene går pga. oversigtsbilledet. Dette gør han i 60 sek. indtil han opdager at der har været en accept fra Jens, som har været der i de 60 sek.
1000	T-07	Han nævner at hvis han havde kørt, så ville han have studeret kortet og den rute han skulle køre, for ikke at skulle sidde og kigge på kortet mens han kørte
1015	T-07	Observere skiftet fra grøn til gul, og ræsonnere at det er fordi de er blevet enige om at han gerne må komme med
1055	T-07	Ved første opgave med at sige til når Jens skal med, nævner han at det er svært at se sideveje pga. detaljen på kortet
1200	T-07	Han siger at hvis man har luret status farverne, så er teksten redundant, og skaber bare mere forvirring. Han mener at der er for mange informationer
1230	T-07	Han er forvirret over at Jens stadig står på kortet, selvom han lige er blevet samlet op
1250	T-07	Mener at det ville give mere mening hvis Jens stod som nummer et på listen, siden at han er den første der skal med op og køre
1345	T-07	Bestemmer hurtigt at han gerne vil have anden person med, selvom hun havde flyttet sig
1450	T-07	Problemer med at se på skærmen pga. sollys
1520	T-07	Han er hurtig og foreslår at han vil invitere nummer 3 med op at køre, men bliver stoppet, så han kan blive kontaktet af hende, som er i følge opgaven. Han nåede desuden heller ikke at læse hele teksten
1730	T-07	Han forstår ikke ruten, henne ved 3 person. Da ruten oprindelig ikke skulle derind.
1930	T-07	Ved sidste opgave, nævner han at der ikke rigtig kan være andre at kontakte end den sidste blå på listen. Denne er så en person som står tæt på hans rute, og hvis der havde været flere i nærheden af hans rute, så havde de været på listen.
2010	T-07	Ved sidste opgave, tjekker han hvor hun står henne, inden han sender en invitation til hende, og går udfra at han smider de andre af inden han sender den
2030	T-07	Sidste opgave profil bliver gul, og han venter svar på om hun vil med

2130	T-07	Han nævner at det er fint med satellit oversigts kortet, så man kan se evt. byer på kortet
2150	T-07	Han fundere over om hvordan hendes side ser ud, og om hun kan se et billede af hans bil
2400	T-07	Testperson leger med systemet i resten af tiden, hiver rundt med GE. Han forventede at han ville kunne se flere profiler
0045	TI-07	Mest markante forskel mellem de to interfaces var valget af kort; oversigts kort på PC, og sattelit billede på bil-interfacet. Dette gjorde at man mistede overblikket i starten.
0125	TI-07	Når man kommer nærmere en person, er sattelit billedet udemærket, da man så kan se den bygning de evt. står i nærheden af. Han ved dog ikke om dette er nødvendigt
0230	TI-07	Han antog at dem som var på bil interfacet var i nærheden af hans rute
0330	TI-07	Han manglede at han kunne ændre ruten i bilen, hvis han bestemte sig for at tage en anden rute.
0350	TI-07	Han ledte efter de grå personer efter testen var slut, for at se om de skulle med, hvis han tog en anden rute på vej tilbage. Der var en klar forventning om at alle han kunne se på PC, også ville være i bilen
0630	TI-07	Han var forvirret over at birgitte var på hans rute, siden at det kun var personer der var direkte på hans rute der var på listen. Birgitte derimod stod på en afstikker af ruten.
0720	TI-07	Uoverenstemmelse mellem hvad der bliver henholdsvis blå og rød, efter at man har annulleret en anmodning/invitation. Hvis en hitcher har anmodet og man har afvist så rød, hvis mán har anmodet og derefter annulleret så burde den person gå tilbage til at blive blå
0805	TI-07	Han vil helt klart foretrække at bruge PC'en, da den giver mest overblik, og minder mest om navigations systemer pga. kortet
1020	TI-07	Han mener at de grå personer skal kunne tilgåes igennem systemet i bilen på den ene eller anden måde, uden at man mistede overblikket

8th test person

0330	T-08	Leger med systemet i starten, og undrer sig over at der står "Jens's position" og foreslå istedet at der bare kan stå "Jens"
0355	T-08	Observere at han kan se de sidste to personer som han ikke har kontaktet, og siger at disse stod langs han rute på PC'en
0500	T-08	Han beskriver at chaufføren kører gennem universitets området, og benævner at det ville være lettere at skabe et overblik via et kort, og ikke satellitkortet
0540	T-08	Han mener at bilen flytter sig meget godt i forhold til hvordan man kører i selve trafikken IRL
0800	T-08	Han antager at skiftet i farven for bil ikonet har noget at gøre med om man

		flytter sig eller ej
0830	T-08	Da vi nærmer os Jens, undrer han sig over at der ikke er en adresse for hvor Jens står, da han mener at dette kunne være en nyttig information
0930	T-08	Han kan se Linda lige efter at Jens er blevet samlet op på kortet, og undrer sig meget over at hendes ikon på kortet er grøn
1050	T-08	Brugeren har lidt travlt med at trykke videre når han får svar fra Linda, og ser ikke at hun har skiftet position, hvilket forvirre ham lidt. Han antager desuden at hendes forhenværende position er hendes nuværende, han forklarer dette med at ikonerne er små
1140	T-08	Han undrer sig over at Linda stadig står på vejen selvom hun er blevet samlet op, specielt hvis hendes system også har GPS og denne er linket til bil interfacet
1230	T-08	Bestemmer sig hurtigt for at tage 3. person med, efter at have set hvor hun står, selvom hun står lidt uden for ruten.
1330	T-08	Han irritere sig over kompasset i GE
1450	T-08	Status ikonet for bilen mener han er overflødigt, og foreslår istedet at den blev rød hvis man kommer afveg fra sin rute
1530	T-08	Ved sidste person ser han positionen på hende, og bemærker at hun skal til AAU, og siger at dette er et problem, men hvis vi skulle til AAU kunne hun godt komme med. Hvorefter der bliver ventet på svar fra hende
1620	T-08	Han finder den information som ligger i et sattelitkort unødvendig i forhold til hvad han skal bruge systemet til
1630	T-08	Efter at have fået svar fra den sidste person, undrer han sig over at han ikke har et valg mellem at sige ”ok” og ”annuller/afvis” i stedet for bare ”Ok”, hvilket forpligter ham til at samle hende op. (selvom der kan gå langt tid fra at hun får anmodningen til at hun svarere)
0100	TI-08	Han fandt Visiting interfacet simplet at bruge
0120	TI-08	Savner at man kan lave ruter med ”via” funktionalitet
0220	TI-08	Han savner adresse angivelser for Hitchers, hvis det er i et lokalt kendt domæne/kontekst
0315	TI-08	Adressen på hitcheren burde ligeledes være i bilen, da man så kan se efter et bestemt husnummer, når man kører på vejen. Dette vil være hensigtsmæssigt ift. delays
0415	TI-08	Mangler telefon nummer under kontakten for at kunne kontakte ham
0440	TI-08	Han forstår ikke at vi skifter fra kort interfacet til sattelitkort, da han mente at det skulle repræsentere det samme system. Hvor hitcher ikonerne derimod virker ganske fint, da de er det sammen imellem interfacene (genkendelighed)
0510	TI-08	Adolf Hitler ikonet repræsentere at der står en eller anden et sted og gerne vil med

0525	TI-08	Farverne på ikonerne var tydelig at aflæse for ham på begge interfaces
0620	TI-08	Under kontakt profil i visting kontekst, manglede han muligheden for at kunne skrive til den person som han kontakter. Dette var en klar forventning
0840	TI-08	I skiftet mellem kontekst, kunne han se de profiler han havde kontaktet, og de andre som stod langs hans rute, samt at ruten var indtegnet på kortet. Han siger at han sagtens kan se skiftet. Ikonerne gav en god genkendelighed
0940	TI-08	Han havde sagt ved PC' interfacet at han forventede kun at han kunne se dem som han havde kontaktet på bil interfacet.
1040	TI-08	Hvis han blev kontaktet af en der ikke var på listen, fandt han det meget underligt, da denne person skulle stå langs hans rute, og derved være på hans liste.
1150	TI-08	Ved vis postion fra en person som man ikke selv kontakter, ville han gerne kunne se et oversigts kort, så han kunne se den relative distance til personen, og derved tage bedre stilling til om han ville samle hende op
1450	TI-08	Ved personen der havde flyttet sig, forventede han at "tidligere position" stemte overens med havde han havde set på PC'en
1550	TI-08	3. persons tidligere position er han ligeglad med, da han ikke kan bruge den information til ret meget, da han kan se hendes nuværende position ift. hans rute
1640	TI-08	Hvis tidligere-nuværende postion skal være på kortet, vil en pil være en god måde at repræsentere dette på
1715	TI-08	Han fandet desktop interfacet lettere at bruge, bla. pga. input devices. Begrundet med at autoopdatering af GE gør det svært at bruge dét kort til noget som helst
2135	TI-08	Han mener ikke at der er ret stor forskel på systemerne, hvilket er godt ift. brugssammenhængen
2210	TI-08	Det er primært genkendeligheden igennem ikonerne, og de interaktionsmuligheder der ligger i dem, der gør at man kan se at det er ét system, som kan bruges i forskellige kontekster
2230	TI-08	Han forventede at de grå profiler var væk fra listen/kortet i bilen
2450	TI-08	Han mener at hvis han var bevidst om hvad hitcherne havde af muligheder, så ville det være mere gennemskueligt hvad han kunne gøre
2510	TI-08	Man kunne lave små mobiltelefon ikoner så brugeren var bevidst om at brugeren kunne have den med ude, og derved interagere i wandering kontekst
2700	TI-08	Vigtigt med status farver mellem konteksts

9th test person

05.20	TV-09	Regner med at det er hendes eget profilvindue, hvor hun evt kan sætte sig

		eget billede ind.
09.05	TV-09	Regner med at når trykker på et sted på kortet og trykker zoom, bliver der zoomet ind på det sted. Ligesom Krak.
10.00	TV-09	Prøver at zoome på Aalborg Universitet
11.45	TV-09	Mener ud fra hendes profil, at Linda står i Romdrup. Finder dog ud af at det ikke er tilfældet, da passagererne ikke står de steder, der er angivet i "destination".
12.50	TV-09	Tror ikke at hun var chauffør, men kun bilist. Troede hun var den der skulle op og køre med nogen.
14.15	TV-09	Antager at når hun har indtastet sin rute og trykket "Vis rute" at hun vil få angivet ruten tekstuelt i boksen.
14.42	TV-09	Regner med at når hun trykker på overfør rute til bil, at de andre kan se hende eller at hendes rute bliver overfør til hendes GPS.
14.50	TV-09	Antager de er blå ikoner vil med hende, og de grå ikoner betyder at de ikke skal hendes vej.
15.10	TV-09	Bemærker at den optegnede rute ikke er den rute hun selv normalt ville bruge for at komme til Klarup.
15.31	TV-09	Lagde ikke mærke til ruten først, da hun normalt synes at en ruteoptegnelse er rød, og ikke grå.
16.00	TV-09	Regner med at der er blevet sendt en anmodning til passageren, når ikonet er gult.
17.45	TV-09	Regner med at computeren ha overført hendes informationer til bilen.
10.12	T-09	Nævner selv at status for Jens har ændret sig. Ligger ikke mærke til at farve har ænret sig.
10.44	T-09	Bruger Jens "Vis position" til at finde ud af hvor der skal stoppes.
11.18	T-09	Ligger mærke til at ikoner blinker, regner med at der har noget med at vi ved Jens.
11.44	T-09	Ligger mærke til at Jens status har ændret sig til "At være med i bilen"
12.20	T-09	Trykker OK, uden at læse tekst, ved besked fra Linda.
12.50	T-09	Regner med at Birgitte også gerne vil med op og køre, uden at der er blevet sendt en anmodning. Hun vælger at få vist hendes position og mener godt vi kan tage hende med op og køre.
15.05	T-09	Hun ligger mærke til at hun mangler en markering af bilen på kortet. Tror måske det er en fejl i systemet. Det gør vi andre også. Men hun ville gerne have set hendes egen position i forhold til Birgitte.
15.52	T-09	Siger at systemet melder at Birgitte godt kan komme med.
16.15	T-09	Vælger at bruge Birgittes "Vis position" til at finde ud af hvornår der skal stoppes.
16.45	T-09	Nævner at hun savner sin egen position på kortet. Så hun kunne se hvornår hun skal stoppe. Ser at hun kommer ind i skærmbilledet.
17.20	T-09	Tror at hun er ved Birgittes position, da bil-ikonet er på linje med Birgitte første gang. Siger til at chaufføren at han skulle have stoppet før.
18.30	T-09	Nævner selv at Mette vil med tilbage fra Romdrup til AAU, så hun regner

		med at vi bare kører til Romdrup nu.
18.45	T-09	Ved godt hvor Romdrup er, siger det er før Klarup.
19.20	T-09	Finder Mette på listen, da hun bliver spurgt hvem der er i nærheden er hendes rute. Regner med at vi skal tilbage til AAU, efter vi har været i Romdrup.
19.40	T-09	Bruger "Vis position" til at finde frem til om hun er i nærheden af hendes rute.
21. 25	T-09	Mener hun kan bruge Mettes position på kortet, til at finde ud af hvor de andre skal sættes af.
22.25	T-09	Har prøvet touchscreen på nyindkøbt GPS, samt DSB togstationer.
23.30	T-09	Synes det er bedre med auditivt feedback på GPS, da det ikke kræver så meget opmærksomhed på systemet.
01.50	TI-09	Kunne måske godt savne en rutebeskrivelse, hvis man ikke kender ruten selv.
02.50	TI-09	Mener godt at hun selv kunne have fundet ud af at bruge systemet, selv uden testleder.
05.10	TI-09	Lagde ikke så meget mærke til at ikoner skiftede farve ude i bilen, gjorde det kun inde på desktop. Brugte mere den tekstuelle status ude i bilen.
06.50	TI-09	Mener at interfacet i bilen vra bedst, da hun godt kan lide at hun ved hvor hun kommer hen. Men synes samtidig at det andet interface virkede godt foran computeren, gav overblik.
07.45	TI-09	Savnede ikke sin egen position foran desktop, da hun ikke selv bevægede sig.
08.05	TI-09	Regnede med at ruten der blev tegnet, kun var med dem som var interessante.
08.10	TI-09	Havde først regnet med at man skulle snakke med nogen der var udenfor ens rute.
09.00	TI-09	Kunne måske godt savne at man kunne ændre sin rute ad hoc, hvis man nu vil køre en anden vej.
11.30	TI-09	Havde forventet at bilen havde en GPS, og måske noget internet, så der kunne sendes data til den.
11.50	TI-09	Kunne genkende profilbilleder, navn, men synes ikke hun kunne huske at der var ryger-information ved desktoppen.
13.24	TI-09	Tænkte at bil-interfacet bare var en ny måde at gøre de samme ting som inde ved desktoppen.
14.00	TI-09	Nævner at systemet kan give en sikkerhed i forhold til at få øksemordere med op og køre.

07.20	TV-10	Forventer at der bliver tegnet en tydeligt streg, der viser ens rute, når man taster ruten ind.
08.30	TV-10	Mener at ikoner på kort er blaffere, der har brug for et lift.
09.10	TV-10	Ikoner kan også være andre bilister, da ikoner har samme udformning som

		hans profilvindue.
09.40	TV-10	Lyder til at han mener at ”destination” i profilvinduet er hvor profilerne kommer fra.
11.10	TV-10	Går ud fra at ruten, der bliver vist er den korteste vej til Romdrup.
11.56	TV-10	Grå ikoner er folk der ikke er indenfor den ruten, man har indtastet. Man har ikke mulighed for at hente dem op. De kunne komme til at betyde noget igen, hvis han indtastede en ny rute.
13.00	TV-10	Forventer meddelsesboks, hvor han kan indtaste en meddelse, når han trykker på ”Kontakt profil”.
13.15	TV-10	Han forventer at Jens har fået besked via mobiltelefon om at han vil samle ham op i løbet af noget tid.
14.00	TV-10	Regner med at systemet kan regne ud hvor lang tid der går han er ved blafferens opsamlingssted.
14.50	TV-10	Han mener at den gule farve betyder at profilerne er aktive, imens de blå er inaktive.
15.35	TV-10	Han forventer den rute han kører og informationer om hvem der er aktive og inaktive bliver overført til bilen, når han trykker ”Overfør til bil”.
16.45	TV-10	Forventer den samme repræsentation som foran desktop. Synes ikke det giver mening at han også skal indtaste brugenavn og kodeord i bilen, da det er ham selv der har bilen.
03.10	T-10	Han har set alle profilerne i profil listen før. Det er både dem som har været i kontakt med om dem som han ikke har givet samtykke til at køre med.
04.16	T-10	Han har tre valgmuligheder for Birgitte: Tage hende med, få vist hvor hun er og gå tilbage.
04.40	T-10	Ligger mærke til at Jens er ikke-ryger og finder det praktisk, da han også selv er ikke-ryger
05.20	T-10	Han kan se Jens’ position, når han trykker på ”Vis position”. Han kan ligeledes se at han står på ruten og at det er den samme rute, som der blev indtegnet på desktop.
06.18	T-10	Ligger mærke til at position-ikonet er blevet grønt og siger det er pga. at bilen er startet og at den kører. Ikonet følger den rute som der er blevet indtegnet og det er meget naturligt synes han.
06.40	T-10	Forventer at der sker noget hvis man kommer udenfor ruten.
07.25	T-10	Havde forventet at der var en annuller-knap i medddelses-boksen fra Jens. Trykker OK, og går derefter ind under Jens’ profil og ser at han kan annullere hans aftale.
07.50	T-10	Ser at Jens har skiftet farve i profil-listen.
10.15	T-10	Han ser i profil-listen at Jens er med i bilen nu, men samtidig kan han se på kortet at Jens stadig er markeret. Det synes han er mærkeligt. Han havde forventet at den grønne figur forsvandt eller var med i bilen.
11.00	T-10	Vælger at trykke hurtigt videre på besked fra Linda. Går ikke ud fra at han læser hele teksten. Læser at hun har flyttet sig i hendes profil-vindue.

12.15	T-10	Lægger selv mærke til at Lindas profil i profillisten ændrer status til at være i bilen.
14.55	T-10	Ligger selv mærke til at Birgittes profil har ændret sig til ”med i bilen”
16.35	T-10	Ligger mærke til en lyd da Mette svarer tilbage.
18.35	T-10	Ligger mærke til at Mette er i bilen.
21.50	T-10	Kunne godt være interesseret i at se de grå ikoner på bil-interfacet, for at kunne samle dem op og spare endnu flere penge.
00.57	TI-10	Der var ingen overraskelser i forhold til interaktionen, da han havde brugt Google Maps før.
01.30	TI-10	Savnede måske først nogle pop-up bokse, da han ikke kiggede så meget ud ei siden.
02.40	TI-10	Gik ud fra at når ikonet blev gult, gjorde at profilen havde meldt ud han gerne ville med, så det var ikke nødvendigt at sende besked igen.
03.28	TI-10	Mener ikke at havde stødt på det gule ikon så mange gange.
04.30	TI-10	Mener ikke at der var de store vanskeligheder med systemet. Ikke så mange valgmuligheder.
05.15	TI-10	Forbinder den grå farve med noget, han ikke rigtig har noget med at gøre.
07.45	TI-10	Kunne måske have været forvirrende, hvis man var blevet præsenteret med alle ikoner(aktive/inaktive) fra desktoppen på bil-interfacet.
07.50	TI-10	Han kunne ikke rigtig huske hvad folk de hed. Sagde først han kendte dem, men så blev han i tvivl. Havde forventet at det var nogenlunde det samme interface man havde på computeren. Det virkede nogenlunde ens.
08.40	TI-10	Blev lidt forvirret i starten over at der ikke var nogle valgmuligheder på bil-interfacet.
10.30	TI-10	Ved ikke helt om personerne stod samme sted som inde ved desktop. Ud fra vejnavne. Mener ikke det er så interessant, da han ved at de er på den rute han kører på.
11.50	TI-10	Han går ud fra at passageren har indtastet en ny adresse på hans mobiltelefon, og ikke GPS.
14.20	TI-10	Synes helt klart at desktop-interface gav det bedste overblik. Flere valgmuliheder på desktop, pakket mere væk i bilen.
15.20	TI-10	Synes det gav mening at det var de samme ting man havde med at på desktop som på bil-interface, da man trykkede ”overfør til bil”
17.05	TI-10	Hvis der kommer en ny blå person i profil-listen på bil-interfacet, betyder det at der er kommet en ny person i nærheden af hans rute.

