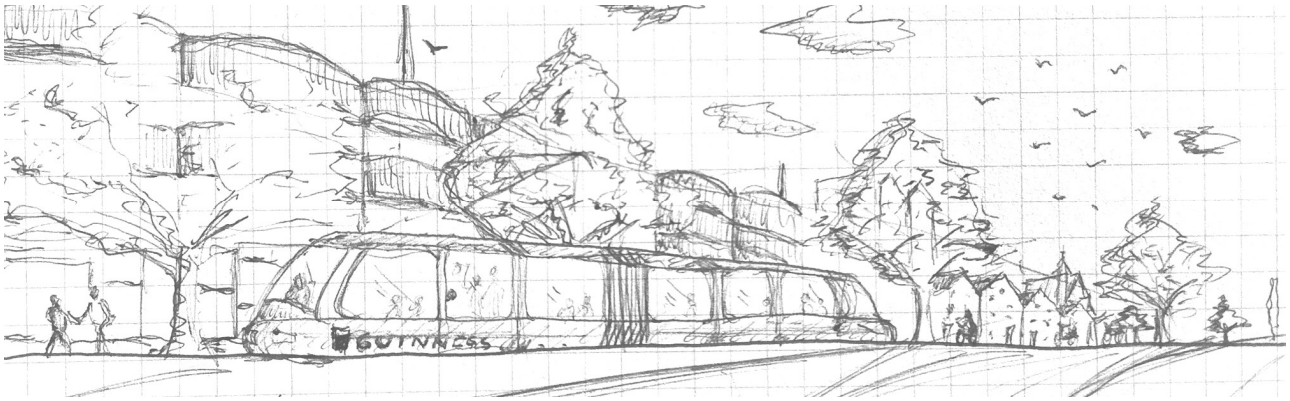
Urban Tram Forum (UTF) Meeting



Minutes

3rd and 4th November 2016

PARTICIPANTS

- Céline AVRIL (CEREMA, France)
- Ana-Paula BOUCHEREAU (CERTIFER, France)
- Laetitia FONTAINE (STRMTG, France)
- Lars FORSTING (Copenhagen Metro, Denmark)
- Axel KUEHN (Consultant, Germany)
- Emmanuel JUBIN (STRMTG, France)
- Anthony LOUI (Federal Transit Administration, USA)
- Klara MACSINKA (St Istvan University, Hungary)
- Christian MARTI (ETH, Zürich)
- Franck MONTI (CEREMA, France)
- Marine MILLOT (CEREMA, France)
- Reddy MORLEY (Transport Infrastructure Ireland TII, Ireland)
- Margarita NOVALES (Universidad de A Coruña, Spain)
- Michael ROSENBERGER (Regierungspräsidium Stuttgart , Germany)
- Manuel TEIXEIRA (Municipality do Porto, Portugal)
- David WALMSLEY (retired from CPT, United Kingdom)
- Tony YOUNG (retired from Greater Manchester, United Kingdom)
- David ZAIDEL (4sight, Ergonomics & Safety, Israel)

EXCUSED

- Dominique Bertrand (France)
- Matus Sucha (Czech republic)
- Maarten Duhoux (Belgium)
- Carlos Gaivoto (Portugal)
- Johannes Yezbek (Austria)
- Dirk Langesiepen (Germany/UITP)
- Amal Kammachi (Belgium)
- Raf Van Genechten (Belgium)
- Dominique Schmitt (France)
- Cees Smit (Netherlands)
- Robert Jan Roos (Netherlands)
- Mathias Sdun (Denmark)
- Hans Vilhelm Tausen (Denmark)
- Elge Herlandsen (Denmark)
- Paulo Taveira (Portugal)

0. Introduction

This was the first UTF meeting. Based on the experience we had on COST project, the goal of the Urban Tram Forum is the same: to exchange problems we have, and to discuss on how it could be possible to solve them.

The method all participants agreed on is a free speak about the problem and cooperation between the group.

The group is based on voluntary bases and has been enlarged from the initial COST group.

Each participant presents him/herself.

1. Main hazards for pedestrians in tramways design – Marine Millot, France

Presented in Minneapolis, 2015- and Spain 2016

In France, in 2015, 50 % of accidents with trams occurred with pedestrians. They were only events with an injured person, material accidents were not reported. Obviously, when there's an accident involving a pedestrian, he is always injured.

About headphones

55 % of accidents involved 11-25 years old persons, which is a different result from usual literature that says old people are more concerned: it's unusual to have more young people injured than elderly.

