

Future Networked Car Spin-off in Qatar

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A brief update on UNECE activities regarding automated and connected vehicles

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UNECE

Moderator of session 1

Agenda



1. Introduction
2. UNECE's role regarding automated driving systems
3. ADS and traffic safety considerations



The “automotive multinationals” Following the technical progress

2000'

- Active safety developments
- ABS, ESC, corrective steering

2010'

- AEBS for truck
- Tesla “Autopilot”

2020'

- Honda
- Mercedes-Benz



The “startups” Disruptive approach

2000'

- 2004 Darpa* challenge
- 2005 Darpa challenge

2010'

- “California”
- Automated shuttles

2020'

- Phoenix (Waymo one)
- Others (China, EU etc.)

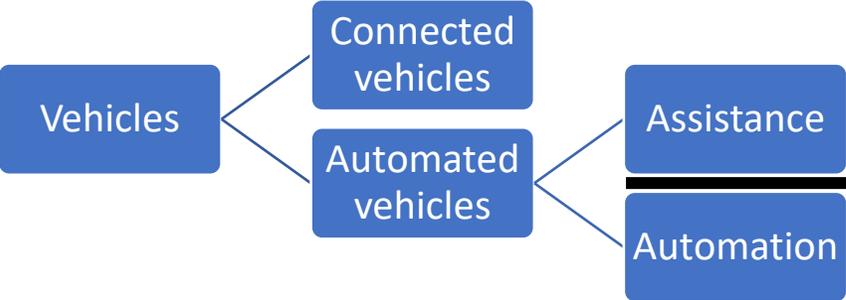


Different levels of technology

Automated and Connected Vehicles



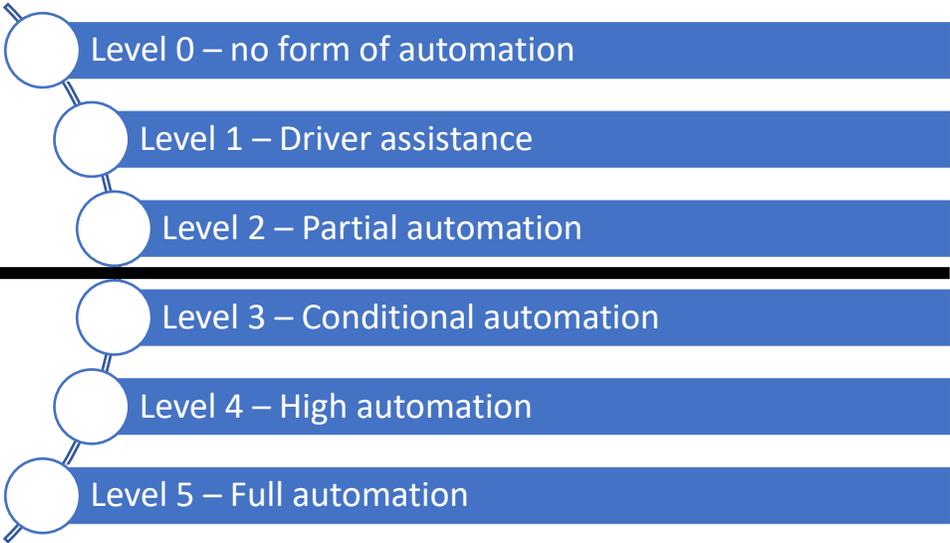
Connected vehicles:
Since 2018, all new vehicles
are connected in the EU



Automated vehicles:
Many recent vehicles offer assistance
A few exceptions are automated

