Deployment initiatives for C-ITS in Europe

Meeting  
Venue  
Date

ETSI ITS Workshop
Sophia Antipolis
08.03.2016
Core stakeholders committed for C-ITS deployment

- **C2C-CC**: 15 OEMs and 30+ global suppliers
- **CEDR**: 27 European Road Authorities
- **ASECAP**: 16 members, 5 associate members
- **POLIS**: 58 cities and regions

Amsterdam Group
Corridors and city deployments
Leveraging the efforts of the Amsterdam Group

Multi-stakeholder collaboration

C-ITS Platform

...have formed the Amsterdam Group

Intra sector coordination

...are represented in the C-ITS Platform

European ITS Platform

...provide support to the Amsterdam Group

C-EDR

Conférence Européenne des Directeurs des Routes
Conference of European Directors of Roads

CODECS

Cooperative ITS for Mobility in European Cities

Cimec

European Commission

CAR 2 CAR
COMMUNICATION CONSORTIUM
**Initial services with infrastructure involvement**

**Typical V2V**
- Hazardous location warning
- Slow vehicle warning
- Stationary vehicle warning
- Emergency Brake Light
- Emergency vehicle warning
- Motorcycle approaching indication

**I2V provided by infrastructure / V2I**
- Road works warning
- In-vehicle signage/information
- Signal phase and timing of traffic lights
- Probe vehicle data (Floating Car Data)
Interaction between Amsterdam Group and corridor deployments

- Roadmap between automotive industry and infrastructure organisations,
- Roadmap on initial deployment of Cooperative ITS (C-ITS) in Europe from 2015 onwards,
- Roadmap aims at practical recommendations for AG members,
- Roadmap on AG level as a guiding star for C-ITS deployment of members in corridors.
Cooperative ITS Corridor – Initial services
Cooperative ITS Corridor – Phased approach and location

1. Preliminary development and "proof-of-concept"
   • with roadworks warning trailers in Hesse around Frankfurt/Main,
   • by extending the Dutch test environment DITCM, and
   • within the Austrian project ECo-AT

2. Introduction of the two first applications in the Cooperative ITS Corridor (NL – DE – AT)
   • Road Works Warning
   • Improved traffic management by cooperative vehicle data

3. Introduction at national level

The corridor is the basis for the further development of cooperative services.
SCOOP@F – Initial services (First wave)

- Data collection: position/speed/direction, events detected, events declared
- Road works warning:
  - Planned road works,
  - Slow moving maintenance, winter maintenance,
  - Road operator vehicle approaching, rescue and recovery work in progress
- Hazardous location notification:
  - Slippery road, bad visibility, extreme weather condition
  - Animal on the road, human presence on the road, obstacle on the road, unmanaged blockage of the road
  - Accident, emergency brake, stationary vehicle, end of queue
SCOOP@F – Pilot sites

SCOOP@F: 3000 vehicles, 2000 km of roads
UK Corridor – A2/M2 Connected Vehicle Corridor
NordicWay – Initial Services

- Focus on cellular C-ITS
- Three common services
  - hazardous location warning
  - cooperative weather warning
  - probe vehicle data
- Additional national services vary, including
  - in-vehicle signage
  - cooperative traffic management
  - road works warning
  - etc.
- 2000 drivers/vehicles
NordicWay – Corridor
Pilots in the Czech Republic

- Test C2X technology in Czech environment
- Evaluate theoretical knowledge in real operation
- Test following Motorway D1 applications:
  - Slow moving vehicle warning (SMVW)
  - Stationary vehicle / trailer information (SVI)
  - Decentralized FCD
  - Approaching Emergency Vehicle Warning (AEVW)
  - Traffic Jam Ahead Warning (TJAW)
  - In-Vehicle Signage (IVS)
    - Road line traffic control (max. speed, lane allowance)
    - Other information (road works, rain, fog, snow etc.)
    - Road Works Warning (RWW)
- Develop set of recommendation for future deployment (Technical, legal and operational)
- Now primary focus on real deployment issues from Road and Motorway Directorate perspective
Czech Deployment Sites
Solving open issues for initial deployment

