

Identifying needs of terminals

EXECUTIVE SUMMARY

As part of the CLYMA project, to identify service needs and terminals for development of the Corridor, we have prepared a catalogue with the terminals and services associated to this axis.

We have put together some detailed fact sheets containing the infrastructure features and services of each terminal.

As a result of this work, we have performed a comparative analysis of the terminals and identified the main shortcomings to be corrected.

STUDY CONDUCTED BY:
TEIRLOG Ingeniería
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The full document is accessible to the project's Stakeholders Interest Group on the CLYMA website: www.clyma.eu



DEVELOPMENT OF THE
CONNECTION
LYON-MADRID
ON THE MEDITERRANEAN
CORRIDOR



Co-financed by the European Union
Trans-European Transport Network (TEN-T)

The Madrid – Lyon Axis

The Madrid - Lyon Axis, passing through Spain and France, covers seven regions: Madrid, Castile - La Mancha, Aragon, Catalonia, Languedoc-Rousillon, Rhone Alpes and Provence -Cote d'Azur, passing through some key industrial and logistic nodes and metropolitan areas.

Some of these nodes have an intermodal terminal within their facilities, allowing the transfer of UTIs and/or goods between road and rail modes. There are also a series of key ports with rail access along the axis, allowing the transfer of UTIs and/or goods between the road, rail and maritime transport modes.

The analysis will differentiate between two different types of intermodal terminals - those already in operation and those at various stages of development.

The box to the right lists the terminals analysed.

We have prepared two types of information sheets for each of the terminals in the catalogue covered in this document:

- one contains detailed information on the location of the terminal, its physical characteristics, railway facilities, types and volumes of current and planned activity and availability of operational resources.
- the other sheet covers the various types of services currently provided in the terminal: train services (receipt & dispatch, railway compositions, etc.), goods services (loading/unloading, depots, etc.), logistics services (warehousing, consolidation ...), administrative services and employee/driver services, etc.

Information was provided by the staff at these terminals to verify and complete the primary information available (all the intermodal terminal fact sheets) to make this compilation.

This analysis helped to identify the main shortcomings and deficiencies of the intermodal terminals on the axis, both in terms of infrastructures and services, as shown in the table on the next page.

SPANISH INTERMODAL TERMINALS

- PLAZA
- TMZ
- I.T. MONZON
- D.P. AZUQUECA
- L.C. PORTBOU
- L.C. BARCELONA MORROT
- L.C. TARRAGONA CARGO
- L.C. GRANOLLERS CARGO
- L.C. CONSTANTÍ
- BARCELONA PORT
- I.T. BAYER – BERTSCHI
- L.C. ABROÑIGAL
- D.P. COSLADA

FRENCH INTERMODAL TERMINALS

- LYON – VENISSIEUX
- PORT EDOUARD HERRIOT
- PORT LES VALENCE
- AVIGNON
- SETE
- PORT – LA – NOUVELLE
- PERPIGNAN
- LE BOULOU
- MARSEILLE LE CANET
- MARSEILLE MOUREPIANE
- MIRAMAS CLE SUD
- FOS XXL
- RIVESALTES

