ITU Workshop on "The Future of Vehicular Multimedia"
23 January 2019
Tokyo

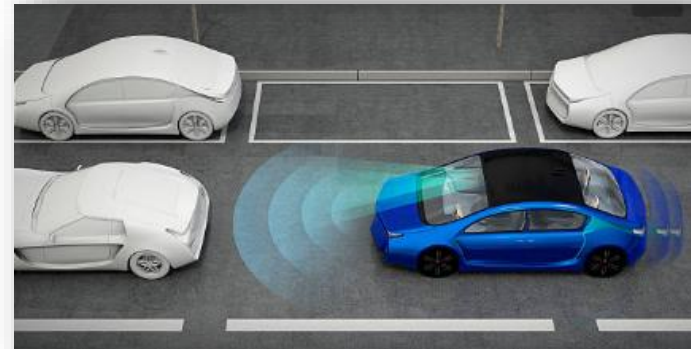# UNECE Activities Relevant to the FG-VM

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Content

1. Brief presentation of UNECE' activities on vehicles regulations

2. Vehicular multimedia

3. Technological progress and new behaviors

4. Current activities of interest for the FG-VM

    1. Automated vehicles

    2. Connected vehicles

    3. Task Force on Cyber Security and OTA issues (Software Updates)

Agenda 2030 – Sustainable Development Goals

Automated Driving vehicles are expected to contribute to the solutions needed to address the transport related issues:

- Road traffic
- Pollution
- CO_2 emissions
- Road safety crisis

UNECE and vehicle regulations

Social Rules
(driving and rest hours)

Road Traffic Rules

Drivers' License

Road Signs and Signals

Vehicle Regulations

Infrastructure (standards and parameters, tunnel safety, all land modes)

E19

Statistics

Border Crossing Facilitation

Customs

Dangerous Goods

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

- UNECE Transport Division: secretariat to WP.29 for more than 60 years
- Since 2000, WP.29 is:
  - the unique worldwide regulatory forum for the automotive sector
  - administrating three Multilateral UN Agreements

Certification regulations
1958 Agreement - Type Approval Regulations with mutual recognition of the type approvals
1998 Agreement - Global Technical Regulations

In Use PTI regulations
1997 Agreement - Adoption of Uniform Conditions for Periodical Technical Inspections of Wheeled Vehicles and the Reciprocal Recognition of Such Inspection

Mutual recognition

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UNECE and vehicle regulations

What is WP.29 doing?

Emissions of pollutants and CO_2

General safety

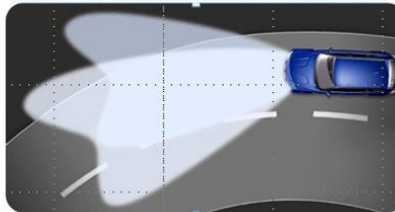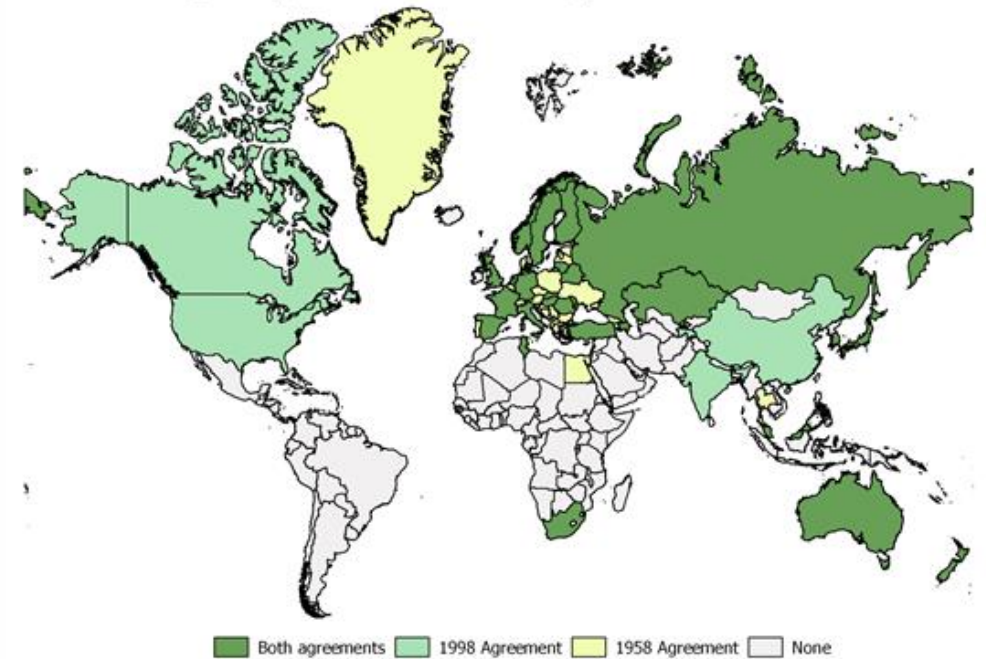Passive safety

