The role of intermodal Terminals for greening freight transport

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ECITL: Smart Freight to enable sustainable logistics solutions
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5TH EUROPEAN CONFERENCE ON ICT 4 TRANSPORT LOGISTICS

THANKS FOR YOU VISIONARY LOGISTICS MIND!

- **Low-carbon innovation and challenge towards market adoption**
- Hubs role and Business/Technical Requirements
- Hubways – Rationale and strategic expectations
- IPBO, from R&D to exploitation to Business environment

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ecological sustainability

Definition

A capacity of ecosystems to maintain their essential functions and processes, and retain their biodiversity in full measure over the long-term.

environmental sustainability

Definition

The maintenance of the factors and practices that contribute to the quality of environment on a long-term basis.

The commitment to low-carbon innovations is critical to the success of a company's long-term innovation strategy.

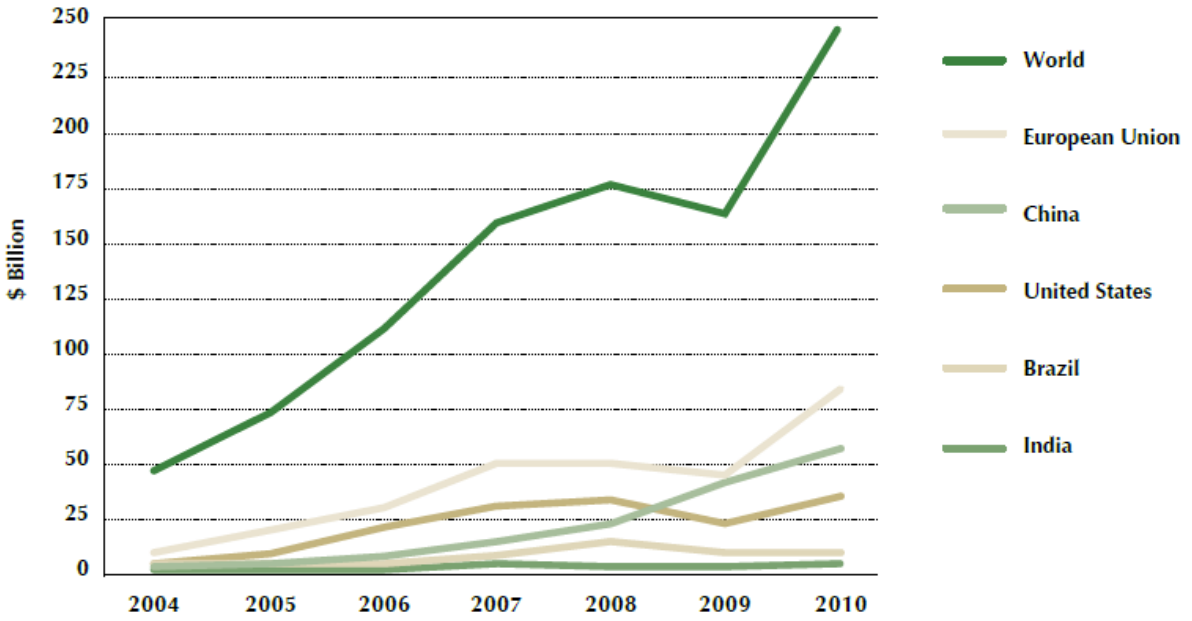
No new low-carbon innovation will survive in the marketplace if it fails to maximize customer value along supply chain.

Reductions in carbon emissions alone will not make low-carbon innovations successful in the marketplace. The innovations must also bring robust value in terms of total cost reduction, competitive growth, or enhanced performance.

Adoption of Low- Carbon Innovations - Key Drivers for the Stakeholders

- Reduced energy consumption
- Reduced total lifecycle costs
- Environmental performance (carbon footprint)
- Competitive advantages in their markets
- Availability of funding

Global new Investment in Clean Energy Technologies, 2004 - 2010



Source: Bloomberg New Energy Finance (2010)

