Implementation of Global Satellite Navigation System (GLONASS) for In-Vehicle Emergency Call Systems: Status and Further Development

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Presented by the Russian Federation
March 2013, 159-th WP29 meeting
GLONASS Applications

- Security and Searching Systems
- Digital Tachographs
- Use of Roads on Paid Basis
- In-Vehicle Emergency Call Systems
- Commercial Transport Monitoring and Scheduling

ERA-GLONASS
Satellite Navigation Equipment of Commercial Vehicle Fleet

- Passenger vehicles
- School buses
- Vehicles designated for carriage of garbage, special purpose and dangerous goods
- Heavy and oversized vehicles requiring special permission for transportation

Russian Technical Regulation “On Safety of Wheeled Vehicles.”
ERA-GLONASS Basic Requirements

The amendments to the Customs Union Technical Regulation “On Safety of Wheeled Vehicles” were adopted in January 2013

Requirements:

– M &N category vehicles: generation of an emergency call manually

  – + from 01.01.2017 automatic generation of an emergency call in case of vehicle roll-over

– M1 & N1 category vehicles (GVW ≤ 2.5 tons): in addition: automatic generation of an emergency call

– Voice communication with emergency services
ERA-GLONASS Implementation Schedule

- **2014 2015 2016 2017**
- From 01.10.2014 – new vehicle types of categories M1, N1 (GWV > 2.5 tons), М2, М3, N2, N3 for transportation of passengers and dangerous goods
- From 01.01.2015 – new vehicle types of categories M and N
- From 01.01.2016 – all vehicles of categories M1, N1 (GWV > 2.5 tons), M2, M3, N2, N3 for transportation of passengers and dangerous goods, released for circulation
- From 01.01.2017 – all vehicles released for circulation

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Automatic Generation of an Emergency Call

- Vehicles of categories M1, N1 (GWV ≤ 2.5 tons)
- In response to activation of airbag(s), other sensor(s) of vehicle restraint system(s) or other system(s) detecting vehicle deceleration
- Performance is checked in the conditions of the UN Regulations Nos. 94 (or 12) & 95 tests (for vehicles falling in the scope of those Regulations)
- After those tests the system shall remain efficient and a voice communication with emergency service shall be provided

*The test procedures of the UN Regulations Nos. 94 (or 12) & 95 are involved*
How to Check a System Performance

In a crash – automatic generation of an emergency call

After a crash – a system remains efficient and provides for a bilateral voice communication with emergency service

*That can be verified by the technical specialists of the test laboratory when a vehicle is tested pursuant to the UN Regulations Nos. 94 (or 12) & 95*

But the provisions of the UN Regulations Nos. 94 & 95 do not stipulate such kind of checks of an in-vehicle system of emergency calls
Objectives for Regulatory Development

- **Harmonization of requirements** for ERA-GLONASS and eCall systems as much as possible

- Involvement of two existing and available **Global** Navigation Systems (GPS, GLONASS)

**Why two systems?**

- Noise stability, reliability of navigation maintenance
- Higher accuracy of vehicle positioning
- Receivers on the market are suitable for two systems
- It is more favorable to use GLONASS in Russia
Proposal for a Regulatory Development:

*For WP.29 Consideration*

- **Action Item 1.** To develop a new UN Regulation:
  - Containing provisions for in-vehicle systems of emergency calls
  - Containing vehicle installation requirements
  - Stipulating system performance assessment in crush conditions of UN Regulations 94 (or 12) & 95
  - Other crash conditions like rolling-over or submersion in water could be added, if considered appropriate
Proposal for a Regulatory Development:

For WP.29 Consideration

- **Action Item 2.** To include into UN Regulations 94 (or 12) & 95 the provisions for emergency call system performance assessment

- Optional for vehicles having the said systems on board

*The Russian Federation will come up with a proposal for a new draft UN Regulation by the 160th WP.29 session in June 2013*
Consideration of GLONASS Further Application

- Road accident reconstruction
  - Vehicle path and deceleration information recording before, during and after an accident
- Road accident prevention
  - Integration into ITS infrastructure, providing for information to vehicles and drivers, transport monitoring service, police, etc.
  - Active accident prevention using V2V and V2I communication technologies
- GLONASS integration into transportation management systems
  - Fleet management
  - Road tolling
  - Digital tachographs
  - Passenger ticketing
  - Other possible applications