0550	WV-11	Han ser Danmark med bynavne og veje
0640	WV-11	Han ser et profil vindue, han ikke helt hvad gør
0730	WV-11	Eter at have zoomet ind ser han flere detaljer på kortet og nogle streger som han antager er ruter eller busruter
0820	WV-11	Han formoder at grå biler ikke kører
0830	WV-11	Han ser profil vinduet, som et vindue hvor man kan se detaljer for

		ruterne, når man klikker på en ”bil”
0920	WV-11	Han antager at bil billedet under profilen er til for at man kan se hvor mange der kan sidde i bilen. Finder ud af senere at det er bilen som kører.
0950	WV-11	Han opdager at bilerne flytter sig, og ræsonnere at det ikonerne repræsentere hvor de er
1230	WV-11	Antager korrekt at efter anmodningen så afventer han svar fra hende
1400	WV-11	Inden skiftet til mobilen, antager han at han får et svar fra Linda om hun vil høre hans nødråb. Hvis hendes svar er nej, formoder han at han kan finde på noget andet via mobilen
0110	WI-11	Mangler en retningsbestemmelse for billisterne, så man kan se hvor de er på vej hen
0150	WI-11	Var tidligere i tvivl om hvad bil billedet under billist profilen betød, men fandt ud af at det var den bil man kørte i. Han mener yderligere at man også kan have nummerplade nummeret i systemet.
0200	WI-11	Manglede tekstuel information på mobilen om hvilken bil chaufføren kørte i
0300	WI-11	Manglede en infobox om hvilke rute-farver der hørte til de forskellige profiler
0500	WI-11	Manglede en forståelse for hvorfor de forskellige profil personer var i listen på mobilen
0630	WI-11	Han undrer sig over om det minut antal der står ved profilerne, tager højde for hvor langt tid han er for at gå hen til opsamlings punktet
0800	WI-11	Hvis det ermuligt, kunne han godt bruge en repræsentation af hvor man er henne i verden på de forskellige kort
0900	WI-11	Ville finde det smart hvis man kan navigere rundt på kortet på mobilen

0520	WV-12	Observere et kort af Danmark
0530	WV-12	Antager korrekt profil vinduet
0550	WV-12	Forstiller sig at profil vinduet, kan indeholde informationer for hvor man plejer at tage afsted fra
0630	WV-12	Centrere Aalborg, og bruger zoom knappen til at zoome ind med
0650	WV-12	Første antagelse på forskellen mellem blå og grå, har noget at gøre med om de er hjemme eller ej
0940	WV-12	Brugeren mangler en måde hvorpå han kan indtaste informationer om hvor han skal på, og hvor han gerne vil han, når han anmoder om at komme med op at køre
1010	WV-12	Antager korrekt skift i farve fra blå til gul

1115	WV-12	Antager at han får respons på hans anmodning fra Linda, og at han derefter skal specificere hvor han gerne vil samles op henne.
0104	W-12	Bruger kan ikke huske navnet på Linda fra Visiting til Wandering kontekst
0210	W-12	Bruger finder ”Angiv desination” først i testen
0300	W-12	Antagelse af at den blå prik er brugerens position
0310	W-12	Brugeren antager at han skal specificere hvor han skal stå på henne, medmindre at systemet har specificeret hvor han skal stå på, ”udfra et tilfældigt gæt og en fornuftig indstilling et eller andet sted om at det er der jeg plejer at stå på”
0620	W-12	Brugeren mangler et kompas i mobiltelefonen, så den selv vender kortet ift. navigation
0757	W-12	Han antager at minut angivelsen på interfacet har noget at gøre med hvornår de er henne ved deres destination
1000	W-12	Har problemer med at gennemskue farvekoderne for ikonerne, indtil han aktivt undersøger det
1050	W-12	Ved anmodning ved Jens, formoder han at han har samme destination som ved den første køretur
1700	W-12	Han finder det underligt at Johnny sender en invitation til ham, og vil gerne se om Johnny kører forbi brugeren på sin rute
0100	WI-12	Han undrede sig over det tomme profil vindue, det så ufærdigt ud
0145	WI-12	Mener at man burde kunne minimere profil vinduet
0200	WI-12	Hvis han skulle samles op i felten så ville han have noteret hvordan bilen så ud
0245	WI-12	Han var ligeglad med om der var et profil vindue eller ej
0315	WI-12	Brugeren ”manglede helt vildt en signatur forklaring” for bla. den blå prik
0345	WI-12	Manglede viden om hvorvidt bilerne i visiting var på deres startposition inden de begyndte med at flytte sig
0510	WI-12	Han har styre på status farverne og liste dem op. Han mener at de er lette at finde ud af når man først har brugt systemet én gang
0520	WI-12	Forslag: når man trykker på en profil må ruten gerne blive highlighted, da det var svært at se
0800	WI-12	Mangler liste over aktive chaufføere i Visiting (den der er i wandering)
0840	WI-12	Han huskede ikke at profilerne på mobilen havde en destination
0940	WI-12	Han havde svært ved at relatere hvad han skulle bruge minut antallet til, han ville hellere have denne information på kortet (mobilen) så han kunne se det i relation til hvor chaufføeren ville være efter det angivne minut antal.
1010	WI-12	Han manglede meget at man kunne navigere rundt på kortet på mobilen. Han mener ikke at det er sikkert at man ville kunne zoome, pga. skærmens ringe størrelse
1020	WI-12	3 halve vejnavne var fuldstændig ubrugeligt

1050	WI-12	Manglede en rød prik til at repræsentere sig selv på mobil telefonen
1130	WI-12	Ved handshake på mobilen har man valget ”ok” eller ”annuller” hvor han manglede en yderligere option ift. vis rute på kort. For at kunne se den spatiale distance.
1500	WI-12	Manglede at kunne specificere hvornår han gerne ville afsted, og hvor han ville afsted fra
1620	WI-12	Han foreslår at man kan skifte mellem vis ”rute på kort” direkte, så man kan se de forskellige ruter der bliver kørt
1845	WI-12	Han mente at det var let at se at det var de samme systemer, og antog ligeledes at den destination han havde spcificeret på PC’en var den samme på mobilen

0605	WV-13	Han formoder at det er hans billede/profil i øverste højre hjørne
0740	WV-13	Finder nuværende lokation på kort smertefrit (zoom)
0803	WV-13	Han finder billist ruterne, og beskriver dem som gennemsigtig, dog ved han ikke hvad det betyder, men antager at det er ofte kørte steder, på baggrund af viden om hvad systemet kan
0845	WV-13	Han observere bil ikonerne, og antager at dette er biler
0850	WV-13	Han har lyst til at klikke på et bilikon (nysgerrig) og får lov til dette
0920	WV-13	Beskriver profilen Jens Vindestrup
0925	WV-13	Observere at bilerne bevæger sig, han antager at denne observationbetyder at det er kørende biler, som følger ”pathen de her streger”
1015	WV-13	Han ser en grå bil ikon, hvilket han først antager betyder inaktivitet, men ændre sin mening da den flytter sig
1220	WV-13	Bliver stillet opgaven med at finde til klingenberg. Han funderer over at der er to faktorere der spiller ind, i forhold til tidsmæssigt at der kommer en forbi, eller den der er tættest på hans lokation.
1303	WV-13	Trykker på kontakt profil, og mener at noget voice over ip telefonisk kontakt kunne være ekstremt smart.
1340	WV-13	Profil status skifte til gul fortæller ham ikke noget umiddelbart, men ved nærmere eftertanke kobler han det til trafiklys, og ræsonnere sig frem til en ubekræftet anmodning
1505	WV-13	Ved opgave overførsel til mobiltelefon, er han i tvivl om hvordan han gør dette, men vælger ”logud” da det er den eneste mulighed.
1540	WV-13	Han siger at han ikke ville have vist at log ud ville medføre en overførsel til mobiltelefon, da han ikke får nogen tilbagemelding herfor
1610	WV-13	Ved nærmere indspørgen til udlogning ift. at han havde en mobiltelefon der benyttede samme system, ville han stadig være i tvivl
0111	W-13	Genkender profilerne fra computeren, og ser at Linda er tættest på ift. minut antal, og er stadig gul hvilket han reæsonnere til at hun hverken har sagt ja eller nej til anmodningen.

0130	W-13	Birgitte kører ikke da hun er grå, og ”Jens kører formentlig”
0140	W-13	Observere ”angiv destination”
0210	W-13	Trykker på Linda, og får hendes profil frem, og kan ikke helt finde ud af om ”fra” er kører fra, eller hvor hun er fra, men antager at det er hvor hun kør fra
0255	W-13	Tryk på vis rute, antager han at viser hvor hun er på hendes rute
0345	W-13	Han forsøger at scrolle rundt på kortet, og finder en tilbage mulighed
0510	W-13	Han modtager respons fra Linda, og observere at hun er blevet grøn på profil oversigten, hvilket han ræsonnere at hun har accepteret
0712	W-13	Han undrer sig over at Linda ved hvor de skal mødes henne
0805	W-13	Undren over at de 24 minutter som det skulle tage for en driver at komme ikke ændre sig
0850	W-13	Observere at Linda er forsvundet fra oversigten over mulige ”rides”
0915	W-13	Han finder Jens på oversigts kortet, og antager at han er 5 minutter ”herfra”
0935	W-13	Han går samtidig med at han interagere med systemet, og gør testlederen opmærksom på at han ikke ser hvor han går henne
1010	W-13	Han anmoder Jens, og observere at han kommer i afventnings status da Jens bliver gul, og formoder at Jens bliver grøn hvis han samtykker
1115	W-13	Svært at navigere via kort, og udpeger hvor jens burde være
1230	W-13	Bliver stillet spørgsmålet om han ved hvor Jens kommer fra, og finder Jens’s ”Fra” under profil. Han går ikke udfra at han kan se på det rute kortet, hvilket han heller ikke mener under kortet.
1550	W-13	Under opgave ændr destination, finder han menuen og vælger AAU, hvor han lyder overrasket
1605	W-13	Efter ændring af destination, går han direkte ind og ser hvem der er tættest på for at kunne komme til AAU, og finder Birgitte da hun er tættest på ift. minutter, som han så anmoder om en opsamling.
1630	W-13	Birgitte bliver gul, og han mener at hun ikke har sagt ja endnu
1645	W-13	Birgitte afviser ham, og han antager at det er pga. et dårligt billede af ham
1705	W-13	Han får en invitation fra Johnny om at blive samlet op, hvilket han finder underligt da Johnny ikke var på listen før
1725	W-13	Han finder Johnny suspekt og overvejer ikke at tage med ham
1745	W-13	Johnny var ikke på listen, da brugeren mente at han var usynlig.
1815	W-13	Han forsøger at se ruten for hvor Johnny kører én gang, og forsøger igen lidt efter for at se om den var dukket op. Han manglede derved informationer om ruten, samtidig med at han går tilbage mod AAU, da han gerne vil se hvilken rute Johnny tager for at kunne gå langs den
1915	W-13	
0245	WI-13	Forklarer at ruterne på GM, viser at systemet ved hvor chaufførerne kører hen (chaufføre profil)
0510	WI-13	Han fandt det interessant hvis man ikke skulle logge ud i visiting

		interface, og således blive overrasket på mobilen
0617	WI-13	Ved ”kontakt profil” forventede han at der var VoIP, da han mente at hun havde travlt med meget andet, og ikke kunne interagere med et system.
0850	WI-13	Undrede sig over at systemet kendte hans destination, hvis det havde været en IRL application
0850	WI-13	Skærmens ringe størrelse gjorde det svært at overskue ens muligheder i systemet
1230	WI-13	Manglen på et ordentlig kort på mobilen, virkede stort da der var et godt kort i Visiting. (kontrast mellem sysmerne)
1250	WI-13	Han forventede at systemerne mindede om hinanden, og derfor også en mere optimal kort repræsentation på mobilen
1320	WI-13	Han undrede sig over at kort repræsentation ikke var primær på mobilen (kort undren), da det var det på PC’en
1440	WI-13	Han mente at skiftet mellem chaufføre på ruten mht. hastighed og destination, til mobile konteksten hvor det var i minutter, var et godt skift der repræsenterede den samme information for brugeren.
1500	WI-13	Han formoder at chaufførere i liste interfacet på mobilen kører forbi eller meget tæt på ham
1700	WI-13	Opgaven ned Johnny fandt han meningsfuld, da han lige havde angivet en destination og derved fået opdateret systemet, så Johnny kunne se ham

0710	WV-14	Han ser Danmark og syd Sverige, og de største veje er indtegnet
0738	WV-14	Ser er profil vindue i højre hjørne, og regnede med at der skulle stå nogle detaljer for ham
0820	WV-14	Forstod muligvis ikke træk og slip på GM
0850	WV-14	Mente at zoom knapperne var bedre, end scroll zoom pga. forsinkelsen
0930	WV-14	Han ser ruter på kortet, og biler som kører på disse ruter
1005	WV-14	Distinktion mellem blå og grå biler på visiting, er at de grå står stille og han kan gøre brug af de blå
1020	WV-14	Han ser de blå biler som nogle der kan samle ham op på den position de er på lige nu
1100	WV-14	Savner retningsindikator på ruterne
1150	WV-14	Godt med redundant rute information, iform af streg og profil info
1420	WV-	Savner en bedre sammenhæng mellem profil og rute farve bla. pga.

	14	forvirring over overlappende ruter
1550	WV-14	Forventede formular ved tryk på ”kontakt profil” hvor han kunne udfylde yderligere informationer
1630	WV-14	Skiftet til gul reæsonnere han sig frem til at han har sendt en anmodning til Linda, og derved forventer han et svar fra hende
1750	WV-14	Mangler en ikonisk repræsentation i form af en mobil telefon, ved opgaven til overførsel til mobil telefon. Eller en form for menu
1755	WV-14	Overvejer om at de ændringer han har lavet i visiting automatisk bliver overført til mobiltelefonen, med ræsonnementet at hvis han kan kontakte Linda på den måde, kan det også være at overførsels funktionalitet også er der
1820	WV-14	Han finder det underligt at man skal logge ud, da han så mener at han slipper nogle ting. (måske i form af at Linda ikke kan sende svar tilbage /J)
0150	W-14	I tvivl om betydningen af vælg destination, enten så er det vælg destination, ellers referere det til hans nuværende destination
0200	W-14	Han formoder at hvis han trykker på Linda, så får han hendes rute at se
0300	W-14	Forventede zoom funktion på mobilen
0320	W-14	Formoder at den blå prik er hvor han krydser hendes rute
0410	W-14	Manglede en bevægelse på kortet for at kunne få en indikation af hvad den blå prik er
0500	W-14	Havde ikke set at man kunne scrolle ned på mobil telefonen, og mente ikke selv at han havde fundet den, hvis ikke Esben havde sagt det
0610	W-14	Observere at Linda er skiftet til grøn på mobilen, efter at hun har accepteret hans anmodning
0900	W-14	Forvirring omkring minut angivelse i listen over kontaktpersoner
0940	W-14	Antager at han er den blå prik, ved krydset efter at være sat af første gang. Han sender hurtigt en anmodning om at blive samlet op, og observere farveskiftet.
1100	W-14	I tvivl om farven på ruten ved anden opsamling, og tjekker derfor rute billedet
1150	W-14	Indser at den blå prik, er der hvor han skal hen for at blive samlet op
1414	W-14	Efter at have angivet en ny destination, formoder han at listen over mulige chaufføere har rettet sig indtil hans nye destination.
1520	W-14	Overrasket over Johnny dukker op, og modtager hans invitation om en tur
1640	W-14	Prøver på at se Johnnys rute igen, da han ikke kan forstå at den ikke kunne ses
0100	WI-14	Manglede løbende opdatering af bilerne i Visiting, for at give et bedre dynamisk billede af systemet, så man kan se der sker noget
0245	WI-14	Han mener at det ville være smart at kunne skrive en lille besked til chaufføren når man trykker på ”kontakt person” ved Linda i visiting
0320	WI-14	For lille forskel fra Visting til Wandering, i form af at der ikke var større

		mulighed for interaktion med chaufføerne ved computeren.
0530	WI-14	Generel god interaktion med mobilen, efter at have fundet ud af at den kan scrolle. Fundere over scroll bar, men mener at den er overføldig når man ved dét.
0625	WI-14	Endelig opfattelse af blå prik under interviewet var at det var mødestedet
0940	WI-14	Ikonernes skiften i farver, var hans indikation om at der var kontakt mellem de to systemer
1110	WI-14	Ift. Johnny er han i tvivl om hvor meget information han selv sender ud, og derved giver andre mulighed for at kontakte ham
1300	WI-14	Grå ikoner mener han at han ikke kan kontakte, men han kan se en mulighed for at kunne kontakte dem for at lave en fremtidig aftale, så derfor måske en anden farve
1400	WI-14	Han mener at ikonerne og farve skiftet i disse, skaber meningssammenhæng mellem de to systemer

15.20	W-15	(Systemet er ikke blevet resat og derfor forkert status på profiler) Han kan huske navnene på profilerne fra desktop, men kan ikke huske hvem han lavede aftale med.
15.48	W-15	Finder ud af at det er Linda, han har lavet en aftale med, ved at gå ind under hendes profil. (Hendes farve er grøn og forkert)
16.20	W-15	Han går ind under Lindas ”Vis rute”, men har svært ved at se hvad prikken betyder.
16.33	W-15	Tror han ville have fundet ud af hvor han skulle stå på, inde ved desktoppen og på den måde finde vej.
16.53	W-15	Ved ikke om prikken på kortet er Linda eller der hvor han selv er.
17.05	W-15	Ville gerne have haft mulighed for at zoome ud, for at se hvor han selv er og hvor hun er og forholdet imellem de to positioner.
17.40	W-15	Ligger mærke til minuttallet ud for hver profil i listen.
17.55	W-15	(Skærmen bliver resat) Siger at Linda ”stadigvæk” er gul, men indtil videre har hun været grøn.
18.20	W-15	Vil gerne lige tjekke om Linda har skiftet position, da hun har skiftet farve. Går ind under hendes ”Vis rute”.
18.45	W-15	Kunne godt tænke et billede af bilen i stedet for af hende. Kan se at hun har skiftet farve, og dermed accepteret at samle ham op.
20.00	W-15	Kunne godt have savnet at kortet vendte sig efter hvor man er.
22.00	W-15	Vælger at se på Jens’ profil i forhold til at komme med op og køre, der han kan se at han kun er 5 minutter væk.
22.05	W-15	Kan se at Linda forsvandt fra skærmen.
22.25	W-15	Regner med at den sorte rute på ”Vis rute” er Jens, og den turkise er Lindas tidligere rute. Så han regner med at Jens kører forbi hans nuværende position.

