



C-ITS Plenary

Wednesday, 20 September 2017 - Brussels - 14h - 17h

DRAFT AGENDA

14.00	Opening and welcome	Claire Depré
14.10	Revision and approval of minutes of previous plenary meeting	Claire Depré
14.20	Presentation of achievements and final reports of each of the WGs, open floor for feedback/questions from platform's members	WG's Chairs
15.30	Coffee Break	
16.00	Presentation of achievements and final reports of each of the WGs, open floor for feedback/questions from platform's members (continued)	WG's Chairs
16.30	Conclusions / endorsement of the Final Report	Claire Depré
17.10	Future of the C-ITS Platform	Claire Depré
17.30	AOB & Closure	



WG on Data Protection and Privacy

C-ITS Plenary Meeting – DG MOVE
20th September 2017

Paivi Elina Wood and Vincent Mahieu



@Transport_EU

Mobility and
Transport

CONNECTING
EUROPE



Outcomes

- During the phase II the working group has convened 12 times
- The main focus of the group was to prepare the document to the Art 29 and its' technology subgroup to receive guidance and feedback.
- Recommendations from the working group, and
- Preliminary feedback from technology subgroup

Recommendations from the working group

- Enactment of EU-wide legal framework, evoking public interest
- Intermin solution
- E-privacy
- Full analysis of GDPR
- Data controller models



Technology subgroup of Art. 29

- The technology subgroup of Article 29 had first discussion on the matter in March
- Document was submitted to the technology subgroup in July and on the agenda of the group on the 7th of September
- The intention is that Plenary of Article 29 would adopt the report compiled by the technology subgroup on the 3/4th of October



Preliminary feedback from Art. 29

- Developing European wide legal framework and Data Protection Impact Assessment
 - Assessment of necessity and proportionality, DPIA should be mandated in the course of the legislative process
- Feedback concerning other possible legal basis
- Do not track function
- Security





European
Commission

Questions?



@Transport_EU

Mobility and
Transport

CONNECTING
EUROPE



WG Security

C-ITS Plenary Meeting – DG MOVE
20 September June 2017

Gerhard Menzel



@Transport_EU

Mobility and
Transport

CONNECTING
EUROPE



C-ITS Strategy COM (2016) 766

Ch 3.2 C-ITS Security:

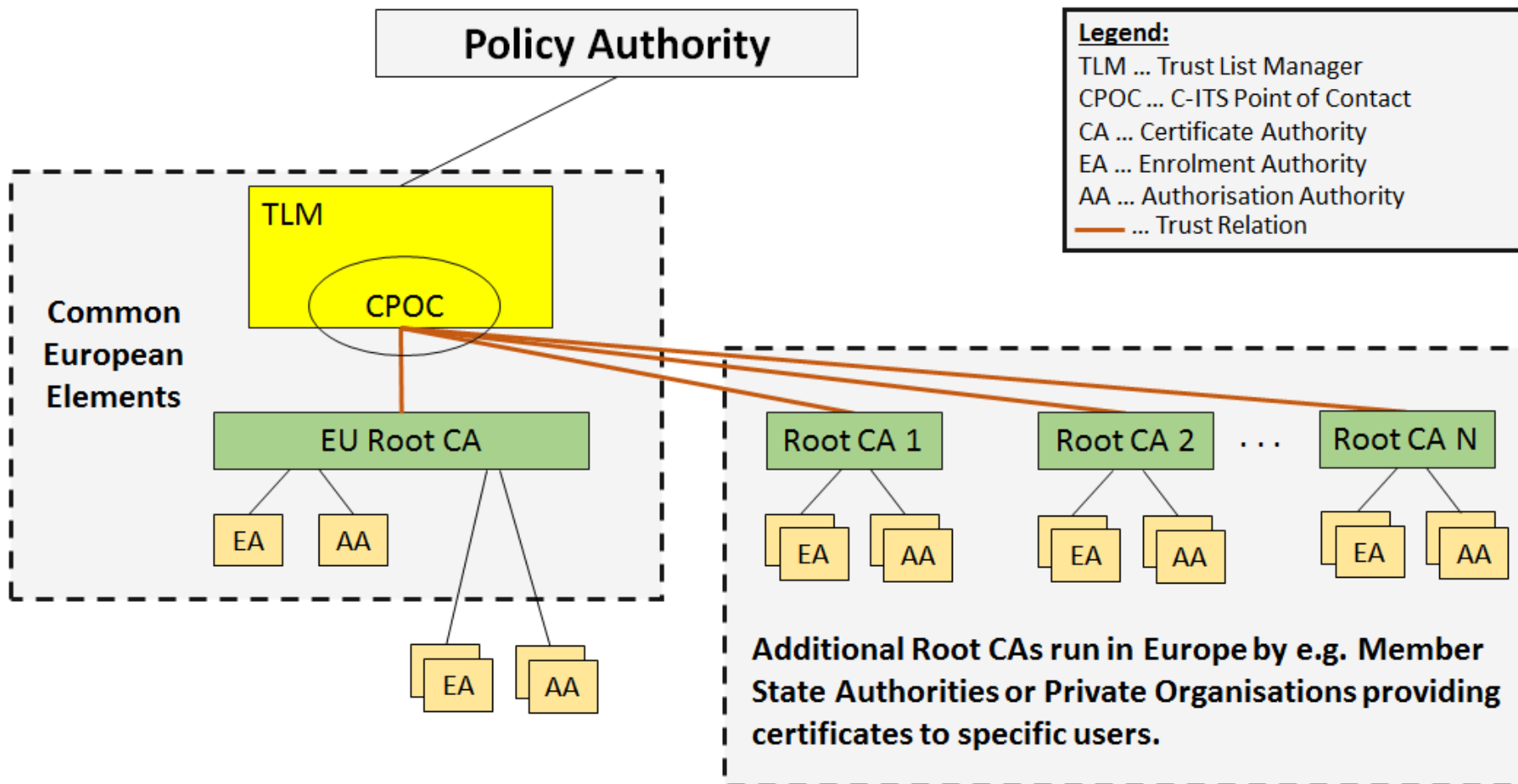
- The Commission will work together with all relevant stakeholders in the C-ITS domain to steer the development of **a common security and certificate policy** for deployment and operation of C-ITS in Europe. It will publish guidance regarding the European C-ITS security and certificate policy in 2017.
- **All C-ITS deployment initiatives** should participate in the development of this common security policy by committing from the beginning to implement future-proof C-ITS services in Europe
- The Commission will analyse the roles and responsibilities of the European C-ITS Trust Model, and whether some operational functions and governance roles should be taken over by the **Commission** (as, for instance, in the case of the Smart Tachograph).



Certificate Policy – Release 1



C-ITS Security EU Trust Model





Certificate Policy – Release 1

- Document is by definition a "living" document – the certificate policy will be updated in **future releases**.
- Document will be published on DG MOVE Website after this plenary meeting – Link will be circulated to you for broad dissemination
- **New functional Mailbox** setup as contact point:
 - MOVE-JRC-C-ITS-POLICY-AUTHORITY@ec.europa.eu



Open items / Next steps

- Resolve "yellow" parts in Certificate Policy towards next Release 2, including link to privacy discussions (authorisation ticket detailed values), standardisation activities, protection profile/compliance assessment
- Focus of work now shifted to second document: **Security Policy & Governance Framework for deployment and operation of European C-ITS**
 - **1st version to be published is almost finished**
 - **Work to continue through workshops organised by EC**



C-ITS Security – EU Support

Commissioner Maroš 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:

https://ec.europa.eu/commission/commissioners/2014-2019/sefcovic/announcements/speech-driving-future-platform-european-parliament_en



@Transport_EU

Mobility and
Transport

**CONNECTING
EUROPE**



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





European
Commission

Questions?



