INTERNATIONAL UNION OF RAILWAYS

unity, solidarity, universality

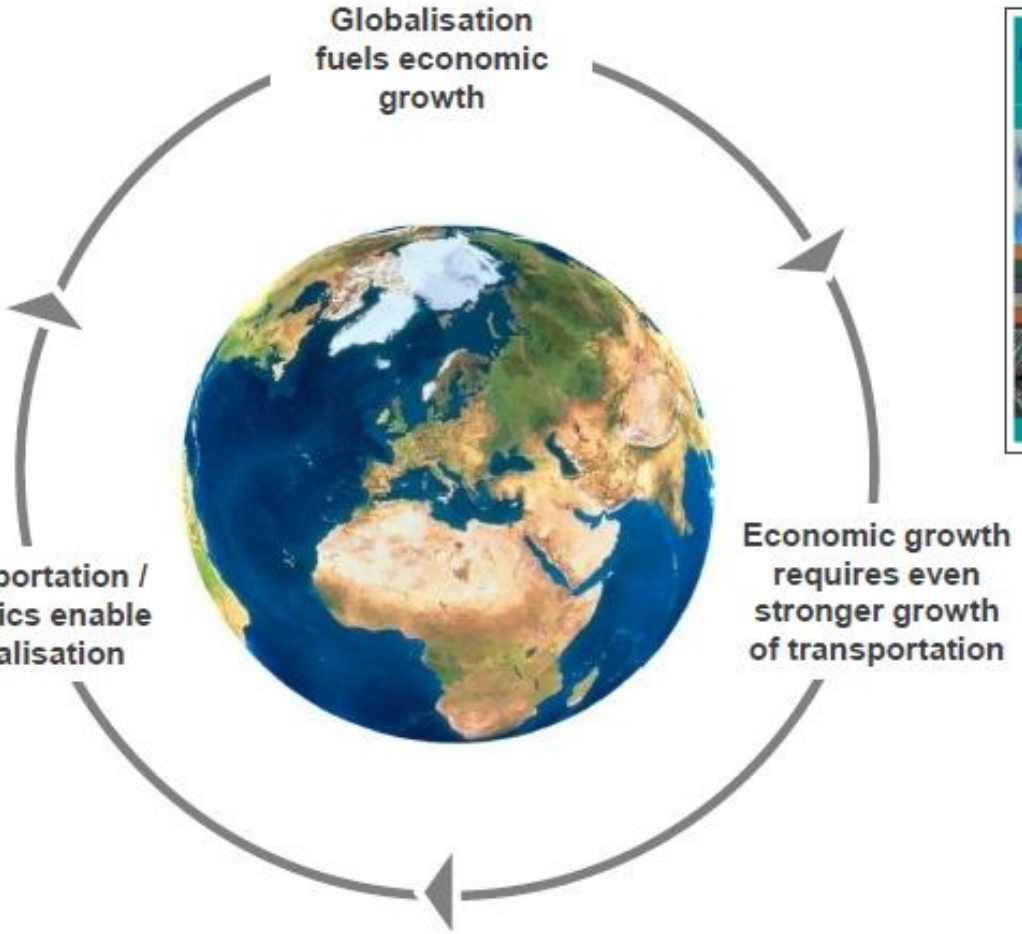
Making Rail Competitive for Passengers & Freight on interoperable Euro-Asia Infrastructure

Vincent VU

UIC – Director Institutional Relations

Geneva – February 5th 2014

Global trade is growing and fuels the need for transportation: "global logistics has to fit with local logistics"