Noise and tires

Automated/autonomous and connected vehicles

Lighting and light signalling

Geographical scope of WP.29

Both agreements   1998 Agreement   1958 Agreement   None
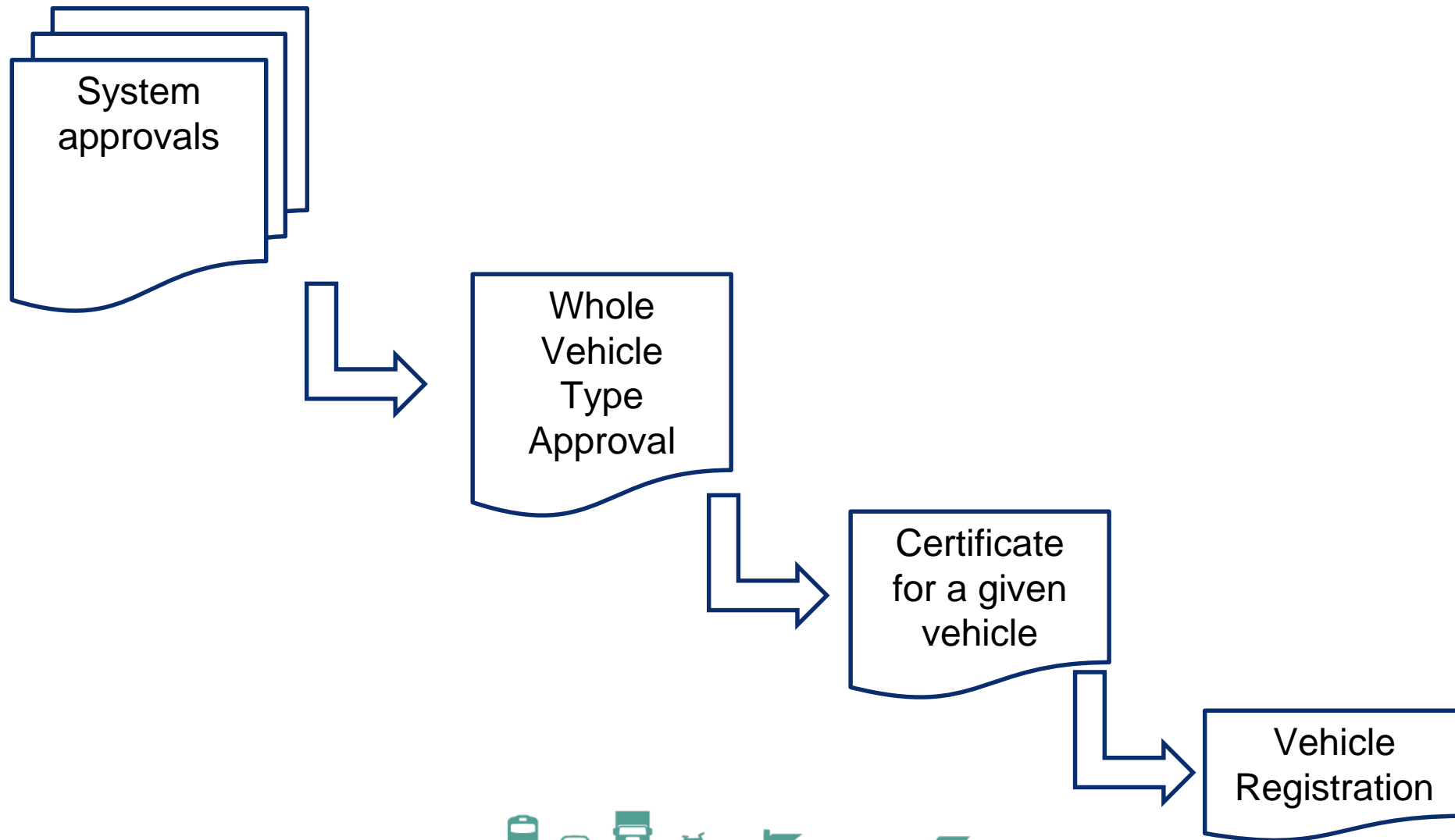
WP.29 is open to all Nations of the United Nations without any limitation or discrimination

