Infrastructure, Urban Mobility, Freight

Session 3 of the ERTRAC Annual Conference 2015
The Panel

- **Ruud Smit** (Rijkswaterstaat; ERTRAC VC Member States)
- **Karen Vancluysen** (Polis; Co-chair WG UM)
- **Anders Berger** (Volvo; Co-chair WG LDFT)
- **Keir Fitch** (EC DG MOVE; Head of Unit of the Research & Innovative Transport Systems)

UM = Urban Mobility Working Group
LDFT = Long Distance Freight Working Group
ERTRAC Systems Approach

System development forecast
- Convergence towards an Integrated Road Transport System (2030)
- Convergence with other modes towards a Single Transport Area (2050)

See also: ERTRAC SRA 2010
Infrastructure Recommendations

Ruud Smit

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Infrastructure Challenges

• Upkeep of the existing network
  – Maintenance
  – Rehabilitation
  – Replacement

• Upgrading for future service
  – ITS
  – Climate
  – Ageing

• Financing

• Implementation, NOW
  – Drives Research demand
Infrastructure Recommendations

Construction and Maintenance
- *Tyre-Road interaction* holistic approach for sustainable road traffic
- *Enhanced durability in performance* of current pavement concepts
- Next Generation of *Infrastructure Inspection and Monitoring*
- *Rapid construction, repair and retrofitting* of high value transport infrastructure assets

Supporting Systems and Services
- *Infrastructure integrated energy systems* supporting the transition in the transport energy pool
- *Platooning and self-driving heavy duty vehicles* in real traffic conditions with adaptation of infrastructure standards

Governance, Management and Finance
- *Comprehensive resilience* of the transport infrastructure system
- Improved *Transshipment Points* (terminals, city-hubs, ports)
- *Holistic transport performance measurement* model to support road transport policy-making and strengthening the road user perspective
Urban Mobility Recommendations

Karen Vancluysen

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Key research challenges in urban mobility

• Take up of electromobility services
• Enhanced high quality bus services
• Improved coordination and management of urban transport networks
• Performance based mobility planning
• Multimodal and seamless mobility
• Addressing urban freight in an integrated way
Enhanced high quality bus services

CHALLENGES

Better understanding of innovative bus systems across the world & their underlying principles

Innovative bus system concepts tailored to European urban contexts

RESEARCH NEEDS

Define new concepts for bus systems operations in Europe

Identify the technology enablers most suitable to introduce these new bus concepts and enhance their quality – electrification, automation, ICT…
Improved coordination & management of urban transport networks

CHALLENGES

Effective coordination of different transport networks and operators to achieve optimal management — different modes, spatial areas, policy objectives and priorities, authorities and operators

Likely impacts of ITS on policy goals — traffic management to be more responsive to policy

RESEARCH NEEDS

Optimal data management and use

Role of local authorities in an open data environment

Flexible infrastructures

Policy responsive ITS systems development

Integrating DSS
Addressing urban freight in an integrated way

**CHALLENGES**

- Coordination between public and private parties
- Synergies between passenger and freight transport
- Data collection & sharing
- Adapted city distribution concepts and schemes

**RESEARCH NEEDS**

- Innovative urban logistics services & bus. models
- New governance models adopting a holistic view of urban mobility
- Smart, multi-stakeholder frameworks for data collection
- Low-noise, light-weight urban freight concepts
European Bus System of the Future / 3iBS

Towards a new generation of the urban bus system

• IT Bus Platform
• New Driver Workplace
• Solutions for better accessibility and passenger flow
• Bus stop design
• Bus passenger area design tools
CONDUITS

Towards a common and more holistic approach to the assessment of ITS and traffic management measures

• key performance indicators (KPIs)
  – across the main policy areas of traffic efficiency, pollution reduction, road safety, social inclusion and land use

• decision support tool (DST) to help decision makers understand what will be the likely wider impact(s) of a particular traffic management measure, e.g. in terms of pollution reduction, reliability and mobility
## Road Freight Recommendations

<table>
<thead>
<tr>
<th>Long Distance Road Freight WG Recommendations</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Improved truck availability thanks to real-time diagnostics and monitoring, including connectivity of vehicle to maintenance</td>
<td>Early application area for Big Data in Transports</td>
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<tr>
<td>Low noise and light weight adapted urban freight concepts and logistics schemes</td>
<td>Urban freight and logistics still a challenge</td>
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<tr>
<td>Improved Transshipment points (terminals, city-hubs, ports)</td>
<td>The Port of the Future needs new road freight concepts</td>
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<tr>
<td>Platooning and self-driving heavy duty vehicles in real traffic conditions with adaptation of infrastructure standards</td>
<td>Operational demo in real traffic needed</td>
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Hybrid-on-Demand Driveline

Mission-Based Configurable Aerodynamics

Truck Manufacturers
DAF
Volvo

Trailer Manufacturers
Schmitz Cargobull
Eck

End Users
P&G
IRU

Suppliers
Bosch

Research Institutes
Fraunhofer
TNO

Service Supplier
IFSTTR
FEHRL

Big Data in Transports – Where to start?

Connected
Vehicle
Infrastr. Goods
“Things”

Public utility/value

Transport system planning
Eco-Labelling

Private utility/value

Transport system

Safety

Pay-as-you-use services

Driver Behavior

Vehicle Uptime & Maintenance

Infrastructure management

E-Freight

Added value logistic /traveler services

Asset utilization
Innovative Transport Systems

Keir Fitch

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Debate