



Freight Transport and Interconnection Lines in Europe

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CORRIDORS' APPROACH IN EUROPE

CORRIDORS APPROACH IN EUROPE

Context

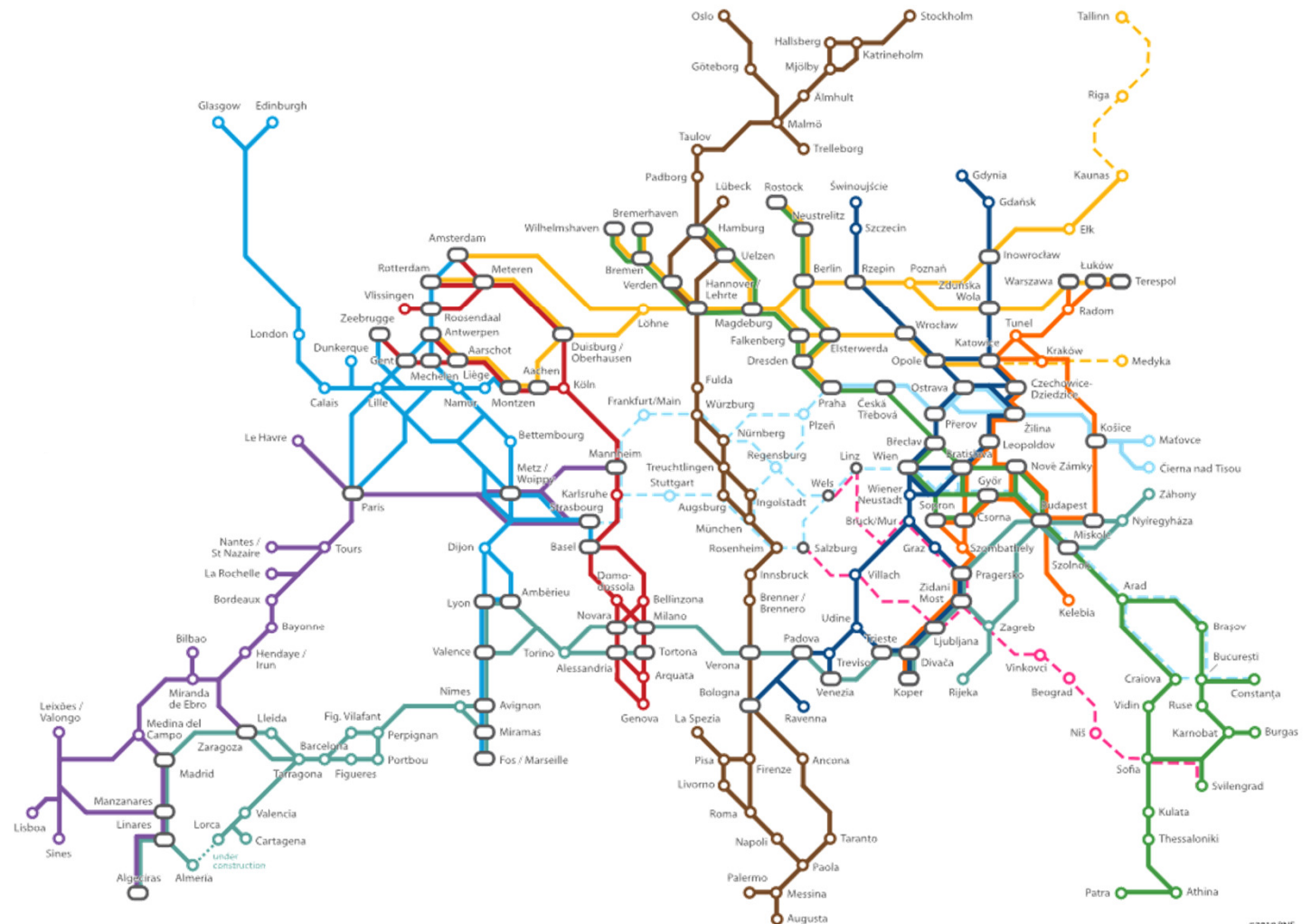
European Commission has adopted a corridors' approach: it has established eleven (11) rail freight corridors in order to:

- strengthen international rail freight transport
- promote sustainable mobility of goods (... and also passengers !)

CORRIDORS APPROACH IN EUROPE

General Layout of the Corridors

- RFC1** Rhine - Alpine
 - RFC2** North Sea - Mediterranean
 - RFC3** Scandinavian - Mediterranean
 - RFC4** Atlantic
 - RFC5** Baltic - Adriatic
 - RFC6** Mediterranean
 - RFC7** Orient / East-Med
 - RFC8** North Sea - Baltic
 - RFC9** Czech-Slovak / Rhine - Danube
 - RFC10** Alpine - Western Balkan
 - RFC11** Amber
-
- Multi-corridor station
 - Single-corridor station
 - Expected extensions / RFCs



CORRIDORS APPROACH IN EUROPE

Several Advantages

The corridors offer several advantages:

- Interconnection between corridors
- Facility during the capacity request & assignment process
- Possibility for Re-Routing in case of disruption (even though this is not always easy !)

THE MEDITERRANEAN CORRIDOR

THE MEDITERRANEAN CORRIDOR

Context

Mediterranean Rail Freight Corridor or “RFC-6” has been set up on 2013 according to Regulation (EU) 913/2010

It crosses 6 countries of the European Union:

- Spain
- France
- Italy
- Slovenia
- Croatia
- Hungary

THE MEDITERRANEAN CORRIDOR

Layout

Algeciras, Almería,
Valencia, Madrid,
Zaragoza, Barcelona



Marseille, Lyon



Torino, Milano, Verona,
Padova, Venezia, Trieste



Koper,
Ljubljana



Rijeka,
Zagreb



Budapest,
Záhony



Ukrainian border



THE MEDITERRANEAN CORRIDOR

Connection with Asian routes



THE MEDITERRANEAN CORRIDOR

Interconnection with several corridors

Mediterranean Corridor interconnects with:

- RFC-1 Rhine – Alpine in Milano
- RFC-2 North Sea – Mediterranean in Lyon & Marseille
- RFC-3 Scan Med in Verona
- RFC-4 Atlantic in Zaragoza
- RFC-5 Baltic – Adriatic in Ljubljana
- RFC-7 Orient in Budapest

THE MEDITERRANEAN CORRIDOR

In few words

The Mediterranean Corridor is a key part of the EU Corridors' Network

Connects the main Mediterranean Ports facilities and Inland HUBs

Captures a big portion of EU population

Together with the other interconnecting Corridors, captures a great part of the EU GDP

Offers a link to Asian routes (Russia, China)

Influences millions of inhabitants of North Africa (Morocco, Algeria, ..)

