Economic and Social Council

Distr.: General
15 December 2015

Original: English

Economic Commission for Europe

Inland Transport Committee

Seventy-eighth session
Geneva, 23–26 February 2016
Item 4 (f) of the provisional agenda
Strategic questions of a horizontal policy nature:
Intelligent transport systems

Status of the implementation of the Road Map on Intelligent Transport Systems

Note by the secretariat

Summary

This document provides an overview of activities promoting innovative technologies that impact on the implementation of the Road Map on Intelligent Transport Systems (ITS) that was launched at the seventy-fourth session of the Inland Transport Committee.

The Committee is invited to **encourage** activities promoting ITS activities linked to infrastructure and all transport modes and to **consider ways** to address ITS issues in an integrated approach.

I. Background

1. The following sections in this note aim at presenting activities and initiatives promoting innovative technologies to implement the UNECE Road Map on ITS. The Annex summarizes the 20 Actions contained in the Road Map.

II.   UNECE activities in 2015

A.   Policy segment of the Inland Transport Committee

2.   The 2015 policy segment of the Inland Transport Committee (ITC) on "Rethinking Sustainable Urban Transport and Mobility to Meet the Challenges of a New Era" provided insight on the challenges related to sustainable transport and the political will needed to decouple economic growth from impacts such as air pollution and traffic accidents. Some interventions have shown how important demand-side policies can be in reversing trends, especially those actions that had included the use of smart technology and innovations.

Road Map Action addressed: Action 2

B.   Symposium of the International Telecommunication Union on the Future Networked Car

Documentation: http://itu.int/en/fnc/2015/

3.   Following the policy segment in 2015, UNECE jointly with International Telecommunication Union (ITU), organized the 2015 Symposium on the Future Networked Car. The symposium took place during the Geneva Motor Show and thus addressed a large professional audience from the telecommunication and transport sectors. The international symposium examined advances in the area of connected vehicles, from the perspectives of business, technology and regulation. Technical sessions highlighted the crucial roles of communication protocols, information security, in-vehicle emergency call systems, location referencing and maps.

Road Map Actions addressed: Actions 2, 3, 4, 5, 8, 9 and 17.

C.   Annual round table on Intelligent Transport Systems and Services (ITS)

Documentation: www.unece.org/index.php?id=39185#/

4.   UNECE organized its annual ITS workshop in Bordeaux this year during the ITS World Congress 2015, in collaboration with the French Ministry of Ecology (MEDDE) and with the support of the Michelin Bibendum Challenge (MBC). In line with the objectives of COP21, international experts and decision makers presented how new services in mobility and ITS technologies can be used to mitigate climate change. This workshop was organized as one of the transport meetings of the Lima Paris Action Agenda of the Conference of Party 21 (COP 21). It reviewed state of art traditional ITS applications in China, new ways to manage the mobility as a service ("door-to-door" mobility) as well as new mobility patters such as Car Sharing and their potential impact on the mitigation of climate change.

Road Map Actions addressed: Actions 1, 2, 3, 4, 5, 7, 9, 11, 13, 15, 16, 17, 18, 19 and 20.

D. Working Parties of the Inland Transport Committee

(a) Working Party on Inland Water Transport (SC.3)

5. The Working Party on Inland Water Transport continued its work on ITS applications in Electronic Ship Reporting and on the harmonization of pan-European River Information Services (RIS).

Road Map Actions addressed: Action 14.

(b) Working Party on the Transport of Dangerous Goods (WP.15)

6. The joint meeting of the Carriage of Dangerous Goods by Rail (RID) Committee of experts and WP.15, through its Informal Working Group on Telematics, continued work on ITS applications aimed, inter alia, at improving the speed and efficiency of emergency responses involving dangerous goods in transport. Among others, this Informal Working Ggroup held a session in Bordeaux during the ITS World Congress 2015.

Road Map Actions addressed: Action 12.

(c) Working Party on Road Traffic Safety (WP.1)

7. The amendment to the 1968 Vienna Convention on Road Safety, Article 39 by introducing paragraph 5bis into Article 8 below, will enter into force on 23 March 2016.

"5bis. Vehicle systems which influence the way vehicles are driven shall be deemed to be in conformity with paragraph 5 of this Article and with paragraph 1 of Article 13, when they are in conformity with the conditions of construction, fitting and utilization according to international legal instruments concerning wheeled vehicles, equipment and parts which can be fitted and/or be used on wheeled vehicles.*

Vehicle systems which influence the way vehicles are driven and are not in conformity with the aforementioned conditions of construction, fitting and utilization, shall be deemed to be in conformity with paragraph 5 of this Article and with paragraph 1 of Article 13, when such systems can be overridden or switched off by the driver." (footnote not reproduced here)

8. In parallel to the activities on the 1968 Vienna Convention, WP.1 decided to align the text of the 1949 Geneva Convention on Road Traffic (parent convention to the 1968 Convention) and particularly the text of Article 8 with the agreed text that would enter into force in March 2016. The 1949 Geneva Convention has 96 Contracting Parties, including the United States of America (not Party to the 1968 Vienna Convention).

