Harmonized regulatory framework on Accident Emergency Call System developed by UNECE World Forum for Harmonization of Vehicle Regulations (WP.29)

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UNECE, ITC and WP.29

- UNECE works to facilitate economic integration and cooperation among its member States. Key actions include:
  - negotiation of international legal instruments
  - development of regulations and recommendations

- ITC negotiates and adopts international legal instruments on inland transport that support develop efficient, harmonized and integrated, safe and sustainable pan-European transport systems.

- WP.29 is a unique framework that allows for the development of globally harmonized regulations on vehicles.
Every year, more than 120 thousand people are killed on roads in the ECE region!

Lack of transport is a barrier to getting a job for 38% of the jobseekers in the UK.

About 30% of total energy consumption is from transport.

UN Regulations resulted in a reduction of 95-97% of pollutants CO, HC and NOx from new passenger cars.

Investments in innovative transport technologies and infrastructure increases private sector productivity.

Lack of transport is a barrier for seeking medical help, going to the supermarket and attending education.

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Climate change
Air quality
Noise
Land use
Waste

Social
Access
Inclusion
Safety
Security
Health

Economic
Growth
Employment
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Choice

Environment

Transport for sustainable development

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ITC expressed its continued support in March 2015 on proposed SDGs:

**GOAL 3**  Ensure healthy lives and promote well-being for all at all ages

3.6  By 2020, halve the number of global deaths and injuries from road traffic accidents

**GOAL 11**  Make cities and human settlements inclusive, safe, resilient and sustainable

11.2  By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.
Why a worldwide regulatory framework for vehicles?

- WP.29 established in 1952 (World Forum since 2000)
- The automotive industry became a global industry
- Main contributor to economical growth
- Mitigate negative effects (accidents, pollutants, climate change)

Note: The development of worldwide harmonized regulations results:

- in safer and cleaner vehicles and
- in the reduction of technical barriers to trade and of costs for consumers
- given the focus of proposed SDGs 3.6 and 11.2, WP.29 and the others
  UNECE/ITC subsidiary bodies will have an increasing role on sustainable transport goals
The World Forum administers 3 Agreements:

‘58 Agreement concerning the adoption of uniform technical prescriptions for wheeled vehicles, equipment and parts which can be fitted and/or be used on wheeled vehicles and the conditions for reciprocal recognition of approvals granted on the basis of these prescriptions (52 Contracting Parties, 134 UNECE Regulations)

‘98 Agreement concerning the establishing of global technical regulations (gtrs) for wheeled vehicles, equipment and parts which can be fitted and/or be used on wheeled vehicle (35 Contracting Parties, 16 gtrs, adopted in 2014)

‘97 Agreement concerning the adoption of uniform conditions for periodical technical inspections of wheeled vehicles and the reciprocal recognition of such inspections (12 Contracting Parties, 17 pending signatories, 1 Rule, 1 draft Rule)

The 58 & 98 Agreements have similar technical provisions (parallel)
Most of BRICS countries are Contracting Parties to the Agreements of the World Forum WP.29
UNECE/WP.29 structure

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

- Active Safety
- Passive Safety
- General Safety
- Environmental protection

- Lighting and light-signalling (GRE)
  - Adaptive Front-lighting Systems
  - Installation of lighting and light-signalling devices

- Brakes and running gear (GRRF)
- Electronic Stability Control (ESC)
- Lane Keeping Assist System (LKAS) and Parking Assist Systems (PAS)

- Passive safety (GRSP)
- Pedestrian protection
- Frontal/lateral impact protection
- Child restraint

- General Safety (GRSG)
  - Safety of buses & coaches
  - Glazing materials
  - Rear view mirrors

- Pollution and Energy (GRPE)
  - On-Board Diagnostic systems
  - Electric Vehicles and Environment (EVE)

- Noise (GRB)
  - Quiet road transport vehicles

> 40 non-permanent technical groups
Key Provisions:

- CPs are free to be bound by all, some or no UN Regulation.
- UN Regulations apply to a type of vehicle, equipment or parts as specified in the scope of the Regulation.
- A new UN Regulation is adopted by a 2/3 majority of the CPs, but in practice by unanimity.
- UN SG notifies a new Regulation to all CPs.

UN Regulations include:

- Technical prescriptions, regarding the testing method.
- Conditions ([performance requirements](#)) for granting a type approval (including limit values).
- **Conditions for the mutual recognition of the type approvals**
- Requirements for E-marking.
- Prescriptions for conformity of production.
The ‘58 Agreement (2)

- **52 Contracting Parties** (incl. European Union-EU).
- **Regulations accepted by other countries** (i.e. Canada, ASEAN, APEC etc.)
- **Regulations applied by other countries on a national level law** (i.e. South America, Philippines ...)

