



Ricardo
Energy & Environment



Evaluation of ITS Directive 2010/40/EU

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Stakeholder Workshop
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Disclaimer

- This presentation presents draft conclusions/recommendations. Any views expressed are preliminary views and may not in any circumstances be regarded as stating an official position of Ricardo Energy & Environment or the Commission.

- Introductions
 - Objectives of the study and the workshop
 - Presentation of the methodology
 - Baseline scenario
 - Implementation status & assessment of progress
 - Analysis of evaluation questions & initial findings
 - Next steps

Project team

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- Edina Löhr
- Marius Biedka
- Ian Skinner (TEPR)



Objectives of the study

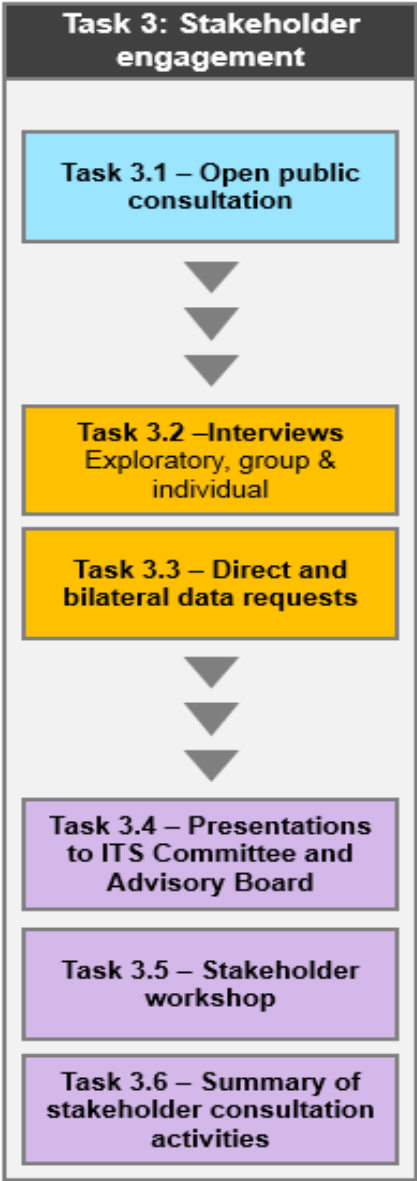
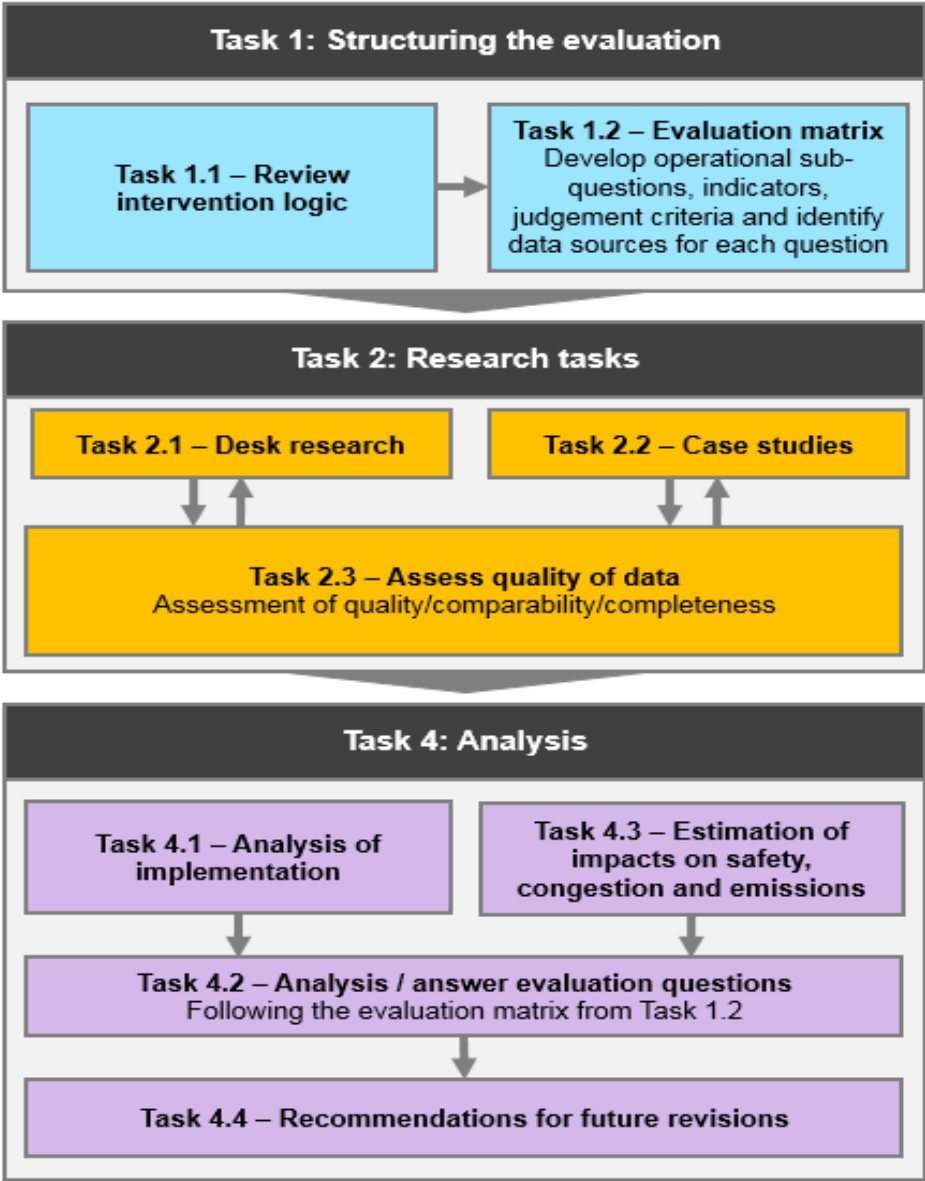
- Update on the status of the implementation of the ITS Directive
- Assess **effectiveness** of the Directive in achieving its objectives
- Identify impacts/benefits so far and, if possible, quantify them
- Identify the parameters/factors that determine effectiveness
- Assess **costs** of implementation and the ratio of costs to benefits
- Examine **relevance** of the objectives of Directive in relation to initial needs and with current/new developments – appropriateness to respond to new trends
- Assess **coherence**: internally (among provisions and with Delegated acts) and externally (with other EU legislation and policies)
- Verify **EU added value** (i.e. in comparison to action at other levels)

