



ITS got Solutions

Session: Connected Vehicles Status of C-ITS Deployment in Europe

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C-The Difference Pilot Project Manager

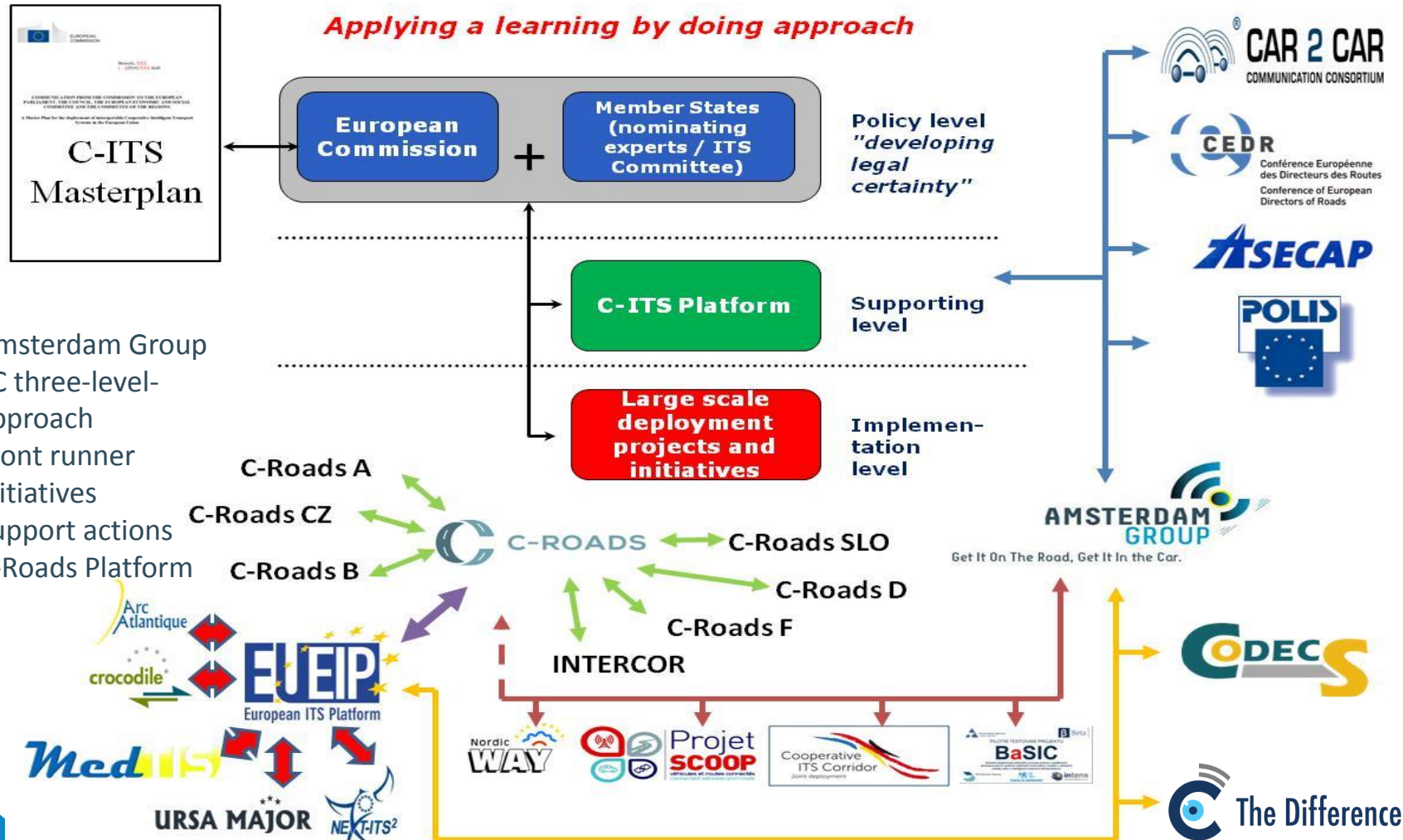
SIP adus International Workshop

November 14-16, 2017 - Tokyo

Summary

- European C-ITS Deployment Platform
- C-ITS pilot initiatives in Europe
- C-The Difference: C-ITS urban pilot project
- Conclusions