DEVELOPING/PLANNED SPANISH INTERMODAL TERMINALS

- L.C. VALLES – LA LLAGOSTA
- I.T. FAR D'EMPORDA
- I.T. PENEDES
- I.T. BASF
- L.C. VICALVARO
- L.F. ARANJUEZ CARGO



Identification of shortcomings and deficiencies in the intermodal terminals

INFRASTRUCTURE ISSUES

●	There is no large terminal in Catalonia, as there is in Madrid or Zaragoza, but a whole series, some of which are very small and fairly close together , which prevents the generation of economies of scale and concentration of cargo & flows
●	Usage of the terminals (per surface or per L/U tracks) is much higher in the smaller terminals than in the larger ones
●	UIC gauge tracks are not available in the Spanish terminals , except in Barcelona Morrot and Port of Barcelona.
●	750-metre long loading/unloading tracks are not available in the Spanish and French terminals , except in Barcelona Morrot (mixed-gauge tracks only) in Spain, and Miramas, Perpignan and Fos XXL in France. Trains therefore have to be cut.
●	In most of the Spanish terminals, and all of the French ones, the tracks are not continuous, but “dead end of line” , entailing more manoeuvres.
●	Rail accessibility to the terminals of Coslada and Bertschi is insufficient . To access the terminal, trains have to be cut if longer than 420 m and 225 m respectively. Difficulties in rail accessibility to the Fos XXL terminal .
●	Difficulties in both rail and road access to the Lyon, Marseille and Avignon terminals owing to their location in their urban areas and the design of the network, and heavy traffic.
●	Most of the small, private terminals need to be supported by an ADIF technical installation located nearby .
●	Several Spanish and French terminals (Azuqueca, Portbou, Granollers, Abroñigal and Coslada in Spain, and Lyon-Vénissieux, Avignon and Marseille Le Canet in France) cannot be enlarged because they are located in urban areas or for other reasons. In some of these, the problem will be solved by moving them to new planned terminals (Far d'Empordá, La Llagosta, Vicálvaro).
●	Difficulties in rail access to the terminals of the ports of Barcelona and Tarragona .

SERVICES ISSUES

●	French terminals provide only the few indispensable services needed for changing modes .
●	Controlled temperature ITUs service for perishable goods is not provided in any of the Spanish terminals (except in the Port of Barcelona). There are no facilities able to provide this service in any of the Spanish terminals.
●	None of the Spanish terminals in this study have specialised facilities for dangerous goods, ITU storage (except the Bayer/Bertschi Terminal), and many of them are unable to provide services to these (R/D, L/U and storage of the ITUs), except PLAZA, Azuqueca Dry Port, Barcelona-Morrot, Granollers, TCB, Best, Tarragona Port and Bayer Terminals.
●	Very few terminals have services for cleaning ITUs (PLAZA, tmZ, Monzon and Azuqueca Dry Port) and maintenance (PLAZA and Azuqueca Dry Port).
●	In general, the Spanish terminals provide no services to goods : storage, consolidation/deconsolidation, etc., except tmZ, Azuqueca Dry Port and Abroñigal (Granollers, Bertschi, Coslada and Tarragona Port provide cargo storage and handling services). No French terminal provides services to goods .
●	Few terminals offer Custom and inspection services (PLAZA, Portbou, Bertschi, Abroñigal, TCB, Coslada, Tarragona Port). Others provide only Customs services (tmZ, Azuqueca and BEST).
●	Most of the Spanish terminals provide no services to haulage trucks (only tmZ, Monzón, Granollers, Abroñigal and Azuqueca).
●	Most of the French terminals lack additional services to ITUs . Several terminals do not even provide an ITU storage service .
●	Many of the Spanish terminals are associated or very close to a Logistics Platform, with the consequent advantages , but this is not the case for the French ones, except those associated with a port and the Miramas terminal .

Type of shortcoming: Critical ● Significantly restrictive ● Restrictive ●




Summary tables and maps

Summary tables and maps have been prepared to evaluate and compare the current state of the intermodal terminals studied. These summary tables and maps include the main characteristics that define the functionality of intermodal terminals, and a system of colours to indicate the current state of the terminal in each aspect.

The features selected to evaluate and compare the intermodal terminals are:

- **Total area**
- **Road accessibility**
- **Rail accessibility**
- **Technical characteristics:**
Receipt/Dispatch tracks,
Loading/Unloading tracks and
Loading/Unloading & Storage yards
- **Current Activity:** 2012 or 2013

The colour system developed to assess the current state of the intermodal terminals in each feature is:

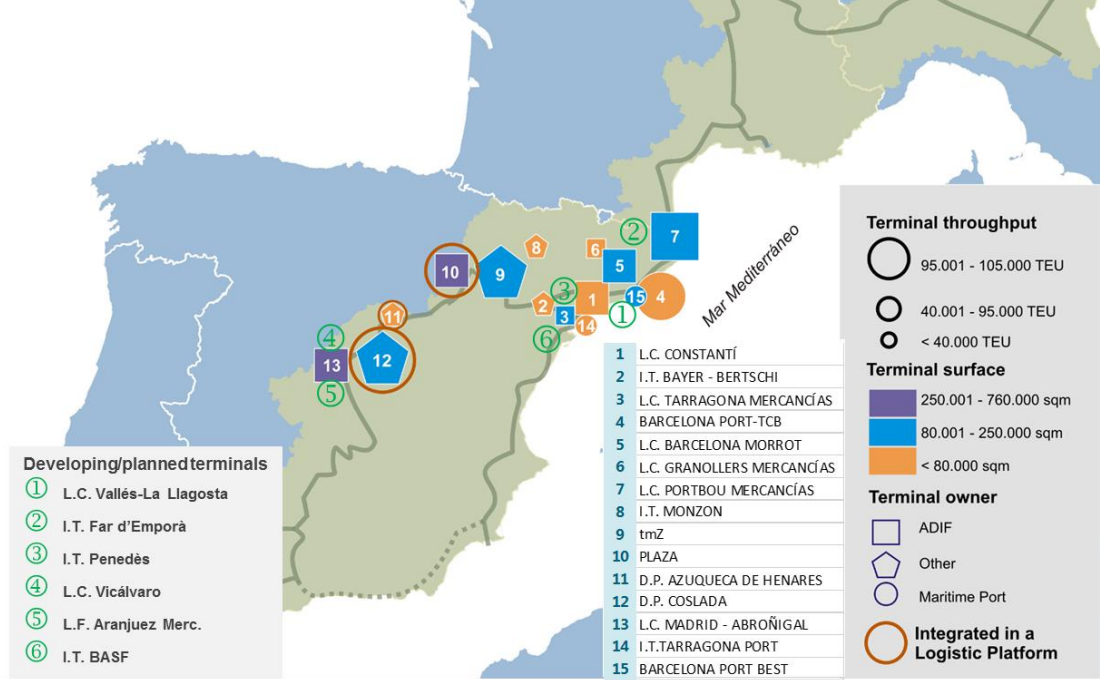
-  **Very good condition or high value**
-  **Medium condition or value (improbable)**
-  **Deficient condition or low value**

If no information is available for a feature, it will be white, since it cannot be assessed.





