



## Operation and safety of tramway in interaction with public space

### What does this COST Action deal with?

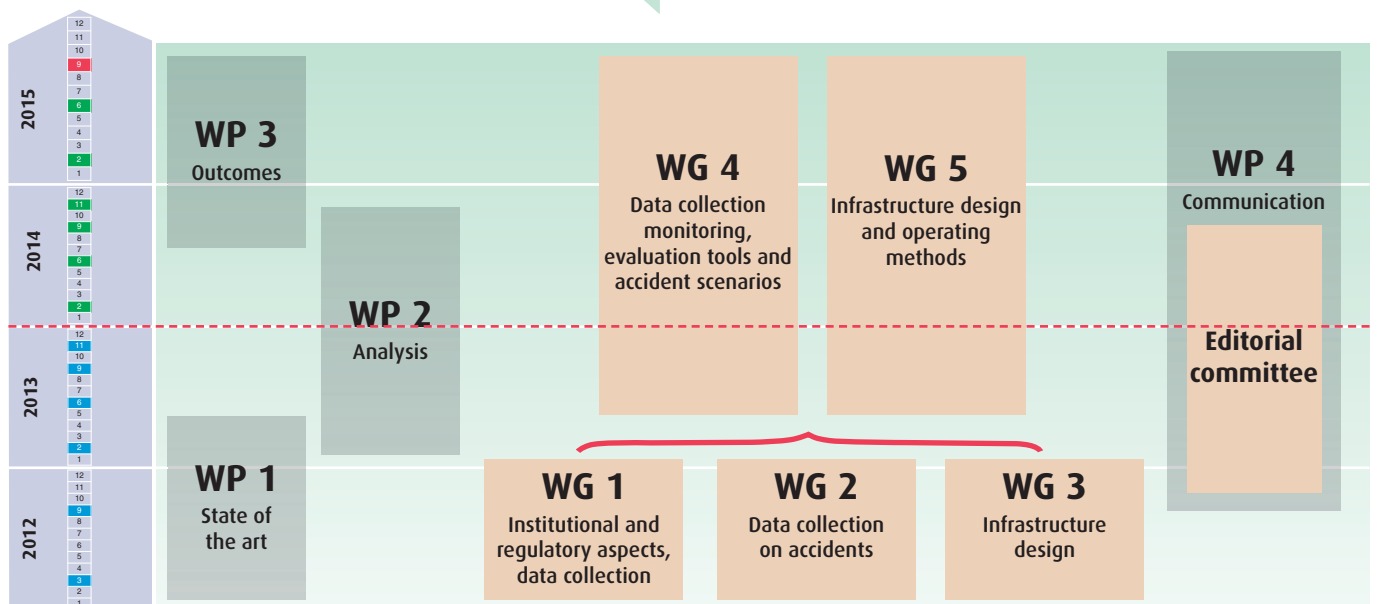
In our Action, **safety** deals with **risk** and with the precautions taken to reduce the level of risk related to accidents and injuries, such the way a tramway is inserted into the urban design and measures which can be taken within the institutional framework.

Regarding **tramways and Light Rail Transit**, our Action looks at **urban fully guided public transport systems** which share **public space** with road, cycle and pedestrian traffic.

We look at **accidents** and **near-misses** where they are recorded, and the whole tram system, including **infrastructure design** and **equipment management**, is important. All good ideas or bad experiences might be shared in this Action within these limits.

Objectives of the Action have been described in Newsletter 1 (April 2013) - see <http://www.tram-urban-safety.eu/spip.php?article245>

### Organisation and planning



3 3 Plenary sessions 2 Conferences WP: Work phase WG: Working group



Since the publication of our first newsletter in April 2013, new partners from Austria, Belgium, Israel, Poland and Spain have joined us. During these last months, we actually achieved our work phase 1 and launched the second one, going into the analysis of gathered materials.