‘58 Agreement is being updated soon to include:
- International Whole Vehicle Type Approval (IWVTA).
- A whole vehicle approved accepted by all.
- Different levels of stringency to facilitate the regulatory activities of developing countries.
- Possibility to grant approvals to earlier versions of the UN Regulations.
UN Global Technical Regulations can be amended when transposed to national law (almost total harmonization)

**Contracting Parties:** 35 countries including China, India and USA

**UN GTRs include:**
- technical prescriptions, the testing method (eventually alternative provisions and
- performance requirements, including limit values
- No administrative provisions
  - No certification procedure
  - No conformity of production
  - No reciprocal recognition
Experts of Working Group make a proposal of amendment to existing UN Regulation or for a new one.

CPs applying that UN Regulation binded to apply.

The UN Reg./Amend is adopted after 6 months if no disagreement from >1/3 CPs.

WP.29 adopt the proposal with 2/3 majority.

The WG adopt the proposal & send to WP.29/AC.1. Only CPs have right to vote.
Manufacturer shall address the application to a Designated Administrative Department (Type Approval Authority (TAA))

Tests conducted by accredited Technical Service

TAA grant the type-approval, if test results comply with the requirements

The type approval is mutually recognized by all other CPs applying that Regulation

The manufacturer and the TAA have to ensure the conformity of production

The manufacturer may bring its E-marked product to the market without any further tests
Why a UN Regulation on Accident Emergency Call Systems (AECS)

Save up to 2500 lives a year, speed up emergency response times by 40% in urban areas and 50% in the countryside (EU)

Need of fully interoperability of positioning systems (e.g. ERA-GLONASS, GPS, Galileo) and of mobile telecommunication networks

Need for harmonization of technical requirements on the basis of performance-based tests provisions

Voluntary approach would not lead to a fast widespread eCall deployment, rather to services limited to some (high end) vehicles initially

WP.29 agreed in June 2013 to develop a UN Regulation by Oct. 2015 applicable worldwide
At its June 2013 session WP.29 established a new informal working group (IWG) on AECS chaired by the Russian Federation.

Task of the IWG:

- **Develop** a UN Regulation (in the framework of the 1958 Agreement),
- **Technologically** neutral provisions for AECS applicable worldwide.

- The UN Regulation would be implemented in national legislation on e-call after its adoption by WP.29 and entry into force.
- The UN Regulation would support any Global Navigation satellite system
The draft UN Regulation consists of three parts:

- Part I: e-Call devices;
- Part II: installation on vehicles of approved AECS devices
- Part III: AECS system (fully integrated AECS)

Scope: passenger (M1) & small commercial (N1) category of vehicles
Harmonization of Acronyms

“e-Call device (AECD)” refers to a device capable of:

- determination of co-ordinates and direction of motion of a vehicle;
- Transmission of above information in case of severe accident;
- bilateral voice communication with emergency services through mobile telephone networks.

“e-Call system (AECS)” refers to a fully integrated e-Call device.
Outreach of UN Regulations

Final potential outreach of the Regulations under UNECE

- Contacting Parties to both Agreements
- Contacting Parties to the 1958 Agreement
- Contacting Parties to the 1998 Agreement
- Not Contracting Parties

UNECE - Transport Division
The UN Regulation would be implemented successfully at the global level only if the surrounding vehicle environment is efficient.
Scheme of operations of the AECS system
Pending issues on the lack of harmonised telecommunication standards due to existing regional requirements:

**Russia (ERA Glonass Regulation and standards established):**
- Positioning via **Glonass** satellite constellation
- Mobile network: 2G & 3G required
- In band modem and **SMS** for data transmission
- Detailed device requirements with regard to environmental, mechanical and voice communication performance
- Manual-only operation for ‘device’ and automatic trigger for ‘system’

**EU (voluntary third party service system and eCall Regulation in progress):**
- Positioning via **Galileo** satellite constellation
- Mobile network: 2G required & 3G optional
- In band modem data transmission
- **No manual-only** operation

**Japan (Helpnet, voluntary third party service system):**
- Positioning via **GPS** satellite constellation
- Mobile network: 3G (UMTS 1700/2100 MHz)
- Packet data transmission (not compatible with 2G voice transmission)
State of play of discussions at experts level:

1. Scope restricted to items not related to communication:
   • Human/Machine interface
   • Resistance to impact
   • Triggering signal generation
   • Minimum Set of Data (MSD)
   • Etc.

2. On-going discussions on
   • “if-fitted” requirements with regard to GNSS connectivity
   • Vehicle approval procedures
   • Test method for resistance to impact of eCall device
   • Human/Machine Interface
1. **Satisfying environmental and safety regulations** on a market-by-market basis is extremely expensive.

2. **A UN Regulation will simplify** an exceedingly complex global “regulatory arena.”


4. **Set harmonized** technology-neutral provisions fostering leverage of costs.

5. **An affordable eCall system for all vehicle categories** will help saving multiple lives and reducing road fatalities.
Thank you for your attention