Objectives of the workshop

- Present the main findings of the study and preliminary results
- Obtain feedback (views, data, etc.) from stakeholders to validate/correct the analysis and conclusions:
 - During the workshop
 - Following up period (by 4th May)
- Gain stakeholder input on the recommendations in terms of relevance and feasibility (afternoon session)

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Overview of methodology



- **National reports from Member States**
 - Review of national reports submitted in 2011, 2014 and 2017 and 5 year plans (2012)
 - 2017 reports submitted from 20 countries.
- **Literature**
 - EC studies, deployment projects, web-based resources
- **International case studies looking at Australia, Japan and the U.S.A.**
 - Evaluate the ITS policy strategies adopted by other countries and compare with the EU
 - Desk research and 4 interviews with national policymakers in the countries and ITS service provider

- **Four group discussions (one for each Priority Area):**
 - Group discussion to address data/information gaps from the desk research, validate results of the analysis based on multiple views
 - 22 stakeholders involved
- **6 additional individual interviews with experts (low response rate)**
- **Data requests to national authorities**
 - Collect additional input to cover any data gaps
 - 10 responses (AT, EL, FI, IE, NL, SE, CZ, LV and SI)
- **Presentations to stakeholders**
 - 2 presentations to Member States in the ITS Committee meetings
 - Presentation to wider stakeholder group during this workshop

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Baseline scenario



- An assessment of the baseline scenario levels of ITS deployment was undertaken to use it compare to the progress made under the Directive
- Assumptions on expected progress on the basis of initial impact assessment study, other support studies, inputs from stakeholders and third country cases
- Analysis of expected development by priority area/action focusing on:
 - Expected development in legal framework and harmonised standards
 - Expected investment in relevant ITS infrastructures (public/private sector)
 - Expected level of cooperation and focus on interoperability
 - Expected level of deployment of ITS services and their use

- The baseline scenario identified the following issues at the time of the adoption of the Directive:
 - No clear vision or governance resulting in incoherent and unfocused ITS deployment – focus on local needs
 - Lack of effective cooperation platforms
 - ITS development and deployment limited in functional and geographical scope
 - Lack of interoperability of applications, systems and services resulting in fragmented ITS deployment
 - High start up costs
 - No clear business models for a number ITS services
 - No clear rules governing the collection and exchange of (traffic) data and privacy matters

- Under the “no action” scenario the situation would be expected to evolve as follows :
 - Fragmented legal framework across the EU
 - Legal/juridical implications to remain unsolved or addressed in an isolated way
 - Limited and ad-hoc cooperation in the context of existing for a (such as eSafety forum) and platforms (e.g. ERTICO)
 - Public sector awareness to remain limited in many Member States
 - Limited level of investment, except in a few leading Member States
 - Low level of market uptake of ITS services, due to lack of data availability and higher deployment costs
 - Missed opportunities to use ITS to tackle expected increases in congestion, accidents, and emissions

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Implementation of the Directive



- Primarily based on analysis of Member States' national reports, complemented by other key pieces of literature and inputs from stakeholder engagement activities
- It includes:
 - A description of activities at EU level since the implementation of the Directive
 - An overview of the current state of ITS deployment across the EU, by priority area
 - An assessment of the progress achieved since the implementation of the Directive, by priority area and priority action
 - An overview of ITS key performance indicators (KPIs) that are to be used to establish progress in ITS deployment, quantify the benefits and track the level of investment in Member States