INTERMODAL TERMINALS ON THE SPANISH SIDE



INTERMODAL TERMINALS ON THE FRENCH SIDE



FEATURES	ARAGON			CATALONIA			
	ZARAGOZA LOGISTICS PLATFORM (PLAZA)	ZARAGOZA MARITIME TERMINAL (tmZ)	MONZON INTERMODAL TERMINAL	PORTBOU CARGO LOGISTICS CENTRE	BARCELONA MORROT LOGISTICS CENTRE	TARRAGONA CARGO LOGISTICS CENTRE	GRANOLLERS CARGO LOGISTICS CENTRE
Total area	75.56 Ha (entire railway area 100 ha approx.)	11 ha	3.2 ha (6 ha entire area). Final planned stage: 15 ha	16.9 ha	13.3 ha (7.5 ha are managed by UTE Sefemede – Setemara)	16.3 ha	2.5 ha
Road accessibility	Direct access to the A-2 highway, and close access to other high-capacity roads (A-23 and A-68)	Direct access to the A-2 highway (through Mercazaragoza) and close access to other high-capacity roads (A-23 and N-330)	Close access to the N-240, which has close accessibility to the A-2 and A-22 highways	Access to the N-260, connecting with the AP-7 motorway and N-II in Figueres	Direct access to the Ronda Litoral (B-10 ring road), which connects to most of the highways and motorways that pass through Barcelona	Not close to any high-capacity road because located in the city, only AP-7 and A-7 can be accessed a few km away	High-capacity roads AP-7 and C-17 can be accessed by the C-352, connected directly with the terminal
Rail accessibility	Direct access to Adif 200 Line, included in 2 TEN-T rail corridors (Cantabric – Mediterranean and Central Corridors)	Direct access to Adif 070 Line and to Adif 200 Line, and close access to Adif 210 Line, Adif 700 Line and Adif 214 Line	Access to Adif 200 Line through Selgua T.I.	Direct access to Adif 050 Line and Adif 270 Line	Direct access to Adif 238 Line, which connects to other rail lines (Adif 200 Line or mixed HSL Barcelona – Figueres)	Direct access to all Adif lines passing through Tarragona (600, 210, 230 and 234), and few km away of the city, Adif 050 Line could be accessed	Direct access to Adif 270 Line and Adif 246 Line, and a few Km away from the terminal, there is a connection to Adif 222 Line
Technical characteristics (R/D tracks, L/U tracks, L/U & storage yards)	<ul style="list-style-type: none"> R/D tracks: 16 tracks of 750 m on Iberian gauge L/U tracks: 6 tracks (5 of 850 m and 1 of 690 m) 1 concrete yard for container L/U and storage of 3.7 ha 	<ul style="list-style-type: none"> R/D tracks: 3 Iberian gauge tracks (1 of 680 m and 2 of 750 m) L/U tracks: 2 tracks of 585 m 2 full containers storage yards of 2.1 ha and 1.35 ha, and 1 empty containers depot of 0.7 ha 	<ul style="list-style-type: none"> R/D of trains is performed from the Selgua T.I. L/U tracks: 2 tracks of 520 m (increasable to 4 tracks of 750 m) 2 L/U and ITUs storage yards (increasable to 4 yards) (all the tracks on Iberian gauge) 	<ul style="list-style-type: none"> R/D tracks: 15 tracks on Iberian (max. 500 m) or UIC gauge (max. 590 m) 14 classification tracks (10 on Iberian gauge and 4 on UIC gauge) L/U tracks: 4 tracks on Iberian gauge and 4 tracks on UIC gauge (lengths 288 m - 340 m) 2 open-air platform of 0.52 ha and 0.61 ha 5 vehicles transshipment ramps 	<ul style="list-style-type: none"> R/D tracks (managed by Adif): 2 tracks on mixed gauge with useful lengths of 825 m and 890 m L/U tracks: 8 tracks on Iberian gauge (380 m – 480 m) and 2 tracks on mixed gauge (440 m) 3 container L/U and storage yards of 1.8 ha, 1.38 ha and 0.36 ha 	<ul style="list-style-type: none"> 15 electrified tracks of lengths between 100 m and 485 m 13 non-electrified tracks of lengths between 330 m and 538 m 1 head electrified track of 230 m length 1 container L/U and storage yard of 1.8 ha (all the tracks on Iberian gauge) 	<ul style="list-style-type: none"> R/D tracks: 2 tracks of lengths up to 630 m L/U tracks: 3 stub-tracks of lengths of 340 m to 360 m R/D & L/U tracks: 2 passing tracks of 460 m and 490 m 2 yards for L/U of 0.775 ha and 0.76 ha (all the tracks are on Iberian gauge)
Current Activity (2012)	2,754,189 t (intermodal: 65,625 TEUs)	816,464 t (intermodal: 98,000 TEUs)	330,385 t (intermodal: 317,670 t)	1,816,847 t (intermodal: 1,016,546 t)	774,153 t (intermodal: 714,791 t)	123,511 t (intermodal: 24,814 t)	311,911 t (intermodal: 311,911 t)



