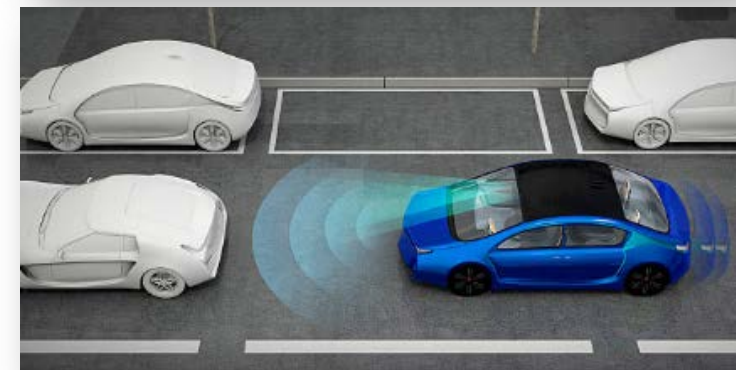


80th Inland Transport Committee

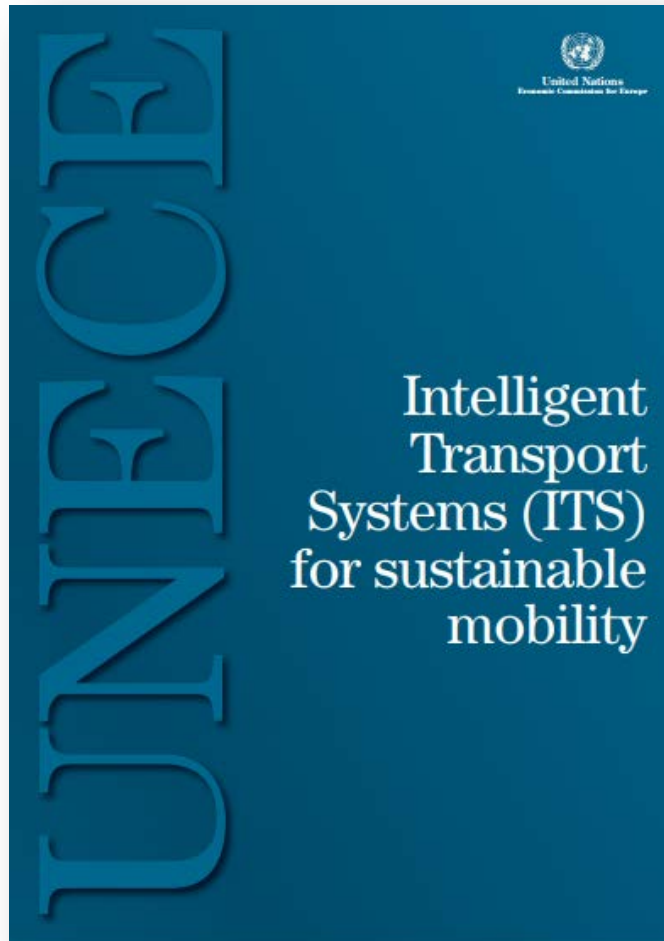
20-23 February 2018

Intelligent Transport Systems

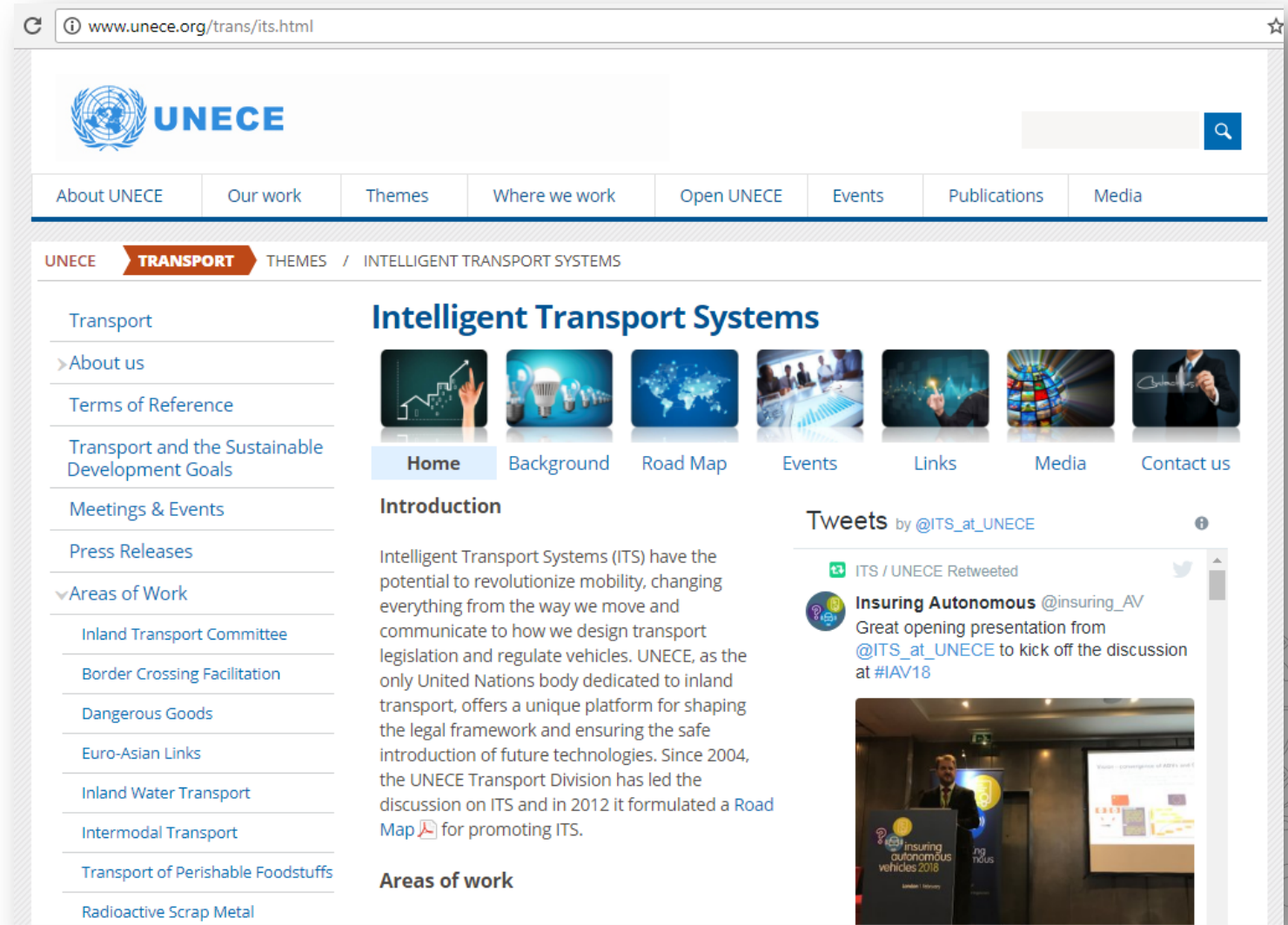
Agenda item 4(f)



UNECE and Intelligent Transport Systems (ITS)



- Background document
- Strategic note
- Road map
- ➔ Adopted in 2012



www.unece.org/trans/its.html

UNECE

About UNECE | Our work | Themes | Where we work | Open UNECE | Events | Publications | Media

UNECE **TRANSPORT** THEMES / INTELLIGENT TRANSPORT SYSTEMS

Transport

- About us
- Terms of Reference
- Transport and the Sustainable Development Goals
- Meetings & Events
- Press Releases
- ▼ Areas of Work
 - Inland Transport Committee
 - Border Crossing Facilitation
 - Dangerous Goods
 - Euro-Asian Links
 - Inland Water Transport
 - Intermodal Transport
 - Transport of Perishable Foodstuffs
 - Radioactive Scrap Metal

Intelligent Transport Systems

Home | Background | Road Map | Events | Links | Media | Contact us

Introduction


Intelligent Transport Systems (ITS) have the potential to revolutionize mobility, changing everything from the way we move and communicate to how we design transport legislation and regulate vehicles. UNECE, as the only United Nations body dedicated to inland transport, offers a unique platform for shaping the legal framework and ensuring the safe introduction of future technologies. Since 2004, the UNECE Transport Division has led the discussion on ITS and in 2012 it formulated a **Road Map** for promoting ITS.

