



COOPERS – Lessons learned from a road operator perspective

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THE COOPERS PROJECT: MOTIVATION

- Road operators are responsible for a safe usage of the motorway
- Road operators mission is to support an efficient and ecological sustainable way of mobility
- Telematics in general are seen as tool to support these mission
- Traffic information services in general and especially cooperative services (not systems) are seen as important step in our mission

USERS POINT OF VIEW - TODAY



USERS POINT OF VIEW - 2025



MOTIVATION OF ASFINAG FOR COOPERATIVE SERVICES

- Provision of information to our customers directly in the car in an fast and efficient and with capacity for more content
- This is not an outlook, this is an mission
- Current infrastructure will be at the end of lifecycle in 2020 – 2025
- Migration path has to be elaborated now
- Savings in road side infrastructure possible
- Information generated by cars (xFCD) interessting as information content



COOPERS FIELD TESTS

Austrian one out of 6 field tests in COOPERS



- Coopers Service Center: Central application for the generation of messages and storage of FCD messages
- Roadside Unit: relay messages between Coopers Service Center and OBU
- OBU: display information to the user

TRAFFIC CONTROL CENTRE DEVELOPMENTS

- Gathers information from road side sensor network
- Aggregates it with other content (e.g. Weather information, construction side information)
- Codes the information into COOPERS messages using TPEG
- Sends the information to the test stretch



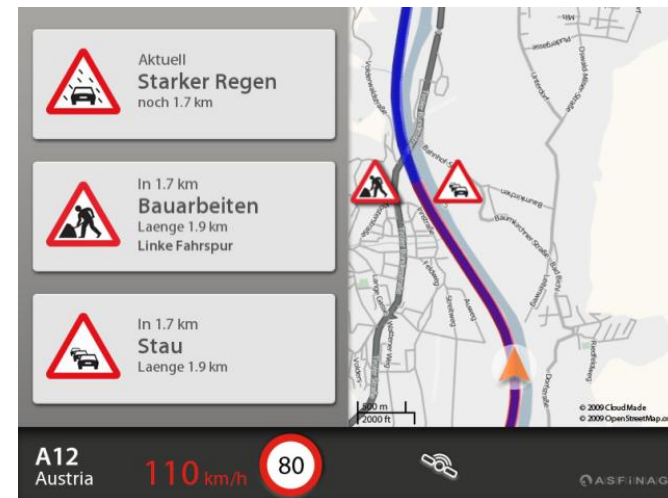
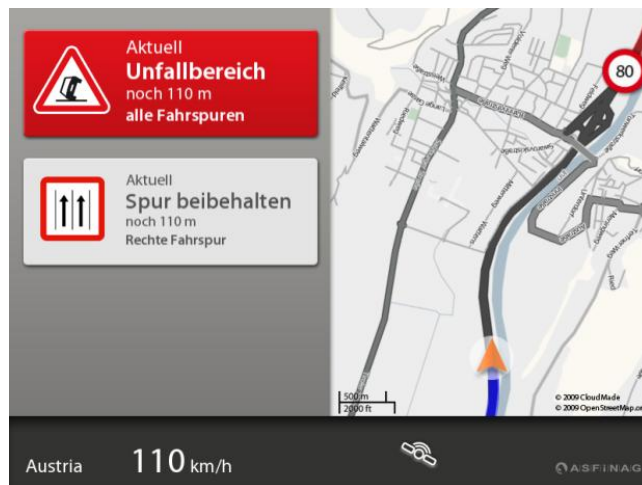
ROAD SIDE DEVELOPMENTS

- Receives the messages from Coopers Service Center and stores it
- Sends it, prioritised, to vehicles and respective On Board Unit
- A test stretch of 17 km has been equipped in Tirol (Austria)
- On 8 gantries 15 CALM Infrared Sensors have been installed



IN CAR DEVELOPMENTS

- On Board Unit software developed by ASFINAG
- Running on a commercial of the shelf equipment
- Is in use also on other test stretches (Berlin, Bavaria, Italy, France)



COOPERS TESTS - Facts

- COOPERS messages generated and sent to test track
 - ~ 150 messages per day
 - ~ 4500 messages per month
 - ~ 40000 messages in total since test track became operational
- Test drives on test track
 - ~ 250 test drives
 - ~ 9000 km driven on test drives
 - ~20000 km driven for test activities in total

COOPERS LESSONS LEARNED – SERVICE CENTRE

- COOPERS Service Center
 - Content for the provision of COOPERS services is available in an adequate granularity and quality
 - TPEG Standard for coding COOPERS messages gives appropriate freedom and flexibility
 - Interpretation of xFCD data and the implication on traffic management has to be further analysed

COOPERS LESSONS LEARNED – ROAD SIDE UNIT

- COOPERS Road Side Unit
 - Infrared technology as transmission technology had no limitations on the transmission of messages
 - Although the implemented technology is in R&D status, no major maintenance constraints have been identified
 - Message management (Which message to sent as first to the OBU) has shawn no drawbacks

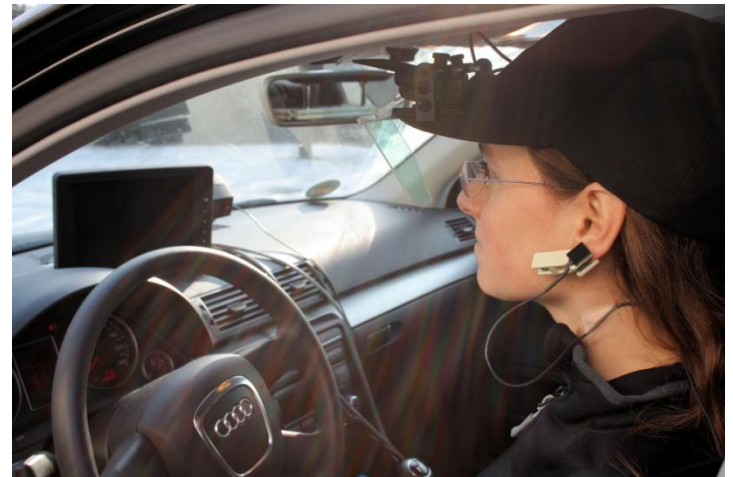
COOPERS LESSONS LEARNED – ON BOARD UNIT

- COOPERS On Board Unit
 - Display and usage have to be very near to state of the art solutions to be accepted by involved stakeholders
 - Latest development in the navigation devices (e.g. Virtual reality) have to be analysed on their applicability



COOPERS LESSONS LEARNED – USER FEEDBACK

- COOPERS user feedback
 - The test drives have a thoroughly positive attitude towards the system; they perceived it to be useful and easy to use
 - The messages given by the system are easily understandable
- The Coopers System fulfilled almost all expectations (pre- vs. post-questionnaire)



cooperative

Conference 2010

mobility