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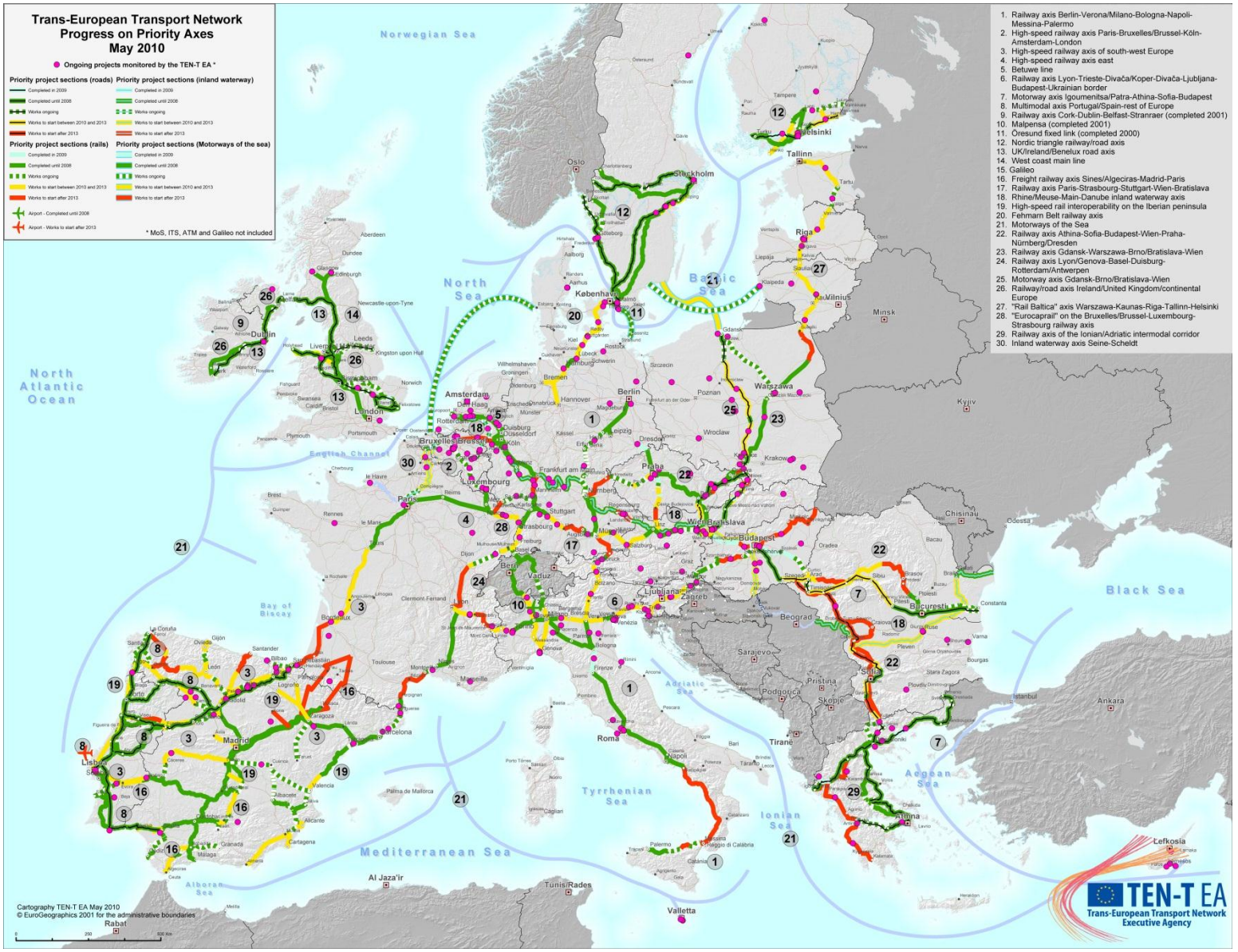
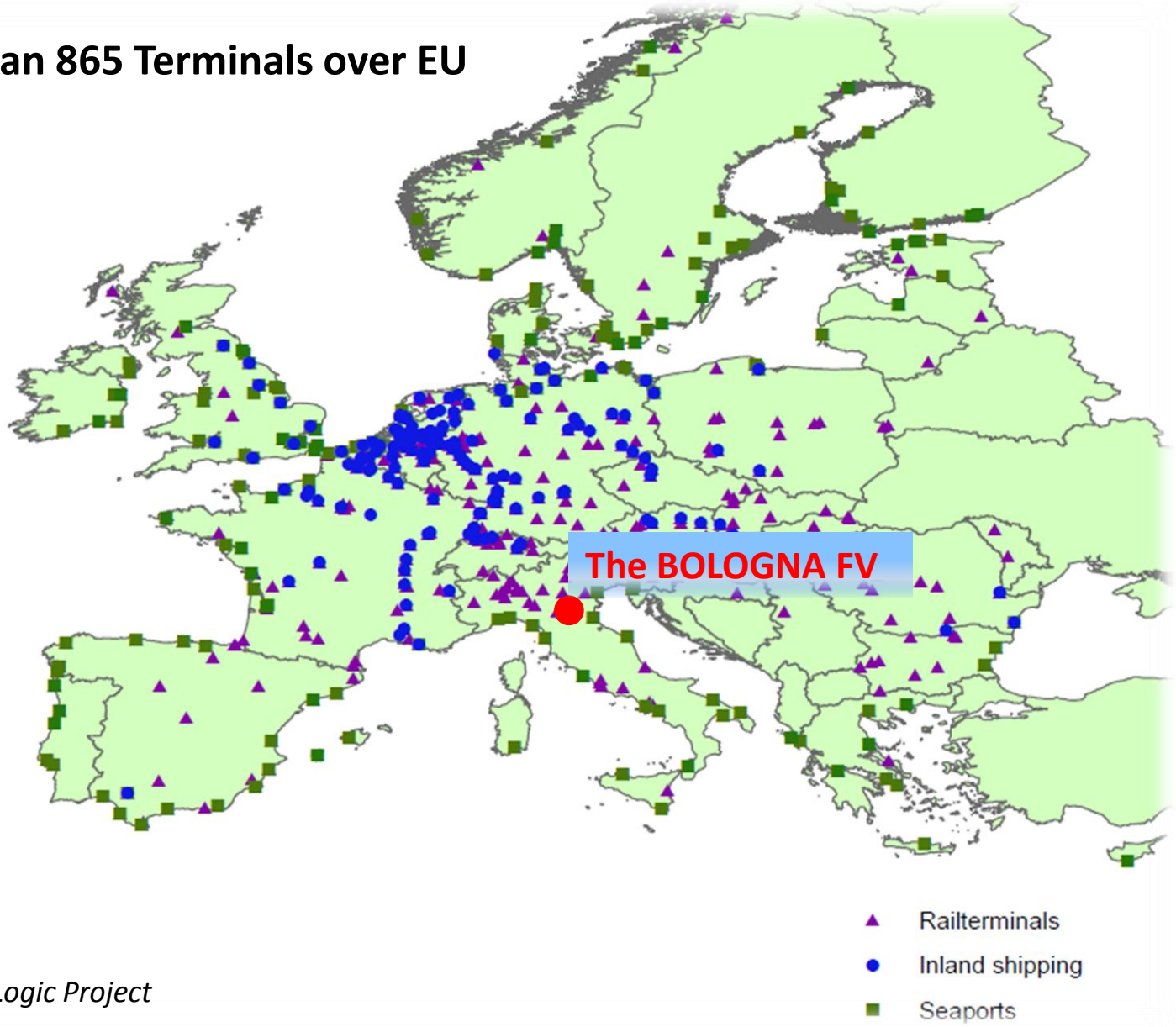