European C-ITS Deployment Landscape



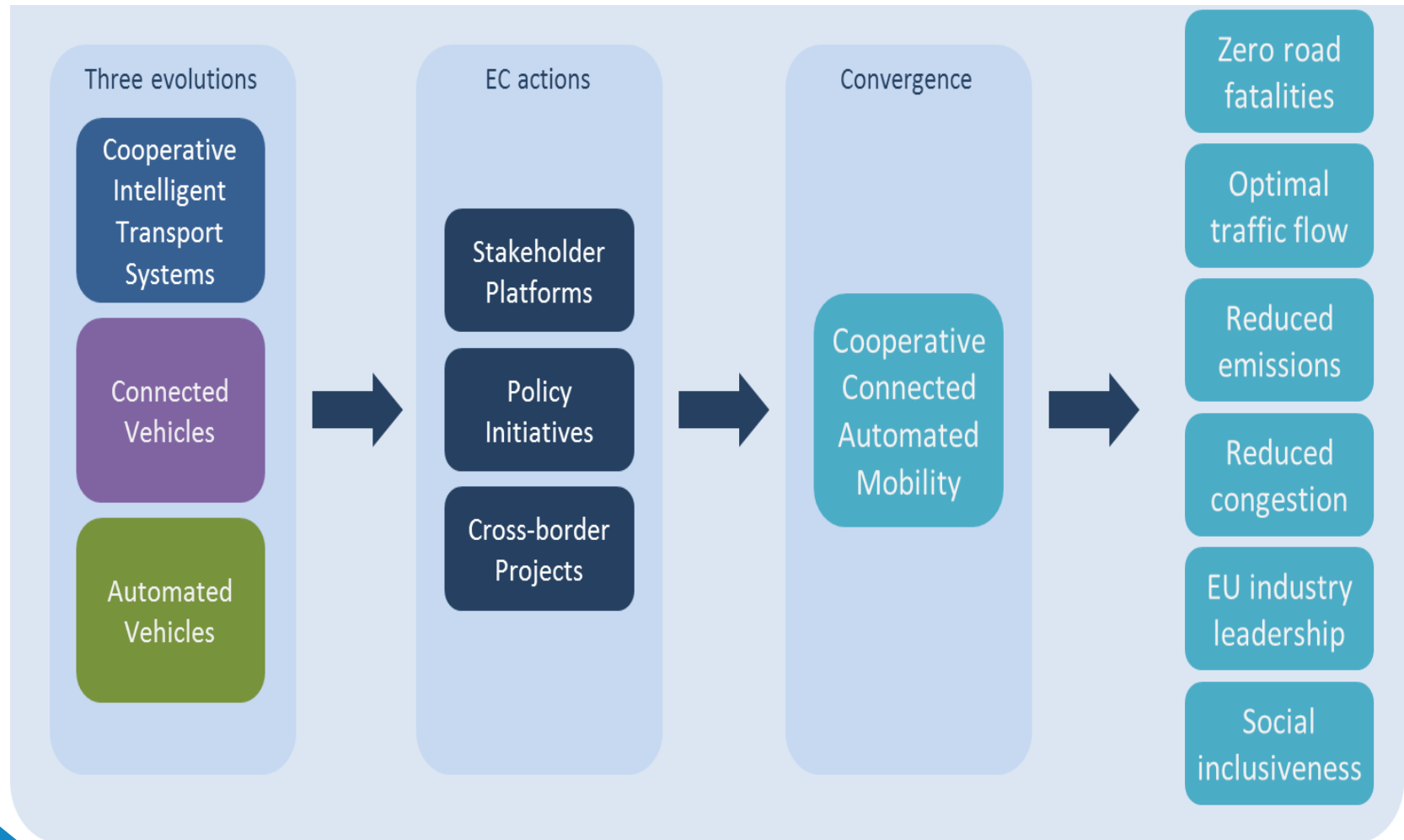
- Amsterdam Group
- EC three-level-approach
- Front runner initiatives
- Support actions
- C-Roads Platform