CATALONIA					COMMUNITY OF MADRID & SURROUNDINGS			FEATURES
CONSTANTI LOGISTICS CENTRE	BAYER – BERTSCHI INTERMODAL TERMINAL	SUD WHARF RAIL TERMINAL (TCB)	PRAT WHARF RAIL TERMINAL (BEST)	INTERMODAL TERMINAL OF TARRAGONA PORT	AZUQUECA DE HENARES DRY PORT	MADRID – ABRONIGAL LOGISTICS CENTRE	COSLADA DRY PORT	
5.1 ha	1.8 ha	5 ha (maritime container terminal 81 ha)	≈12 ha (maritime container terminal, 100 ha)	5 ha (maritime container terminal, 20 ha)	6 ha	30 ha	12 ha	Total area
Located few km away from the C-14 highway . Can be used to access highways T-11 and motorway AP-7	Located a few km away from both A-7 and AP-7, both accessible through N-340a main road	Close access to the Ronda Litoral (B-10), which connects to most of the motorways and highways that pass through Barcelona	Close access to the high-capacity roads A-2, B-10	Connected to the Mediterranean highway (A-7) through the national road N-241, and is also close to highways A-2 and C-25	Close to the Northeast highway (A-2), and a short distance from Radial motorway 2 (R-2)	Located next to the ring-road M-30 (urban & congested), which connects with the 6 radial highways. Also close to the high-capacity roads M-40, A-42 or R-5	Located close to several high-capacity roads (M-40, M-50 and A-2), and no far from M-30, which connects with all the radial highways	Road accessibility
Direct access to Adif 234 Line, and nearby, through this line, link to Adif 230 Line & to Adif 210 Line	Direct access to Adif 600 Line, which connects with Adif 210 Line and Adif 200 Line	Connected to Can Tunis L.C., connecting through it to Adif 238 Line, and other rail lines (Adif 200 or mixed HSL Barcelona – Figueres)	Connected, through the port, with the Can Tunis L.C., and connects through it to Adif 238, and to other rail lines (Adif 200, mixed HSL Barcelona – Figueres)	Has access to Adif 600 Line and Adif 210 Line	Has direct access to Adif 200 Line	Has direct or almost direct access to Adif 200 Line, Adif, 310 Line and Adif 300 Line	Has direct access to Adif 200 Line and Adif 300 Line	Rail accessibility
<ul style="list-style-type: none"> • R/D tracks: 4 tracks of lengths between 460 m to 541 m • L/U tracks: 5 tracks (2 of 400 m & 3 of 380 m) • 1 container storage and depot area of 1.1 ha • 1 container L/U yard of 1.1 ha 	<ul style="list-style-type: none"> • L/U tracks: 1 track on mixed gauge of 511 m useful length • 1 shunting neck of 220-225 m for operations of R/D of trains • 1 container L/U and storage yard of 1.5 ha 	<ul style="list-style-type: none"> • R/D of trains is made in the Adif terminal of Can Tunis • 6 tracks of 750 m length on mixed gauge • Container freight station of 1.38 ha 	<ul style="list-style-type: none"> • R/D & L/U tracks: 8 tracks of 750 m length on mixed gauge • 1 transfer modal yard of 9.5 ha, 25.5 ha of storage area shared with maritime • 2 ha of empty containers depot , 2.7 ha of storage area for dangerous ITUs 	<ul style="list-style-type: none"> • R/D tracks: 2 tracks of 850 m length on Iberian gauge (a 800 m long track on mixed gauge is under study) • L/U tracks: 4 tracks of 800 m length on mixed gauge (increasable to 4 more tracks) • L/U yard of 1.5 ha (increasable to 2.7 ha) • Storage area of 2.3 ha 	<ul style="list-style-type: none"> • R/D tracks: 1 track for 750 m trains • L/U tracks: 2 tracks of 500 m useful length • Total storage surface: 2.45 ha (full & empty containers depot, ADR depot, and a storage yard for other cargo) 	<ul style="list-style-type: none"> • R/D tracks: 15 tracks of lengths up to 700 m • L/U tracks: 19 tracks for handling trains of up to 500 m length (L/U) and for handling conventional cargo trains of up to 400 m • 4 L/U yards of 1.78 ha, 1.22 ha, 5.9 ha and 1.16 ha 	<ul style="list-style-type: none"> • R/D tracks: 2 tracks of 1.775 m and 450 m length • L/U tracks: 1 bundle of 4 L/U tracks of lengths between 433 m to 533 m (extendable to 6 tracks) • 1 full containers depot of 2.2 ha • Empty containers depot of 1.9 ha 	Technical characteristics (R/D tracks, L/U tracks, L/U & storage yards)
713,087 t (intermodal: 671,214 t)	1-2 container trains per week (average)	98,000 TEUs (all the terminal)	Start of operations in 2012	-	192,027 t (intermodal: 120,590 t)	863,663 t (100% intermodal)	102,000 TEUs	Current Activity (2012)