Trans-European Transport Network
Progress on Priority Axes
May 2010
Ongoing projects monitored by the TEN-T EA *
Priority project sections (roads)
Priority project sections (inland waterway)
Priority project sections (rails)
Priority project sections (Motorways of the sea)
Completed in 2009
Completed until 2008
Works ongoing
Works to start between 2010 and 2013
Works to start after 2013
Airport - Completed until 2008
Airport - Works to start after 2013
* MoS, ITS, ATM and Galileo not included
1. Railway axis Berlin-Verona/Milano-Bologna-Napoli-Messina-Palermo
2. High-speed railway axis Paris-Bruxelles/Brussel-Köln-Amsterdam-London
3. High-speed railway axis of south-west Europe
4. High-speed railway axis east
5. Betuwe line
6. Railway axis Lyon-Trieste-Divača/Koper-Divača-Ljubljana-Budapest-Ukrainian border
7. Motorway axis Igoumenitsa/Patra-Athina-Sofia-Budapest
8. Multimodal axis Portugal/Spain-rest of Europe
9. Railway axis Cork-Dublin-Belfast-Stranraer (completed 2001)
10. Malpensa (completed 2001)
11. Öresund fixed link (completed 2000)
12. Nordic triangle railway/road axis
13. UK/Ireland/Benelux road axis
14. West coast main line
15. Galileo
16. Freight railway axis Sines/Algeciras-Madrid-Paris
17. Railway axis Paris-Strasbourg-Stuttgart-Wien-Bratislava
18. Rhine/Meuse-Main-Danube inland waterway axis
19. High-speed rail interoperability on the Iberian peninsula
20. Fehmarn Belt railway axis
21. Motorways of the Sea
22. Railway axis Athina-Sofia-Budapest-Wien-Praha-Nürnberg/Dresden
23. Railway axis Gdansk-Warszawa-Brno/Bratislava-Wien
24. Railway axis Lyon/Genova-Basel-Duisburg-Rotterdam/Antwerpen
25. Motorway axis Gdansk-Brno/Bratislava-Wien
26. Railway/road axis Ireland/United Kingdom/continental Europe
27. "Rail Baltica" axis Warszawa-Kaunas-Riga-Tallinn-Helsinki
28. "Eurocaprail" on the Bruxelles/Brussel-Luxembourg-Strasbourg railway axis
29. Railway axis of the Ionian/Adriatic intermodal corridor
30. Inland waterway axis Seine-Scheldt
Norwegian Sea
North Sea
Baltic Sea
North Atlantic Ocean
English Channel
Bay of Biscay
Mediterranean Sea
Black Sea
Tyrrhenian Sea
Adriatic Sea
Ionian Sea
Aegean Sea
Alboran Sea
Cartography TEN-T EA May 2010
© EuroGeographics 2001 for the administrative boundaries
TEN-T EA
Trans-European Transport Network Executive Agency