Progress so far - approach



- Based on information in the 2017 national reports, countries were rated from 1 (very active) to 4 (not active) using objective criteria (example below)
- Expert (subjective) judgment was still necessary
- No/limited information in some Member States – did not allow assessment
- We assessed progress since 2014 based on: i) difference between ratings in both years, and ii) qualitative assessment of activities reported in both reports

Criteria for Priority Area I

Rating	Activity	Explanation	Progress
4	Not active	No activities reported within this priority area in the national report	No progress
3	Less active	NAP for either priority action b or c implemented, or no NAP implemented but evidence of other projects or activities	Some progress
2	Active	NAP for both priority actions b (with some dynamic data) and c implemented. Or, NAP for one set of data implemented, with evidence of other projects or activities within this priority area	Good progress
1	Very active	In excess of rating (2), with a significant number of projects reported or widespread availability of dynamic information	Excellent progress

Priority Area I



- Good progress in deployment of NAPs for the provision of information within the three priority actions – use of DATEX II standard through Crocodile II
- Improved data collection infrastructure in many Member States
- However, services that use this data are still in the early stages of deployment.

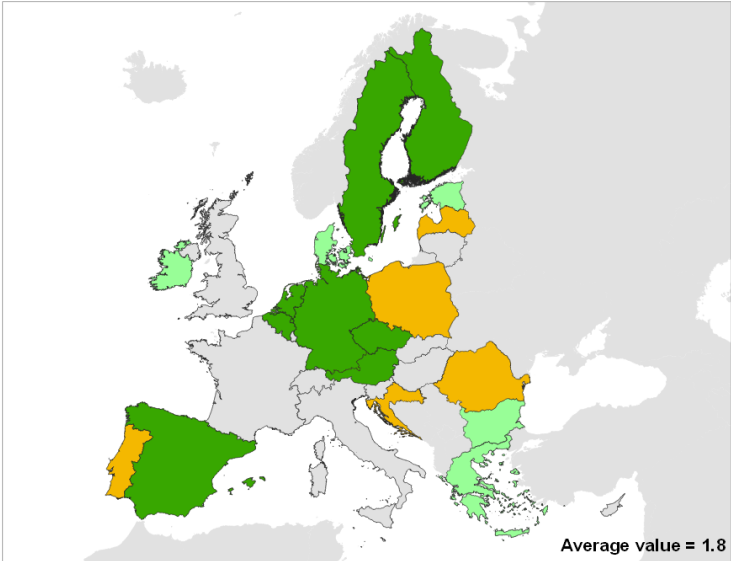
Progress in NAP implementation across the EU-28 and Norway

NAP status	Multimodal travel information	Real-time traffic information	Safety-related information
Operational	8	15	17
In development	11	5	6
No action	0	1	0
No information	10	8	6

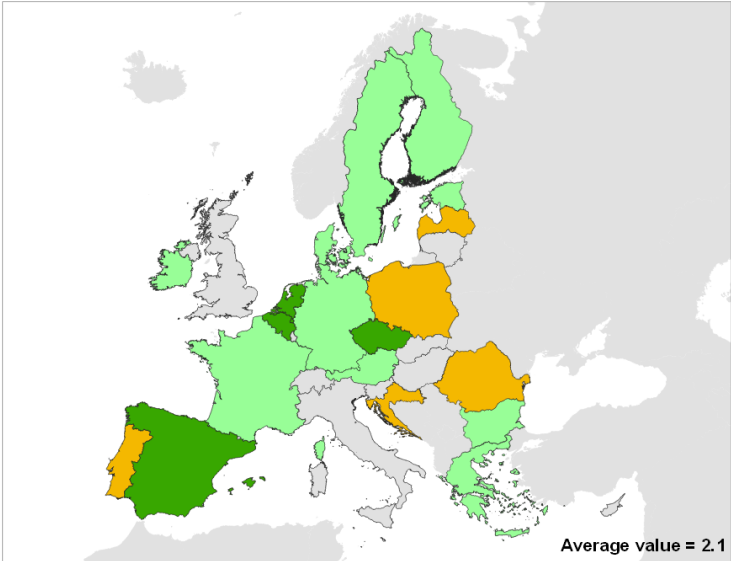
Note: Table shows the total number of countries for each status and priority action

