Data issues in Europe

From the EU to the German Aerospace Center

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Outline
Why Europe?

- Travelers and goods don’t stop at legal borders
- Standardisation efforts are driven by the European Union

How does the EU foster standardisation?

- Communication
- Project funding
- Legislation
Let’s make it specific…
Communication (1)

➤ COST
   ➤ European Cooperation in Science and Technology
   ➤ “One of the longest-running European instruments supporting cooperation among scientists and researchers across Europe.”

➤ COST Shanti
   ➤ Survey Harmonisation with New Technologies Improvement
   ➤ harmonizing national travel surveys
   ➤ concrete harmonization guidelines (protocol, questionnaire design, variables definition, etc.)
   ➤ survey knowledge dissemination

References
   http://www.cost.eu/
   http://shanti.inrets.fr/index.php
   http://inst.ifv.uni-karlsruhe.de/wiki-shanti/
Let’s make it specific…
Communication (2)

**MULTITUDE**

Methods and tools for supporting the Use caLibration and validaTion of Traffic simUlation moDElEs European Cooperation in Science and Technology

References
- [http://www.cost.eu/](http://www.cost.eu/)
- [http://www.multitude-project.eu/](http://www.multitude-project.eu/)
Let’s make it specific…
Project funding (1)

References
http://www.easyway-its.eu/
http://www.datex2.eu/
http://www.mdm-portal.de/
Let’s make it specific…

Project funding (2)

COFRET

Ecostand

e-freight

Nearctis

A Network of Excellence for Advanced Road Cooperative traffic management in the Information Society

Impact on data exchange

References

http://www.easyway-its.eu/
http://www.datex2.eu/
http://www.mdm-portal.de/
Only the tip of the iceberg…
Selected FCD initiatives in Europe

- SINERGIT (Système d’information sur les déplacements par véhicule traceurs avec Galileo pour l’agglomération Toulousaine, 2006)
  - integrate traffic information from cellular phones to traditional measurement systems like GPS, fixed detectors or cameras
- Antwerp, Belgium (2004)
  - assess whether data collected from mobile phones (e.g. travel times) provided accurate traffic information
- TrafficOnline (2002-2005), Germany
  - innovative and worldwide portable and thus applicable system for the online detection of road traffic detection using phone data
- GALILEO
  - Higher accuracy for vehicle positioning expected
  - Galileo may allow FCD to become a much wider accepted data source

Sources: Led08, Schm05
Only the tip of the iceberg…
And more European projects

- FRAME – Framework Architecture Made for Europe
  - ITS Architecture for Europe
- CVIS – Cooperative vehicle-infrastructure systems
  - unified technical solution for V2X communication, open application framework, open architecture and system concept, user acceptance, data privacy and security, risk and liability, public policy needs, cost/benefit and business models, and roll-out plans for implementation
- CADaS - The Common Accident Data Set
  - standardisation of road accident data

References
http://www.frame-online.net
http://www.cvisproject.org
Let’s make it specific…
Legislation

- European emission standards
  - National laws

- New sources of emission data
  - Existing sources inadequate

- New measures
  - Environmental zones
  - …
European Committee for Standardization

- CEN/TC 278: Road Transport and Traffic Telematics (RTTT)
  - current priorities
    - RDS-TMC (Radio Data System - Traffic Message Channel)
    - Electronic Fee Collection (EFC)
    - Traffic Data Exchange (e.g. DATEX)
    - Human/Machine Interface

References
http://www.cen.eu/cen/Sectors/Sectors/TransportAndPackaging/Roadtransport/Pages/RTTT.aspx
UNECE
United Nations Economic Commission for Europe

- Emerging statistical needs
  - Indicators on safety, congestion
  - Emissions (GHG, pollution, noise)
  - Co-modality, intermodality, logistics and performance indicators
  - Road traffic and passenger transport, i.e. in urban areas

- Ongoing work (→ Eurostat)
  - Structural indicators, sustainable development indicators, modal split indicators, …
  - Community data collection on road traffic data (road VKm) with a focus on GHG emissions
  - Dissemination of Community transport statistics
Is Germany a different issue?

