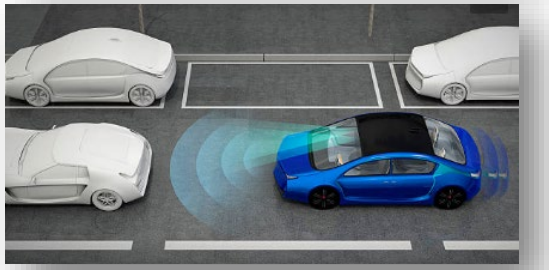
Informal document **WP.29-180-25**
180th WP.29 – 80th WP.1
Joint session

180th WP.29 – 80th WP.1
11 March 2020
Geneva, Room XII

Status report on WP.29 activities related to Automated and Connected Vehicles



UNECE

Takao Onoda

Vice-Chair of the Working Party on Automated/Autonomous and Connected Vehicles (GRVA)

Co-Chair of the Validation Method for Automated Driving (VMAD)

Senior Director, National Traffic Safety and Environment Laboratory, Japan

Content

- Presentation of WP.29 and GRVA
- Automated vehicles – strategic activity
- Requirements for automated vehicles – as of today

UNECE and vehicle regulations

What is WP.29 doing?

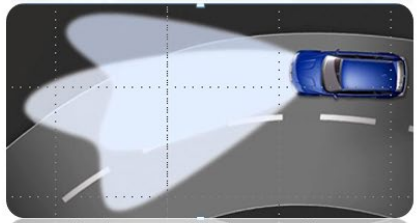

Emissions of pollutants and CO_2


General safety

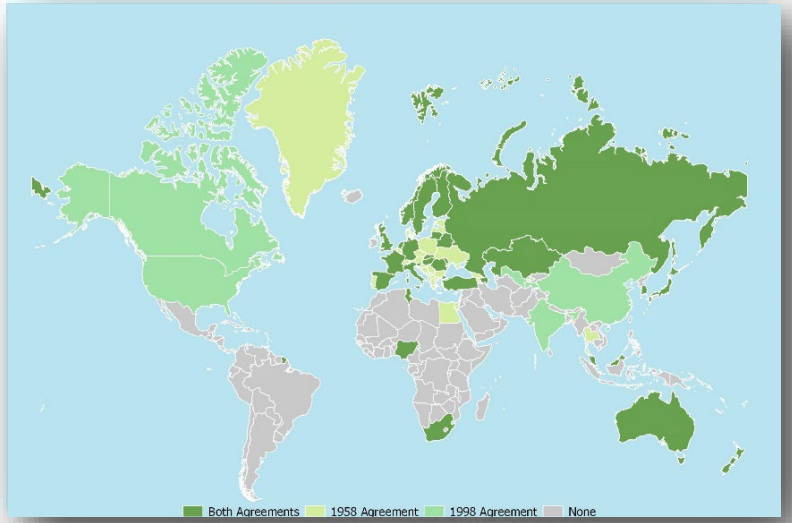

Passive safety


Noise and tires


Automated/autonomous and connected vehicles


Lighting and light signalling

Where?