@Transport_EU

Mobility and
Transport

CONNECTING
EUROPE



WG Compliance assessment

C-ITS Plenary Meeting – DG MOVE
20 September 2017

Gilles Carabin



@Transport_EU

Mobility and
Transport

CONNECTING
EUROPE



Final Report / outcomes

- 12 meetings + several telcos
- Report: guidance for the EU compliance assessment process. approved on 12 July at WG level.
- Scope limited initially to requirements relating to existing standards, without precluding additional requirements as soon as standards are made available.
- Requirements are also based on the profiling of set of standards.
- Minimum requirements for conformance and performance.
- Compliance assessment methodology described, including specific methodology for roadside and vehicle C-ITS stations.

Final Report / outcomes

Emerging technologies

- **Cloud based solutions:**

All protocols currently used for these solutions are proprietary protocols, characteristics of these solutions are not public and compliance assessment of these solutions is excluded from this document.

The communication from C-ITS station is typically based on cellular technology. The compliance of the communication link can therefore generally be assumed to be covered by the GCF certification scheme.

- **LTE V2X using cellular**

For the two modes of LTE V2X that uses a cellular uplink to a server that is responsible for the distribution of the messages, it is assumed that for the communication part the RED combined with the GCF certification scheme would be sufficient to assure compliance of the communication.

- **LTE sidelink**

At this point in time, a first assumption would be that the main difference in terms of compliance for ETSI G5 and LTE sidelink would be covered by the requirement associated with the RED and all compliance assessment criteria above the access layer can be common.





Final Report / outcomes

- The report looks at existing and emerging technologies. Technology agnostic compliance assessment, but standards need to be validated for each new technology.
- The report looks also at requirements and compliance assessment methodology for:
 - End to end service tests/Quality of service assessment
 - C-ITS system scalability
- The report describes the detailed Roles and responsibilities of the different actors, as well as the general compliance assessment process.





Final Report / outcomes

3 main roles

- **C-ITS Governing Body**

Defines the requirements to the C-ITS Station, that fulfil the policy needs. The C-ITS governing body defines the operational and security requirements, which drive the definition of the compliance assessment test and procedures, which are coordinated by the Compliance assessment body, and defines rules (including conflict resolution process) for the resolution of issues detected by the C-ITS Supervision body. It is also its responsibility to maintain consistency with any other certification schemes.

- **Compliance Assessment body**

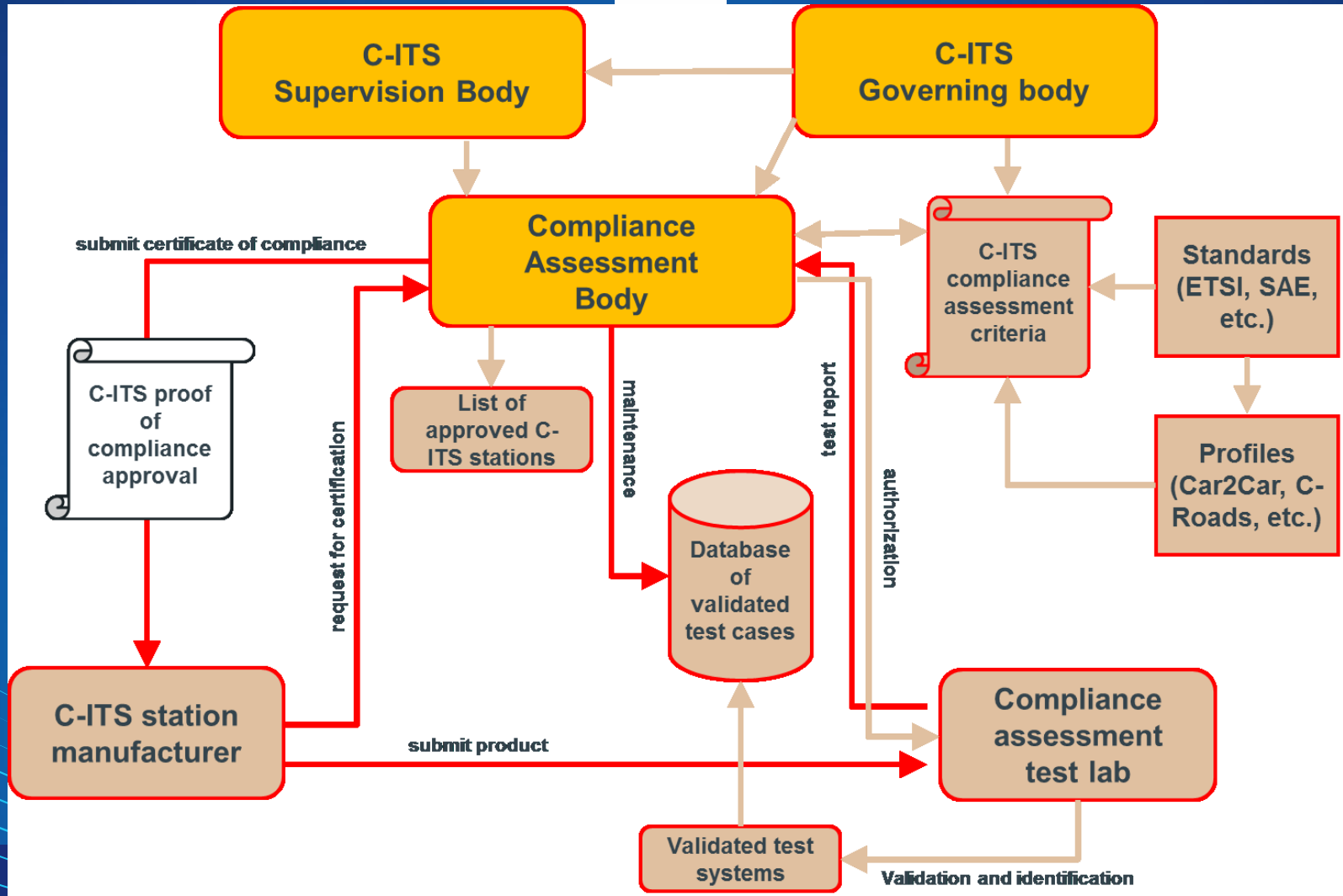
The central operational body in the compliance assessment process, it oversees the overall process, and manages the day to day Compliance Assessment operation. It defines the governing rules and procedures for the compliance assessment tests and procedures. It issues the C-ITS proof of compliance approval. Maintains the list of approved C-ITS stations.

- **C-ITS Supervision Body**

Is responsible for the detection of problems in the deployment and operational phase, which can be reported to the C-ITS Governing body and to Compliance assessment body for further analysis and action, on the basis of rules defined by the C-ITS Governing body. This requires a hierarchical organisation to be able to solve issues at appropriate level and/or report them to the appropriate level.



Overview of the compliance assessment process



Conclusions and recommendations

- The scope of the C-ITS Compliance Assessment process being described in this report is only considering the C-ITS Station level including isolated C-ITS Stations for the after sales and retrofit, and C-ITS Station being embedded in vehicles and RSU.
- However, this does not mean that C-ITS components and systems will not be validated, but their compliance assessment is out of the scope of the proposed organisation and is left to the private industries and Member States.
- It is important to note that the described CA process/organisation does not remove the need for the stakeholders to perform end-to-end and system testing.





