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Item 7 (b) of the provisional agenda
Traffic censuses and geospatial statistics:
2020 E-Rail Traffic Censuses

Recommendations for the E-Rail traffic census 2025

Note by the secretariat

I.   Proposal

1.   The secretariat suggests below the draft recommendations to Governments on the 2025 E-Rail traffic census, as amended by the Secretariat from the recommendations on the 2020 E-Rail traffic census.

Documentation

ECE/TRANS/WP.6/2018/8

II.   Coverage of the census

2.   For purposes of the coverage of the 2025 E-Rail traffic census, the rail network to be considered consists of:

(a)   Lines that are included in annex 1 of the European Agreement on Main International Railway Lines (AGC) of 1985 and in its amendments which come into force before 2025 (www.unece.org/trans/main/sc2/sc2_agc_text.html);

(b)   Lines that are included in the European Agreement on Important International Combined Transport Lines and Related Installations (AGTC) of 1991 and in its Amendments which come into force before 2025 (www.unece.org/trans/wp24/welcomeagtc_text.html);

(c)   In the European Union countries, lines in the Trans-European rail network (TEN) (Decision 1692/96/EC of the European Parliament and of the Council and further amendments).

3.   Lists of AGC and AGTC lines as at the beginning of the reference year will be made available by the ECE secretariat if necessary. Where an E-Railway line is not open to traffic (e.g., because it is closed for repairs, has not yet been built, or for other reasons), the census could, if possible, be taken on the railway line(s) used by the traffic which would otherwise use the E-Railway line.

III.   Purpose of the census

4.   Internationally comparable data on main international railway line traffic are of major and increasing importance in Europe, given the growing volume of international and transit traffic.

5.   Every effort should be made within the framework of the 2025 E-Rail traffic census to arrive at data which are as comparable as possible at the international level and respond to new data requirements and changes in traffic patterns. Continuous efforts are, therefore, necessary to keep the scope and quality of the 2025 E-Rail traffic census data in line with user requirements.

6.   In particular, rail traffic data are to be collected on the E-Rail network with the intention of facilitating the international organization and planning of passenger and goods traffic between ECE member countries.

7.   Information on the extent to which various types of trains use different segments of the railway tracks enables improved land use management and better integration of rail traffic in the planning processes of the country itself, as well as at the international level, allowing for adequate maintenance, renewal and improvement programmes and facilitating member States' achievement of the Sustainable Development Goals. This information also contributes to finding solutions to traffic congestion and facilitates the study of environmental issues, rail safety and energy consumption.

8.   An additional objective of the 2025 E-Rail traffic census is the measurement of the train performance of the rail network, expressed mainly in train-kilometres, by the different categories of trains counted.

IV.   Scope of the census

9.   As E-Railway lines constitute a relatively limited part of a country's national railway network, it is of particular interest to know the importance of traffic on these main international railway lines as compared with the traffic borne by the whole of the rail network.

10.   For this comparison, train-kilometres are the most important statistical measure to express the volume and development of traffic in a country. Figures on train-kilometres are also indispensable in the context of traffic accidents and energy consumption. Accordingly, it is recommended that data be provided on train-kilometres on all E-Railway lines. These data should also be provided, to the extent possible, for all other lines of the total national rail network.

V.   Categories of trains to be counted

11.   All trains mentioned in the following categories should be counted.

The train classification system is as follows:

- Category A – Passenger train: a train mainly for the carriage of passengers composed of one or more passenger rail vehicles and, possibly, vans moving either empty or under load

- Category B – Goods train: a train mainly for the carriage of goods composed of one or more wagons and, possibly, vans moving either empty or under load

- Category C – Other trains: other train movements (service trains, etc.) per year.

VI. Values to be calculated

12.   It is recommended that for each E-railway line in a country, the annual number of trains per network segment, by direction and by train category is recorded.

13.   For the total railway network in each country, train-kilometres should be provided broken down by different train categories for the year of the census.

14.   It is necessary for the railway network to be divided into railway segments. The length of segments of the different lines should be defined in accordance with prevailing local conditions.

15.   The necessary data may be obtained using any combination of the following sources:

(a)   Timetables;

(b)   Mandatory surveys;

(c)   Administrative data, including data collected by regulatory authorities;

(d)   Statistical estimation procedures;

(e)   Data supplied by professional organizations in the rail industry;

(f)   Ad hoc studies.

16.   Data need to be divided into three parts:

(a)   Data on the number of trains;

(b)   Data on train-kilometres;

(c)   Data on the infrastructure.

VII. Technical characteristics of E-Railway lines

17.   Information about the volume and distribution of traffic on the E-Railway lines is of greater value if information about the characteristics of such lines is obtained. Governments are, therefore, requested to submit also information on the technical characteristics of the rail network.

18.   Data should be provided for the stock situation at the end of 2025. If a country diverges from this date, it should report accordingly.

VIII. Compilation and publication of the 2025 E-Rail traffic census

19.   It is recommended that Governments supply to the ECE secretariat a report on the 2025 E-Rail traffic census carried out in their country. Member States of the European Union

and European Free Trade Association countries should submit data to Eurostat. Eurostat will pass on these data to the ECE. The other member States should submit data directly to the ECE secretariat. Since the usefulness of the publication of the census depends to a large extent on its timeliness, it is desirable that Governments try, to the extent possible, to provide the data (including the map, if possible), as soon as possible and not later than 30 November 2026 (countries sending data to Eurostat should observe the deadlines as set out by that organization). The report should include data as presented in tables 1 to 6 to the present recommendations.

20.   Data (and, if possible, maps) should be transmitted in an electronic format. In previous census rounds, a manually drawn map has been requested; this now only needs to be provided if Shapefiles (explained below) are not available. For guidance on how a basic map should be manually drawn, users are advised to read the guidance for the 2015 E-Rail census, in ECE/TRANS/WP.6/2013/5.