	RHÔNE – ALPES			INTERMODAL STATIONS BETWEEN PERPIGNAN AND AVIGNON		
FEATURES	LYON VÉNISSIEUX NAVILAND	LYON VÉNISSIEUX NOVATRANS	PORT EDOUARD HERRIOT OF LYON	AVIGNON	SETE	PORT LA NOUVELLE
Total area	7 ha			-	-	-
Road accessibility	Located near the A46 motorway and not far from the A43 motorway, but its location in the urban agglomeration of Vénissieux and Saint-Priest, and the high traffic of this area, hinder accessibility to those motorways		Situated where the A-7 motorway connects to the itineraries with south direction. The terminal is also connected to the D838 road, the main connection between A7 and the urban ring (there are important traffic problems)	Heavy goods vehicles traffics are mixed with the urban traffics, and there are 5 km of distance to the motorways (A9 and A7) The road access to the terminal is not as good as it could be, there are problems of traffic saturation	This terminal is integrated in the A9 motorway corridor . The access to A9 is provided by D600 road (5 km). There are other road connections with the Port of Sète	It is connected by the motorway between Northern Perpignan and Western Narbonne (A9). The road access is provided by road D6139
Rail accessibility	Direct access to general rail network through Lyon Vénissieux terminal		A single track branch connect this terminal with Lyon rail node (there are important traffic problems)	It is served by the railways which provide access to Avignon station (high traffic station, very saturated)	Includes a railway access (connection to Montpellier)	Accessible directly from international tunnel TP Ferro and the rail Lyon - Perpignan at the station from Port la Nouvelle.
Technical characteristics (R/D tracks, L/U tracks, L/U & storage yards)	<ul style="list-style-type: none"> • 4 handling yards including two external yards with rails under gantries and handling by stacker • 2 yards each served by two tracks under gantry with respective working lengths of 250 metres for the first which has a gantry and 320 metres for the second which has 2 gantries • 2 tracks of 280 metres under two gantries and a track of 320 metres for handling with stacker • A 3,500 TEUs of capacity storage yard 	<ul style="list-style-type: none"> • 3 lines of 380 metres under gantry • 2 lines of 325 metres under gantry • 2 handling yards 	<ul style="list-style-type: none"> • 2 times 5 tracks • 2 times 3 yards 	<ul style="list-style-type: none"> • 2 tracks of 400 metres under 2 gantries • 2 tracks of 320 metres under 2 gantries • 8 tracks of 300 metres for handling by the stacker 	<ul style="list-style-type: none"> • 2 tracks of 300 metres under gantry • 2 tracks of 200 metres for handling with the stacker • 1 storage yard (500 TEUs of capacity) 	<ul style="list-style-type: none"> • Port la Nouvelle has tracks of 750 metres and will be equipped with a triangle with access which will make it possible to return direct with the engine in both directions. • Tracks of 1000 metres in the course of restoration • This Port will be developed by building complementary passenger terminals.
Current Activity (2012)	-	30,630 TEUs	-	-	-	-



PORTES LES VALENCE MOYENNE VALLÉS DU RHONE		INTERMODAL STATIONS AT PERPIGNAN – LE BOULOU				
PORTES LES VALENCE	PERPIGNAN TERMINAL	LE BOULOU			RIVESALTES	FEATURES
		AMBROGIO	TRANSALLIANCE	VIIA		
-	10,2 ha	9 ha	-	3ha	-	Total area
The A7 motorway is close to it (2 km)	Near to the motorway exit for “Perpignan Sud” (connection between A9 and N116)	Direct access to the A9 motorway	Direct access to the A9 motorway	Direct access to the A9 motorway	Close connection to the A9 motorway	Road accessibility
Connects to the general railway through the terminal of Port les Valence	Accessible from the international tunnel TP Ferro and from the route Lyon – Perpignan	Direct access to the general railway line	Direct access to the general railway line	Direct access to the general railway line	Direct rail connection to Perpignan – Narbonne Line (a branch that does not allow freight trains towards Spain)	Rail accessibility
<ul style="list-style-type: none"> • 3 tracks of 400 metres • 250 metres handling zone • 1 container storage (2,000 TEUs of capacity) 	<ul style="list-style-type: none"> • 2 handling yards of 750 metres • 4 tracks of 750 metres • 1 handling yard of 370 metres • 2 tracks of 370 metres • 4.000 m2 for container storage 	<ul style="list-style-type: none"> • 8 tracks of 370 metres (container storage) 	<ul style="list-style-type: none"> • 4 tracks of 200 metres (no container storage) 	<ul style="list-style-type: none"> • 1 track of 350 metres for 20 loading quays for the rail motorway (no container storage) (saturated, as it is very small) 	<ul style="list-style-type: none"> • 2 tracks of 550 metres (car traffic only) 	Technical characteristics (R/D tracks, L/U tracks, L/U & storage yards)
-	19,000 ITUs (2013)	39,000 TEU (2014 data)	6,500 ITUs	45,000 semi-trailers	-	Current Activity (2012)