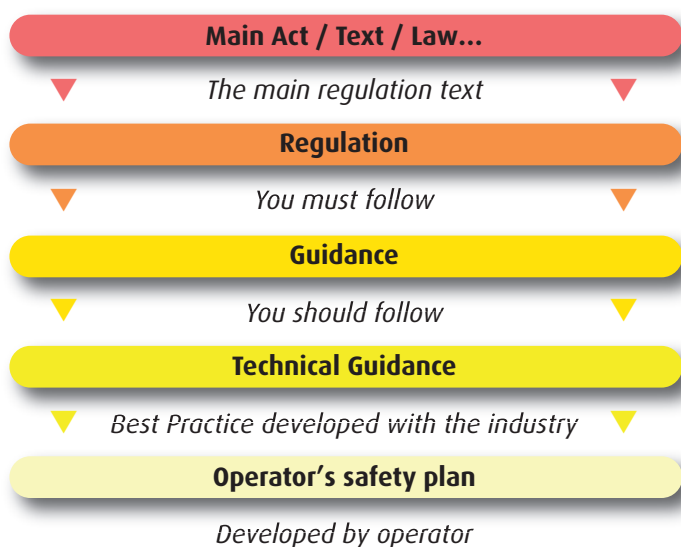
## Results of Work Phase 1

Information gathered during the exploration of the state of the art and contexts in participating countries has been gathered in three detailed reports – one per working group – and summarised in a public deliverable.



Jerusalem

### Working Group 1: institutional and regulatory aspects



One of the main results achieved is the improvement in knowledge about **similarities and dissimilarities** among different European countries in relation to the institutional and regulatory frame. There is a **wide range in the manner and level of regulation and standardization** for light rail systems between the countries.

Based on information from members, data were collected in :

- a glossary to be sure of common used terms (shared spaces, mixed zones, event, collision,...),
- a document presenting a global view per country (Networks, Main tram regulation, Actors, Tram and urban insertion),
- a list of all regulations concerning LRT system in each country,
- a bibliography on related studies.

### Working Group 2: data collection on accidents

In relation to data collection on accidents, we have produced an **overview of organisational options in terms of gathering and using data** on safety and operation. Then we didn't only focus on accidents, but also took in account near missed ones through emergency braking, and other tools like CCTV. However it appears that a European wide harmonisation would probably be very difficult to achieve. Anyway there are some lessons to be learnt which could reduce risks on new systems. The common knowledge on safety issues (problems, levels, impacts) as well as regarding tools to manage them (events reporting, indicators, accidents scenarios) will be continued during WP2.



Barcelona

## Working Group 3: infrastructure design

The main achievement about infrastructure design and urban insertion is the **compilation and analysis of good and bad practices** in relation to safety when interacting with other street users (pedestrians, cyclists and road vehicle users). Every country's systems face similar kinds of risky situations, and that there are specific design solutions that may be generally considered as safe or dangerous.



Berlin



Porto

## Deliverables

A synthesis - **Operation and safety of tramways in interaction with public space - Public report Work Phase I** - is available for downloading on our website: see <http://www.tram-urban-safety.eu/spip.php?rubrique21>

WGs reports are mainly for internal use, however they can be made available on demand; for more information please see <http://www.tram-urban-safety.eu/spip.php?article90>

## A focus on pending phase: Work Phase 2

The second Work Phase deals with best practices and their analysis. During this phase (WP2), particular attention will be paid to the causes of accidents and efforts will be made to **identify the configurations that:**

- pose recurrent problems in terms of operation or safety at intersections, stations and the intermediate sections between them,
- correspond to sections of line that perform well and/or have no accidents,
- are innovative in terms of design.

To achieve this second work phase, there are two Working Groups dealing with:

- **Data collection monitoring, evaluation tools and accident scenarios:** this group focuses on tools for accidents analysis,
- **Infrastructure design and operating methods** : an analysis is made about each interaction point, identifying the risks (linked parameters, for example lack of visibility), the objectives to cover them, and the possible measures that can be taken.

WP2 will gather analysis and recommendations, and would conclude directly after analysis, discussions and debates. This work phase will not result immediately in publishable deliverables; they will rather be captured in working documents useful for the following step (Work Phase 3), which this WP2 is closely related to.

