



Geographical Information Systems UNECE data on transport networks

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Group of Experts on International Railway Passenger Hubs

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Road network

European Agreement on Main International Traffic Arteries (**AGR**)

Waterways

European Agreement on Main Inland Waterways of International Importance (**AGN**)

Rail network

European Agreement on Main International Railway Lines (**AGC**)

Intermodal transport

European Agreement on Important International Combined Transport Lines and Related Installations (**AGTC**)

Protocol to AGTC

Rail network

European Agreement on Main International Railway Lines (AGC)

Annex I : Railway lines of major international importance

Annex II : Technical characteristics of main international railway lines

It describes routes and draws a schematic network, not the real transport network

List of railway lines

I. Numbering of lines at the European level

North-South

- E 03 Glasgow — Stranraer — Larne — Belfast — Dublin — Holyhead — Crewe — London — Folkestone — Dover
- E 05 $\frac{\text{Lisboa — Coimbra}}{\text{Porto}}$ — Pampilhosa — Vilar Formoso — Fuentes de Oñoro — Medina del Campo — Burgos — Irún — Bordeaux — $\frac{\text{Orléans (Les Aubrais)}}{\text{Vendôme}}$ — Paris
- E 07 Paris — $\frac{\text{Orléans (Les Aubrais)}}{\text{Vendôme}}$ — Bordeaux — Hendaye — Irún — Burgos — $\frac{\text{Avila}}{\text{Aranda de Duero}}$ — Madrid
- E 09 Paris — Lille — Calais
- E 051 Calais — Paris
- E 053 Madrid — Córdoba — Bobadilla — Algeciras
- E 15 Amsterdam — Den Haag — Rotterdam — Roosendaal — Antwerpen — Bruxelles — Quévy — Feignies — Aulnoye — Paris — $\frac{\text{Dijon}}{\text{Le Creusot}}$ — Lyon — Avignon — Tarascon — Marseille
- E 23 Dunkerque — Aulnoye — Thionville — Metz — Frouard — Toul — Culmont — Chalindrey — Dijon — Vallorbe — Lausanne — Brig
- E 25 Bruxelles — Arlon — Sterpenich — Kleinbettingen — Luxembourg — Bettembourg — Thionville — Metz — Strasbourg — Mulhouse — Basel — Olten — Bern — Brig — Domodossola — Rho — Milano — Genova
- E 27 Liège — Gouvy — Troisvierges — Luxembourg
- E 35 Amsterdam — Utrecht — Arnhem — Emmerich — Duisburg — Düsseldorf — Köln — Mainz — Mannheim — Karlsruhe — Basel — Olten — Chiasso — Milano — Bologna — Firenze — Roma — Napoli — Salerno — Messina
- E 391 Dnipropetrovsk — Lozovaya — Krasny Liman — Kharkov
- E 43 Köln — Limburg — Frankfurt (Main) — $\frac{\text{Heidelberg}}{\text{Mannheim}}$ — Stuttgart — Ulm — Augsburg — München — Freilassing — Salzburg
- E 45 Oslo — Kornsjo — Göteborg — Helsingborg — Malmö — København — Odense — Fredericia — Padborg — Flensburg — Hamburg — Hannover — Würzburg — Nürnberg — Ingolstadt — München — Kufstein — Wörgl — Innsbruck — Brennero — Verona — Bologna — Ancona — Foggia — Bari
- E 451 Nyköping — Gedser — Rostock — Berlin — $\frac{\text{Halle}}{\text{Leipzig}}$ — Erfurt — Nürnberg — Passau (— Wels)
- E 53 Helsingborg — Hässleholm
- E 55 Stockholm — Hässleholm — Malmö — Trelleborg — Sassnitz Hafen — Stralsund — Berlin/Seddin — Dresden — Bad Schandau — Dečín — Praha
Linz — Salzburg — Schwarzach St. Veit — Villach — Arnoldstein — Tarvisio — Udine — Venezia — Bologna

Intermodal transport

European Agreement on Important International Combined Transport Lines and Related Installations (AGTC)

Annex I: Railway Lines of Importance for International Combined Transport

Annex II: Installations Important for International Combined Transport

Terminals, Border crossing points, Gauge interchange stations, Ferry links/ports forming part of the international combined transport network