Priority Area I

Status of Implementation in 2017



Progress since 2014



Priority Area II

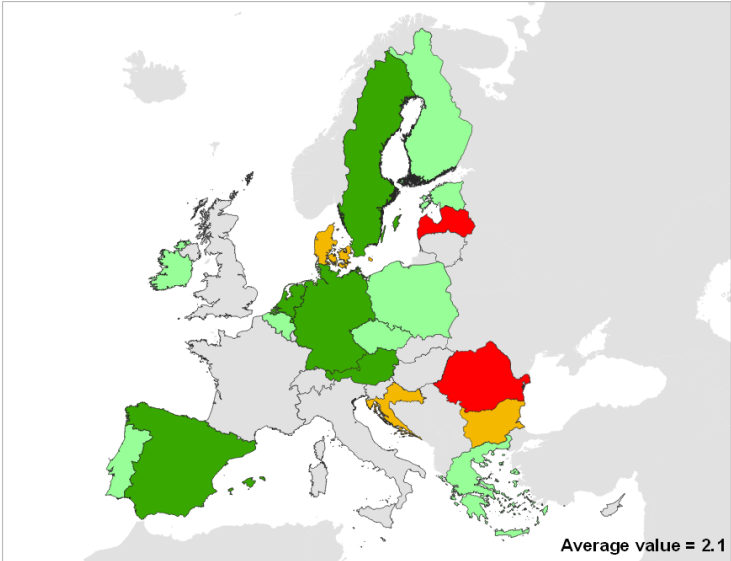


- Good progress in deployment of traffic management systems and ITS infrastructure related to continuity of services
- Important role of the EU funded actions (e.g. Arc Atlantique) and European ITS platform
- 60% of national authorities asked felt that intermodal traffic management systems have been moderately developed
- 50% considered e-freight services have been moderately developed
- Lack of KPIs make it difficult to estimate the coverage across the EU

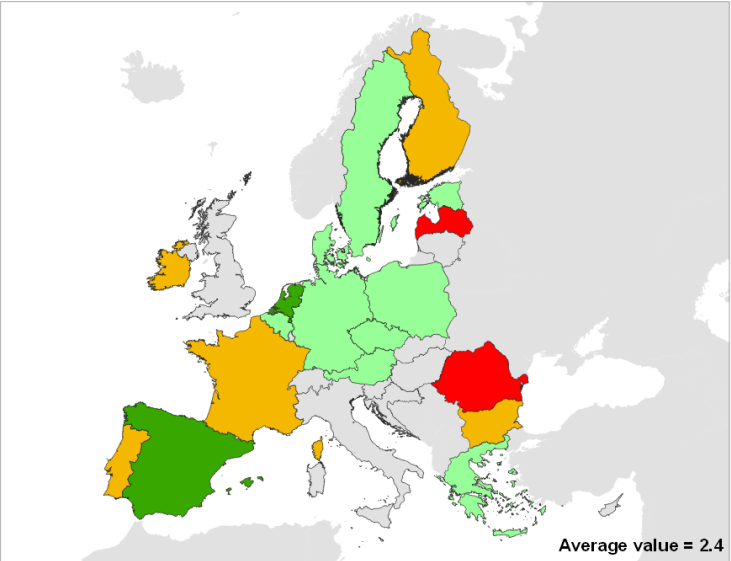
Priority Area II



Status of Implementation in 2017



Progress since 2014



Priority Area III



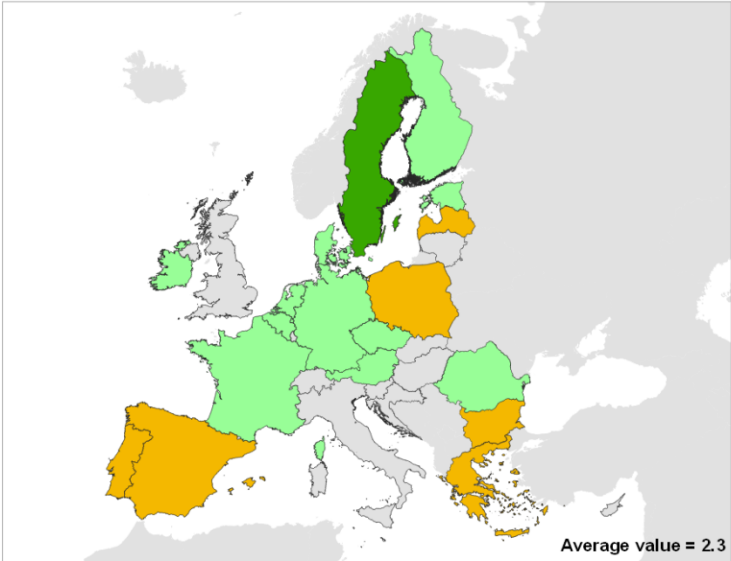
- Fewer activities in this area compared to Priority Area I and II
- However, good progress in deployment of PSAPs in preparation for eCall and in establishing NAP for safe and secure truck parking information services
- Limited progress in other areas, such as in-vehicle communications security and safety of VRUs

