EUROPEAN CITIES AND REGIONS NETWORKING
FOR INNOVATIVE TRANSPORT SOLUTIONS

The deployment of public transport innovation in European cities and regions

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What is Polis ?

Network

Exchange of experiences

65 European cities & regions

European Initiatives

Innovation

European Institutions

Sustainable urban mobility

Understanding innovation

Understanding Innovation

- **'Idea, practice or object that is perceived as new by an individual or other unit of adoption' (Rogers) and that provides a better solution to existing challenges than traditional measures in urban transport and mobility**
  - Higher potential to effectively respond to current challenges than already well-established measures
- **Pragmatic perspective: mainstream in some countries versus new in other parts of Europe**
  - Comparably new to large parts of Europe

Understanding innovation (TIDE approach)

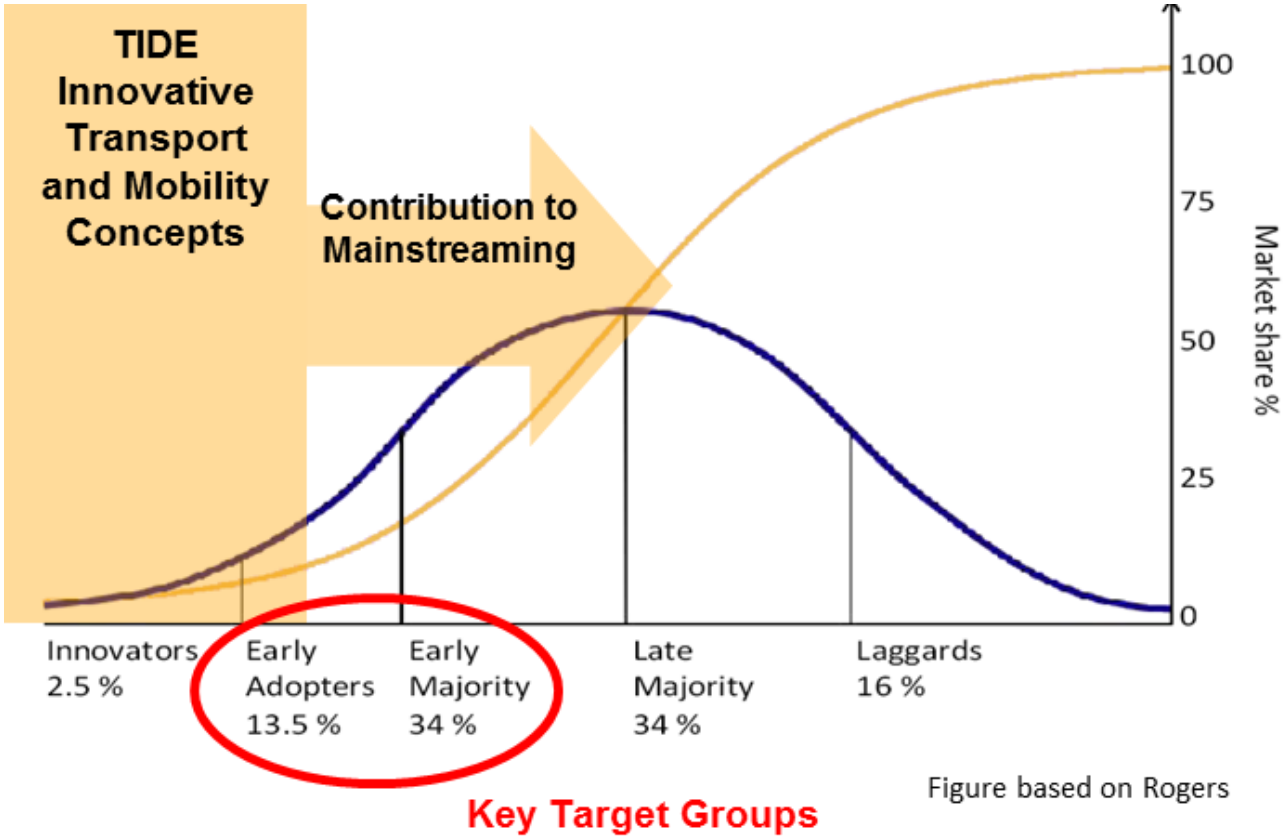


Figure based on Rogers

Reduce the risk of starting something new

- **Most European cities want to be innovative, but not all want to be the first to implement a new measure**
- **Various risks**
  - Financial: will we be able to afford the measure?
  - Political: will the measure be accepted, will citizens vote in favour of it?
  - Effectiveness: will the measure solve the problems it is meant to solve?
  - Implementation: will we be able to introduce the measure smoothly, without delays or extra cost?