Annex I

RAILWAY LINES OF IMPORTANCE FOR INTERNATIONAL COMBINED TRANSPORT

(1) Portugal */

C-E 05	(Fuentes de Oñoro-) Vilar Formoso-Pampilhosa- <u>Coimbra-Lisboa</u> Porto
C-E 90	Lisboa-Entroncamento-Marvão (-Valencia de Alcántara)

(2) Spain */

C-E 05	(Hendaye-) Irún-Burgos-Medina del Campo-Fuentes de Oñoro (-Vilar Formoso)
C-E 07	(Hendaye-) Irún-Burgos- <u>Avila</u> -Madrid Aranda de Duero

A. Terminals of importance for international combined transport

AT Linz-Stadthafen
Graz Süd/Werndorf
Salzburg Hauptbahnhof/Liefering
Villach S

B. Border crossing points of importance for international combined transport

Vilar Formoso (CP) - Fuentes de Oñoro (RENFE)
Marvão (CP) - Valencia de Alcántara (RENFE)
Irún (RENFE) - Hendaye (SNCF)
Port Bou (RENFE) - Cerbère (SNCF)
Dublin (CIE) - Holyhead (BR)

Dundalk (CIE) - Newry (NIR)
Dover (BR) - Calais (SNCF)

C. Gauge interchange stations of importance for international combined transport

Stations between railway systems with different rail gauges	Countries concerned	Interchange technique applied	
		Change of wagon	Transshipment of loading units by
<u>Irún</u> - Hendaye	Spain - France	Holyhead - Dublin	(United Kingdom - Ireland)
<u>Port Bou</u> - Cerbère	Spain - France	Calais - Dover	(France - United Kingdom)
<u>Hanko</u>	Finland	Oostende - Dover	(Belgium - United Kingdom)
		Dunkerque - Dover	(France - United Kingdom)

D. Ferry links/ports forming part of the international combined transport network

Intermodal transport

Protocol on Combined Transport on Inland Waterways to the AGTC

Annex I: inland waterways of importance for international combined transport

Annex II: terminals in ports of importance for international combined transport

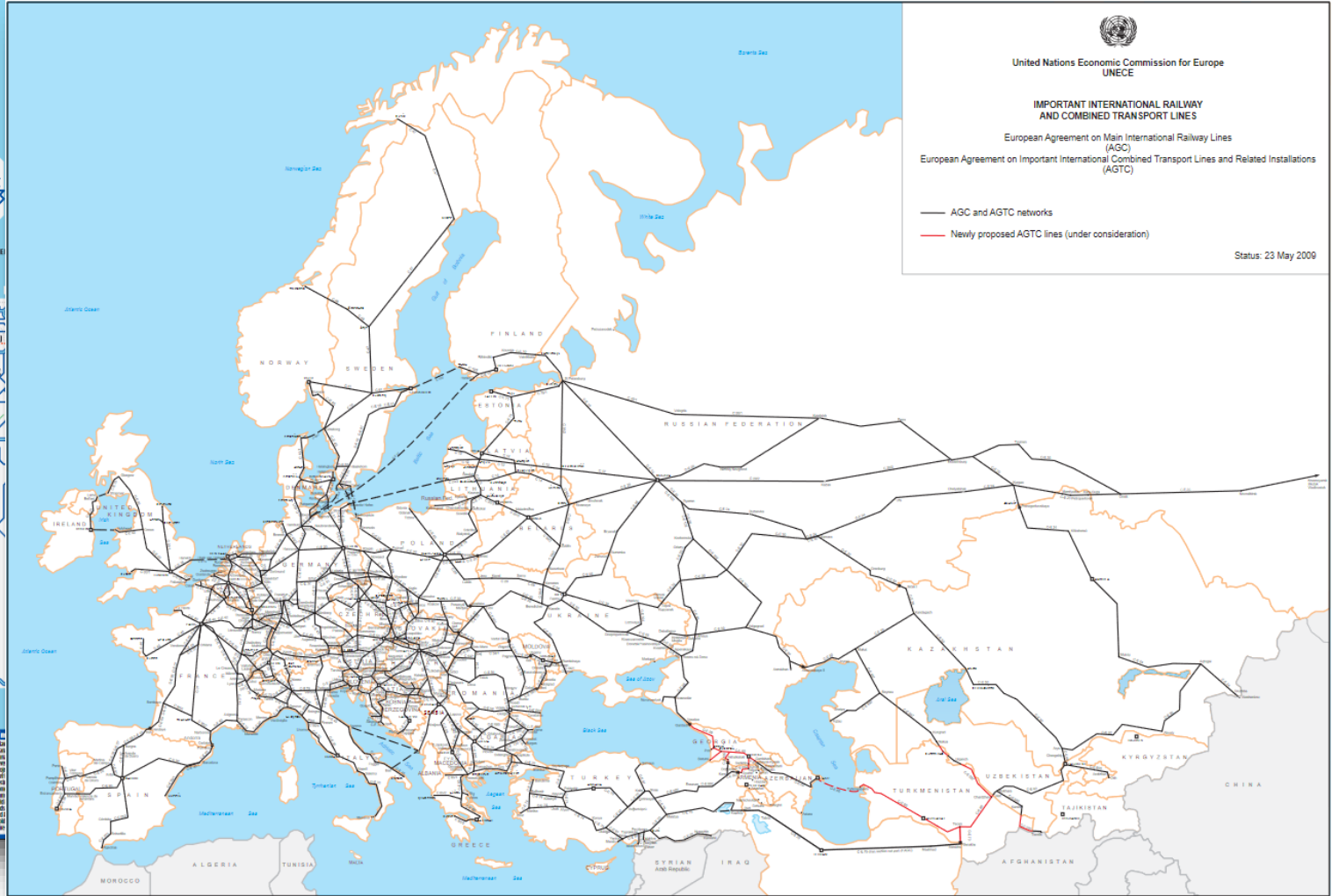
EUROPEAN INLAND WATERWAYS OF IMPORTANCE FOR REGULAR INTERNATIONAL COMBINED TRANSPORT	
<u>Inland waterway section</u>	<u>C-E waterway number</u>
(1) <u>France</u>	
Dunkerque-Arleux-Condé sur Escaut	C-E 01
Deûle	
Bauvin-Lille-(Zeebrugge)	C-E-02
Seine-North connection	
[Compiègne-Arleux] (planned)	C-E 05
Rhone	
Marseille-Fos-Lyon	C-E 10
Canal du Rhône à Sète	C-E 10-011
Lyon-St.Jean de Losne	C-E 10
[St.Jean de Losne-Mulhouse] (planned)	C-E 10