Progress in NAP implementation across the EU-28 and Norway

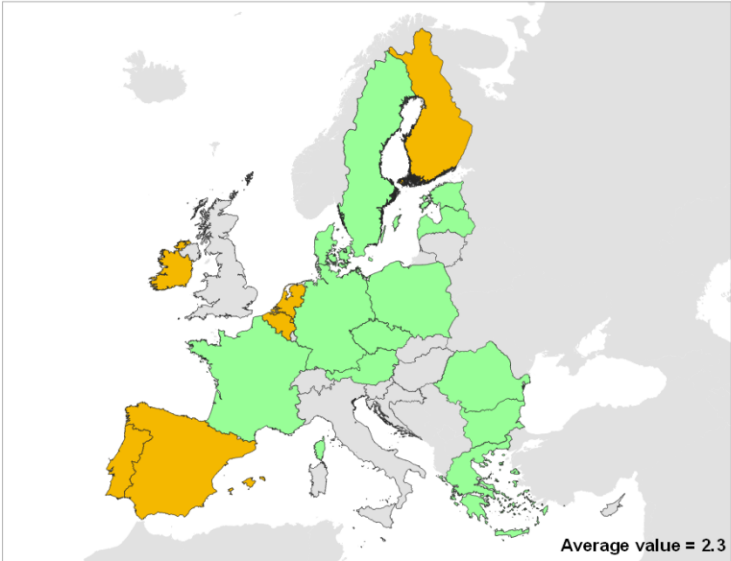
NAP status	eCall PSAP status	Safe and secure truck parking info
Operational	24	12
In development	4	8
No action	0	6
No information	1	3

Priority Area III

Status of Implementation in 2017



Progress since 2014



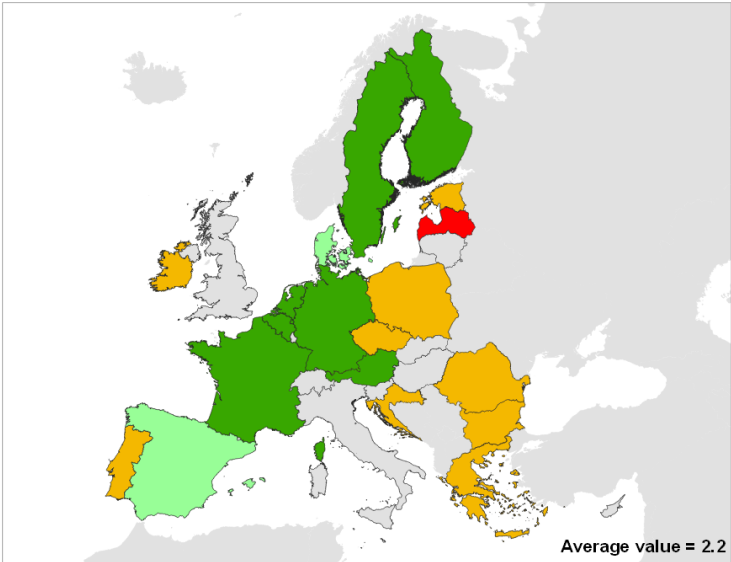
Priority Area IV



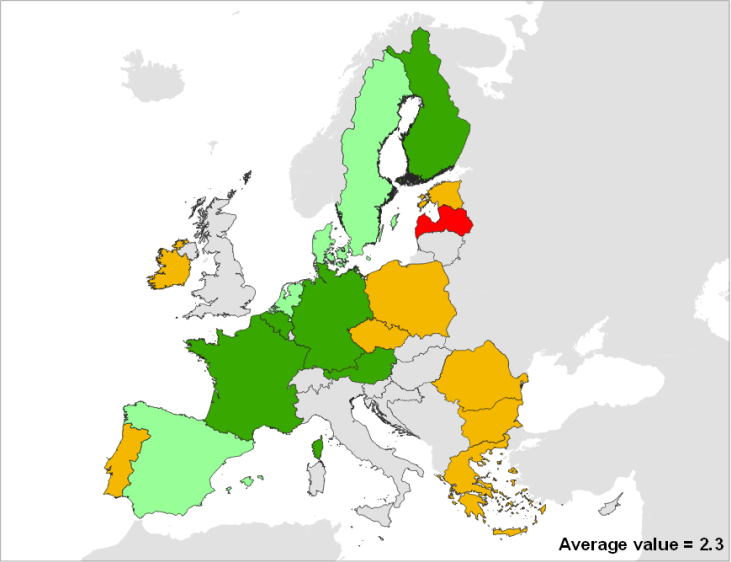
- Activities in this area have gathered pace, with large scale pilot projects and cross-border cooperation taking place
- Move from R&D to pilot phase and interoperable specifications for day-1 C-ITS services
- But, limited KPI data in national reports make it difficult to evaluate level of deployment
- 60% of national authorities felt that there had been limited deployment of C-ITS in their country
- Only a small part of the progress made can be associated with the Directive
 - C-ITS has mainly been driven by CEF and industry funding

Priority Area IV

Status of Implementation in 2017



Progress since 2014



Progress so far – Summary



Priority Area	Progress compared to the baseline	Comments/justification
I	++	<ul style="list-style-type: none"> • Significant progress in the development of NAPs • Higher deployment than expected in baseline • Progress also in areas outside of priority actions (e.g. digital maps)
II	+	<ul style="list-style-type: none"> • Good progress within some actions such as the development of interfaces to support intermodal passenger transport and the digitalisation of freight • Less evidence of cross-border interoperability and continuity of traffic management systems
III	+	<ul style="list-style-type: none"> • Deployment accelerated in some areas (e.g. eCall) • Few activities have taken place in areas not covered by priority actions. • Coordination between countries still problematic
IV	+	<ul style="list-style-type: none"> • Significant progress in C-ITS deployment, particularly since 2014 but most activities are still at the pilot project stage • CEF funding has played a key role • Evidence of cross-border cooperation but issues such as data protection, privacy and interoperability have not yet been properly addressed • There has been little progress towards an open in-vehicle platform



Questions/Comments?

