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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), launched at the seventy-fourth session of the Inland Transport Committee.

The Committee is invited to **encourage** the promotion of ITS activities linked to all transport modes and to **consider** ways to address ITS issues in an inclusive approach addressing current roadblocks.

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 Intelligent Transport Systems (ITS). The Annex summarizes the 20 Actions contained in the Road Map.

II. UNECE activities in 2016

A. Policy segment of the Inland Transport Committee

Documentation: <http://www.unece.org/fileadmin/DAM/trans/doc/2016/itc/ECE-TRANS-254-Add1.pdf>

2. The policy segment of the seventy-eighth Inland Transport Committee in 2016 dealt with transport and innovation in the field of Information and Communication Technologies (ICT). It was moderated by Mr. Russell Shields, Chair of Ygomi, board member of the World ITS Congress and founding board member of ITS America. It consisted of three sessions. The first session "Access for all: The role of Governments in harnessing the full potential of transport innovations" was opened by a keynote speech from Mr. Bart van Bolhuis, Director for International Affairs at the Dutch Ministry of Infrastructure and the Environment, who spoke on the priorities of the Dutch EU Presidency. His speech was followed by Prof. Elmar Fürst, of the Institute for Transport and Logistics Management, Vienna University of Economics and Business. The second session "Connecting the dots: Connectivity and access for tomorrow's passenger mobility" was opened by Mr. Alain Flausch, Secretary-General, International Association of Public Transport (UITP), followed by Mr. Leon Rizzi, VP Sales EMEA, INRIX, and Mr. Hervé Richard, Director "Door to Door" SNCF. The third session "Connecting the dots: Connectivity and access – the logistics dimension" was opened by Mr. Peter Füglistaler, Director, Swiss Federal Office of Transport, followed by Mr. Claude Pfauvadel, Chef de la Mission du Transport des Matières Dangereuses, MEDDE and Chair of WP.15/AC.1, and Mr. Wim Van Geffen, Global Head of Physical Distribution of Nestlé.

Road Map Actions addressed (areas of primary focus are indicated in **bold**): *Actions 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 13, 15, 16, 17, 18 and 19.*

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

Documentation: <http://itu.int/en/fnc/2016/>

3. Following the policy segment in 2016, UNECE jointly with International Telecommunication Union (ITU), organized the 2016 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 relevance of the work to be done on cyber security.

Road Map Actions addressed (areas of primary focus are indicated in **bold**): *Actions 1, 2, 3, 4, 5, 7, 8, 9, 15, 17 and 19.*

C. Annual round table on Intelligent Transport Systems

4. UNECE organized its annual Intelligent Transport Systems (ITS) workshop in conjunction with the meetings of the Working Party on Road Traffic Safety (WP.1), the Working Party on Braking and Running Gear (GRRF) and the WP.29 Informal Working Group on ITS/AD. WP.1 experts expressed the willingness to actively contribute to the technical discussion on automated driving vehicles and the corresponding GRRF work. Taking advantage of the WP.1 and GRRF expert's presence in Geneva, WP. 1 and GRRF

agreed to break their usual work on 20 September 2016 (afternoon) in order to informally meet as joint meeting of WP.1, GRRF and IWG on ITS/AD experts. The ad hoc meeting aimed at an in-depth exchange of views and information. Mr. J. Valmain (Chair of the Informal Group on Automated Driving) gave a status report on the activities of WP.1 and its informal group. Mr. O. Klöckner (Germany) gave a status report on the activities of GRRF followed by a Q&A session addressing various subjects such as driver training, the regulatory process pace and secondary tasks that can be performed by drivers during automated driving phases.

Road Map Actions addressed (areas of primary focus are indicated in **bold**): *Actions 1, 2, 3, 5, 6, 9, 10, 15, 19 and 20.*

D. Working Parties of the Inland Transport Committee

1. 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 (areas of primary focus are indicated in **bold**): *Actions 1, 2, 3, 4, 5, 6, 7, 9, 11, 13, 14, 15, 16, 17, 18 and 19.*

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

6. The joint meeting of the Committee of experts on the Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) 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.

Road Map Actions addressed (areas of primary focus are indicated in **bold**): *Actions 1, 2, 3, 4, 5, 7, 9, 11, 12, 13, 15, 16, 17, 18 and 19.*

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

7. The amendment to the 1968 Convention on Road Traffic, by introducing paragraph 5bis into Article 8, entered into force on 23 March 2016. This amendment provides for the use of advanced technologies towards automatization under the condition of system compliance and approval according to United Nations vehicle regulations or the possibility of overriding the system by the driver.

