INTERREG NORTHSEA

ITRACT

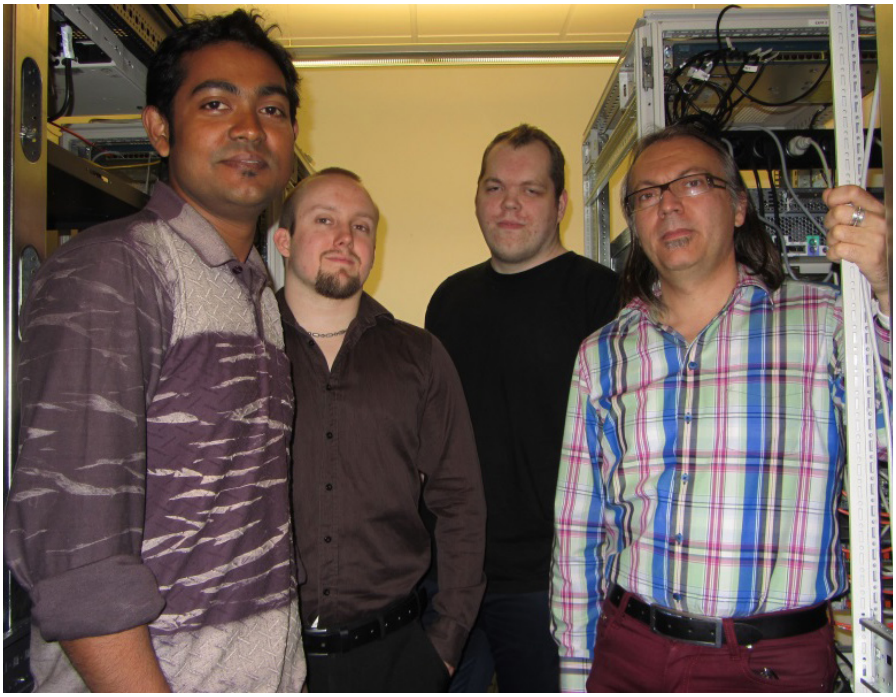
Improving Transport and Accessibility through new Communication Technologies

NEWSLETTER No 6, Autumn 2014

ITRACT Information architecture supports GTFS real time

Karlstad University has integrated support for the ITRACT backend architecture to connect to GTFS real time data feeds.

Alerts, vehicle positioning and trip updates are all integrated. Alerts comprises for instance information that a certain bus stop is temporarily unavailable due to construction work or likewise. Positioning includes real time information about individual vehicle positions during a trip, and trip updates include real time deviations from time tables. The ITRACT backend architecture has been modified to support those dynamic trip updates, so that when a trip is planned it is taking into account potential delays due to such real time information. When planning a trip, a user gets information about the actual schedule and the deviation from the planned schedule according to the static timetable information.



The development team in Karlstad. From left: Robayet Nasim, Andreas Arvidsson, Pieter Soesbergen (exchange student) and Andreas Kassler.

Next step ahead is to develop a generic push functionality in the ITRACT architecture. This will allow users to subscribe to events correlated with a specific trip and get notifications about real time updates concerning those trips. As the backend has to handle potentially thousands of such updates per second, scalability is a major concern in the design.

ITRACT Lead partner – Contact:Theo Miljoen, Hanze University, Groningen, The Netherlands
e-mail: t.a.miljoen@pl.hanze.nl, No:+31 505955565

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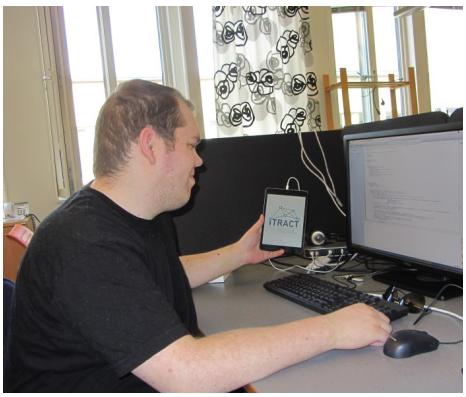
Dutch exchange student at Karlstad Universitet

Student from Hanze is engaged in the extension of an iOS version of the OpenTripPlanner at Karlstad University.

