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ECo-AT – the Austrian contribution to
the Cooperative ITS Corridor

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C-ITS Corridor: 3 Countries, 2 Use Cases, 1 Specification

Noticing traffic jams before you see them. Detecting risks before they become a threat. Arriving at your destination safe and sound. This vision of safe and intelligent mobility can be realised by so called Cooperative Intelligent Transport Systems (C-ITS). These systems enable direct communication between vehicles, roadside infrastructure and traffic control centres. Within the next years C-ITS should be developed for beeing applied in the Cooperative ITS Corridor Rotterdam – Frankfurt/M. – Vienna. This happens in close cooperation between the EU-member states Netherlands, Germany and Austria, who have signed a Memorandum of Understanding.

2 Use Cases within the C-ITS Corridor

The Use Cases "Road Works Warning and Information" as well as "Vehicle Data for Traffic Management" were chosen first to be implemented within the C-ITS Corridor due to their attractive and early impact even with low penetration of technology.

Road Works Warning – RWW

Approaching vehicles get information about road works and the traffic situation directly before construction sites additionally to static traffic signs. Furthermore the exact position of road works will be sent to the traffic control center. At present there is no such information available in a balanced geographic basis.

The benefits:

- Increasing safety of road works staff through warning approaching vehicles.
- Increasing road safety through early warnings regarding road works in the motorway network.
- Traffic control centers get better knowledge of the current situation of long-term as well as short-term roadworks in the motorway network. As a result roadworks management and network influence can be optimised as well as information can be passed on to traffic service providers.
- Support of C-ITS with the target to become a common technology inside vehicles. On the one hand roadworks information can be distributed up-to-date, precisely and directly on-site to vehicles. On the other hand the new technology can be used as a basis for the implementation of further applications later.

Vehicle Data for Traffic Management (CAM, DENM Aggregation)

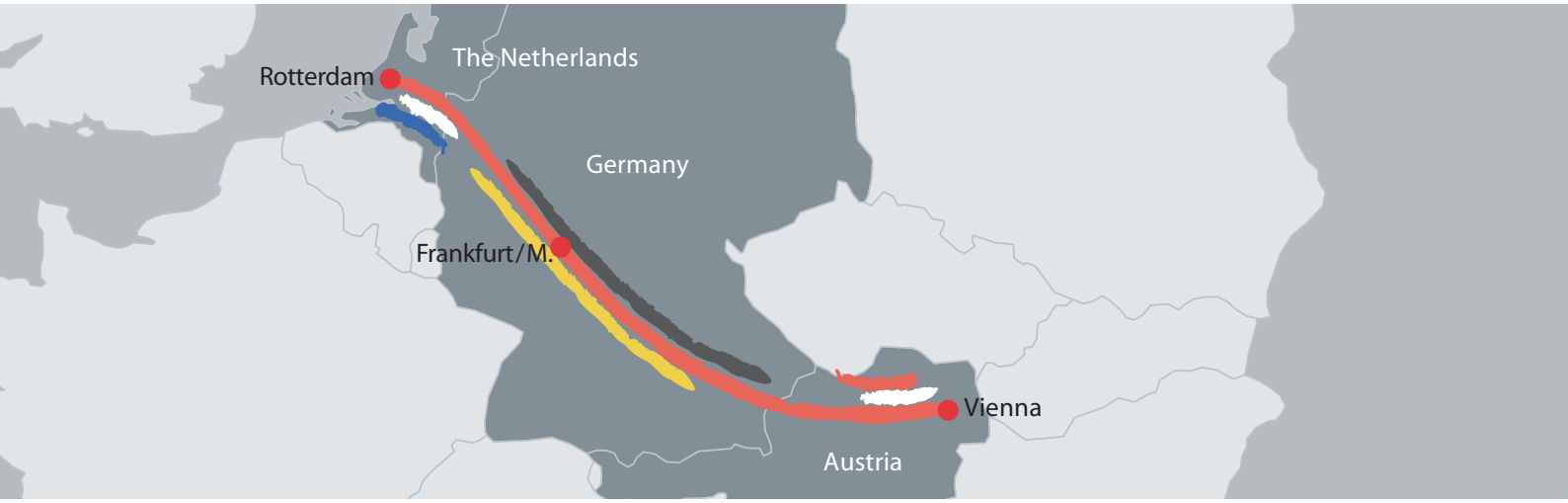
Currently traffic data only can be detected by using especially installed traffic data acquisition infrastructure. Event driven information (e.g. emergency breaking warning) can´t be detected at all.