This map doesn't show those Countries applying the Regulations unilaterally

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How are used UN type approvals / certificates

System approvals

⟶

Whole Vehicle Type Approval

⟶

Certificate for a given vehicle

⟶

Vehicle Registration

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Type Approval

Testing
- Submission of the information document (documentation of the product)
- Performance of the tests prescribed
- (According to the provisions of the Regulation)

Approval
- Test report and documentation checked
- Type approval issued by the Authority

COP
- Conformity of Production (COP) process and checks (QM / QA)
- COP audit by the Authorities

In Use
- Some regulations require «in use» testing of products (e.g. in the field of emissions)

End or life
- One regulation is dedicated to the recyclability of vehicles

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Regulation through cooperation with various sectors & SDOs

- **Lighting and Light Signalling sector:**
  - IEC standards: IEC 60061, IEC 60809
  - ➔ Specific UN Regulations on light sources

- **Tire sector:**
  - ISO, ETRTO, JTMA standards
  - ➔ Regulation on tires
  - ➔ Regulation on tire installation

- **ICT and Telecom sector:**
  - eCall
  - Cyber Security and OTA
  - …

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Vehicular multimedia

- Vehicle multimedia was often associated with driver distraction

- Advocacy addressing distracting devices in vehicles

  – Mobile / Smartphones

  – In-vehicle screens (e.g. navigation systems, TVs)

- Highway code:

  – The Vienna Convention states

  Art. 8, para. 6

➔ "A driver of a vehicle shall at all times minimize any activity other than driving."
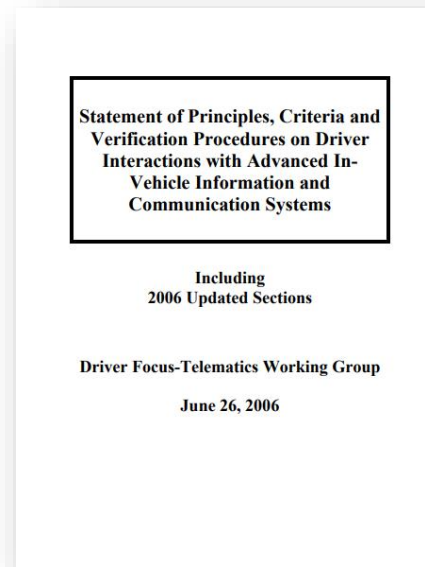
Distraction – some responses

➜ Responses from Regulators – Guidelines

 ➜ JAMA Guideline for In-Vehicle Display Systems, V3.0

 ➜ European Commission Recommendation [...] on HMI

➜ Visual Manual NHTSA Driver Distraction Guidelines for In-Vehicle Electronic Devices

➜ Responses from the automotive industry

Statement of Principles, Criteria and Verification Procedures on Driver Interactions with Advanced In-Vehicle Information and Communication Systems

Including 2006 Updated Sections

Driver Focus-Telematics Working Group

June 26, 2006

Splitview

DRIVER VIEW   PASSENGER VIEW

Dualview

➜ Response from the ICT industry e.g. Apple's Do Not Disturb While Driving

Do Not Disturb While Driving

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Technical progress and new behaviors