C-ITS Deployment Platform Status and next steps

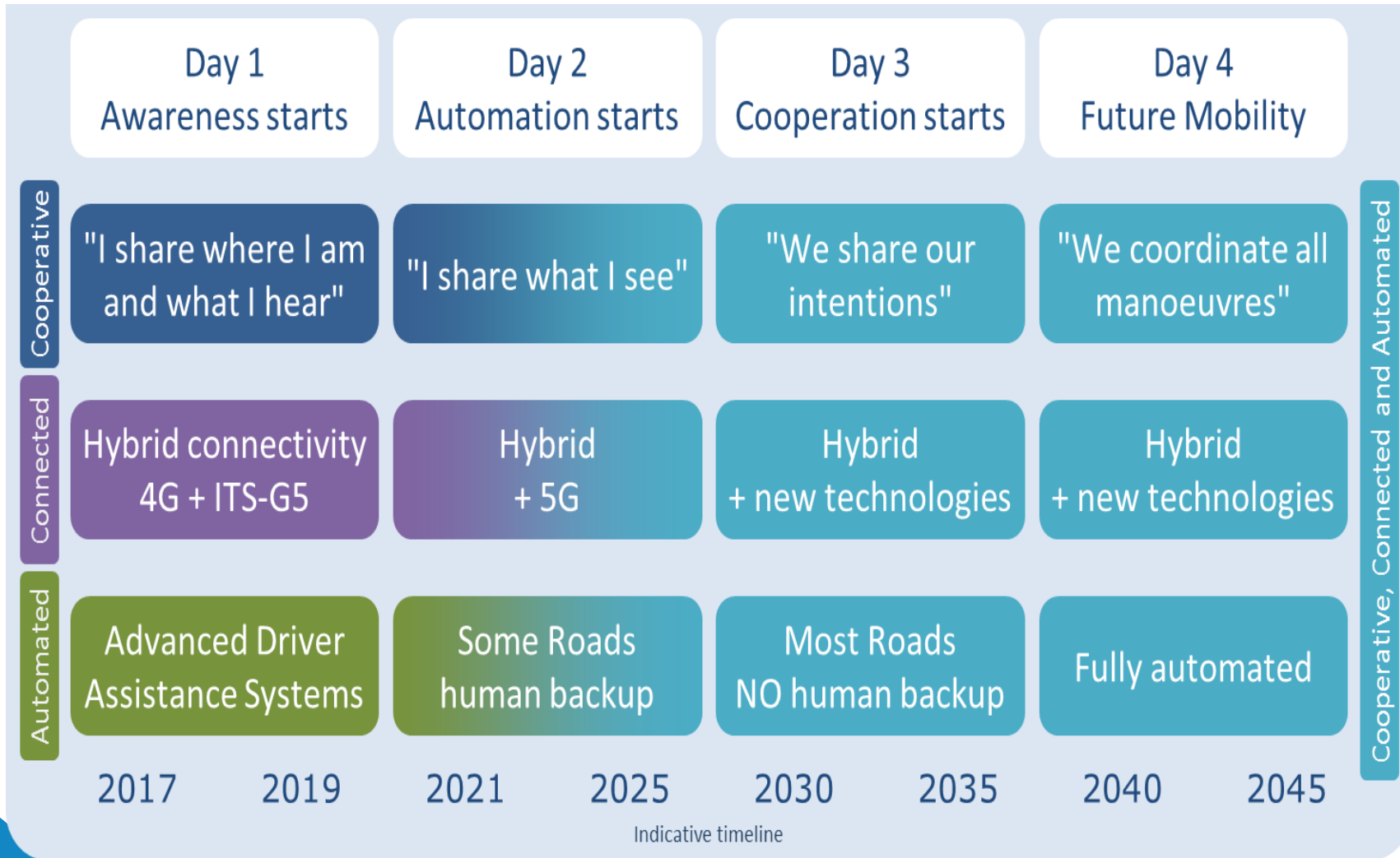


- Phase 1 closed (November 2014 - January 2016)
Publication of report consolidating recommendations from 11 Working Groups
<https://ec.europa.eu/transport/sites/transport/files/themes/its/doc/c-its-platform-final-report-january-2016.pdf>
- Phase 2 closed (April 2016 – September 2017)
 - New Working Groups addressing C-ITS and automation:
 - Physical and Digital Road Infrastructure
 - Enhanced Traffic Management
 - C-ITS, Automation and Road Safety
 - C-ITS, Public Transport and automation in urban areas
 - Phase 2 report published in September 2017
(https://ec.europa.eu/transport/themes/its/c-its_en)
- Revision of ITS Directive (from 2018)

From Technology to Sustainable Mobility



Towards Cooperative, Connected and Automated Mobility



- Driven by EU Member States
 - Austria, Belgium, Czech Republic, Denmark, Finland , France, Germany, Hungary, Italy, Netherlands, Norway, Portugal, Slovenia, Spain, Sweden, UK
 - 3 associated members: Ireland, Switzerland, Queensland (Australia)
- Focus on main trans-European corridors, limited number of urban nodes (France, Czech Republic)