Conclusions and recommendations

- Need to set up an appropriate common EU legal and technical framework to implement the proposed roles and compliance assessment requirements and process, which is summarised on the figure on the overview of the compliance assessment process.
- Main roles are governance (C-ITS Governing Body), operation (Compliance Assessment Body) and supervision (C-ITS Supervision Body). **Main decision body is the C-ITS Governing Body.**
- Any new C-ITS station must fulfil the compliance assessment criteria to be part of the C-ITS security trust model.
- Considering the challenging time schedule of setting up a final organisation as described by the Compliance assessment Working Group, progressive development of this organisation should allow for deployment in a relatively short timeframe (2019).
- After 2019, the proposed compliance assessment organisation should be able to also address and ensure interoperability of existing services and future C-ITS service extensions and technology deployments
- Moreover, the proposed organisation shall have the capability allowing the introduction of new services and/or new technologies in a backward compatibility manner with already deployed services.
- Need to finalise by second half 2018 the standards and profiles necessary to support the compliance assessment process for Day 1 services.
- Need to maintain consistency with any other certification frameworks.
- Further work is needed to elaborate a common EU framework to cover the roles defined by all WGs (compliance assessment, privacy/data protection, security).





European
Commission

Questions?



@Transport_EU

Mobility and
Transport

CONNECTING
EUROPE



WG Urban

C-ITS Plenary Meeting – DG MOVE
20 September 2017

Pedro Barradas



@Transport_EU

Mobility and
Transport

CONNECTING
EUROPE

Urban C-ITS



- The objective of C-ITS is to make road traffic safer and more efficient but in an urban context this is only one piece of a broader puzzle to build an integrated and more sustainable urban mobility system.
- The deployment of C-ITS in urban areas must therefore **support strong local policy objectives** and demonstrate how it can **improve** and **build** on top of existing ITS investments for **all** road based transport modes.
- If underlying political, financial, technical and operational barriers are not addressed the **timely** deployment of C-ITS systems in cities will be delayed.
- Urban stakeholders will choose which C-ITS services can best address local problems and bottlenecks but as deployment comes with a cost it must be fully suitable and effective in the urban environment and demonstrate it can directly benefit the citizen.
- In this context the need to widen the scope of C-ITS services to more urban specific use cases was recognised. Additional C-ITS services and extended functionality or user groups of existing Day 1 and Day 1.5 services relevant for the urban environment were identified by the WG





- A number of dedicated urban C-ITS projects and initiatives have produced valuable results and fostered exchange of best practises. However, further **dedicated urban C-ITS research** and pre-deployment testing and **urban C-ITS standardisation** initiatives will be crucial in the near future:
- The deployment of C-ITS services in urban areas across Europe will require the involvement and support of a wide range of **public and private actors** all of which have unique roles and responsibilities.
- In particular, both Member States and the European Commission have a role to enable the appropriate financial and technical support to facilitate C-ITS deployment. European Industry and standardisation organisations need to work closely with local authorities to better understand their **needs and requirements**.
- C-ITS initiatives and platforms must ensure the active participation of local authorities and future projects and deployment activities must address the defined research requirements. Local authorities and the public transport sector have a responsibility themselves to define their own C-ITS deployment strategies and engage with C-ITS stakeholders to define how C-ITS can best support their sector and local context.

Urban Automation



- For cities across the EU, the potential arrival of automation raises the prospect of safety issues, increased traffic and consequently worsened pollution and congestion if not **tailored and shaped towards the needs** of local authorities.
- Before automated vehicles are commercially available and while the legal framework is not yet finalised, there is a **window of opportunity** for local authorities to **plan** how automated vehicles will be managed and operated in their city and what **mobility services** can be offered.
- Local authorities have a range of possibilities in shaping how automated vehicles can operate in their city, but to properly and effectively prepare, local authorities need a clear and realistic timeframe of when automation will arrive. However, at present there is **no** commonly agreed view amongst all urban and industry stakeholders of when automation will arrive, which therefore makes it difficult for local authorities to effectively and confidently conduct such planning. Short term actions:

- 1. Demonstrate how automation should be used to support integrated and sustainable urban mobility through optimal and sub-optimal use cases;**
- 2. Identify which tools and enablers can be used by urban stakeholders to influence the operation of automated vehicles and what they need to prepare for;**
- 3. Ensure the complementary of Urban C-ITS deployment and higher levels of automation**





European
Commission

Questions?



@Transport_EU

Mobility and
Transport

CONNECTING
EUROPE



WG Business Models

C-ITS Plenary Meeting – DG MOVE
20 September 2017

Guus van de Schouw



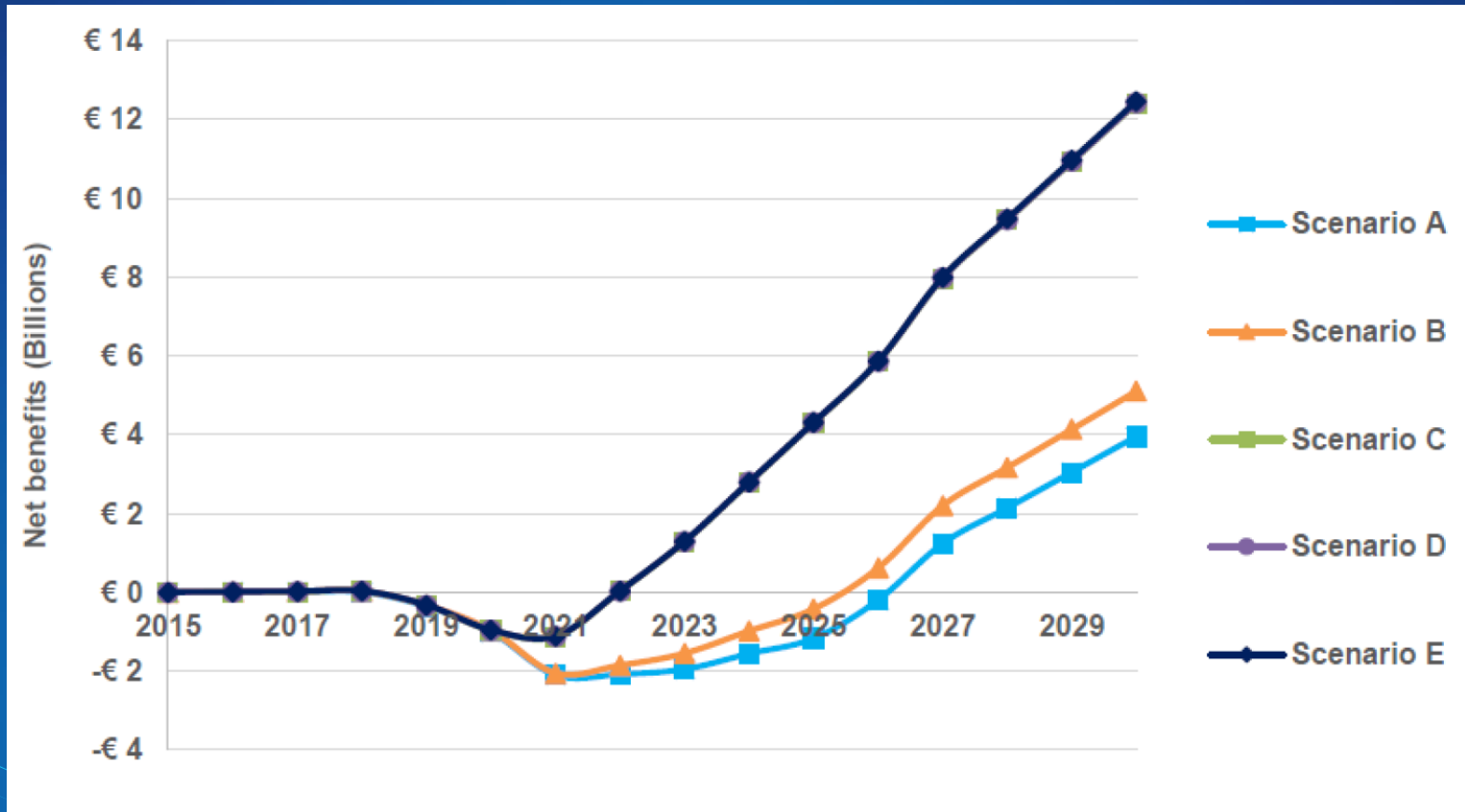
@Transport_EU

Mobility and
Transport

CONNECTING
EUROPE

The issue (1/2)