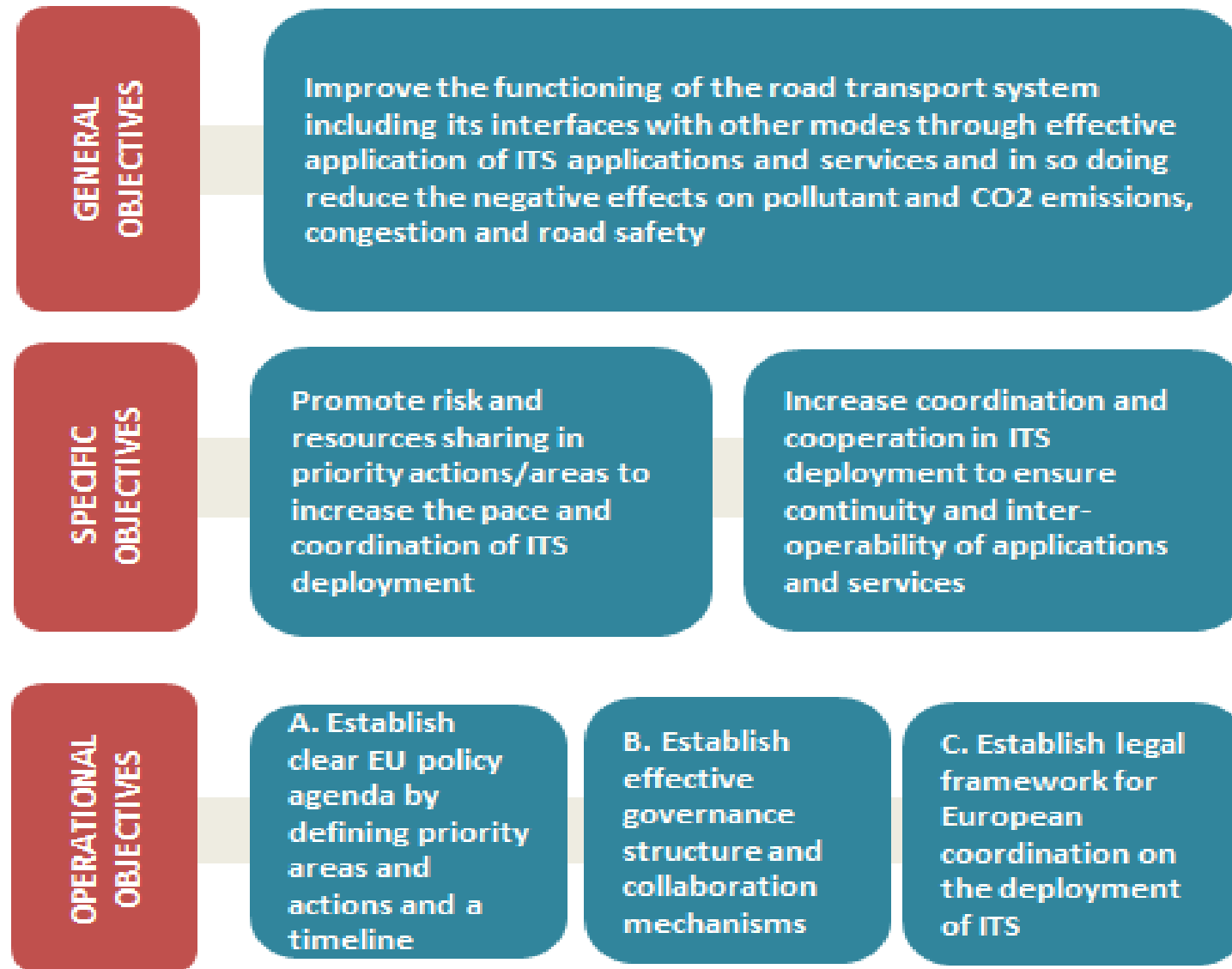
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Evaluation questions/initial findings



- The Directive was evaluated across five evaluation criteria:
 - Effectiveness
 - Efficiency
 - Relevance
 - Coherence
 - EU Added Value
- Each criteria has a number of sub-questions, presented in the following slides.