9. WP. 1 decided to establish an Informal Working Group on Automated Driving. The first session was scheduled on 5 November 2015 in Amsterdam under the lead of the Netherlands.

Road Map Actions addressed: Action 10.

(d) Working Party on Brakes and Running Gear (GRRF)

10. GRRF implemented the decision of the World Forum on the amendment to Regulation No. 79 which had been identified as the Regulation that prohibits innovation related to self-steering technologies by initiating an Informal Working Group on Automated Commanded Steering Functions (IWG on ACSF). In a status report from IWG on ACSF to GRRF at the September 2015 session, the Group reviewed the requirements and limitations associated with ACSF as defined in Regulation No. 79. The group, in particular, reviewed the current speed limitation (10 km/h) with the purpose of permitting ACSF functionality during interurban journeys; it is defining the Human Machine Interphase (HMI) requirements as well as requirements to enable the evaluation of ACSF during periodic

technical inspection. The provisions for ACSF shall require that the driver shall be able to activate and deactivate the system and at all times, be able to override the system.

11.   The Group did not use the definitions of automation levels as a basis for its work. It defined five categories (A to E) of ACSF systems with varying degrees of automation.

12.   In February 2015, GRRF received a proposal from Japan and German introducing provisions on Remote Control Parking into R.E.3. GRRF advised the authors of the proposal to consider a new Regulation for RCP. In September 2015, GRRF was given a demonstration of a vehicle equipped with RCP. On 16 September 2015, the Ministers of Transport of the G7 countries witnessed a similar demonstration in their meeting at the Frankfurt Motor Show. In their declaration, the transport ministers of the G7 States and the European Commissioner for Transport stressed that "A key prerequisite for the widespread deployment of innovative and reliable technologies in road transport is that modern vehicle systems are legally permissible and suitable for mass production. Revising, as appropriate, regulations applicable in the G7 states, and those established under the agreements administered by the UN World Forum for the Harmonization of Vehicle Regulations (WP.29) - is of crucial importance."

Road Map Actions addressed: Actions 2, 3, 4, 5, 8, 9 and 17.

(e)   Working Party on General Safety (GRSG)

13.   During the October 2015 session of GRSG, the expert from the United Kingdom recalled the discussion on EDR at the previous GRSG session and acknowledged that the wording "Event Data Recorder" was probably not the correct terminology and could be misleading. The expert from Germany underlined the importance exchanging views in GRSG on this specific subject. He stressed the need to develop a new Regulation on optional installation on vehicles of such devices and to define the technical parameters to be stored, including the access and security of the data. GRSG endorsed that position and agreed that such an activity should be coordinated with ITS/AD and other Working Parties involved in automated driving activities.

14.   GRSG resumed consideration of the item related to Accident Emergency Call Systems (AECS). The expert from the Russian Federation, chairing the IWG on AECS, reported on the work results achieved by the Group and that the Group would need an additional year to conclude its activities.

15.   The expert from Germany informed GRSG about the outcome of a study carried out by the Federal Highway Research Institute (BASt) on blind spot accidents of heavy goods vehicles. GRSG welcomed the information and the results of the study. GRSG noted general support to develop a new regulation on the installation on heavy goods vehicles of driver assistance systems to avoid blind spot accidents.

16.   The expert from Germany announced his intention to submit a proposal for such a new regulation for consideration to the next GRSG session. GRSG agreed to keep GRSG-109-19 as a reference document under a new agenda item on the development of a new regulation on Advanced Driver Assist Systems (ADAS)

Road Map Actions addressed: Actions 3, 4, 5, 7 and 9.

(f)   Informal Working Group on Intelligent Transports Systems / Automated Driving of the World Forum for Harmonization of Vehicle Regulations (WP.29)

17.   The mandate of the Informal Working Group (IWG) on Intelligent Transport Systems / Automated Driving (ITS/AD) specifies the work items to be covered by the activities of the Group on the basis of three pillars:

(a)   Prepare a proposal with harmonized definitions of Automated Driving Technologies (ADT);

(b)   Identify the main horizontal issues and legal obstacles to automated driving technologies and, where possible and appropriate, those not within the remit of WP.29;

(c)   Prepare a proposal on harmonized general guidelines for eSecurity and eSafety in motor vehicles.

18.   In addition, the Group continues to exchange information on driverless technologies.

19.   The Group made progress in defining automation levels, with SAE J3016 as a basis for discussion. The Group received a presentation from the expert of the Netherlands on software security. It considered the cybersecurity guidelines developed by Japan. Germany presented a paper on cybersecurity highlighting the discussions at the G7 transport ministers event on 17 September 2015 . Following the invitation by ITC to WP.1 and WP.29 to seek novel institutional approaches on the issue of more advanced vehicle automation vis-à-vis the driver's role (para. 42 (d), ECE/TRANS/248), the Group was designated to be the interface with the Informal Group of Experts on Automated Driving of WP.1 and elected the representative of Finland to act as ambassador between ITS/AD and the WP.1 Informal Working Group.