- C-ITS requires the involvement of stakeholders from different industries and the public sector.
- The decision to deploy has to be based on sound and convincing business cases for all actors along the value chain.
- Cost-benefit analysis shows benefits strongly outweigh the costs, but these benefits will only materialise over time, and depend strongly on coordinated and accelerated deployment.
- A large part of these benefits go directly to the users / society at large, while the costs of investment and operation need to be borne upfront by road operators and vehicle manufacturers.



The issue (2/2)

- C-ITS are not yet a mature and independent market that can operate without governmental support. A critical mass of services, infrastructures and vehicles needs to be put in place.
- To cross this gap the transition of C-ITS services from the testing phase to large scale deployment needs to be supported
- A sound and shared understanding of business models for C-ITS is needed, which reduces uncertainties about the value that is created for all stakeholders who invest.





Objectives and scope

The Working Group aimed to:

- Raise awareness on different business models for C-ITS services
- Investigate interest in, and mutual understanding of, business models
- Explore process for creating a business model for the C-ITS eco-system
- Identify barriers and / or issues that need addressing





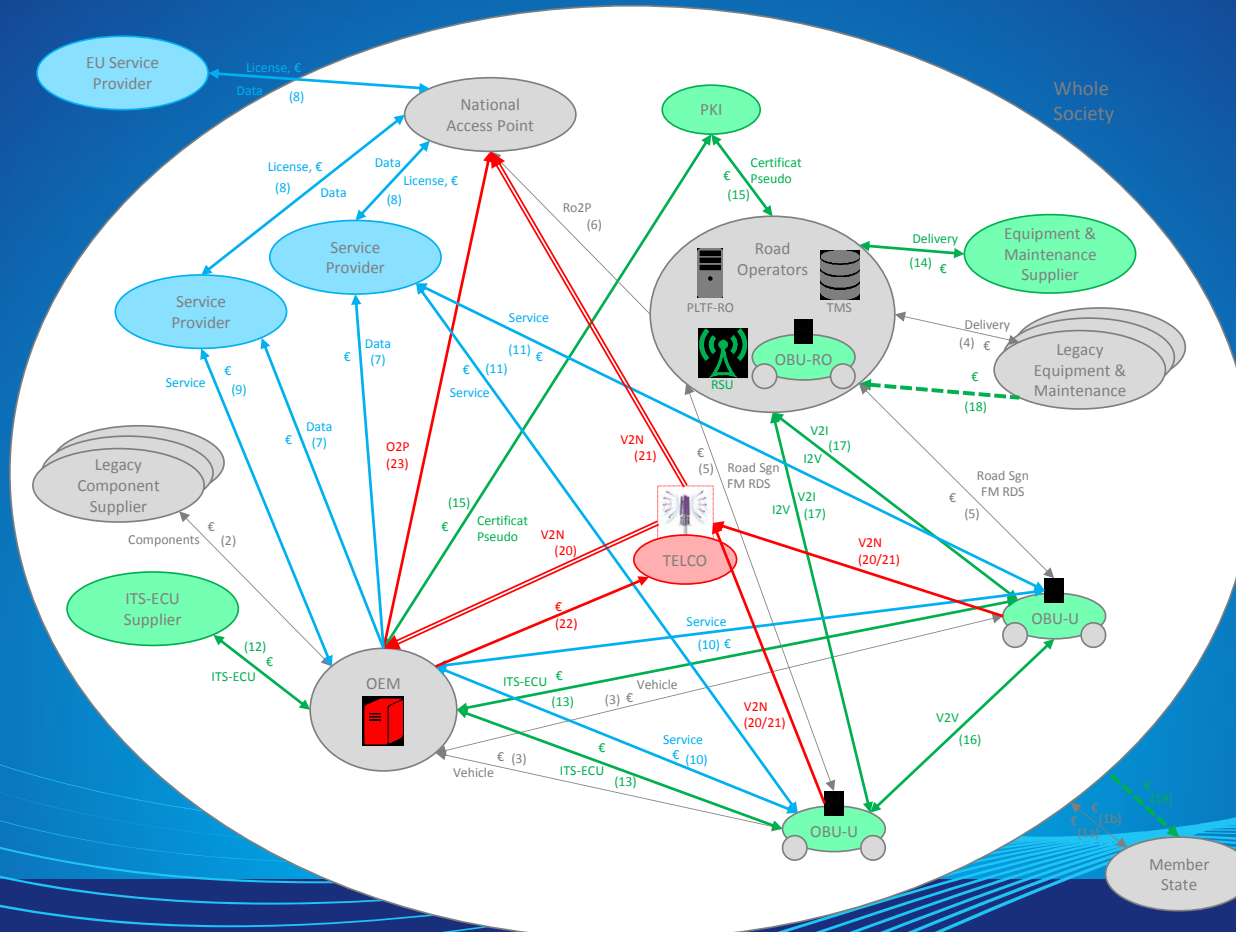
Analysis (1/3)

- A Business Model describes the way in which organizations produce and deliver value to their customers/consumers.
- C-ITS market is a dynamic, developing market => primary focus on the qualitative features of the business model.
- Value chain model and value network model (and their combination) are most useful to describe and discuss C-ITS business models with multiple stakeholders.

Value chain

Generic value chain for traffic information incl. detailed process steps		Content provision										Service provision										End User		
		Content Collection					Content Processing					Service Provision					Service Presentation							
Road Works Warning (Short Term) - Germany - ETSI ITS G5		Detection	Data delivery	Data reception	Data pre-processing	Data delivery	Communication	Data reception	Content fusion	Data processing	Quality check	Content delivery	Communication	Content reception	Content fusion	Service generation	Pre-formatting	Service delivery	Communication	Service reception	Service decoding	Info fusion	Service rendering	Service presentation
Roles	Example Actors																							
R-ITS-S Operator	Hessen Mobil	X	X (IRS)	X	X	X																		
C-ITS-S Operator	Hessen Mobil							X	X	X	X	X		X	X	X	X	X	X					
Communication Provider	Telekom, Unity Media, fixed cable			X			X						X											
Service Application Provider	TomTom, INRIX, Here																							
V-ITS-S Operator	Volkswagen, Opel ...																		X	X	X	X	X	X
TCC Operator	Hessen Mobil					X (Road Works Management System)																		
Road Infrastructure Operator	Hessen Mobil	X	X (Road Works Safety Trailer)																					
Infrastructure PKI Operator	tbd																							

Value Network





Analysis (2/3)

- The Working Group developed a description of C-ITS business models from various stakeholder perspectives to identify key motivations and issues for each stakeholder group in deploying C-ITS.
- Included public road authorities, private road operators, city authorities, service providers, vehicle manufacturers and end users.
- WG consisted of small group of active stakeholders, for the further development and refinement of C-ITS business models it is critical to engage with a broader group of stakeholders.



