



# COoperative ITS DEployment Coordination Support



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This project has received funding from the *European Union's Horizon 2020 research and innovation programme* under Grant Agreement No 653339

# Panel Session



## C-ITS Deployment – Interoperability

**Moderator**      Holger Drees [BAST]

**Panellists**      Torsten Geissler [BAST]  
Marko Jandrisits [ASFAG]  
Sandro Berndt [BAST]  
Martin Volny [Intens]

Wednesday, 8:30 – 9:30

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# Deployment Landscape and Need for Profiles

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# Collaboration effort



Vehicles supporting C-ITS services



Infrastructure supporting C-ITS services



CAR 2 CAR Communication Consortium Statement:  
Strong support for the European Strategy on C-ITS Deployment

23 February 2017  
The European Commission has recently published the European Strategy on Cooperative Intelligent Transport Systems (C-ITS) – an important milestone for realising cooperative and automated mobility on European roads. The CAR 2 CAR Communication Consortium (CC2-C) strongly supports this strategy, highlighting a hybrid communication approach for transmitting C-ITS messages using both direct vehicle communication (V2X ITS-G5 technology) as well as mobile radio communication. All research and development activities of the Consortium show that the V2X ITS-G5 technology is mature and displays a number of advantages for direct vehicle communication.

With the publication of the COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS – A European strategy on Cooperative Intelligent Transport Systems, a milestone towards cooperative, connected and automated mobility – Document COM(2016) 764 final of 30 November 2016, the European Commission has set the scene for C-ITS deployment in Europe. The CC2-C expresses its strong support for this strategy, which considers a combination of different communication technologies for transmitting C-ITS messages. Hybrid communication based on existing mobile radio and direct vehicle communication has been identified as the best way for supporting automated and connected driving. For direct vehicle communication, V2X communication based on ITS-G5, IEEE 802.11p (V2X ITS-G5) is favoured.

The advantages of the V2X ITS-G5 technology are real-time operation in all scenarios (independent of cellular infrastructure even during high-performance operation), the capability of automotive functional safety (ISO 26262), and established concepts of security-by-design and privacy preserving technology, all-in-all harmonised with the C-ITS Deployment Platform.  
V2X ITS-G5 has been developed and it is ready for the market. This is a prerequisite to facilitate V2X rollout in 2019. Suppliers are contracted with the V2X implementation. The essential IP(s) and patents on V2X ITS-G5 are owned by members of the European CC2-C and can be used royalty-free by all its members.



Common Statement of  
CAR 2 CAR Communication Consortium and C-Roads Platform  
Jointly deploying interoperable V2X-Services based on ITS-G5 on European Roads by 2019

20<sup>th</sup> of June 2017  
The CAR 2 CAR Communication Consortium and the C-Roads Platform have just signed a Memorandum of Understanding for enabling a close cooperation between the automotive industry, road authorities, and road operators for enabling the deployment of initial cooperative ITS services across Europe by 2019. Short range wireless communication from Road-to-Road (V2V) and Vehicle-to-Infrastructure (V2I) – based on the ITS-G5 standard (IEEE 802.11p) – represents together with hybrid communication technologies an essential dimension towards safe, connected automated driving. Both partners strongly support the recommendation developed by the European Commission's C-ITS Deployment Platform to enable short range communication in the 5.8 GHz frequency band. In accordance with the European C-ITS strategy (COM (2016) 766) adopted in November 2016, the hybrid communication approach builds on combining short range ITS-G5 and wide area cellular and broadcast communication under a complementary principle.

Interoperability of C-ITS services is a pre-requisite for enabling seamless driver experience while travelling cross-border on European roads. Vehicles need to understand and correctly process messages sent by each other – irrespective of the brand – as well as by the road operators for enabling the best possible support of the drivers in such individual traffic situation. Initiatives to achieve this requirement are already facilitated by the European Commission and gain additional importance with increasing automation of the vehicles.

Since its foundation in 2002, the CAR 2 CAR Communication Consortium focused its work on establishing European standards for short range communication between vehicles and traffic infrastructure. The allocation of the 5.8 GHz band for these purposes has mainly been driven by the Consortium. Its members have initiated and supported numerous research projects as well as large-scale field operational tests on national and European level. As a result of this, ITS-G5 has proven to be ready for enabling short-range communication. Now that the system enters the deployment phase, the Consortium is working closely together with infrastructure deployment initiatives to ensure a seamless market introduction of V2X communication.