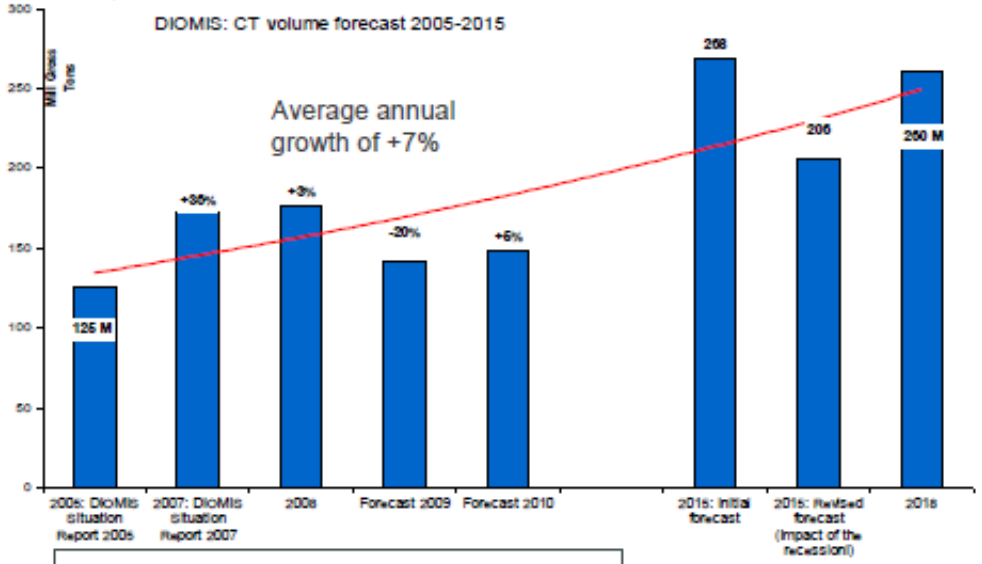
Rail can be used to support the transportation required by globalisation:

➡ combined transport is part of the logistics solution

Segments	Commodities	Share of volume	Competitive environment
Full Train 	Coal, Steel Construction materials	~ 35 %	✓ Traditionally barge Competition ✓ Focus of intra-modal rail competition ✓ Price decline
Single Wagon Load 	Chemicals Paper and pulp	~ 50 %	✓ Focus of road competition ✓ Complex production process, high barriers to entry
Intermodal 	Finished goods Containerized goods	~ 15 %	✓ Strong road competition ✓ Subsidized in several geographies

Steady increase for combined transport volumes in Europe

UIC has a dedicated structure: The Combined Transport Group



Combined Traffic

A special group was created to deal with this fast growing market segment.

The priorities for the period ahead are:

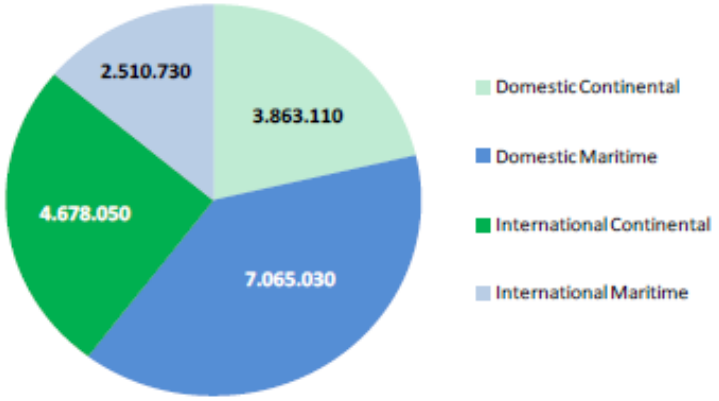
- ☐ Terminals in the combined transport chain
- ☐ Train dimensions and masses
- ☐ Positioning combined transport in the debate on freight corridors
- ☐ Launching international pilot trains using the electronic consignment note
- ☐ Monitor trends in combined transport and issue the "the 2012 Report on Combined Transport".

