Plenary Session One

Integrating vehicle, driver and infrastructure strategies

Al Bustan Rotana Hotel, Al Rashidya Ballroom A & B
Plenary Session One

Presentation 1

Development of Automotive Technology and Social Conditions as a Challenge for PTI

Gerd Neumann

Managing Director, DEKRA Automobil GmbH, Germany
Vision Zero – Requirement and challenge

Factors of success:
- Development of automotive engineering
- Improvement of infrastructure
- Improvement of medical rescue services
- ...

PTI- Contribution:
Support high standard of vehicle safety during „lifetime“!
Challenge – Modern vehicle technology

Further development issues: new propulsion system, online diagnosis, telemetry systems, networking of transport mode, Change of vehicles: entertainment systems on wheels, new mobility concepts, …
Challenge: Development of Vehicle Safety

Innovation for Vehicle Safety is going to be more quickly marketable through new electronic systems and IT solutions
Example Active Safety

Strategy of Avoidance

- Reduce energy
- Turnout
- Remain
- Escape

Vehicle Action

- Braking
- Steering
- Not driving back or sideways
- Acceleration

DAS – Driver Assistance System

- Emergency Brake Assist.
- Lane Assist.
- Pedestrian recognition Lane Change Assist.
- Autonomous systems

Step by step reduction of accident potential and higher influence of technical safety on the general road safety
Example: Pre-Safe® and Passive Safety

- driver-airbag
- window bags about two seat rows
- active belt buckle outer fond passengers
- seat belt tensioners and self adaptive seat belt force limiter on the outer seats of the fond
- BELTBAG outer fond passengers
- Side bags fond
- side bags front
- Seat cushion airbag (executive reclining seat)
- PRE-SAFE®-seat belt tensioner and self adaptive seat belt force limiter for driver and front passenger
- knee bag for the driver
- PRE-SAFE® Impuls for driver and front passenger

The variety of technical solutions requires new comprehensive PTI test procedures

Source: Daimler AG
Challenge: Telematics

Challenge with highest priority!

- International regulations are under amendment

EU-Example: eCall – automated emergency call

- Obligatory for homologation from 2018
- First step testing for PTI implementation

Technology development gives new questions for the future of PTI - Role of CITA members?
What is the impact of vehicle innovation on PTI?

Quo vadis PTI ... ?
What has to be done?

- Innovation in PTI Technology
- PTI ability as homologation standard
- Continuous amendment of the relevant regulations
- ...

Which role could CITA play as a global network?
Important step has been done!

CITA has taken over an important role in Geneva!

The formulation of joint strategic goals is necessary!
The way to a realizable strategy?

Picture of the future

Example guidelines

- support of national government
- innovation
- focus on members
- globalisation
- integration

Targets | Tasks
--- | ---

From the CITA Vision & Mission to joint targets and measurements

Joint acting as a success factor: From the strategy to the implementation....!
Thank you!
Plenary Session One

Presentation 2

AUTOMATED/AUTONOMOUS VEHICLES — THE
CHALLENGE FOR TYPE APPROVAL AND VEHICLE
INSPECTION

Walter Nissler

Chief of Vehicle Regulations and Transport Innovations Section,
Transport Division, UN/ECE, Geneva
Automated/autonomous vehicles
The challenge for type-approval and periodic technical inspections of vehicles
Content

I. Automated/autonomous vehicles

II. WP.29
   a) WP.29 Activities
   b) WP.29 scope and organization

III. The tools of WP.29
   a) Vehicle approval/certification: the 1958 and 1998 Agreements
   b) Periodic technical inspections (PTI): the 1997 Agreement
Content

I. Automated/autonomous vehicles

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III. The tools of WP.29
   a) Vehicle approval/certification: the 1958 and 1998 Agreements
   b) Periodic technical inspections (PTI): the 1997 Agreement
### Vehicle approval/certification regulation challenges

- Adapt existing vehicle construction regulations (WP.29)
  - Update existing Regulations
  - Define proper HMI concepts
  - Identify side effects and address them
  - Design new safety concepts
  - Address interoperability issues
- Integrate new technologies & standardization work (e.g. from ITU, ISO, IEC, IEEE)
- Not only hardware but also software to be covered (modeling of decision making processes at conflict situations)
- Don’t neglect traditional vehicle safety issues

### Other challenges

- Adapt traffic rules? (e.g. safety distances?)
- Adapt infrastructure?
- Address security questions
- Revise responsibility / product liability concepts
  - Define expectations of the product / its Manufacturer
  - Implement customer protection updates
  - Adapt the role of the insurance companies and Define balanced relationship between «driver (owner)» / «Manufacturer» / «insurance»
### PTI challenges

- Adapt existing vehicle inspection rules (WP.29)
  - ECSS Study as a first approach
  - How to include image based systems
  - How to inspect radar/distance sensors
  - How to inspect positioning systems
  - ???

