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Inland Transport Committee

UNECE and Intelligent Transport Systems

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Vehicle Regulations and Transport Innovations Section

Global megatrends

Challenges

- Urbanization
- Aging of Population
- Climate Change
- Road Safety
- Limited Resources

Responses

- Ownership of vehicle
  → mobility as a service
- Access to mobility
- Electrification
- Use of 'big data'
  - Transport management
  - Traffic management

Future mobility

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Transport of persons

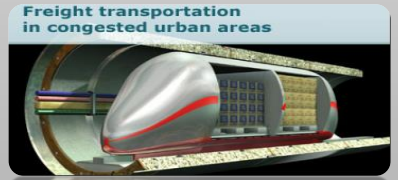
- Shift from individual to public transport
  - The last mile issue
    - Autonomous ´pods´
    - Car sharing
  - New public transport concepts

- Electromobility
  - E-bikes
  - Small elctric urban cars

- New individual transport concepts

Transport of goods

- New concepts of goods delivery
  - Underground
  - Drones



- Intelligent delivery management
  - Truck sharing
- Electric/hybrid /autonomous trucks

UNECE ITS strategy and roadmap

- Established in 2012
  - Background document
  - Strategic note
  - Road map

- Continued in 2015
  - ITS Concept Note

UNECE – ITS definition

Intelligent Transport Systems and Services (ITS)

"any system or service that makes movement of people or goods more efficient and economical, thus more intelligent"

- ITS can help achieve sustainable mobility by making transport more efficient, safer and greener and provide more mobility options

- For this to happen technical solutions need to be nationally and internationally interoperable, and the technologies need to be embedded in appropriate policy frameworks and harmonized policies

UNECE Road Map on ITS

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UNECE Road Map on ITS contains 20 global actions to promote the use of ITS:

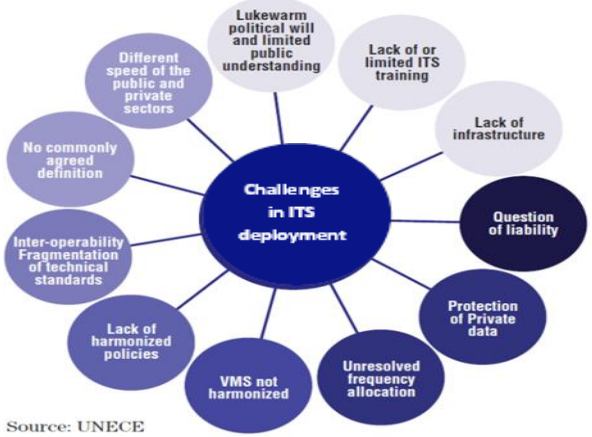
1. Reaching common definition for ITS	11. Harmonizing Variable Message Signs (VMS)
2. Harmonizing policies	12. Making transport of Dangerous Goods less dangerous
3. Forging international cooperation	13. Integrating with Rail Transport
4. Facilitating interoperability	14. Integrating with Inland Water Transport
5. Ensuring data security	15. Enhancing the modal integrator's role of ITS
6. Scaling up work on ITS to all WPs	16. Developing cost-benefit assessment methodologies
7. Promoting vehicle-to-infrastructure (V2I) communication	17. Contributing to climate change mitigation and adoption
8. Promoting vehicle-to-vehicle (V2V) communication	18. Launching analytical work
9. Fighting the road safety crisis	19. Contributing to capacity-building, education and awareness raising
10. Addressing liability concerns	20. Organizing the UN annual Round Table on ITS

ITS – Concept Note

- ITS impacts the world of transport
  - Door to door mobility
  - Production to consumption freight transport
  - Mobility as a Service
- ITS role in achieving Sustainable Development Goals

ITS – Concept Note (cont.)

- **Challenges in ITS deployment**
  - Interoperability
  - Fragmentation of technical standards
  - Lack of harmonized policies



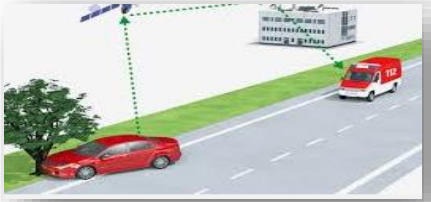
Source: UNECE

- **Ongoing activities and actors in the field of ITS**
  - ITS World Congress
  - ITS activities at UNECE
    - ITS implementation in road traffic (WP.1) and vehicle regulations (WP.29) is on the way
    - Other Working Parties (WP.15, WP.24, SC.3, SC.1, AC.7, …) started to work too

➡ **Holistic approach to harmonize policy and overcome technological and regulatory fragmentation needed**