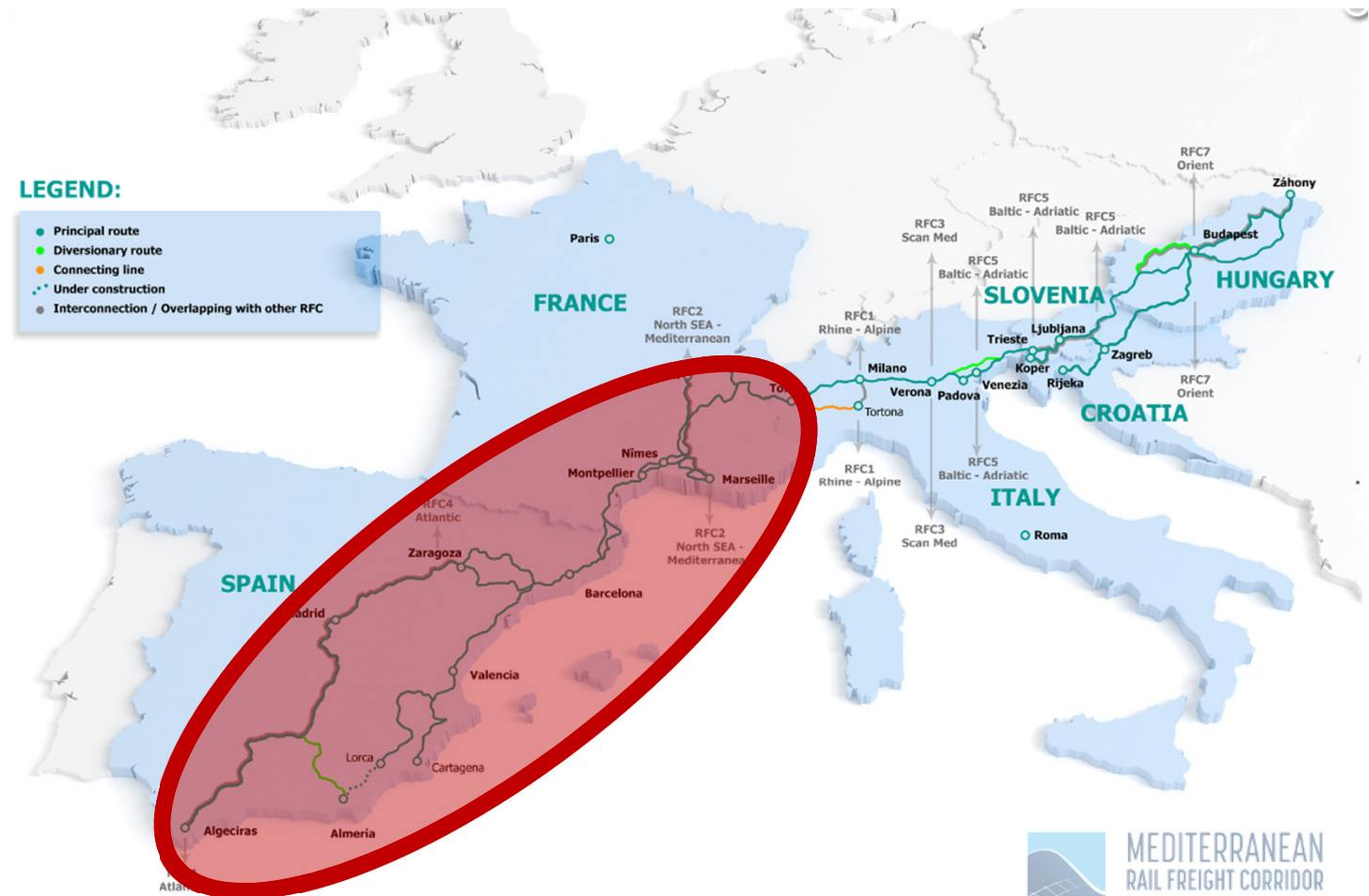
CASE STUDY: THE SPAIN-FRANCE CONNECTION IN THE SW PART OF THE MEDITERRANEAN CORRIDOR

CASE STUDY: SPAIN-FRANCE CONNECTION IN THE S.W. PART OF THE CORRIDOR

What are we talking about ?



The South-West side
of the Corridor...



CASE STUDY: SPAIN-FRANCE CONNECTION IN THE S.W. PART OF THE CORRIDOR

How is today's situation (Nov-2019)

Continuously growing traffic

- High-speed passengers' trains
- Freight trains
- But... still no Regional passengers' trains



GOOD NEWS !... Obstacles "of the past" are solved... or on way to be solved

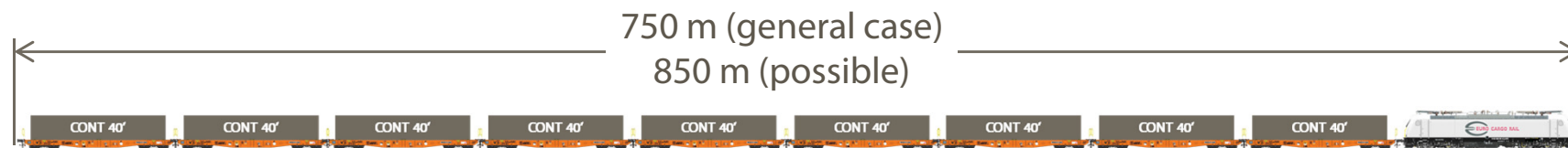
- UIC-gage infrastructures in Spain ⇒ works are progressing well, expected 2021-22
- Freight locomotives ⇒ new high-performance freight locomotives, expected 2020-21
- Competitive environment in freight transport ⇒ new freight operators, expected 2020-21
- Increase of capacity allocated for freight ⇒ joint work ongoing ADIF/LFP/SNCF-R

CASE STUDY: SPAIN-FRANCE CONNECTION IN THE S.W. PART OF THE CORRIDOR

High-performance Infrastructures ready for Freight !

Infrastructures designed for freight trains

- Interoperable ERTMS and GSM-R systems: 300 km/h for passengers trains 100 km/h freight trains
- Several safety systems to allow safe mixed operations, passengers + freight
- Length: 750 m generally admitted, 850 m possible

