European Corridor – Austrian Testbed for Cooperative Systems

What is needed to deploy release 1 from a Road Operators Point of View?

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SWARCO
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Outline

- European Corridor Austrian Testbed
- Needs of Road Operators
- Use Cases and Applications
- Project Status
- Final considerations
European Corridor – Austrian Testbed

Intro

- "European Corridor" based on collaboration between road operators of Germany, the Netherlands and Austria (signed MoU in June 2013)
- **Goal:** corridor from Rotterdam via Frankfurt to Vienna equipped with telematics technologies to identify potential dangers before they become threats
- **Vision:** safe and intelligent mobility
- **achieved** through direct communication of vehicles with roadside infrastructure and transportation management centers
- collaboration of Ministries in charge, motorway operators and industry **partners**, automotive industry
European Corridor – Austrian Testbed

System overview

Communication model

System architecture
European Corridor – Austrian Testbed

Involvement of SWARCO

› SWARCO main contributions:
  › Specification of the overall system
  › Work on Standardisation
  › Provision of SW and/or HW components for the whole infrastructure-chain
  › Responsible for the “Living Lab” management

› SWARCO companies involved in the process:
  › SWARCO Mizar (C-ITS-S based on OMNIA)
  › SWARCO Traffic Systems (R-ITS-S and TLC)
  › SWARCO Futurit (field components)
Needs of Road Operators
Specification

‣ Operational
  › Basic ITS standards for interoperability
  › Profiles for adaptation of standards
  › Use case description for functionality
  › Organisational specification

‣ Organisational
  › Comparable offers
  › Embedding in a European framework
Needs of Road Operators

Security

› Privacy aspects are different
  › Complicates interesting use cases system
  › Easing data management

› Authenticity and Integrity
  › Receivers can trust data

› Access control
  › Identification
  › Authentication
  › Authorisation

Roles and Responsibilities

› Security system
› ISO TS 17427
Needs of Road Operators

Investment Protection

- Needs for:
  - Coexistence to existing systems
  - Extendibility to existing systems
  - Interoperability (conformance testing)
  - Reliability and availability
  - Easy configuration and maintenance
  - Durability (Long life time)
Needs of Road Operators

Future Viability

- Upgrades of functionality
- Upgrade to more powerful equipment
- Replacement of security mechanisms
## Needs of Road Operators

### Economics

<table>
<thead>
<tr>
<th>Use Case</th>
<th>Release 1</th>
<th>Release 2</th>
<th>Release 2+</th>
<th>Day 2</th>
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</thead>
<tbody>
<tr>
<td>Road works warning (RWW)</td>
<td></td>
<td>X</td>
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<tr>
<td>• Emergency, Short Term and Mobile RW</td>
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<tr>
<td>• Long Term RW</td>
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<tr>
<td>In-vehicle-information (IVI)</td>
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<tr>
<td>• Dynamic signs</td>
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<tr>
<td>• Static Signs</td>
<td>X</td>
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<tr>
<td>Probe vehicle data (PVD)</td>
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<td>• aggregation of CAM</td>
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<tr>
<td>• PVD including PDM</td>
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<tr>
<td>SPAT / MAP based applications</td>
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<td>Other DENM based applications</td>
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<tr>
<td>• Processing of DENM from the vehicles</td>
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<td>• TCC initiated DENMs based on traffic information content</td>
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<tr>
<td>Multimodal information (MIF)</td>
<td>To be considered for Day 1?</td>
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Project State

Project Time Schedule

Testfeld Telematik

ECo-AT Living Lab

Living Lab for Acceptance Tests

Releases for Day 1.5/2 and beyond

<table>
<thead>
<tr>
<th>Release 1</th>
<th>Release 2</th>
<th>Release 3 (Final Draft)</th>
<th>Release 4 (Final)</th>
<th>Tender specifications</th>
<th>Tender execution</th>
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<tbody>
<tr>
<td>11/14</td>
<td>03/15</td>
<td>06/15</td>
<td>11/15</td>
<td>SWP 4.7 System Verification</td>
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</tbody>
</table>

Publication events for Release II documents

- 20. April: Workshop with OEMs and their suppliers
- 21. April: Public event on the Release II docs
- 21. April: Amsterdam Group will meet and discuss RWW in parallel
- 28. April: Workshop with road operators/administrations
Final Considerations

‣ The ECo-AT Project is designed for needs of the Road Operators.
‣ Collaboration with other partners in the Corridor is driven on several layers
‣ Further engagement is needed.
‣ Big topic to solve is the organisational part of the security system.
‣ Intermediate solutions enable the take off but for a roll out a European solution is necessary.
Project partners