

Joint Research Centre

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Working group session Lessons Learned and next steps Autonomous driving

B. Ciuffo, F. Peyret

Intelligent Transport Systems: a Tool or a Toy?

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Disclaimer: The views expressed are purely those of the presenter and may not in any circumstance be regarded as stating an official position of the European Commission



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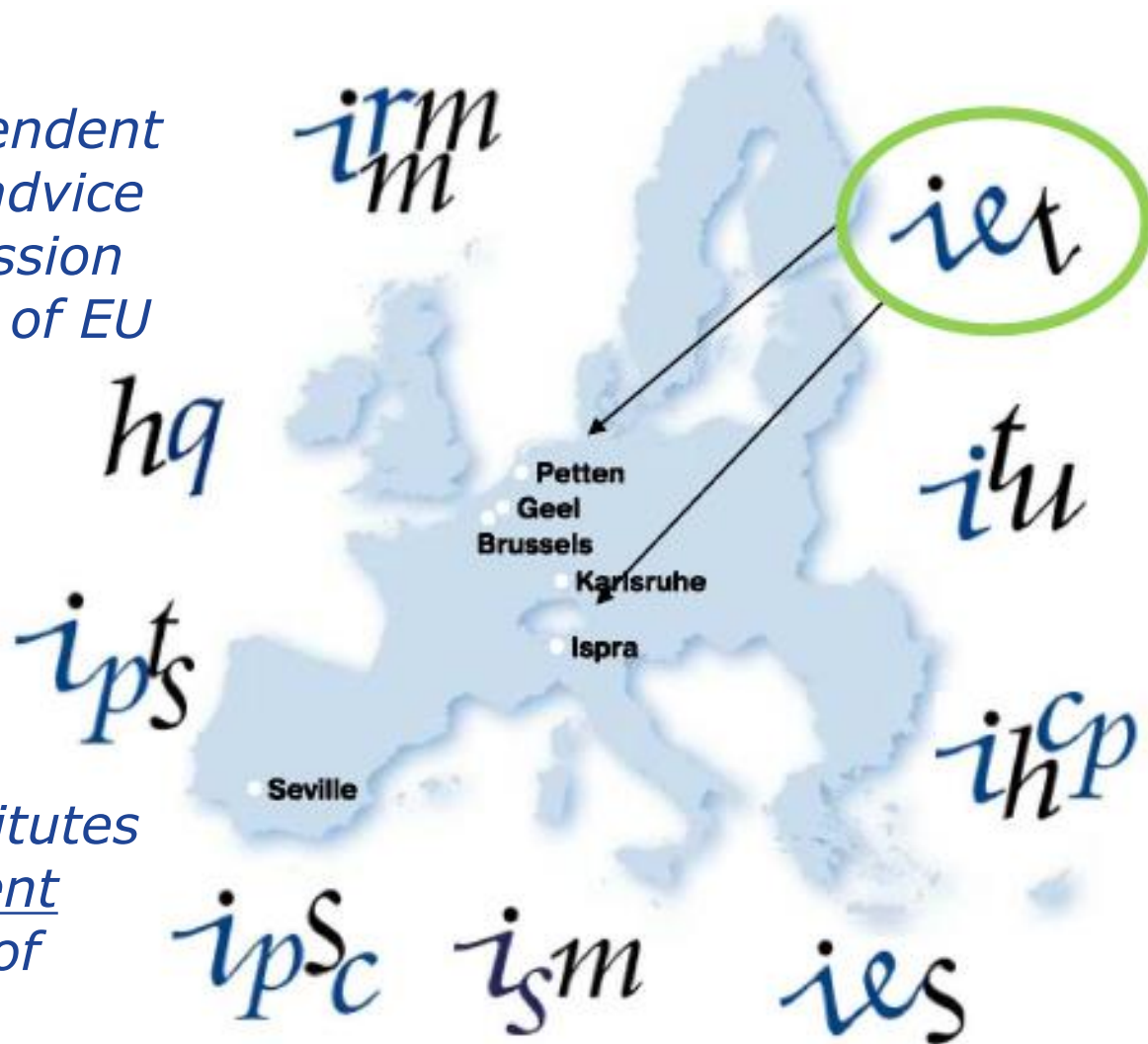


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The JRC provides independent scientific and technical advice to the European Commission to support a wide range of EU policies.