Unaccompanied Combined Transport Volumes, 2011

2011: new record high with 18 Mio TEU

CT market segment	Continental	Maritime	Total
	(TEU)		
Domestic CT	3.863.110	7.065.030	10.928.140
International CT	4.678.050	2.510.730	7.188.780
Total CT	**8.541.160**	**9.575.760**	**18.116.920**

TEU carried by CT market segment, 2011



CT market segment	Continental		Maritime		Total		
	2009	2011	2009	2011	2009	2011	2011/2009
Domestic CT	3,010	3,863	6,442	7,065	9,452	10,928	15,6%
International CT	3,708	4,678	2,416	2,511	6,124	7,189	17,4%
Total CT	**6,718**	**8,541**	**8,858**	**9,576**	**15,576**	**18,117**	**16,3%**

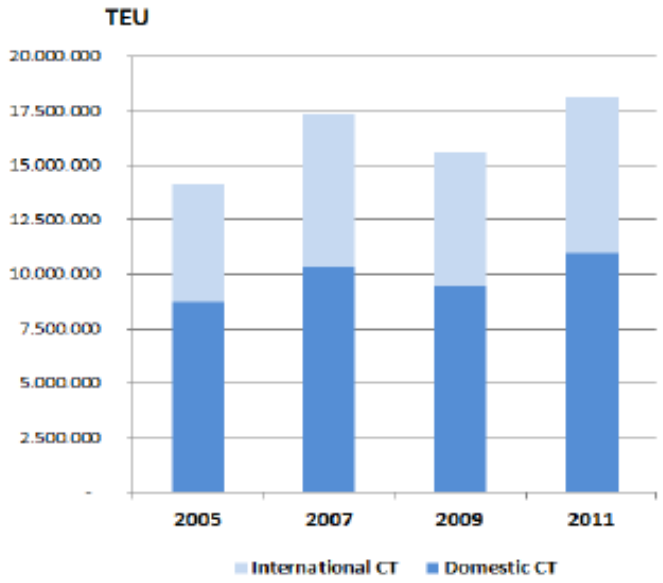
- Maritime/hinterland continues to keep its leading position with a share of 53% yet slight decline vs. 2009
- Domestic maritime still largest market segment
- Continental witnessed strongest growth rate

Source: UIC "2012 Report on Combined Transport in Europe" by KombiConsult

Unaccompanied Combined Transport Volumes

TEU carried by CT market segment, 2005-2011

CT market segment	TEU				% change 2011/2005
	2005	2007	2009	2011	
Domestic CT	8.708.170	10.367.810	9.451.870	10.928.140	25,5%
International CT	5.378.880	7.007.250	6.123.280	7.188.780	33,6%
Total CT	**14.087.050**	**17.375.060**	**15.575.150**	**18.116.920**	**28,6%**