23.30	W-15	Ligger mærke til at hvis han scroller nedad i profillisten og skærmen bliver opdateret bliver første punkt i listen markeret.
23.45	W-15	Han vælger selv at gå ind under ”Angiv destination” for at sige at han vil til Klingenberg.
24.00	W-15	Bliver forvirret over at Klingenberg bliver valgt som nuværende position. Klingenberg er markeret rød allerede. Vælger at gå tilbage.
24.30	W-15	Ville gerne kunne sige, hvor han var nu i ”Angiv destination”, men det kan han ikke.
25.35	W-15	Ville gerne have haft et billede af bilen, så han kunne genkende Jens’ bil.
27.00	W-15	Tror at han skal angive hans nuværende position i ”Angiv destination”, før han angiver destination.
28.58	W-15	Forvirret over at Jens stadig er på listen efter at han er steget ud af hans bil.
29.30	W-15	Forvirret over at der ikke bliver vist et kort under Johnnys ”Vis rute”
01.15	WI-15	Ville gerne have en pop-up, når man kører musen henover profil-ikonet, i stedet for at se hele profil-vinduet.
01.30	WI-15	Er ligeglad med at få at vide hvor gamle folk er osv., hvis de bare kører den vej han skal. Synes til gengæld et billede af bilen er meget vigtigt at have.
01.55	WI-15	Synes desktop-systemet er forholdsvis nemt at gå til.
03.15	WI-15	Ved ikke helt hvad et sort ikon betyder, men det betyder ikke så meget, for han tror i hvert fald ikke det har noget med ham at gøre.
04.00	WI-15	Kunne godt savne noget mere eksplicit information om status for den besked man har sendt af sted. Har hun nu sit system slået fra el. lign.
04.50	WI-15	Mener at det giver meget god mening med rød-gul-grøn symbolikken.
05.35	WI-15	Savnende at blive spurgt om hvor han gerne ville have mødt billisten på mobil-interfacet. Vidste ikke om telefonen havde GPS. Hvis det var tilfældet, ville en status på GPS have været ligeså godt, for så kendte systemet hans position.
06.10	WI-15	Ville gerne have haft en mulighed for at vælge et opsamlingspunkt. Enten gøres af bilisten eller ham selv
07.00	WI-15	Savner pris i systemet. Ville være en faktor for ham, f. eks. hvis de havde forskellige priser.
07.50	WI-15	Blev forvirret over at han skulle angive hvor han var i ”Angiv destination”, da han troede systemet godt vidste, hvor han var. Fik valgt forkert, og fik vendt ruten om.
09.05	WI-15	Savnede muligheden for at bruge systemet i lommen, kan bl.a. være lyd eller vibrator.
11.07	WI-15	Systemet gav ikke meget feedback på egen position.
11.30	WI-15	Kunne godt have tænkt sig at han kunne se sin egen rute og så kunne man så se hvem der kører på den.
12.00	WI-15	Profil-listen på mobilen var god nok, men det kunne være at den skulle filtreres anderledes når der var tale om korte ture (til Klingenberg) i forhold til ture til Århus.

13.05	WI-15	Forventede ankomsttid og opsamlingssted inde ved desktoppen.
14.05	WI-15	Mener at desktop-udgaven ikke kunne gå på mobil enhed. Mener der er overflødig information på desktoppen, som han ikke kan bruge on-the-go.
15.00	WI-15	Der skal ikke meget til før at han ikke behøves desktop-delen og kan nøjes mobilen.
17.30	WI-15	Kraftigt overlap i data, så han havde indtrykket af at det var de samme data han manipulerede.

Timeframe		Comment
07:07	WV-16	Logger ind. Tror han ser sin egen profil (tom). Identificerer Google Maps
07:40	WV-16	Scroller lidt rundt og bevæger kortet. Er bekendt med Google Maps.
08:30	WV-16	Ønsker mulighed for at indtaste adresse (som på findvej.dk) i stedet for at skulle zoome ind
08:55	WV-16	Det er muligvis nogle ruter, han kan se på kortet. Han ved det ikke helt.
09:15	WV-16	Ikonerne symboliserer biler – Nårh, nu bevæger de sig ligefrem Gætter på, farverne har en betydning men er ikke klar over hvilken.
09:30	WV-16	Bemærker at profilen har samme farve (grå) som en af bilerne. Er i tvivl om, hvorvidt det har en betydning overhovedet.
09:45	WV-16	Forventer at de forskellige ikoner følger de respektive ruter
10:40	WV-16	Baseret på information om, at den grå ikke burde bevæge sig, gætter han på, at grå betyder inaktiv. Men understreger at han endnu ikke ved det.
11:05	WV-16	Leder først efter menuer da han skal finde navne på bilister. Derefter undersøger han, om man kan trykke på ruterne. Derefter trykker han på et ikon. ”Aaah – ja”.

11:35	WV-16	Havde forventet, at der stod under en bilists profil, om han har plads til flere passagerer
12:45	WV-16	Zoomer ind, for at danne overblik over ruterne, da han skal identificere, hvilken rute der kommer tættest forbi uni.
13:30	WV-16	Identificerer Linda – får profilen op – siger ”ok, det giver god mening” da han opdager ”kontakt profil”-knappen.
13:45	WV-16	Forventer mobilnummer når han trykker på ”Kontakt profil”. Han bedømmer at Linda er her om ca 3 minutter udfra bevægelsen på skærmen. Esben oplyser at han skal se bort fra bevægelsen i forhold til tid.
14:10	WV-16	Ønsker du.... ”Ja, ellers havde jeg ikke trykket på den”
14:23	WV-16	Opdager hurtigt, at ikonet har skiftet farve. Går ud fra, det betyder at der er sendt en request til hende. Sidder og kigger lidt – mangler noget information.
14:35	WV-16	”Annuller anmodning.... Nårh, det var smart”
14:40	WV-16	Nu venter han på, hun siger OK
14:45	WV-16	Bliver i tvivl om, hvorvidt han skulle have valgt den grønne rute i stedet for Linda. Esben informerer om, at han har gjort det rigtige. Han har lidt svært ved at se bort fra, at Linda er ved at være tæt på, på skærmen.
15:48	WV-16	Han antager, der er GPS i mobiltelefonen. Han er blevet spurgt om, hvordan vi får mobilen til at forstå, at vi skal have fat i Linda. Han tænker over situationen.
16:00	WV-16	Han forventer, at mobilen vil kunne fortælle ham, hvornår Linda ankommer til hans position. Hvis hans position er væk fra ruten, forventer han, mobiltelefonen giver ham en beskrivelse af, hvordan han lettest kommer hen til Lindas rute.
16:28	WV-16	Af meningsfulde interaktionemuligheder mener han kun at have ”annuller anmodning”. Esben gør opmærksom på, at han skal logge ud.
		Ude i felten med mobiltelefonen
18:10	W-16	Når han trykker på start, forventer han at se en menu. Han forventer, hans rute er lagt ind. Han forventer, at systemet fortæller han hvordan han kommer hen til Linda og hendes bil. Tilføjer, at han håber der er et billede af bilen.

18:25	W-16	Antager, at bilen er ”den hvide der holdte der” (kadetten). Bemærker at han har glemt hvordan Lindas bil så ud i profilevinduet på desktoppen.
18:33	W-16	Identificerer 3 biler på listen. Umiddelbart lidt forvirrende, da det er Linda han skal bruge. Vil gerne trykke på Linda, men bliver bedt om at uddybe hvad han ser
18:50	W-16	Han ser 3 biler, remser navnene op og siger de har 3 forskellige farver
19:00	W-16	Erindrer fra desktoppen at gul betyder, han har reserveret den, blå betyder den kører og den grå holder stille.
19:10	W-16	Mener ikke han har behov for at angive destination, da han allerede har en destination (han har fået den at vide, men ikke indtastet den nogen steder)
19:15	W-16	Trykker på Linda, og forventer at få at vide hvor han skal gå hen
19:25	W-16	Undrer sig over profilinformationer – ”Jeg skal køre med hende, ikke date med hende”. Scroller ned til rutebeskrivelse. Bliver nødt til at stå stille (pga stærk vind, der irriterer øjnene)
19:45	W-16	Vil gerne have mobiltelefonen til at fortælle hvordan han finder Linda, men har ikke fundet ud af det endnu (vi går videre)
19:55	W-16	Mener ikke der er en mulighed, der springer i øjnene, for hvad han skal, men klikker på vis rute
19:58	W-16	Som forventet kommer der et kort op
20:25	W-16	Gætter forsigtigt på, at den blå prik repræsenterer Lindas bil. Identificerer at der er en rute op kortet.
20:40	W-16	Forventer at få noget at vide om, hvornår Linda ankommer. Har ikke opdaget minutnumrene ved den første menu.
21:15	W-16	Bliver bedt om at forsøge at finde et minuttal for, hvornår Linda kommer. Går tilbage til profilen og leder efter ruteinformation. Konstaterer, at han ikke kan finde et minuttal. Han bliver opfordret til at lede videre.
21:30	W-16	Vælger ”vis rute” igen og gætter på, midtertasten (enter) gør noget. Konstaterer at der ikke sker noget.

21:40	W-16	Går tilbage til profilen for at undersøge om der er noget han har overset. Vælger tilbage igen, så han ender i hovedmenuen. Bemærker, før han trykker, at han ikke kan huske hvordan hovedmenuen så ud.
22:02	W-16	Er i hovedmenuen. "Der er de 3 mennesker igen... så er der angiv destination". Konstaterer, at han ikke kan finde minuttallet (på trods af, at det står på skærmen nu! Evt pga sollys). Går ind under Lindas profil igen.
22:20	W-16	Giver op og mener ikke, han kan finde minuttal.
22:30	W-16	Han bliver bedt om at gå tilbage til hovedmenuen. Han bremser op – vi står stille.
22:50	W-16	"Nåååh ja, okay" – der er kommet en accept fra Linda. Bemærker, at han ikke havde taget højde for dette. Konstaterer, at hun ikke havde sagt ja før.
23:05	W-16	"Nu er den grøn! AHA". Han antager, det er fordi hun har accepteret ham. Konstaterer, at gul måske betød en afventende tilstand.
23:20	W-16	Trykker på Linda igen for at se, om der er sket noget nyt. Vi går videre
23:35	W-16	Tror kortet måske indeholder mere info nu.
23:45	W-16	Scroller ned og leder efter nye informationer (under kortet)
24:00	W-16	Bliver informeret om, at vi nærmer os FR.Bajers vej og at Linda kommer forbi. Han bemærker, at hun bør komme fra højre side (korrekt), såfremt han har vendt mobilen rigtigt. Han kigger stadig på kortet.
24:10	W-16	Under normale omstændigheder ville han putte mobilen i lommen nu
24:25	W-16	Undrer sig over, hvordan Linda ved hvordan han ser ud, så han stikker en arm ud for at give sig til kende.
25:10	W-16	Bemærker igen, at han normalt ville gemme telefonen væk og snakke med Linda
25:35	W-16	Truer Linda med at få en "bad standing" på hans profil, fordi han bliver smidt af

26:15	W-16	Bemærker, at han erindrer noget om ruteplanlægning i den første menu, så går tilbage til hovedmenuen
26:35	W-16	Konstaterer at Linda er forsvundet – "det var interessant"
26:40	W-16	"så kan jeg se, der er en fyr der hedder Jens. 5 minutter – men til hvad?"
26:50	W-16	"Jeg skal angive en destination her – ellers kan systemet jo ikke vide, hvor jeg skal hen". Stopper op.
27:00	W-16	Vælger Klingenberg som destination og bemærker, at han forventer systemet bliver opdateret, så han kan vælge en relevant køremulighed (dvs, han ved ikke at listen repræsenterer dem, der kører forbi ham)
27:14	W-16	Undrer sig kortvarigt over, at systemet ikke forlader "vælg destination"-menuen, når han har valgt en ny. Bliver bedt om at gå videre.
27:25	W-16	Tilbage i hovedmenuen – systemet er ikke blevet opdateret.
27:35	W-16	"Der er en der hedder Jens 5 minutter" Esben spørger, hvad han tror, det betyder. "Det kan være, jens kommer forbi om 5 minutter. Men det gjorde han jo sådan set også før (pre destinationsangivelse)". Vælger Jens
27:50	W-16	Vælger "vis rute" for at være sikker.
28:00	W-16	Ser kortet og bliver informeret om, hvor vi er. "Det passer jo glimrende". Vil trykke tilbage, men bliver bedt om at uddybe. "Hvad er hvad her? - esben". Han undrer sig lidt... "Det jeg reagerer på er, at jeg kan se hans bil. Men hvor den skal hen er jeg ikke sikker på". Identificerer at der er 2 ruter på kortet. Undrer sig lidt. Vi går videre
28:30	W-16	Opgave: Vi skal med Jens. Det har han styr på. Vælger send anmodning. Forventer at dette bliver markeret på Jens' profil.
29:10	W-16	Konstaterer at Jens er blevet gul. Venter på at få en confirm/reply. Modtager reply. Ingen overraskelser,
29:30	W-16	Konstaterer at jens er blevet grøn. Nu venter han bare på at få øje på Jens

29:40	W-16	”Her ville jeg igen have puttet den i lommen”
29:50	W-16	Husker ikke udseendet af Jens’ bil og vil undersøge om der er et billede af bilen under hans profil. Husker, at der var et på desktoppen men mener ikke det er på´mobilen. Han undersøger det.
30:59	W-16	”Normalt ville jeg putte den i lommen igen”.
32:40	W-16	Opdager, at Jens er på listen igen. Kender Jens i forvejen, så trykker på ham. Konstaterer at Jens er grøn – undrer sig. ”Der er et eller andet opdatering, der ikke fungerer”. Han bliver bedt om at vente, mens systemet opdateres...
33:05	W-16	Nu er birgitte kommet og han vælger hende.
33:25	W-16	Vil med birgitte og forventer at ikonet skifter til gult
33:40	W-16	Vil gå hen mod vejen – så afviser Birgitte. ”Bitch! Nårh, der var en der gik om en halv time...”
33:39	W-16	Konstaterer at der går en time, før næste billist kommer.
33:58	W-16	”En Johnny? Okay, det kommer jo lidt bag på mig... Øhhmm... Men 3 minutter, det er jo fair nok”. Han bliver bedt om at uddybe. Han aner ikke hvem johnny er. Undersøger profilen
34:25	W-16	Han tror ikke på, at Johnny er 21 år. ”Normalt ville jeg ikke køre med ham. Jeg tror han samler drenge op. Men jeg er desperat”
34:45	W-16	Konstaterer at Johnny er grøn. Forventer at systemet vil fortælle hvor han skal gå hen, for at møde Johnny. Bliver spurgt om der er en måde, han kan finde ud af det på. ”Måske...”
34:55	W-16	Vælger Johnnys profil for at se kortdelen. Vælger ”vis rute”.
35:10	W-16	Konstaterer at der ikke er et kort med Johnny på
35:42	W-16	Kadetten er kommet lidt for tidligt, og har taget en tur i rundkørslen, og er kørt tilbage. Karsten nævner, at hans backup plan er, at spørge Johnny om han skal til AAU, for det er han ikke længere helt sikker på.

36:10	W-16	Han antager, at Johnny har set karstens profil ”fordi – hvorfor skulle han ellers sende mig en invite”
37:20	W-16	Johnny er ankommet. Karsten siger, han først vil bekræfte om det er johnny, og om han kører til AAU.
	W-16	
		TESTEN I FELTEN ER SLUT. Herunder opfølgende interview
01:10	WI-16	Svært ved at gennemskue hvad farverne betød på desktoppen. Farverne var nemmere at identificere i forhold til funktioner på mobilen
1:40	WI-16	Ønsker search-function på desktoppen. Glad for, der ikke er for meget gøgl.
2:10	WI-16	Forestiller sig, at et kommercielt produkt ville dække over 400 bilister, og at en søgefunktion ville indsnævre resultatet til det, han blev mødt af
2:40	WI-16	Baseret på kendskab til Google Maps : Efterspørger hybrid-funktionen for kortet, fordi han ikke er stedkendt. Han nævner, at han bruger det meget, til at genkende bygninger. Finder det relevant i forhold til, at folk højst sandsynligt skal bruge det udenfor deres lokalområde.
3:10	WI-16	Havde forventet, at han skulle tage kontakt til Linda (telefonnummer). Forestiller sig, der bliver sendt en sms eller lignende til Linda.
3:45	WI-16	Forestiller sig, han ville lave aftale med mange bilister, for at være sikker på at få resultat. Ved svar glemme at annullere med de andre.
4:30	WI-16	Manglede informationer ala ”Du har nu kontaktet linda og du får svar indenfor blabla tidsrum” efter at have kontaktet en profil.
5:10	WI-16	Farvernes betydning blev aldrig rigtigt klart for ham under desktop-brug.
6:10	WI-16	Han synes helt klart, at ikonforklaringerne skulle have været integreret i systemet.
7:05	WI-16	Det han manglede allermest ved mobilinterfacet var billeder af de biler, han skulle med.

7:20	WI-16	Meget brug af ”tilbage”-knappen. F.eks. ved valg af destination. Simpelt interface – det kunne han godt lide.
8:00	WI-16	Han mener, i forhold til opgaverne, at systemet kunne det nødvendige. Perspektiverer over, at han ikke havde brug for at kunne ændre farverne og lignende systemindstillinger.
8:25	WI-16	Han blev overrasket, da han modtog et tilbud fra Johnny
8:50	WI-16	Er ikke stedkendt. Manglede en relation til hans egen position, da Johnny tilbuder ham et lift. Det er ikke klart for ham, hvor Johnny befinder sig, samt hvor han kører hen (fordi han ikke kan omsætte bynavnene til relation i forhold til egen position).
9:00	WI-16	Ved Johnny var det helt galt, for der var ikke noget kort hvor han kunne få bekræftet, at han faktisk kom forbi det rigtige sted.
9:35	WI-16	Esben forklarer ”først er johnny der ikke, der kommer et tilbud, så er johnny på listen”... Karsten antager, at Johnny først har startet/tilmeldt sig efter (efter hvad? Det pågældende tidspunkt? Start på systemet? Vides ikke)
9:50	WI-16	Han synes det var underligt, at Johnny kontaktede ham
10:00	WI-16	Han havde overhovedet ikke (ordret) nogen opfattelse af, at bilisterne på listen havde en relation til ham
10:10	WI-16	Esben: ”Hvis der nu havde været 20 på listen...?” Nej, ingen opfattelse af relation til ham selv.
10:20	WI-16	Begrundelse: Han havde jo reserveret en tur med Linda, så han er forvirret over, hvorfor alle de andre er der. Han havde kun forventet at blive mødt af informationer om, hvordan han fandt Linda.
10:35	WI-16	”Dengang jeg trykkede start havde jeg bare en forventning om, at der kom nogle informationer om, hvordan jeg fandt Linda – og så var det det. I stedet for, så kom der en masse biler – det var faktisk meget forvirrende. Fordi da skulle jeg ind og vælge hende igen”
10:48	WI-16	(fortsat) ”... og der var jeg heller ikke helt opmærksom på den der confirm der skulle komme”
10:50	WI-16	Esben: ”Så hvad de andre bilister betød for dig, var lidt uklart?” Karsten: ”Ja, jeg koblede dem slet ikke til det kort der... Altså, jeg havde set navnene før, men det faldt mig ikke ind, at det var fordi de måske også kørte forbi – fordi jeg havde jo reserveret en tur. Hende skulle jeg jo køre med, og så var alt andet ligegyldigt”