<u>List of terminals in ports</u>	
(1) <u>France</u>	
C-P 01-01	Dunkerque (Dunkerque-Valenciennes Canal, 20.5 km)
C-P 02-03	Lille (Deûle, 42.0 km)
C-P 10-36	Strasbourg (Rhine, 296.0 km)
C-P 10-39	Mulhouse-Ottmarsheim (Grand Canal d'Alsace, 21.0 km)
C-P 10-43	Aproport (Chalon, Mâcon, Villefranche-sur-Saône)(Saône, 230.0 km, 296.0 km and 335.0 km, respectively)
C-P 10-44	Lyon (Saône, 375.0 km)
C-P 10-45	Marseille-Fos (Marseille-Rhône Canal, 0.0 km)
C-P 10-04-01	Sète (Rhône-Sète Canal, 96.0 km)
C-P 80-01	Le Havre (Le Havre-Tancarville Canal, 20.0 km)
C-P 80-02	Rouen (Seine, 242.0 km)
C-P 80-04-01	Port Autonome de Paris:
	Gennevilliers (Seine, 194.7 km);
	Bonneuil-Vigneux (Seine, 169.7 km);
	Evry (Seine, 137.8 km);
	Melun (Seine, 110.0 km);

European Agreements on main international transport networks



Map of the European Recreational Inland Navigation Network (AGNP) – Carte du réseau européen de navigation de plaisance (AGNP) – Карта европейской сети прогулочного судоходства по внутренним водным путям (AGNP)