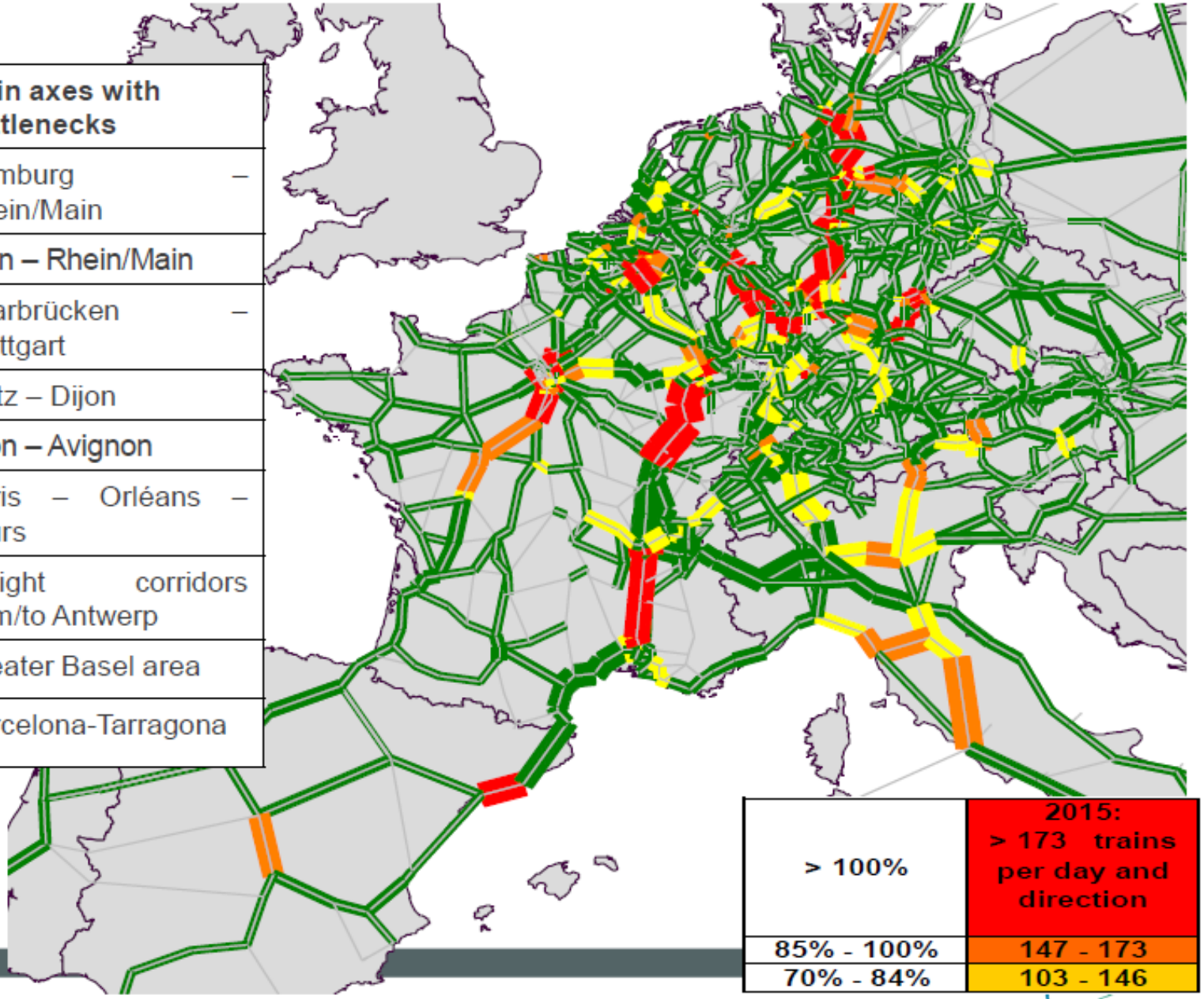


- In 2011, CT industry was able to recover from the 2009 worldwide economic downturn: all-time high with 18.1 million TEU.
- Compared to 2005 when the first report was issued, the total unaccompanied volume rose by 28.6% in the period to 2011.
- On cross-border services +33.6%
- Total domestic volume +25.5%,

Source: UIC "2012 Report on Combined Transport in Europe" by KombiConsult

Situation in Europe: dense and shared network

	Main axes with bottlenecks
Germany	Hamburg – Rhein/Main
	Köln – Rhein/Main
	Saarbrücken – Stuttgart
France	Metz – Dijon
	Lyon – Avignon
	Paris – Orléans – Tours
Belgium	Freight corridors from/to Antwerp
Switzerland	Greater Basel area
Spain	Barcelona-Tarragona