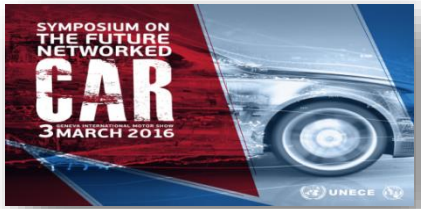
ITC Working Parties and ITS

- Working Party on Road Transport (SC.1)
  - Computerization of the transport contract eCMR
- Working Party on Inland Water Transport (SC.3)
  - ➔ Worked on ITS applications e.g. on pan-European River Information Services (RIS).
- The Working Party on the Transport of Dangerous Goods (WP.15)
  - ➔ RID Committee and WP.15 (telematics IWG) continued its work on ITS
- The Working Party on Customs questions affecting Transport (WP.30)
  - ➔ Computerization of the TIR transit procedure eTIR
- Working Party on Road Traffic Safety (WP.1)
  - ➔ Worked on the Vienna Conventions to address the challenges related to autonomous driving
  - ➔ Established an informal working group on *automated driving*
- The World Forum on Harmonization of Vehicle Regulations (WP.29)
  - ➔ Worked on the automation levels definitions as well as *Cyber Security* and *Privacy*
  - ➔ Vehicle automation such as *self steering* systems and *Remote Control Parking*
  - ➔ Worked on AECS (eCall)



Main activities on ITS in 2016

- **78th ITC session, policy segment**
  on "Innovations for Sustainable Inland Transport with Special Attention to Information and Communication Technologies" calling for
  - *Common and not fragmented approach*
  - *Access for all*
  - *Availability of data and sharing of information*



- **UNECE/ITU Symposium on The Future Networked Car**
  The symposium examined advances in the area of connected vehicles, from the perspectives of business, technology and regulation
  Technical sessions highlighted the relevance of work done on cyber security

- **2016 Annual Roundtable on ITS – Geneva**

  First informal joint meeting WP.1 – WP.29/GRRF – WP.29 /ITS/AD
  The ad-hoc meeting aimed at an in-depth exchange of views and information exchange and discussed topics such as
  - *driver training,*
  - *the regulatory process pace and*
  - *secondary tasks performed by the driver during automated driving phases*

Ministerial round table on ITS - Bordeaux

- *Ministerial round table* 5 October 2015

- 30 Countries endorsed the manifesto "ITS addressing climate change"

The participants to the minister's roundtable:

- express their appreciation for the support given by the previous Round Tables of Vienna, Tokyo and Detroit that has fostered the coherent deployment of ITS to face transport challenges;

- commit to promoting the deployment of ITS systems to reduce CO_2 and Greenhouse Gas emissions linked to transport through stepping up investments into these instruments;

- invite the experts, national decision makers, relevant international organizations and legal bodies to provide guidelines and capacity building actions to support the deployment of appropriate solutions based on ITS;

- invite both public and private sector stakeholders to come forward with 'best practice' examples of ITS deployment that contributes to the reduction of CO_2 and associated Greenhouse Gas emissions so that governments can be helped to reach the ambitious objectives to be decided during the COP21.

Summary

- **UNECE and its Inland Transport Committee plays active role in area of ITS**
- **ITS roadmap and strategy towards a holistic approach**
- **All modes of inland transport address ITS aspects**
- **Flagship activities in area of ITS/AD towards connected automated vehicles**

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THANK YOU
FOR YOUR ATTENTION

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Roles of WP.29

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Vehicle approval/certification regulation	Other roles
• More than 60 years experiance in regulatory work • Continuing integration of new technologies in the regulatory framework • Technical regulations are perfomance based and not design restrictive • International harmonization • Connectivity is beeing taken on board (incl. cooperation with ITU) • Not only hardware but also software is being covered (modeling of decision making processes at conflict situations) • Software updates (updates over the air, limitations, need for new or extension of existing certificate) • Address data security / cyber-security • Does not neglect traditional vehicle safety issues	• Only international regulatory platform for the automotive • Platform for exchange between governments –experts-NGOs and all relevant stakeholders • Learn from each other • Cross sectoral activities and coordination (e.g. insurance) • Adapt easily following demands • Advise to governments (e.g. G7)

Future vehicles

Some questions:

- Automated?
- Autonomous?
- Connected?
- What propulsion?
  - ICE/Electric/Hydrogen/ Fuel-cell/??
- On roads/ground?

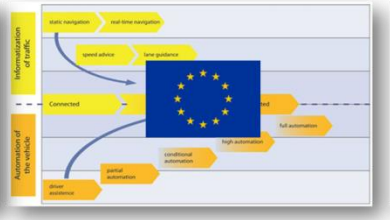


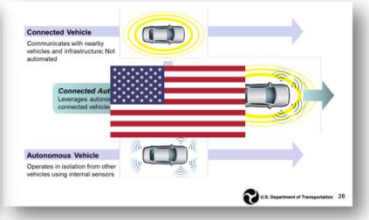


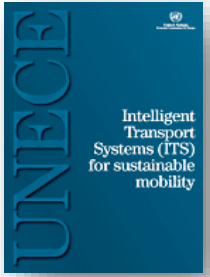



Conclusions in 2016 and next steps

- **ITS across all inland transport modes and their infrastructures**
  - 2016 focussed on “automated vehicles” and new mobility concepts
  - UNECE promoted activities on ITS, across all transport modes and their infrastructures







- **Connected and Automated Vehicles (CAV)**
  - Various technologies are now marketed
  - Technical regulatory action going on
  - Coordination between WP.29 and WP.1 is ongoing
  - Related items not in the scope of WP.29 or WP.1 still need to be addressed
  - Insurance industry represented in WP.29 ITS/AD
  - US NHTSA Federal policy Guidelines on Automated Driving issued
  - US NPRM to mandate vehicle-to-vehicle (V2V) communication