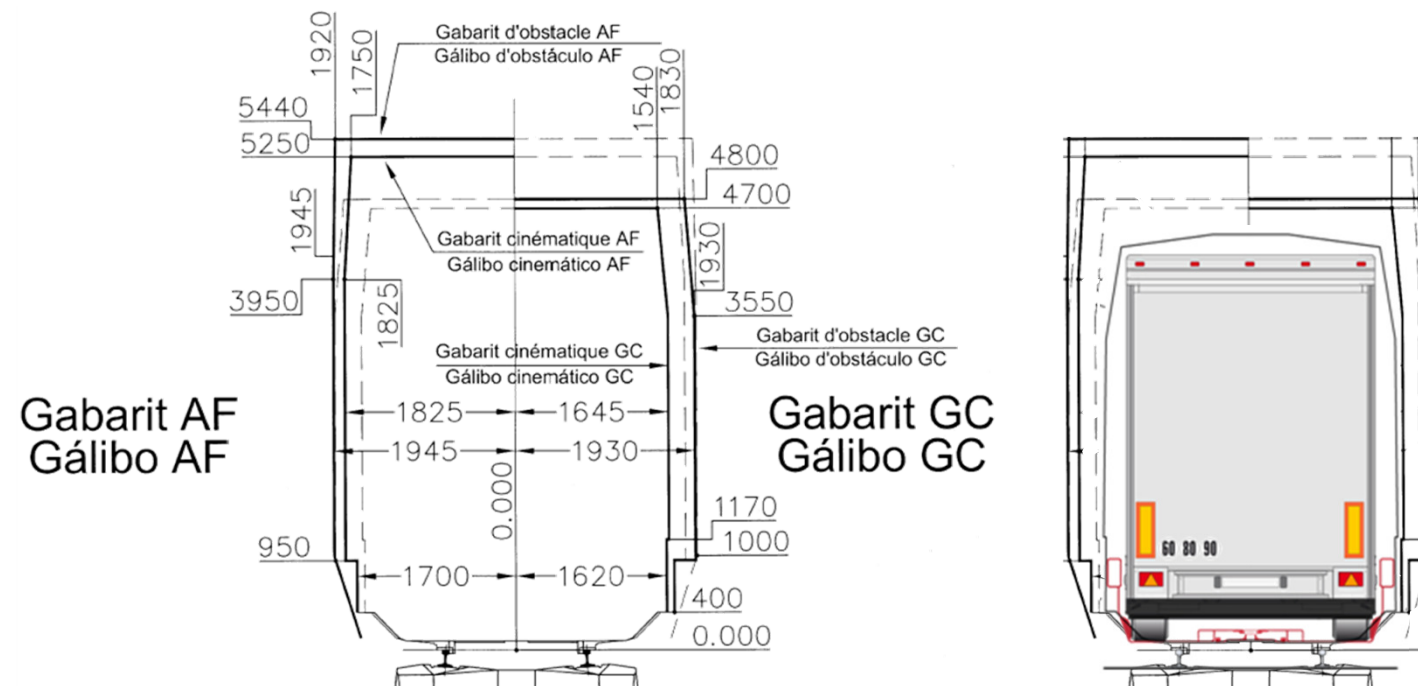


CASE STUDY: SPAIN-FRANCE CONNECTION IN THE S.W. PART OF THE CORRIDOR

High-performance Infrastructures ready for Freight !

Infrastructures designed for freight trains

- Gage: AF and GC \Rightarrow widest possible gages for upper and lower parts, including piggyback low wagons

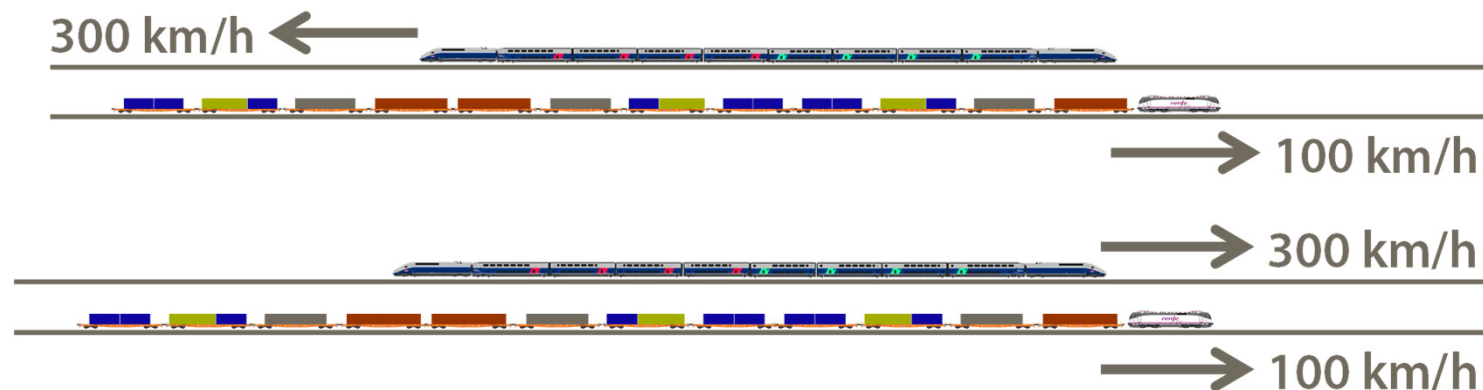
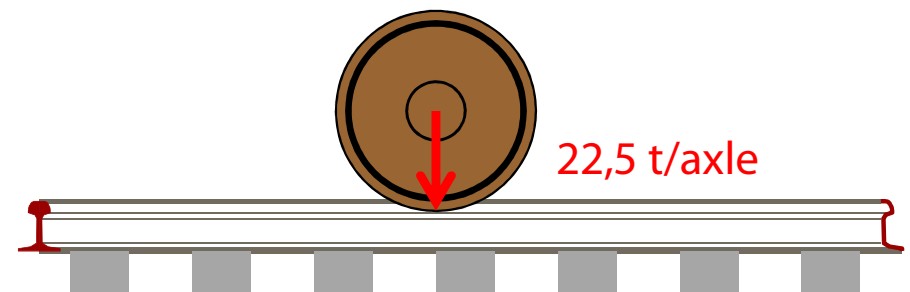
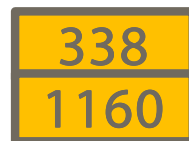


CASE STUDY: SPAIN-FRANCE CONNECTION IN THE S.W. PART OF THE CORRIDOR

High-performance Infrastructures ready for Freight !

Infrastructures designed to admit freight trains

- Load: 22,5 t/axle
- Dangerous goods: admitted
- No restrictions for the freight trains: crossing and overtaking with high-speed trains admitted



CASE STUDY: SPAIN-FRANCE CONNECTION IN THE S.W. PART OF THE CORRIDOR

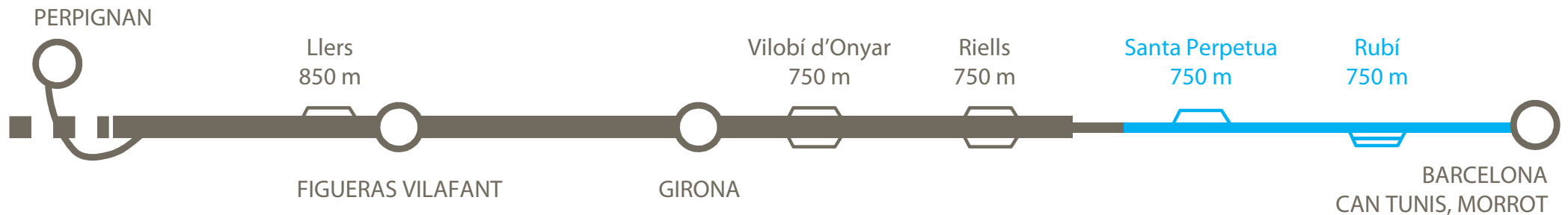
High-performance Infrastructures ready for Freight !