- Integrate new technologies in PTI

- Not only hardware but also software to be covered (checking of software versions and installation of mandatory updates)

- Don’t neglect traditional vehicle safety issues

### Other challenges

- How to inspect V2V, V2I or V2X communication?

- Can / may we use information generated during the use of the vehicles for PTI?

- Address data security questions during PTI
Crucial need to update regulations constantly to cover new technologies and to harmonize internationally the technical requirements
Content

I. Automated/autonomous vehicles

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   a) WP.29 Activities
   b) WP.29 scope and organization

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   a) Vehicle approval/certification: the 1958 and 1998 Agreements
   b) Periodic technical inspections (PTI): the 1997 Agreement
The World Forum for Harmonization of Vehicle Regulations (WP.29)

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

**Construction 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
What is WP.29 doing?

- Emissions of pollutants and CO₂
- General safety
- Passive safety
- Noise
- Active safety
- Lighting and light signalling
The WP.29 structure

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

Committee for Coordination of Work (AC.2)

Active Safety
- GRE & GRRF
  - Lighting and light-signalling
  - Brakes and running gear

Passive Safety
- GRSP
  - Pedestrian protection
  - Head restraints
  - Child restraint
  - Truck cab strength

General Safety
- GRSG
  - Safety of wheelchair users in buses & coaches
  - Glazing materials
  - Rear view mirrors

Environmental protection
- GRPE & GRB
  - Pollution and Energy
  - Noise

Committee for the 1958 Agreement (AC.1)
Committee for the 1998 Agreement (AC.3)
Committee for the 1997 Agreement (AC.4)

Around 40 non-permanent technical groups
WP.29 is worldwide, unique and transparent

- Agreements open to all Nations of the UN
- Participation open to States, Governmental Organizations (GOs) and NGOs, but
  
  **Decisions are taken by Governments (of CPs)**

- No other worldwide organization covers this area
Geographical scope of WP.29
Content

I. Automated/autonomous vehicles

II. WP.29
   a) WP.29 Activities
   b) WP.29 scope and organization

III. The tools of WP.29
   a) Short introduction about the 1958 and 1998 Agreements
   b) Focus on the 1997 Agreement (PTI)
Principal Elements of the 1958 Agreement

Eligible Contracting Parties to the 1958 Agreement:

- Members of UN

The 1958 Agreement provides:

- Legal framework for the adoption of uniform UN Regulations on the vehicle construction
- Reciprocal recognition of Type Approval Approved once and accepted everywhere (CPs)
Principal Elements of the 1998 Agreement

Eligible Contracting Parties to the 1998 Agreement:
- Members of UN

The 1998 Agreement provides:
- Legal framework for the adoption of uniform GTRs, to be transposed nationally
- No administrative provisions (for self certification and homologation)
Principal Elements of the 1997 Agreement

Eligible Contracting Parties to the 1997 Agreement:

Members of UN

The 1997 Agreement provides:

- Legal framework for the adoption of uniform UN Rules for PTI of vehicles in use
- Reciprocal recognition of certificates of such inspections for cross-border use of vehicles
UNECE - Transport Division

1997 Agreement

UN Rule No. 1

For environmental issues

UN Rule No. 2

For safety inspection
Status of the 1997 Agreement

Current PTI regulations (UN Rules)

- Commercial vehicles - Vehicles of Category N2 and N3
- Coach and busses - Vehicles of Category M2 and M3 (Mass > 3.5t)

Next steps - Amendments in discussions

- Scope extension - Including vehicles below 3.5t
  i.e. passenger cars and vans
- Update of technical provisions - e.g. for cars

Future

- Extend content - Include elements relevant for level of PTI
  (test-equipment, skills & training of inspectors, supervision)
- Make it a set of harmonized technical provisions - for
  vehicles in use derived from those of the 1958 & 1998 Agreements

WP.29 has agreed to update the UN Rules
Latest developments at WP.29

- New Informal Working Group on PTI
  - Established at 165th session March 2015
  - Chair: The Netherlands
  - Secretariat: CITA
  - Main tasks: Establish new Rules on
    - Test equipment
    - Skills, training and certification of inspectors
    - Supervision of test centres
Possible new structure for WP.29

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

Committee for Coordination of Work (AC.2)

Committee for the 1958 Agreement (AC.1)
Committee for the 1998 Agreement (AC.3)
Committee for the 1997 Agreement (AC.4)

Active Safety
- GRE & GRRF
  - Lighting and light-signalling
  - Brakes and running gear
- GRSP
  - Pedestrian protection, Head restraints, Child restraint, Truck cab strength

Passive Safety
- General Safety
- Environmental protection
- GRSG
  - Safety of wheelchair users in buses & coaches, Glazing materials, Rear view mirrors
- GRPE & GRB
  - Pollution and Energy
  - Noise