Analysis (3/3)

Key issues:

- How will we determine costs & benefits of C-ITS?
- How will services be financed?
- How will the delivery of services be realized?



Recommendations (1/2)

1) Report on benefits and costs of C-ITS

- C-ITS deployment projects and pilots should report on the costs, impacts and benefits of C-ITS services.
- Results should be compiled & synthesized.
- Assess allocation of costs and benefits between the various stakeholders.

2) Form the governance layer of C-ITS and determine the costs associated with the delivery of services

- Elements of the governance layer bring with them development and common costs which are to be shared by the actors.
- Data needs to be gathered, both within and outside projects, keeping track of the parties and activities incurring these costs.



Recommendations (2/2)

3) Agree on access to data for C-ITS services

- Access to all relevant data will facilitate not only C-ITS services but also a number of other services, with considerable economic value.
- An agreement on access to data should be found, including business model-related questions of data licenses, formats, interfaces, privacy etc.

4) Establish quality levels for data

- Established quality levels limit risks to all parties in their business models.
- Data provided to National Access Points and in-service delivery should have an agreed (minimum) level of quality.



WG Road Safety

C-ITS Plenary Meeting – DG MOVE
20 September 2017

Casto López Benítez



@Transport_EU

Mobility and
Transport

CONNECTING
EUROPE



Scope

Assess C-ITS day 1 and day 1,5 services to:

- Identify road safety benefits and challenges
 - Focus on interaction with road users
 - Identify effects on driver/user behaviour
 - Identify adaptations to traffic rules
 - Identify HMI challenges

Methodology

- 6 meetings
- Presentations on specific topics followed by discussion
- Written contributions on the basis of a template





Conclusions

- C-ITS assessed (studies, projects ..) as capable of contributing substantially to road safety
- C-ITS safety potential more apparent with the current connected and automated driving (CAD) developments
- C-ITS Day 1 and some Day 1.5 safety applications are mature enough to significantly contribute to the prevention of vehicle collisions
- MS budgetary constraints make it difficult to invest in infrastructure. Authorities need to see continuity in the European Commission's plans for gradual C-ITS deployment



Recommendations (General)

- EU should encourage C-ITS services for all vehicles and road users, ensuring interoperability amongst the different players to facilitate a fast European-wide deployment.
- C-ITS stakeholders should work together with WP29 and WP1 to promote safety C-ITS implementation
- European Commission to define a clear set of short-term targets for C-ITS deployment and timeline with enabling actions.
- European Commission should further encourage innovation projects and pilots involving all stakeholders.





Recommendations (priority services)

- Highest safety potential :
- Day 1 services
 - In-vehicle speed limits (including dynamic speed limits)
 - Emergency electronic braking light
 - Road works warning
 - Weather conditions
 - Hazardous location notification
- Day 1.5 services:
 - Intersection safety
 - Vulnerable road users protection





Recommendations (Human-machine Interaction)

- Human-machine interaction must be addressed in a comprehensive manner: in-vehicle human-machine interface should be designed to integrate all interactions between the vehicle and the driver.
- The underlying principle for the design of human-machine interface should be a safe operation of the vehicle.
- HMI, in particular for C-ITS systems, should be tested and designed taking into account the human capabilities.



Recommendations (Human-machine Interaction)

- Danger warnings: information provided to the driver should be limited to the minimum necessary for understanding and taking adequate action in the available time frame
- Timing of alerts adapted to the emergency of the situation
- To be assessed if for time-critical use cases, C-ITS messages should provide the driver with information only on his/her expected behaviour (what to do)



Driver behaviour

- C-ITS may change driver behaviour
- Address, mitigate 'compensation effects'
- Consider effects of assistance and automation on driver's skills
- Adapt driver training, testing and licencing
- Inform drivers about safety features in the vehicle
- Vehicle manufacturers provide information about the C-ITS technologies fitted
- Assess risks incurred by mix of equipped and non-equipped users.



Traffic rules

- Traffic rules may in some cases need adaptation (as a results of C-ITS services, driver assistance systems and automated driving functions ...)
- Such adaptation should be coherent in all Member States' traffic rules, so that C-ITS services (and any other technology) may be effectively used in the same manner across EU while respecting traffic rules.



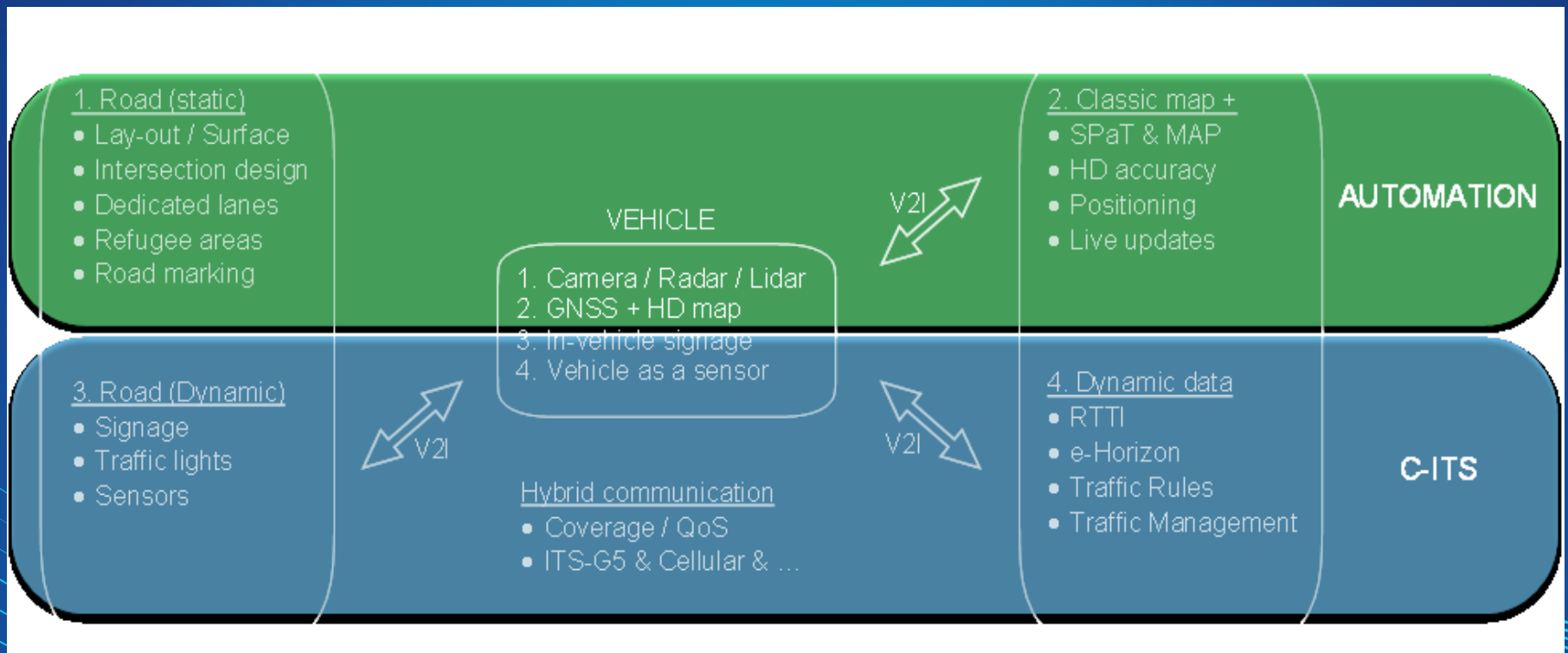
WG Physical & Digital Road Infrastructure