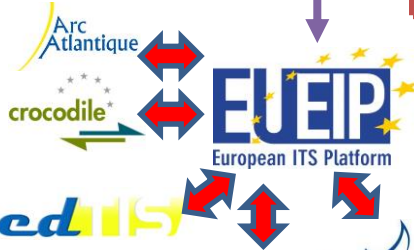
In 2016 the C-Roads Platform has been established as the platform of Member State authorities and road operators for harmonising the roadside C-ITS deployment across Europe. An infrastructure deployment initiative is currently in progress. The CAR 2 CAR Communication Consortium commits to close collaboration with the C-Roads Platform for jointly fostering the successful C-ITS deployment in Europe starting in 2019.  
With the signing of this memorandum, major European stakeholders are displaying initiative by moving closer together and emphasising their commitment to the common goal of harmonising C-ITS deployment across borders and throughout Europe.



# Deployment Landscape



- C-Roads AT
- C-Roads BE - FL
- C-Roads BE - WA
- C-Roads CZ
- C-Roads DE
- C-Roads FR
- C-Roads HU
- C-Roads IT
- C-Roads PT
- C-Roads SI
- C-Roads SP



URSA MAJOR



## EU Policy Tools



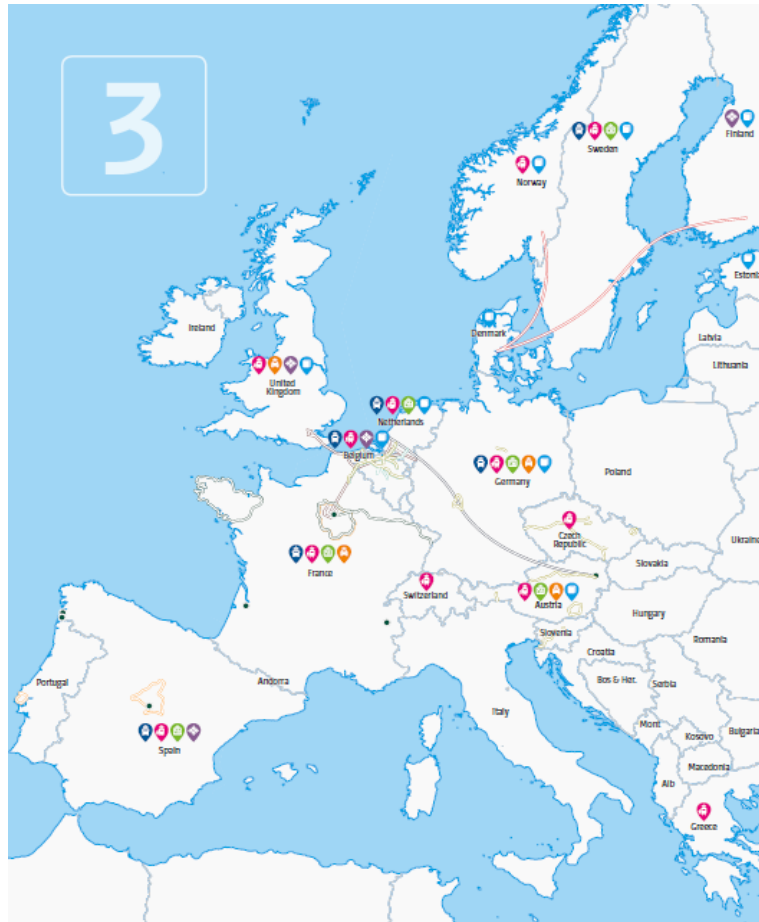
Get It On The Road, Get It In the Car.



# Deploying C-ITS – advancing on automation



3



## Smart mobility projects in Europe

Cross border testing: overview European connected and automated Field Operational Tests.