Vehicle inspection
- ....
  - Test items, methods, defect assessment
  - Equipment
  - Training
  - Supervision

Around 40 non-permanent technical groups
Contracting Parties to the 1997 Agreement

Signatories, pending ratification:
Austria; Belgium; Cyprus; Czech Republic; Denmark; France; Georgia; Germany; Greece; Ireland; Italy; Portugal; Spain; Sweden; Switzerland; United Kingdom
THANK YOU FOR YOUR ATTENTION

World Forum WP.29

Plenary Session One

Presentation 3

VEHICLES AND DRIVERS OF THE FUTURE: INTERNATIONAL COOPERATION IS NEEDED

Kari Hakuli

President, CIECA, Europe
“Vehicles and drivers of the future: international cooperation is needed”

Dubai, UAE, 14-16 April 2015
Mr. Kari Hakuli, CIECA President
CIECA

– International commission for driver testing
– Non governmental platform organization working to:
  • develop technical and scientific knowledge about driver education and assessment.
  • develop shared solutions to the safe use of motor vehicles
  • share a common understanding
– Founded in 1956
– 69 members in 35 countries
– Core members design and deliver theoretical and practical driving tests
– Managed by a Board elected by a General Assembly
– Secretariat and offices in Brussels, Belgium
– Financed by annual membership fee
– United Nations consultative status and observer status in driving licence committee of EU Commission
Our objectives

- Improve road safety
- Improve driving standards
- Contribute to development of road traffic education
- Protect the environment
- Facilitate mobility
Why did we renew our strategy in 2011?

• We need to meet the challenges of today to make roads safer
  – Environmental awareness
  – Ageing and mobility
  – New vehicle technology and intelligent transport systems
  – Financial uncertainty

• Issues in a complex system need broader processing

• We are just a part of the system
What did we change?

• We took a broader role in road safety and driving standards
• We changed our statutes to match the new strategy
• We accepted wider range of memberships
• We started to develop partnerships with other relevant organizations in the sector
• We started to build work programs based on the strategy
What happened?

• We have got many new members (29)
• We have more cooperation with other stakeholders
• We are learning new things
• We have established a broader role in the field
• We are more global
• We have more stable financial position
Building more bridges

• A system approach to new vehicle technology

Mercedes-Benz-F-015 concept vehicle
Hype is there already

Autonomous Vehicles

Hype cycle 2015, Gartner inc.
Why cooperation is needed?

• Not just vehicle technical issue, also human factors (safety, usability, acceptability) and infrastructure as well as legal and institutional issues must be envisaged.

• Road traffic system is complex and the interactions between the components (vehicle, driver, infrastructure) must be taken into consideration to create a safe system.
Who should cooperate?

• Regulators
  – UNECE: WP1, WP29
  – EU: DGMOVE, ENT, ENER, ENV
• Vehicle manufacturing industry
• Vehicle testing and inspection industry
• Road infrastructure developers
• Driver training and testing industry
• Research institutes
• Authorities (licenses and surveillance)
Drivers of the future

• Are there any drivers?
  – From driver assisting systems into autonomous vehicles
• Drivers task is changing from manual control to supervision
• Driver education and testing have to adapt
• Vehicles have to adapt to human factors
• Legislation has to adapt more quickly
Conclusions

• It is strategically wise to broaden the horizon, look out of the box and to cooperate
• Rapid development of vehicle technology has fundamental implications for many organizations
• A system approach and cooperation is needed
• CIECA is willing to cooperate and contribute
• Together we are stronger!
Question 1:

What impact will this vehicle innovation have on roadworthiness inspection?

Answer Choices:

A. Very High
B. High
C. Moderate
D. Quite Low
Question 2:

How important is it that type approval standards are designed to facilitate in-service roadworthiness inspection?

Answer Choices:

A. Extremely High
B. High
C. Moderately Important
D. Low Importance
E. Not Important at all
Question 3:

In the future, how important will it be to coordinate these factors for new initiatives for safe and sustainable mobility?

Answer Choices:

A. Very Highly Important
B. High Importance
C. Moderately Important
D. Low Importance
E. Not Important At All
Question 4: How difficult will it be to find appropriate solutions?

Answer Choices:

A. Very Difficult
B. Moderately Difficult
C. Quite Easy
D. Very Easy
Question 5:

Should roadworthiness standards be tailored to meet these different needs?

Answer Choices:

A. Standards should be the same worldwide
B. Each region should have different standards
C. Each country should have different standards
D. This is not an important issue
Question 6:

Do you consider that drivers are ready for this change of role?

Answer Choices:

A. Understand the implications and keen for the changed role
B. Do not understand the implications but still keen for the change
C. Neutral about the changed role
D. Are becoming aware of the implications of this change
E. Not aware if the implications for this change
Lunch

12:00 – 13:30

Please return promptly to your seats for Plenary Session Two