Infrastructures designed to admit freight trains

- Minimised night maintenance window



- Several 750 m sidings all along the Mediterranean Corridor



CASE STUDY: SPAIN-FRANCE CONNECTION IN THE S.W. PART OF THE CORRIDOR

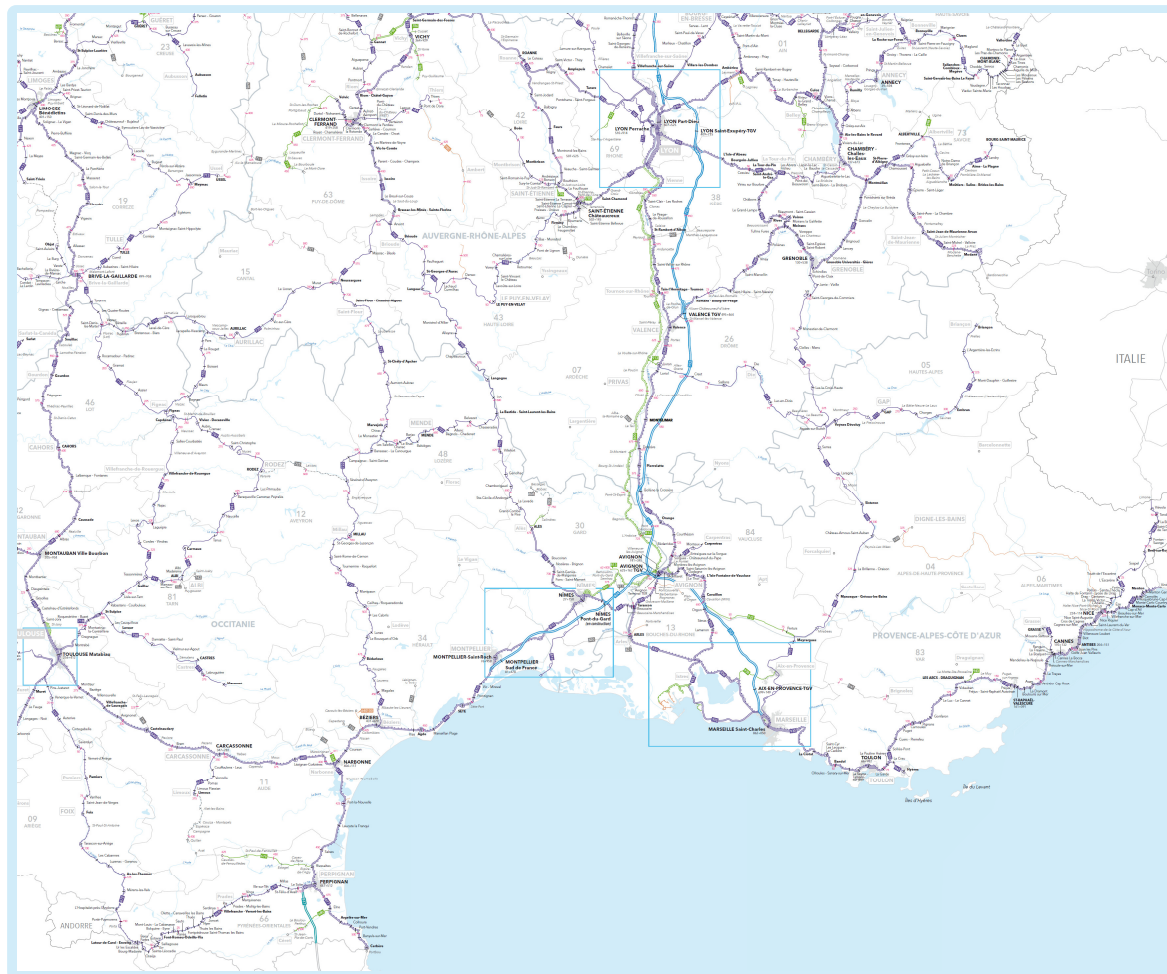
High-performance Infrastructures ready for Freight !

Infrastructures designed to admit freight trains

- Punctuality rate: around 99,7%

CASE STUDY: SPAIN-FRANCE CONNECTION IN THE S.W. PART OF THE CORRIDOR

Today's situation in France, 2019



UIC-gage conventional line all along down to Perpignan and Cerbère

High-speed line to Montpellier

High-speed line between Montpellier and Perpignan in project phase

— Conventional Line, UIC gage

— High-Speed Line, UIC gage





CASE STUDY: SPAIN-FRANCE CONNECTION IN THE S.W. PART OF THE CORRIDOR

Today's situation in Spain, 2019



UIC-gage line all along from Perpignan (France) to Barcelona

Works ongoing from Barcelona to Valencia for UIC-gage adaptation

-  Conventional Line, UIC gage
-  Conventional Line, IBE gage
-  Conventional Line, IBE+UIC gage
-  High-Speed Line, UIC gage

CASE STUDY: SPAIN-FRANCE CONNECTION IN THE S.W. PART OF THE CORRIDOR

Tomorrow' situation in Spain, 2021-22



UIC-gage line all along from Perpignan (France) to Tarragona and Valencia

Works ongoing from Barcelona to Valencia for a second UIC line and south of Valencia to Alicante and Algeciras

CASE STUDY: SPAIN-FRANCE CONNECTION IN THE S.W. PART OF THE CORRIDOR

In brief...

High-performance infrastructure

Re-Routing possibilities

Capacity available for freight

Continuously growing traffic

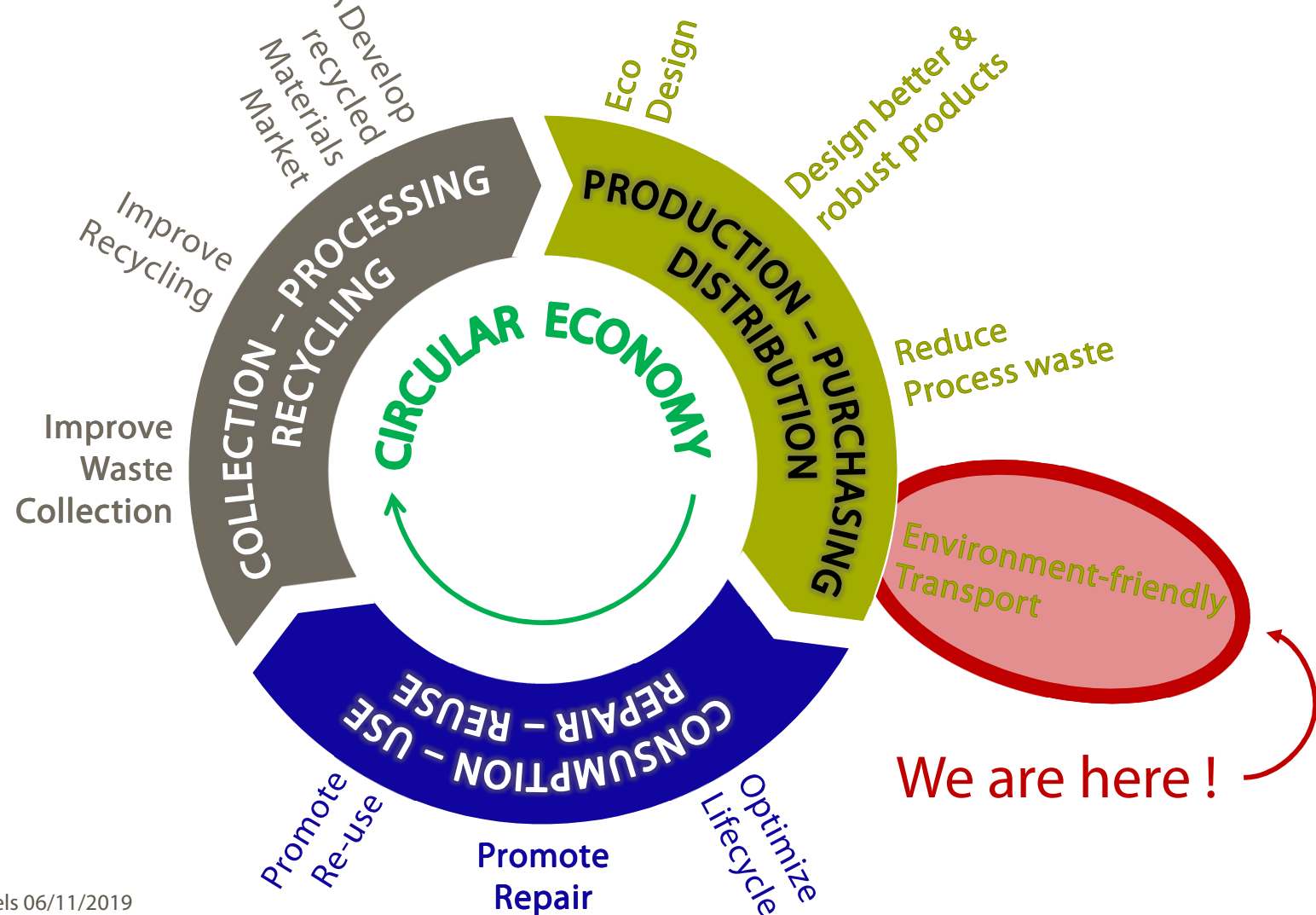
Obstacles “of the past” solved... or on way to be !

