Cooperative, Connected and Automated Mobility

1. ITS Deutschland Kongress, Frankfurt
22.11.2017
Gerhard Menzel
European Commission - DG MOVE
From Technology to Sustainable Mobility

Three Components
- Cooperative Intelligent Transport Systems
- Connected Vehicles
- Automated Vehicles

EC actions
- Stakeholder Platforms
- Policy Initiatives
- Cross-border Projects

Convergence
- Cooperative Connected Automated Mobility

Objectives
- Zero road fatalities
- Reduced emissions
- Reduced congestion
- EU industry leadership
- Social inclusiveness
Stakeholder Platforms for shared Visions

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>2014</td>
<td>Launch C-ITS platform</td>
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<tr>
<td>2015</td>
<td>Launch C-ROADS</td>
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<tr>
<td>2016</td>
<td>C-ITS DAY 1 deployed</td>
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<tr>
<td>2017</td>
<td>Cooperative driving</td>
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<tr>
<td>2018</td>
<td>5G on main corridors</td>
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<td>2019</td>
<td>High Automation</td>
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<tr>
<td>2030</td>
<td>Conditional Automation</td>
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<tr>
<td>2030</td>
<td>GEAR 2030 conclusions</td>
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<td>2030</td>
<td>Launch GEAR 2030</td>
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<tr>
<td>2030</td>
<td>Letter of Intent Rome</td>
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<tr>
<td>2030</td>
<td>Large scale 5G trials</td>
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Cooperative, Connected and Automated
Key EU Policy Milestones to deliver C-ITS in Europe by 2019

- European Certificate Policy for Deployment and Operation of European C-ITS, June 2017
- Commission Delegated Act on Cooperative Intelligent Transport Systems, foreseen 2018
C-ITS Platform Phase I

Setting the scene for the Pan-European Deployment of Cooperative, Connected and Automated Vehicles

C-ITS platform final report & Annexes available at:
C-ITS Platform Phase II

- Continue supporting C-ITS deployment – implement recommendations of first phase
- Analyse how cooperation, connectivity and automation converge

C-ITS Strategy

• COM (2016) 766 - A European strategy on Cooperative Intelligent Transport Systems, a milestone towards cooperative, connected and automated mobility

• First EC Deliverable following the Declaration of Amsterdam of EU Transport

“Making C-ITS a reality from 2019 onwards”

https://ec.europa.eu/transport/themes/its/c-its_en
Priorities for deployment of C-ITS Services

- At least fully support the list of Day 1 C-ITS
- EC will continue to support and co-funded activities

Communication technologies and frequencies

- Hybrid communication approach
  - combining complementary communication technologies
  - Initial deployment for short range vehicle-to-vehicle and vehicle-to-infrastructure communication will be based on technologies already available: therefore combination of ETSI ITS-G5 (5,9 GHz Band) and existing cellular networks
  - where appropriate will operate in seamless co-existence with 5G, under a complementarity principle → full consistency with 5G Action Plan (Page 9)
Communication technologies and frequencies 5,9 GHz Discussions

- **Currently ongoing:** Mandate to CEPT
  
  - study measures which allow coexistence of LTE-V2X and Urban Rail ITS (such as technologies for CBTC already in operation in the 5 905-5 925 MHz frequency band) with **existing** ETSI ITS-G5 within the 5 875-5 925 MHz frequency band.

- **Reminder:** C-ITS Standardisation initiatives are supposed to respect interoperaibility:
  
  - **M/453 Standardisation mandate** addressed to CEN, CENELEC and ETSI in the field of information and communication technologies to support the **interoperability** of co-operative systems for intelligent transport in the European Community
C-ITS Interoperability at all levels

- Harmonised deployment of C-ITS in line with needs and priorities of Member States
- Definition of specifications (security, communication, etc.)
- Test suited and cross-border pilots
- 16 European States committed
- More than 300 Mio EUR investment
- More details and description of the pilots available at www.c-roads.eu
Certificate Policy – Release 1

Certificate Policy for Deployment and Operation of European Cooperative Intelligent Transport Systems (C-ITS)

RELEASE 1
JUNE 2022
C-ITS Security
EU Trust Model

Policy Authority

Legend:
TLM ... Trust List Manager
CPOC ... C-ITS Point of Contact
CA ... Certificate Authority
EA ... Enrolment Authority
AA ... Authorisation Authority
... Trust Relation

Common European Elements

TLM
CPOC

EU Root CA
EA
AA

Root CA 1
EA
AA

Root CA 2
EA
AA

Root CA N
EA
AA

Additional Root CAs run in Europe by e.g. Member State Authorities or Private Organisations providing certificates to specific users.
C-ITS Security – EU Support

Commissioner Maroší Šefčovič (Commission Vice-President for Energy Union), 5th of September at an Event at the European Parliament:

"As of next year, the Commission will also fully-fund a 4 year pilot phase of a European Cyber Security Credential Management System - which will be open to all stakeholders. This involves the setup of central coordination functions as well an operational EU Root Certification Authority. It will allow all European deployment initiatives to ensure interoperability, security and trust of communications."

Full Speech:
EU Pilot Phase:

- 4 year fully financed pilot operation of an European C-ITS Credential Management System ("PKI") implemented and operated by the European Commission

  - Funds of CEF Public Support Action (Work Programme 2016)

  - Provision of common European elements: Full setup of CPOC, TLM and EU Root CA to support initial C-ITS deployment in Europe as defined in Release 1 of the certificate policy

- Time Horizon Pilot Phase: 2018-2021
More Information

Directorate-General for Mobility and Transport:
http://ec.europa.eu/transport/index_en.htm

ITS Action Plan and Directive:
http://ec.europa.eu/transport/its/road/action_plan_en.htm

Cooperative, connected and automated mobility (C-ITS):
https://ec.europa.eu/transport/themes/its/c-its_en

Thank you for your attention!

Gerhard Menzel
gerhard.menzel@ec.europa.eu
European Commission - DG MOVE
B.4: Sustainable & Intelligent Transport