How can we shorten the innovation cycle?

What about Impact Assessment and Transferability?

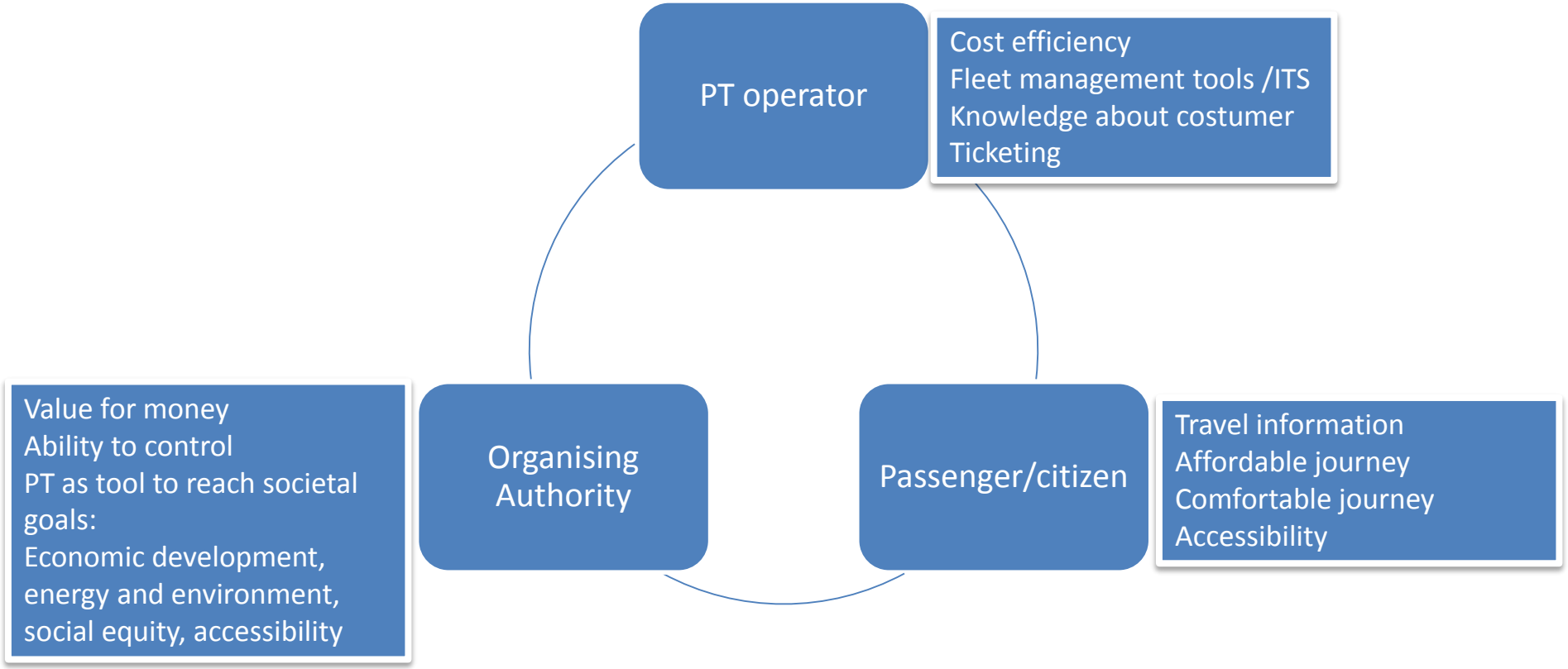
What drives innovation in PT?