- Truck platooning**  
Truck Platooning comprises a number of trucks equipped driving support systems – one closely following the other. This forms a platoon with the trucks driven by smart technology, and mutually communicating.
- Pods / people movers**  
Shared and fully automated transport services (people movers or pods) as part of or added to public transport solutions.
- Highway pilots**  
A system that is able to navigate on the highway without any help from the driver. It uses sensors to observe its surroundings.
- Urban driving / valet parking**  
Automated driving and parking in urban surroundings.
- Other**  
Such as connected vehicle services, cellular tests etc.
- Policy Initiatives**  
Relevant: developments regarding policy and legislation on C-ITS e.g. adopting legislation, codes of practice, type approval and technical inspection etc.

- Legend**
- C-ITS corridor Rotterdam - Vienna
  - Non-EU
  - Also C-ITS
  - C-ITS for Trucks (CITRUS)
  - C-Roads
  - SCOD/PIF Part 2
  - InveCo

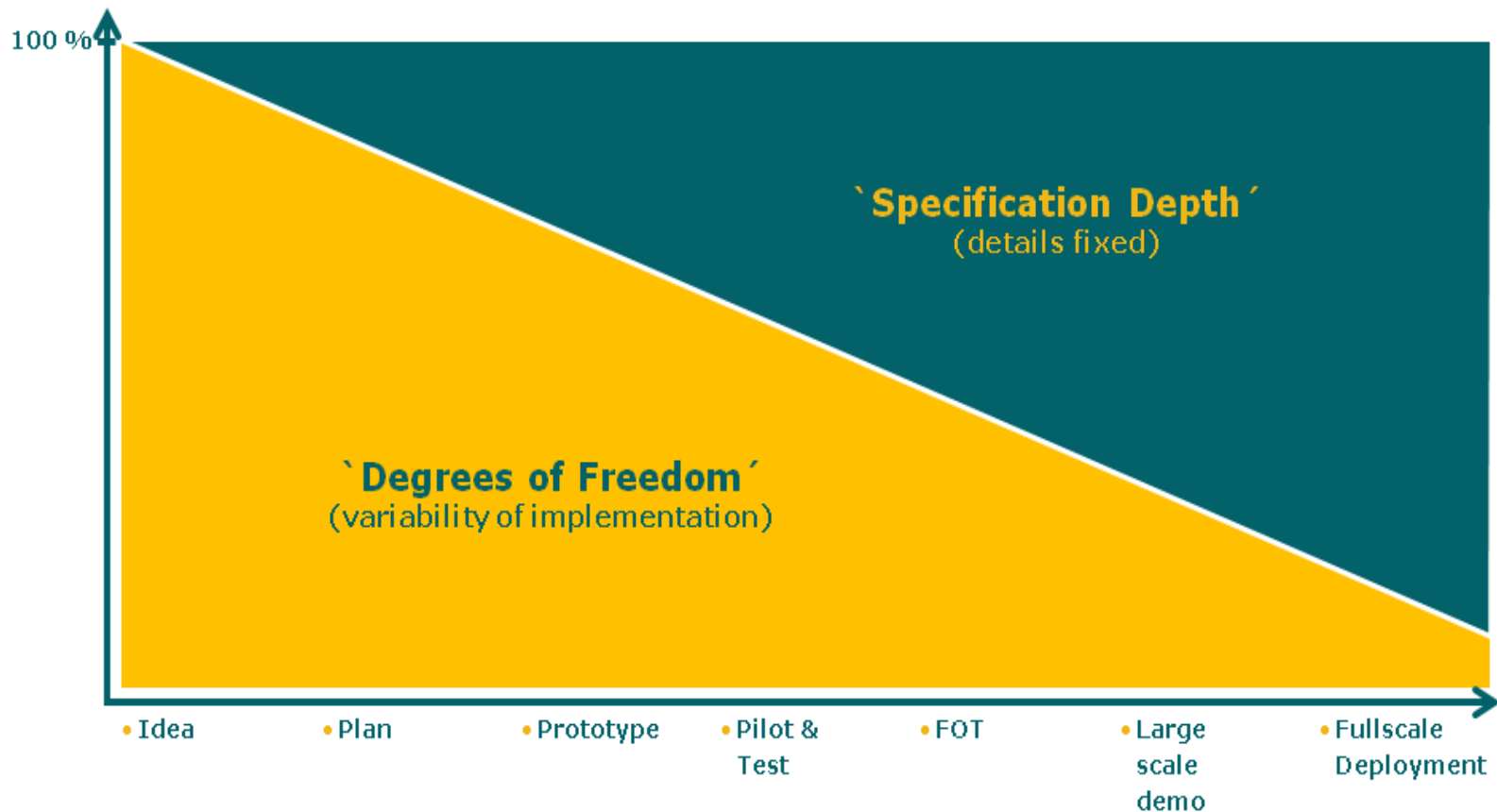


As the Connected and Automated Driving field is a dynamic and lively environment, please find an up-to-date overview of all Initiatives and projects on the site: [Connected and Automated Driving website of the European Commission](#), via the QR code.