More than 865 Terminals over EU



Source: Be-Logic Project

CURRENT MATTERS IN THE EU FREIGHT TRANSPORT NETWORK

Lack of capacity

LAND PLANNING

- **mega facilities performing completely different functions.**
- **Mega HUBS and Extended Terminal Clusters**

Lack of inadequacy of interoperability between modes and loading units.

INNOVATIVE TECHNOLOGIES

- **in transport means and equipment;**
- **in transhipment techniques;**
- **in load units;**
- **information technology and telematics systems (inside the terminal).**

New trends

Exploiting and integrating ICT

- **ICT applications. ICT technologies are a key factor for the improvement of the effectiveness and efficiency of terminal operations. Main issues are standardisation of technologies, harmonisation of information, regulations on security and confidentiality.**

Improvement of the co-ordination and collaboration between actors.

- **Operational framework for Horizontal Collaboration**
- **Making the supply chain sustainable with long-term contractual relations**
- **Increase the utilization of assets with secure volumes and contracts**

- Low-carbon innovation and challenge towards market adoption
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HUBWAYS provides models and capabilities for cooperation and communication between green hubs' stakeholders, plus establishing value added services making co-modal networks attractive to use and, at the same time, contributors to reduction in greenhouse gas emissions and other pollutants.

BMT Group Ltd
Interporto Bologna spa
KOMBICONSULT GmbH
HaCon Ingenieurgesellschaft mbH
INLECOM Ltd
MARLO a.s.
Deutsche GVZ-Gesellschaft mbH
SINTEF
UIRR
Jernhusen AB
Adria kombi d.o.o.
Lindholmen Science Park
PE International
Interferryboats NV

MAIN REASONS BEHIND THE HUBWAYS INITIATIVE

- Creation of efficient hubs or nodes to boost multimodal interconnections
- Integration of terminal networks (co-modal network design, supply chain visibility)
- Improvement of terminals' quality standards exploiting innovative controls and coordination mechanisms
- Enhancement of co-modal transport links and removal of bottlenecks (also at borders)
- Full commitment to low-carbon innovations for a successful long-term strategy of the Companies dealing with freight transport issues (as per the Transport White Paper)

Cooperative Model for Green Hubs enabling low-carbon, resource-efficient and secure transportation services through:

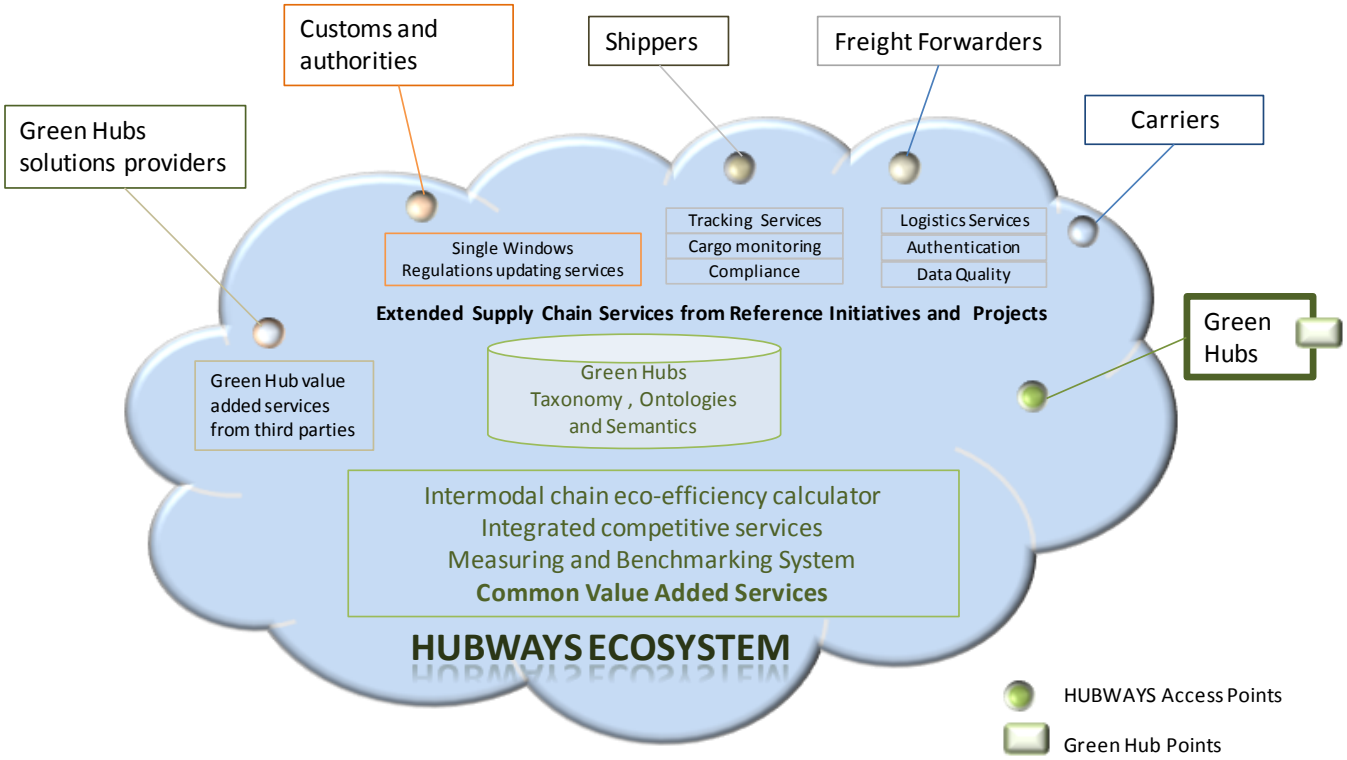
- improved connectivity for hubs in supply chains and trust oriented corridor co-ordination
- effective cooperation at supply chain and regional level to balance flows.

Ecosystem for electronically connecting multimodal terminal network stakeholders and amplifying their joint capabilities when using the Cooperative Model. The result will be faster communications, shared resources and synchronised actions. The HUBWAYS Ecosystem will implement an architecture allowing real world logistics objects, existing systems, and emerging cloud/internet technologies and applications to co-exist and co-operate at an affordable cost for network stakeholders

Common Value Added Services to be combined with existing services, facilitating end-to-end co-modal, low-CO_2 transport solutions that maximise utilisation of terminal and logistics resources.

Four HUBWAYS Demonstrators to be used across several representative operating scenarios characteristic of modern intermodal terminals. By allowing the industry stakeholders to drive HUBWAYS, we guarantee that the output solutions will address the real needs of this sector in a cost-effective way.

In the Green Hubs Ecosystem the technological, economic, social and other systems affecting multimodal terminals will be considered. Particularly the TEN-T infrastructure, legislation harmonization, etc will impact Green Hubs. Also the governance system and the global economy which affects terminal operation as higher flows will demand more co-operation and co-ordination to meet demand without increasing congestion and emissions.