Public transport sector drives innovation

‘Push’ from EU policy side: not strong, nor coordinated

- **‘Urban Mobility Package’/ transport white paper**
  - PT not very visible!
- **ITS directive (travel data)**
- **Clean Power for Transport Package**
- **Clean vehicle directive**
- **Public Service Obligations Regulation (revision)**

Innovation based on needs of 3 PT stakeholders



Examples of innovation areas for public transport

energy | information | automation | coordination


THE FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION
HORIZON 2020

The energy challenge

Hybrid buses

✓ 30-40% Fuel reduction
✓ Silent take-off
✓ 40 % lower on road emissions
✓ Improved passenger capacity

Plug-in hybrid buses

80% Fuel 60 % Energy reduction
Electrical drive 70 % of route = silent
80-90 % CO_2 reduction*
Charging 6 min at end stations.

Fully electric buses

80 % Energy reduction
Electrical drive 100 % of route = silent
No local exhaust emissions
99 % CO_2 reduction with CO2 neutral electricity
Charging 6 min at end stations.

2009 → 2013 → 2015

Source: Volvo

Electrification: ZeEUS

Zero Emission Urban Bus System

Testing electrification solutions at the heart of the urban bus system network through live urban demonstrations and facilitating the market uptake of electric buses in Europe

- 8 core demonstrations in 6 EU countries
- 35 buses of 12+meters and double-deckers
- 3 innovative electric solutions
  - Plug-in hybrid, full electric, battery trolley buses
- fast and slow charging strategies
- different energy supply modes
  - Plug-in, inductive, conductive, overhead line
- www.zeeus.eu
- 11/2013– 04/2017

Outputs:

- Economic, environmental and societal feasibility analysis in different conditions
- Guidelines and tools to support decision makers
- ZeEUS Observatory to follow and discuss the progresss of urban bus system electrification

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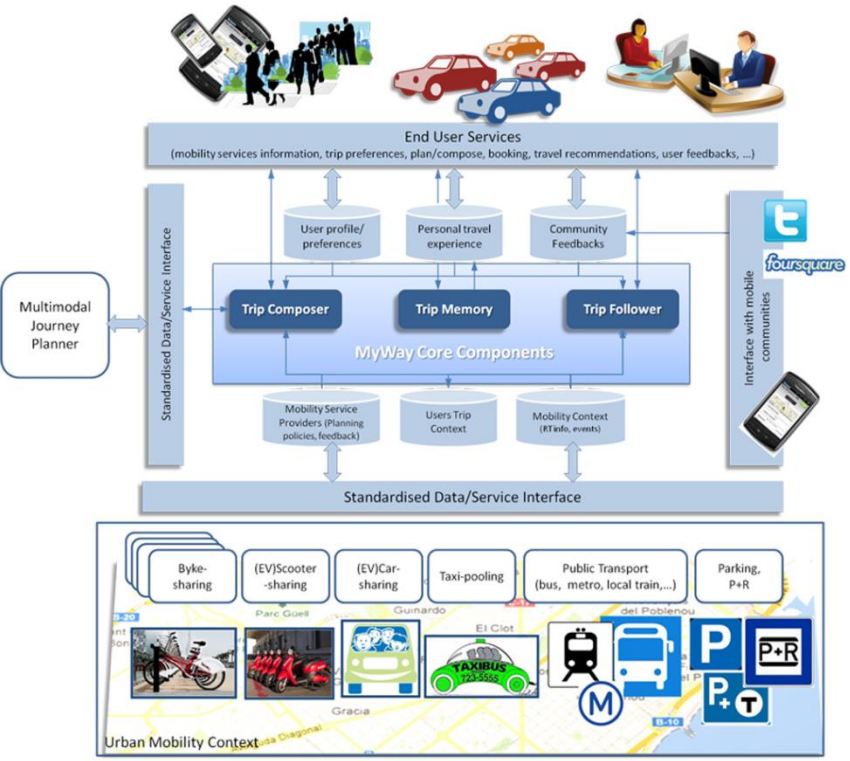
Inductive charging for PT: UNPLUGGED

