



CiViTAS FORUM 2016
CIVITAS ANNUAL CONFERENCE | 28-30 SEPTEMBER | GDYNIA



Automation and Urban Mobility

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Context – Goals of White Paper (2011)

- Transport sector to reduce emissions by 60% by 2050:
 - Developing and deploying **new and sustainable fuels** and propulsion systems
 - Halve the use of 'conventionally fuelled' cars in urban transport by 2030; phase them out in cities by 2050
 - A fully **functional and EU-wide multimodal TEN-T** 'core network' by 2030, with a high-quality and capacity network by 2050 and a corresponding set of information services. common aviation area.
 - By 2050, move close to **zero fatalities in road transport**. In line with this goal, the EU aims at halving road casualties by 2020.
- ❖ **Move towards a safe, efficient and multimodal transport system**

http://ec.europa.eu/transport/themes/strategies/2011_white_paper_en.htm

New European Low Emission Transport Policy 2016

Increasing the efficiency of the transport system by making the most of digital technologies, smart pricing and further encouraging the shift to lower emission transport modes,

Speeding up the deployment of low-emission alternative energy for transport, such as advanced biofuels, electricity, hydrogen and renewable synthetic fuels and removing obstacles to the electrification of transport

Context - Safety

Between 2001 and 2010, Europe cut the number of road deaths by **43%** in spite of the increased traffic volumes, and reduced it by another **17%** since 2010.

However, change in fatality figures was close to **0** from 2013 to 2014, and 2015 repeated the **same pattern.**

Why?

- *a higher interaction between unprotected and motorised road users in our **cities**, and an ever growing number of elderly people in road traffic.*
- *a growing number of **vulnerable road users** (pedestrians, cyclists, motorcyclists or elderly road users).*

→ Increasing need to make our transport system safer, especially in cities

Context - Environment

- **Congestion** in the EU is often located in and around urban areas and costs nearly **100 billion Euro**, or **1%** of the EU's GDP, annually
- **Climate change:** urban mobility accounts for **23%** of CO₂ emissions from transport
- **Air pollution** - Some **40 million** people in the **115** largest cities in the European Union (EU) are exposed to air exceeding WHO air quality guideline values for at least one pollutant
- **Noise pollution:** about **40%** of the population in EU countries is exposed to road traffic noise at levels exceeding 55 db(A)

→ **Increasing need to make our transport system more efficient, especially in cities**

Connected and Automated Driving

- *Connected and automated driving is an important tool to improve **road safety** and **traffic efficiency** both in urban areas and throughout network corridors.*
- *The introduction of autonomous vehicles will undoubtedly make us **rethink** how vehicles are used in cities but rather than seeing them as a threat it should be explored how autonomous vehicles can support **sustainable urban mobility** and **multimodality**.*

Focus Areas – Key Questions

This topic in the urban and public transport context is gaining a lot interest by public authorities and public transport operators who are posing questions such as:

- *'What impact will the arrival of autonomous cars have on urban mobility?'*
- *'Is automation purely restricted to passenger cars or can this stretch to public transport vehicles as well?'*
- *'What is the potential impact that automated vehicles, and especially public transport could have on urban planning and design?'*
- *'How does this fit within 'SUMPs'?*



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Role of research and forums of discussion to answer such questions