- Security
- System specification profiling
- Consistency of legal framework
- Radio spectrum and frequency
- Deployment, roll-out day one
- Roadmap beyond day one
- Conformance assessment
- Hybrid communication concept
- Backend services
- Use cases and applications (RWW, IVI, SPAT/MAP, PVD)

AG has identified this set of open issues
Leading entity has been identified
AG takes lead only when needed
AG contributes via its members to solve the open issues
Progress on solving open issues

- **White Paper**
  - RWW and SPAT/MAP mature for publication (AG website)
  - Agreement in umbrella organisations finished
  - Long term RWW will be added (work in progress)
  - IVI and PVD docs less mature

- **Radio spectrum and frequencies**
  - Joint approach of AG members in the RLAN activity
  - Coexistence 5.8/5.9 GHz: agreement reflected in relevant specifications

- **Hybrid communication**
  - AG input to ERTICO task force and report
  - AT has issued a Convergence concept for G5 with cellular
  - DE investigates in TPEG usage for C–ITS next to G5

- **Roadmap beyond day one: exchange has started**
Summary: Growing network of deployment initiatives

- Coherent deployment → Shared view on day 1 services
- Wider scope of deployment (technology, geograph.)
  - Hybrid communication (ITS G5, cellular, ...)
  - Starting with motorways but also involving urban environments
  - Starting with personal transport but also involving freight & logistics
- Coherent timing of the deployment initiatives
  - Broader wave of pilot deployments within next 3–4 years
  - Potentially followed by another wave (similar to US)
- Networking of corridors for promoting interoperability
  - Amsterdam Group as unique opportunity to bring together domain experts from corridor deployments to share information and to mitigate possible divergent approaches
  - Cross-testing – growing interest and facilities
Corridor initiatives

The roll out of Cooperative ITS is underway on several locations and corridors in Europe. C-ITS is being implemented. An important goal of the Amsterdam Group is to facilitate cooperation between corridors to enable harmonized deployment of C-ITS services. On this page, a selection of current initiatives can be found.

C-ITS corridor: Rotterdam – Frankfurt/M. – Vienna

German, Dutch and Austrian road operators started the gradual introduction of cooperative systems in Europe.

Project website Germany: http://www.c.its-kerndor.de/?menuId=1&sp=en

Project website Austria: http://eco.at/eco

Project website The Netherlands: https://itscorridor.mett.nl/default.aspx

SCOOPEff

Test deployment project of cooperative intelligent transport systems in France.


NordicWay

NordicWay is a pilot project that seeks to enable vehicles to communicate safety hazards through cellular networks on a road corridor through Finland, Norway, Sweden and Denmark.

www.nordicway.net

Other initiatives

Additional ongoing initiatives were discussed in the Amsterdam Group session during ITS...
Public Workshop “C-ITS Deployment is Underway!”

Jointly organised by the Amsterdam Group and CODECS

15 September 2015
Scandic Hotel
Roskilde, Denmark

CODECS has received funding from the European Union’s Horizon 2020 research and innovation programme under Grant Agreement No.676610.

Executive Summary

The full-day workshop “C-ITS Deployment is Underway!” was jointly organised by the Amsterdam Group and the CODECS project, both committed to network all relevant stakeholders for facilitating joint deployment of cooperative ITS in Europe. Corridor projects and pilots are currently arising all over Europe and form the first examples of real C-ITS deployment. The workshop gave these activities and further deployment related initiatives a platform to present their status, to declare first practical experiences and to address open issues for an aligned C-ITS implementation on vehicle and infrastructure side.

For the Amsterdam Group, the strategic alliance of CDEC, ASBECAP, POLIS and the CAR 2 CAR Communication Consortium, this has been the second public workshop where it presented and interactively discussed its work on harmonising the C-ITS road network across Europe. CODECS is a Coordination and Support Action in the Horizon 2020 Research and Innovation Framework of the European Commission which took-up its operation in May 2015. CODECS stands for Co-operative ITS Deployment Coordination Support, and the project aims on coordinating initial deployment activities, aligning deployment road maps, giving strategy coordination support and raising awareness for the idea of C-ITS deployment.