Pieter Soesbergen from the Hanze University has temporarily joined the development team at Karlstad University during his Erasmus exchange program. He is fully engaged in the extension of an iOS version of the OpenTripPlanner (OTP) that includes new functionality like showing the location of the next bus stops and the real time location of the vehicles. Future plans include the integration of the push service which would enable a user to receive notifications of real time changes that might occur during a trip.



Exchange student Pieter Soesbergen from Hanze University is busy developing an extension of the OTP application.

Official Opening of ServiLocker

From April 2014 Kring-pharmacy Beilen, in Ericalaan, offers a new service to their customers.

Kring-pharmacy Beilen offers a ServiLocker, which is a medication locker that provides medication 24/7. Customers are able to pick up medication outside opening hours and they do not have to wait until opening hours of the pharmacy. Picking up medication goes via a unique personal code, sent to the costumer by e-mail or sms.

Opening of the ServiLocker

On April 18, the ServiLocker was officially opened. The pharmacists gave a speech and one of the general practitioners was invited to cut the ribbon. To celebrate the occasion customers were invited to try the ServiLocker and were also able to win nice prices by participating.

Jacqueline Branbergen, general practitioner, is cutting the ribbon on the ServiLocker.

Collaboration Project

The ServiLocker at Kring-pharmacy Beilen is part of the ITRACT-project. The project is a European partnership – an interaction between academia, industry and government. Amongst the univeristies are for example; Karlstad University, the University of Groningen and Hanze University Groningen. One of the industry partners is Alliance Healthcare. The ITRACT project focusses on Improving Transport and Accessibility through new Communication Technologies.

24/7

"This 24/7 concept for picking up medication is applied in more places in the Netherlands", pharmacist Jacomijn Ruiter-Weijer explains. "At the moment you can find the ServiLocker in 90 locations in the Netherlands. This, however, is the first locker at an Alliance Pharmacy. The locker contains 126 compartments. After 24 hours, the customer receives a message that the medication still is in the locker. The medication stays in the ServiLocker for 48 hours. The method is simple and reliable", says Jacomijn Ruiter-Weijer.

Receive Takeaway Message

Besides the ServiLocker, the pharmacy has another new service. Colleague-pharmacist Emina Rak explains: "Often we receive questions from customers if their medication is already prepared. From now on, the pharmacy sends an automatic e-mail when medication is ready to be picked up. A real improvement!"

Kolumbus will be cash free

Kolumbus will remove cash from public transport in Rogaland.

- Now you can buy all Kolumbus products online. We aim to make all our products as cash -free as possible, says Odd Aksland, director of Kolumbus.

On the16 of September 2013, Kolumbus launched "Ticket", an app for mobile phones that allows you to buy your ticket on your mobile and then use your mobile phone as a ticket. It is Kolumbus latest step towards cashless public transport in Rogaland.

Reduces risk

If fewer people buy tickets on the bus, it will, according to Aksland, lead to fewer delays and shorter time at bus stops. He also means that a reduced number of cash will increase security on your travels.

– It will be safer for both the driver and passenger if more people choose to buy a ticket in advance. Less cash on the bus will result in fewer robberies, he said.

Cash machines on the bus

It is currently not possible to use credit cards to buy tickets, except online, but Kolumbus have experimented with bank terminals on buses at Rennesøy. Aksland believe this offers the same type of problems as cash.

– In the cities, a cash machine on the bus take just as much time to buy a ticket with cash. But we have started a survey that will be completed this summer. We look at how we can simplify the grid and products, he said.

When the results are ready, Kolumbus will look at several options to facilitate the journey. Among the solutions they are looking at are vending machines, as in Oslo and Bergen, or making kiosks similar to retailers. Work will start after the results are known, a solution is proposed and the solution is political adopted.

