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

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GLONASS Applications
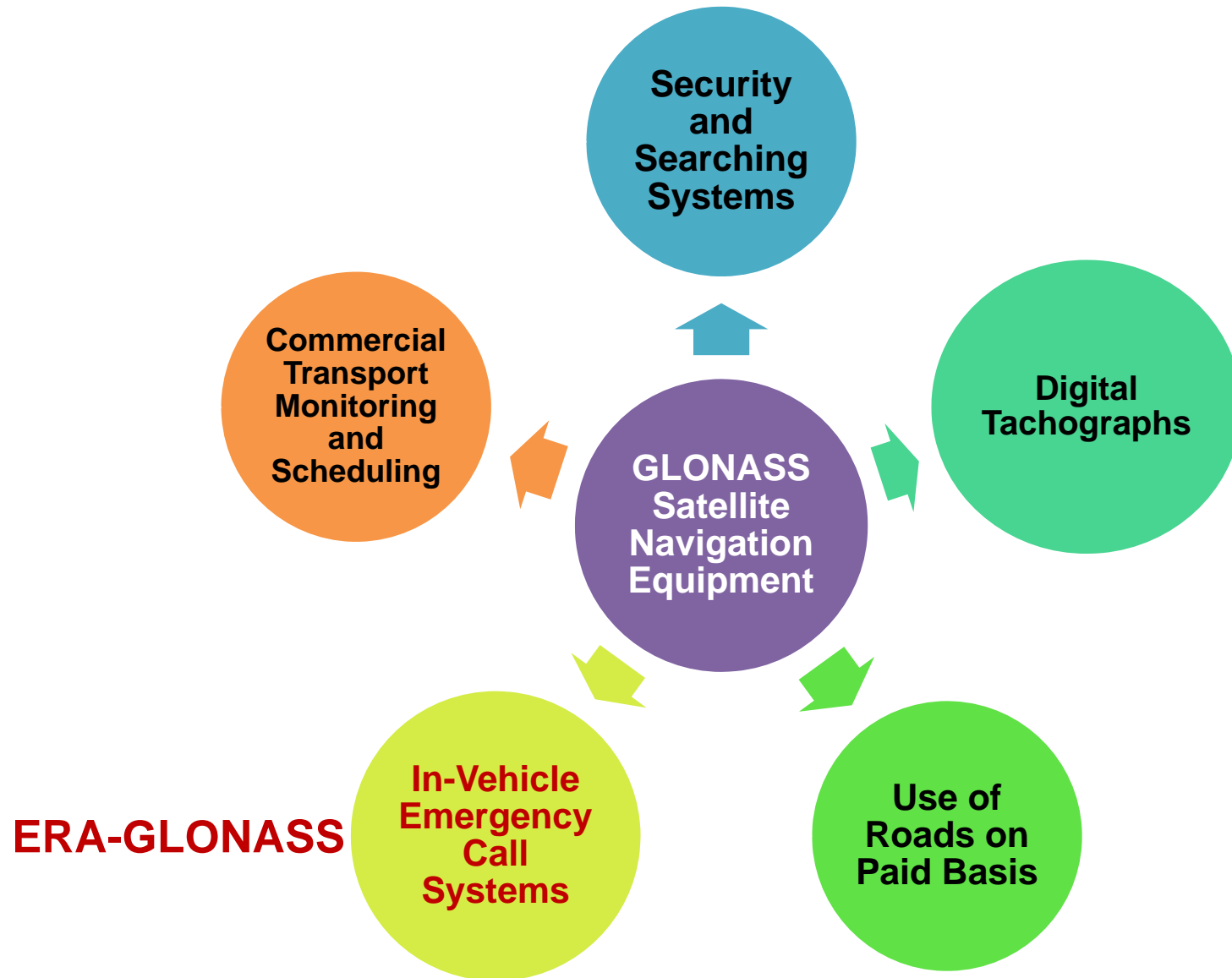
Satellite Navigation Equipment of Commercial Vehicle Fleet

➢ Passenger vehicles

➢ School buses

➢ Vehicles designated for carriage of garbage, special purpose and dangerous goods