Collaboration

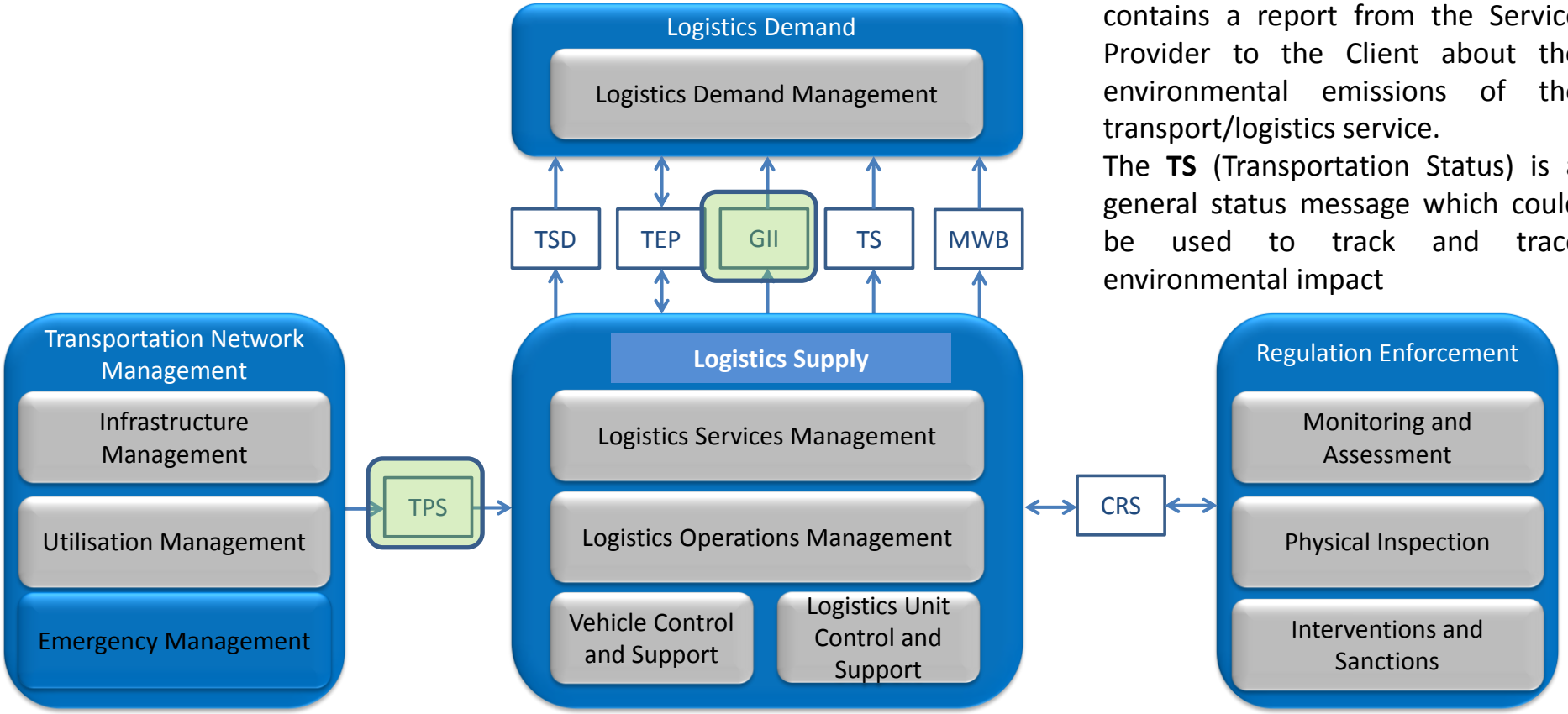
The **TPS** (Transport Progress Status) is probably most relevant here, and maybe also the TS.

There will also be interactions between Logistics Service Providers (LSPs) which Hubways could define further

Low carbon

GII (Goods Item Itinerary) which contains a report from the Service Provider to the Client about the environmental emissions of the transport/logistics service.