Distractions themselves are inducing accidents but a majority of people with headphones continue to interact with their environment. But we don't know every time if a headphone is involved since sometimes it is hidden or broken.

We need to know who are the involved persons, in order to adapt communication campaigns.

About responsibility

What happens if someone is crossing at red? Tramway has priority above other users. However, the weaker user has to be protected, or to be compensated if something happens.
And the police enforcement toward pedestrian is not strong. So the issue is more about the behavior!

About near-accidents

Germany doesn't have the kind of accidents, where a pedestrian is hurt by a car while crossing a street to access the tramway platform. This is considered as a road accident, not a tram accident nor indirect tramway accident's, even if the pedestrian is a tramway client.

To put all the pedestrian lights to red when a tramway arrives could be a solution.

About avoiding pedestrian accidents

How about training the tramway driver to recognize if a pedestrian is there and might cross? In Besançon, when a pedestrian is close to a pedestrian crossing, they have to really slow down.

2. Tramways in pedestrian zones and traffic calmed areas: speed allowances - Axel Kühn, Germany

This presentation is extracted from a study at a European scale for an Oslo client.

Speed limit is a limit, not a recommendation to reach. And tram speed limits in pedestrian zones and traffic calmed areas can vary from 10 to 30 km/h.

In Germany, there are no federal rules, it's fixed locally. 10 km/h is judged too slow and dangerous because people are walking at the same speed along the tramway. Special allowances for tramway are common.
The actual speed of the tramway is unknown, it seems hard for tramway drivers to respect very slow speed limits.

In France, 7 or 10 km/h limit is avoided because drivers tend to look at the speedometer and no more at the

other road users.

2. German experience of trans-borders tram projects (Basel and Strasbourg) - Michael Rosenberger, Germany

After a presentation of the area of supervision and an overview of tram situation in Basel(CH) and Weil-am-Rhein(DE), the experience on the tram line extension from Switzerland to Germany is presented.
BoStraB was unknown and new to the police, firemen, etc. And tram drivers needed licenses for Germany.
Nevertheless, with the same language and a good team, the aim of a trans-borders tram line was achieved.

Germany experienced also the Strasbourg(FR) – Kehl(DE) tram project, with a new tram bridge and rolling stocks built by Citadis. And no unsolved problem.

In both cases, the two control rooms stayed were they were in Basel and Strasbourg. One requirement was that in the PCC, there will always be one person who can speak German properly.
And in both cases, the extensions reached an area where no tram network existed, so there was in each case only one operator with existing rules, experience,…

France has made a review on the modifications demanded by the German colleagues that might have changed the rolling stock or the operation from the French safety approach. Of course, no issue arose.
The Basel network is also extending to France and the extension will operate in 2017.

3. Design parameters of passenger platforms to tramlines - Klara Macsinka, Hungary

Since no exact design or sizing method is given for tram platforms, a study has been led to observe where passengers stand, their speed and movements, depending of the level of service and number of passengers, how they react to the presence/absence of a podotactile line, of obstacles. In order to define dead space around obstacles and apply it to design process.

4. Latest tram-accidents experienced in Budapest this year - Klara Macsinka, Hungary

A presentation of latest hotspots in Budapest is made :

- a succession of turn-lefts on a line close to the airport Szemertelep are problematic : it is a radial road and the crossroads have no traffic lights. Municipality did nothing.
- accidents also occurred on a ring road with turn-left movements again, some involved fixed obstacles.
- derailing events occurred (around 2 per week) because of the bad conditions' infrastructure and the old rolling stocks.

Note: Budapest tram operators don't have safety departments.

In Budapest during the last 15 years, sections have been renewed little by little, some developments have occurred and new vehicles have been bought (CAF).

5. Luas Safety Statistics – Reddy Morley, Ireland

Analysis is done every month by TII with the operator Transdev. And since all tramways have safety cameras at their front, it is possible to know exactly what happened.

Since 2005 and the start of the tram operation, only 4 deaths are counted. In 2016, the rate is 15,6 accidents per 1 million kms.

There are cyclists behavior problems, induced by the absence of traffic light for cyclists. But also by cyclists falling into grooves in shared areas. They made lots of safety campaigns but effects on cyclists are not visible...

Tram surfing and tram scouting are also major issues. They lead to measures that cost money in order to prevent unreasonable behaviors: the design of the front of the tramway has to be reconsidered in order to provide the wider safety as possible considering every possible misuse.

