Using mobile networks for providing C-ITS information

Torsten Geißler
BASt role and facilities

- BASt operates in the domain of the Federal Ministry of Transport and Digital Infrastructure
- Main activity fields: Research, (Policy) Advise, Testing and certification, Standardisation
- Participates in almost 875 national and international committees
- Monitoring the implementation of national, European and international legislation and harmonisation procedures

Located in Bergisch Gladbach (close to Cologne), Germany
Number of employees: 400
Annual budget: about 47 MEUR
More than 300 internal research projects and more than 300 research projects conducted by external scientists
Key challenges for road authorities and operators

- Cooperative ITS implementation has started and Level 3/4 automated vehicles are expected to be introduced
- Mixed fleet (automated and non-automated) for decades to come
- NRAs can and should take a leading role to ensure that the potential benefits of Connected Cooperative and Automated Mobility (CCAM) can be harvested
- Current infrastructure – physical as well as digital – is not necessarily well prepared to facilitate change of role and tasks
- NRAs face an investment bump to be managed
Challenge of cross-sector cooperation

Industry

Road Operator

Market Structure (Indicator: Number of Suppliers/Network operators)

Geographical Market (Indicator: Number of km)

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Cooperative ITS Corridor – Road Works Warning

• Roadworks Safety Trailer are a.o. connected via Mobile Network to the Traffic Management Center
• Information is a.o. provided to service providers via National Access Point, i.e. Mobility Data Marketplace
• Phased nationwide rollout of trailer equipment on motorways) is underway
• Harmonisation of further services incl. aspects of hybrid communication via C-Roads

5G Connected Mobility

Use Cases and Activities on the Test Field
- Network Slicing for data communication in protected channels
- Automotive Use Cases
- Drone supported maintenance and traffic monitoring
- Quality-of-Service aware Networks and Applications

Technological Features
- Network Slicing
- Edge Cloud
- 5G New Radio
- Positioning
- Narrowband-IoT
- CAT M1

ICE 1004
Speed: 260.5 km/h
Destination: Nürnberg
ETA: On time

http://www.5g-connectedmobility.com
Data Sourcing from Industry

- Exchanging safety related traffic information (→ Delegated Regulation 886/2013) in a sustainable way
- Fulfilling public interest, making use of technological capabilities of industry, work towards a sustainable and healthy ecosystem
- Data Task Force of the High Level Meeting(s) for Connected and Automated Driving
- Data Task Force Proof of Concept as multi-sector effort, including several OEMs, Data Aggregators and (six) Member States
- Important role of mobile networks in the uplink (data) & (one of several) communication channels for SRTI

Demo and MoU signature at ITS European Congress, Eindhoven, 03.06.2019
Towards requirements

• Implementation report (2017) on Federal Govt strategy on Automated and Connected Driving
• Several actions fields for implementation, a.o. infrastructure, innovation, IT security and data protection
• Use case specific requirements. → coverage, bandwidth, latency
• Upgrade of telco infrastructure (cellular communication, fibre optics) to ensure continuous connectivity (a.o. supported by service requirements – coverage along motorways – towards MNOs linked to frequency allocations)
• Research and its promotion on combining communication techs in hybrid networks, use of digital test fields for pilots
• In-depth study on co-use of existing road infrastructure for CAD required communication
• Closer cooperation between MNOs and authorities/operators
Thank you for your attention

Dr. Torsten Geißler
Section F5 – Connected Mobility
Bundesanstalt für Straßenwesen
Brüderstraße 53
51427 Bergisch Gladbach, Germany
Telefon +49 (0)2204 43 5501
geissler@bast.de
www.bast.de