

EasyWay



Annual Forum 2010



Shortcut to the future.

Lisbon • November 16th-18th



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DVB-T as a long-range broadcast medium for Cooperative Systems

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Pros and Cons of Local Transmission

- **Pros**
 - Full message set / local messages / non-broadcast messages
 - Vehicle feedback (ACK, FCD)
 - Fast delivery from TCC to RSU
- **Cons**
 - Expensive roadside equipment
 - Extremely narrow (IR) / narrow (WLAN) communication zones
 - No multimedia information due to bandwidth
 - Availability restricted to installations (min 1km, max >10km)
 - Specialized equipment for reception needed (IR, WLAN)

Local message delivery is important (FCD, more messages), but in order to make Cooperative Services work, a **ubiquitous, cheap, reliable broadcast medium** is needed on top of the communication chain

- 2G/3G cellular is neither cheap nor reliable (in case of emergencies)
- The only other ubiquitous digital media are digital radio and digital television



Broadcast of Cooperative Service Messages

TCC

ASFINAG

- Accident / Incident Warning
- Wrong Way Driver Warning
- Weather Warning
- Roadworks Warning
- Congestion Warning
- **Multimedia Information**

DVB-T2

TISP

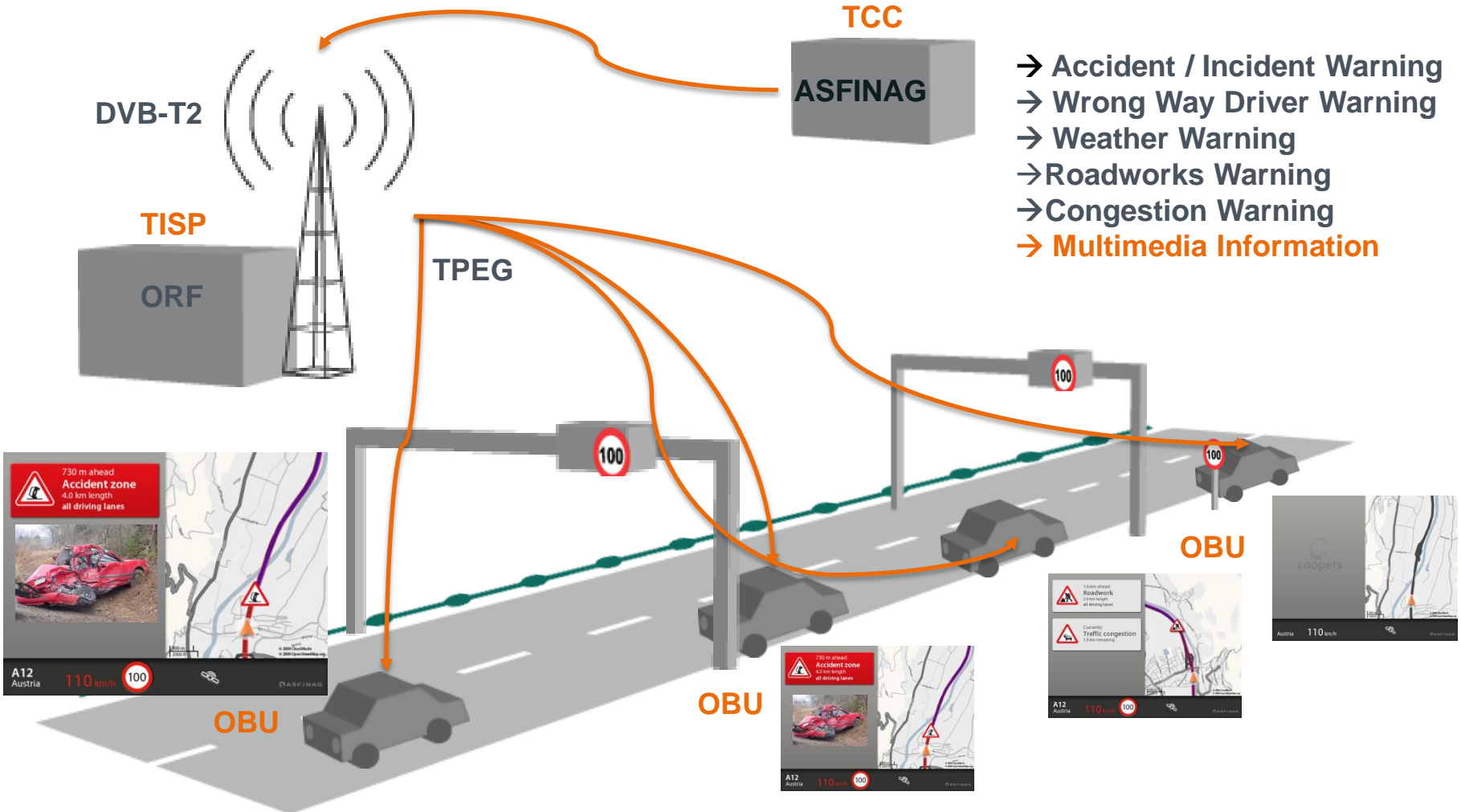
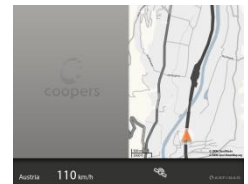
ORF