Effectiveness - Objectives of the intervention



- *Has the ITS Directive helped speed up deployment of ITS infrastructure?*
 - Clear role through the Delegated acts in the deployment of relevant ITS infrastructure: NAPs (even if deadlines have not always been met) and data collection
 - Increased geographical scope
 - Positive role by increasing awareness, setting priorities and establishing a clear time plan at national level – particularly among “lagging” Member States
 - Some evidence of increased allocation of public sector funds
 - Key role of EU funding (TEN-T and CEF) and the ITS action plan as drivers of this investment (not clear how much would have happened without)

- *Has it helped speed up deployment of ITS services?*
 - eCall service the clear example; but relevant Delegated act only part of the picture (fitting of vehicles covered by Regulation 2015/758)
 - Relatively few ITS services developed making use of the data from NAPs up to now
 - Evidence suggests that there is still rather limited awareness/interest of the possibilities provided as well as issues of trust concerning the sharing of data
 - Most ITS applications are still at pilot/pre-deployment stage (and most often part of EU funded projects)
 - Business case has yet to be made in cases where public/social benefits are more important (e.g. safety related C-ITS)
 - Nonetheless, in comparison to the baseline scenario a positive impact should be expected

- *Has it led to led to lowering of costs of ITS?*
 - Very limited information available
 - Some, but limited, support provided that costs have been lowered through standardisation activities
 - Too early in the deployment process
 - More impacts on costs expected in the future

- *Has it led to led to development of innovation in ITS?*
 - Limited evidence so far – too early in the process
 - Some stakeholder input suggests a positive role of the ITS Directive by providing a supportive framework

- *Has it improved the compatibility, interoperability and continuity of ITS across Europe?*
 - Positive impacts driven by:
 - Increased stakeholder engagement (in the context of the development of Delegated acts)
 - Collaboration (mainly in the context of EU funded projects – EU ITS-Platform, Crocodile, C-Roads, HeERO) have helped increased the deployment of interoperable ITS infrastructure services
 - Use of common standards, largely as a result of the Delegated acts where they are in place
 - Continuity evident in some projects (eCall, corridor projects) but needs more work in other areas and to better connect pilot projects
 - Compatibility demonstrated at pilot project level, but further work is needed at a wider level

- *Longer term impacts - Contribution to improving the functioning of the road transport system?*
 - Most feedback received suggests that it is too early to tell
 - Deployment/pilot projects demonstrated positive impacts on congestion and emissions, but overall impacts are small as projects are largely at pilot stage and limited geographically
 - Still, overall limited level of uptake of ITS services that lower congestion, road safety or emissions; also reflected in the limited capacity to report benefit KPIs
 - eCall and C-ITS are expected to have significant impacts on road safety, but have had minimal deployment so far
 - Most stakeholders/experts also indicated limited benefits so far, but expect more in the future

- *Factors that have influenced effectiveness*
 - Implementation weakened by lack of financial resources, low awareness and weak administrative structures at national level
 - Partly addressed by EU support mechanisms (projects and platforms)
 - Governance structures (ITS Committee and ITS Advisory Group)
 - Positive role in terms of cooperation and coordination – supported by other information activities (projects, platforms)
 - But not fully successful in providing a clear governance structure
 - Role of ITS Advisory Group unclear : Low participation, few meetings (4), limited role in the policy design process
 - Informal “Friends of ITS” group the answer? Not clear, stakeholder participation has not increased
 - Impacts of evolution of technology and business models on effectiveness
 - No evidence so far; but expected to continuously challenge effectiveness of the specifications

- *What are the costs associated with the implementation of the Directive?*
 - For the Commission, the highest costs relate to funding for ITS deployment under TEN-T and CEF
 - Total funding for ITS for roads under TEN-T and CEF : €719m (€262m+€457m)
 - Programme Support Actions (PSAs) under the CEF are considered as more directly linked with the Directive : €14m since 2013
 - Remainder of funding not a direct results but relevant
 - Costs for national authorities vary depending on the activity;
 - Average costs of transposition of the Directive at €781,000 per MS
 - Setting up the NAP : €195,000 - €352,000 depending on Priority Area
 - Upgrading PSAPs : average of €775,000 per MS
 - Costs to ITS service providers/road operators were difficult to obtain
 - Costs to other stakeholders identified (hauliers, private road users, OEMs, network providers) considered negligible – eCall fitting outside scope

- *How do the costs associated with the implementation of the Directive compare to benefits generated?*
 - Too early to assess benefits especially as there are very limited benefit KPIs available
 - Stakeholder activities suggested that the costs are proportionate, and if the benefits do not already justify the costs, they will in the long run
- *Has the Directive given rise to (unexpected) administrative burdens or inefficiencies?*
 - Stakeholder input suggests that there are no significant issues around administrative burdens
 - No evidence of systematic unexpected savings
 - No comments to suggest significant reduction in administrative burden, although some costs are yet to materialise so may be too early to conclude

- *Do reporting mechanisms allow for efficient (and effective) policy monitoring?*
 - Analysis of 2014 and 2017 Member State reports show a positive trend in quality and consistency of reporting, helped by the guidance on reporting format
 - However, there are still significant issues with comparability between Member States, especially as KPI reporting is voluntary and often difficult to compare
 - Despite overall improvement in national reporting, there are still limitations that restrict comprehensive monitoring of implementation



Questions/Comments?