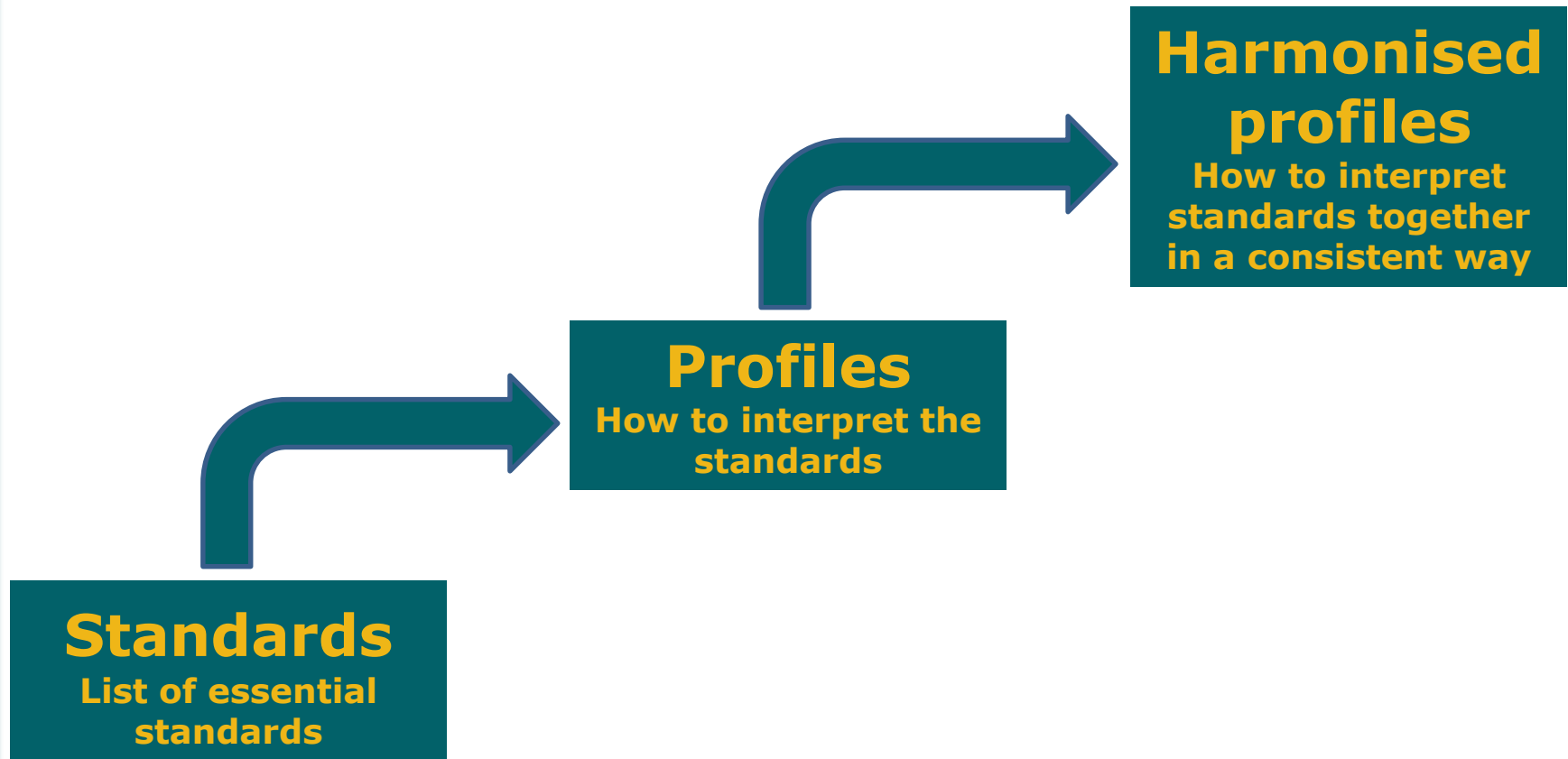
On our way towards connected and automated driving in Europe | 17

