Overview of map-related activities

Benefits of enhanced maps for ITS applications

Mechanisms to bring map updates faster to clients

Definition of map content for safety applications

In-Vehicle Map

In-vehicle map interface to ADAS functions

Mechanisms to detect map deviations by clients

Mechanisms to correct maps by clients

Link map information from Public Authorities

Public Authorities

Map provider

Automotive maps
Context

- Unsolved issue = supply of relevant quality data
  - Difficult access to updated road information
    - Multiple data providers
    - Multiple formats
    - Variety of quality
    - Long delays between updates
  - Lack of road databases in some European countries
Motivations (1)

- How to ensure timely & easy access to road information?
  - Need for mechanisms to enhance the quality of available data (accuracy, correctness, up-to-dateness)
  - Need for mechanisms to enable multilevel aggregation of the data
  - Need for timely incremental map updates
  - Need for road authorities to report/notify updates in a timely and standardised manner
Motivations (2) – eSafety Digital Maps WG

- Created in April 2005
- Develop closer cooperation between public and road authorities and the map providers for the provision and maintenance of road safety attributes
- 3-phase approach
  - COOPERATION
    - common solution, mutual benefits
  - QUALITY INSURANCE
    - Quality management concept
  - OPTIMISATION
    - support of standardization activities to enable faster deployment
ROSATTE

- Road Safety ATTRIBUTES exchange infrastructure in Europe
- Funded by EC DG INFSO
- Overall budget: € 4.6 million
- Funding: € 3 million
- Duration: 30 months
- Coordinated by ERTICO – ITS Europe
Consortium

Data Providers and Users

Public
- Road Administrations: NPRA, SRA and LROP
- Transport ministries: RWS, SETRA, OBB, FL

Private
- Motorway operators: ASFA
- Map providers: Navteq, Tele Atlas
- Service provider: PTV
- Application developer: Triona

Research Institutes
- SINTEF
- University of Stuttgart

Others
- ERTICO
Objectives

- Facilitate access to, exchange and maintain European-wide core road safety spatial data from national/regional/local sources by standard procedures
- Enable the multi-level aggregation and update of European-wide safety data
- Assess the technical & organisational feasibility of this infrastructure
S&T Objectives

- Identify requirements and options for organising access to and maintenance of pan-European road safety spatial data
- Optimise road data update process
- Evaluate state-of-the-art methods
- Produce common specifications for data access and exchange
- Establish a data quality management concept
- Explore organisational aspects and expected benefits
- Set up and evaluate pilot trials
## Focus

<table>
<thead>
<tr>
<th>Safety Attributes</th>
<th>Example of ADAS application</th>
<th>Change frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed limit</td>
<td>Speed alert</td>
<td>Very high (7-9% / year)</td>
</tr>
<tr>
<td>Traffic signs</td>
<td>Enhanced navigation (e.g. truck)</td>
<td>High</td>
</tr>
<tr>
<td>Lane information (number, width, divider, connectivity)</td>
<td>Lane keeping assistance, Lane departure warning, Curve warning</td>
<td>Medium</td>
</tr>
<tr>
<td>Traffic lights</td>
<td>Intersection assistance</td>
<td>Medium</td>
</tr>
<tr>
<td>Crossings (pedestrian, tram)</td>
<td>Enhanced navigation</td>
<td>Medium</td>
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<tr>
<td></td>
<td>Vulnerable road-users protection</td>
<td></td>
</tr>
<tr>
<td>Toll barriers, motorway junctions, tunnel access</td>
<td>Obstacles / change of lighting / speed limit / inter-vehicle distance management</td>
<td>Very low (new road or reshaping)</td>
</tr>
<tr>
<td>Gradient (slope)</td>
<td>Curve warning</td>
<td>Very low (new road or reshaping)</td>
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<tr>
<td></td>
<td>Fuel consumption assistance (car and truck)</td>
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</tr>
<tr>
<td>Transverse gradient (banking)</td>
<td>Roll-over warning system (truck)</td>
<td>Low (new road or reshaping)</td>
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<tr>
<td></td>
<td>Curve warning</td>
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</tbody>
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Work Breakdown

WP1
Requirements and overall architecture

WP2
Methods and tools for safety attributes for access and maintenance

WP3
Data exchange infrastructure, methods and tools

WP4
Data integration into digital databases

WP5
Test and validation of the data chain

WP6
Organisational aspects and expected benefits

WP7
Dissemination, liaison and exploitation of results

WP8
Project management
Test Sites

- 5 test sites:
  - Sweden/Norway
  - Netherlands
  - Belgium (Flanders)
  - Bavaria
  - France (BALI & ASFA)
- According to workplan, testing will start in June 2009 (M18)
- Exploitation of national/local road databases on public roads
Timeline

- August 2008: Requirements and overall architecture defined and agreed
- August 2009: Infrastructure and tools developed
- February 2010: Testing conducted and demonstrations developed
- June 2010: Organisational recommendations and project finished
Expected Results

- Common specifications & architecture
- Tools for accessing and maintaining existing data
- Infrastructure for data exchange
- Tools & methods for data integration
- Quality management
- Development of organisational model(s)
  - Technical and organisational assessment / proof of concept
  - Input for standardisation of the exchange interface
  - European-wide consensus among stakeholders on proposed solutions
Benefits

- A significant increase in the coverage of safety-related road information and new value-added services.
- A considerable decrease of time delay between the update of an attribute in the map database at a public authority and its availability in the map database at the end-user.
- A significant increase in quality of attributes values.
- Road authorities will be more efficient in maintaining safety related data through the tools developed in the project.
- Increased efficiency of data integration at map providers due to the implementation of common solutions instead of specific solutions.
Thank you for your attention…

- Any questions?

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