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Inland Transport Committee

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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), 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.

I. Background

1.   This note presents activities and initiatives that promote innovative technologies to implement the ECE road map on ITS. The annex summarizes the 20 actions of the road map.

II. Activities in 2017

A. Ministerial meeting of the Committee

   Documentation: ECE/TRANS/270/Add.1

2.   Transport ministers from across Europe and the globe came together at the 70th anniversary session of the Inland Transport Committee (ITC). More than 500 representatives from 89 countries attended. The purpose of the anniversary session was to take stock of the past contributions of ITC to inland transport and to, at a time of profound global changes, challenges and opportunities, decide on a future mission up to 2030. A ministerial resolution which recognizes 70 years of accomplishments of ITC and commits to continued support to the Committee in the future was signed at the occasion. Decision 7 of the ministerial resolution expressed the resolve to use ITC as a platform to further integrate ITS and automated driving in the work of the Committee and its subsidiary bodies, and to promote the digitalization of transport documents first of all in international transport.

3.   Panel No. 2 of the ITC anniversary session, "ITC – Platform to link regulators and innovators: Technologies for sustainable mobility" explored policy responses to technological changes and the conditions for creating a conducive environment for innovations, and how ITC can facilitate the transition. Panelists, including Ms. Violeta Bulc, European Commissioner for Mobility and Transport, Ms. Anna Johansson, Minister of Infrastructure of Sweden, and Mr. François Bellot, Minister for Mobility of Belgium, highlighted the role of ITC as the central place for the governance of inland transport and for paving the way to automated and connected vehicles. Mr. Volodymyr Omelyan, Minister of Infrastructure of Ukraine stressed the importance of intelligent infrastructure.

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

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

Documentation: http://itu.int/en/fnc/2017/
www.itu.int/en/fnc/2017/Documents/Presentations/S3_P2.%20Geneva%20-%20UN%20Beridze.pdf

4.   Following the policy segment in 2017, ECE jointly with the International Telecommunication Union, organized the 2017 Symposium on the Future Networked Car at the Geneva Motor Show, and addressed a large professional audience from the telecommunication and transport sectors. The international symposium examined advances in connected vehicles from the perspectives of business, technology and regulation. Technical sessions highlighted the relevance of the work to be done on artificial intelligence and cyber security. It is interesting to note that the United Nations Interregional Crime and Justice Research Institute presented their activities on automated driving.

Road Map Actions addressed (areas of primary focus are indicated in **bold**): *Actions 1, **2**, 3, 4, **5**, **7**, 8, 9, 10, 15, 17and 19.*

C.   Annual round table on ITS

5.   The Division organized its annual ITS workshop in conjunction with the regular meetings of the Working Party on Braking and Running Gear and the Global Forum for Road Traffic Safety (WP.1) in September 2017. Information was shared on current views in activities that drivers could perform while their vehicles are driving as well as on cyber security, as a threat that could affect traffic.

Road Map Actions addressed (areas of primary focus are indicated in **bold**): *Actions 1, 2, 3, 5, **6**, 7, 8, **9**, **10**, 15, 19 and **20**.*

D. Working Parties

1. Working Party on Inland Water Transport

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

7.   Provisions for variable traffic signs were included in Resolution No. 59, "Guidelines for Waterways Signs and Marking". The draft revision of the Signs and Signals on Inland Waterways publication includes a chapter on variable message signs to regulate traffic and a related annex.

8.   Electronic charts and the visualization of signs on inland waterways were added to the draft revision of Signs and Signals on Inland Waterways in Chapter 12, "Monitoring of signs and marking by AIS aids to navigation".   The Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation approved the additions in June of 2017.

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

9.   The joint meeting of the Committee of experts on the Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) and the Working Party on the Transport of Dangerous Goods, 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. Global Forum for Road Traffic Safety

10.   The activities of WP.1 on driving automated/autonomous vehicles will be reported under agenda item 5(c).

11.   The Global Forum for Road Traffic Safety, National Highway Traffic Safety Administration, and French Institute of Science and Technology for Transport, Development and Networks co-sponsored a workshop to continue a dialogue on approaches for ensuring the safety of all road users in an environment that includes highly automated and self-driving vehicles (28 and 29 June 2017, Geneva). Attending were approximately 100 professionals representing governments from around the world, United Nations standard-setting organizations, automotive and information technology industries and academic institutions. The workshop began with an update of vehicle automation technology development and an overview of the preparations by public safety institutions to accommodate the unique needs and implications of automated vehicles along with a review of evidence of public interest and acceptance. The workshop went on to consider challenges and opportunities for optimizing the safety of traffic including highly automated vehicles from both the institutional and operational levels. A technology demonstration familiarized attendees with recently introduced autonomous driving systems. This workshop followed a similar event at Stanford University in the United States of America in October 2016, which initiated the dialogue and set the course for further deliberation.