**Source: Ministry of Infrastructure and Environment The Netherlands, On our way towards Connected and Automated Driving in Europe, Outcomes of the first HLM, 2017.**

# Interoperability challenge



# Necessary steps to meet the interoperability challenge

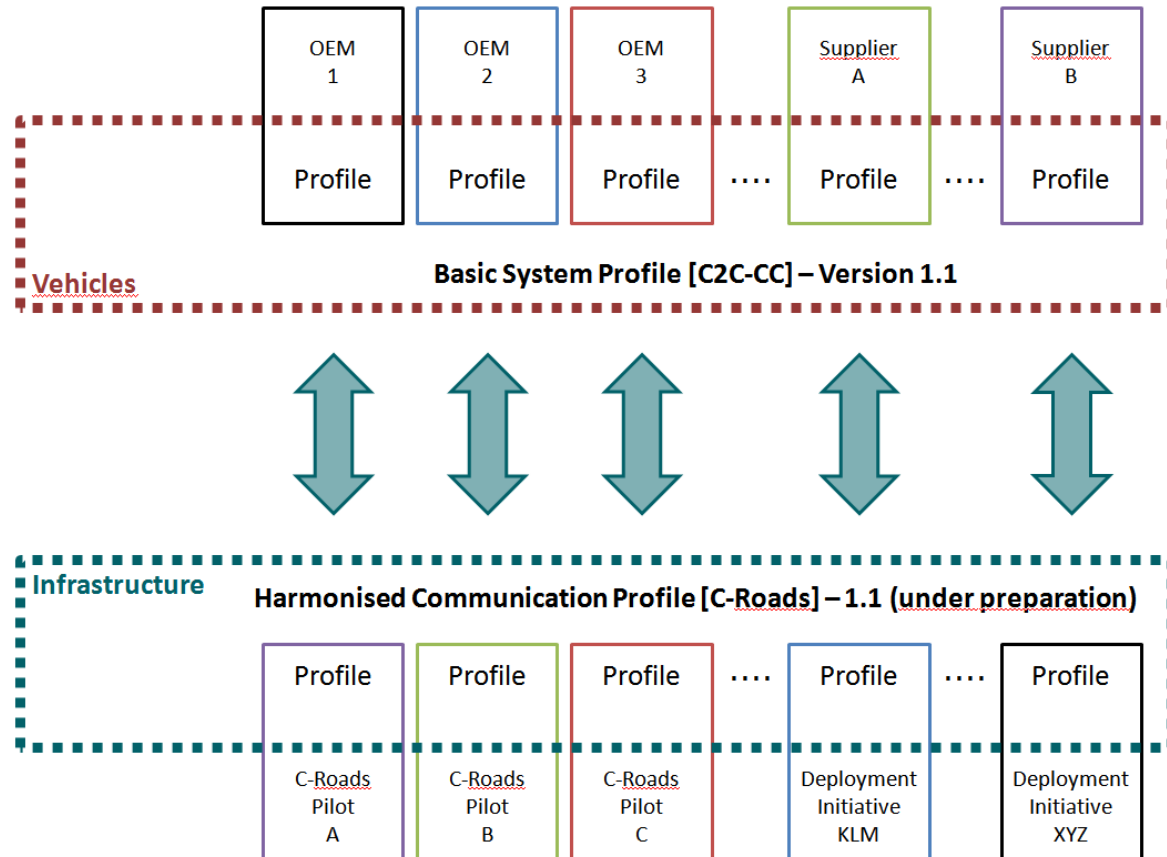




# Scope and relation of Profiles



Schematic representation



# Panel Session



## C-ITS Deployment – Use Cases and Roadmaps

**Moderator**      Niels Andersen [Anemone Technology]

**Panellists**      Christine Tissot [Renault]

N.N. [?]

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N.N. [?]

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