Freight is WELCOME

OPPORTUNITIES & INTERCONNECTIONS IN THE CIRCULAR ECONOMY CONTEXT










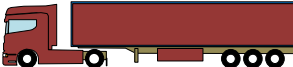
OPPORTUNITIES & INTERCONNECTIONS IN THE CIRCULAR ECONOMY CONTEXT

Rail Transport in the circular Economy Context



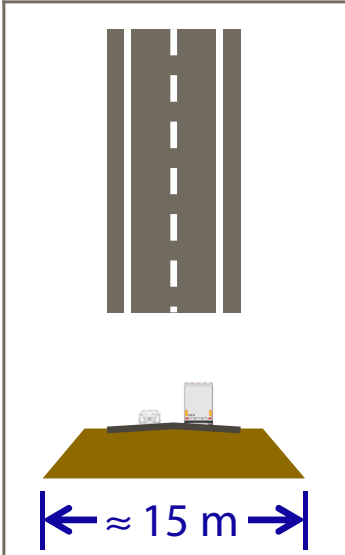
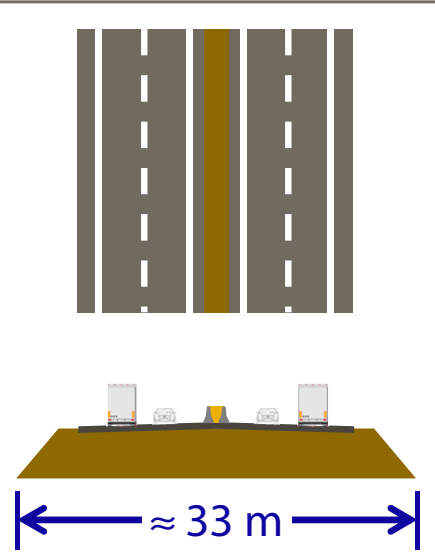
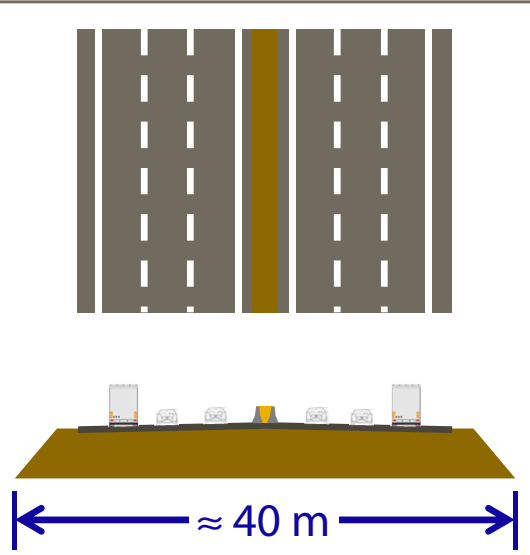
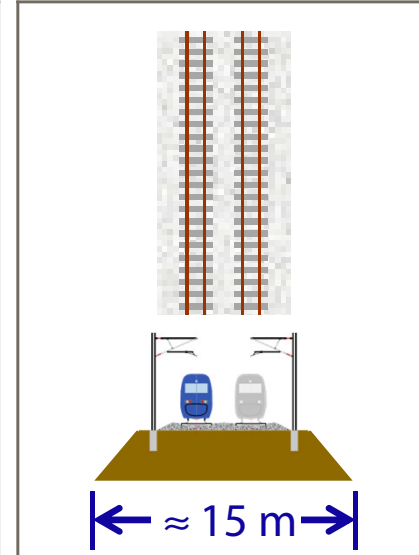