By using roadside C-ITS infrastructure in-vehicle data as well as traffic events (safety-relevant data and traffic data) can be detected and distributed to traffic control centers in the future. Currently these data are not available at all or even not as detailed as necessary.

The benefits:

- Enhancement of route and network management to avoid traffic jams by providing extensive traffic information data (e.g. travel times, traffic events).
- Enhancement of incident management by early availability of event data and information from the traffic network.
- Enabling commercial independent access to vehicle data by direct detection through road infrastructure.
  Hereby it is possible to enter a new traffic management "core technology".
- Dissemination support of C-ITS technologies in vehicles so they can be used as a basis for further applications later.

3 Countries, 2 Use Cases, 1 Specification within the C-ITS Corridor Rotterdam – Frankfurt/M. – Vienna



ECo-AT: the Austrian contribution to the C-ITS Corridor

ECo-AT (European Corridor – Austrian Testbed for Cooperative Systems) is the Austrian project to create harmonised and standardised cooperative ITS applications jointly with partners in Germany and the Netherlands. ECo-AT is the Austrian spearhead activity in the C-ITS domain. The project has significantly contributed to the preparation and implementation of the Austrian C-ITS strategy and has strengthened BMVIT's, ASFINAG's and all project partners' position in Europe. ECo-AT was designed with an entirely transparent process. All specification release documents have been published after multiple iteration discussions. These documents have been provided to more than 300 interested stakeholders and public release presentations arised huge interest from stakeholders.

Phases 1 and 2

The result of Phase 1 is a full system specification for C-ITS which is tested and verified by the ECo-AT industry partners and by 3rd parties (until 03/2017). Thereafter in Phase 2 ASFINAG is the only partner of the ECo-AT project and performs, after positive evaluation of the framework conditions, the tendering of the C-ITS system.

Living Lab – Open joint testing facilities

- **Come and test in May and October 2016 in Vienna!**
- The ECo-AT Living Lab Concept is the unique Austrian contribution to the C-ITS Corridor by providing a unique functionally operational test infrastructure to all interested parties in Europe.
- ASFINAG and ITS-infrastructure industry together provide the possibility for all project partners as well as third parties to test new technologies based on common specifications. They also get full support from one party including C-ITS central station messages.
- The ECo-AT Living Lab is open to 3rd Parties in a way and to an extent unique in Europe. The test time schedule is harmonised across the C-ITS Corridor partners.
- Interface and end-to-end conformance tests guarantee the service functionality and will be provided in parallel and after the launch of C-ITS infrastructure in Phase 2.
- Large participation and positive feedback to concluded Test Cycles I – III

Use Cases

All use cases deployed in the scope of ECo-AT Phase 2 are called "Day 1 use cases":

Road Works Warning (RWW): drivers get information of road works ahead, their relevant parameters and associated obstructions (e.g. closed lanes).

In-Vehicle Information (IVI): drivers get information about present speed policy/advices and other relevant (hazard) information.

CAM, DENM Aggregation: the collection of anonymized information from vehicle ITS stations enlarges the information basis for traffic management decisions.

Intersection Safety (ISS): cooperative Traffic Lights will provide information on their status (SPaT – Signal Phase and Timing).