12.   The intent of this workshop was not to reach agreement on the best safety assurance methods, but rather to provide an opportunity for open discussion on the challenges and opportunities. The desire was to focus on issues surrounding the integration of highly

automated vehicles in traffic and stimulate thought among a broad range of stakeholders on approaches for maximizing the safety of traffic in future years. Workshop presentations were delivered by internationally recognized experts in technology, public policy and safety assurance methods. Specific topics included: update and overview of technology; institutional readiness and accommodating legislation; governance methods: challenges and opportunities; considerations for testing automated vehicles on public roads; and consumer education and acceptance, with opening and closing remarks from the workshop sponsors.

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

4. Working Party on Brakes and Running Gear

13. The Working Party 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. The group defined five categories of automation on the functionalities that the vehicle would be able to perform and adopted performance requirements for the first two levels of automation defined by the Society of Automotive Engineers International.

14. These systems, under specific driving circumstances, take control over the vehicle under the permanent supervision of the driver, i.e. self-parking functions and lane keeping assist systems (e.g. the car takes 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 from UN Regulation No. 79. The World Forum adopted the provisions in March 2017 for insertion into UN Regulation No. 79 as a new series of amendments that entered into force in October 2017 and would be applicable as of April 2018. The group continued working on the requirements for more complex highway autopilots (e.g. when the vehicle would self-drive at high speeds on highways) and had an extraordinary session in December 2017 to complete the drafting of provisions for systems able to assist driver in lane change manoeuvre.

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

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

15. The mandate of the Informal Working Group on ITS/Automated Driving specifies the work items to be covered by the activities of the group:

(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.

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

16. The group made progress in defining automation levels, with SAE J3016 as a basis for discussion and produced a working document for review in November 2017 by WP.29.

17. The group had a brainstorming session on how to reflect the automation of vehicles in vehicle category denominations and a strategic discussion on type approving vehicles

equipped with higher levels of automation. For this purpose, the group established a task force on the testing of automated/autonomous vehicles.

18.   WP.29 adopted the guideline on cyber security and data protection, developed by the group under the leadership of Germany and Japan. As a follow-up, the group established a task force on cyber security and over-the-air issues that is expected to present recommendations to WP.29 in the first semester of 2018.

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

19.   The Working Party regularly addresses the role of ITS in intermodal transport and logistics by inviting experts to present projects, innovative solutions and good practices in ITS. This year the Working Party invited the European Union project Tellisys on the development of a complete volume optimized intermodal combination, including a product-family of new intermodal loading units, which satisfy the current market demands. This solution enhances the performance of intermodal logistic chains by meeting the European Union's demand for more energy-efficient, low-emission logistics networks and contributes to more efficient transport by easing the transition between different transport modes.

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-ECE activities in 2017

20.   The G7 Ministers of Transport issued a ministerial declaration in September 2017 (following their meeting in Italy). The ministers "encourage the United Nations Economic Commission for Europe World Forum for Harmonization of Vehicle Regulations to continue to work on the fundamental technical principles, including appropriate performance metrics and test procedures for demonstrating the effectiveness and safety of these technologies and to focus activities on systems with higher levels of automation and to assess whether new categories should be defined in order to cover all kinds of automated driving systems".

21.   The adopted guideline on cyber security and data protection was mentioned in the Resolution on Data Protection in Automated and Connected Vehicles adopted by the thirty-eighth International Conference of Data Protection and Privacy Commissioners in September 2017 (https://icdppc.org/wp-content/uploads/2015/02/Resolution-on-data-protection-in-automated-and-connected-vehicles-.pdf).

22.   The secretariat attended several conferences on ITS, cyber security and vehicle automation to raise awareness on the activities of ECE 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 ECE Road Map on Intelligent Transport Systems

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 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 ITS