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An aerial photograph of a village in the Swiss Alps. The village is situated on a hillside, with a cluster of buildings in the foreground and a larger settlement further up the slope. The landscape is characterized by green fields and dark, dense forests. In the background, a large, deep blue lake stretches across the middle ground, and beyond it, a range of mountains with significant snow cover is visible under a clear blue sky.



Parallel Sessions & Panel Discussions

Autonomous Driving Research and Innovation

- Where do we need more research?
- How to create innovation dynamics?
- Changes in the industry landscape (product and systems)

Moderator

Carlos Holguin Ortiz

Project Manager Connectivity and Automation, ERTICO

Lex Eggink

Chair, CEN TC278

François Peyret

Chair, COST Action TU1302 “Satellite Positioning Performance Assessment for Road Transport (SaPPART)”

Ivana Dusparic

COST Action TU1102 on “Towards Autonomic Road Transport Support Systems”

Roman Hauptvogel

GlobalLogic Slovakia

Parallel Sessions & Panel Discussions

Autonomous Driving Policy Aspects

- New legal Framework and Liability?
- What are expected benefits for user and local authorities?

Moderator

Johannes Liebermann (tbc)

Innovation & E-Mobility
AustriaTech, Vienna

Biagio Ciuffo

Scientific Officer at the European Commission - Joint Research Centre

Imre Lendak

MC Member for Serbia, COST Action IC1203 “European Network Exploring Research into Geospatial Information Crowdsourcing: software and methodologies for harnessing geographic information from the crowd (ENERGIC)”

Nikolas Thomopoulos

Senior Lecturer in Transport and Business Logistics, Greenwich University

Gert Blom

Strategic Advisor Mobility - City of Helmond

Main questions (1)

- **Automated Vehicles or Automated Road Transport?**
 - Is V2V and V2I communication needed?
 - Is V2V and V2I communication sufficient?
 - Is a full automated (road) transport needed?
- **In case of a full ART**
 - Who should be in charge of the system management/optimization?
 - Should rules be defined or left to the market?
 - Who should define the rules?
- **Which are the plausible impacts of AVs in the different cases?**
 - Impact on safety
 - Impact on system efficiency
 - Impact on energy consumption
 - Impact on environment

Main questions (2)

- **Standardization**

- Where we are and which are the next steps?
- Have the right stakeholders been involved?
- Which kind of standards are needed for AVs and for an ART?

- **Enabling technologies**

- Which are minimum technologies still needed to achieve fully autonomous vehicles?
 - Systems hybridizing GNSS and on-board sensors with full integrity ?
 - High-accurate maps ?
- Is there any automation level that could be exploited already now?
 - Road signs recognition for safety
 - Smooth driving for energy
 - ISA...

Main questions (3)

- **Research**

- Main research needs

- Holistic approaches (Integration of different expertise)
 - Systems optimization methods
 - Artificial intelligence and system learning
 - Data processing
 - Computing techniques
 - Seamless, rapid and safe communication
 - Accurate positioning with high integrity
 - ...

- **Soft enablers**

- Transparency in vehicle behaviour

- Can vehicles be developed in a “close” way as today or should a more transparent approach be used?
 - ...

Main questions (4)

- **Liability**

- Which are the main issues?
 - Who's responsible for system malfunctioning?
 - Which tests a vehicle should undergo before being put in the market?
 - Change in the vehicle type-approval?
 - Certification ?
 - ...
 - What is the position of the insurance companies ?
 - ...

- **Change of paradigm**

- Given the major gaps between manually-driven and fully automatic vehicles and the safety issues, wouldn't it be necessary to rebuild all the road transport system on the model of the air transport system ???

Conclusions

- Autonomous vehicles are attracting the attention of industry and governments for the promises linked to their introduction
- Technologies will be on the market very soon and regulators will act as enablers (at least at the beginning)
- ...



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