@Volvo

@Faurecia
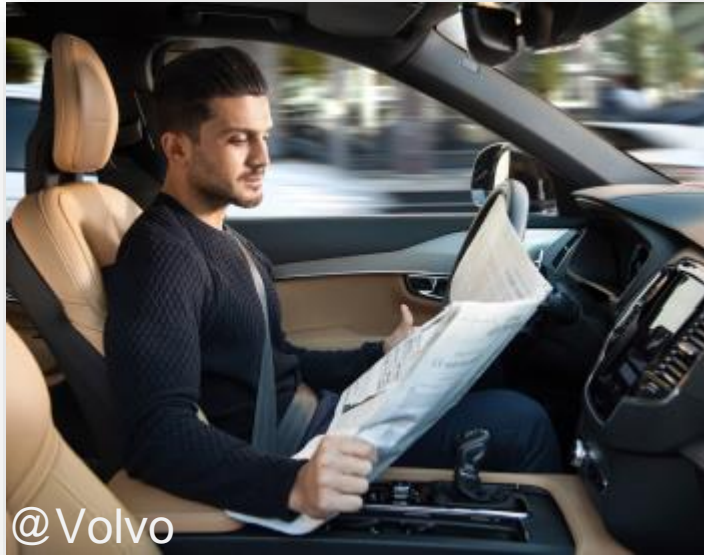
New ITU-T Focus Group on "Vehicular   1/2
Multimedia" (FG-VM)

Vehicular multimedia system
- 4th screen after *TV, PC & Mobile Phone*
- 3rd infotainment space after *home, office*

Aim of FG-VM
- Integration of Terrestrial and Satellite networks
- Integration of Broadcasting and Internet services
- Reduce costs using converged networking
- Provide wide area coverage

Challenges
- Integration and compati
- Software protocols and
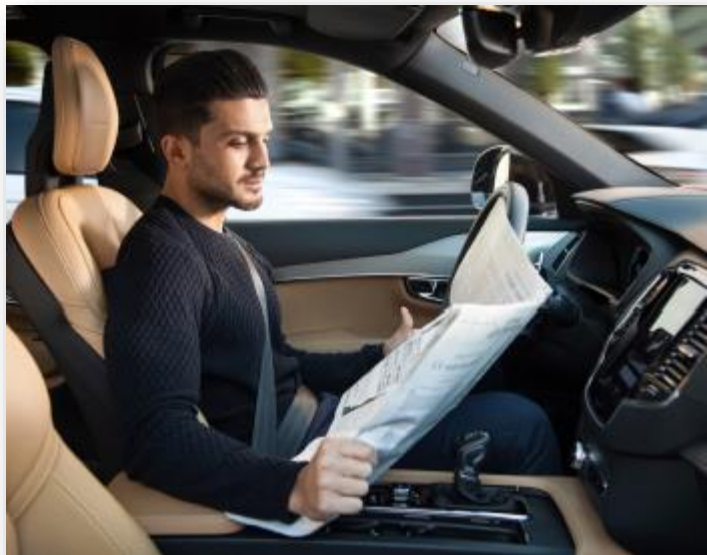- Harmonization of Trans
- Involve international ex

Source: https://www.blmediacomms.com

Vehicular multimedia system
- 4th screen after *TV, PC & Mobile Phone*
- 3rd infotainment space after *home, office*

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Relevant UNECE's activities

Automated vehicles

«Activities other than driving»

Discussion:

Principle 1 - these activities do not prevent the driver from responding to demands from the vehicle systems for taking over the driving task

Principle 2 - these activities are consistent with the prescribed use of the vehicle systems and their defined functions

➔ Activities involving a "screen" likely to be allowed if the "screen" is controlled by the vehicle

Relevant UNECE's activities

Automated vehicles

– «Transition demand»:

If the automated driving system detects that its reaches its boundaries or will be reached shortly or in case of a system failure, it shall provide a transition demand to the driver

– « Driver availability recognition:»

➔ These regulatory aspects (affecting the overall performance of the vehicle) may impact the way vehicular multimedia systems are designed and made available.