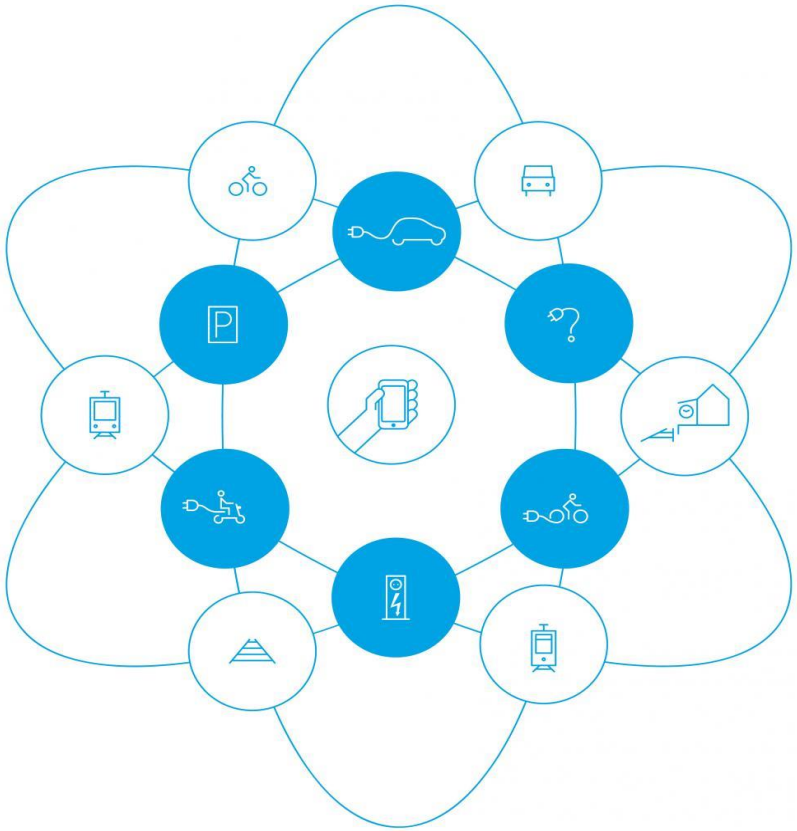
- Inductive charging infrastructure can be used for several types of vehicles simultaneously: buses, trams and in future cars as well
- Decreased battery size and reduced charging times
- http://unplugged-project.eu

The information challenge



Pictures TfL, MyWay

Towards integrated services



Infomobility services: POLITE

Enhancing attractiveness and thus use of public transport through better travel information

- support co-modality, efficient use of various modes separately and in synergy, to optimise public transport options
- assist public sector and decision makers by providing knowledge and skills related to policies for infomobility measures deployment
- focus attention on various already existing and proven good practice solutions in Europe
- stimulate coordinated implementation of interoperable ITS for PT across borders
- www.polite-project.eu

polite

POLICY LEARNING IN INFORMATION TECHNOLOGIES FOR PUBLIC TRANSPORT ENHANCEMENT

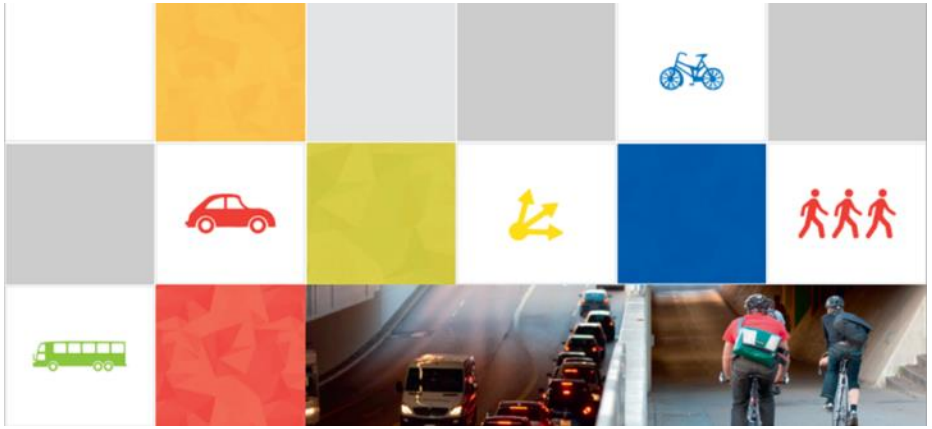
Personalised travel planning: MyWay

European Smart Mobility Resource Manager

Multimodal journey planner with integrated ticket purchasing and automatic travel readjustments that encourages cleaner modes of transport.