Road Map Actions addressed: Action 1, 2, 3, 4, 5, 7, 9, 10, 15, 17 and 19.

II.   Non-UNECE activities in 2015

20.   On the initiative of France, the formal twenty-second ITS World Congress opening was preceded by a Ministerial round table. Mrs Segolène Royal, Minister of Ecology, Sustainable Development and Energy as well as Mr. Alain Vidalies, Secretary of State for Transport, Maritime Affairs and Fisheries broadly invited their Counterparts throughout the world and proposed to focus on ITS development prospects for the benefits of environment and climate.

21.   The round table was co-chaired by Commissioner V. Bulc (EC) and Secretary of State A. Vidalies (France) and moderated by E. Molnar (UNECE).

22.   The Ministers of more than thirty governments contributed to the discussion on ITS and climate change mitigation. José Viegas, Secretary-General of the OECD International Transport Forum (ITF), Patrick Oliva (Michelin Challenge Bibendum) on behalf of the Lima Paris Action Agenda of the Conference of Party COP21, and Herman Meyer, CEO of ERTICO made short interventions. The Ministerial meeting endorsed the Bordeaux declaration to be presented at COP.21 in Paris in December 2015.

Road Map Actions addressed: Action 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18 and 19.

III.   New developments in the field of ITS

A.   ITS and connectivity

23.   While the work of the transport community on traditional ITS technologies (such as road traffic management, roadway operations, crash prevention, weather and incident management) remains tremendous despite of the known challenges (e.g. those related to the fragmentation of technical standards, the interdependence of the private and public sector in term of financing, the missing global framework), the trend based on the use of Information

and Communications Technology (ICT) especially mobile technologies was confirmed this year as it supports new mobility patterns and visible in the various Conferences organised (incl. the 22nd World Congress on ITS organised in October 2015 in Bordeaux). This trend is very appealing as it is based on fashionable ICT technologies and the related behavioural transformations, initially not related to transport.

24.   The difficulty related to this trend for the transport authorities is related to the fragmentation or the lack of technical standards and that these technologies are not institutionalized. Their informal character implies a lack of guaranty and an ephemeral nature, while institutions would need to deliver a sustainable transport system taking this trend and the corresponding technical solutions into account. The challenge of policy makers will be to integrate this trend in the transport system with the aim of ensuring that the benefits of these new technologies can be captured without compromising safety, privacy, security and interoperability.

B.   Vehicle automation

25.   The most visible pillar of ITS will remain the automation of vehicles for which three different items are emerging:

(a)   Experts and policy makers have as a vision the *Autonomous Vehicle* (delivering the highest level of automation) that would disrupt transport system, especially with the introduction of autonomous taxis, for new types of mobility servicing the door-to-door mobility concepts and the mobility as a service.

(b)   The industry is delivering the *Automated Vehicles* with a lower level of automation. These systems are not yet supporting new mobility concepts that would disrupt transport systems but it is worth to note that these innovations are introducing benefits in term of road safety and energy consumption (CO_2 emissions) as well as emission of pollutants.

(c)   Countries are testing *specific applications*. Some are related to autonomous driving functionalities and their impact in the urban environment (e.g. the driverless pods tested in the framework of the Catapult Transport System project); others are testing the connectivity such as the Vehicle-to-Vehicle (V2V) communication. Other projects are testing applications such as "Platooning".

Annex

The UNECE Road Map on Intelligent Transport Systems (ITS)

Action 1 Reaching a common definition for ITS	**Action 11** Harmonizing Variable Message Signs
Action 2 Harmonizing policies	**Action 12** Making Transport of Dangerous Goods less dangerous
Action 3 Forging International cooperation	**Action 13** Integrating with Rail Transport
Action 4 Facilitating interoperability and ITS architecture	**Action 14** Integrating with Inland Water Transport
Action 5 Ensuring data security	**Action 15** Enhancing the modal integrator's role of ITS
Action 6 Scaling up the work on ITS in all Working Parties of the UNECE Inland Transport Committee (ITC)	**Action 16** Developing cost-benefit assessment methodologies
Action 7 Promoting vehicle to infrastructure communication	**Action 17** Contributing to climate change mitigation and adaption
Action 8 Promoting vehicle-to-vehicle communication	**Action 18** Launching analytical work
Action 9 Fighting the road safety crisis	**Action 19** Contributing to capacity-building, education and awareness raising, with special attention to emerging economies
Action 10 Addressing the liability concerns	**Action 20** Organizing the United Nations annual round table on Intelligent Transport Systems