8. In parallel to the activities on the 1968 Convention on Road Traffic, WP.1 proposed to align the text of the 1949 Convention on Road Traffic and, particularly, the text of Article 8 with the agreed text that would enter into force in March 2016. At this stage, this parallel amendment did not enter into force.

9. WP. 1 established an Informal Working Group on Automated Driving. The Group discussed the issue of testing of driverless vehicle on public roads. The Group was of the opinion that there was no need for amendments to the 1949 and 1968 Conventions on Road Traffic for foreseeable types of experiments (i.e. “where there is a person who is ready, and able to take control of the experimental vehicle(s); this person may or may not be inside the vehicle”).

10. WP.1 agreed with the Group’s opinion that amendments to the 1949 and 1968 Conventions are not necessary for public testing of driverless vehicles under the above-stated conditions. It also set out the following near-term guidance for the informal Group:

(a) to discontinue considering possible amendments to facilitate testing of driverless vehicles on public roads; (b) to continue considering possible amendments to the 1949 and 1968 Conventions on Road Traffic which would accommodate highly automated vehicles and to explore different possibilities to that end; and (c) to commence work on automated systems such as remote parking where the definitions of “driving” and “operating” may be needed in order to provide guidance to WP.1 delegates.

11. WP.1 together with the National Highway Traffic Safety Administration (NHTSA) of the United States of America and the Centre for Automotive Research at Stanford ¹ (CARS) organized a workshop on governance of automated vehicles.

Road Map Actions addressed (areas of primary focus are indicated in **bold**): *Actions 1, 2, 3, 4, 5, 7, 9, 11, 10, 13, 15, 16, 17, 18 and 19.*

4. Working Party on Brakes and Running Gear (GRRF)

12. 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). The group defined five categories of automation corresponding to the functionalities that the vehicle would be able to perform and adopted performance requirements for the first two levels of automation defined by SAE International.

13. These relate to systems that, under specific driving circumstances, will take over the control of the vehicle under the permanent supervision of the driver, such as self-parking functions and lane keeping assist systems (e.g. when the car will take corrective measures if it detects that it is about to cross a lane accidentally). They also entail to remove the current limitation of automatic steering functions to driving conditions below 10km/h contained in UN Regulation No. 79. Once adopted by the World Forum at one of its forthcoming meetings, these provisions will be integrated into UN Regulation No. 79. The group will continue working on the requirements for more complex highway autopilots (e.g. when the vehicle would be self-driving at high speeds on highways).

Road Map Actions addressed (areas of primary focus are indicated in **bold**): *Actions 1, 2, 3, 4, 5, 6, 9, 15, 17, 18 and 19.*

5. Informal Working Group on Intelligent Transport Systems / Automated Driving of the World Forum for Harmonization of Vehicle Regulations

14. 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.

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

¹ Stanford University, United States of America.

16. The Group made progress in defining automation levels, with SAE J3016 as a basis for discussion. They reviewed cybersecurity guidelines developed by the experts from Germany and Japan.

*Road Map Actions addressed (areas of primary focus are indicated in **bold**): Actions **1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 16, 17 and 19.***

6. Working Party on Intermodal Transport and Logistics (WP.24)

17. As part of its ongoing work on the role of ITS in intermodal transport and logistics, WP.24 held a workshop titled ‘Promoting sustainable intermodal transport through innovative solutions’ at its fifty-ninth session. A number of innovative practices were discussed showing how this sector is seeking to increase its market share through the use of intelligent transport systems.

*Road Map Actions addressed (areas of primary focus are indicated in **bold**): Actions **1, 2, 3, 4, 5, 6, 13, 15, 16, 17, 18 and 19.***

III. Non-UNECE activities in 2016

18. G7 Ministers of Transport had created a subgroup on automated vehicles, connected vehicles and ITS, and issued a Ministerial declaration in September 2016. In addition, the Netherlands as well as President of the Council of Ministers of the European Union (EU) issued the Amsterdam Declaration on automated driving on 19 April 2016 during an informal meeting of the EU Ministers of Transport ().

19. The secretariat attended several conferences on ITS and vehicle automation in order to raise awareness on the activities of UNECE and the progress achieved.

*Road Map Actions addressed (areas of primary focus are indicated in **bold**): Actions **1, 2, 3, 4, 5, 6, 7, 8, 9, 10 and 19.***

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