OPPORTUNITIES & INTERCONNECTIONS IN THE CIRCULAR ECONOMY CONTEXT

Efficiency of Rail Transport with regards to Massification

	100 
	200 
	80 
	160 
	40 

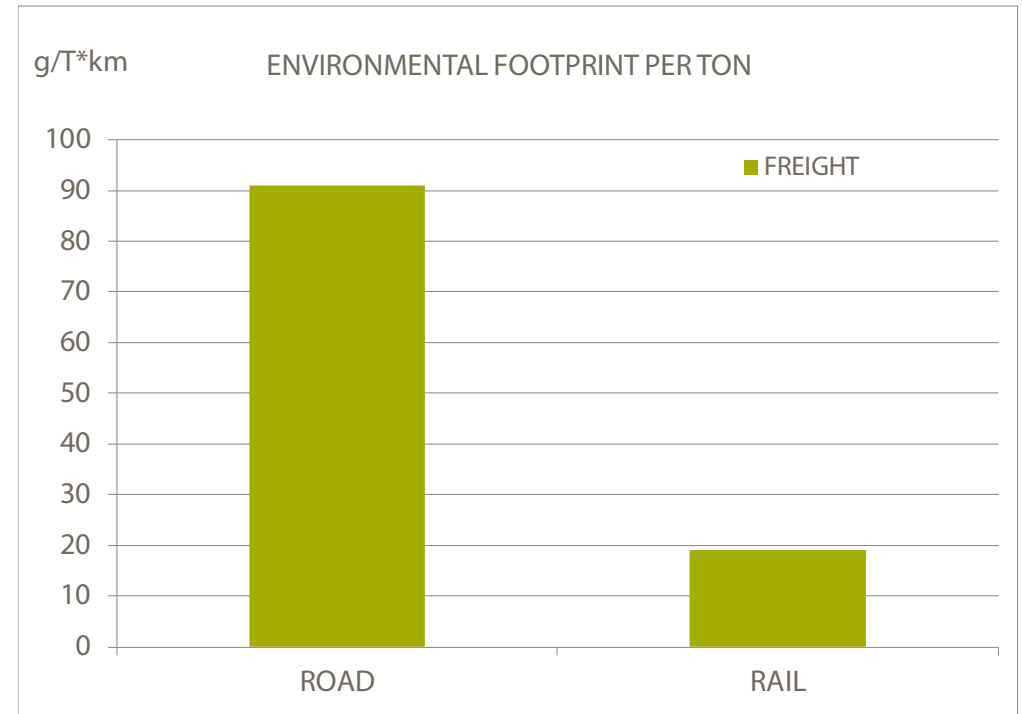
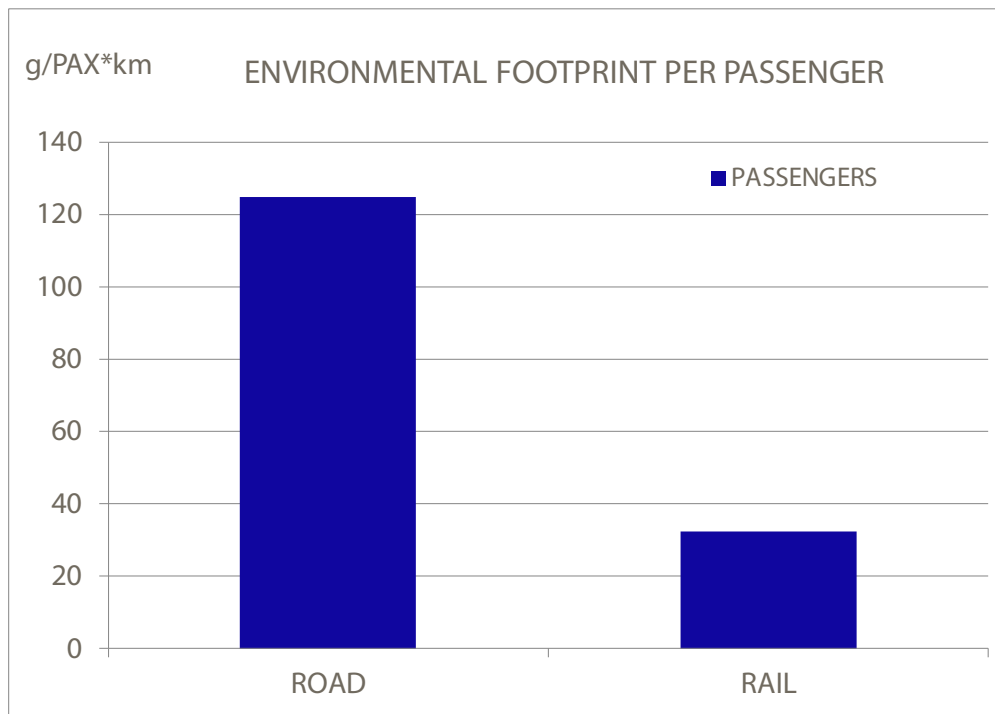
OPPORTUNITIES & INTERCONNECTIONS IN THE CIRCULAR ECONOMY CONTEXT

Efficiency of Rail Transport with regards to Land Occupation

Maximum Capacity per Direction				
	≈ 1.000 cars/h	≈ 2.000 cars/h	≈ 3.000 cars/h	≈ 6 trains/h
Equiv. PAX	≈ 3.000 PAX/h	≈ 6.000 PAX/h	≈ 9.000 PAX/h	≈ 6.100 PAX/h
	≈ 120 trucks/h	≈ 200 trucks/h	≈ 250 trucks/h	≈ 4 trains/h
Equiv. TEUS	≈ 240 TEUS/h	≈ 400 TEUS/h	≈ 500 TEUS/h	≈ 400 TEUS/h

