

2011 CH COST meeting - SCIENTIFIC REPORT

COST Action TU 603

Buses with a high level of service:

Fundamental characteristics and recommendation for decision-making and research
9th, 10th, and 11th May 2011 – Zurich / Lucerne



The 8th plenary meeting of COST Action 603 “Buses with a high level of service: Fundamental characteristics and recommendation for decision-making and research” took place in Switzerland, visiting the BHLS cases of Zurich (Line 31) and the bus network approach of Lucerne.

The programme for the 3 days was:

Day 1 – Zurich

1. Presentation by Prof. Weidmann, ETH Zurich.
- 2.** Presentation of Zurich’s Transport Policy by Ruedi Ott.
- 3.** ETH Zurich research project presentations by Nadine Schüssler and Nelson Carrasco
- 4.** Visit to the public transport operator in Zurich (VBZ) with presentation of bus line 31, with bi-articulated trolleybuses by Susanne Reumüller.
5. Visit of the VBZ control room and the main workshop for tramway and buses.

Day 2 – Zurich / Lucerne

6. Plenary session: WP3 recommendations for the final report.
7. Presentation of the Chronobus program by Sebastien Rabuel.
- 8.** Visit to Lucerne: presentation about the public transport (bus) network by vbl (operator)
- 9.** Lucerne: visit of the control room and the depot.

Day 3 – Zurich

10. Management committee
11. Visit to Zurich’s traffic management control centre including presentation
12. Core group meeting

All presentations on BHLS and research are on the web site, public part; all other presentations, MC or WG minutes, will be soon on the private part.

1. Presentation of the Zurich region and research presentations

Zurich is currently growing and expecting a further growth in the coming years. It currently has about 385'000 inhabitants. Some 365'000 jobs are located here. Moreover, Zurich is the hub of a metropolitan area with approximately 1.7 million inhabitants.

Zurich embraces public transport. Zurich's transport planning has a good reputation for its comprehensive and long-term objective setting and implementation. Moreover, public transport enjoys wide support by the politics and the population. In 2007 a large-scale mobility study was conducted, comprising 1'300 interviews in the city and the neighbouring municipalities. The study shows, for example, that approximately 80 per cent of the inhabitants use public transport regularly, that is to say daily or two to five times a week. Zurich residents use public transport services in a flexible and rational manner. For example, only 11 per cent focus exclusively on cars as a mode of transport. (Pedestrians excluded).

Zurich has a high performance in complete mobility. This is the result of a new study by MRC Mc Lean Hazel sponsored by Siemens. (www.siemens.de/mobility/uitp2009). Full text with slides are available.

Afterwards two on-going research projects within the framework of the Action and funded by the Swiss Government have been presented:

- “Observing public transport route choice using GPS devices” by Nadine Schüssler

Aims:

- Understand public transport route/connection choice.
- Improve our understanding of the motivation of public transport users and the drivers of their behaviour
- Use GPS observations to derive the true route choice behavior.

- “Quantifying public transport reliability in Zurich”, by Nelson Carrasco, which was basically a travel time, speed, punctuality and regularity analysis using operational AVL data of bus Line 31 in Zurich.

The calculation “CEN” (EU standard, taking in account the number of passengers having a bus on time) is not applied in Zurich, so that figures can unfortunately not be compared with the other BHLS data collected in our WP1. However the level of regularity stays impressive, an average of all services, and at each station can be observed.

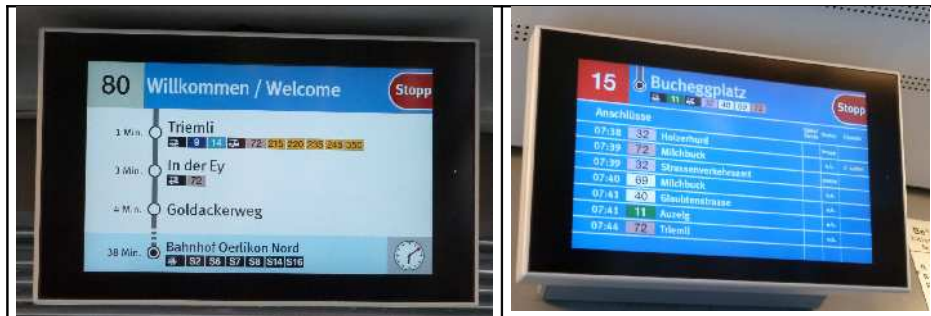
2. Presentation of the public transport network and transport policy approach of Canton Zurich, and the City of Zurich, including bus Line 31, with bi-articulated trolleybuses.

Main characteristics of the network of Canton Zurich

- High quality of coverage,
- High density of bus/tram stops
- Quality standard: everybody should reach the next bus/tram stop within the next 300m
- High quality of information (before and during trip), link on Google maps and Google transit, Real time Information and apps for smart phones



The bus and tram station “Central”, a complex node crossing without traffic lights, that needs the help of police men for regulation at rush hours only.