Mobility Data
- big recurrent surveys
  - Mobility in Germany (MiD)
  - Car traffic in Germany (KiD)
  - Mobility Panel (MOP)
  - Mobility in Cities (SrV)

Traffic Flow Data
- Collected by authorities and private companies
- Good coverage on federal roads
- Main sources:
  - inductive loops
  - IR
  - FCD

- Clearing House at DLR
- MDM
Traffic Data in Outer Space?
Transport Research at the German Aerospace Center

- DLR Institute of Air Transport and Airport Research
- DLR Institute of Vehicle Concepts
- DLR Institute of Communications and Navigation
- DLR Remote Sensing Technology Institute
- DLR Institute of Robotics and Mechatronics
- DLR Institute of Technical Thermodynamics
- DLR Institute of Combustion Technology
- DLR Institute of Transport Research
- DLR Institute of Transportation Systems
- DLR Simulation- and Software Technology
Institute of Transport Research

- **Residence**: Berlin
- **Director**: Prof. Dr. Barbara Lenz
- **Employees**: Presently ~30 employees from various scientific disciplines
- **Vision**
  A modern, integrated, socially and ecologically sustainable transport system
- **Tasks**
  Understanding the causality and changes in passenger and commercial transport
Institute of Transport Research
Fields of research

- Passenger traffic generation & travel behaviour
- e-mobility & technology evaluation
- Modelling
- Commercial traffic generation & logistics
- Measures & environmental effects

passenger traffic commercial traffic

Clearing House for Transport Data
Institute of Transport Research
Projects (choice)

- COFRET and AMITRAN
  - European projects related to traffic impact assessment on CO$_2$
- e-City Logistics and Fleet Experiment E-Mobility
  - research on e-mobility
- MiD and KiD
  - mobility survey related projects
- Transport Development and the Environment (VEU)
  - from trip generation to traffic assignment, from measures to impacts
- HPA
  - survey fusion, using traditional (manual counts) and modern techniques (GPS logger)
  - connection between traffic and mobility data
Institute of Transportation Systems

- **Residence:** Braunschweig and Berlin
- **Director:** Prof. Dr.-Ing. Karsten Lemmer
- **Employees:** Presently 120 employees from various scientific disciplines
- **Tasks**
  - Basic research
  - Creating concepts and strategies
  - Prototype development
### Institute of Transportation Systems

**Fields of Research**

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<thead>
<tr>
<th>Automotive Systems</th>
<th>Railway Systems</th>
<th>Traffic Management</th>
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<tr>
<td>Methods / Evaluation</td>
<td>Operation</td>
<td>Traffic data recording</td>
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<td>Understanding the driver</td>
<td>Life cycle management</td>
<td>Traffic data management</td>
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<tr>
<td>Human factors engineering &amp; design</td>
<td>Safety and rail human factors</td>
<td>Traffic simulation und prediction</td>
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<tr>
<td>Technologies for ADAS Vehicles</td>
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<td>Simulators</td>
<td></td>
<td>Traffic quality</td>
</tr>
</tbody>
</table>
Institute of Transportation Systems

Data collected and used

- Database of Floating Car Data (10+ cities, several billion GPS positions)
- Database of loop detector data from our urban test track
- Trajectory data from instrumented vehicles
- Freeway loop data from different projects (freeways Cologne, Munich)
Clearing House Transport & Mobility Overview

- Est. 2001 as Clearing House for Transport Data and Models
- Motivation
  - Scientific (Data) Exchange on Transport Research Sector
  - Official provider of German Ministry of Transportation’s data sets (non-commercial usage purposes)
- Geographic focus
  - Germany
- Content
  - META information and partly raw data
  - Original content:
    - Traffic Flow Models
    - Surveys and Studies analysis
    - Road side observations
    - Cross-Sections and Counts
Clearing House Transport & Mobility Outlook

- No Models (too diverse and too challenging)
- No Technical Data (too many competitors and too dynamic)
- Data Focus
  Mobility Surveys and Studies
- Geographic Focus
  Germany → Europe → ?
- Creation and cultivation of international and interdisciplinary networks and cooperation
Clearing House Transport & Mobility
Current state

- Technical re-engineering ongoing (Relaunch fall 2011)
  - New forms for data set and portal description implemented as Eprints archives
  - Advanced data set visualisations (Maps) and portal linkage (Mindmaps à la TheBrain)
- Newsletter, paper and articles

References
http://www.dlr.de/cs/en/
Rene.Kelpin@dlr.de
Data issues in Europe
Any questions?

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