IX.   Creating and sharing shapefiles

Guidance on the easiest software to use to create the shapefiles

21.   Shapefiles are a file format widely used within a geographic information system (GIS). Proprietary software such as ArcGIS, MapInfo and GeoConcept can create shapefiles. There are also free and open-source software, such as QGIS. Transport infrastructure administrations often use GIS software to manage transport networks.

22.   When sharing shapefiles with the secretariat, the shapefiles' coordinate system should also be submitted (prj file), together with a short explanation on the columns' significance, allowing the identification of E-Rail number, annual number of trains (by type), and any other field with useful information.

X.   2025 E-Rail traffic census tables

23.   Each country should provide data in accordance with the following tables for the census year 2025:

(a)   Table 1 asks for annual goods train movements for each network segment;

(b)   Table 2 asks for annual passenger train movements for each network segment;

(c)   Table 3 asks for annual other train movements for each network segment;

(d)   Table 4 asks for annual train-kilometres, for the E-Rail network, other national lines, and the total, each split between passenger trains, goods trains and other trains;

(e)   Table 5 asks for technical characteristics of each network segment;

(f)   Table 6 asks for the geographical coordinates of each network segment;

(g)   Table 7 describes some of the terms used in the first six tables.

24.   Data transmission arrangements for European Union countries are similar to those applied to other Annexes of Regulation (EC) 2018/643[1].

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[1] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32018R0643.

Traffic flows on the rail network

Table 1
Goods train movements per year

Network segment identifier	AGC line number	AGTC line number	TEN flag	Number of trains
CZS10001			Yes/No	
CZS20001			Yes/No	
CZS10002			Yes/No	
....				
CZS2nnnn			Yes/No	

 Note: Each country should provide data as informally exemplified for the case of Czechia.

Table 2
Passenger train movements per year

Network segment identifier	AGC line number	AGTC line number	TEN flag	Number of trains
CZS10001			Yes/No	
CZS20001			Yes/No	
CZS10002			Yes/No	
....				
CZS2nnnn			Yes/No	

 Note: Each country should provide data as informally exemplified for the case of Czechia.

Table 3
Other train movements (service trains, etc.) per year - Optional

Network segment identifier	AGC line number	AGTC line number	TEN flag	Number of trains
CZS10001			Yes/No	
CZS20001			Yes/No	
CZS10002			Yes/No	
....				
CZS2nnnn			Yes/No	

 Note: Each country should provide data as informally exemplified for the case of Czechia.

Table 4
Train-kilometres per year - Optional

Network	Train-kilometres		
	Passenger trains	Goods trains	Other trains
E-Rail (AGC/AGTC)			
Other lines			
Total			

Table 5
Technical characteristics of the rail network segments in 2025

Network segment identifier	From	To	AGC line number	AGTC line number	TEN flag	Track gauge	Length in km	Number of tracks	Is the segment electrified (Yes/No)?	Type of current (AC/DC) and voltage
CZS00001					Yes/No					
CZS00002					Yes/No					
CZS00003					Yes/No					
....										
CZS0nnnn					Yes/No					

Note: The following technical characteristics should be given for each network segment. The countries are free to choose the granularity of the segmentation so that the segments build up a network, depending on data collection issues and the local traffic situation. To allow intertemporal comparisons, governments are encouraged to usethe same traffic segments as previous rounds of census, if feasible.

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Table 6
Geographical co-ordinates of the rail network segments

Network segment identifier	Points (geographical co-ordinates)	
	X	Y
CZS00001	x1	y1
	x2	y2
	…	…
	Xn	Yn
CZS0nnnn	…	…

Table 7
Description of variables

Country name	Use ISO3166-alpha2 except the United Kingdom of Great Britain and Northern Ireland (the UK).
Network segment identifier	Use ISO3166-alpha2 except the UK. For the UK+ "S" + indication of direction (1 or 2) + number on 4 positions.
	It is recommended that traffic in different directions is reported by designating a separate "network segment" for each direction. For example, "Praha-Plzeň"[2] could be "10001" and "Plzeň-Praha" "20001".
	In tables 5 and 6, the direction is coded 0 meaning no direction.
TEN flag (Rail Transport European Network)	0: No 1: Yes
Number of trains	Numeric
Geographical coordinates	Latitude and longitude are angles measured from the earth's centre to a point on the earth surface. Latitude and longitude are measured in degrees, minutes and seconds. The equator has latitude 0°, the North Pole - 90°, and the South Pole - 90°. The Prime Meridian, indicating a longitude of 0°, starts at the North Pole, passes through Greenwich, England and ends at the South Pole.
	At least the coordinates of the starting and ending points of the segment should be reported.

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[2] "Praha-Plzeň" is used as an informal example only. It might be that the national authorities choose to divide this line into several sections, if there happen to be major junctions, stations or sidings between the two cities.

XI. Definitions

25.   Further definitions for terms used in the E-Rail census are available in the Glossary for Transport Statistics (Fifth edition, 2019, ECE-International Transport Forum-Eurostat[3].) In particular, Governments are encouraged to view definitions A.I-01, A.I-06, A.I-11, A.I-12, A.I-14, A.I-15, A.I-16, A.I-17, A.I-18, A-II.A-01, A.II.A-02, A.II.A-03, A.II.A-04, A.II.A-05, A.II.A-06, A.II.A-07, A.II.A-10, A.IV-05, A.IV-06, A.IV-07 and A.IV-08. Note that the fifth edition of the Glossary was being elaborated while this document was being produced.

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[3] https://unece.org/DAM/trans/main/wp6/pdfdocs/Glossary_for_Transport_Statistics_EN.pdf.