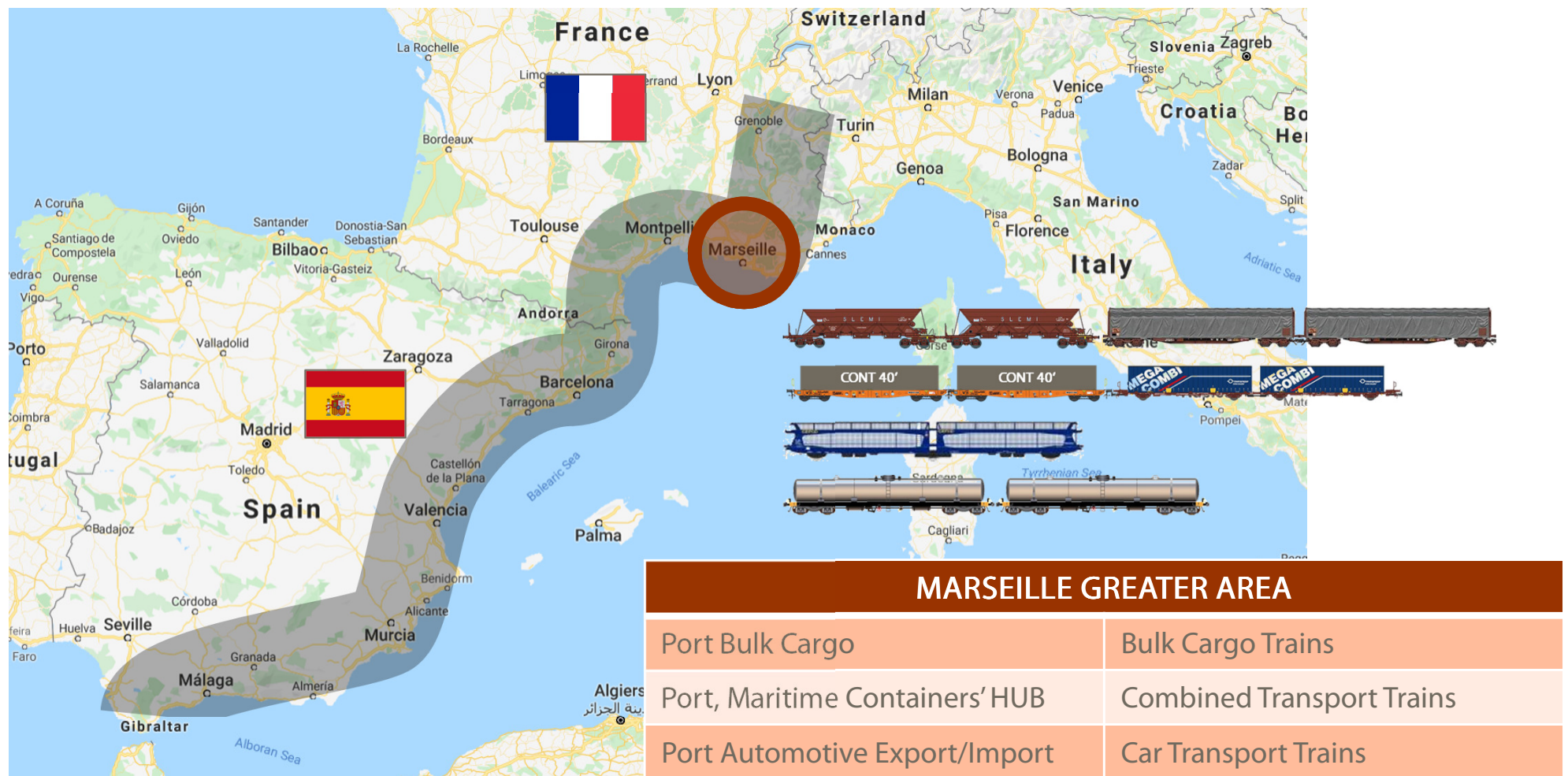
OPPORTUNITIES & INTERCONNECTIONS IN THE CIRCULAR ECONOMY CONTEXT

Environment Advantage of Rail Transport



OPPORTUNITIES & INTERCONNECTIONS IN THE CIRCULAR ECONOMY CONTEXT

Areas of Development



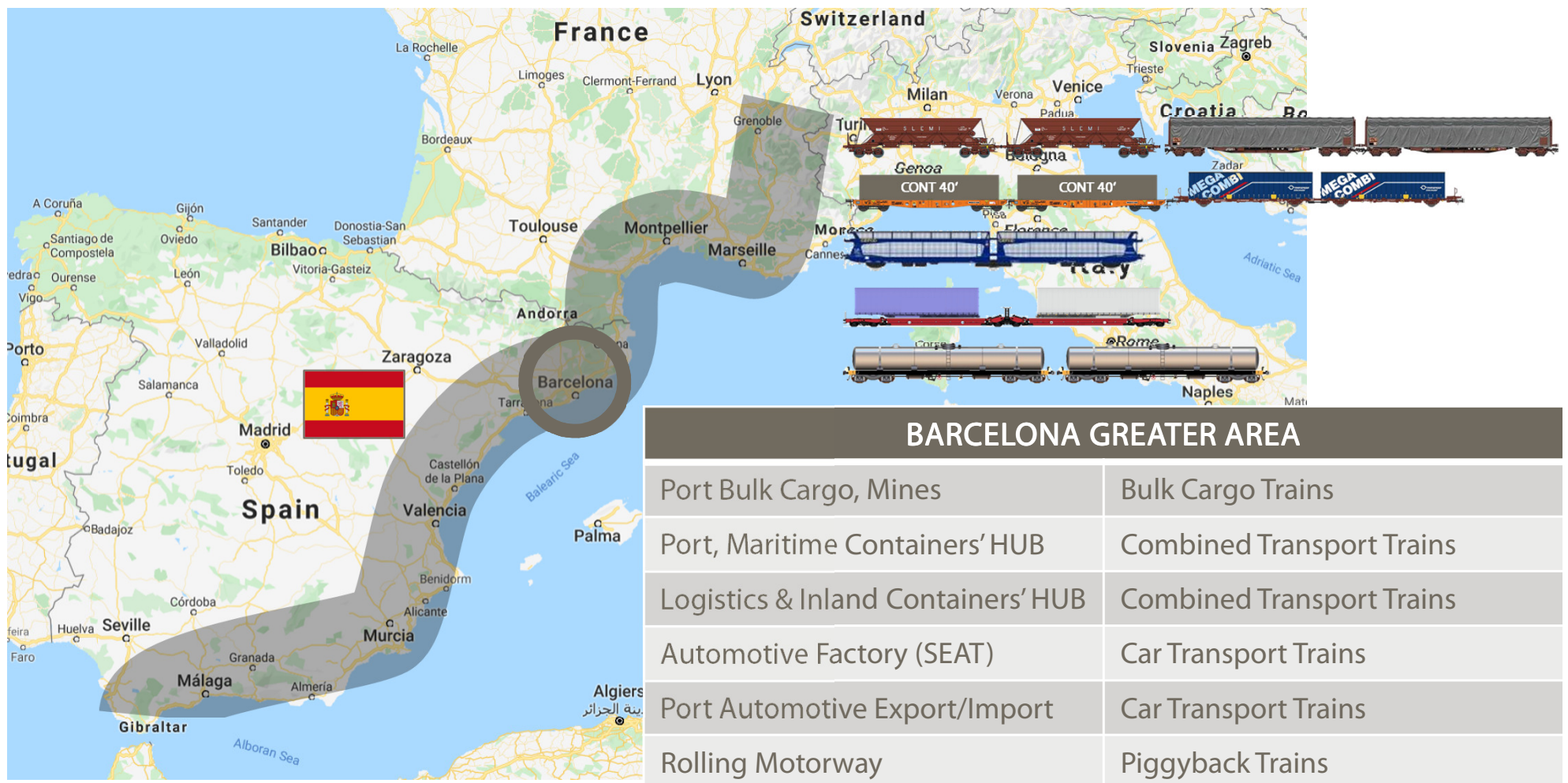
OPPORTUNITIES & INTERCONNECTIONS IN THE CIRCULAR ECONOMY CONTEXT

Areas of Development



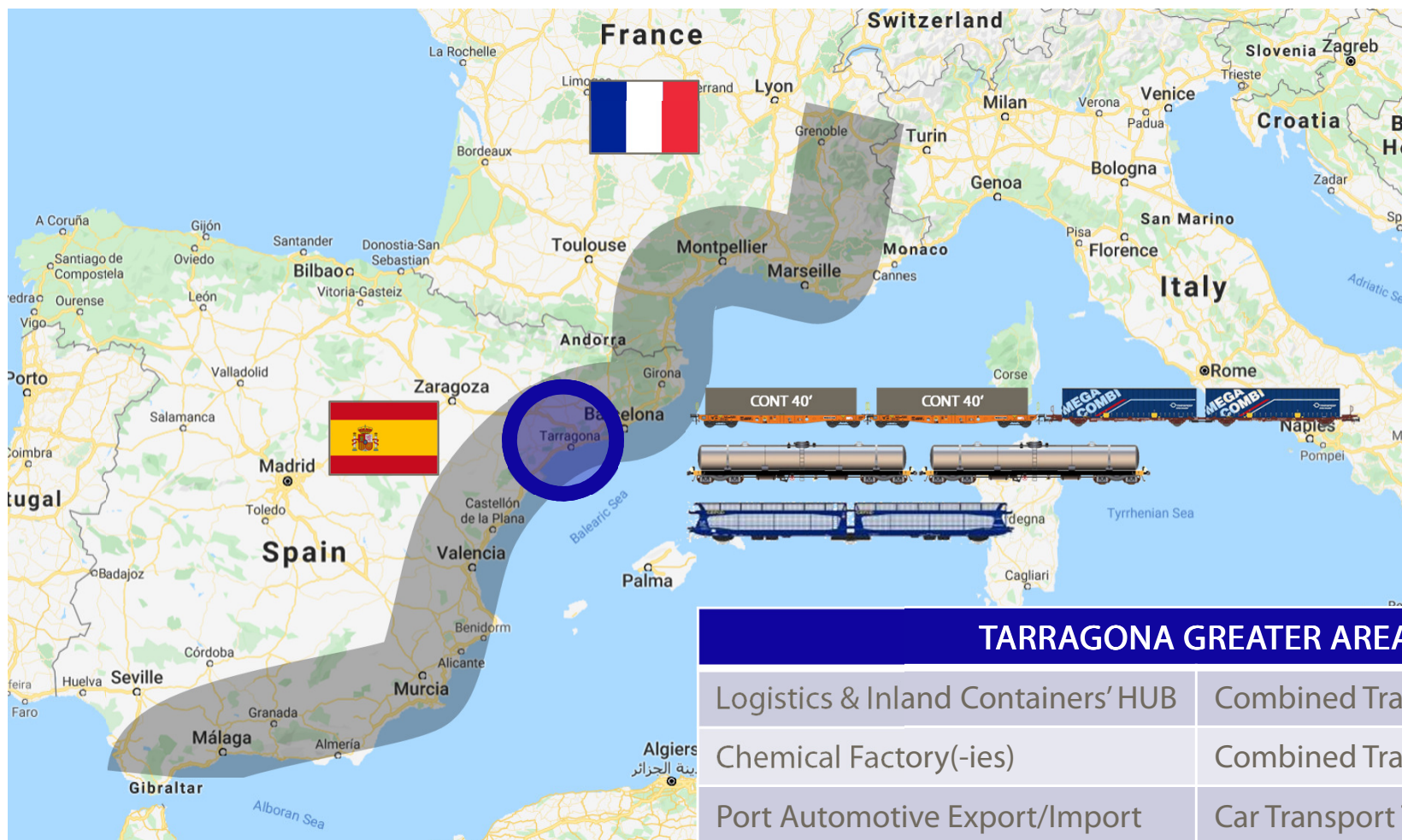
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Areas of Development