Areas of work

Tweets by @ITS_at_UNECE

ITS / UNECE Retweeted

Insuring Autonomous @insuring_AV
Great opening presentation from @ITS_at_UNECE to kick off the discussion at #IAV18



Agenda 2030 - SDGs



Events in 2017

The Annual ITS round table (WP.29/GRRF – WP.1)

- 90 min session
- Bringing the road traffic and vehicle experts together
- Exchange of information on respective activities of mutual interest
 - Secondary activities
 - Remote Control Parking
 - Cyber Security
 - «IoT» and Road Transport / Mobility



The 2017 Future Networked Car symposium

- 1 Day symposium co-organized by ITU and UNECE
- Bringing the Telecommunication and the Automotive industries together meeting the regulatory and standardization bodies (ITU/UNECE)
- Policy dialogue on
 - 5G and the automotive applications
 - Connected and Automated vehicles
 - Cyber security



The Global Forum for Road Traffic Safety (WP.1)

- Workshop on Traffic Safety in an Automated vehicle environment
 - Co-sponsored by
 - Global Forum for Road Traffic Safety,
 - National Highway Traffic Safety Administration
 - French Institute of Science and Technology for Transport, Development and Networks (IFSTTAR)
- To open discussion on the challenges and opportunities
- Focus on integration of highly automated vehicles in traffic
- To stimulate thought among a broad range of stakeholders on approaches for maximizing the safety of traffic in future years



ITC Working Parties ITS activities (examples)

Guideline on Cyber Security and Data Protection

Guideline adopted by WP.29 in March 2017

It contains:

- Definitions
- Data protection requirements, e.g.:
 - Everyone's right for privacy and communications shall be respected
 - Privacy «by design» and «by default»
- Cyber Security and Safety requirements, e.g.
 - Avoid fraudulent manipulation
 - Detect fraudulent manipulation by a cyber-attack, inform driver
 - Secure software updates
- Verifiable through independent authorized audit.



The World Forum for the Harmonization of Vehicle Regulations (WP.29)

Work on Automated Vehicles

The regulatory work is preempting the technology

➔ The regulator has to be *moderately proactive* to enable innovation: not too quick, not too slow.

Goal:

- Integrate the technologies into the existing transport system,
- ensuring that the benefits of these new technologies can be captured
- We do so without compromising:

safety and ITC's achievements so far (e.g. international transport, trade, interoperability and environmental performance)



The IWG on ITS/AD Level 3- 5: Horizontal Regulation

Use-Cases: Urban, Highway, Interurban, [Parking] for automation levels 3*, 4 and 5
Requirements address vehicle behavior in road traffic and further general safety requirements

Physical Certification Tests

Dedicated, reproducible worst-case tests for specific scenarios that cannot be guaranteed to occur in real world test drives

- + Objective performance criteria
- Significant testing efforts
- Transfer of requirements into reproducible tests technically difficult or likely to result in remarkable functional restrictions

Real World Test Drive

Test drive to assess the vehicle's standard behavior in public road traffic, compliance with traffic laws and maneuvers according to defined checklist

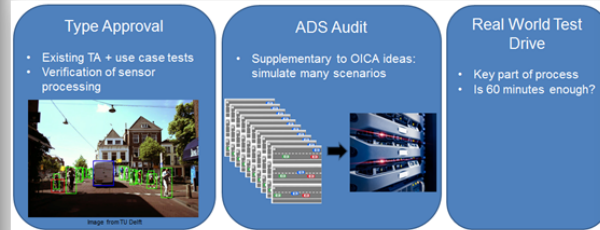
- + Limited testing efforts
- Subjective influence on judgments
- Requires highly skilled and qualified test house/certification agency to appropriately assess systems

Audit

OEM provides e.g.:
- Safety concept / functional safety strategy
- Simulation and development data to verify vehicle behavior in edge cases
- Manufacturer's self declarations
- etc.