Uniform and elegant design of LCD displays inside all vehicles, which provide real time trip information and next stop connections



Touch screen for drivers of buses and tram, including schedule adherence information (Source: VBZ)

3. Visit of the Zurich control room and the main workshop for tramway and buses

The Zurich control centre was visited and information was provided on the evolution of the control strategy for public transport in Zurich, dating back to 1972. Currently, 5 operators control public transport traffic throughout the city, which consists of about 400 vehicles during rush hours. Interestingly, strategies to overcome section blockings were presented. Each controller goes through a selection process and is required to have been a tram and bus driver for at least two years. Controlling starts at 4:20 in the morning and ends at 1:30 in the morning of the following day. During normal operations, about 2000 radio contacts between drivers and the control centre take place. During bad weather conditions, this number can double. The control centre is dedicated to maintaining and returning the service back to schedule when delays occur.

About PT safety, a level of 4 events per 90 000 km riding by tram and buses; the tram appears to be more unsafe due to new trams that are now very silent and more pedestrians are hearing music or with smart phones.

About accessibility goals for wheelchairs and any other disabled people

- The objective is to achieve at a full accessibility level in 2025, with the main station in 2015.
- The tram are now purchased 100 % low floor.
- The station platform will be retrofitted higher partially (30cm), for the second door : a long and complex task for some station, a lot in curve.
- The ramp will stay manual on buses, operated by drivers, justified by a small use, as an efficient special service stays available for heavier handicapped people.

4. Plenary session – WP3 and presentation of the Chronobus program.

Its objectives were to present and discuss the recommendations suggested by each WG. Each presentation had two parts, a first one about the main key points on the state of the art analysis, and a second part split as follows:

- the main barriers / difficulties observed for launching a complete BHLS scheme
- the recommendations that can help any stakeholder

Each presentation is available on the private part; a synthesis will be set up soon.

During this session, Sebastien Rabuel presented the Chronobus programm:

- The Chronobus concept, as a BHLS concept for routes with less capacity than Busway concept, less expensive, however with a very coherent “system approach”
- The fleet will not be specific for cost reasons, but specific thinks are on the way to be decided for having an identification when the bus is chosen for a Chronobus line.
- The objective to achieve a high level of reliability (more frequency, higher schedule span)
- A very good example of hierarchisation of the bus network, ... into several levels of capacity...

5. Lucerne: presentation on the bus network

Lucerne has a very long history in public transport, using now only conventional diesel buses and trolleybuses (1961, abolishment of the Tram).

Since 2001, a new organisation, with a cooperation with the private sector, explaining all the recent improvement and much more information through different media (by radio called “radio pilot” for example, very fruitful feedbacks).

Like the Zurich region, Lucerne has improved its bus PT network (night buses also) and promoted the use of slow and clean modes (high market share with walking and cycling). However very few dedicated lanes have been implemented at this time (no data of percentage of RoW), and due to increasing mobility problems, a study has been carrying out, highlighting these main needs:

- Reorganization of the traffic system at the rail station Lucerne (convergence of all main lines).
- More and continuous bus lanes.
- Bus prioritization.
- Bypass Lucerne

Regarding the PT results to days, we observe a very high use of PT transport, 19,7 passengers par km driven along a year, with buses only.



Double articulated trolley buses, in operation since 2006



The screens inside all buses, displayed transport information and city information (managed by an external professional unit)

6. Lucerne: visit of the control room and the workshop.



The control center with a high level of information to passengers

7. Management Committee meeting

The Management Committee approved the last minutes (meeting held in NL). A quick review on WP1, WP2 and WP3 method issues has been discussed.

Discussion and first decision have been taken regarding the final report and the final conference. The final conference is planned on the 29th, 30th of November 2011.

The minutes is available on the web site – private part.

8. Visit of the Zurich traffic management control centre

Coordinating traffic measures with other authorities (Building Department, Public Transport etc.), with these targets:

- Processing and analysing relevant traffic data.

- Management of traffic calming measures.

The first traffic control was implemented at the 70ties, since that moment, lots of investment have been made. Approximately 400 traffic light signal systems are managed in the city of Zurich.

Priorities:

- Preferential treatment of public transport (the first is served, the tram before the bus) and slow moving traffic at traffic lights.
- Priority for emergency services.
- Optimizing traffic flow at building sites/road work by adjusting traffic light signal systems accordingly.

The results regarding priority at tram and buses are actually very impressive, due also to a strong decrease of the car traffic, step by step, since years that could be achieved with the increasing PT offer all around the region.

From the control room, any crossing can be observed on real time, with the data collected by the sensors, for checking the efficiency.

9. Core group meeting

Within a smaller group, these outputs have been achieved:

- A first content of the final conference session dedicated for the COST action.
- A suggestion of several title for the final report and the final conference as well.
- A review of the final report content.