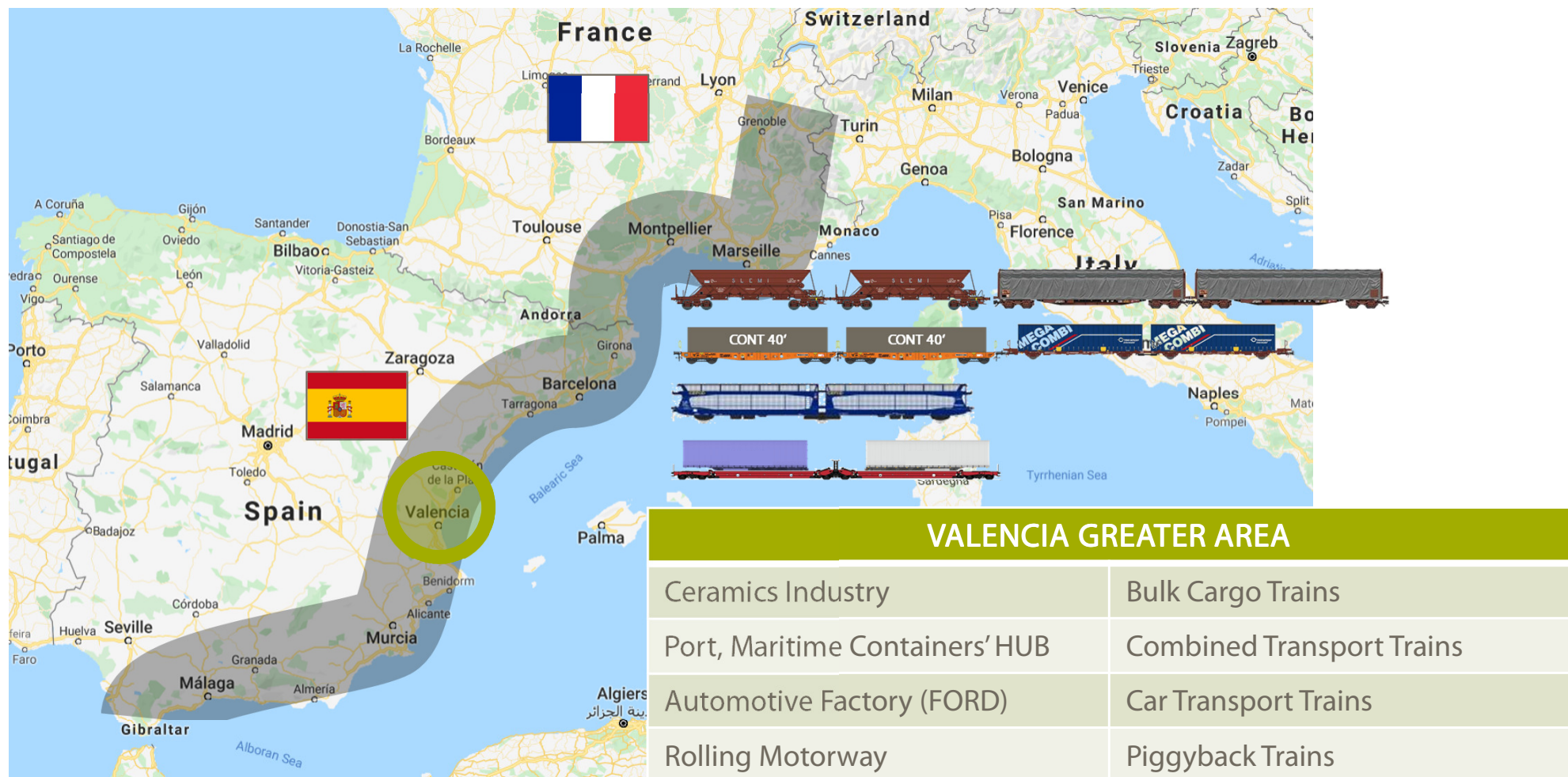
OPPORTUNITIES & INTERCONNECTIONS IN THE CIRCULAR ECONOMY CONTEXT

Areas of Development



OPPORTUNITIES & INTERCONNECTIONS IN THE CIRCULAR ECONOMY CONTEXT

Areas of Development



CONCLUSIONS

CONCLUSIONS

The main message

The Mediterranean Corridor connection between France and Spain offers a HIGH-PERFORMANCE infrastructure, specially adapted to FREIGHT

New Operators and new Locomotives open new opportunities

Interconnection with seven (7) European Rail Freight Corridors

Connection with the main Mediterranean Ports facilities and Inland HUBs

Link to Asian routes

... While being fully into the circular economy logic

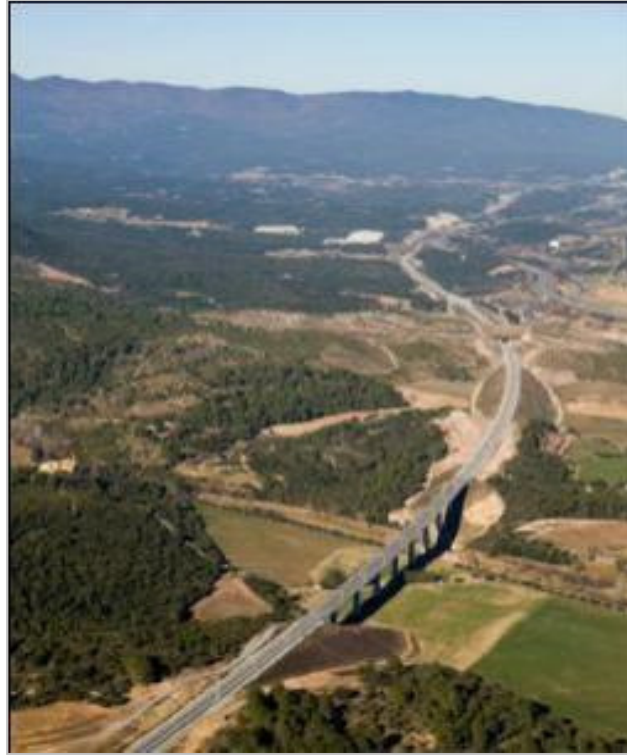


CONCLUSIONS

Actions to continue

UIC lines finalisation in Spain, including terminal and capillary connections ⇒ Ongoing !

Maintain in perfect condition the Infrastructures





Thank you !

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