No increase in prices

As of today Kolumbus will not raise prices on tickets purchased on the bus, which has been introduced in Oslo and Bergen. But Aksland will not rule out that it may be appropriate in the future.

– When we put in place a system that makes it easier to buy tickets outside the bus, it may be necessary. But first we must look at what the survey tells us. We need a new system if we are going to do the Bergen- way . But either way it will be less cash in public transportation, he said.

Kristian Misje Mossige, Norway

It will be easier to buy tickets outside the bus. Kolumbus will have the fewest number of cash in circulation. FOTO: Jonas Haarr Friestad

News from Jade University

Industrial Trade Fair Hannover

In April Jade University presented the ITRACT-Project at their exhibition stand on the Industrial Trade Fair in Hannover for almost a week. Taking part in the exhibition was a great success and several hundred discussions were held. Also the Lower Saxony's Minister for Economic Affairs, Olaf Lies, expressed a great interest in the results of our project.

Industrial Trade Fair Hannover

UserEmpowermentWorkshop

The first User Empowerment Workshop was successfully completed in January. A group of senior citizens were introduced into the basic use of smartphones and ipads and also into some ITRACT-applications as well. Some results of the workshop will be shown on the after-workshop of our partner meeting in Oldenburg. The press reported with approval.

VEJ Shareholder Meeting

Jade University also held a speech at the VEJ shareholder meeting in may. Some results of ITRACT were presented and discussed together with managers of regional bus companies. Specially our web based application aroused a great deal of interest.

UserEmpowermentWorkshop

Studenten at Jade University

Survey among students

Actually we started a small survey about the ITRACT-screens at our university, which display the departure time.

Partner meeting and last work on the application test in the Jade-Ems region

In May 2014 the partner meeting took place in Oldenburg which lies in the Jade-Ems region in Germany. The steering meeting, 21st of May and the partner meeting, 22nd and 23rd of May both took place at the “Schlaues Haus” (Smart House) in Oldenburg. The different work packages and their deliveries have been topics during the meeting. In the afternoon of the 23rd there was also a “train the trainer” workshop to prepare every region to do their user empowerment workshops.

There was a little disturbance at the 22nd because a (fortunately not real) firealarm caused a break in the meeting. In the evening of the 22nd the participants had the opportunity to learn a little about Oldenburg at a guided tour.

Some impressions about the partner meeting in photographs

Break firealarm

Meeting at the Schlaues Haus

In summer 2014 the last work on the application tests in the Jade-Ems region have been done and there was a lot of effort to finish the documentation of the piloting test. The monitoring of the progress of WP5 in all regions went on, so that now almost everything is complete for the overall 41 apps of the project.

The public was informed in different ways in the Jade-Ems region: There has been published a scientific article about the project and several contacts, fairs etc. have been used to give information about ITRACT.

The ITRACT booth at the Hannover Fair 2014

the presentation of the project to a member of the Danish Technical University

Pilot-tests with employees at County Council in Värmland

For one month selected employees at the County Council in Värmland tested to use Värmlandstrafiks new app "Bussiness Travel". With this app they were able to search their trip, pay and get a ticket in their mobile for their work related trips with public transport. And, in the end of the month an invoice is sent to their employer, who at the same time gets an overview of their employees travels. Outcome of the test was valuable feedback about the app from the testers, insights we need to improve the app before launch.

Every tester got a "start up kit" with instructions about how to download the test app and how use it.

Visit by dutch partners

April 10th Rob Willems from Hanze University and Attie Sijpkes from OV-bureau Groningen Drente visited Värmlandstrafik. During the meeting we presented the apps developed by participation organisations and discussed their transferability between the countries. Then, Rob Willems held a usability workshop where he presented theories of usability and user experience, and gave valuable insights in the development of mobile apps and the usability issues that arise and how to cope with them in the design methodology. Finally, we tested Värmlandstrafiks mobile app with travel planner, to travel by bus in Värmland.

Regional innovation with new technology for public transport

Apps shall utilize WIFI communication to improve the public transport issues in the participating regions.