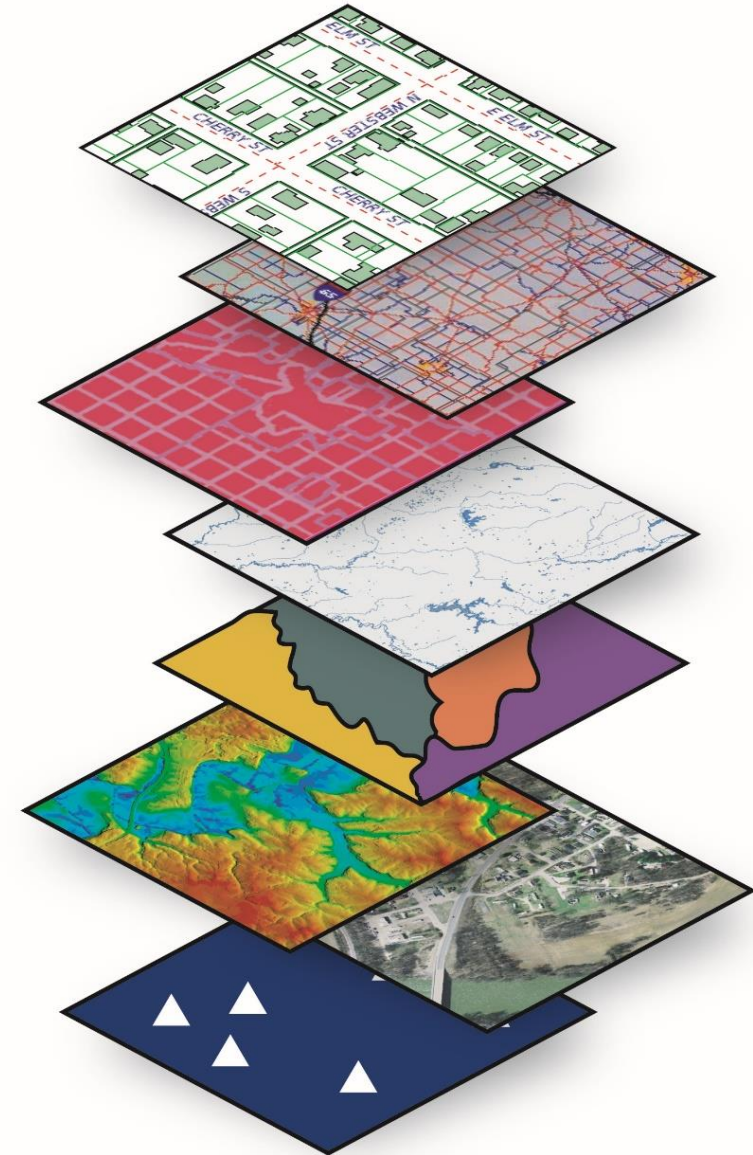
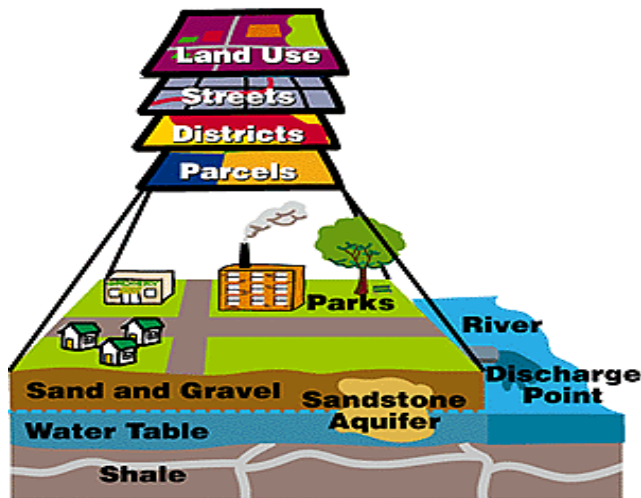


Geographical Information System (GIS)

GIS: a spatial system that creates, manages, analyzes, and maps all types of data.

GIS connects data to a map, integrating location data (where things are) with all types of descriptive information (what things are like there).

In a GIS, layers of information, are overlaid on top of each other. This lets us see how these systems interact with each other.



Geographical Information System (GIS)

AGC/AGTC network on UNECE GIS: recently digitalized (2020/2021), parameters based on RINF data (ERA).