ADAS

ADS



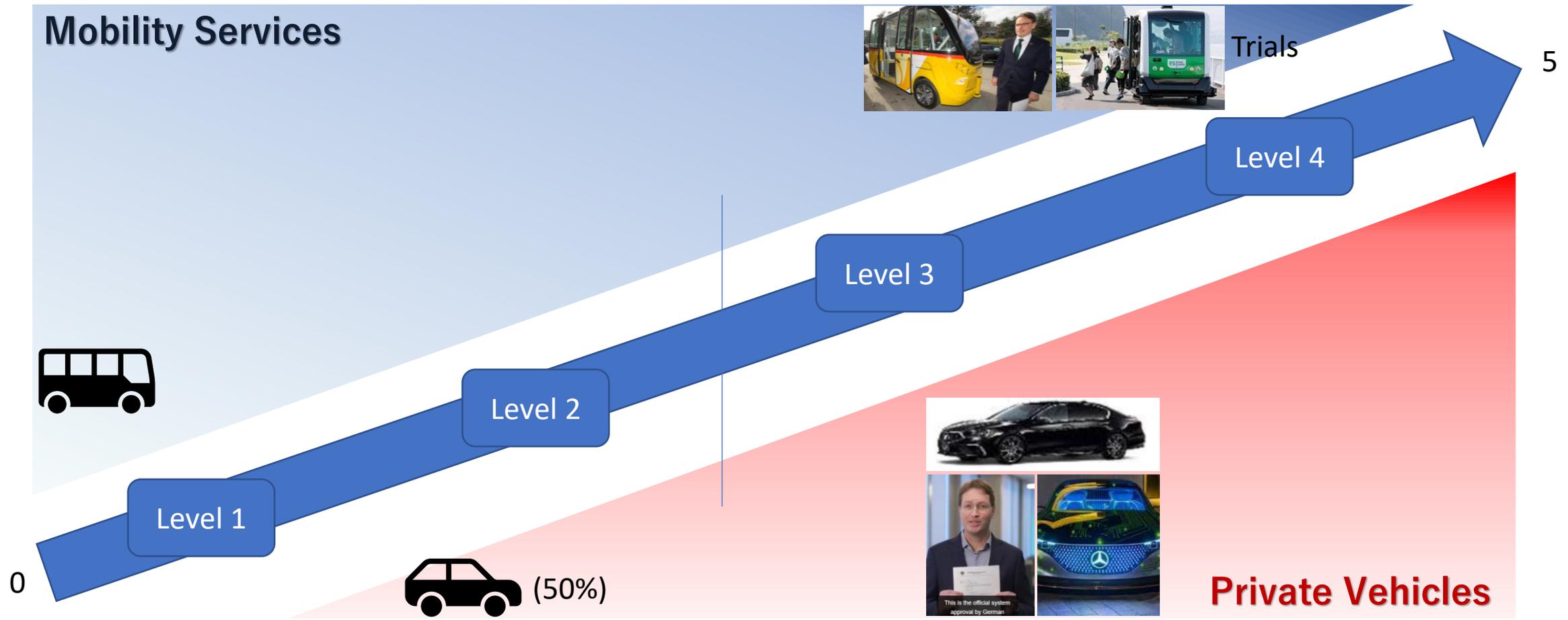
Note: No technology exist today for a system to the performance of the driving task through connectivity