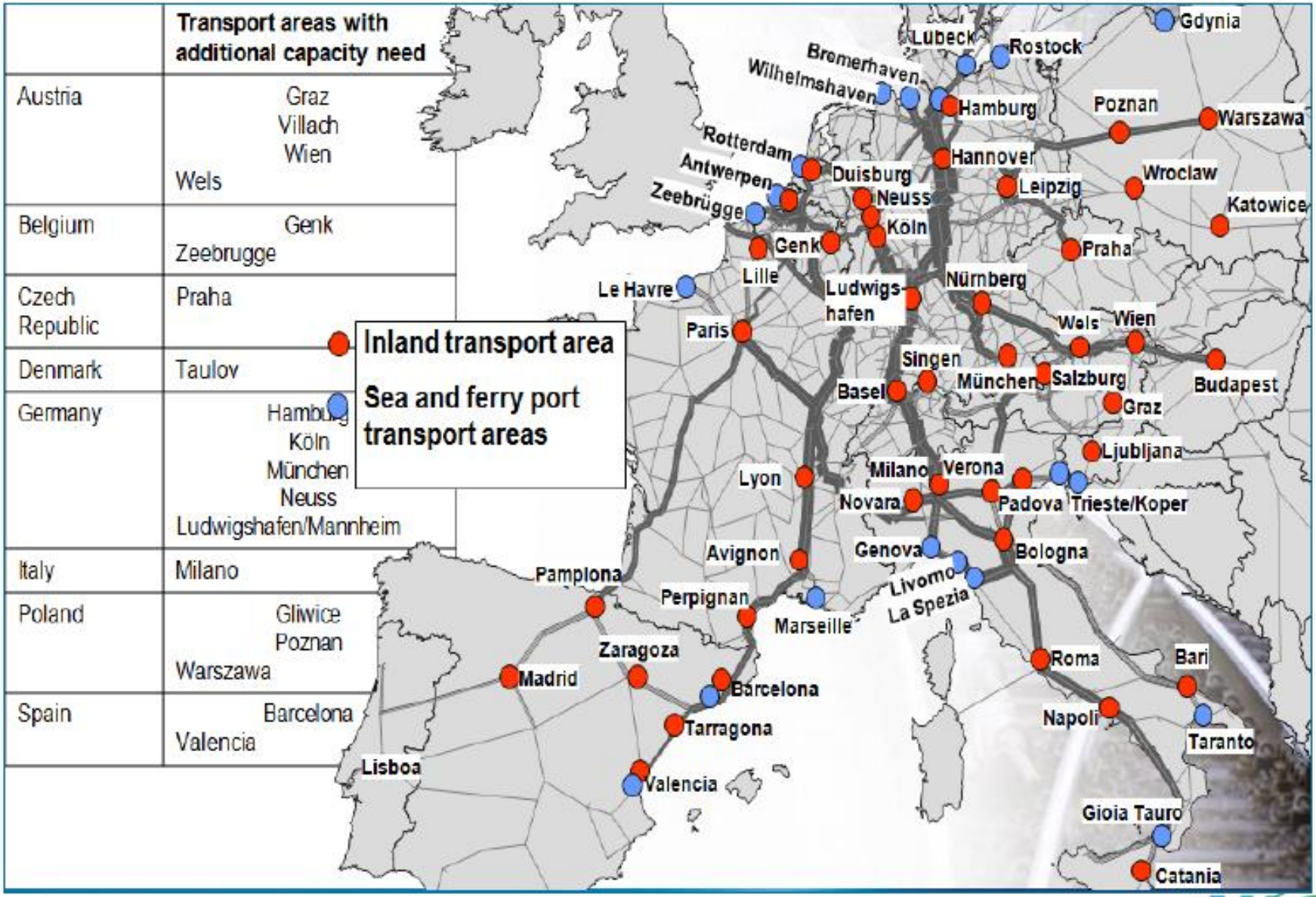


	2015:
> 100%	> 173 trains per day and direction
85% - 100%	147 - 173
70% - 84%	103 - 146

Source :UIC Capacity study

Top terminal areas and seaport-related terminals

	Transport areas with additional capacity need
Austria	Graz Villach Wien Wels
Belgium	Genk Zeebrugge
Czech Republic	Praha
Denmark	Taulov
Germany	Hamburg Köln München Neuss Ludwigshafen/Mannheim
Italy	Milano
Poland	Gliwice Poznan Warszawa
Spain	Barcelona Valencia