The **TS** (Transportation Status) is a general status message which could be used to track and trace environmental impact



Hubways and further Exploitation

Freight 4 All

AGORA Intermodal Terminals

iCargo

SuperGreen
Supporting EU's Freight Transport Logistics Action Plan on Green Corridors Issues

Hubways and provisional Exploitation

Freight 4 All

Freight 4 All, aims at tackling the fragmented functioning of transnational multimodal freight transport chains by providing **an interoperable and distributed ICT solution**. It will facilitate the remote collaboration of the involved parties and joint use of available e-logistics systems, thus strengthening territorial cohesion and providing cost effective and sustainable services. The real life cases and extensive communication program will effectively capitalise results to the wider transport community.

iCargo

SuperGreen

Supporting EU's Freight Transport Logistics Action Plan on Green Corridors Issues

Hubways and provisional Exploitation

iCargo will build an open affordable information architecture that allows real world objects, existing systems, and new applications to efficiently co-operate, enabling more cost effective and lower-CO2 logistics through improved synchronisation and load factors across all transport modes.

Hubways and provisional Exploitation

This common learning action is therefore targeting the improvement of management, operation and services of, in particular, intermodal rail-road terminals for unaccompanied intermodal transport units (semi-trailers, swap bodies and containers).The project is aiming at a better use of the existing terminal infrastructure. It is neither a research nor study project but addressing the mutual exchange of good practices between terminal managers, and common learning about the improved interaction with other actors in the intermodal transport chain. It can contribute to the standardisation of procedures, reduction of costs and thereby optimize the intermodal transport chain.

Hubways and provisional Exploitation

The interesting results produced by SUPERGREEN will be presented at the final conference of the project on **11 January in Gothenburg** : www.supergreenproject.eu/igo2013.html

The objectives of the SuperGreen project concern supporting the development of sustainable transport networks by fulfilling requirements covering environmental, technical, economic, social and spatial planning aspects. This will be achieved by:

- **Benchmarking of Green Corridors**
- **"Green technologies"**
- **"Smarter" utilisation of ICT-flows**
- **Recommendations for R&D**
- **Policy Implications**

SuperGreen

Supporting EU's Freight Transport Logistics Action Plan on Green Corridors Issues

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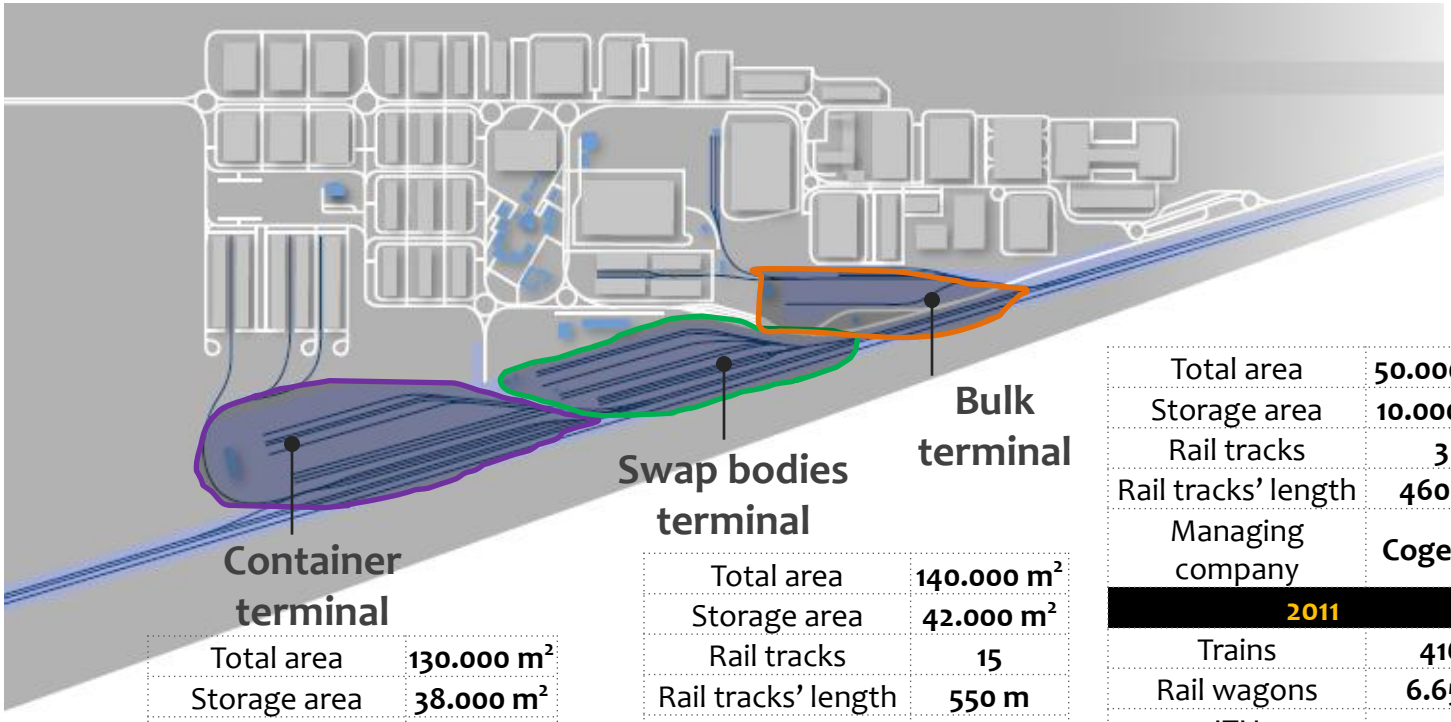
Intermodal Facilities