← pros/cons: see RWTD

* If not covered by UN-R 79 ACSF – ACSF results for highway could also be transferred afterwards



ITS/AD's Task Force on Cyber Security and OTA

- Initiated in November 2016, by WP.29,
- Reporting to the IWG on ITS/AD,

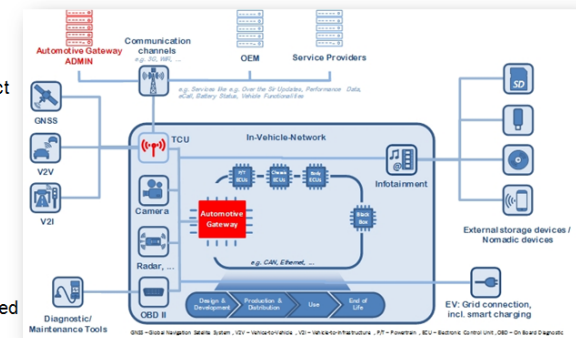
• The aims of the group are to:

- Define requirements for addressing cyber threats
- Define requirements for software update management with respect to safety type approval
- Define guidance or measures for how to achieve this
- Address the effect of OTA on cyber security and the overall Type Approval system (Potential challenge for administration of vehicle "in use")

• Aim to deliver these in 2018 to WP.29

- The output may then be adopted as a UN Regulation possible linked to a Resolution (dynamic)

• Recommendations are being drafted on Cyber security and on OTA issues



Proposed certification system compatible with existing systems (Type Approval or Self Certification)
This ensures a minimum impact on national or regional systems dealing with registration, insurance etc.

ITC Working Parties ITS activities (examples cont.)

The Working Party on the transport of Dangerous Goods

The joint meeting of:

- The Committee of experts on the Regulations concerning the International Carriage of Dangerous Goods by Rail (RID)

and

- the Working Party on the Transport of Dangerous Goods, through its Informal Working Group on Telematics,

continued work on ITS applications aimed, inter alia, at improving the speed and efficiency of emergency responses involving dangerous goods in transport.

The Working Party on Inland Waterways

- ITS applications in Electronic Ship Reporting and on the harmonization of pan-European River Information Services (RIS)
- Provisions for variable traffic signs were included in Resolution No. 59, "Guidelines for Waterways Signs and Marking"
- Electronic charts and the visualization of signs on inland waterways were added to the draft revision of Signs and Signals on Inland Waterways in Chapter 12

Working Party on Intermodal Transport and Logistics

The Working Party regularly addresses the role of ITS in intermodal transport and logistics by inviting experts to present:

- projects,
- innovative solutions and good practices in ITS.

This year the Working Party invited the European Union project Tellisys on the development of a complete volume optimized intermodal combination, including a product family of new intermodal loading units, which satisfy the current market demands.

This solution enhances the performance of intermodal logistic chains by meeting the European Union's demand for more energy-efficient, low-emission logistics networks and contributes to more efficient transport by easing the transition between different transport modes

The Working Party on Customs Questions affecting Transport



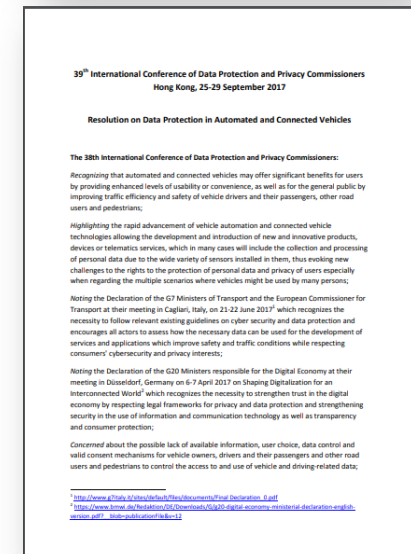
MoU with IRU as basis for funding of finalization and rollout of the system

Pilot projects Georgia - Turkey

Non-ECE relevant activities

- The 2017 G7 transport ministers' declaration:
 - encourage the UNECE's WP.29
 - to continue to work on the fundamental technical principles, including appropriate performance metrics and test procedures for demonstrating the effectiveness and safety of these technologies
 - to focus activities on systems with higher levels of automation and
 - to assess whether new categories should be defined in order to cover all kinds of automated driving systems

- The Resolution on Data Protection in Automated and Connected Vehicles adopted by the thirty-eighth International Conference of Data Protection and Privacy Commissioners in September 2017 mentions:
 - The Guideline on Cyber Security and Data protection



**THANK YOU VERY MUCH
FOR YOUR ATTENTION**

UNECE

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