TPEG

OBU

OBU

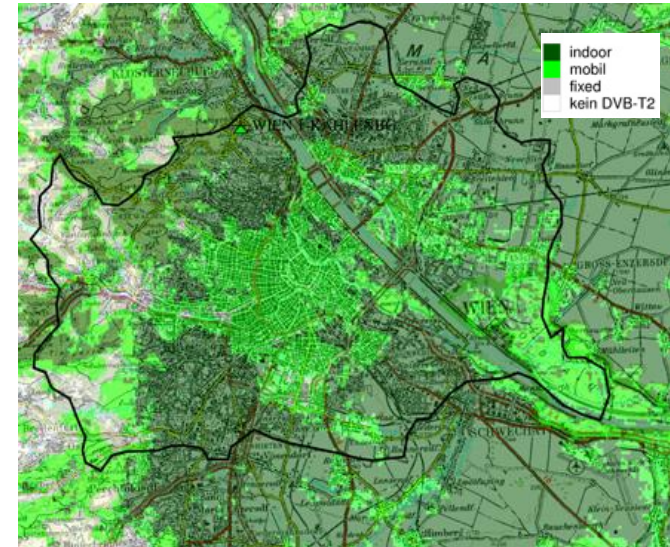
OBU





DVB-T2 Testbed Vienna

- **Broadcast technology: DVB-T2**
 - DAB / DAB+
 - no coverage in Austria in the foreseeable future
 - DVB-T2
 - better suited for mobile applications (diversity, modulation)
- **DVB-T2 transmitter Kahlenberg (5kW)**
 - Covers the whole Vienna area
 - Local gap fillers (100W) as needed
- **Target area: Triangle A23 / A4 / S1**
 - Highest traffic rates in the network
- **Desired Results until 2012**
 - Multiple test drives on the target area with a dedicated test fleet, thus proving the feasibility of DVB-T2 as broadcast medium for TPEG / CoSy
 - Showcase for ITS World Congress 2010 in Vienna





Partners, Description of initial work

- **Partners**

- **ASFINAG** – the Austrian motorway operator
- **ORF** – the Austrian national public service and TV broadcaster
- **Hitradio Ö3** – Austrias largest national radio station
- **ORS** – the Austrian Broadcasting Service

- **Description of initial work**

- **ORS**

- prepare a DVB-T2 transmitter and gap fillers, if needed
- do message and message carousel management as/at the TISP

- **ORF / Ö3**

- provide and combine multimedial content for different COOPERS Service Messages
- enhance COOPERS Services / TPEG with (links to) multimedia content

- **ASFINAG**

- Port COOPERS TCC software to Vienna region, change dissemination model from local transmission to broadcast
- create interfaces from the TCC to the TISP
- Provide DVB-T2 reception and decoding capabilities for the OBU
- enhance GUI to accommodate multimedia content alongside COOPERS service messages