MARSEILLE SECTOR					
FEATURES	MARSEILLE LE CANET		MARSEILLE MOUREPIANE	FOS XXL	MIRAMAS CLÉ SUD
	NOVOTRANS LE CANET	NAVILAND LE CANET			
Total area	-	-	-	-	55 ha
Road accessibility	Close access to the A7 motorway, but location inside Marseille city make access and traffic difficult	Close access to the A7 motorway, but location inside Marseille city make access and traffic difficult	Direct access to metropolitan motorway A55, and also it has easy connection to A7 motorway. (traffic congestion problems)	Connected to N180 (E80) motorway by N568 with access and close to terminal	Close connection to some roads (N1569, D5, D10), but the nearest high-capacity road is located 10 km from the terminal (A54/E80 motorway)
Rail accessibility	Direct access to general railway line, but difficult because of location within Marseille city	Direct access to general railway line, but difficult because of location within Marseille city	It is connected by rail with Mourepiane Station, integrated in the Marseille node (problems of traffic but difficult because of location in Marseille city)	It is connected to the railway network by the rail branch to Miramas	It has very good rail accessibility
Technical characteristics (R/D tracks, L/U tracks, L/U & storage yards)	<ul style="list-style-type: none"> • 6 tracks grouped by 3 under gantries • 3 tracks of which one group makes 220 working metres and the second group 190 metres • 2 handling yards allowing transshipments 	<ul style="list-style-type: none"> • 4 tracks grouped by 2 under gantries (useful length 300 metres) • 2 handling yards to allow for transshipments under gantries • 3 tracks of 300 metres serve 2 yards for handling • 1 track of 135 metres 	<ul style="list-style-type: none"> • 4 tracks of 350 metres • 1 track of 200 metres with possibility of handling • 1 handling and storage yard of 15.000 TEUs capacity 	<p>It has lines of 1,480 metres divided into three distinct sections and all tracks are accessible to handling.</p> <ul style="list-style-type: none"> • The first section of marshalling yard comprises 3 tracks of 600 metres working length • The second section of marshalling yard is divided into two successive yards, including 6 tracks also with working lengths of 600 metres. • The third part extends over 280 metres working length by integrating points leading to extension tracks • Storage capacity is close to 1 million TEUs at Fos 	<ul style="list-style-type: none"> • A section of marshalling yard with electrified tracks of 750 metres, used for the receipt of trains; • a crane yard of 730 metres in length, equipped with 3 tracks, where trucks can manoeuvre, and where there is handling by mobile cranes and a container storage yard • 2 lines of 720 metres
Current Activity (2012)	-	-	-	-	12,500 ITUs (2013)



Main findings from the infrastructure and services analysis of certain key European terminals: Busto, DELTA 3, TRICON & KTL Kombi Terminal Ludwighshafen

High traffic levels, in no case corresponding to the size of the terminal

- The Kombi Terminal Ludwighshafen is the smallest (13 ha), handling 350,000 TEUs, but TriCon (17 ha) handles 530,000 TEUs. Busto (24 ha) handles 420,000 TEUs, and the largest, DELTA 3, handles 250,000 TEUs

Obtaining synergies by concentrating with inland waterway mode

- The search for synergies by joining the location of Delta 3 and Tricon shows clear results.

Key provision of track infrastructure

- All terminals show a significant provision of rail infrastructure: 10 tracks in TriCon, 11 in Busto, and 13 in Kombi Terminal Ludwighshafen, also in DELTA 3. In almost every case the length of the tracks allows trains of at least 700 m.