www.c-roads.eu


C-ITS services implemented in EU pilots

C-ROADS Members								
C-ITS services	France	Germany	Austria	UK	Czech	Slovenia	Netherlands	Belgium
Slow or stationary vehicle(s) & traffic ahead warning		X	X	X	X	X		X
Road works warning	X	X	X	X	X	X	X	X
Weather conditions	X		X		X	X		X
Emergency vehicle approaching					X			
Other hazardous notification	X		X		X	X		X
In-vehicle signage		X	X		X	X	X	
In-vehicle speed limits			X	X		X		
Signal violation / Intersection Safety			X		X			
GLOSA	X	X	X	X			X	X
Probe vehicle data	X	X	X		X	X	X	X
Shockwave damping		X						X



The Difference C-The Difference

Beyond Traffic Jam - C-ITS urban pilots

- Funding: EC DG MOVE 
- Period of activity: October 2016 – September 2018

Consortium:

- Cities



- Industry



- Research



- Consultancy: BLERVAQUE Sprl

- Consortium Leader: MAP Traffic Management

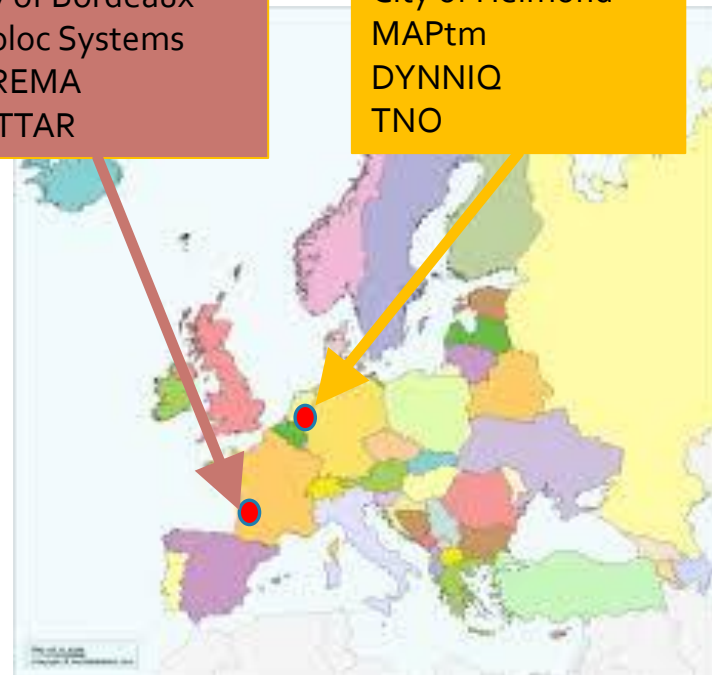
- Project Manager: Vincent BLERVAQUE

Bordeaux Pilot Site

City of Bordeaux
Geoloc Systems
CEREMA
IFSTTAR

Helmond Pilot Site

City of Helmond
MAPtm
DYNNIQ
TNO



General approach

Five golden rules for success in implementation and long run provision of C-ITS services:

