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Traffic Censuses in the ECE region:
Considering an E-Inland Waterway Traffic Census

A proposal for a traffic census of the E Waterway Network

Note by the secretariat

I. Mandate

1. This document is an amended version of ECE/TRANS/SC.3/2018/14, which was considered by the Working Party on Inland Water transport at its sixty-second session in October 2018. Its updates reflect considerations of the Working Party, in addition to updates on the data side due to the publishing of the E-Rail census map.

2. The Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation at its fifty-third session asked the secretariat to prepare a detailed proposal for a traffic census of E-Inland Waterways as a working document for the sixty-second session of the Working Party on Inland Water Transport (SC.3) (ECE/TRANS/SC.3/WP.3/106, para. 68).

3. The present document proposes a new data collection mechanism concerning traffic levels on the E-Inland Waterway Network, and the visualization of the traffic data on an interactive map. This would ask for traffic levels (in both vessels per day and tonnage shipped), for individual waterway sections.

II. Background

4. Internationally comparable data on main international traffic lines are of major and increasing importance in Europe, given the growing volume of international and transit traffic. The E-Road census carried out under the auspices of ECE is the only existing international framework providing comparable data on traffic flows on main European roads on a pan-European basis. ECE has been conducting a quinquennial census of motor traffic and inventory of standards and parameters on main international traffic arteries in Europe since 1980. This census has been based on the E-Road network as defined by annex I of the European Agreement on Main International Traffic Arteries (AGR) of 1975, as amended. The last census was conducted in 2015.

5. The data produced from this census allow policymakers to:

(a) See how the quality of E-Roads has changed over time, measured in the number of lanes, lane width and E-Road signage;

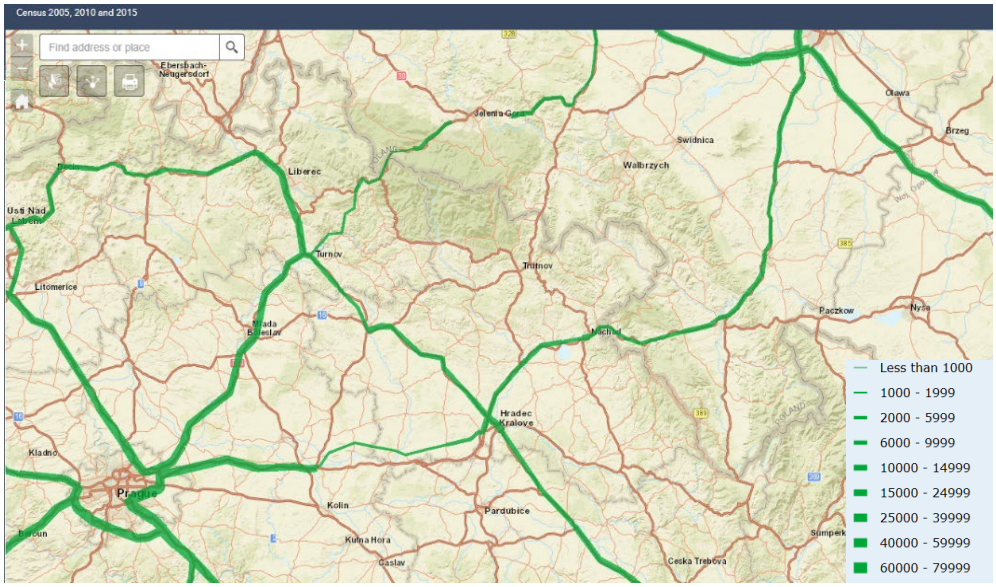
(b) Monitor traffic, including transit traffic and heavy goods traffic, together with holiday traffic, peak hour traffic and night traffic. This allows insights into how people and goods are moved through and between countries on main international corridors;

(c) Visualize through interactive maps how these traffic volumes move across the E-Road network.

6. The Annual Average Daily Traffic (AADT) figures collected in the census represent the total number of motorized vehicles passing through each particular segment of E-Road in a given year, divided by the number of days in the year. While the type of vehicle, time of travel or seasonality factors are not considered, it is a useful headline measure of traffic, and potentially congestion. The AADT level specifically for heavy goods vehicles defined by number of axles is also asked for and can thus also be visualized separately.

7. The interactive map visualizes AADT figures, measured in a standardized manner, across countries.[1] Data for 2005, 2010 and 2015 can be accessed through this map. An example is given in figure 1 below.

Figure 1
Example of E-Road traffic visualization (number of vehicles per day)



8. The recommendations to governments on how the data should be collected and provided to the secretariat for the 2020 E-Road Census can be found in ECE/TRANS/WP.6/2018/11.