Total area	130.000 m²
Storage area	38.000 m²
Rail tracks	5
Rail tracks' length	600 m
Managing company	Terminali Italia
2011	
Trains	1.316
Rail wagons	21.091
ITU	44.320
TON	754.773
TEU	70.912

Total area	140.000 m²
Storage area	42.000 m²
Rail tracks	15
Rail tracks' length	550 m
Managing company	Terminali Italia
2011	
Trains	3.036
Rail wagons	29.375
ITU	35.273
TON	804.408
TEU	74.073

Total area	50.000 m²
Storage area	10.000 m²
Rail tracks	3
Rail tracks' length	460 m
Managing company	Cogefrin
2011	
Trains	416
Rail wagons	6.657
ITU	9.733
TON	185.757
TEU	12.652

6 Railway companies operating:

Trenitalia Cargo, Serfer, HUPAC

NORDCARGO, ISC, GTS, OceanoGate

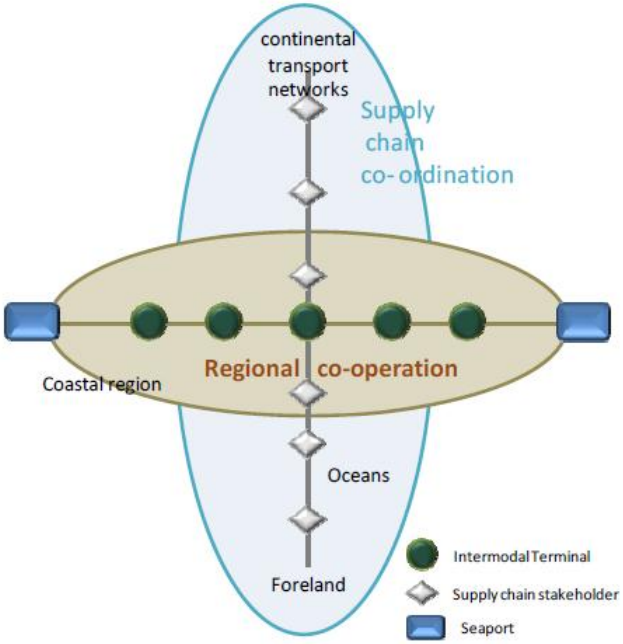
IT infrastructure

ICT FACILITIES

- Totally wired area
- 14 wireless HiperLAN antennas
- 13 km optic fiber
- Road traffic information system
- Broadband connectivity
- Optic fiber rental
- Centralized system for security, burglar and fire alarm
- Mail and information services, access to community databases

THE BUSINESS OF INNOVATING: NEEDS & CHALLENGES BRINGING LOW-CARBON SOLUTIONS TO MARKET

IPBO-SPECIFIC HUBWAYS EXPECTED IMPACTS



- Increased cooperation
- Provision of added value services

IPBO CAPITALIZAZION ON R&D RESULTS

- Integration of RTD Results in the IPBO business

Longer trains along Adriatic Rail Corridor

HUB System and mix Trains

Competition Vs. Cooperation

- Improved cooperation among transport actors

From Best Practices to Cooperation in the Port Hinterland Integration

- Exploitation towards Business environment

Cooperation Agreement with Port of La Spezia and Customs for a "Free Lane" with Bologna Freight Village

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