11:30	WI-16	Esben forsøger at spørge til Karstens opfattelse af, at de samme data benyttes i 2 kontekster. Karsten svarer"...altså... Jeg har en forventning om, at det bare virker"
12:10	WI-16	Det kan være, der blev sendt data, da jeg loggede ud. Det havde jeg egentlig forventet, at der blev gjort da jeg trykkede "kontakt profil"
12:20	WI-16	Esben spørger "Sendt data siger du – hvorhen?" Karsten "til et eller andet centralt system".
12:35	WI-16	"Men det var ikke noget jeg tænkte over. Jeg har bare en forventning om at det skal bare virke".
13:00	WI-16	Esben forklarer om, at pointen handler om, hvordan han opfatter de samme data fra kort til listeinterface. Karsten: "Nåårh, så når der stod 30 minutter...ja okay. Det forstod jeg egentlig også, jeg forstod bare ikke hvad jeg skulle med dem, for jeg havde jo en tur"
13:20	WI-16	"Sådan som jeg forstod det, så skulle det her (desktop) være en planlægningsdel, og så skulle mobilen egentlig være en passiv del, der egentlig bare guidede mig derhen jeg skulle. Det var meget fedt da jeg blev smidt af, at jeg kunne planlægge det, men som udgangspunkt der skulle det bare være at finde Linda".
13:50	WI-16	Samme data på 2 dimser: "Det var egentlig meget selvforklarende"
14:50	WI-16	At der var 2 andre bilister som udgangspunkt gjorde ham usikker på hans aftale med Linda
15:00	WI-16	"Hvis jeg havde lavet en søgning på desktoppen og indsnævret resultatet til de 5 biler, så kan det godt være, jeg havde dannet den kobling (at de alle havde noget med ham at gøre) for så havde jeg selv gjort noget aktivt til at finde de der 5 biler og så ville det måske give god mening."
15:25	WI-16	"Det svarer lidt til at køre med en bus. Hvis jeg skal med 2'eren, så er jeg ligeglad med 12'eren og 14'eren".
		Slut

05.40	WV-17	Tror det er hans egen profil i venstre side
06.20	WV-17	Han zoomer ind smertefrit, ved at han skal trække i kortet for at flytte fokus.
06.50	WV-17	Som udgangspunkt ved han ikke hvad farver på ikoner betyder, men har en forventning om at streger er ruter.
07.05	WV-17	Forstår ikke farveforskelle på ruter betyder, men ved at folk kører på de enkelte ruter.
07.40	WV-17	Forventer at grå ikke kører og blå kører eller på vej til det.
08.16	WV-17	Forventede tooltip når han kørte musen over ikon. Trykker på profil for profil-information.
08.45	WV-17	Billede af bil har betydning ham, er bilen han selv skal køre i.
09.03	WV-17	Vælger selv at trykke på "Kontakt profil"
09.15	WV-17	Han forventer at destination er der hvor profilen fra kører fra og ikke hvor hvor han skal hen. Resonænerersig dog frem til at det er hvor profilen skal hen.B48
11.15	WV-17	Han kan se at Linda ikke er kørt forbi hans position endnu
11.55	WV-17	Han tror at han har aftalt med Linda at han kan komme op atkøre
12.09	WV-17	Han mangler information. Han ved ikke hvad han skal gøre.
13.00	WV-17	Forventer at han får informationer om hvor han skal mødes med Linda. Forhåbenlig det sted der er tættest på ham.
14.05	W-17	Kan genkende Linda på listen, men ved ikke hvad tiden betyder.
14.15	W-17	Overrasket over at Jens og Birgitte er på listen (hovedmenu) på mobil.
14.30	W-17	Han ser Linda har samme farve (gul) og forventer det betyder at de har en aftale.
14.45	W-17	Jens er stadig ude og køre mens Birgitte holder stille. (Genkender ikoner)
14.53	W-17	Han forventer at "Angiv destination" er der hvor man gerne vil samles op.
16.00	W-17	Han regner med at kunne se ruten, hvor han kunne tage med Linda, når han trykker vis rute i "Profil"-menuen
16.10	W-17	Han bliver nødt til at stoppe op for at se på hvad der er på kortet under "Vis rute"
16.30	W-17	Han mener enten at Linda harfået information om hvor han er eller at systemet har regnet det bedste opsamlingssted ud.
16.40	W-17	Han synes det kunne være smart at kortet kunne vende alt efter hvordan man vente, men det vra ikke noget han forventede.
16.55	W-17	Havde forventet at han kunne zoome ud, så han kan få etoverblik over vejen. Han mener ikke at han er stedkendt nok.

19.25	W-17	Han stopper op for at navigere tilbage fra kortet til listen med passagerer.
19.45	W-17	Han kan se at Jens er 5 min fra hans egen position. Ved nu at det minutangivelsen betyder. Han nævner ikke hvad Jens' tidligere tid var.
19.55	W-17	Han ved nu at han bliver nødt til at gå ind under profil vinduet og få vist Jens' rute for at se hvad hans rute er.
20.00	W-17	Han stopper for at læse kortet under "Vis rute".
20.40	W-17	Han tror at den blå prik repræsentere Jens og der han holder lige nu.
21.05	W-17	Han forrventer at Jens holder på den bl prik og da han ikke har lavet nogen aftele med ham, så forventer han bare at han kører videre.
21.20	W-17	Han stopper og sender en anmodning, som han forventer at Jens modtager.
21.46	W-17	Han ser at Jens har skiftet farve og siger det er det samme som Linda, som betyder at de har en date.
22.18	W-17	Han regner måske med at den grønne farve betyder at ham og Jens har en aftale.
22.40	W-17	Han forventer at den blå prik er der de skal mødes, hvor han før troede at det var der han var.
23.37	W-17	Han forventer at han dukker op ved den blå prik, indenfor fem minutter.
25.30	W-17	Han ser at listen er blevet opdateret og at der er to nye billister han kan komme med.
25.56	W-17	Han finder ud af at han skal gå ind i angive destination for at indtaste hans nye destination. Troede i starten at det var hans egen position.
26.15	W-17	Han ved ikke om han ved at trykke tilbage bekræfter at det er hans nye destination.
26.40	W-17	Han får vist hvor birgitte kører henne. Ergo han ved ikke at billister i listen kører forbi ham.
27.00	W-17	Han siger at han at lidt bange for at birgitte stadig er gul, for nu har han lavet en aftale med johnny og så birgittte stadigvæk tror hun skal komme. Han antager at det er en fejl i systemet at hun stadig er gul.
00.40	WI-17	Han forventer at log ud skærmen er øverst til højre pådesktop-interfacet. Det er han vant til flere steder på nettet.
01.00	WI-17	Ruter kunne være mere tydelige og andre farver for de falder i et med hinanden.
01.10	WI-17	Ikoner kunnehave samme farve som ruten
01.20	WI-17	Ikke helt intuitiv med blå og grå havde forventet grøn og rød
01.50	WI-17	Forvirring over om han har indtastet sin destination
02.20	WI-17	Savner søge/filtrering-funktion
02.45	WI-17	Kunne godt savne en tidsangivelse af hvornår Linda var, hvor han var

		nærmest hendes rute
06.45	WI-17	Kunne måske godt tænke sig at det var angivet status i profil-vinduet
07.28	WI-17	Manglede måske nogle bekræftigelser
08.05	WI-17	Kunne ikke helt finde ud af hvad minuttallet betød.
09.30	WI-17	Han fandt kortet på mobilen uoverskueligt og utilstrækkeligt og ønskede zoom og navigering.
10.08	WI-17	Han synes han manglede sin egen position på både desktop og mobil.
11.15	WI-17	Han mener ikke at han kunne have brugt bilbillede til noget på mobilen.
12.15	WI-17	Desktop giver bedre overblik end liste på mobil. Men mener samtidig at han godt kunne bruge en tidsangivelse på desktoppen.
14.40	WI-17	Han har lagtmærke til at knapperne på de enkelte interfaces ikke havde samme navn, selvom de gjorde det samme. Han synes det burde være det samme.
15.00	WI-17	Han synes bedre om interfacet på desktop og tror også det ville have været mere overskueligt på mobil at bruge det.
15.50	WI-17	Kunne godt bruge en rutebeskrivelse af hvor han skulle gå hen, ved desktoppen.
18:00	WV-18	Testen starter ude i felten – Vi har ingen lyd på desktop-delen ☹
18:50	WV-18	Genkender Linda – husker det pga den gule farve. Mener man typisk vil huske navnet bedre, hvis ikke det var en testcase. Desuden er Linda øverst
19:20	WV-18	Er lidt i tvivl om, hvad han skal. Måske det skulle være tydeligere, at han har sendt en anmodning til Linda
20:00	WV-18	Trykker på Linda og forventer information om hende, hendes bil samt hvor hun er og hvor han skal møde hende
20:30	WV-18	Han er lidt ligeglad med personlige informationer. Han vil vide, hvor hun er. Han går langsomt mens han læser profilinformationerne.
21:20	WV-18	Stopper helt op, da han skal overskue kortet
21:35	WV-18	Den orange rute er hendes rute. Den blå prik er hende... Eller mig. Det ved han ikke. Vi går videre
22:15	WV-18	Undrer sig over, at lindas accept dukker op, inden han når tilbage til hovedmenuen. Et brud i rækkefølgen.

22:45	WV-18	Forventede ikke at beskeden om accept var popup. Forventede at ikonet blinkede eller lignende, så han skulle gøre noget akrivt for at se beskeden.
23:05	WV-18	Linda er blevet grøn – det er fordi, hun har accepteret. Perspektiverer over, at hvis man kender systemet, er det måske nok, at ikonet bare bliver grønt (dvs ingen popup)
25:10	WV-18	Vi stiger ud – har opdaget at Lindas ikon er forsvundet. Har svært ved at se om grå er grå eller bodeaux. Han kan ikke huske de forskellige farvekoder, men klager over sollys der er problematisk.
26:10	WV-18	(fortsat) Forklarer at birgitte holder stille og jens kører. ”Dvs, jeg kan komme med Jens”
26:30	WV-18	Husker, at han ikke kunne sende en anmodning til Linda, da han allerede havde gjort det på computeren – men nu kan han til Jens. ”Meget logisk”
26:40	WV-18	Går ud fra, han får besked/svar når Jens har modtaget anmodningen
27:00	WV-18	Jens skifter til Gul. ”Det betyder, han har accepteret”
27:10	WV-18	”Men nu får jeg ikke noget feedback i for af tekst, som jeg gjorde før. Det er inkonsistent – men jeg ved ikke om det kommer. Jeg ved ikke om jeg får det, hvis jeg trykker på ham”
27:30	WV-18	”Den kom der – okay. Jens har accepteret”
27:50	WV-18	Thomas diskuterer lidt med sig selv, om gul betyder at vedkommende har accepteret eller ej. Det kan han ikke helt huske.
28:00	WV-18	Husker på at grøn betyder accept. Diskuterer lidt videre med sig selv og kommer frem til det rigtige. Konstaterer at jens er blevet grøn. ”Alt er som før”
28:35	WV-18	Esben beder Thomas om at finde ud af, hvor Jens er. Vi står stille. Umiddelbart vælger han ”angiv destination”. Han forestiller sig, at han skal angive en destination, som han fortæller jens. Derfor mener han, det bør være en undermenu til jens’ profil. ”Hvorfor fanden sku han bare acceptere min anmodning? Han ved ikke hvor jeg er og hvor jeg skal hen. Jeg mener ikke, jeg har givet ham noget. Han må gå ud fra, jeg er i nærheden af hans rute”
29:40	WV-18	Vælger vis rute. Stadig i tvivl om hvad den blå prik er. ”Ja, nu kan jeg da se ruten. Den er grøn. Vi står faktisk på noget af den – eller lige ved hjørnet af den. Så han kommer her forbi på et tidspunkt, hvis ikke han er kommet forbi.”

30:30	WV-18	Efter lidt tid, konstaterer Thomas at Jens vil komme fra sidegaden.
31:38	WV-18	Vi stiger ind i bilen og Jens siger ”du skal hen til Klingenberg centret?” Thomas: ”Hvor fanden ved du det fra?” Jens ”Det kan jeg se i min del af systemet” Thomas undrer sig lidt
32:50	WV-18	”Birgitte og mette er blå, så de kører”
33:00	WV-18	”Det der undrer mig lidt... Har jeg på noget tidspunkt angivet hvor jeg kommer fra og hvor jeg skal hen?” Esben:”Nej, jeg har fortalt dig...” Thomas : ”Okay, det ved systemet bare” Esben ”det er simuleret, at det ligger i den anmodning du sendte til...” Thomas: ”okay, undskyld, fint nok”
33:25	WV-18	”Og så de der minutter, jeg går ud fra, det er når vedkommende kommer forbi her hvor jeg står. På en eller anden måde, må den information også været givet, hvor jeg er...”
34:00	WV-18	Han vælger destination til AAU. ”Nuværende destination Aau – ja okay, det er så ikke rigtigt. Nuværende destination er så klingenberg...” Han ønsker en slet-funktion... Esben begynder at belære Thomas om betydningen af position og destination. De bliver enige om, at destination er der, vi skal hen.
35:00	WV-18	Han formoder, at han nu har fortalt systemet, at han vil hen til AAU.
35:20	WV-18	”Jeg tænker lige over, hvad fanden det er jeg skal” (han har fået at vide, vi vil finde en bil tilbage til AAU). Han trykker på birgitte, fordi der står færrest minutter.
35:40	WV-18	Tror på, hun kommer forbi, så sender anmodning uden at se rute. Konstaterer den skifter til gul. Nu er der styr på, at han venter på svar. Modtager afvisning. Undrer sig over, birgitte stadigvæk er gul. Måske den skulle fjernes ”det er jo ikke en mulighed længere”.
36:40	WV-18	Johnny skriver. Hvem er johnny? ”Ja, det kunne jeg fandme også godt tænke mig at vide. Men det må være.... andre kan måske se at jeg... Nej. Det forvirrer mig. Fordi, han ved ikke hvor jeg skal hen.” Esben: ”han ved ikke hvor du skal hen?” Thomas: ”nej, han ved ikke hvor jeg er”
	WV-18	Esben forklarer at vi simulerer at der er GPS i mobilen. Thomas snakker om, at hvis der er en million koblet på... Det er vi ligeglade med. Thomas bliver enig med sig selv om, at så kan Johnny se hvor Thomas er. Han vælger at se johnnys profil. Han ville gerne kunne acceptere uden at se profilen først

38:30	WV-18	Sender anmodning. Konstaterer, johnny er grøn. Han går ud fra, vi nu skal vente på Johnny.
		Felttesten er slut. Herunder følger interviewet
1:00	WI-18	Havde forventet, at skulle indtaste nogle informationer, da han sendte en request. Antager, man havde lavet en profil i forvejen. Det var lidt hemmeligt, hvad der skete da han sendte en anmodning. På daværende tidspunkt havde han ikke tænkt GPS og mobiltelefon ind i sammenhængen.
2:00	WI-18	Ruter og biler – det hang ok sammen. Overvejer om farverne på ruterne kunne knyttes i højere grad til bilerne. Ved godt, bilernes farve har en anden betydning. Overvejelse i forbindelse med at ikonerne ligger tæt. Foreslår et andet ikon, der illustrerer om bilen kører eller ej – så er farverne fri til ruterne.
3:20	WII-18	Overordnet gjorde systemet som han havde forventet.
3:45	WI-18	Under profil kom kun destination – husker at der også var start-sted på mobilen. Ønsker konsistens. Ellers er der de informationer, han skal bruge (desktop interfacet).
4:25	WI-18	Ved afslut-funktion: På dette tidspunkt havde han ikke tænkt på mobilen. Kun desktoppen.
5:30	WI-18	Ingen overvejelser i forhold til mobiltelefonen og hvad den kunne da han sad foran desktoppen.
5:50	WI-18	Først forventede han ca samme billede på mobilen som på desktop. Ikke sikker på sammen detaljeringsgrad med kortet. Men forventede at kunne se andre biler.
6:20	WI-18	Det var meget logisk at linda stod øverst, fordi han havde sendt en anmodning til hende.
6:40	WI-18	Der gik et lille halvt minut med mobilen, før han koblede navnene til dem, han havde set på desktoppen. Det var den gule farve der gav udslettet. Nu mener han, det er logisk og at han bare ikke havde opdaget, at det var de samme navne. Mener det er hans egen fejl og ikke at der er noget galt med systemet. Nævner at han ville huske navnene bedre i en ikke-test-situation.

7:30	WI-18	Han kom i tvivl om, hvad gul og grøn betød. På et tidspunkt troede han, gul betød accepteret. Men da han så grøn var det helt logisk. Grøn kan kun betyde OK. Udleder guls betydning efter at have set grøn.
8:40	WI-18	Esben siger noget om, at det måske ikke er logisk at indhold på en pc præsenteres på en mobil. Thomas: ”Nej, men jeg synes da, det er smart. Alt andet lige, så er det nemmere at interagere på computeren end mobilen”
9:30	WI-18	Med de her små afstande ville du ikke bruge computeren, men være derude med mobilen.
10:10	WI-18	”Men det er smart nok, at der sker en eller anden synkronisering mellem ens profil og...”
11:05	WI-18	Første tanker om Johnny: ”hvordan fanden han vidste hvor jeg var og hvor jeg skulle hen. Hvor den data var tilgængelig for ham henne”. Esben: ”har du nogen ide om, på nuværende tidspunkt, hvordan han fandt ud af det?” Thomas: ”Det må... Nej. Nej det har jeg faktisk ikke. For han er jo også ude at køre”. (dvs thomas tror ikke der er et system i johnnys bil) Thomas: ”For så skulle han have adgang til en computer hvor han kunne... Hvor jeg så skulle have trykket ind”. Esben: ”Hvis du forestiller dig, han har noget lignende mobilen i hans bil...” Pause... Thomas: ”Han må vel kunne se de brugere der er i systemet på et kort. Ja okay, så han må kunne se hvor jeg er. Men fordi jeg har bedt en anden bilist om at tage mig op så kan jeg ikke se hvorfor eller hvordan han kan vide at jeg gerne vil med op at køre. Så ku man måske forestille sig, at idet jeg sender en anmodning om at køre med en, så skifter mit ikon generelt i systemet. Så alle brugere der ser mig, ser mig som en der gerne vil have et lift”. Esben: ”så det er fordi du sender en anmodning om at komme med en?” Thomas: ”ja. Det ved jeg ikke. Det kunne jeg forestille mig.”
13:10	WI-18	(fortsat) Esben: ”lige inden, havde du angivet en destination” Thomas: ”Ja. Så har det noget med at gøre, at alle de ruter den destination krydser, de får mig op på deres skærmbillede”.
14:20	WI-18	Farverne giver ok mening (han ser på oversigten)
15;40	WI-18	”Først så troede jeg egentlig i havde udviklet 2 systemer. Men det er jo i bund og grund et, ikke. Men først troede jeg, jeg skulle sidde og teste heroppe. Jeg troede ikke, jeg skulle ud. Jeg ved godt, du havde sagt et eller andet, men men, det var ikke lige feset helt ind på lystavlen. Men nej, det havde jeg ikke nogle problemer med at forholde mig til – det er fuldstændig logisk at det havde noget med hinanden at gøre”