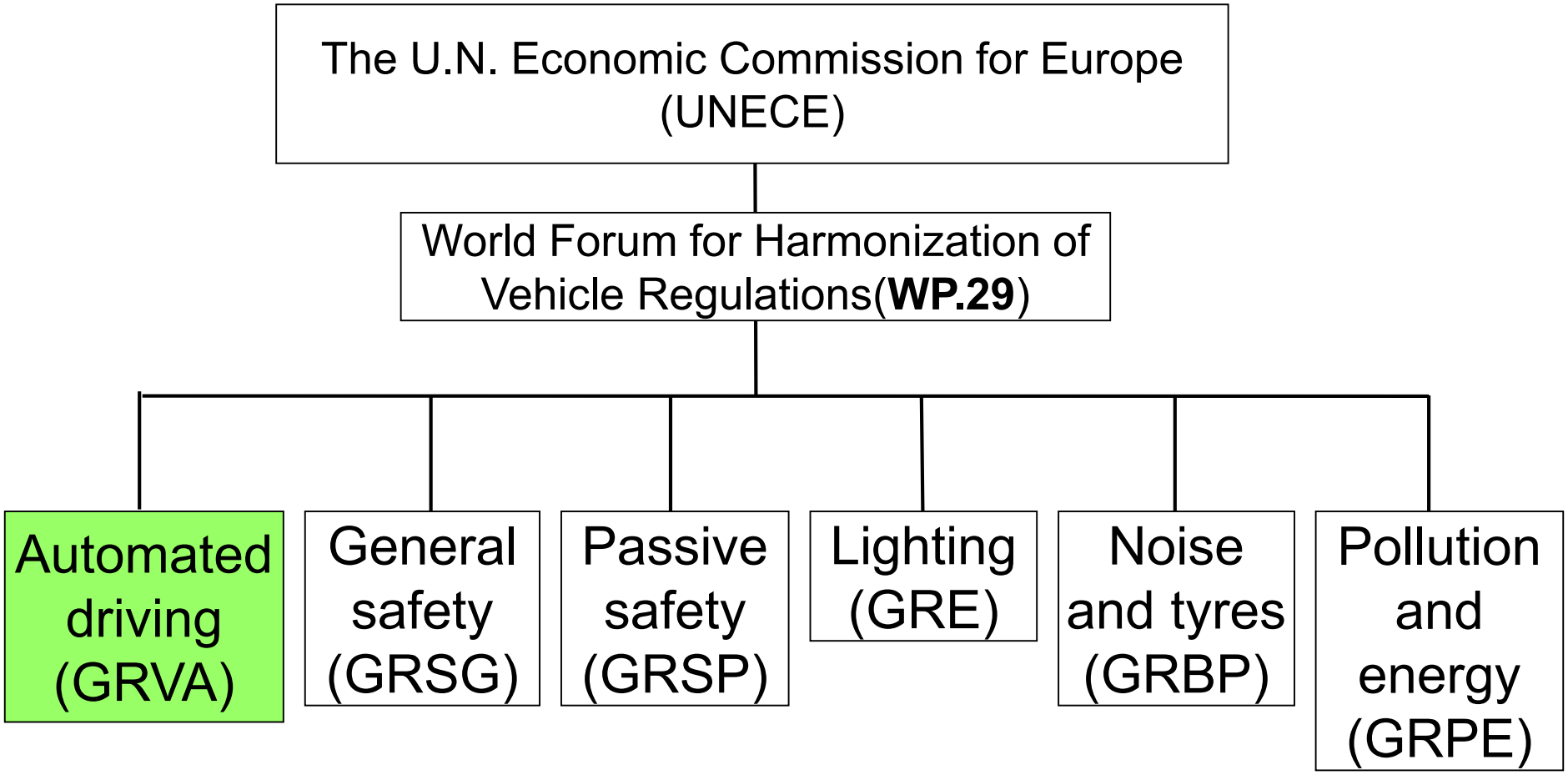
Our structure:

➔ WP.29, 6 working groups, ~40 informal working groups

Notes:

- Some countries not marked here apply unilaterally (some of) the UN vehicle Regulations
- Concept of mutual recognition of approvals for a number of countries

Organization of WP29



Created in June 2018

Content

- Presentation of WP.29 and GRVA
- Automated vehicles – Strategic activity
- Requirements for automated vehicles

Framework document for automated vehicles

Authors

Purpose

Guides WP.29's groups

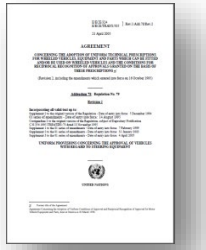
Programme management

Highlights

Safety vision

Key safety elements

Timeline



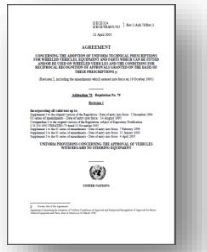
Adopted in June 2019

http://www.unece.org/fileadmin/DAM/trans/doc/2020/wp29/ECE-TRANS-WP29-2019-34-Rev2e.pdf

Outline of the Framework document

- **Safety Vision**

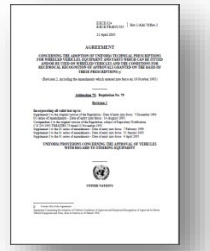
  “an automated/autonomous vehicle shall not cause any non-tolerable risk”, meaning that automated/autonomous vehicle systems, under their automated mode ([ODD/OD]), shall not cause any traffic accidents resulting in injury or death that are reasonably foreseeable and preventable.