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Relevant UNECE's activities

Connectivity

– UNECE Guideline on Cyber Security and Data Protection adopted in 2016

The guideline includes requirements regarding:

- Security (by design)

- Privacy (by design and by default)

- Secure software updates

- Integrity of internal communication as well as online services

It also states (among others) :

- The system shall be accessible for verifying the measures implemented by automotive manufacturers, component/system suppliers and service providers to ensure cybersecurity and data protection by independent authorised audit

- The protection of connected vehicles [...] requires verifiable security measures according security standards (e.g. ISO 27000 series, ISO/IEC 15408)
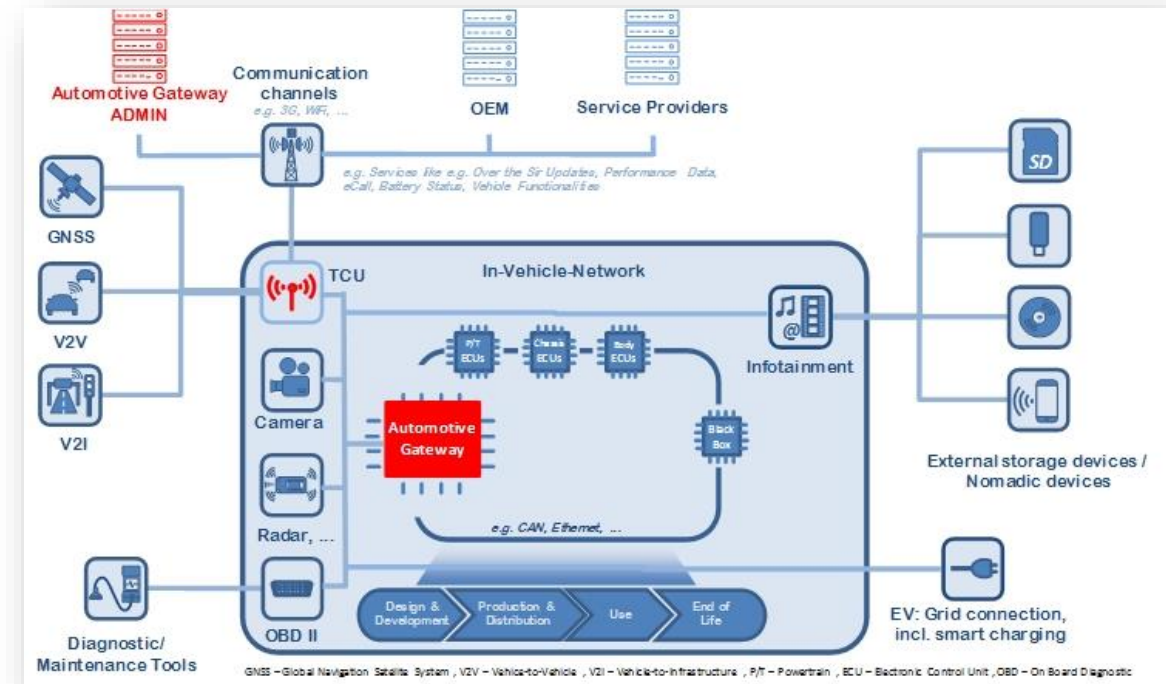
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The Task Force on Cyber Security and OTA