06.24	WV-19	Hun forventer det er hendes profil-vindue.
09.05	WV-19	Mener ikoner er mulige biler, der kan have hende med op og køre og linjerne er bilernes ruter.
10.00	WV-19	Regner med at det grå ikon ikke kører endnu, og de blå biler kører.
10.30	WV-19	Antager at destination i profilvindue er der hvor de skal hen.
11.00	WV-19	Antager at billede af bil i profilvindue er enten klassegraduering eller deres egen bil.
12.10	WV-19	Bruger destination profil-vindue til at se hvor de kører hen og dermed om de kører forbi Klingenberg.
13.20	WV-19	Gul farve betyder, at hun venter på svar fra Linda.
14.30	WV-19	Forventer at kortet er på mobil-telefonen og informationer om hvor Linda er henne og hvor de forskellige folk der er ledige, er.
16.20	W-19	Ser at de profiler i listen har de samme farver som før.
16.35	W-19	Linda er 24 minutter væk, og Jens og Birgitte er lidt længere væk.
16.45	W-19	Linda har en gul der er hende som der blev kontaktet, Jens har blå bil, så han er undervejs. Han er ikke blevet kontaktet. Birgitte har grå ikon og det betyder at hun holder stille og ikke er taget afsted endnu.
18.10	W-19	Forventer at "vis rute" i Lindas profil-vindue gør hende i stand til at se Lindas rute.
18.30	W-19	Den røde streg er Lindas rute, og den blå prik er enten hvor hun selv er eller hvor Linda er.
19.15	W-19	Forventer at kortet ændrer sig efter hendes egen position. Spørger om hun skal være så stedkendt at hun selv kan finde det. Mangler information hendes egen position. Man kan bruge kortet, hvis man er stedkendt, men hvis man ikke var stedkendt ville kortet være lidt for lille og det ville være lidt for svært.
19.50	W-19	Ville gerne have at kortet rykkede sig efter ens position, det ville gøre det lidt mere pædagogisk.
21.55	W-19	Ser Kadatten og regner med at det er der Linda er markeret på kortet.
22.55	W-19	Kortet bevæger sig stadigvæk ikke, som om det har sat sig fast.
24.05	W-19	Jens er 5 minutter herfra, så ham kan man jo kontakte.
24.35	W-19	Ser at Jens kører fra Terndrup til Nørresundby og forventer ikke at han kører forbi AAU.
25.25	W-19	På Jens "Vis rute"-kort ser hun 2 ruter og en blå prik hun tror, er hende selv. Men den passer nu ikke helt. Regner med at Jens er den blå linje. Tror nu at den blå prik er mødestedet.
26.30	W-19	Undrer sig over om Jens kender hendes position. (Får at vide at der er GPS i

		telefonen). Forventer at hun skal angive hendes destination, da Jens ikke kan finde ud af det. (der kommer besked fra Jens)
28.25	W-19	Synes det passer med at hun næsten er ved mødepunktet.
31.00	W-19	Tror at hun har set Mette før.
31.20	W-19	Undersøger selv hvor Birgitte kører hen og får vist rute.
32.15	W-19	Undrer sig over at hun kan angive destination, når hun ikke har gjort det endnu.
33.15	W-19	Bliver forvirret over om hun skal angive hendes egen postion, efter hun har angivet hendes destination. Vælger at trykke tilbage.
34.25	W-19	Ville måske gerne have noget mere information om Johnny.
35.05	W-19	Vælger Johnnys profil for at se hvor mødestedet er. Bliver forvirret over ikke at kunne se kortet.
01.00	WI-19	Mere besværligt at bruge mobilen end desktoppen, pga. mindre skærm.
01.40	WI-19	Hun forventer at bilisterne for data om ens selv, ligesom man kan se deres data.
02.30	WI-19	Selvom der var billede af bilen i profil-vinduet, ville hun ikke kunne huske hvordan bilen så ud når hun kom ned, da hun så flere profiler igennem. Og da hun ikke havde billedet på mobilen, kunne hun ikke rigtig bruge billedet til noget. Hvis billiedet er det ene sted, skal det også være det andet sted.
04.05	WI-19	Ville gerne have haft at ruterne på kortet havde samme farve som bilen havde. Lidt mere pædagogisk. Så man kan koble dem.
04.30	WI-19	Forvirret i starten over hvad farverne på bilerne betød. Kunne det eventuelt være angivet efter hvor langt en bilist var på ruten.
05.30	WI-19	Der skal være en startside-forklaring, når man logger ind i systemet første gang. Ikonforklaring.
07.20	WI-19	Synes det fungerede bedre på desktoppen. Bla. fordi der var ting på mobilen der ikke fungerede, såsom brug af den rigtige tilbage-knap. Manglede et mere dynamisk kort på mobilen og så var kortet meget småt.
08.40	WI-19	Man kunne ikke se hvis rute det var man krydsede på kortet.
	WI-19	

08.00	WV-20	Ligger ikke mærke til profil-vinduet
10.03	WV-20	Forventer at farvede linjer er ruter for biler, der har planlagt at køre på dem.
10.48	WV-20	Regner med at når hun trykker på ”Kontakt profil” bliver vedkommende kontaktet om kørsel.
11.20	WV-20	Overvejer om hun ønsker at komme op og køre med en i en Opel Kadett.

12.00	WV-20	Associatierer den orange linje med Lindas ikon.
12.50	WV-20	Regner med at systemet kontakter Lindas mobiltelefon, måske sendes en SMS.
13.20	WV-20	Synes ikke der sker noget, da hun trykker på ”Kontakt profil”. Finder ud af at hun måske venter på at Linda svarer.
13.45	WV-20	Den gule farve betyder at hun er aktiv.
13.55	WV-20	Ved ikke helt hvad hun skal gøre nu, om hun bare skal vente på at Linda svarer. Bliver i tvivl om Linda skal gøre noget aktivt eller hun selv skal.
14.45	WV-20	Hun kan ud fra ikonerne se at hun snart får travlt, hvis hun skal nå at komme med Linda.
17.15	W-20	Linda er her om 24 min. Kan i hvert fald se at der står Linda, Jens og Birgitte. Repræseterer bilister ude i verdenen.
17.35	W-20	Det var Linda jeg ville prøve at komme i kontakt med.
17.56	W-20	Åbner Lindas profil og ser at Linda er ikke-ryger og kører frs Skelby til Da Vinci Parken.
18.19	W-20	Regner med at hun kan annullere anmodningen til Linda, som blev lavet inde ved computeren, inde under Lindas profil.
19.45	W-20	Havde forventet at hun skulle skrive en SMS til Linda, men det var ikke rigtigt da Linda fik en besked helt automatisk.
20.35	W-20	Vælger at gå ind under Lindas profil, for at se Lindas rute.
21.55	W-20	Troede først at den blå prik på kortet var der hvor Linda var, men tror nu at det er der hvor Linda samler op, for hvis der er 24 minutter til at Linda kommer, ville det være dumt at hun holdte ved den blå prik nu.
21.40	W-20	Kunne have været rart at kunne zoome ud på kortet, hvis man nu ville vide hvor hun endte henne. Det kunne man selvfølgelig se på computeren.
24.00	W-20	Prøver at kontakte Jens som er 5 minutter væk. Går ind på ”Vis rute” for at se om Jens kører forbi. Mener at Jens er den grå streg og at han derfor kører forbi hendes nuværende position.
26.00	W-20	Skal lidt længere frem, for at komme til opsamlingssted, hvro Jens kommer om 5 minutter. Håber på at hun kan nå det.
27.25	W-20	Hun genkender hvor den blå prik er i landskabet, da hun er stedkendt og behøves ikke at bruge kortet mere.
28.45	W-20	Undrer sig over hvordan Jens ved at hun skal til Klinegnberg, det har hun ikke skrevet nogen steder.
30.20	W-20	Regner med at hun skal bruge ”Angiv destination” til at markere at hun skal tilbage til AAU.
31.35	W-20	Forventer at der er kommet nye ruter i profil-listen, efter at hun har angivet destination. Opdager at der er kommet en Mette og Birgitte.
32.20	W-20	Antager at dem der er i listen alle kører til AAU, da hun har angivet destination.
32.50	W-20	Kan ikke se noget kort for Mette, så hun antager at det ikke er en

		mulighed.
33.05	W-20	Kan se at Birgitte har skiftet farve til gul eller grøn efter hun har kontaktet hende.
34.12	W-20	Tror Johnny grønne farve at han gerne vil tage hende med.
00.50	WI-20	Man havde et bedre overblik på desktoppen i forhold til mobilen. Mærkeligt at man ikke angav en destination. Forvirrende hvordan de andre vidste hvor man skulle hen. Kunne man måske se via GPS.
02.50	WI-20	Kan ikke huske om der skete noget med Lindas ikon på mobilen, da hun svarede. Men Johnny blev grøn med det samme.
04.00	WI-20	Antager at de er noget informationer om én selv, man har indtastet før, som de andre så kunne se.
05.20	WI-20	Forventer at når man logger ud på desktoppen, så bliver man aktiv på mobilen. Man skifter system.
06.20	WI-20	Havde forventet at listen på mobilen kun indeholdt Linda, da det var hende hun havde lavet aftale med.
07.00	WI-20	Synes hun havde adgang til de samme informationer på mobilen som på desktoppen, bare på en anden måde. Man havde dog kun informationer om hvor bilisterne kørte fra og til, men ikke det store overblik som ved desktoppen.
07.25	WI-20	Synes det var en fordel at have en markering (blå prik) af hvor man skulle mødes.
08.05	WI-20	Det var svært at overskue de enkelte farver på ruterne på kortet på mobilen, og hvilke ruter edr tilhørte hvem. Kunne være at hver profil havde en bestemt farve.
10.25	WI-20	Tror at Johnny har sat sin status sådan at man ikke kan se ham i systemet. Men han kan måske godt se hende.
13.30	WI-20	Stod klart at det var de samme data hun kunne manipulere med, da det ikke kun var Linda der var i listen på mobilen.

13.6 Interviews for understanding

Time	Person	Utterance
00:00:20	Jesper	Ja i princippet nu er jeg i et arbejdsregi ik' og det er første gang jeg prøver det i forbindelse med arbejdsregi. Normalt er det fordi jeg har kæreste i Tyskland, i Kiel.

00:03:00	Jesper	Altså jeg får jo også henvendelser fra mange, efter jeg har fået profil inde på Gomore. Jeg har nok tyve i min database. Nogle er enkeltstående tilfælde, som måske ikke er og nogen er mere en den ene gang, men jeg har dem nu liggende, for det kunne jo være. Og grunden til at jeg har dem liggende, det er ikke fordi jeg tror at jeg vil spamme dem ned, om at de skal med, det er bare rart at have noget på folk. Også bare lige for at have navnene, så man kan kategorisere dem ind og hvordan faen var det nu. Hvad er det nu de vil, er det en for en gang og er det flere gange ik. Der er mange tyskere som studere i Århus og så tager de til Tyskland, til Flenburg eller…
00:04:12	Jesper	Ja enten skal de til Hamburg og så står de af i Flensburg. Jeg har ikke prøvet at køre med dem endnu, for det har ikke rigtig passet sammen. Det er altid et lille problem, det der med at få det til at passe sammen ik. Men det de har givet udtryk for, det er at de gerne vil med til Flenburg ik. Det der med aflønning det er også en svær en, for hvad skal man have for det ik. For det er vidst et eller ande tt med loven, så er det hyrevogns ik.
00:04:55	Jesper	Altså for mit vedkommende er det en udgiftsdeling. Det er ikke for at tjene på, det er egentlig bare for at dele udgifterne.
00:05:15	Jesper	Ja, hvis det er til Kiel kan det helt klart betale sig, men det er også rare..for nu kan jeg godt lige at snakke med folk, så det gør ikke mig noget at møde en masse nye mennesker, så det selvfølgelig fordi man har interesse for at møde nye mennesker, ellers gør man det ikke, for man ved ikke hvad man får, så man skal have en tiltro til de mennesker man har med at gøre. Selvfølgelig kan man bare lade være med at tage dem op, men der er alligevel, men man ligger alligevel noget af sin barriere ned ved at lade nogen komme ind i sin bil. Men i princippet ved man ikke om det er en der sidder med kniv.
00:05:35	Jesper	Normalt vil jeg sige at man har en korrespondence. Jeg har haft én hvor det kun var per mail, hvor jeg spurgte kan jeg lige ringe dig op ikke, for igennem stemmen kan man høre forholdsvis en del ik. Hun var fra Polen, så jeg vidste godt hvor det bar hen ad, jeg vidst godt at hun var pige og der sker nok ikke noget . Men jeg ville have det meget bedre med at vi deler telefonnumre ik. Det er også vigtigt for dem…hvem er jeg. Jeg skriver i min profil at jeg har en kæreste dernede, så det ikke er et eller andet seksuelt overgreb. Jeg prøver i hvert fald at ligge ud at det er rent kørsel det her. Der er ikke noget skjult. Der ligger ikke nogen dagsorden. Det er klart at alt man hører i medierne. Det er vigtigt for mig at man prøver at få sandheden frem i det her. Og indtil videre er det faktisk kun piger der har henvendt sig. Der har været to fyre og så er der jer, der har henvendt sig, men ellers har det været piger. Af hvilke årsager det ved jeg ikke. Indtil videre er min database så lille, at den ikke er repræsentativ. I og med jeg kun har haft kontakt med de der tyve mennesker.
00:07:50	Jesper	Jeg vil sige, jeg tror der er mange der ikke kender til Gomore, hvis jeg skal være ærlig. Nu ved jeg ikke hvor meget I har været inde og interviewe de, men tror det er meget mund til mund det her. Det er den måde jeg har hørt det på, for det er også den måde jeg har hørt det på. For jeg brugte det der pendler i starten, det var sådan lidt trægt fordi jeg havde. Nu er det godt pendlerrelateret det fra Kiel. Men hvis nu har de her små ture, så skal det gerne være noget der er enkelt, hvor man næsten får per sms, hvor man næsten kan få en besked, hvor jeg næsten sender noget ud. Det er det jeg ønsker et elle andet sted. Når jeg ligger noget ind, så kommer der en besked ud til nogen ikke, og så kan de bare se på telefonen, eller måske er det skærpet, men de kan i hvert fald sende en tilbagemelding. Korresponcencen kommer i gang med det samme, fordi du ved man er ikke på nettet hver dag, måske er man på nettet, men man er ikke inde og tjekke de her portaler, så man skal lige en gang imellem hjælpes i gang af en eller anden robotserver. Det synes jeg helt klart det ville forbedre. Og så er der noget med tiderne, hvornår er det fra, der skal man skrive fra kl. 12. og så spørger de, jamen jeg vil gerne med fra kl. 12. Men jeg kører ikke fra kl. 12, jeg har ikke bestemt mig endnu. Men jeg har bare skrevet kl. 12, for man kunne ikke vælge det fra, man skulle vælge. På nogle måder er det godt, men på nogle måder er det skidt. Der skulle være mulighed at vælge hele dagen eller man ikke behøver at skrive en dato på. Men det er små ændringer i databasen. Men det er helt klart noget I kan kommer ind og kritisere dem for ik. Den fleksibilitet der nogel gange ligger i pendleri, er der ikke taget højde for…Der står så et sted, hvor man kan vælge fra om man kan i den og den periode. Men man går ikke lige ind. Jeg har taget alle dagene fra Århus til Kiel, men det er ikke alle, for jeg vidste..men jeg kører i princippet lige nu kun fredag og mandag hjem og søndag hjem måske. Men det kan man så ikke rigtig skrive i den der…jo man kan krydse af mandag fredag, lørdag søndag. Men hvis jeg skriver at det er fredag at jeg kører til Kiel og søndag at jeg kører hjem igen, det er der så nogen der ikke har læst eller ved, men altså…jeg har ikke selv prøvet at søgt, så jeg ved ikke hvad der kommer frem på billedet, det er nok vigtig at vide hvad der kommer frem, om det jeg har skrevet, det er tydeligt nok.

00:10:50	Jesper	Ja pendlernet, det var fordi jeg blev informeret om det i et eller andet forbrugerprogram, i Rene ord for pengene, hvor det kom op. Det er nok halvanden år siden. Men jeg har jo egentlig ikke brugt det for jeg havde egentlig ikke behov . Der var nogle gange, men så blev det ikke til noget, så faldt det lidt til jorden. Men kunne jeg se at det havde et behov, for rent økonomisk. Så kunne jeg forsvare, at hvis jeg skulle til Kiel, så var der nogle penge at spare der, hvis der var nogen der skulle med. Så der gik jeg ind på Gomore. Jamen der er også noget der hedder gomore...ok så prøver jeg det og den var også mere fleksibel, også det med at man kunne bare tage enkeltture, som Pendlernet ikke havde. Det er pendlere, det er som ordet siger. Det er meget med at det er kun nogle dage, så skulle man lave sådan at det bare var en kontakt, så det var en kontakt. Men fik en kontinuerlig fast kontakt. For hvis man er de der to tre stykker, jamen så beholder man jo dem, så kan jo slette sin profil, hvis det var det. Det ved jeg ikke om man gør. For indtil videre er det altid spontant nogle der ringer, jeg skal derhen, hvornår skal du og sådan noget ik. Der er aldrig...men nu har jeg også kun kørt med to indtil videre og I er den tredje i den her omgang med Gomore, så det er også nyt for mig med Gomore.
	Jesper	Jamen det er et par måneder siden, at jeg rigtig begyndte at lave min profil der.
00:13:00	Jesper	Det er vidst et år, jeg fik vidst en mail fra den at de havde eksisiteret et år. Sådan et nyhedsbrev, det synes jeg også det er fint nok at det kommer en gang imellem, bare det ikke bliver spam.
	Jesper	Jeg formoder at det er to fyre der har startet det op...hehe
	Jesper	Ligger der noget kommecialitet over, tjener de noget på de der bannere?
	Jesper	Jeg tror de skal have flere deroppe...man har set på de der dating-sider, hvordan de får en kæmpekundedatabase og så begynder de at have fee på. Så kan man gøre det, for nu er der sgu så mange. Man er måske i snak med en masse ik. Som jeg ser det er der ikke nok derinde endnu. Der er for få og det er gengangere. Der er ti og så er det det.
	Christian	Hvad med dem du har haft oppe at køre?
	Jesper	Flinke fyre og piger, der har ikke været noget...snakkesaglige folk, og det er det jo mest. Altså hvis man ønsker den der tætte kontakt og så er der selvfølgelig et økonomisk incitament af alle parter. Det er klart, men man skal også et eller andet sted have gidet at sidde over for en eller anden ik? Jeg kan jo selvfølgelig bare vælge at sidde og stirre ud i luften. Men er jo stadigvæk kunstigt jo. Det er klart at der skal være en eller anden form for interesse. Der er nok mange der siger, jeg gider ikke det der med at skulle have nogen med op, fuck hvad det koster. Jeg tror det handler om at få de studerende og folk med lavere indkomst, det er måske forkert sagt...men hvor de tænker økonomisk. Det kunne være meget godt. Og også for mig selv, selvfølgelig vil jeg gerne have dækket udgifter, men det er også for at skabe netværk .Nu er det jo en branche indenfor IT jeg er i nu, men det er et rekrutteringsfirma jeg er i. Og når jeg kører med nogen som jer, lidt i samme boldgade, det er mere dataloger. Den slags jeg har med at gøre. Det er jo klart, der kan jeg jo give jer et visitkort, det er jo også i min interesse at få spredt.
	Jesper	Det er vidst et år, jeg fik vidst en mail fra den at de havde eksisiteret et år. Sådan et nyhedsbrev, det synes jeg også det er fint nok at det kommer en gang imellem, bare det ikke bliver spam.
00:17:05	Jesper	Det er gør jeg i mit arbejde, men det er første tur jeg har lagt på med arbejde, så indtil videre har det kun været i forbindelse med Kiel-turen. Det er klart at det kunne være meget fint med de her ture, hvis jeg skal. Nu har jeg et møde her i morgen ik. Men igen det skal tilpasses, for jeg har et møde og det kan ikke rykkes, så det ligger fast. Hvis jeg skal til Kiel så kan det godt, ja lad os nu se på det. Men den anden her, der er vi nødt til at køre ikke. Så jeg havde egentlig ikke troet at der ville komme noget, af den grund.
	Jesper	Altså den måde jeg gør det på, der er sgu ikke noget. Jeg kan hurtigt mærke i en telefonsamtale. Også fordi du lagde ud til hvad det handlede om ik. Så relativt hurtigt var min barriere nede om hvad det handlede om. Men det har også noget med personlighed at gøre. Det er ikke alle der har ønske om at få nogen med op vel pga. af en samtale på ti sekunder.
	Jesper	Har du nogensinde samlet en blaffer op?
00:20:57	Jesper	Ja det har jeg. Jeg har gjort det mere efter jeg selv begyndt at blaffe. Jeg ville prøve at se hvordan at blaffe. Det prøvede jeg...ja det var ikke som jeg sidder nu her, men det var decent tøj , og jeg prøvede at blaffe fra Århus til Alborg, da jeg boede i Aalborg. Der fik jeg mange forskellige oplevelser Konklusionen er at de mest fredelige er kvinder, generelt kvinder er bedre, men problemet er at de har en forindtagethed at en fyr vil lave seksuelle overgreb. Men det er selvfølgelig noget med udstråling at gøre, fordi jeg måske ikke lignede en der ville gøre det. For jeg spurgte også hvorfor? Jeg sad næsten ligesom jer ikke.