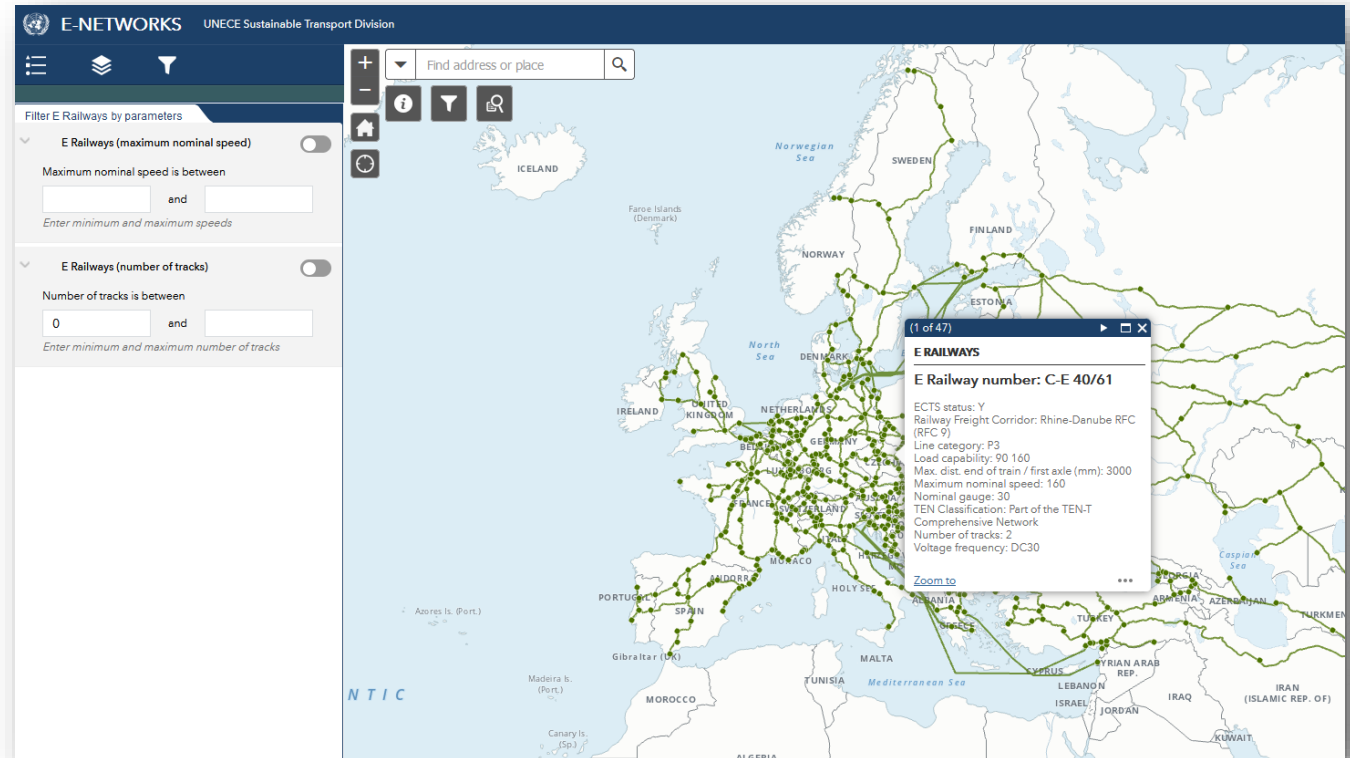
C-E sections: railway lines essentially identical to relevant E lines of the AGC

C sections: other lines important for international combined transport

Nodes: main intersections between sections and possible stations

Parameters:

- ECTS status
- Freight Corridor
- Line category
- Load capability
- Maximum nominal speed
- Nominal gauge
- TEN-T Class
- Number of tracks
- Voltage frequency



Other **AGC / AGTC parameters** from the Annexes to the agreements are being currently implemented

Some of the RINF parameters currently implemented are common to the AGC / AGTC parameters, but the geographic coverage may differ

Installations as described in the AGTC are being geocoded (based on AGTC description, location may not be accurate):

- **Terminals**
- **Border crossing points**
- **Gauge interchange stations**
- **Ferry links/ports**

Use GIS data

Data dissemination
Analysis
Awareness raising



Dashboards Data manipulation

Select a legal instrument

Additional Protocol to the CMR concerning the electronic consignment note (e-CMR)
Entered into force on 5 June 2011

Map of Contracting Parties

Rail censuses Data analysis

UNECE UNECE E Rails Census

Layer List

Layers

- Transport of passengers (2015)
- Number of trains (Passengers)
- Transport of goods (2015)
- Number of trains (Goods)
- Transport of passengers (2010)
- Transport of Goods (2010)

Climate change impacts Awareness raising

UNECE Climate Change

Layer List

Layers

- Main transport networks (Europe)
- Main transport networks (Canada)
- Warm spell duration index (Europe only)
- Maximum precipitation amount over a 5 day period (Europe only)
- Annual count of days when daily precipitation amount is greater than 20mm (Europe)
- Annual count of days when daily precipitation amount is greater than 20mm (Canada)
- Very hot days (Europe)
- Scenario 8.5 (mean)
- Scenario 8.5 (P10)
- Scenario 8.5 (P90)
- Scenario 2.6 (mean)
- Scenario 2.6 (P10)
- Scenario 2.6 (P90)