HORIZON
2020

MAVEN

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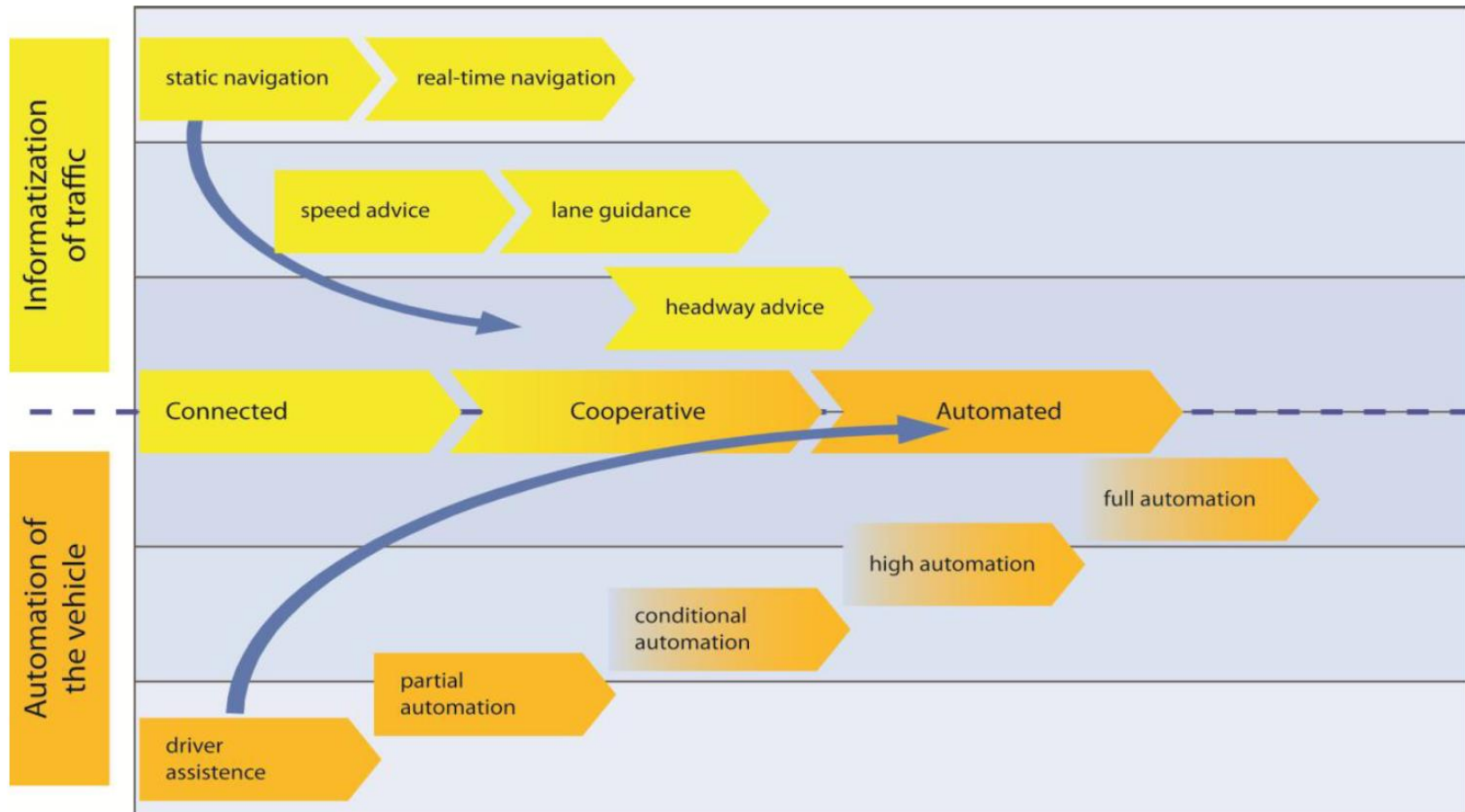
Managing Automated Vehicles Enhances Network

From 2016-09-01 to 2019-08-31, ongoing project



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Connected, cooperative and automated driving – must work in parallel



Role of Connected and Cooperative Systems (C-ITS)

Cooperative Intelligent Transport Systems use technologies that allow **all** road based vehicles (i.e. emergency vehicles, trucks, public transport, cars) to communicate with other vehicles, with traffic signals and roadside infrastructure as well as with other road users i.e. pedestrians, cyclists incl. VRU).

The systems are also known as vehicle-to-vehicle (**V2V**) communications, or vehicle-to-infrastructure communications (**V2I**).

They hold promise to make our transport system **safer** and **more efficient** by exchanging valuable sets of information and data – important in a **multimodal** context.