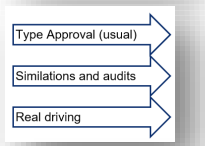
- **Key issues and principles to be considered by WP29 subsidiary bodies as a priority**

A	System Safety
B	Failsafe Response
C	Human Machine Interface (HMI) /Operator information
D	Object Event Detection and Response (OEDR)
E	Operational Design Domain (ODD/OD) (automated mode)
F	Validation for System Safety
G	Cybersecurity
H	Software Updates
I	Event data recorder (EDR) and Data Storage System for Automated Driving vehicles (DSSAD)

Four dedicated Informal Working Groups in the Framework document



- Functional Requirements for Automated Vehicles (FRAV)



- Validation Method for Automated Driving (VMAD)

- Data Storage System for Automated Driving (DSSAD) vehicles + EDR

- Cybersecurity and (OTA) software updates

FRAV

Leaders

Secretary

AAPC
AMERICAN AUTOMOTIVE POLICY COUNCIL
FCA Ford GM

Meetings

Geneva (Sept. 2019)

Berlin (Oct. 2019)

Tokyo (Jan 2020)

Focus on the following key safety elements:

- System safety
- Failsafe Response
- HMI /Operator information
- OEDR (Functional Requirements)

Delivery:

- Common functional requirements based on
  - existing national/regional guidelines
  - other relevant reference documents

VMAD

Leaders

Secretariat

Structure

Traffic scenarios

Audit / In use

Track / real world testing

Focus on the following key safety elements:

- OEDR (Assessment Method)
- Validation for System Safety (including CEL)

Delivery:

- Review of the existing and upcoming methods
- Propose way forward for the assessment of AD