- *Relevance to the needs identified at the outset*
 - Clear link between the operational objectives of the Directive and the problems/issues identified at the time of adoption

Problems/issues for the up-take of ITS	Operational objectives		
	Clear EU policy agenda by defining priority areas and timeline	Legal framework for coordination on deployment of ITS	Effective governance structures and collaboration mechanisms
I. Lack of interoperability of applications, systems and services			
Proprietary solutions with limited sharing of content or components	+	+	+
Initiatives at local level creating fragmented technological spectrum;	+	+	+
Lack of robust business models for several ITS applications;	+	+	
Inconsistent market development with monopolies limiting competition.	0	+	+
II. Lack of concertation and effective cooperation among stakeholders			
Absence of a clear vision on how to make the best use of ITS tools;	++		
Lack of a strong platform for concertation and cooperation;		+	++
Limited awareness of the potential benefits of ITS among public authorities	++		++
III. Unsolved privacy and liability issues			
No clear rules/legislation on privacy of data;	0	++	0
Unclear distribution of responsibilities, no agreements on service ownership.	0	++	0

- *Are the original objectives and instruments of the Directive and the Action Plan, still adequate in the current context?*
 - The general and specific objectives are still relevant
 - C-ITS could be given greater attention in the Directive, as the start of the road to full automation. Currently not explicitly mentioned
 - Possible specific objective to better highlight the need to cover all modes of road transport, and facilitate interconnections with other modes

- *Are specifications adopted through delegated acts still up-to-date and relevant, considering technological and market developments?*
 - No identified market or technology developments that would challenge this
 - It may be too early to assess, as the Delegated Acts have only recently been adopted, and problems may not have become apparent
 - Input from stakeholders confirms that all Delegated Acts are still relevant

- *Are the provisions of the Directive internally coherent? Do provisions overlap or contradict?*
 - The Directive, Delegated Acts, and relevant regulations are considered coherent
 - Some difference in reporting requirements for Member States, which differ in time of year and frequency
 - Appropriate references to other regulations throughout

- *Is the framework provided by the Directive coherent with current ITS deployment?*
 - Member State reports did not reveal an obvious ITS application being widely deployed that would benefit from further EU action - exception possibly ITS for freight (although need for further EU action not clear)
 - On the basis of Member State reports - and slow designation of NAPs - appears that some ITS applications covered by the Directive are not being widely deployed throughout the EU

- *Is the Directive still in line with other relevant EU interventions in the field?*
 - Overall, no issues re coherence with strategic EU policy documents.
 - Similarly, general coherence with specific pieces of legislation
 - Some concerns were raised about the GDPR (and new e-privacy Regulation). These were mainly in relation to how the GDPR would be applied to C-ITS but may also be relevant to other ITS activities covered by the Directive
 - It might be appropriate to review potential safety features that might be mandated by the General Vehicle Safety Regulation well before 2030
 - The roadworthiness testing Directive 2014/45 does not currently mention ITS, even though it sets out the minimum requirements for the periodic testing of vehicles

- *What is the added value resulting from the EU intervention compared to what could be done at **national/regional** level?*
 - Action at national level would not have addressed problems of incoherent, inconsistent, and fragmented ITS deployment
 - EU intervention is still important to ensure interoperability and adoption of common standards across the EU
 - Parallel/lessons from other regions:
 - Australia: limited national cooperation, interoperability
 - US: Less federal regulation/more funding - but set ITS architecture in place setting the framework for action at state level
 - Some support among stakeholders for international action

- *What is the added value resulting from the EU intervention compared to what could be done at **international** level?*
 - Some support among stakeholders for international action
 - International action in relation to ITS significant (e.g. UN ECE Roadmap, ISO, Informal platforms) promoting interoperability and harmonisation
 - Still, slower and not able to provide clear mandate for action and comprehensive legal framework
 - Seems complementary and not sufficient to ensure a EU-wide approach in the development of ITS in the way that is currently provided by the ITS Directive

- *What would be the most likely consequences of stopping or withdrawing existing EU intervention?*
 - Withdrawal is unlikely to result in any backsliding of progress made.
 - ITS deployment may slow down in the future, and risk divergence or fragmentation
 - This would be due to:
 - Withdrawal of funding, primarily impacting cross-border activities and Member States with limited resources
 - Withdrawal of existing formal cooperation mechanisms. Some Member States with common interest may replace these voluntarily



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Today's workshop

- Initial set of recommendations to be presented in the afternoon session
 - Written feedback to the analysis/findings to be provided by 4th of May
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Remainder of project

- Study team is available for further discussion if stakeholders are interested
 - Interviews to be conducted by 4th of May
 - Further questions to: ITS.evaluation@ricardo.com



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