	Jesper	Det jeg kan konkludere det er at det er kvinder og mest hvis de har en mand med sig eller en herre, eller to piger. De har det bedst med . Og er det nogle almindelige uddannede, pædagoger, humanistisk uddannede eller socialt uddannede. Nu ved jeg godt at det er meget snævert sagt ud fra min betragning men efter hvad jeg kunne se af forskellige ik. Og det var almindelige... det var en fiat UNO ikke. De der mercedser de gav mig bare en finger.
00:25:30	Jesper	Altså det er svært nok bare at skelne mellem politiske skel et eller andet sted. Altså det er meget det er meget personfikseret om man er til det, eller man siger jeg skal kraft edme ikke have nogen op at køre. Det er den samme holdning om man er åben. Så kan man selvfølgelig sige ud fra de betragtninger, jamen man er mere leftwing end man er rightwing, men det er igen nogel antagelser man tager. Man skal jo..men det er jo klart det er meget personligt for det tager jo tid og du bruger jo tid på at koordinere. Kan jeg komme med og kan du komme med. Det betyder ikke så meget med et opkald for mig. Der er nogen der siger, jeg gider ikke alt det koordiniering der altså. At tage en bil derover, det koster hvad det koster.
00:28:17	Jesper	Nu har jeg ikke nægtet nogen endnu, for dem jeg har snakket med, de har virket sådan meget flinke og rare og åbne, så der har ikke været nogen grund til at være mistænksom. Jeg tror også et eller andet sted at dem der bruger det er åbne. Det hænger nogle gang lidt sammen.
	Jesper	Det er ikke noget jeg tænker over (om personen man tager med er psyko). Jeg tænker bare så kan man splejse om udgiften. Det er helt klart den der er forgangstaler for det hele, det er den med at man kaan dele udgifter. Det er den parameter der ligesom er i højsædet. Og hvad man skla have det er altid svært, for der står at man skal bestemme hvor mange penge man skal have af den anden. Det har jeg meget svært ved, fordi jeg vil ikke gøre sådan noget med at sige at jeg skal have det her beløb. Men mange gange har jeg prøvet at finde ud af, hvad er rimligt ikke. Hvad vil jeg selv. En ungdomsbillet, uanset om man er gammel eller ung, så kan du ikke gøre det billigere med hensyn til at komme med et tog. Og så runder man lige ned og så skal man ikke have en pladsbillet og så kører man fra dør til dør. På den måde kan jeg ligesom forsvare mig selv. Men er man flere i bilen skal det så bare deles op. Men det er også skidesvært, men så er der én der ikke skal med og så bliver prisen andeledes...nå men så skal jeg ikke med. Jeg gider heller ikke gøre det for svært for mig selv. Uden at det skal virke som en pengemaskine, for i bund og grund er det bare en skilling. Bare for at supplere. Jeg plejer bare mange gange at sige, hvad vil jeg selv er reelt. Ja der var også en hun skulle med til Kiel og ja, der tog jeg ikke mere end dem der skulle til Flensburg. Vi havde aftalt lidt prisen. Der er måske nogen som vil være lidt mere stringent. Jeg kan se der er nogen der sætter fast pris på, men der vil jeg hellere i dialog.
00:32:00	Jesper	Jeg har læst erhvervsøkonomi, en af de kortere videregående uddannelser på erhvervsakademiet. Og så havde jeg et job deroppe. Et lille IT-firma, der var totaltleverandører.
00:33:45	Jesper	Så sker der også noget nyt ikke, så sker der et nyt spring, det er mange gange det man er bange for at prøve noget nyt eller noget hovedkuls. Jeg havde i hvert fald lyst til at prøve.
00:34:10	Jesper	Nu er det jo så heldigt er jeg har et meget fleksibelt arbejde, jeg arbejder meget hjemmefra i og med at jeg ringer til en del kunder hjemmefra og kører som sagt hjemmefra. Nu havde jeg godt nok et internt møde i dag som ligger i Lystrup. Jeg har også kontor i Lystrup.
00:39:45	Jesper	Jeg har først møde om 45 min, så jeg har tid nok.
00:42:45	Jesper	Det kan være at vi skal holde kontakten og jeg kan holde jer opdateret med hvordan det går.

Interview with Pernille and Mads

Table: Interview with Pernille and Mads

Person	Utterance
Pernille	(fil 13 2:00) Jeg syntes at det er samfundsmæssigt smart, at vi ikke alle sammen fiser afsted hver evig eneste enkelt i vores egen lille bil, at vi prøver på at fylde bilerne op så godt som muligt. Hvis man nu skal køre i bil, og det sku jeg. Så vil jeg gerne have den fyld op når jeg skal frem og tilbage.
Esben	Er det så overvejende af økonomiske årsager?
Pernille	Nej ikke overvejende vil jeg sige, det overvejende er miljø, hvis vi kun sender én bil afsted, det er sejt i forhold til at sende 4 biler afsted. Mit udgangspunkt var faktisk det der, jeg syntes det var godt for miljøet vi tænkte os lidt om i stedet for vi alle sammen kørte i hver vores lille bil. Så det er min hovedårsag. Det skal siges at jeg meget sjældent kører i bil, fordi jeg faktisk cykler altid, for ikke at belaste miljøet
Pernille	(fil 14 : 1:43 Jeg har selv været passager to gange. Det er tredje gang der er nogen der er på, men jeg har også kun kørt fire gange.
Pernille	03:00 : Jeg har skullet bruge lift to gange, og har været heldig at få et lift to gange.
Christian	Hvem har det så været med?
Pernille	Det har være nogle forretningsforbindelser som skulle fra Jylland til Kbh.
Esben	4:00 Du snakkede om at man gør sig nogle overvejelser inden man lægger en profil på GoMore?
Pernille	Ja det gør man. Min første overvejelse var faktisk at jeg spurgte min mand hvad han sagde til det, fordi hvis han nu var utryg ved at jeg skulle ud og køre med fremmede, eller have fremmede med i bil, så ville jeg ikke gøre det, fordi deet, han skulle ikke gå og være bekymret. Og så har jeg så overvejet det er meget godt at man ringer til folk for så kan man sige nej, hvis det er nogen der lyder sådan lidt (christian: skummel) jaa... Det var faktisk de mest overvejelser jeg har lavet. Jeg er også gammel blaffer, så jeg har prøvet sådan noget før, og jeg samler også altid blaffere op, det skal jeg skynde mig at sige, men hvis de ser for skumle ud, så gør jeg det altså ikke... Generelt gør jeg. ...(snak)... Jeg tager ikke blaffere op hvis det er mørkt, det kan jeg ikke lide, og dog har jeg alligevel gjort det en gang, hvor der var nogle unge mennesker, så kunne jeg jo ikke ha sådan nogle unge mennesker stående der om natten, (chritian: de var ikke fulde så?) jo de var...
Christian	5:20 Hvorfor gør du så det?
Pernille	Det gør jeg fordi jeg har blaffet rigtig rigtig rigtig meget virkelig meget
Christian	Har det været både i Danmark, eller har det også være i udlandet?
Pernille	Jeg har blaffet mest i Japan, og så når man har gjort det, når man, eller jeg føler i det mindste at så er der nogen andre der får glæde, ligesom jeg fik glæde på daværende tidspunkt (christian: give lidt tilbage igen) ja for nu er det mig der har overskud, så kan jeg godt gøre det
Christian	08:00 Har du brugt andre sider end gomore?
Pernille	Nej det har jeg faktisk ikke, jeg så den der, og så tænkte jeg, den bruger jeg
Christian	Og hvad syntes du om den, sådan, fungerer den godt nok?
Pernille	Jaa det er fint nok... Der er ikke de store døje med det. Det kør okay
Pernille	08:50 (Hun bruger ikke pendler funktionalitet)Men hvis jeg skal sætter jeg det faktisk op, hvis jeg skal fra A til B, så gør jeg. Altså jeg kunne aldrig finde på at tage til århus i bil uden at have sat den op, hvis der var nogen der sku med på det tidspunkt der passede mig
Pernille	09:00 Det er også for at få lidt selskab, for det er hammer kedeligt at køre bil
Esben	Så med hensyn til at finde ud af om man vil have folk med eller ej der er det så telefonsamtalen... eller hva?
Pernille	Ja. Hvis de nu lyder meget fjollede, eller bøvede, så er der optaget. Men det var der ikke i dag
Christian	Det var heldig for os
Pernille	Ja det var det faktisk, ej det er okay.
Pernille	10:20 Jeg tror faktisk at det var i rabatten jeg så om gomore, og tænkte at det var hammer smart
Pernille	12:30 (der bliver snakket løst og fast om samkørsels ordninger) Jaa, men det var da helt tilfældig jeg så det program, hvis jeg ikke havde se det program havde jeg aldrig vidst noget om det, aldrig nogen sinde. Det men ik ved det eksistere(grunden til at der ikke er mange der bruger det (red.)), det er jeg sikker på, og så kan man jo være uheldig at have haft en dårlig oplevelse ved at samle nogle mærkelige mennesker op
Pernille	13:00 Som sagt før, så var jeg rigtig rigtig rigtig glad for den første pige det må jeg skynde mig at sige, det var absolut ... vi havde en fantastisk tur til kbh. hvad vi ikke nåede at klare den dag (christian: det var hele verdens spørgsmål) ja og rummet med. Nå men vi snakkede om mange ting, og hun kom med nogle bøger som hun syntes at jeg skulle læse... Det var virkeligt det var udviklende det må man sige. Men sådan en fredag eftermiddag, det er jo et godt sted at køre nogen der vil med jo. For det kunne jeg jo se da jeg var inde og kigge om der var nogen jeg sku ringe til, der var mange, der var så mange at jeg slet ikke kunne finde

	ud af det, så jeg tænkte så må de komme til mig
Esben	14:00 Bruger du Internettet meget eller hvordan med det?
Pernille	Ja det gør jeg. Jeg kan godt lide internettet fantastisk opfindelse
Esben	Computere er det noget du bruger i din daglig dag?
Pernille	Ja
E	Fordi vi tænker lidt på med hensyn til ... Har du prøvet at arbejde med en PDA eller en håndholdtcomputer
P	(15:00) Nej det har jeg faktisk ikke. Jeg har kun arbejdet med stationære
E	16:00 så kræver det jo i dag at du har en kontakt til folk før du kører:
P	Nej
C	Nå
P	Nej det gør det ikke, fordi jeg kan jo godt blive ringet op herfra, og så er der en der vil med længere nede.
E	Ja det er rigtigt nok
P	Og det har jeg faktisk været udsat for, det er derfor jeg svarer sådan
E	Okay vi forstillede os nemlig at folk kiggede på afkørsels tidspunkt og så aftalte inden da, det er ikke tilfældet?
P	Nej, jeg blev ringet op nede i, inde i landet, (utydeligt) men der var ikke plads. Men der er blevet ringet op mens jeg har været på farten, faktisk to gange, men den ene skulle så have tilbagerejsen
E	Okay så det er ikke nogen barriere
P	Nej ikke så længe mobil nummeret er der og du tager mobilen en lille detalje :)
P	Så det er ikke nogen barriere det syntes jeg ikke
P	17:30 Helt sikkert jeg har lært meget af det, og forstsætter nok med at lære af det (hun snakker om hende hun havde med oppe at køre første gang igen) 21 minutter Mads tager over
Mads	snakker om at skarive en liste med registreringer om hvordan han er kommet frem og tilbage mellem Aalborg og Odense.
E	Hvor langt tid har du brugt gomore?
M	Siden 1. september, og alligevel har jeg været ude at oprette ret mange gange. Lad mig se i løbet af september har jeg været ude at køre 4 gange frem og tilbage, og så har jeg vel kørt noget i samme stil i løbet af oktober dvs. 8 gange i alt har jeg været frem og tilbage fra Odense.
E	Har det så været til Sonofon i Aalborg, til arbejdet
M	Ja det har det, jeg har ikke været sat af der nødvendigvis der da vi kom tilbage men jeg har blevet samlet op der ja
E	Hvordan hørte du om det?
M	Det var min fætter der fortalte mig om det, det var ligesom der han fandt ud af at han var nødt til da han ikke kunne få WildCard og nu skete det så også for mig såå ...smalltalk... det var han begyndt at bruge meget når han bor i Kbh. og resten af familien bor på denne side af bæltet ... Det var b.la. denne gode historie som jeg hørte sidste weekend i August der var han til fødselsdag på Fyn de bor hvor jeg bor, der havde han egentlig haft en kørelejlighed over gomore men hun ringede så dagen før og hun havde lagt planen om og de kunne låne en flyver og kæresten var pilot og de kunne flyve til fyn i stedet for man han kunne stadigvæk godt komme med hvis han ville så han fløj til fyn på halvdelen af tiden for 100 kr.
M	24:00 Så gik det hverken værre eller bedre end da jeg føreste gang var ude at køre med en fra gomore der var det faktisk hende han havde fløjet med som bor i Aalborg, som ligger og kør meget frem og tilbage mellem Aalborg og kbh. smalltalk Han ved ikke om der er mere aktivitet omkring kbh. men syntes altid at han har kunnet finde noget, men har nogle gange taget DSB ca 50%.
E	Har du gjort nogle overvejelser omrking hvem man kan komme op at køre med altså rent ektisk og fysisk sikkerhedsmæssigt

M	Altså man kan sige der er jeg ikke så kræsen. Altså man kan sige man kan komme ud for en hvor man ikke var tryg ved kørslen, så ville jeg nok også bare sige dét og blaffe fra næste motorvejsafkørsel, men det er sådan rent hypotetisk, det er nok det værste jeg har forestillet mig
E	Kender du andre sider end gomore?
M	Nej 27:20 Han er ekspertbruger, arbejder med computere
E	Kan du se nogle ting som kan ændres ved gomores hjemmeside ?
M	Jeg har selv overvejet at jeg godt kunne se pointen i at lave en mobil udgave af den. Jeg har mange gange min bærbar med rundt, men jeg bruger mange gange bare min telefon til at slå ting op fordi den kan slå en samkørsel op, der kunne man godt ønske sig en tilpasset en for der kan man godt sige går det alligevel bedre hvis den er skrevet efter det ...
E	29:00 Esben foreligger vores case
M	Snakker om Nav4All som leverer umiddelbart gratis information på din telefon som snakker sammen med en central tjeneste som tilbyder en dating som folk som ha lift således at den dynamisk siger hov der står en her og danner forbindelse mellem dem således at det at man bare sætter ud i sin bil og kør et sted henad så kunne den begynde at se på om der var nogen chancer altså det ville være en fordel hvis man allerede kunne sige jeg skal derhen og så bare har sin telefon liggende så ved den det, så ville den allerede kunne gøre det helt automatisk uden at man skulle til at lave andet end det (Der bliver snakket noget om det)
E	35:00 Mht. oplevelser med folk positiv/negativ hvordan har det været?
M	De har været positive det har varieret og sjove folk. Der har ikke være nogen negative de har alle sammen været en eller anden grad af positiv der har altid været folk man snakker mere eller mindre godt med men der har aldrig være negative det er i hvertfald min oplevelse
E	Der er vel også forskel på hvormeget folk har lyst til at snakke...
M	Ja ja det har jeg også snakket med nogle af dem jeg kørte med også om det der om hvor meget man lægger vægt på hvor meget er det økonomien og hvor meget er det samværet og jeg har kørt med folk i begge ender af spektret så jeg har kørt med en som udelukkende fordi at hun ikke brød sig om at køre alene så langt og så var det meget rart at det gav nogen penge, så har jeg kørt med en som var i den anden grøft som sagde at hun står til rådighed for samtale men på den anden side tog hun det ikke ilde op hvis folk åbnede en bog og lukkede ned og det var sådan set også fint med hende. (E: så det var udelukkende økonomisk?) ja selvom hun ikke også tog den sociale gevinst ved det men den stillede hun ikke nogen krav om at passagerende kunne levere samvær
E	Og ved dig er det sådan lidt af det hele eller hvad?
M	Ja det er det lidt. Lige nu tjener jeg 30 kr på at komme til odense jeg får 125 kr i kørselsfradrag (det er et større regnskab som han håber går op)
M	40:00 Jeg regner med at når jeg engang kører længere strækninger det har jeg ikke gjort siden jeg er begyndt at bruge gomore så regner jeg faktisk med at begynde med at registrere det for at spare nogle penge. Jeg har også tidligere taget nogle blaffere op når jeg har ligget og kørt det sker ikke så tit, men jeg syntes egentlig, jeg bliver helt glad for at kunne tage en op og slippe for at køre alene, ikke så meget fordi det sociale ikke så meget fordi det behøves at være økonomisk bare fordi jeg har det skidt med at sidde i en bil rent miljø mæssigt set så på det område så vil det i hverfald også være en gevinst for mig
E	Hvordan vil du have det hvis der er en der ringer og du er i tvivl
M	(Som udgangspunkt vil han ikke sige nej, med mindre at hans planer er ændret) men jeg vil da et eller andet sted være meget interesseret i at få bilen fyldt op. En større diskussion om hvorvidt man vil lave en afstikker for at smide folk af eller samle dem op, hvor både Mads og Pernille er af den holdning at det gider de ikke, og sætter grænsen ved motorvejsafkørslen, hvor en meget lille afstikker er ok. Det er primært pga. tiden at de ikke gider...
Mads	44:00 ``Jeg har samlet en op i Kolding, og jeg synes det er en ond by, hvis ikke man kommer derfra, hehe.''
	Vi spørger for sjov, om det så var en dårlig oplevelse ``Ja, ja, det var såhn... jeg skal sandsynligvis samle ham op igen i morgen og jeg har tænkt mig at melde ud, at han må tage lidt før afsted, og så må han tage en taxa ud til motorvejsafkørslen - vi ses, haha''.
	Vi spørger ``Det er simpelthen politikken?'' hvortil Mads klart svarer ``ja''. ``Jamen folk er som regel også til at snakke med, men hvis vi bare er enige om, at hovedpointen er, at man ikke kører omveje, vel. Man kan nok godt få folk til at smutte en halv kilometer ind af en indfaldsvej, fra en motorvej af og sådan noget. Det er min opfattelse, at det nok ikke vil være noget problem''.
Pernille	``Det skal også være sådan, at det fungerer for alle parter''.
	Vi snakker om pendler.net parkeringspladsen ved Tilst, og Mads svarer: ``Jeg kender et sted ved Odense som har en lignende funktion, jeg ved ikke om det som sådan hedder pendler.net parkeringsplads men hvis nogen sagde det ord til mig, ville jeg tænke på det sted''
	Vi snakker om delebil-konceptet og Mads tilføjer ``Ja, det kan jeg også huske, jeg hørte om for nogle år siden''. Det er dog ikke noget, nogen af dem bruger.