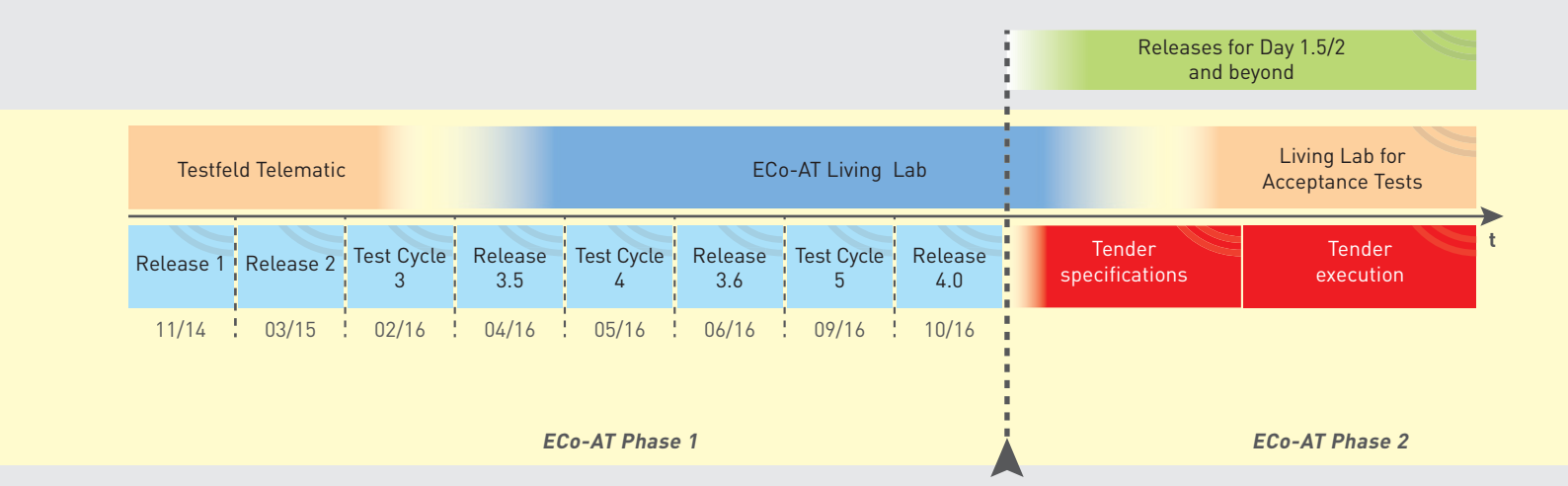
Other DENM based applications: DENM messages can be generated by stationary ITS stations.

Multimodal information (MIF): the provision of multimodal information is an option which will be analysed within a feasibility study.

ECo-AT achievements (end of Phase 1)

- Transparent and iterative process
- Publication of all release documents
- Day 1 use cases are defined and systems are specified
- Key components have been installed
- The Living Lab is set up and ready for testing of use cases
- Harmonised within the 3 countries of the C-ITS Corridor:
  - **1 Specification set** for all Use Cases (as published by ECo-AT)
  - **2 Use Cases** implemented (Road Works Warning and Vehicle Data for Traffic Management)

ECo-AT Project Schedule – the Living Lab is set up and ready for testing by partners and third parties



Project Partners

ASFINAG AG – ASFINAG plans, finances, maintains and tolls the entire Austrian motorway and expressway network. ASFINAG was established in 1982 and is wholly owned by the Austrian Federal Government. www.asfinag.at

KAPSCH TrafficCom AG – Kapsch TrafficCom is a leading international supplier of superior intelligent transportation systems (ITS). www.kapsch.net

SWARCO AG – „SWARCO – the traffic technology corporation of Austrian entrepreneur Manfred Swarovski – provides the complete range of products, systems, services and solutions for road safety and intelligent traffic management. www.swarco.com"

Siemens AG Österreich – Siemens has stood in Austria for technological excellence, innovation, quality and reliability for 135 years and is one of the country´s leading technology companies. Siemens is operating mainly in the three sectors Electrification, Automatisation and Digitalisation. www.siemens.at

VOLVO Group Trucks Technology – The Volvo group is one of the world´s leading provider of commercial transport solutions. Volvo Technology – as part of Volvo Group Trucks Technology – is the central research and development unit within the framework of VOLVO Group. www.volvotrucks.com

ITS Vienna Region – ITS Vienna Region is the cooperative traffic telematics project of the three Austrian Federal Provinces of Vienna, Lower Austria and Burgenland. www.its-viennaregion.at

Bundesanstalt für Straßenwesen (BASt) – Bundesanstalt für Straßenwesen (BASt) is a technical research institute founded by the german Bundesministerium für Verkehr, Bau und Stadtentwicklung (BMVBS). www.bast.de

Hitec Marketing – Hitec Marketing is the expert in assessing ITS acceptance of end users in Europe. www.hitec.at

FTW Forschungszentrum Telekommunikation Wien – FTW is a national leading and international well established center for research and development of technologies for communication systems of the future. www.ftw.at

Project Facts

Title: ECo-AT / European Corridor – Austrian Testbed for Cooperative Systems

Program: Climate and Energyfund: annual program 2012, program line transport, program „Innovation towards green and efficient mobility – implementation measures within the framework of the National ITS Action Plan"

Topic: Intelligent Transport Systems – Cooperative Services

Project term: Q3/2013 to Q2/2017 (52 months)

Project budget: 11.800.000,- Euro, with 5.000.000,- Euro funding

Project partners: 9 partners, coordination by ASFINAG

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