C-ITS Plenary Meeting – DG MOVE

14 June 2017

Geert Van Der Linden

Overview



Starting Point

- Is it needed for Support or a Prerequisite for Automated Vehicles?
 1. YES = how can we make progress faced with slow infrastructure changes and budgetary restrictions?
 2. NO = why are we all in this working group?
- C-ITS Services / Automation Use Cases ⇒ what is the Context?
 1. Identify concrete problems, issues or needs
 2. Look for solutions where Infrastructure could support



Progress Report / outcomes

- 11 meetings were held
- All issues were grouped in 4 categories:
 - 1) Support environment (e.g. Traffic rules)
 - 2) Event handling (e.g. construction sites)
 - 3) Cooperative driving (e.g. complex intersections)
 - 4) Digital infrastructure (e.g. consistency)

Progress Report / outcomes

- Looking for common elements the following areas were identified for recommendations:
 - 1) Physical and digital infrastructure support for automated mobility
 - 2) Roads for automation
 - 3) Connectivity for automation
 - 4) Position support
 - 5) Handling complex traffic situations / Intersections
 - 6) Consistency physical / Digital
 - 7) Legal aspects of Digital Infrastructure

Progress Report / outcomes

- **1) Physical and digital infrastructure support for automated mobility**
 - True level 5 may never happen, it also may not be needed
 - Focus on level 4 islands where infrastructure investment makes sense to integrate automated vehicles in the mobility system

- **2) Roads for automation**
 - Identify key attributes of roads relevant for automated driving
 - Standards in Management of Electronic Traffic Regulations
 - Investigate the (regulatory) consequences of Quality of Service



Progress Report / outcomes

➤ 3) Connectivity for automation

- We set out to find synergies between C-ITS and automation but this conclusion came from the issues identified
- Support from the infrastructure (particularly in the form of data) needs to be communicated
- Automated vehicles will (need to) be connected and cooperative
- hybrid approach from Phase I still fully valid

Progress Report / outcomes

➤ 4) Position support

- All automated road vehicles will need (lane) accurate positioning and improved GNSS alone will not be sufficient
- Cameras, radars and lidars will help the vehicle "see" and position itself but these systems need reference points for fast matching with sensory input
- In an Urban environment buildings could likely provide these reference points
- Investigate how physical and digital infrastructure can contribute to redundancy and safety in accurate positioning, e.g. provide landmarks in high risk road sections or work zones

Progress Report / outcomes

➤ 5) Handling complex situations

- Complexity from road lay-out and challenging intersections
- Complexity from cross-traffic (including VRU & other modes)
- C-ITS evolving from awareness (I share where I am) to perception data (I share what I see)
- We need to define common operational environments for collective perception and a new set of C-ITS messages
- We need standardised C-ITS messages for traffic regulations
- We need specific standards on the context and the interpretation boundaries

Progress Report / outcomes

➤ 6) Consistency physical / Digital

- Physical infrastructure will increasingly be complemented by digital. To avoid confusing and potentially dangerous situations consistency is vital
- Collectively work on the accelerated and joint implementation – by public and private stakeholders – of existing and future Delegated Acts under the ITS directive

➤ 7) Legal aspects of digital infrastructure

- A clear legal framework – including traffic regulation – will be essential to avoid (new) conflicts between information coming from physical and digital infrastructure, and establish precedence regarding information.



European
Commission

Questions?



@Transport_EU

Mobility and
Transport

CONNECTING
EUROPE



WG Enhanced Traffic Management

C-ITS Plenary Meeting – DG MOVE
20 September 2017

Pedro Barradas



Progress Report / outcomes

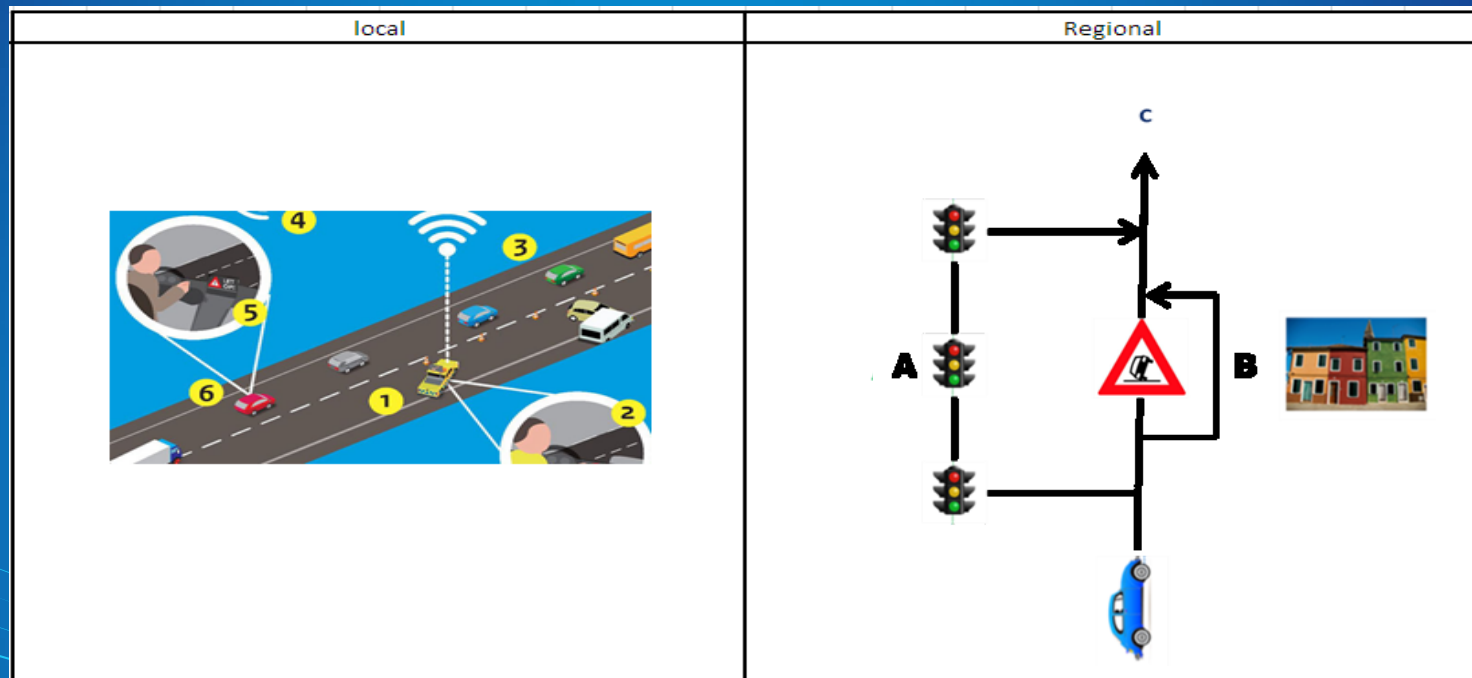
- 11 meetings held
- 1st Draft Report circulated in June. A lot of feedback received over the consolidation process. Final version circulated on the 7th of September
- The discussion combined a **top-down with a bottom-up approach**:
 - The Balanced Score Card provided the right mind-set to foster Cooperation. Experts were asked to think as belonging to an 'Organization' (or a community).
 - The methodology delivered **from the Vision to the Project Pipeline.**

Progress Report / outcomes

- The operational approach made use of all the concepts presented and aimed to understand what Cooperative Traffic Management means **in practice**.
- The group discussed how Cooperative Incident Management could take place in the future, **as compared to today's**, helping to:
 - Establish new processes in which organisations interact;
 - Address the needs of Data exchange and digitalisation;
 - Make cooperation more binding by taking up the shape of an agreement or a contract.