- Initiated in November 2016, by WP.29
- Deliver output in 2018 to GRVA
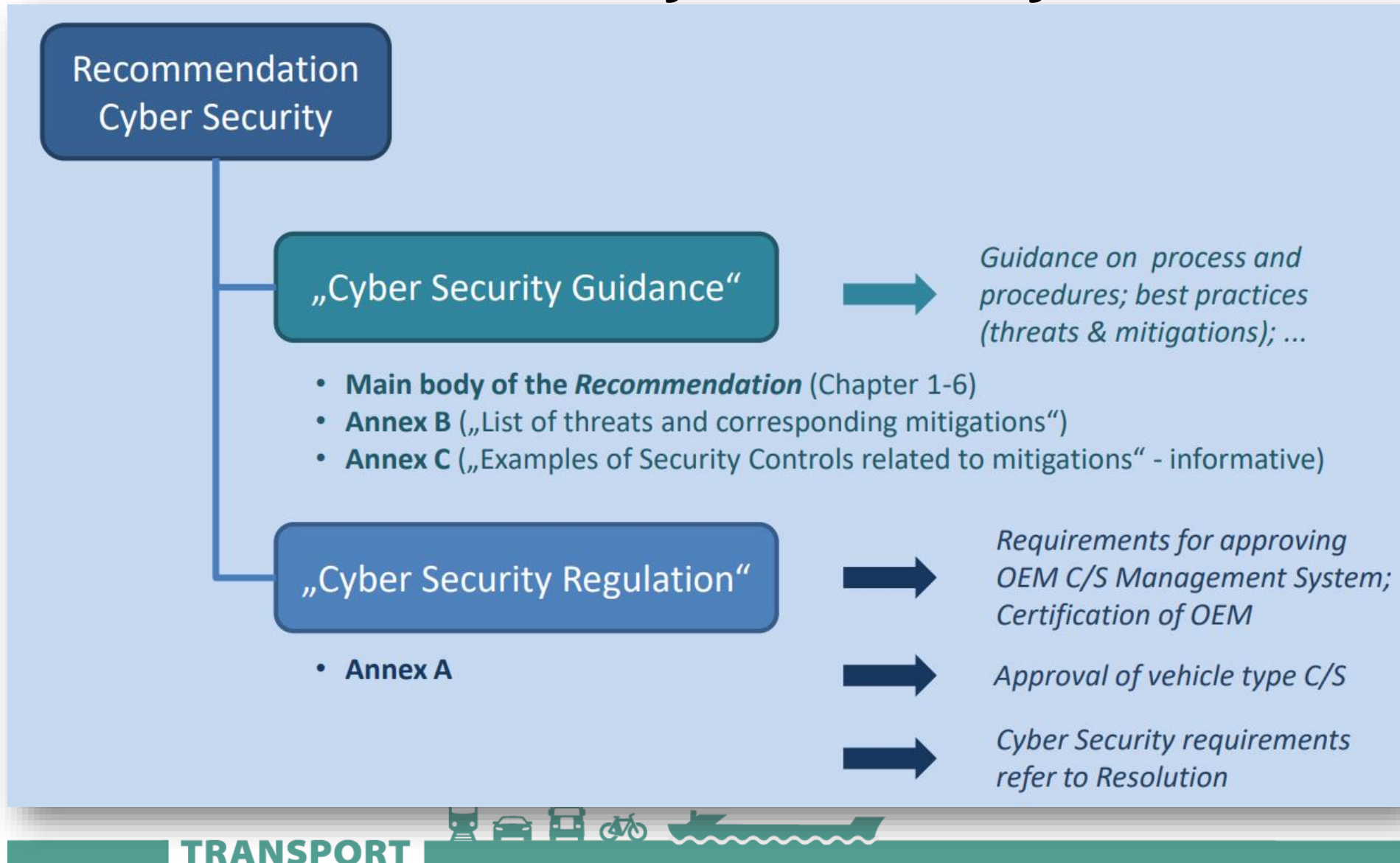 - Cyber security
  - Software updates incl. SOTA