1. Interoperability
2. Sustainability
3. Scalability
4. Replicability
5. Reliability



Driven by city needs

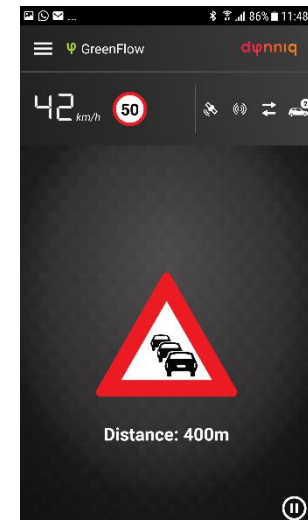
- **Bordeaux:**

- Leading to sustainable, clean and efficient transport
- Implementing efficient multimodal transport
- Innovative traffic management
- Improving Urban and inter-urban (ring road) safety

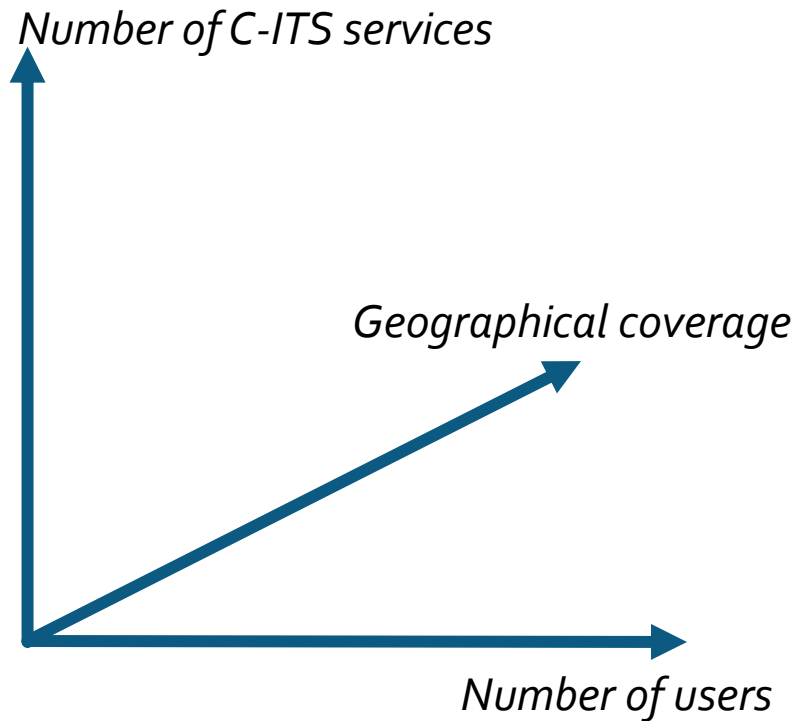


- **Helmond:**

- Improving mobility and accessibility in general
- Leading to a sustainable, clean and efficient transport
- Innovative traffic management
- Improving road safety and vulnerable road users protection



Scalability



- Each city has to identify and implement its own deployment path
- Standardisation is a must to secure open market and not anymore vendor locking solutions
- Ensure interoperability for continuity of services
- Hybrid communications offer more flexibility in implementation, especially for V2I / I2V services

Pilot sites description

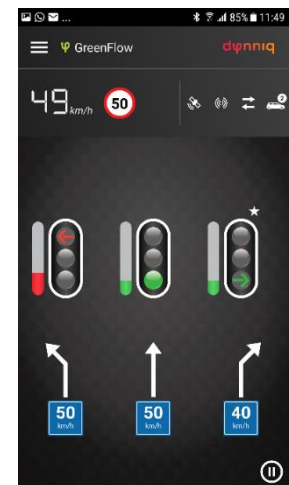
	Bordeaux Pilot Site	Helmond Pilot site
C-ITS Communication infrastructure	Hybrid: 36 ITS G5 RSUs + cellular 3G/4G	24 ITS G5 RSUs
Pilot site coverage	373 intersections 1527 traffic lights	28 intersections 308 traffic lights
Vehicle Fleet		
Passenger cars	32 equipped with ITS G5 OBU + over 900 mobile apps users	n.a.
Commercial vehicles	9 equipped with ITS G5 OBU + over 100 mobile apps users	103 equipped with ITS G5 OBU (trucks, emergency vehicles)