Cooperative Traffic Management

- Scenario for Cooperative Incident Management, was established and a three-step approach was proposed.

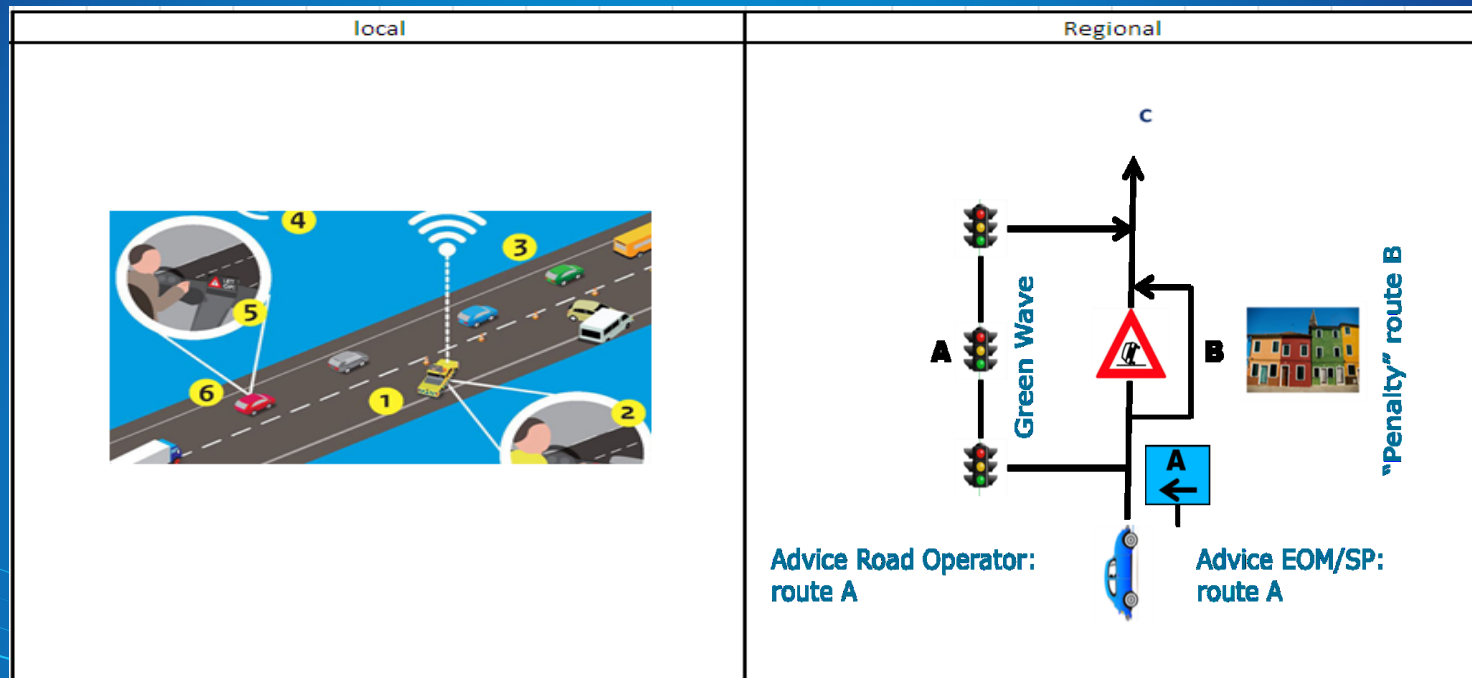


Cooperative Traffic Management

- Scenario for Cooperative Incident Management, was established and a three-step approach was proposed:
 1. **Detection** of an incident, using current and future sensors (loops, floating vehicle data);
 2. Creation of an **Common Operational Picture**;
 3. Implementations of **Local and Regional traffic management measures**.
- **Local measures** can help to change lane or adjust speed, improving safety and flow efficiency, using appropriate V2V and V2I communications.
- **Regional measures** relate to the tactical operational instruments to put into place, such as Traffic Management Plans. Depending of the scenario, the Regional measures can be understood as a recommendation or an obligation.

Cooperative Traffic Management

- Scenario for Cooperative Incident Management, was established and a three-step approach was proposed.

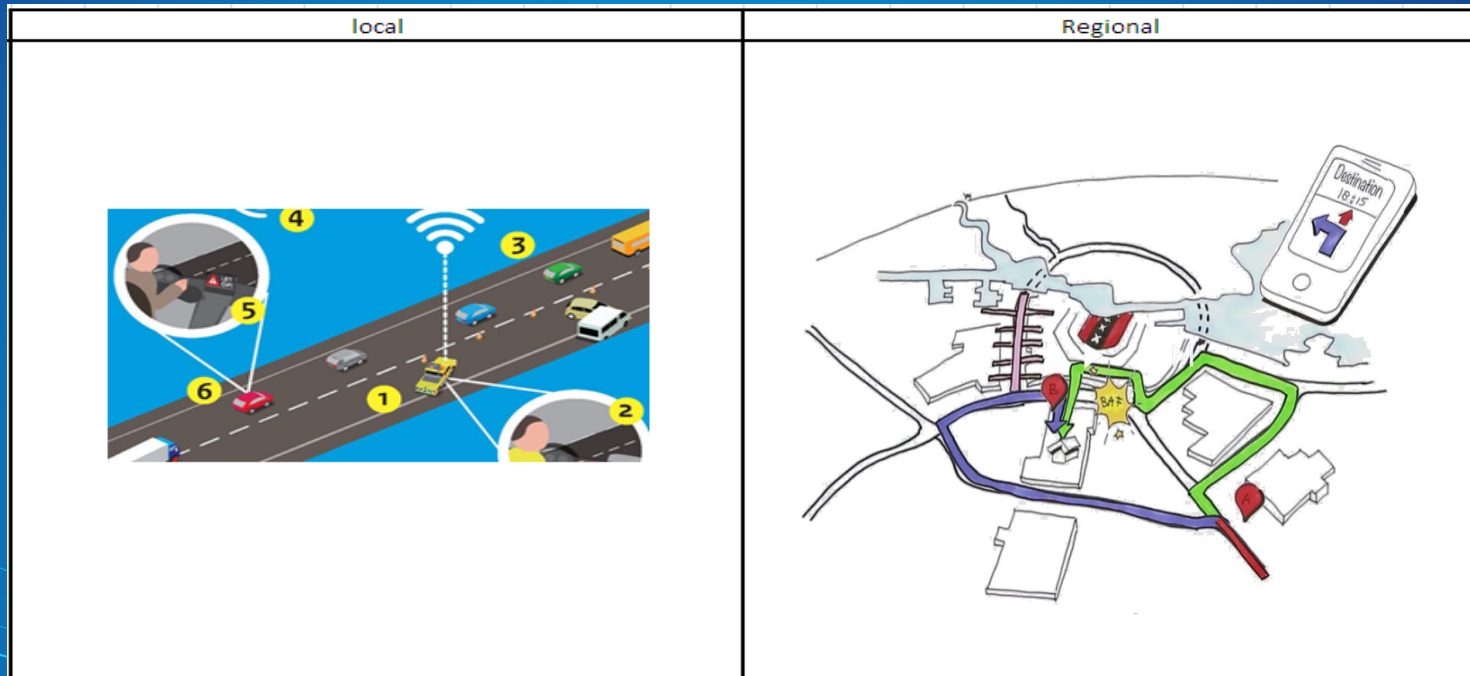




European
Commission

Cooperative Traffic Management

- Scenario for Cooperative Incident Management, was established and a three-step approach was proposed.