9. The E-Road Census is typically not conducted in isolation, but rather as a by-product of the respective national road traffic censuses, thus only marginal costs are involved in the compilation and transmission of the E-Road Census data by ECE member governments. While ECE only collects these data every five years, many member States collect and publish their own data on a more frequent basis.

10. Since 2005, the secretariat (in cooperation with Eurostat) has also collected an E-Rail census based on the European Agreement on Main International Railway Lines (AGC). Data from this census are useful in understanding how many passenger and freight trains use each part of the international network, and visualization applications are possible too. This census clearly distinguishes passenger traffic from freight traffic as trains are typically labelled as one or the other in timetables. This is an advantage for analytical

[1] www.unece.org/trans/main/wp6/e-roads_maps.html.

purposes. The rail census map is planned to be published by June 2019. Combining visualizations of road and rail traffic together can give insight into traffic bottlenecks and where modal shifting of traffic, in particular goods traffic, may be most beneficial. The recommendations to governments on how the E-Rail data should be collected and provided to the secretariat for the 2020 E-Rail census can be found at ECE/TRANS/WP.6/2018/8.

11. Figure 2 shows an example of rail freight traffic mapped in the application. While some point-to-point segments do not accurately fit the true contours of specific rail lines, traffic between major cities is still clear in most cases. This example is particularly relevant to the E-Inland waterway network as some rail lines pictured closely follow major inland waterways.

Figure 2
Example of E-Rail traffic visualization (number of trains per year)

III. Proposal

12. With these clear benefits to collecting E-Rail and E-Road data and given the increasing importance of inland waterways within freight transport, the secretariat proposes to consider collecting an E-Inland Waterway census in a similar fashion. This would naturally cover inland waterways as defined in the European Agreement on Main Inland Waterways of International Importance (AGN).

13. In line with the existing censuses and to limit the reporting burden of member States, this new collection would be conducted every five years, the first to be in 2020.

14. Such a census would need to request data that most countries with navigable inland waterways have already or that could be collected. The annex gives proposals for the data to be asked for, as a starting point for discussions. However, in the inland waterway sector, less interest would be on number of vessels and more would be on tonnes moved in each segment. The measurement point for each segment would typically be locks.

15. For purposes of the coverage of the E-Waterway traffic census, the E-Waterway network to be considered could consist of the waterways that are included in annex I of AGN (this would implicitly include all waterways defined in the European Commission's Trans-European network (TEN-T)).

16. Every effort should be made to arrive at data which are as comparable as possible at the international level. Continuous efforts are, therefore, necessary to keep the scope and quality of the E-Waterway traffic census data in line with user requirements and member State involvement would thus be beneficial.

17. In addition to the tonnes shipped on each segment, particularities of inland waterways could be taken into account, such as their seasonal nature, low water periods or other periods when navigation is stopped or hindered.

18. This information could also contribute to analyses of the modal shift from other inland transport modes and facilitate the study of environmental issues, safety and energy consumption of inland water transport.

19. While the data would be useful in themselves, the real value of this proposed data collection is to visualize these traffic volumes on a map. As such, the data of the table in the annex would be requested in geospatial format, such as in a Shapefile, to allow an interactive map to be produced.

IV. Potential Benefits for member States

20. This proposed data collection would be a useful analytical tool for policymakers in member States. While data already exist at a national level on vessels, tonnes carried and tonne-km, having localized tonnage information will increase the value of information collected, allow targeted policies on the most important and most congested ports and areas of the network, and give the greatest specific insights into where there is potential for shifting freight to inland waterways.

21. This potential data collection is thus of benefit to policymakers in member States with regards to their own countries. But in addition to this, having data produced for other countries in a comparable way, allows a better understanding of the international inland waterway sector.

V. Proposed Timeline

22. If the Working Party wishes to consider this data collection further, it is envisaged that country-level experts will provide additional input, either through informal consultations or through expert-led, ad hoc group meetings of statistics and inland navigation experts, including the relevant River Commissions. Following this, any recommendations on data collection could be presented to the Inland Transport Committee for their consideration, and a resolution thus prepared for member States' agreement.

Annex

Example of an E-IWW Census Data Table

Table
2020 Tonnage data at counting posts on E-IWW, to be shown on the accompanying map

Country: _____

E waterway	*Counting post number*	*Length of waterway section (km)*	*Daily tonnage in 2020*	*Daily tonnage in 2015*	*...*	*Lowest month daily traffic in 2020*	*Highest month daily traffic in 2020*
(A)	*(B)*	*(C)*	*(H)*	*(I)*		*(J)*	*(K)*