	49:20 Hun tilføjer i forhold til vores præsentation af det tænkte GPS-fremtidsscenarie: ``På et tidspunkt der snakkede du noget om at det der fremtidssystem, der skulle man kunne se, hvor bilerne kørte fra A til B. Jeg tror lige man skal tænke på tyvene også, så man ikke reklamerer med hvor meget man er væk fra sit hus. Den optik skal man nok lige have''. Vi tilkendegiver vores enighed og Mads tilføjer: ``Der skal den nok bare lige upræcisere det til bare at sige, det er den by. At det er det, den oplyser videre.'' Pernille tilføjer: ``Ja, og så man ikke oplyser nummeret på bilen, for så har man jo uventet besøg derhjemme''. Mads: ``Det kunne man bare lade være med''. Pernille: ``Jeg har heller ikke oplyst noget, jo. Jeg kommer bare''. Pernille: ``Altså, det kom jeg til at tænke på, hvis man siger jeg kører fra A til B, så er der straks nogen der ved der ikke er nogen hjemme. Og så vil det jo være, at invitere tyven indenfor''.
	52:15 Vi snakker om muligheder for at GoMore.dk kan understøtte, at folk kan verificere at modparten er den, vedkommende giver sig ud for, og vi taler bl.a. om digital signatur og ratingsystem med stjerner. I forbindelse med ratingsystem tilføjer Mads: ``Ja, det kan jeg nemlig huske, det var der faktisk også en af dem jeg kørte med, som et eller andet sted forespurgte hos GoMore, og på det tidspunkt - det var så ikke min egen tanke - men jeg tænkte et eller andet sted, det var også en god ide at kunne give point til dem man kører med. Give en anmeldelse.'' Vi snakker om muligheder og begrænsninger ved at rate hinanden, og Mads tilføjer: ``Man kunne bare lave en simpel faktuel rating og bare sige, jeg kørte med vedkommende den dag. Og vi fortæller at den anden være der til tiden, gensidigt. For sådan nogle ting kan man dårligt diskutere og blive sure over, som jeg ser det.''
	53:25 Mads foreslår samarbejde om prototypeudvikling: ``Jeg skal lave bacheloropgave her i løbet af foråret... I kunne ikke bruge en prototype?''. Vi tilkendegiver, at vi selv skal udvikle noget, men spørgere videre ind til hans ide: ``Jamen altså, bare det der med at få bygget en automatisk delingsservice baseret på, at du har en telefon som virker som navigationssystem på bilen og du har en telefon du enten manuelt fortæller hvor er, eller igen via GPS finder ud af hvor er, så det med at hægte det sammen, så den siger hvis du drejer om 100 meter, så kan du samle en blaffer op. Tryk ja eller nej. Det der ellers er... Jeg kunne godt forestille mig, det er lidt komplekst at få bygget et fuldt system og man kunne overveje, ved at tegne en Non-disclosure agreement ved f.eks. sådan noget som Hollanske NavForAll (Nav4all?) kunne få lov at udvikle det på deres platform og så kunne man enten få nogle penge for det, eller en aftale om at de senere var interesserede i at snakke med én. Alternativt, der findes Svenske WayFinder de har også nogle mobiltelefonbaserede...''.
	Vi forklarer, at vi fokuserer på navigationen frem for implementeringen og snakken går bl.a. på simulation af data. Mads fortsætter: ``Ja, i fokuserer mere på brugerinteraktionen og hvad der virker godt mens man kører, kunne jeg forestille mig. Og hvordan man nemmest gør det her, med færrest mulige transaktioner''.
	57:10 Vi spørger, om vi må kontakte Mads i fremtiden: ``Ja, jeg har en forhåndsaftale om at skrive afgangsprojekt sammen med en anden en, så vi er to om at sige ja og derefter skal vi også have det godkendt, så det er der i hvert fald af begrænsninger, kan man sige. ''

Time	**Utterance**
	Interviewet er det første vi foretog, og foregår under en tur fra Aalborg til Århus kl 8:30. Turen varer 56 minutter og de sidst
02-03:	Blev færdiguddannet i januar 2006 fra Jysk CVU i Århus (39:18). Har fået Barselsvikariat i Horsens til 1. marts.
	Malenes far havde læst en artikel om GoMore, eller set en reklame, og så checkede Malene nettet. På daværende tidspunkt kunne man blive ekspressmedlem og dermed se tlf-numre gratis. Det var inden hun havde bil, og hun var oppe at køre med en enkelt (sammen med hendes lillebror) fra Århus til Aabenraa. Årsagen var forsinkede DSB-tog, men hun checkede GoMore flere dage før, for at se om der var en tur, før de fandt en på dagen.

04-05:	Da hun fik bil, ser hun det som en selvfølge, at hun nu har tilmeldt sig GoMore. Den primære årsag er tilskud til benzinudgiften: ``Det er sgu dyrt!''. Kører 550km om ugen. Malene mener, alle burde bruge GoMore fordi der er mange biler med kun en person i.
	Hun undrer sig over, aldrig at have haft passagerer med på strækningen Horsens-Århus. Hun sætter en annonce på GoMore hvis hun skal noget ekstraordinært - f.eks. hjem til forældrene. Det er hendes indtryk, at der ikke er særlig mange enkeltture. Fra juni til oktober har hun haft en passager med 2 gange.
08:00	Hun kender ikke andre end sin kæreste og lillebror der benytter GoMore. Hun har dog forsøgt at fortælle folk at det er vildt smart og at de skal melde sig til, men hvorvidt folk får det gjort tvivler hun lidt på. ``Jeg tror også, at hvis man skal besøge forældrene sådan en gang hver 3. måned, så tager man toget og så er det det''.
	``Og så er det jo også meget hurtigere at køre i bil''. Tog versus bil ``begge dele har fordele og ulemper''.
10:00	Hun har haft 1 passager en gang og et kærestepar en anden gang: ``det er det eneste, ja. Og så jer. Så man bliver helt glad når folk ringer, hihi, Yeeeaa, haha''. Positive/negative oplevelser: ``Dem jeg har haft med, de har været vildt glade for det og syntes det var vildt fedt at de kunne komme med og de sparede nogle penge og det går meget hurtigere for dem''. ``Jeg har ikke haft nogle sure miner''.
	Overvejelser før man tilbyder turen: ``altså jeg kunne aldrig finde på at... Det ville jeg ikke turde, at stoppe og tage en blaffer med op. Og da slet ikke to fyre! Hehe, men øhh Altså man er da sådan lidt... altså bare fordi jeg har en af jeres to telefonnumre og adresser ik... Altså den kunne jo være stjålet ikke. Men altså, det er jo... Jeg føler mig nu rimelig tryg, jeg synes ikke det er noget såhn, hvor man sidder og (?)''.
11:45	``Men nej, jeg har ik sådan overvejet om der skulle være pinlig tavshed, eller om man gider snakke hele vejen. Det tager man sådan lidt hen af vejen''.
13:00	I Tyskland er servicen meget udbredt.
14:00	``Jeg kender faktisk nogle fra mit studie, dengang jeg læste, som så en gang imellem tog til København hvor de så fandt en tur med GoMore, så jo, jeg kender da også andre, der bruger det''
15:00	Vi beskriver vores case med GPS og taler om, at det kan indføre en større understøttelse for tomlingsfremgangsmåden hvortil Malene tilføjer: ``ja, under ordnede forhold''.
16:00	Vi forklarer om fremtidsplanen for GPS og GoMore, hvortil Malene siger: ``Det lyder smart''.
18:30	``En ting mere, jeg har overvejet, er hvor langt jeg vil køre, altså omveje for at samle folk op eller smide dem af et sted. Altså, man kører strækningen alligevel, men skal man rundt i hele Aalborg og samle 3 mennesker op eller noget ikke, og hvor lang tid tager det så...''.
22:30	Vi spørger om der er noget ved GoMore.dk, hun mener burde gøres anderledes: ``Nej, det synes jeg egentlig ikke. Ikke sådan rigtigt. Den er meget nem og meget overskuelig''.

24:00:00	``Min kæreste har fundet en der bor i Århus som så arbejder i Aalborg og kører hver dag, altså til Aalborg om morgenen og tilbage om eftermiddagen, så han kører med ham nogle gange om fredagen, når han skal hjem til mig. Det er sådan nærmest... Nej, ikke en fast aftale, men nu ved de i hvert fald hvem hinanden er og sådan noget''.
24:30:00	Vi forklarer at vi tror, folk kan benytte GoMore til at skabe bekendtskaber til gentagende samkørsel i forbindelse med arbejdet, hvortil Malene siger: ``Altså det ville jeg da også gerne ha' gjort, for jeg tænke mellem Århus og Horsens må der i hvert fald være nogle der skal derhen. Der er bare ikke nogen. Der er aldrig nogen der har ringet på den strækning''.
25:00:00	``Og ellers er det netop, hvis folk de læser et eller andet sted, så finder de hurtigt sådan 5 der lige kan fylde en bil og så kører de bare hver dag, altså netop når de læser på samme studie og har fri samtidig og sådan noget. Men jeg ved ikke om det er sådan noget''.
	Vi siger det kunne da være lækkert at have fyldt bilen helt op hver gang man kører: ``Ja, helt sikkert''.
	Vi fortælle, at Jacob var i Paris og annoncerede turen på GoMore: ``Ej, hvor fedt! Hvad tog de for sådan en tur?''.
29:00:00	Vi spørger om hun har set nogle blaffere: ``Fra Århus, så lige når man kommer på motorvejen inde fra byen, der er sådan lige et lille blafferhjørne, det er der de står hvis det er. Hvis man er fra Århus, så ved man godt hvad jeg mener, hihi''. ``Og der kunne jeg da godt - altså det er da fristende bare lige og såhn stoppe ind, men så er der også bare mange af dem, der ikke har noget skilt og så ved man ikke hvor de skal hen, sååh, nårh ja... Hvis nu der stod Horsens, så var det let lige at stoppe ind og sige værsgo''
	Efter 2 minutters stilhed bryder vi stilheden ved at kommentere, at vi håber optagelsen fungerer: ``Det må vi da håbe. Ellers kører jeg næste tirsdag, hihi. Så tager vi den bare igen''.
	``Jeg har læst en helt ny uddannelse, hvor vi faktisk var de første der blev færdige her i sommers. Ernæring og Sundhed. I Kender sikkert en diætist. De fleste spørger, er du så diætist? Men det er fordi man kan læse 3 forskellige - altså man har halvandet år der er fælles, og så deler man så ud alt efter hvad man gerne vil, hvor man bl.a. kan blive diætist. Og hvor man også kan blive det der før hed Økonoma - det er en der arbejder i et storkøkken - som nu hedder Catering Leder, fancy, og så har jeg så læst den der hedder humanernæring som har meget med sundhedsfremme og forebyggelse at gøre. Så det ved folk ikke hvad er.''
36:00:00	Hvad arbejder du som? ``Jeg har faktisk fået et job som diætist barselsvikar. Men jeg underviser folk der har diabetes og folk der har rygerlunger og nogle overvægtige børn og deres forældre i ernæring og praktisk madlavning. Det er et kommunalt sundhedscenter. Vi laver kurser for folk.''
39:40:00	Inden hun tog sin bachelor i ernæring og sundhed, tog hun en bachelor i Idræt fra Århus Universitet.
	I forbindelse med hendes 6 årige uddannelsesforløb: ``Så jeg udnyttede min SU til fulde, hihi. jeg har ikke et eneste klip tilbage. Det er jo også godt nok''.

Person	Utterance
Birgitte	Det er Birgitte
Esben	Goddag du taler med Esben Hansen fra Aalborg Universitet
Birgitte	åh hej
Esben	Jeg har sendt dig et par mails
Birgitte	åh yeah
Esben	Har du tid til at snakke et lille kvarter nu måske
Birgitte	Ja det har jeg bestemt
Esben	Okay det lyder godt. Det er sådan at vi er igang med at lave vores speciale, vi er en tre mands gruppe på Aalborg Universitet og vi laver sådan set bare nogle indsamlinger af informationer om hvorfor folk bruger samkørselsmuligheder og sider osv. det er sådan set bare motivationen bag det og det er det der ligger til grund for det her interview. Og jeg har forbedredt en række spørgsmål så det er sådan set bare det. Så vil jeg bare springe ud i det hvis du ikke har andre sprøgsmål
Birgitte	Nej men det lyder fint
Esben	Okay. Men det handler om det her gomore og jeg tænkte på hvordan er du kommet til at kende gomore?
Birgitte	åh det er via en kammerat som brugte det. Han vidste noget om det jeg ved ikke om han egentlig overhovedet har prøvet det men vidste at den der hjemmeside den fandtes, og så prøvede jeg så at gå ind på den
Esben	Ja. Har du... Hvornår var det så?
Birgitte	Det var sådan for en måndes tid siden
Esben	For en månends tid siden okay, så det er relativt nyt
Birgitte	Ja
Esben	Okay har du så prøvet at, du har ikke prøvet at være ud at køre med nogen såvidt jeg kunne læse på dine mail
Birgitte	Nej. Altså det har jeg ikke endnu men jeg har været i kontakt med tre fire stykker tror jeg det var
Esben	Ja og var det for at få et lift eller hvordan?
Birgitte	Ja lige præcis
Esben	Okay, men det kunne ikke lade sig gøre eller hvad?
Birgitte	åh jeg havde faktisk en aftale med en en kvinde eller en pige men hun øhh hun skrev så at det godt kunne lade sig gøre og sådan noget og så, og så lige pludselig så kunne det åbenbart ikke alligevel... Men øh det var lige før det kunne... Og så de andre jeg har snakket med de har, så har det bare ikke lige passet med hvad jeg sku, tidspunktet
Esben	Har det været sådan nogen, hvad skal man sige sporadiske ture du skulle på eller er det noget du har planlagt længere tid i forvejen
Birgitte	Det har været planlagt måske en uge i forvejen eller sådan noget
Esben	Har du så prøvet at annoncere på gomore, eller har du kigget efter hvem der udbudt kørsels ture
Birgitte	Begge dele. Jeg har prøvet både at oprette sådan en annonce og så også kigget om der var nogen der passede
Esben	Okay... Ehm ja. Og du arbejder et eller andet sted?
Birgitte	Ja jeg arbejder i Ã…rhus
Esben	Du arbejder i Ã…rhus, okay
Birgitte	Men har så familie på Als så derfor det var ved den lejlighed jeg havde tænkt jeg ville bruge det
Esben	Ja okay. Vil du betragte dig som om du ligger og pender mellem de to steder eller hvordan
Birgitte	Nej slet ikke
Esben	Nej okay. Og pendling det er ikke noget du har gjort før i tiden?
Birgitte	Nej det er bare sådan engangs ture
Esben	Det er engangsture ja okay. Har du selv bil?
Birgitte	Nej det har jeg ikke

Esben	Hvis du får bil i fremtiden har du så overvejet om du vil annoncere ture på gomore?
Birgitte	Nej det har jeg faktisk ikke overvejet. Men det er sådan lidt, ja det ved jeg ikke det kan jo godt være lidt usikkeret. Men nogen gange når jeg har tomlet bare, har jeg da været mægtig glad for at blive taget op
Esben	Okay så du har prøvet at blaffe. Okay har du prøvet det mange gange?
Birgitte	Ja sådan lidt, men ikke sådan længere ture det var bare 25-30 km
Esben	Okay. Og det har du haft gode erfaringer med eller hvordan
Birgitte	Jaehh
Esben	Det har du måske ikke helt
Birgitte	Nej jeg har da mødt sådan et par skumle fyre
Esben	Nå okay, ja det er jo den typiske stereotyp
Birgitte	Ja ... Men der er da ikke sket noget sådan alvorligt ihvertfald
Esben	Okay, men det har været lige på grænsen til at man tænker det vil jeg ikke prøve igen eller hvordan
Birgitte	Ja ja
Esben	Men det har ikke afskrækket dig fra at prøve det her gomore eller hvordan
Birgitte	Nej fordi man har jo netop nummeret og navn på personen man får et lift af og det vil jeg så bare oplyse til enten mine forældre eller sådan noget så de vidste at hvis jeg ikke lige fik ringet til dem når jeg var kommet frem, så ville de jo vide hvem de kunne kontakte eller lægge sag an mod hvad ved jeg...
Esben	Ja så der er noget sikkerhed i det på den måde
Birgitte	Ja
Esben	Okay så du har gjort nogen overvejelser til hvad man ligesom går ind til må man sige
Birgitte	Ja helt klart
Esben	Okay. Nu kigger jeg lige igennem her. Kender du andre der bruger tjenesten? Udover ham du fik det anbefalet fra
Birgitte	Nej det gør jeg faktisk ikke. Men jeg har så anbefalet den videre. Men jeg har ikke hørt om de har brugt det
Esben	Nej okay. Har du hørt om andre sider eller lignende der understøtter den her form for samkørsel?
Birgitte	Nej det harjeg faktisk ikke. Altså jeg tror at der mest findes sådan nogen hjemmesider for pendlere. Jeg tror også at jeg var inde at kigge på noget, men jeg sytnes ikke at der var noget for mig, som bare skulle bruge noget engang i mellem.
Esben	Okay. Men det var gomore så?
Birgitte	Ja lige præcis der var større mulighed for at finde noget
Esben	Okay. Hvis vi tænker sådan lidt, personlige oplysninger. Det er fordi vi er igang med et projekt hvor vi set over en længere periode skal udvikle et IT system og vores tanke er at prøve at se hvordan man kan anvende GPS i forbindelse med samkørsel, og derfor ved at, vi benytter en model hvor vi skal finde nogle fællestræk hos brugere, og derfor begynder jeg at stille nogle lidt personlige spørgsmål altså ikke det skulle helst ikke være noget besnærrende bare alder osv. det er bare for at du ved at vi skifter lidt i spørgsmålene.
Birgitte	Ja okay.
Esben	Hvor gammel er du?
Birgitte	Jeg er 20
Esben	20 okay, og din beslæftigelse var?
B:	Jeg arbejder som afløser på et plejehjem lige nu
Esben	Og hvordan er din familiesituation kæreste mand?
Birgitte	Nej ikke nogen af delene
Esben	Nej okay. Bor du i lejlighed eller hus eller hvordan?
Birgitte	Værelse
Esben	Værelse ja okay. Det kan være lidt svært at svare på, men hvis jeg nu sprøger dig, hvordan tror du at dine venner og bekendte vil karakterisere dig, kan du så komme med et bud på det?