MyWay
EUROPEAN SMART MOBILITY RESOURCE MANAGER

- **Improved real journey times**
- **Reduced congestion**
- **Increased multi-modal split**
- **Three test sites:**
  - Berlin (DE), Catalonia (ES) and Trikala (GR)
- **Policy & research recommendations**
- **Business models**
- **http://myway-project.eu**
- **09/2013– 02/2016**

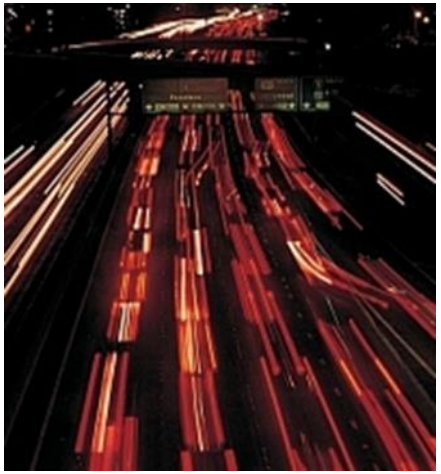


ICT services: MOLECULES

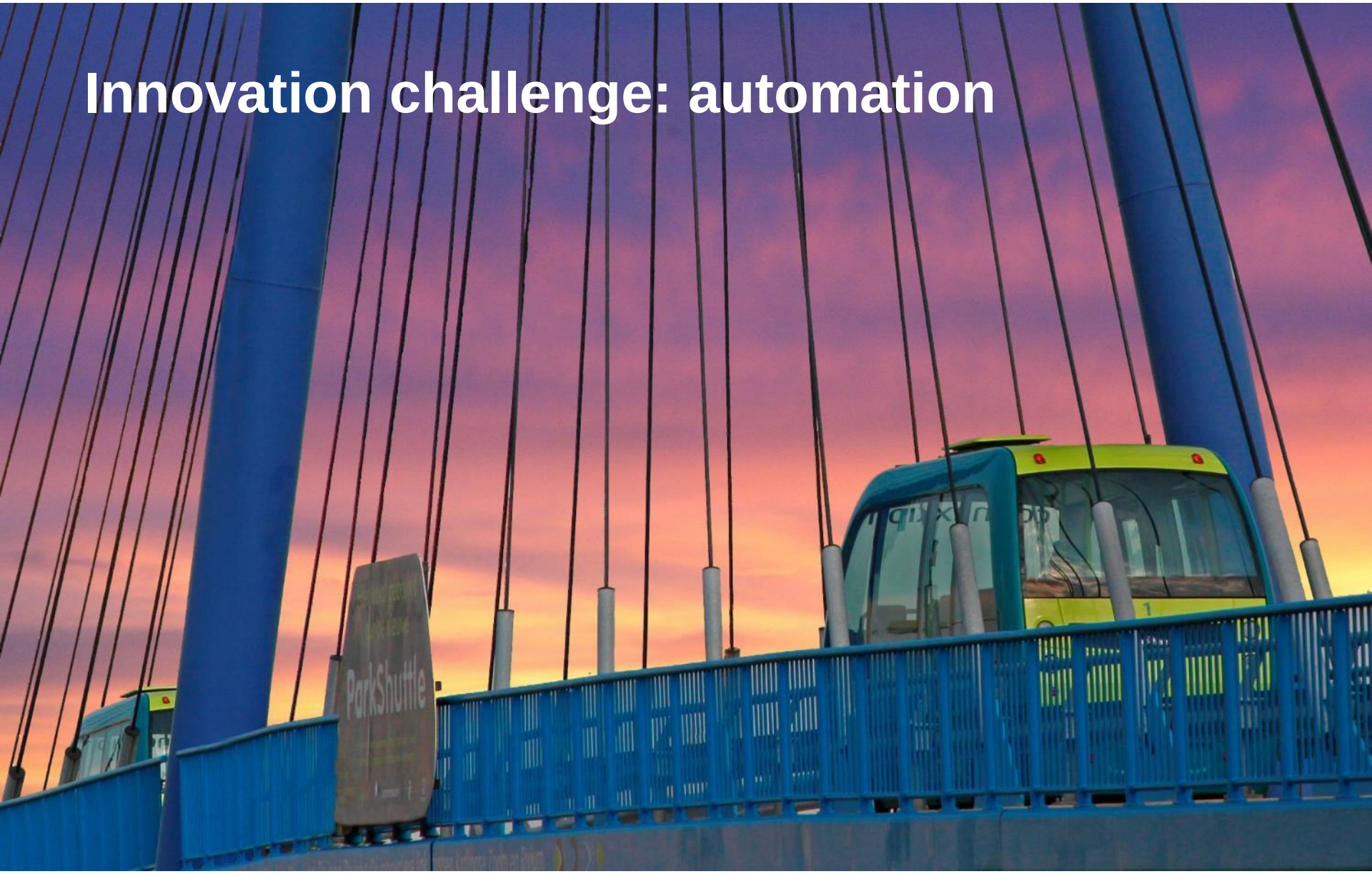
www.molecules-project.eu

Integrated network management: TIDE

- Open data server for applications-based traveller information
- User friendly HMI for traveller information
- Improving bus punctuality using bus priority



Innovation challenge: automation



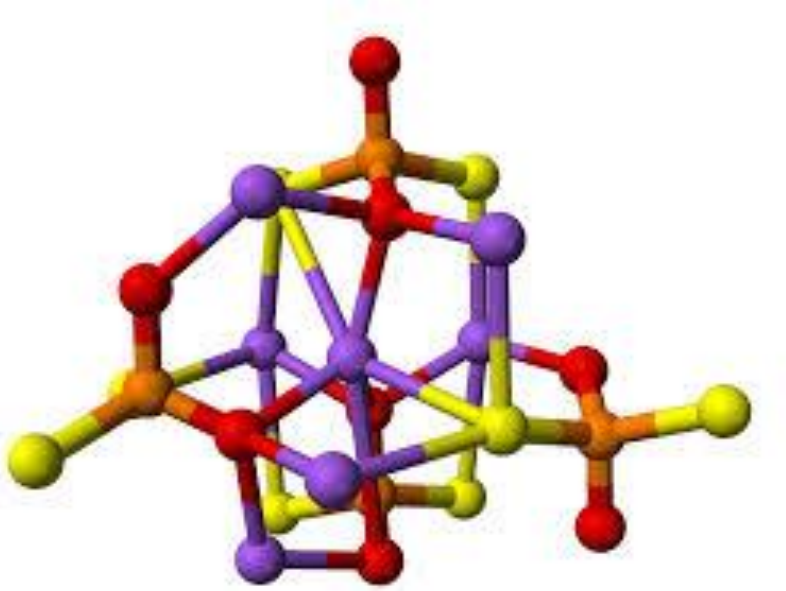
CityMobil2

Cities demonstrating automated or cybernetic transport systems

- Public transport systems based on the use of a fleet of communication-enabled cybercars, i.e. road vehicles with automated driving capabilities
  - Vehicles operating without a driver in collective mode
- Ideally suited to supplement the existing mass public transport system with collective, semi-collective and personal on-demand and shuttle services
- Research into technical, financial, cultural, and behavioural aspects and effects on land use policies and how new systems can fit into existing infrastructure in different cities
- Real use of automated vehicles in 5 urban environments for a period of six months
- 09/2012 – 08/2016
- www.citymobil2.eu

The coordination challenge

- A vision for urban mobility, and for PT
- Governance
- Procurement
- Quality Assurance
- PT organisation
- Intermodality