Android smartphone App available for free on Google Store



List of C-ITS Services

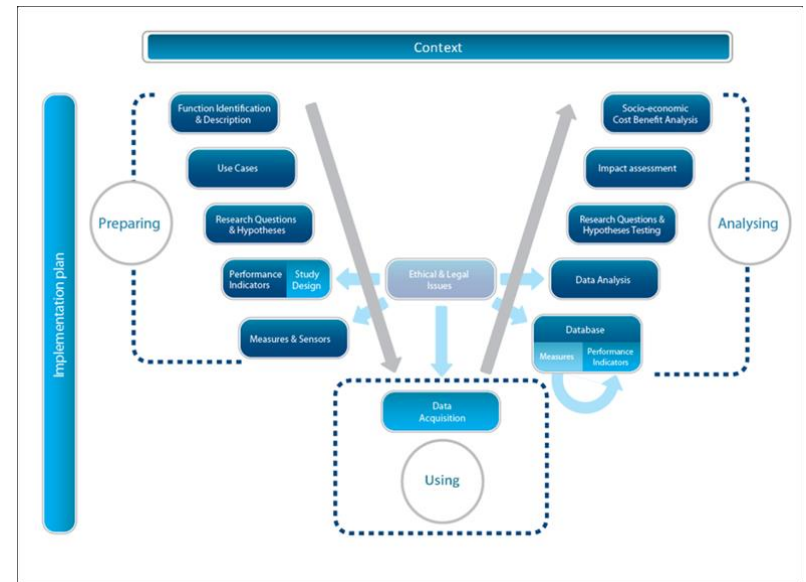
C-ITS services to be piloted and evaluated	Bordeaux	Helmond
Emergency vehicle approaching	ITS G5	ITS G5
Road hazard warning	ITS G5 & 3G/4G	
Road works warning	ITS G5 & 3G/4G	ITS G5
In-vehicle signage	3G/4G	
Park & ride information	3G/4G	
Probe vehicle data	3G/4G	
Signal violation / Intersection Safety	ITS G5 & 3G/4G	ITS G5
Traffic signal priority for designated vehicles	ITS G5	ITS G5
Green Light Optimal Speed Advisory (GLOSA)	ITS G5 & 3G/4G	ITS G5
Tram GLOSA	3G/4G	



Expected Impact

Four impact categories will be assessed (quantitative and/or qualitative):

- Safety (mainly qualitative)
- Traffic efficiency
- Fuel / emission
- Business (Logistics)



Final results to be presented at 2018 ITS World Congress in Copenhagen

City Twinning Program

- Objective: Foster knowledge sharing and C-ITS pilot best practices exchange to accelerate the replicability of C-ITS services with group of follower cities
- Targeted audience: Representatives of cities and regions in charge of transport & mobility innovation, transport planning and traffic management
- Proposed activities:
 - Workshops in Helmond and Bordeaux including live demonstrations
 - Information sharing and transfer of results with C-The Difference pilot city representatives

www.c-the-difference.eu

Conclusions

C-ITS deployment in Europe:

- C-ITS policy is driven by European Transport Policy (ITS Directive, C-ITS Master Plan)
- C-ITS implementation is driven by EU Member States (16 Member States engaged in national and cross-border pilots in close cooperation with industry)
- Address not only European road corridors but also urban nodes with increasing number of cities involved as pilot sites
- Hybrid communication (ITS G5 and cellular 4G) is a reality and a priority

Convergence of C-ITS and automated driving for development and deployment roadmaps towards Connected, Cooperative and Automated Mobility.

Europe actively support international cooperation.

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Thank you for your attention!

More information?

Contact me at
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