Key provision of gantry cranes

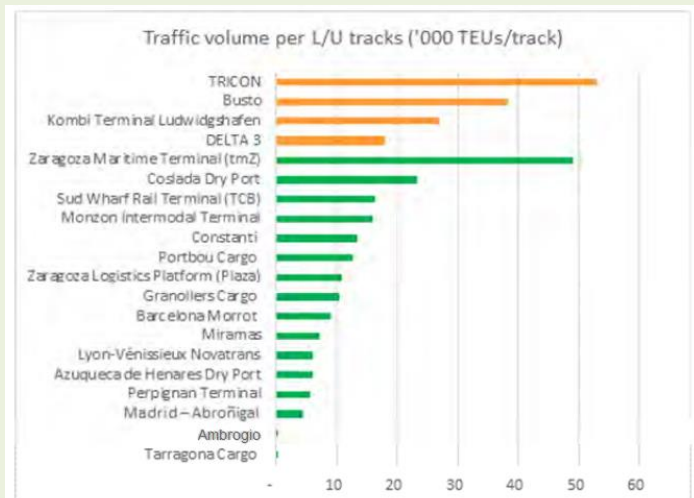
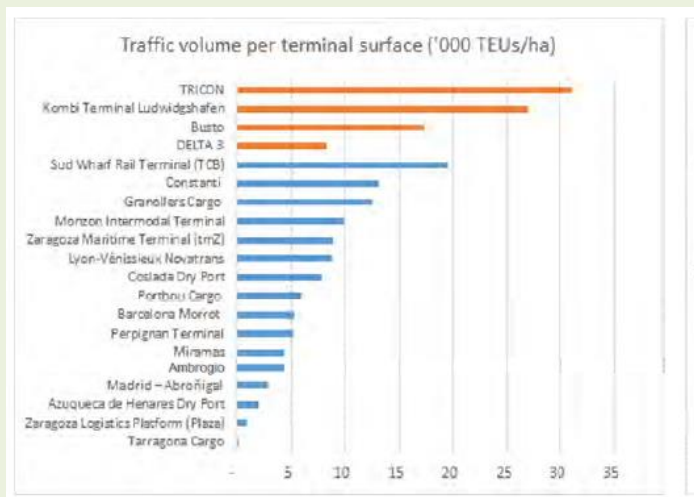
- All terminals have large handling capacity, mainly obtained with a significant provision of gantry cranes: 12 in Busto, 8 in Kombi Terminal Ludwighshafen, 5 in DELTA 3, and 4 in TriCon.

Relevant combined transport operators involved in the terminal management

- In the case of Busto, the terminal is owned and managed by HUPAC, the Swiss Rail-Road Combined operator; in Kombi Terminal Ludwighshafen, HUPAC and Kombiverkehr, the German Rail-Road Combined operator, both are shareholders of the terminal management company. In TriCon, Kombiverkehr is also a shareholder, and in DELTA 3 Naviland and Novatrans, both combined transport operators, are also shareholders of the terminal operator. That is one way of ensuring traffic volumes.

The performance of the reference terminals analysed is greater, both in terms of area productivity and track productivity, than most Spanish terminals. But there are notable exceptions like TCB in terms of area performance, and tmZ and Coslada Dry Port in terms of tracks. Constantí, Granollers, Monzón or Lyon-Vénissieux terminals also show good performance levels.

The conclusion is that some of the terminals in the Lyon-Madrid section are among the best in Europe in terms of performance, but most of them have low productivity ratios.



CLYMA project consists of the implementation of the corridor approach to a section of the **Mediterranean corridor**, concretely to the Western part of the corridor and specifically to the Lyon-Madrid Axis.

The project comprises of studies and actions on the organization and optimal implementation of the **TEN-T network**, taking into account long term perspectives, environmental aspects and associated needs, as well as studies that promote environmental sustainability, resource efficiency and low-carbon transport within an integrated transport concept. This should stimulate the deployment of the **Green Corridor concept**. The project also intends to develop a **managerial structure** for the intermodal corridor.



PROJECT OFFICE



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