Governance: EPTA

- Promoting and consolidating new approaches for the establishment of PTAs as convergence centres of expertise
- www.eptaproject.eu

Public transport organisation: TIDE

- Creation of Public Transport management bodies for metropolitan areas
- Contracting of services focused on improvement of passenger satisfaction and efficiency
- Marketing research as optimisation tool in public transport

Intermodality: NODES

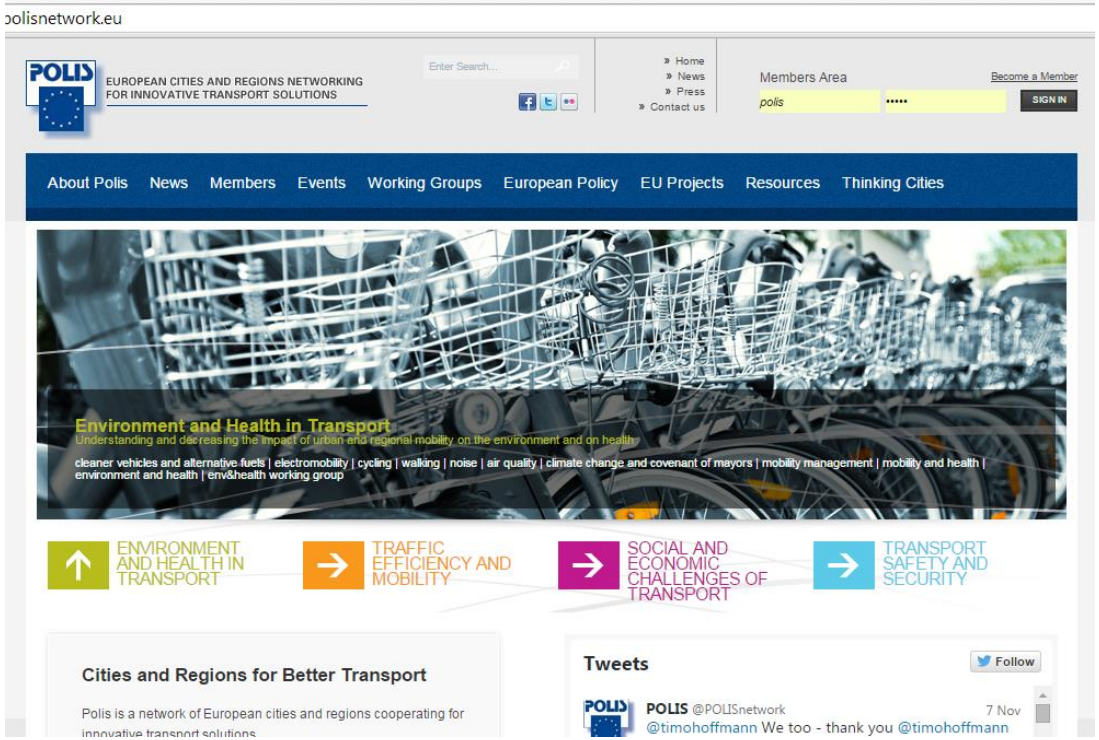
- **Interchanges play a key role in the integration of the urban mobility system and in enabling good intermodal solutions**
  - Their efficiency and sustainability is therefore essential to achieve sustainable transport objectives in Europe
- **Building a toolbox to support European cities in the design and operation of new or upgraded interchanges**
  - as a way to provide greater support, services and satisfaction to travellers and users, as well as to interchange operators and those societal and economic actors depending on the efficiency of interchange operations
- **Five key areas:**
  - Land use & Infrastructure, design, intermodality & ICT, management and business models, energy & environment
- **www.nodes-interchanges.eu**

Conclusions

- **Changing nature of innovation:**
  - Close to market
  - Integrating policies and technologies
  - Increased take up of innovation by shortening innovation cycle
    - Are we ready for innovation?
    - Is the measure good for us?

- **Changing role of the PTA/MTA**
  - PTA/MTA will have to address different policies:
    - not just about mobility
    - but also economic development, air quality, energy etc.
  - Competent authorities will have to manage different networks in an integrated way (including information networks)

More information



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