Specific events are presented: a collision between a touristic bus and a tram, a finger cut by a seat, a technical box hit, a derailment. And a study with the Road User Behavior Research, in order to understand how a Luas junction is different from a normal junction.

6. Red light cameras – Reddy Morley, Ireland

50% of accidents are linked to red light infringements.
A red light camera has been installed on a tram junction, the first one in the whole Ireland. A software is analyzing infringements automatically. Most infringed times are mornings and Wednesdays and Fridays.

7. Tram safety in mixed traffic: experience from Switzerland – Christian Marti, Switzerland

Note: ETH presentation is not to be spread out of the group.

After a quantitative analysis of current safety situation in Switzerland, the presentation shows the experiences of Swiss operators related to infrastructure layout and design. It finishes with the research agenda for tram safety in Switzerland.

The question of removing the pedestrian crossing zebras on the platform and to add pedestrian lights has been discussed for one particular situation, seen in the presentation.

8. Infrastructure and operational influences on collisions between tramways and left turns – Christian Marti, Switzerland

The study examines the situation where cars and tramways are driving in the same direction and then the cars turn left. It aims at identifying factors that influence the occurrence of left-turning car / tram collisions with a quantitative analysis and a regression analysis.

Of course, models have limitations and more precise data could improve predictive power. However, some main factors influencing collisions could be identified: number of tramways, tram speed, presence of a left turn lane, a nearby station, and a soft angle. But predictors do not explain all the accidents, there are many other parameters.

The group agrees that traffic lights can help but we should not depend on them: the design of the streets is the first level.

9. Inputs from UITP

An information was made on the UITP updated Knowledge Brief "LRT - A Safe Means of Transport" (2016), and the UITP Report "Safety Management by Operators" (2016) which illustrates and describes the general organization of safety management for Operators - different experiences concerning different approaches.

Concerning the report on UITP Workshop "Can Driver Assistance System (DAS) deliver safer LRT?" (2015), the Driver Assistance System (DAS) seems not to be compatible with pedestrians.
Some question raised: is it possible to turn it off?
The group thinks it’s better to wait for the system to be mature in the road sector.
Risks includes that the driver would have to look at some screens and not the reality which is dangerous. It could be considered as a distractor as are mobile phones.
And questions raise about what tasks would be left to the drivers? How to maintain their skills?
Also if the driver thinks the automatic system drives at his place, he could be easily deconcentrated.

To keep an overview of the current market situation, a quick survey of operators was started on the topic of DAS implementation. UITP asked if anyone have any further information on additional operators, who are intending to implement a DAS System, they would be very happy to be provided with information.

10. PASSENGERS ACCIDENTS AND EMERGENCY BREAKS - LAETITIA FONTAINE, FRANCE

In 2012, in Montpellier, a deadly fall of a passenger 73 years old occurred inside the tram. Since he was walking inside the tram, an emergency breaking was automatically applied because of the dead-man device.

Therefore, the BEA-TT stepped in: their mission is to produce independently technical inquiries on accidents or severe incidents of land transports in order to establish the circumstances, to identify the causes (certain and possible) and to produce safety recommendations aiming at preventing similar future accidents

For this case, they have studied the dead-man device and its alerting device's ergonomics, the performances' adaptation to the emergency breaking system of Citadis rolling stocks and the management of accidents by the operator.

And then they gave recommendations:

1. to the STRMTG: to ask operators to give a sufficient time to their tram drivers to react to the alerting device >= 3 seconds.
2. to manufacturers and therefore operators and STRMTG: to consider the technical and financial possibilities to reduce the instantaneous deceleration and jerk of existing rolling stocks. (FU3 => FU1).

That's why STRMTG is currently working with French operators to follow these recommendations.

11. CLOSING UP

A great thank was given to the presenters and attendees for the interesting and fruitful debates. Such as many thanks to Dominique and the CEREMA's team.

The group agreed to meet again next year, same period.
Without any other proposal, CEREMA in Lyon will be the place.

For 2018, Dublin proposed to host the event. The group accepted.

11. TECHNICAL VISIT

Philippe RACCURT from Kéolis Lyon (Direction Projets Marketing Intermodalité) led the group in the tramway network to give an overview of some core points of the local tramway network:

- T3/Rhonexpress rapid tram line: from Part Dieu station to "Gare de Villeurbanne" stop (and back);
- T4 from Part Dieu to Jet d'eau;
- T2 on cours Berthelot (turn-on issues junction);
- T1 from Perrache to Debourg (travel back to Part Dieu on Metro B line).