Current situation

Automated Vehicles

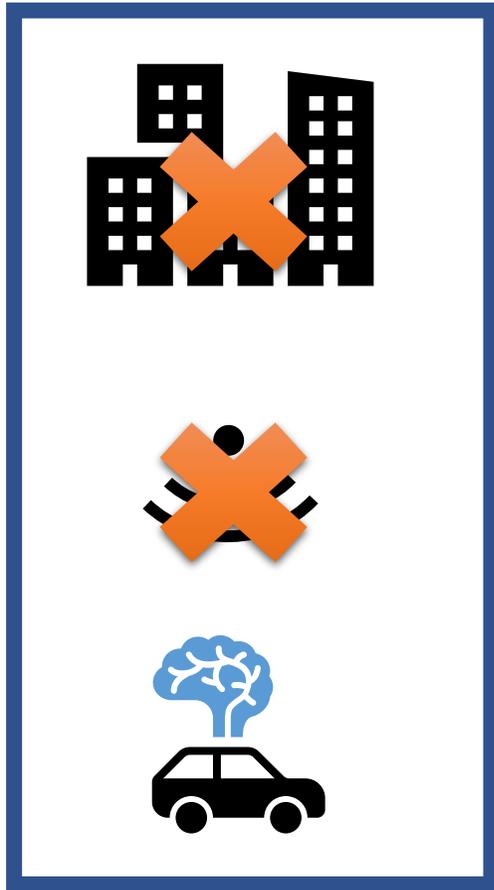


Mobility Services

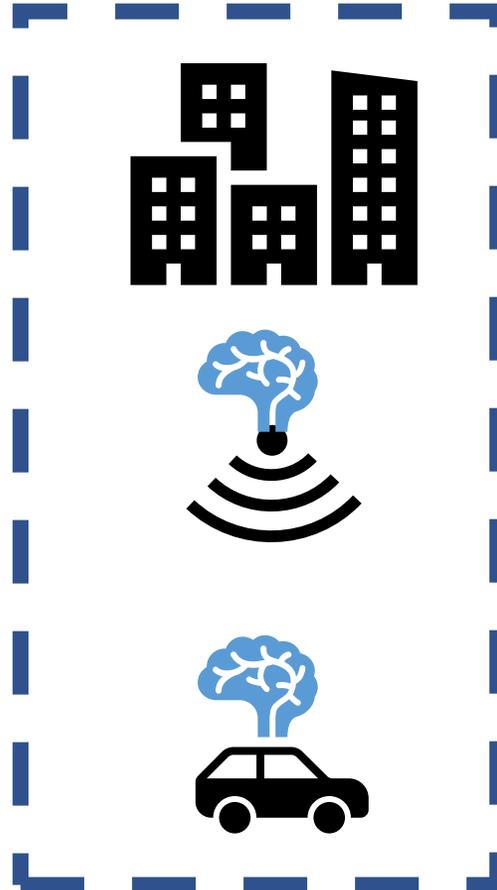


Current model

Automated Vehicles



General trend



Trials



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Group of Seven (G7) Transport Ministers' meeting



UNECE



• Japan presentation at WTO-TBT

https://www.wto.org/english/tratop_e/tbt_e/thematic_sessions_e/presentations_e/p2b_japanese_policy_and_contribution_to_the_international_activities_on_automated_driving_japan.pdf

G7 Transportation Ministers' Meeting 

Joint Declaration at Cagliari, Italy on 23 June, 2017 (excerpt)



- the G7 countries reaffirmed their commitment to identify and remove potential barriers to the introduction of automated guidance technology and to connect to existing regulation systems at international and country levels.
- The Joint Declaration names WP29 as a forum for such cooperation at international level

10

G7 Transport ministers mention WP.29 in:

-2015

-2016

-2017

-2023 see below:

37. We, the G7 Transport Ministers, reaffirm our commitment to continued collaboration with relevant international partners and institution such as ICAO, IMO, UNECE's WP.29 and International Transport Forum, as well as at UNFCCC-COP28. We warmly welcome the intention of forthcoming Italian Presidency of the G7 to convene a Transport Ministers' Meeting in 2024.



UNECE is:

- a United Nations agency
- part of the UN Secretariat
- One of the five regional economic commissions of the United Nations established under UN ECOSOC
- Custodian of 59 Conventions for inland transport
- UN ECOSOC gave UNECE a regional and an inter-regional mandate regarding transport



Road safety perspective



Agenda 2030 – e.g. SDG 3.6



← The Global Plan for addressing road safety

Safe and secure vehicles – UNECE/WP.29 →



Legal instruments at UNECE

Automated vehicles



Road traffic safety conventions:

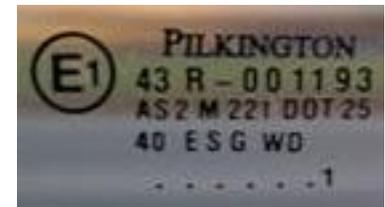
1949 Geneva Convention on road traffic safety
Road Signs Protocol

1968 Vienna Convention on road traffic safety
The Convention on Road Signs and Signals

Vehicle Agreements:

1958 Agreement
Framework for adoption of UN Regulations
Mutual Recognition of Type Approvals issued

1998 Agreement
Framework for the adoption of UN GTRs



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Framework document on AVs

A global initiative



Proposed by



Purpose

Guides WP.29's groups
Programme management



Highlights

Safety vision
Key safety elements
Timeline



Adopted in 2019
2021 and 2022: revisions/updates to the work program

Framework document on AVs

Activities clustered in 4 groups



Safety requirements

(FRAV)

Functional requirements



Validation for AD

(VMAD)

Multi-pillar approach:

- Tests in real world
- Tests on test track
- Simulation



Data

(DSSAD)

- Accident reconstruction
- Determination of the system status



Cybersecurity

(CS/OTA)

- CSMS
- SUMS
- OTA SW updates

Framework document on AVs

Initial achievements



ALKS

Agreed under the FDAV to complete activities initiated before it.



FRAV Guidelines

Delivered in June 2023
Covers all levels,
all use cases



VMAD Guidelines

Master document &
Guidelines on the NATM
Delivered in June 2023



Cyber Security and Software Updates guidelines

Pre-regulatory package expected in June 2024

ALKS for traffic jam pilots (<60km/h)
ALKS for trucks and buses
ALKS for higher speeds up to 130 km/h

Follow ups under the agreements
to be decided March 2024

Guidelines adopted
UN Regulations Nos. 155 & 156
(2022/2024)

...Stay tuned for DSSAD! (June 2024)

Agenda



1. Introduction
2. UNECE's role regarding automated driving systems
3. Automated driving systems and other considerations

The case of ALKS

ALKS and road traffic



Traffic rules shall be complied with

Design speed <[60/130] km/h
Traffic rules shall be respected

The authority issuing an approval shall verify the ability of the system to comply with traffic rules

The approval contains the list of countries for which the system has been checked



Activities other than driving

Might be authorized at national level

The regulation specifies that when the infotainment system shall stop if a take over request is issued



Enforcement possible

Was the system driving?
Was the driver driving?
Was there a take over request?
Was there a technical issue?