Birgitte	Emm Aktiv, åben, positiv
Esben	Ja okay. Dine interesser hvad er de?
Birgitte	Sport og venner tror jeg
Esben	Okay. Hvordan vil du karakterisere dine computer evner?
Birgitte	Mine computer evner. Mine egne evner eller hvad?
Esben	Ja
Birgitte	Nå øh. åh det ved jeg ikke. En mellemting mellem. Det ved jeg ikke jeg kan da godt finde ud af lidt af hvert. Altså kan du præcisere spørgsmålet lidt?
Esben	Ja det kunne være om du mener om du bruger mange forskellige programmer, i forhold til din omgangskreds, og så om du har problemer med forskellige ting og sager, om du syntes at det er nemt at bruge en computer.
Birgitte	Jeg syntes at det er nemt nok, men det er ikke sådan at jeg bruger alle mulige programmer, eller opretter hjemmesider og sådan noget.
Esben	Ja. Internettet er det noget du bruger ofte?
Birgitte	Ja det må jeg sige
Esben	Okay så det er en del af dagligdagen eller hvordan?
Birgitte	Ja det er det
Esben	Okay. Har du prøvet andet, hvis vi nu tænker PDA'er, håndholdte computere, og GPS ting og sager, har du prøvet noget af den slags?
Birgitte	Nej slet ikke
Esben	Okay. Ja så skifter vi til lidt andet. Har du rejst meget?
Birgitte	Nej. Men jeg skal rejse til feburar
Esben	Okay. Rejser som sådan, er det noget der interessere dig?
Birgitte	åhm, det ved jeg ikke, men det kan det jo komme til. Jeg har ikke rejst så meget endnu, men efter jeg har været ude at rejse kan det godt være at jeg bliver mere fanget af det.
Esben	Ja okay. Nu kommer vi lidt tilbage til årsagen til hvorfor du bruger gomore og så videre, kan du sige noget om hvad det er der ligesom driver dig i øh, hvad er årsagen til at du gerne vil ud at køre med en eller anden fra gomore
Birgitte	Det er billigere og det tager kortere tid
Esben	Så det er tid og det er økonomi først og fremmest
Birgitte	Ja det må man sige
Esben	Er der andre ting du kommer til at tænke på i forbindelse med det, er der andre ting som du tænker, det her er rart, det her er mindre rart ved det, altså i forhold til selv at køre, eller offentlig transport eller hvad man nu måtte have af muligheder
Birgitte	Ja. Nej jeg vil nok sige at tid og økonomien det er det positive ved det og så ulempen eller bagsiden, det vil jeg nok sige at det er hvis man bare har brug for at bare sidde og læse eller bare sove eller sådan noget i toget altså, det kan man måske ikke gøre hvis man kører med nogen.
Esben	Okay
Birgitte	Eller det ved jeg ikke om man bare kan tillade sige at sove, men det vil jeg nok ikke selv gøre.
Esben	Nej okay. Så der er nogen overvejlser i forhold til samværet mellem dem man kører sammen med
Birgitte	Ja lige præcis. Altså jeg vil da sige at man eller jeg vil da gå ud fra at man sidder og snakker lidt eller sådan noget.
Esben	Ja. Nu har viu været ude at interviewe nogen forskellige der har brugt systemet og nogen der har været ude at køre osv. og generelt så er det sådan at det er meget casual det finder folk ud af hvad man vil, hvis folk vil snakke så snakker de, og hvis ikke så er det også fint for langt de fleste det tager man stille og roligt hen ad vejen, såvidt jeg kan se på det hele.
Birgitte	Ja ja
Esben	Men der er også folk der nævner sådan noget som trafik belastningen og miljø som sådan som årsager til at de gerne vil bruge gomore er det noget du har tænkt over
Birgitte	Nej ikke sådan direkte, fordi at i forhold til at jeg ku tage et tog i stedet for, der tror jeg ik, jeg ved ikke forurener det ikke lige meget eller hvad man skal sige.
Esben	Jo det er også typisk argument jo
Birgitte	Jeg ville jo ikke selv køre i min egen bil når jeg ikke har nogen bil, det ville være i forhold til at tage toget

Esben	Hvis du så prøver at perspektivere i forhold til hvis du havde egen bil
Birgitte	Jamen så ville jeg virkelig prøve at køre sammen med nogen altså pga. miljø og sådan noget fordi jeg sytnes virkelig at det er træls at se når folk bare sidder en mand i en bil bare striber og stirber efter hinanden hvor man bare kan se der sidder en mand i
Esben	Ja okay, jamen det var interessant. Jeg skal lige høre med min sidemand der sidder her ved siden af om der er et eller andet jeg har glemt lige to sekunder
Birgitte	Ja det bare i orden
Esben	Det ser der ikke ud til at der er nej. Det var super lækkert at du lige gad hjælpe os her.
Birgitte	Ja men selvfølgelig.
Esben	Så må du have en fortsat god dag
Birgitte	Jamen i må have en god opgaveskrivning så
Esben	Mange tak skal du have. Hej hej
Birgitte	Hej hej

Personlige oplysninger (Uddannelse, arbejde, computerevner)
Civilingeniør svagstrøm fra DTU 1978, HD i udenrigshandel, økonom i organisation
Arbejdet som ingeniør fra 78 med udvikling af grafisk udstyr hos Purup Preepress frem til 94. Hvor han bl.a. var udviklingschef.
94-99 kvalitetschef hos Terma.
99-06 Cotas Computer Tech. Købes af Vestas i 2001.
Computerevner: Dem har han set før :)

Kørselsbehov - kører du meget?
Han Kører til Nr.Sundby 2-3 gange pr. uge fra Djursland. Er nogle gange i KBH - forskellige besøg en gang imellem.

Er du pendler?
Det kan man godt sige... Men det er ikke bestemte dage i hver uge. Han planlægger selv turene.

Kører du ofte alene i bilen? Hvorfor?
Han kører alene. Da han var i Vestas kørte han meget til Ringkøbing. Det skete få gange, at de kørte sammen. Det handler mest om fleksibilitet. Når han kørte sammen med andre, fra firmaet, var det ofte hvis de kørte fra Århus. Svært at vide hvornår møderne sluttede, så det krævede, at de skulle til samme møde. Han mener ikke, at hans jobs (også tidligere). Han starter når det hænger sammen med noget andet - mener aldrig han har haft bestemte mødetidspunkter. Hvis han havde haft bestemte mødetidspunkter mener han, det har været noget helt andet. Problematik med firmabil - hvis andre er med, er det komplekst at beregne kørselsfradrag og lignende. Specielt i produktionen (firma) kører folk mere sammen.

Er du økonomibevidst mht. benzinudgifter?
I det nuværende job får han kørepenge og har fradrag, så det hænger fornuftigt sammen. At spare er interessant, men modsvares ikke af manglende fleksibilitet.

Har du hørt om samkørsel? - Om Gomore/Pendler.net/Turen.dk? Hvis ja, så hvor?
Nej, han kender ikke websiderne. Han kender samkørselspladserne, mener det er meget udbredt og kender folk der kører sammen. Han mener ikke, han har haft behov for samkørslen. Perspektiverer til at få bragt rundstykker ud om morgenen. Han mener det giver en helt anden fleksibilitet, hvis man kan bruge en hjemmeside til at se et slags "net" over hvem der kører. Han har aldrig taget folk med fra arbejdet, for hyggens skyld.

Har du overvejet samkørsel med andre?

Hvis han havde behovet, mener han det er en ganske fortrinlig måde at komme frem på. Ligeledes, hvis han havde behovet for det, kunne han godt forestille sig at annoncere at han har bil.

Har du gjort dig nogle overvejelser om, hvorfor eller hvorfor ikke? - Økonomi, hygge/samvær/snak, miljø, trafikbelastning?
Der skal være penge i det!

Har du prøvet at samle en blaffer op eller selv blaffe?
Han har meget sjældent samlet folk op. Har aldrig blaffet.

Vi informerer om vores case/fremtidsideen med GPS i bil+mobil og grafisk repræsentaion af andre ture i nærheden. Kunne du forestille dig, at anvende sådan et system?
Ja. Det er et spørgsmål om tilgængelighed. Det er afgørende. Hvis det bliver meget enkelt for bilisten, og kan laves gennem mobilen er det "noget helt andet". Det ville give nogle helt andre muligheder, ingen tvivl om det. Det er tilgængeligheden der er afgørende. Det er som regel mange af de der beslutninger, der bliver taget i sidste øjeblik. Det er simpelthen et spørgsmål om, at det er for besværligt i dag. Han vil ikke være forpligtet til noget, før han rent faktisk er på vejen. Det er helt afgørende er fjerne bindingen for føreren samt at øge tilgængeligheden. Han mener, trafikministeriet bør være interesseret i at give noget tilskud - de ved jo hvor belastningerne er størst.

Interview with Jens Lebeck Broholt

Generelt om GoMore? Hvornår blev GoMore lanceret og hvilke bevæggrunde lå bag? Gomore er lanceret i juni 2005 (turen.dk blev lanceret en måned før). Det var 2 universitetsstuderende (hum) der havde været i Tyskland, og ville give studerende et billigt alternativ til DSB. DBA blev investor i starten af 2006

Hvor mange er involveret i driften og udviklingen af GoMore? Der er 5 personer indvolveret, ud over DBA.

Er det frivillig arbejdskraft eller er der betalte medarbejdere? Det var frivillig arbejdskraft der startede projektet. En programmør er ansat på deltid og har været med fra starten (sammen med nogle hum-folk?)

Hvilken uddannelse har bagmændene? Jens er cand.merc og Malene er reklametøs. En pige studerer på Uni i Göteborg som står for markedsrelaterede opgaver i sverige. De launchede i sverige omkring 1. oktober.

Hvilket arbejde udfører medarbejderne? Programmøren programmerer, designeren designer, jens står for daglig drift (og måske support) og resten beskæftiger med markedsføring. DBA sidder i bestyrelsen sammen med de 2 der startede projektet.

Hvordan finansieres siden? Tror i brugerne ville betale for at bruge GoMore? Via reklameindtægter. Efter DBA overtog benytter man meget byttehandler med reklamer gennem DBAs kanaler. Det er grundlæggende DBA der financierer foretagendet. Det er tanken, at det skal kunne bære sig selv, med tiden og det er motivationen for, at DBA gik ind i projektet, samt at DBA har stor interesse for alt hvad der har med biler at gøre. De arbejder med et par modeller for fremtiden, hvor brugerbetaling er en af dem, men man er bange for, at det hurtigt kan skræmme folk væk, og derfor vil man ikke umiddelbart benytte dette. Ved brugerbetaling mindskes incitamentet for at pendlere skal bruge siden.

Hvad har I brugt af forbilleder til designe siden? (Andre sider fra Danmark, tyske, amerikanske?)

Flere europæiske sider. Det er kotumen at man stjæler ideer fra hinanden. Bl.a. nævnes at Turen.dk har implementeret de ideer, man er kommet med fra GoMores side. Det er normalt, at man kopierer hinanden, løbende...

Hvorfor tror I at samkørsel ikke er så udbredt i Danmark, som fx i Tyskland og USA? Vi er velhavende og der er derfor ikke tilstrækkelig stort behov for økonomisk tilskud til benzinen. Danskere er relativt konservative - specielt mænd. Vi gider ikke have andre med i bilen, når vi nu ikke er tvunget til det. I Tyskland er det meget udbredt, og mentaliteten er en anden. Det betyder, at det er meget nemmere at få et ride, fordi udbuddet er så stort. Det er svært at motivere den bredde befolkning (i DK), hvis ikke udbuddet er stort i forvejen - cirkelproblematik. Førstegangsoplevelsen har stort betydning for, om folk finder transportmetoden tiltalende. Dette er stort set udenfor GoMores kontrol.

Hvad gør I for at promovere GoMore? De bytter reklameplads primært gennem DBAs kanaler. Sender nyhedsmails - 80% af brugerne modtager disse. Brugerne opfordres til at hænge plakater op på offentlige steder samt arbejdspladser. Det er en fordel, at reklame for GoMore kan bruges af både GoMore samt brugerne og derfor kan brugerne være interesserede i at hjælpe. Han mener, mund-til-mund er den bedste reklame. De benytter mange bannerreklamer, f.eks. på koncert- og foreningshjemmesider (boldklubber etc). De kan tydeligt måle effekten af bannerreklamer, men mindre af avisreklamer. De skriver jævnligt til pressen for at gøre opmærksom på sig selv, hvis de har en specifik hændelse, der kan skrives om. De kontakter aktivt pressen og f.eks. ``Rabatten'' og ``Rene ord for pengene'' for at skabe opmærksomhed.

Hvilke medier bruger I og hvorfor lige disse medier? De mener ikke, at tv-reklamer giver noget udbytte. Primært fordi, folk skal huske webadressen. Når man sidder ved computeren i forvejen og ser en bannerreklame, er det derimod meget nemmere. Jens mener dette har stor betydning, men de har ikke lavet deciderede tv-reklamer.

Brugere af GoMore: Hvor mange registrerede brugere har I? 12.000

Hvor mange er disse registrerede brugere er aktive? Et meget stort procenttal, men har endnu ikke nok statistik til at kunne sige det præcist. Det er svært at definere, hvornår en bruger er aktiv, for man kan godt være aktiv, selvom man kun anvender siden en gang om året.

Har I noget statistisk på hvor meget en enkelt bruger anvender GoMore? (Ugentligt, månedligt, årligt?) Nej. Det kommer måske.

Har i nogle etnografiske og demografiske data på brugere? Er der f.eks. flere der bruger det på Sjælland end Jylland og Fyn? Ja, de store byer fungerer som knudepunkter. Elers kunne han ikke fortælle noget. 56% af brugerne er kvinder! De finder det, ligesom os, overraskende. Jens begrunder det med, at kvinder er mere åbne, og mænd er mere konservative og siger ``jeg gider sgu ikke have nogle ind i min bil''. De vil gerne have fat i de studerende, fordi de ikke har så mange penge, og derfor kan være ``afgængige'' af alternative billige transportmuligheder. Når disse unge så bliver ældre, mener man at de vil være mere tilbøjelige til at samle folk op, fordi de selv har været dem, der havde brug for et lift engang. Derimod er det sværere at bejle til den lidt ældre del af befolkningen i dag.

Er I tilfredse med det antal registrerede brugere og dem der aktivt bruger det? Ja, meget. De forventer at være 35.000 om 2 år. De mener selv, de er det største site i dag, og at pendler.net f.eks. har mistet brugere (fra 20.000 til nu 9.000). Hos pendler.net har man aftaler med kommunerne, som umiddelbart er den største ``trussel'', fordi pendler.net er ejet af det offentlige (vejdirektoratet), og det offentligt arbejder gerne sammen med det offentlige, og derfor kan det være svært at overtage

disse ``kunder".

Henvender sitet sig mest til engangsture eller er det også meningen at pendlere skal kunne bruge det? Det henvender sig til begge grupper, men fordi pendler.net kun henvender sig til pendlere, har det initierende fokus været at understøtte de, der kun tager en tur en gang imellem. Man vil dermed gerne være mere fleksibel, end pendler.net.

Hvad er Jeres opfattelse af, hvordan pendlere anvender siden. Finder de nogen de kan køre med fast og derefter lader være med at anvende siden? Det ved Jens ikke rigtig, men de har selv overvejet muligheden for dette fænomen. Han mener dog ikke, at samkørsel i Danmark sker på baggrund af, at folk lader bilen stå, hvis de har en. Han mener helt klart, at folk kører i deres bil, hvis de har en fordi bilens indkøb sker på baggrund af et ønske om fleksibilitet. Jens mener ikke, at der er et marked for samkørsel blandt folk, der ønsker at skåne miljøet, spare penge osv. mod at miste fleksibiliteten. Han mener, man vil have muligheden for at tage hjem, på lige præcis det tidspunkt, man ønsker. Denne mulighed begrænses, hvis man er afhængig af at køre sammen med andre. Han mener folk er egoistiske og ligeglade med miljøet. Dette baserer han på svar fra deres spørgeskemaundersøgelser på GoMore.dk.

Er der flest der udbyder ture eller flest der vil op og køre? Hvorfor tror I det er sådan? Der er en lille overvægt af annoncer fra folk der udbyder ture, og han mener det er fordi, man blot ønsker at se hvem der kører lige nu, når man checker sitet. Man gider ikke oprette en annonce osv. Man antager, at folk der kører, allerede har lagt en annonce op. Der er dog stadig en del, der laver en annonce hvor de søger en bilist.

Efter vores overfladiske undersøgelse er det mest kvinder der bruger GoMore, er det også Jeres opfattelse og hvorfor tror I det er sådan? Som nævnt ovenfor er 56% af brugerne kvinder. Jens er overrasket men mener det er fordi kvinder er mere åbne og mænd er konservative.

Hvilke computerkundskaber forventer I at brugerne af siden har? Ingen. De udvikler til absolut førstegansbrugere. Det er et tradeoff hvor meget funktionalitet de vil have på forsiden, samt hvor simpel den er at bruge. De ser google som et uopnåeligt forbillede.

Har I nogen idé om hvad brugerne har af computerkundskaber?

Har I fået noget feedback fra brugerne (godt/skidt)? Ja, de får løbende mails om ting, folk mener de bør ændre. De har ikke fået mange negative meldinger, men det er hændt, at folk skriver, fordi de ikke kan finde søgefunktionen, der er placeret midt på forsiden. De får også ``thumbs up"-mails, men mest i forbindelse med små forslag. De har fået en mail, hvor en kvinde beskriver, at en fyr ikke ville køre med, fordi hun var for gammel. Jens mener derfor, der er nogle brugere der bruger servicen til at møde små nuttede trunter.

Gør I noget for at sikre, at folk virkelig er den de skriver de er? Hvorfor/hvorfor ikke? De har overvejet ratingsystemer, men hvis de vil bruge den slags, vil de lave det meget begrænset, så negative kommentarer helst ikke kan forekomme. Problematikken med ``han lugter/han er dum" etc vil de gerne være fri for. Et ratingsystem skulle være begrænset til ``kom bilen til tiden" og den type kvantitative oplysninger. Man skal kun kunne give positiv feedback - hvis man har negativ feedback, kan man så bare lade være med at rate. På den måde slipper man for ``misbrug" i forhold til negativ kritik.

Mener I det spiller en stor rolle i forhold til om folk vil anvende samkørsel? Jens udtaler, at folk tilkendegiver, at de gerne vil have rationgsystemer, men de er meget påpasselige med udformningen heraf. I forhold til GoMores grundmodel - kom ud og kør hurtigt og billigt - mener Jens, at det er ligegyldigt, hvem man kører med. I længden ved han dog godt, at folk vil have flere muligheder -

som f.eks. rating af andre.

Problematikken med om de skal indføre programmeringsunderstøttelse for at vælge flere ``via" byer på ruten: Jens er imod ideen. Det kunne man da godt lave, sig han, men påpeger at folk kan tage flere forskellige veje fra KBH til Aalborg f.eks. og at folk vil oprette deres indlæg hurtigt, og derfor kan overse autogenererede via-byer. Han er positiv overfor ideen, såfremt brugeren bliver spurgt om dette, men ikke hvor via-byer automatisk udfyldes.

Hans eget brug af GoMore: Han bruger det, og har snakket med Line, som vi også har snakket med. Det ville være hyklerisk, hvis ikke de selv brugte servicen. Han nævner selv, at der ikke er så mange ture til/fra Aalborg og han er ikke klar over hvorfor, dette er tilfældet. Måske er Nordjyderne mere reserverede - man ved det ikke. Fremtidsplaner:

Hvilke fremtidsplaner har I med GoMore? De vil være de største. På lang sigt i Europa.

Har I overvejet at bruge rating og anbefalinger som på andre sider? Ja - se ovenfor.

Initiativer som kan gøre én mere sikker på at vedkommende i den anden ende virkelig er den som det påstås? Man kan købe sig adgang til folkeregistret, og derigennem checke folk. Men det er dyrt og det vil de gerne undgå. En af deres ideer er, at folk kan sende en kopi af deres pas ind til GoMore, hvorefter GoMore kunne lave en ``blåstempling" af profilen på nettet. Dette er en billig måde at skabe øget tryghed om personens identitet. Han vidste ikke helt, om digital signatur kunne bidrage med noget.

Hvad synes I om vores idé med LBS GoMore? Tror I folk ville bruge det, eller mener I ikke at on-the-fly opdatering er kørselmuligheder vil blive den store succes?

Har I overvejet et samarbejde med andre pendlersites? De har overvejet at købe pendler.net. Manden (enkeltperson) bag Turen.dk kontaktede dem angående et samarbejde og tilbød senere, at de kunne købe hans foretagende. Men Jens kom frem til, at 2/3 af Turen.dk's brugere også var brugere hos GoMore og finder derfor ikke Turen.dk interessant som nok til at poste penge i foretagendet. Det kan være svært at få fat i pendler.net's kommunekunder, men med tiden antager Jens, at de bliver flere gange større end pendler.net og derigennem kan argumentere for, at kommunerne bør bruge deres service frem for pendler.net. Problemet med det er, at når de laver samarbejde med kommuner, skal dette være non-profit hvilket komplicerer situationen. Han mener Turen.dk er tæt på død. Manden bag arbejder på andre sider (som han formegentlig tjener sine penge på) og efterhånden ikke bruger ressourcer på Turen.dk længere.

Hvilke data kan vi få adgang til? Statistik? Vi kan godt få adgang til statistiske data, men det kræver at vores projekt stemples som fortroligt. Det er vi ikke umiddelbart interesserede i, og det er formegentlig også begrænset, hvor mange statistiske data vi får brug for. Vi har allerede lidt statistik gennem dette interview.

Baggrund for interviewpersonen Uddannelse, alder, civil status? Cand.merc. Midt 20'erne

Har du pendlet, blaffet o.lign før? Bruger GoMore så meget som muligt

Computerevner? Medium - kender officepakke og lignende, men ikke programmør.