The ITRACT project moved during 2013 from the early stage of describing the need of the regions and brainstorming how to solve and answer the prioritized issues. Now architecture and apps designed to be building blocks are under development and will be available for all regions as described in the defined priorities. These apps shall utilize WIFI communication to improve the public transport issues in the participating regions. The regions will test and utilize the apps in various ways depending on the need in each region. →

Scheduling app

When ITRACT project started, it became clear that the public transport administrator in Rogaland County (Kolumbus) had a parallel activity. In spring 2012 an app for scheduling was distributed for public use.

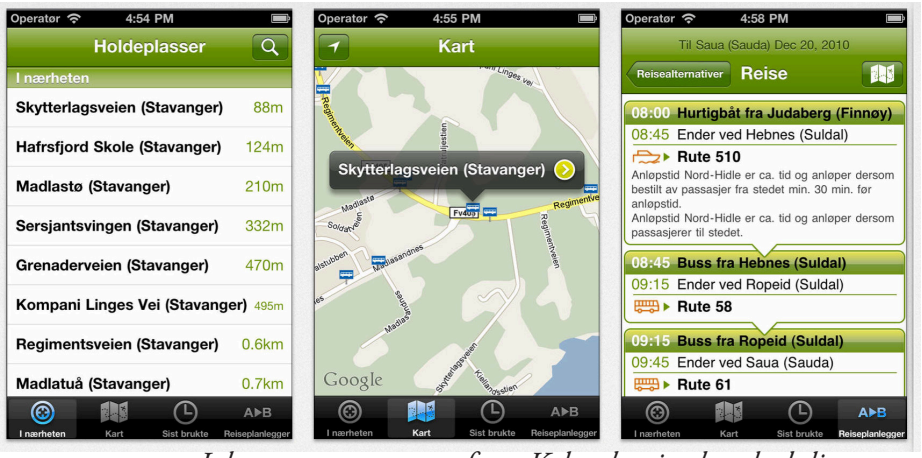
The scheduling app utilizes Google Maps and Google Transit Feed Specification Reference, GTFS. The use of GTFS enables the scheduling app to connect to other transport data in other regions. The consequence is that if you want to plan a travel from University of Stavanger to a location at University of Oslo, then the planner tells you where to walk to the bus stop, when next bus is expected due to schedule, when you can transfer from bus to next train to Oslo, when you can transfer to the local Oslo bus, where to stop, and where to walk to final location. All based on where you are and published schedules.

Real-time app

In April 2013 a real-time app was distributed. This one does not plan your travel, but it identifies where you are with bus stops closest to you, and then tells you which busses will connect at that stop and when they are expected including delays. This real time functionality is available for iPhone/ iPad, android, and general website. But the real-time information is also on screens at bus stops and on a screen in the busses. The real-time app is the most popular app as it enables its users to optimize their time due to better knowledge on actual transport options.

Flexible payment app

The flexible payment app enables people to enter a bus, pay with an iPhone or android, and then show it to the bus-driver or to a QR code reader, as one would do with a prepaid ticket.



Iphone screen captures from Kolumbus in the scheduling app.

The price to pay depends on zones included in the travel. So locations of start and end points and the identification of the bus-route are included in the calculation. In the future, a development to move most or all passengers to cash free system may be provided, but for the moment only a single ride payment is in place. Users of rebated monthly payment and similar reduced fare options still have to use a traditional ticket or card.

The 3 apps have been very popular with estimated downloads of 80000 up to May 14 in a population of 300000.

Feedback

The local ITRACT project group used a group of students in 2013 with a questionnaire to look for feedback about functionality and usability. This gave surprisingly little negative comments on functionality or usability. A survey to university employees and students in June 2014 showed > 60% of respondents as transport app users. 60% also indicated that such apps might increase their use of public transport.

Next issues will be to further test the usability and functionality of these 3 apps more in detail with both the users in the region and to compare as far as possible with apps developed at the other ITRACT partner universities. The purpose of this is to see if or how functionality and usability can be improved. A possibility is also to merge the apps.

Jan Frick and Thomas Laudal, University of Stavanger