Cyber Security and OTA

Leaders

Secretariat

OICA

Cyber security

CSMS approval
Cyber security approval

(OTA) Software updates

SUMS approval
SU approval
SI requirements

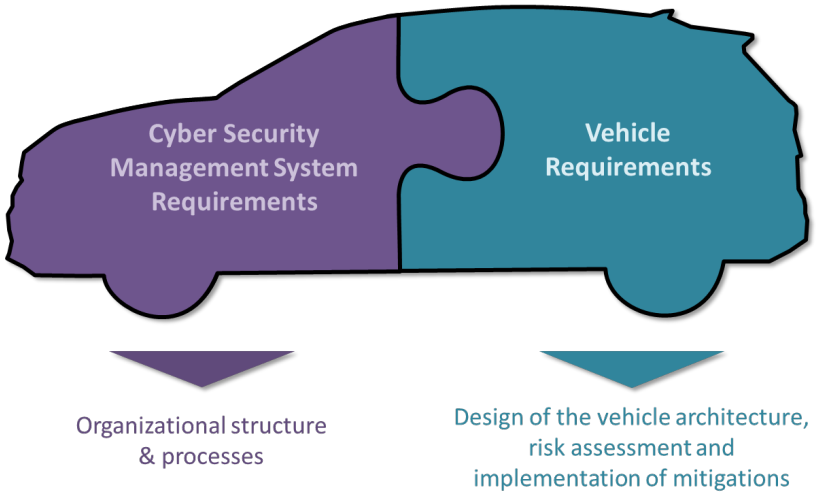
Work

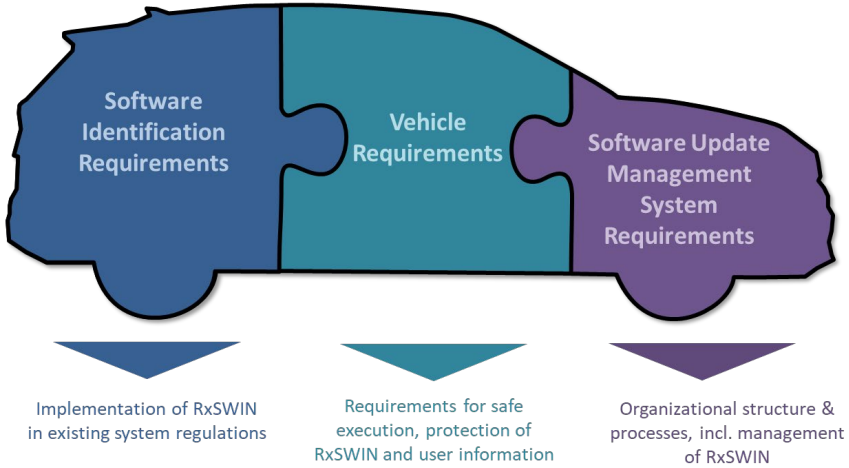
First drafts ✓
Testing Phase ✓

Focus on the following key safety elements:

- Cyber security
- Software Updates

Ambition:
Completion in March 2020





EDR / DSSAD

Event Data Recorder and Data Storage System for Automated Driving

Leaders

Secretariat

OICA

EDR

Not only for ICVs

Harmonization work

C-EDR, US-EDR

➔Accident reconstruction

DSSAD

For ICVs

➔Purposes

- Research
- Monitoring
- Liability
- Legal responsibility

Outcome

EDR vs. DSSAD ✓

DSSAD for ALKS ✓

Focus on the following key safety elements:

- DSSAD/EDR

Delivery:

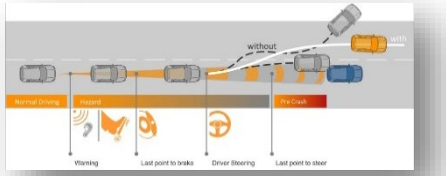
- DSSAD for Lane Keeping systems (levels 3/4)
- DSSAD / EDR

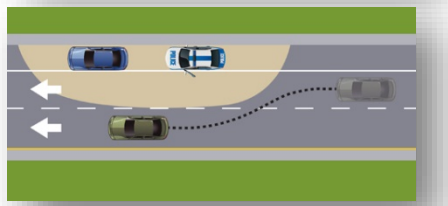
Content

- Presentation of WP.29 and GRVA
- Automated vehicles – Strategic activities
- Requirements for automated vehicles – as of today

UN Regulation No. 79 (Steering)

- Scope (active safety and ADAS):
  - Steering systems, incl.:
    - Emergency Steering Function
    - Corrective Steering Function
    - Remote Maneuvering Systems
    - Automatically Commanded Steering Function
      - Low speed «ACSF of category A» e.g. RCP
      - Lane keeping «ACSF of category B1» (Level 2)
      - Lane change «ACSF of category C» (Level 2)
- ADAS covered since November 2017





Automated Lane Keeping Systems – ALKS

- First Regulation in the area of vehicles of Level 3 and higher

  Use case

  – Motorway

  – Low speed (< 60 km/h)

- Safety related provisions highlights:

  – Dynamic Driving Task

  – Emergency manoeuvre

  – Transition demand

  – Minimum Risk Manoeuvre

  – Driver Monitoring Function

  – Activation criteria and system override provisions

  – …

Conclusion

- Presentation of WP.29 and GRVA
  - *Dedicated Working Party on Automated/ Autonomous and Connected Vehicles was established in June 2018*
- Automated vehicles – Strategic activities
  - *The Framework document, the foundament of WP.29 work on automated vehicles, was adopted in June 2019*
- Requirements for automated vehicles – as of today
  - *The First Regulation in the area of vehicles of Level 3 was drafted.*

THANK YOU VERY MUCH FOR YOUR ATTENTION

UNECE/WP29

www.unece.org/trans/main/welcwp29

www.unece.org/automated-vehicles

t-onoda@ntsel.go.jp

Francois.Guichard@un.org