C-ITS Platform: building a shared vision for deployment

- Because it is not only an industry business
- Looking at deployment scenarios and enabling conditions
- Finding ways to tackle issues hampering coordinated deployment

First phase November 2014 – January 2016

- Over 100 public and private stakeholders discussing a wide range of thematic topics via dedicated working groups.

http://ec.europa.eu/transport/themes/its/c-its_en.htm



Agreed list of Day 1 C-ITS Services

#	Day 1 Services	
	Hazardous location notifications	Signage applications
1	Slow or station vehicle(s) (V2V) and Traffic jam ahead warning (V2V)	7 In-vehicle signage (V2I)
2	Road works warning (V2I)	8 In-vehicle speed limits (V2I)
3	Weather conditions (V2I)	9 Signal violation/intersection safety V2I
4	Emergency electronic brake light (V2V)	10 Traffic signal priority request by designated vehicles V2I
5	Emergency vehicle approaching (V2V)	11 Green Light Optimized Speed Advisory GLOSA/Time To Green (TTG) V2I
6	Other hazardous notifications (V2I)	12 Probe Vehicle Data
		13 Shockwave damping (V2I)

Agreed list of Day 1.5 C-ITS Services

#	Day 1.5 Services
1	Information on AFV stations and charging points (V2I)
2	Vulnerable road user protection (pedestrians, cyclists, motorcyclists) (V2X)
3	On street parking information and management (V2I)
4	Off street parking information (V2I)
5	Park and Ride information (V2I)
6	Connected & Cooperative navigation into and out of the city (1 st and last mile, parking, route advice, coordinated traffic lights)
7	Traffic information and smart routing (V2I)

Relevance of C-ITS in Urban Areas

- Cost-benefit analysis demonstrated that **half** of the benefits will be realised in urban areas alone;
- Many of the Day 1/1.5 C-ITS services are relevant in the urban context for the entire multimodal transport system and can address safety and efficiency issues and help **modal integration**;
- → But deployment of connected, cooperative and automated driving must be taken in overall sustainable urban mobility **context** (SUMP, alternative fuels, MMTIS)

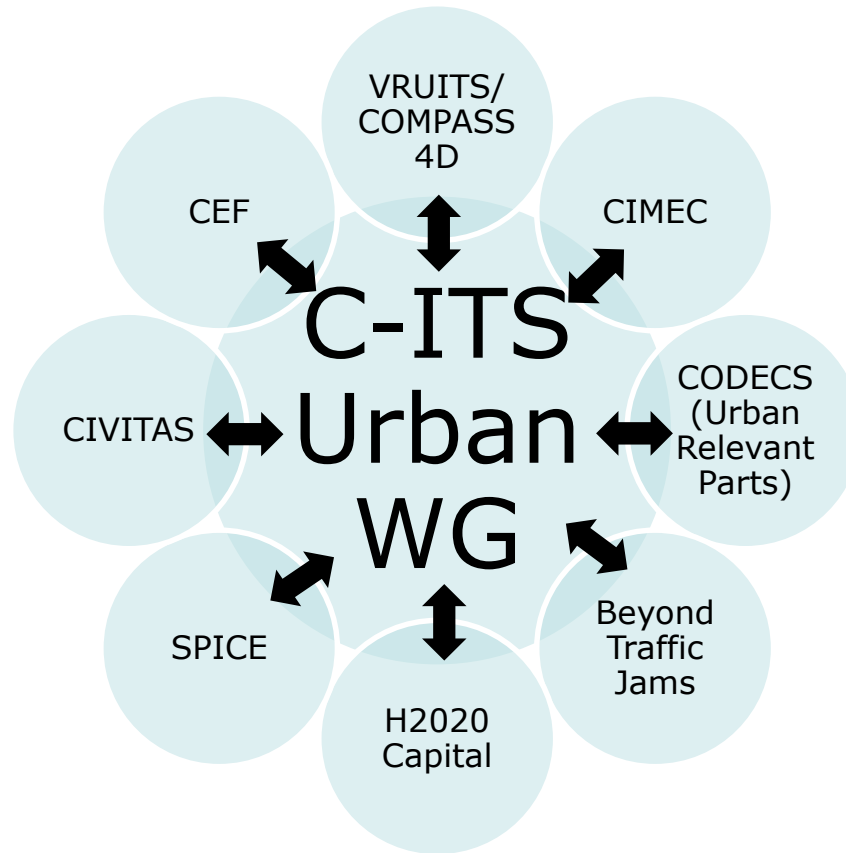


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C-ITS Platform Phase 2: Urban WG

**Identifying
Relevant C-ITS
Services in Urban
Areas**

**Identifying
Deployment
Barriers**



**Identifying
Supporting
Deployment
Measures**

**Coordination of
Urban C-ITS
Activities**



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Thank you for your attention!

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