➢ Heavy and oversized vehicles requiring special permission for transportation

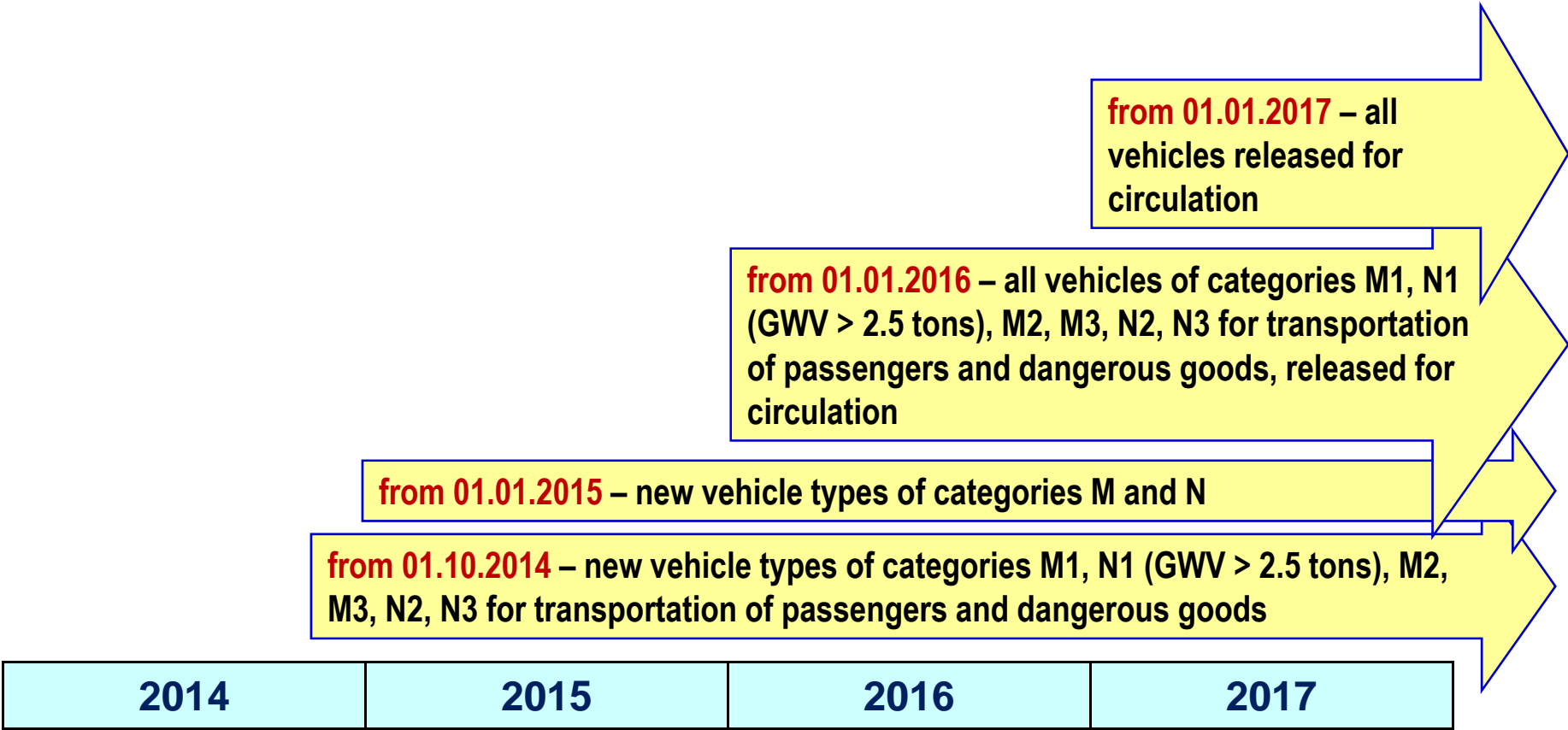**Russian Technical Regulation "On Safety of Wheeled Vehicles."**

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 $\leq$ 2.5 tons): in addition: automatic generation of an emergency call

- Voice communication with emergency services

ERA-GLONASS Implementation Schedule

from 01.01.2017 – all vehicles released for circulation

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 01.01.2015 – new vehicle types of categories M and N

from 01.10.2014 – new vehicle types of categories M1, N1 (GWV > 2.5 tons), M2, M3, N2, N3 for transportation of passengers and dangerous goods

| 2014 | 2015 | 2016 | 2017 |

Automatic Generation of an Emergency Call

➢ Vehicles of categories M1, N1 (GWV $\leq$ 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

➢ **<u>Action Item 2.</u>** 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

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Thank you for attention !

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