Data Storage System

For automated driving (DSSAD)
The regulation does not specify the minimum storage duration.
An example in a footnote mentions 6 months



Conspicuity

Idea: a light informs when the system is driving

Other items of discussion: Privacy-by-design, access to vehicle data...

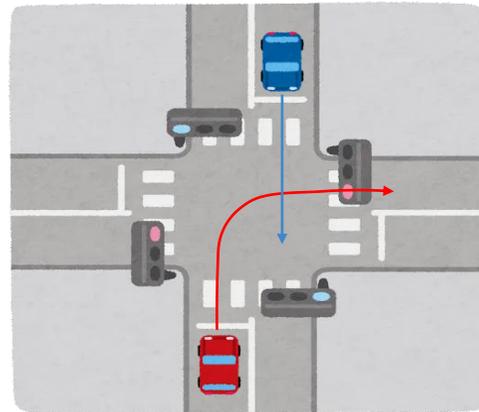
Other challenges

Two examples: vehicular communication, A.I.

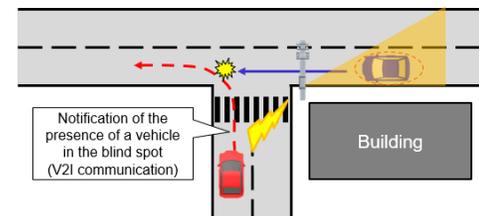


Vehicular Communication Task Force:

- Reviews of potential use cases
- Checks existing technology performance
- Will advise WP.29 on possible actions

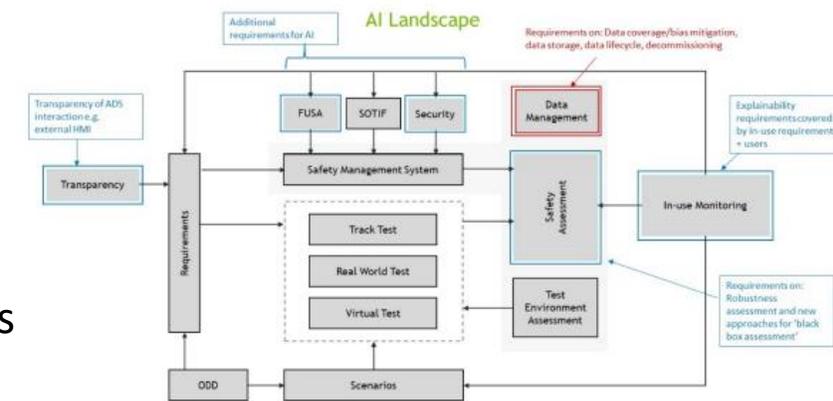


Countries explore the possible role of V2I e.g. Japan:

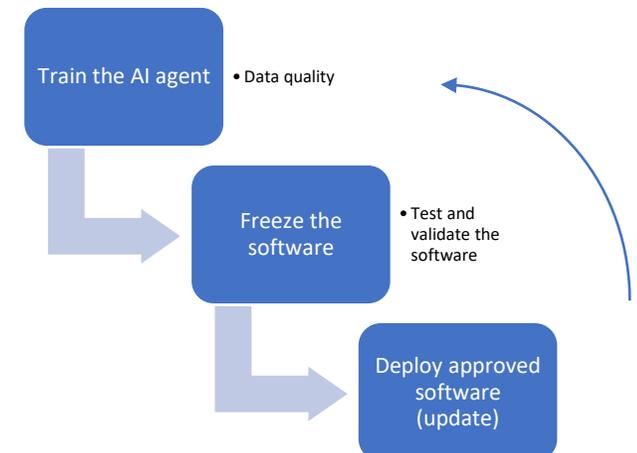


UNECE/GRVA:

- Definitions
- Impact on Perf. neutral requirements



Principles:





INLAND TRANSPORT COMMITTEE



UNECE

Thank you!

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UNECE

Secretary to the WP.29 Working Party on
Automated/Autonomous and Connected Vehicles “GRVA”

Secretary to the WP.29 IWG on Intelligent Transport Systems

Secretary to the WP.1 Group of Experts on drafting on a legal
instrument on the use of automated vehicles in traffic