Cooperative Traffic Management

- The Common Operational Picture.
- A Common Operational Picture (COP), a term widely used in the military domain to **support situational awareness** but often refereed within incident and event management activities, should be **jointly developed and implemented** by all public and private actors, in order to support the required collaborative approach and efficient combination of efforts, towards the safe and efficient delivery of traffic management services.
- At the operational level, setting up Cooperative Traffic Management Services, in order to mitigate the incident situation, will be the **result of combined actions from multiple public agencies and private-sector organizations.**

Cooperative Traffic Management

- The group agreed on the need to **encourage public and private cooperation** and data sharing, but also recognised the slightly different perceptions of the cooperative benefits by public and private stakeholders.
- As the private sector understandably focuses on their customers, developing added-value services and commercially well-defined business models, an agreement with Public Authorities on how they will **share the responsibility of managing traffic** is needed.
- In order to cope with more complex and more flexible scenarios, and taking into account the long period of mixed traffic conditions, expected far beyond 2019, the group concluded that **Traffic Management should move from centralized to more decentralized or distributed governance models.**



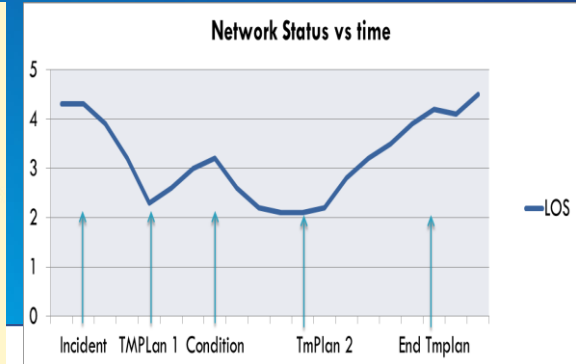
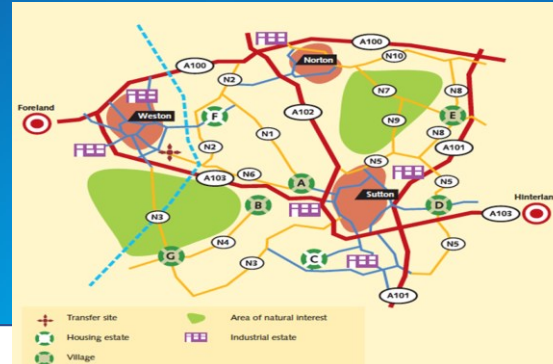
Cooperative Traffic Management

- Therefore, Cooperative Traffic Management Services need to be developed under a clear governance framework, in order for Public authorities to preserve their role, without compromising the commercial competitive advantages of Services Providers and OEMs.
- Cooperative Traffic Management Services will need to be well-orchestrated, as they **depend on combined efforts from those involved in the service value-chain**, both from the public or private sector.
- To help Public authorities play the role of the orchestra conductor and **translate their mobility plans into 'standardized exchangeable data'**, the Working Group conceptualized a specific set of important tools that need to be developed
- The 4 Building blocks for digital Traffic Management Plans .



Cooperative Traffic Management

- Building Blocks for Traffic Management Plans



Steps

Road classification and priority

Zoning (identify areas to avoid)

Define Minimum Network Performance

Define Trigger Levels

Establish Agreements

Which Parties?

Public

Public, working with private organisations

Public

Public – Private Cooperation

Public – Private Cooperation

Supporting Tools

Common Operational Picture Tools



European
Commission

Questions?



@Transport_EU

Mobility and
Transport

CONNECTING
EUROPE



Final comments on the overall report?



So what comes next?

Cooperation

Users and
infrastructure
**coordinate their
actions**

Connectivity

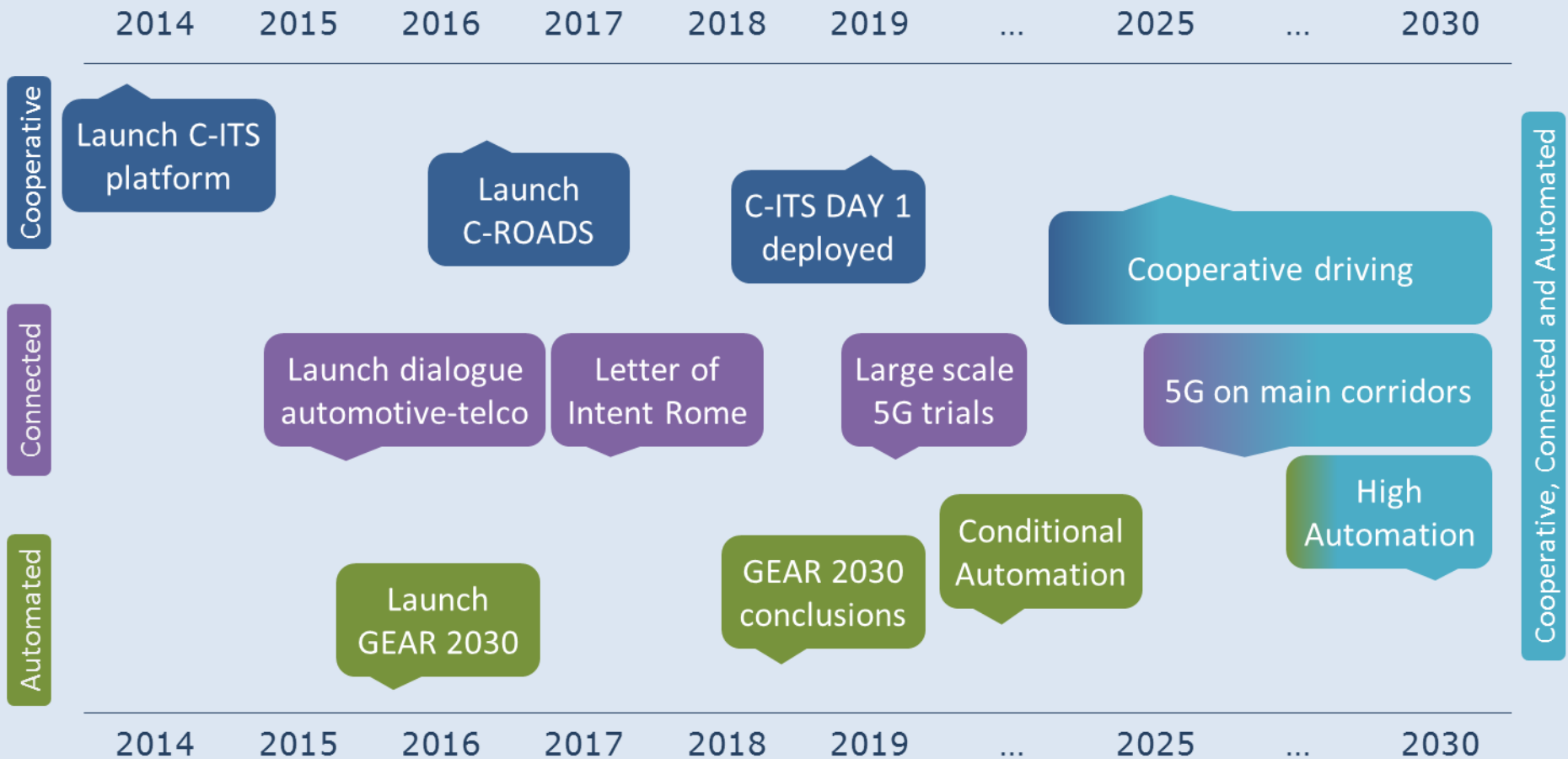
Users and
infrastructure
**exchange
information**

Automation

Vehicle **takes over
tasks** from driver



Stakeholder Platforms for shared Visions





CCAM Toolbox