Finally, in Work Phase 3 the results of the analysis - and of the all Action as a whole - would be recommendations for safest tram insertion in urban spaces, through guidelines with risks, objectives and possible solutions, for example with design examples and additional measures aiming at a safe interaction of new and existing LRT systems with public space.

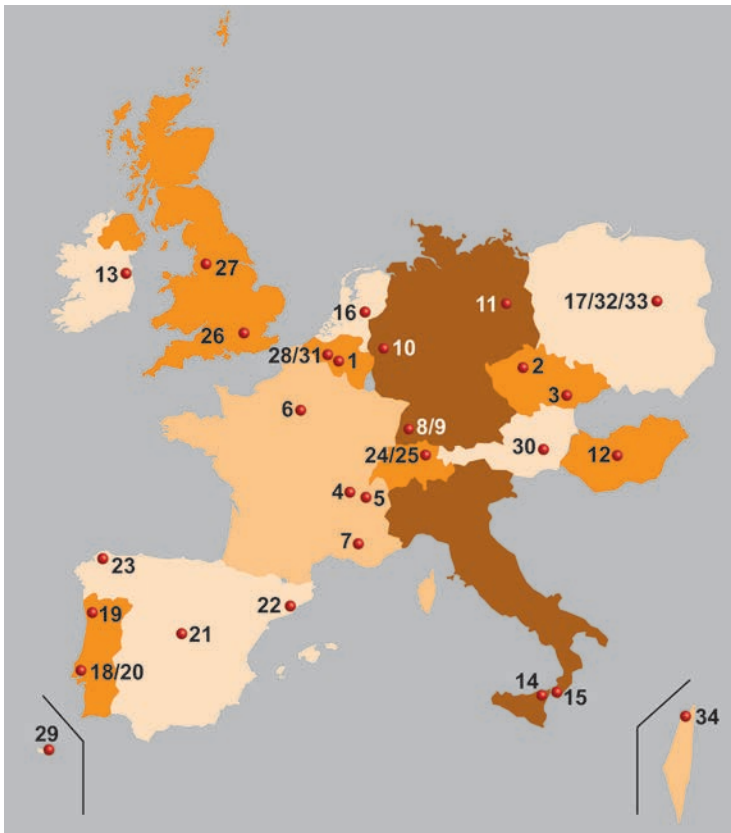
## TU1103 partners

34 organisations from 15 countries (+ UITP) are now involved in this Action.

For details about partners, see <http://www.tram-urban-safety.eu/spip.php?rubrique33>

### Management of the Action

<b>Chair</b>	Laetitia FONTAINE	STRMTG France
<b>Vice Chair</b>	Manuel TEIXEIRA	Metro do Porto SA Portugal
<b>WG1 leader</b>	Reinhold SCHRÖTER	SSB Germany
<b>WG2 leader</b>	Dominique BERTRAND	Cerema France
<b>WG3 leader</b>	Manuel TEIXEIRA	Metro do Porto SA Portugal
<b>WG4 leader</b>	Nelson CARRASCO	ETH Zürich Switzerland
<b>WG5 leader</b>	Robert Jan ROOS	Arcadis Netherlands
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<b>Webmaster</b>	Dominique BERTRAND	Cerema France
<b>Science Officer</b>	Thierry GOGER	COST Office (European Union)
<b>COST Office reporter</b>	Jan SPOUSTA	CDV Czech Republic



## Contacts

Website of the Action : <http://www.tram-urban-safety.eu>  
(a form to be in touch is available in contact section)

COST Actions website : [http://www.cost.eu/domains\\_actions/tud/Actions/TU1103](http://www.cost.eu/domains_actions/tud/Actions/TU1103)

*COST is an intergovernmental European framework for international co-operation in research and technology. COST activities are administered by the COST Office and are endorsed by the FP7. For further information, visit: [www.cost.esf.org](http://www.cost.esf.org)*

### Countries involved in the action