For both:
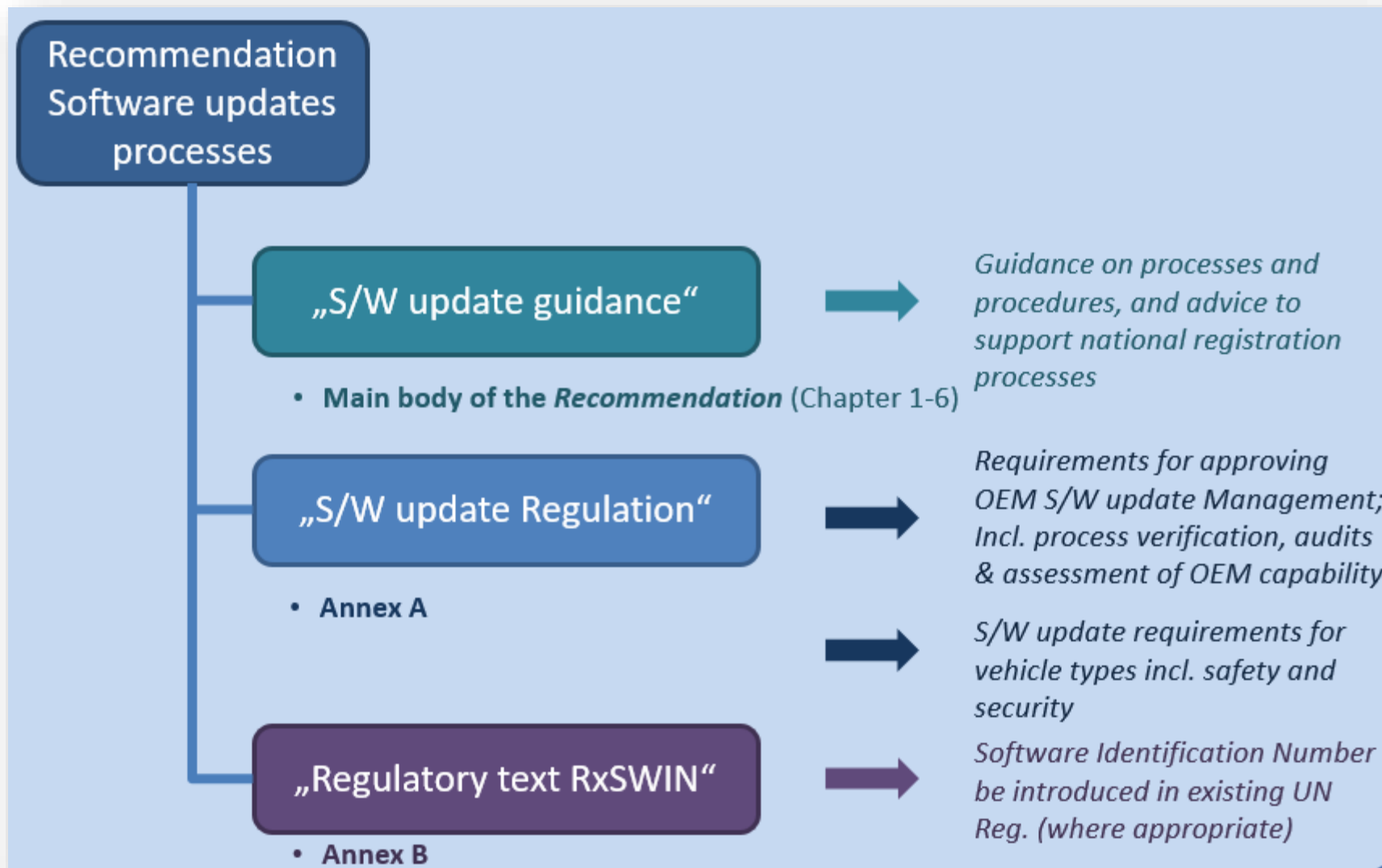 - Recommendation part
  - Draft UN Regulatory text

... Almost all new cars come with a sim card

Draft recommendation on Cyber Security

Recommendation Cyber Security

"Cyber Security Guidance" → Guidance on process and procedures; best practices (threats & mitigations); ...

- **Main body of the *Recommendation*** (Chapter 1-6)
- **Annex B** ("List of threats and corresponding mitigations")
- **Annex C** ("Examples of Security Controls related to mitigations" - informative)

"Cyber Security Regulation" → Requirements for approving OEM C/S Management System; Certification of OEM

- **Annex A** → Approval of vehicle type C/S

→ Cyber Security requirements refer to Resolution

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Draft recommendation on Software updates (incl. OTA)

The non-binding crystal ball prediction

Vehicular multimedia will have to respond to the following demands:

Safety requirements:
- Limit driver distraction
- Don't interfere in driver's perception of the environment
- Optimize HMI (safety)
- Durability aspects (?)
- …

Security requirements
- Comply with cyber security and data protection provisions
- Provide for secure updates
- …

THANK YOU VERY MUCH
FOR YOUR ATTENTION

UNECE

http://www.unece.org/automated-vehicles

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