Amsterdam Group present at ITS World Congress in Bordeaux

The Amsterdam Group was present at the ITS World Congress in Bordeaux, 5-9 October 2015. Together with the European Commission and Corridor projects we held a “project dissemination session”. The session attracted a large number of people to the project dissemination room, which acknowledges the important role the Amsterdam Group plays in C-ITS deployment.

Amsterdam Group chairman Torsten Geißler moderated the session and introduced the Amsterdam Group. He highlighted the interaction between the Amsterdam Group and corridor deployments, with the road map as a guiding star. The road map comprises a number of open issues, amongst others security, consistency of legal framework and hybrid communication concept. The Amsterdam Group contributes to solve the open issues via its members.

Cédric Depre (European Commission-OS MOVE) followed with the EC view on C-ITS deployment, stressing the need for coordination to ensure interoperability and coherent deployment. There is a tight time window for European players to remain competitive because other regions of the world are moving fast. Key items are Cross testing and Common evaluation methodologies. The EC C-ITS platform has an important role in the harmonised deployment.

Then the various corridor projects presented themselves:

- Marko Isakovic (ASFINAG) described the status of the C-ITS corridor from Rotterdam through Frankfurt to Vienna. The corridor is providing a basis for standardization, international, future-oriented cooperative ITS services. The focus is on Road Network Working at the moment. Regular workshops are organized to share ideas with the market.
- Eric Cillinger (French Ministry - AEEDIC) explained that Roll-out is underway in France through the SCORPIO project. A first wave is taking place in 2014-2017 (ITS G5 communication only) with a second wave running 2016-2018 (hybrid: cellular+ITS G5). Road operators, local authorities and car manufacturers are involved and there are five pilot sites. Linking to other corridors is one of the goals.
- Risto Kulmala (Finnish Transport Agency) presented the Finnish C-ITS pilot North/Way of the four Nordic countries. Finland is chosen over ITS G5 because of the existing infrastructure, and the long road network with low traffic volumes. Deployment should be ready in 2018 including services like hazardous location warning and in-vehicle signage.
- Graham Hanson (UK Department for Transport) highlighted that connected corridors are a cornerstone of the UK road strategy. Feasibility studies are being conducted to support
Perspective

- **Focus on the added value of the Amsterdam Group**
  - Deployment initiatives by the members
  - Policy framework by the EC Masterplan
  - Amsterdam Group for sharing knowledge and lessons learned in order to facilitate C-ITS deployment
  - Leverage resources (mostly) via H2020 and CEF

- **Ensuring interoperability of deployments**
  - Solving open issues for initial deployment
  - Profiling of standards for services with infra involvement
  - Address standardisation issues beyond release 1
  - Testing efforts and trial operation
  - Cross tests – growing interest and facilities

- **Way forward**
  - Careful preparation of the regular operation phase
  - Roadmap beyond day one – Link to automated driving
Perspective

Larger set of pilots potentially supported through CEF co-financing

Note: Maps show pilots linked to INTERCOR and C-Roads proposals (submitted 02/2016)
SAVE THE DATE – C-ITS Deployment is underway Part II – progress reports of European C-ITS corridor projects and pilots – Public Workshop on 26 April 2016 in Amsterdam, The Netherlands

CODECS and the Amsterdam Group proceed their successful collaboration with organising the second edition of the public workshop “C-ITS Deployment is underway!” The workshop will take place on 26 April 2016 at Schiphol Airport in Amsterdam, the Netherlands.

The format provides C-ITS deployment pilots and corridors with a platform to report their progress in making cooperative road traffic a reality. Several months have passed since they have met at the first “C-ITS deployment is underway” workshop in Roskilde. The presentations and discussion shall serve for a status update with respect to lessons-learned, identifies challenges for C-ITS deployment as well as selected solution approaches.

We invite you to already Save the Date of the workshop in your calendars and will come back to you with further information and registration facilities in the oncoming weeks.
Thank you for your attention!

Acknowledgement

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