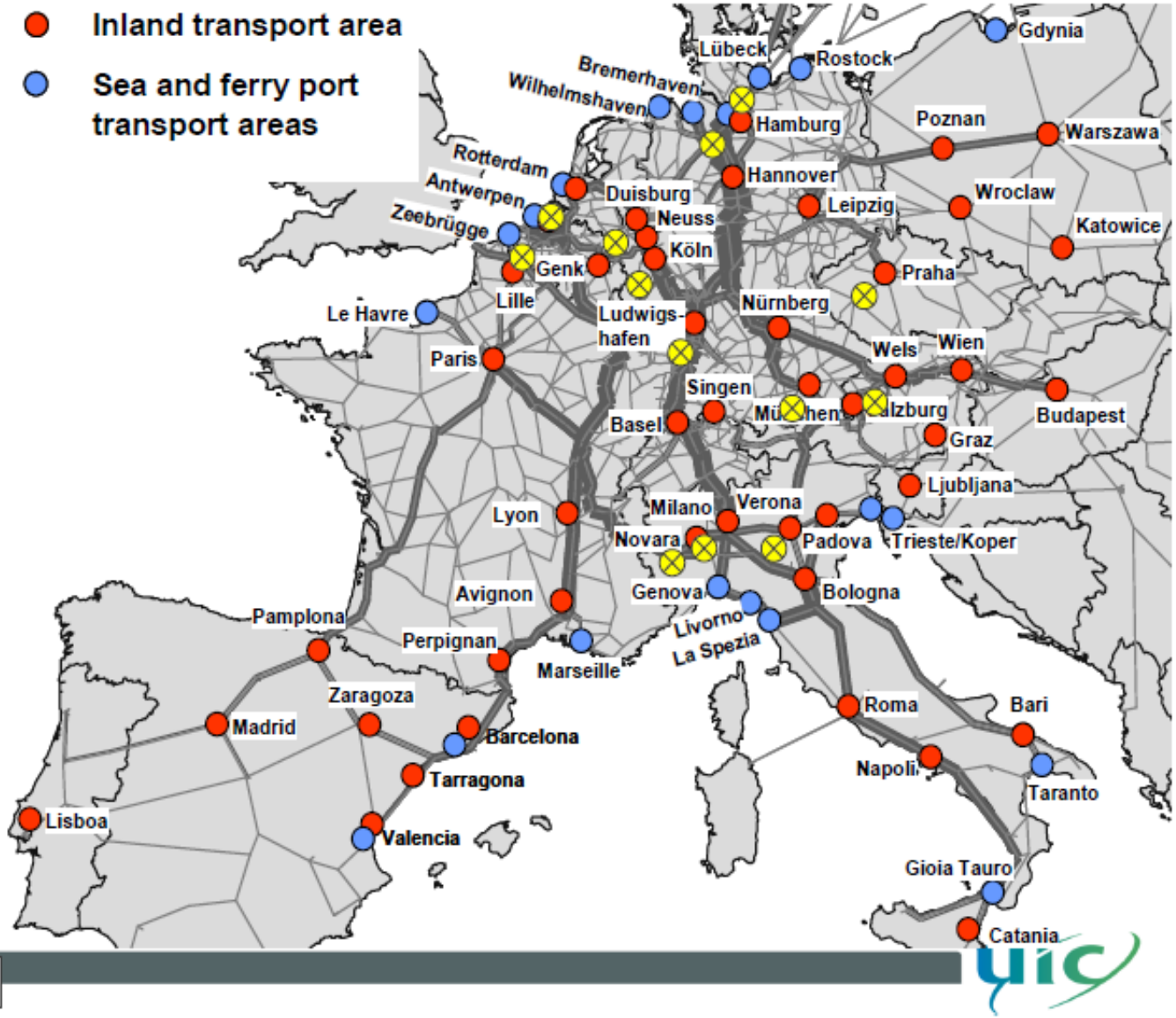


Need to build an infra- & operator-efficient CT network

Industrialized production

- multi-frequency shuttle & direct services between key economic areas
- small- and medium-size areas served by shuttle via gateway/hub
- high level of inter-connectivity at hubs

Etc.

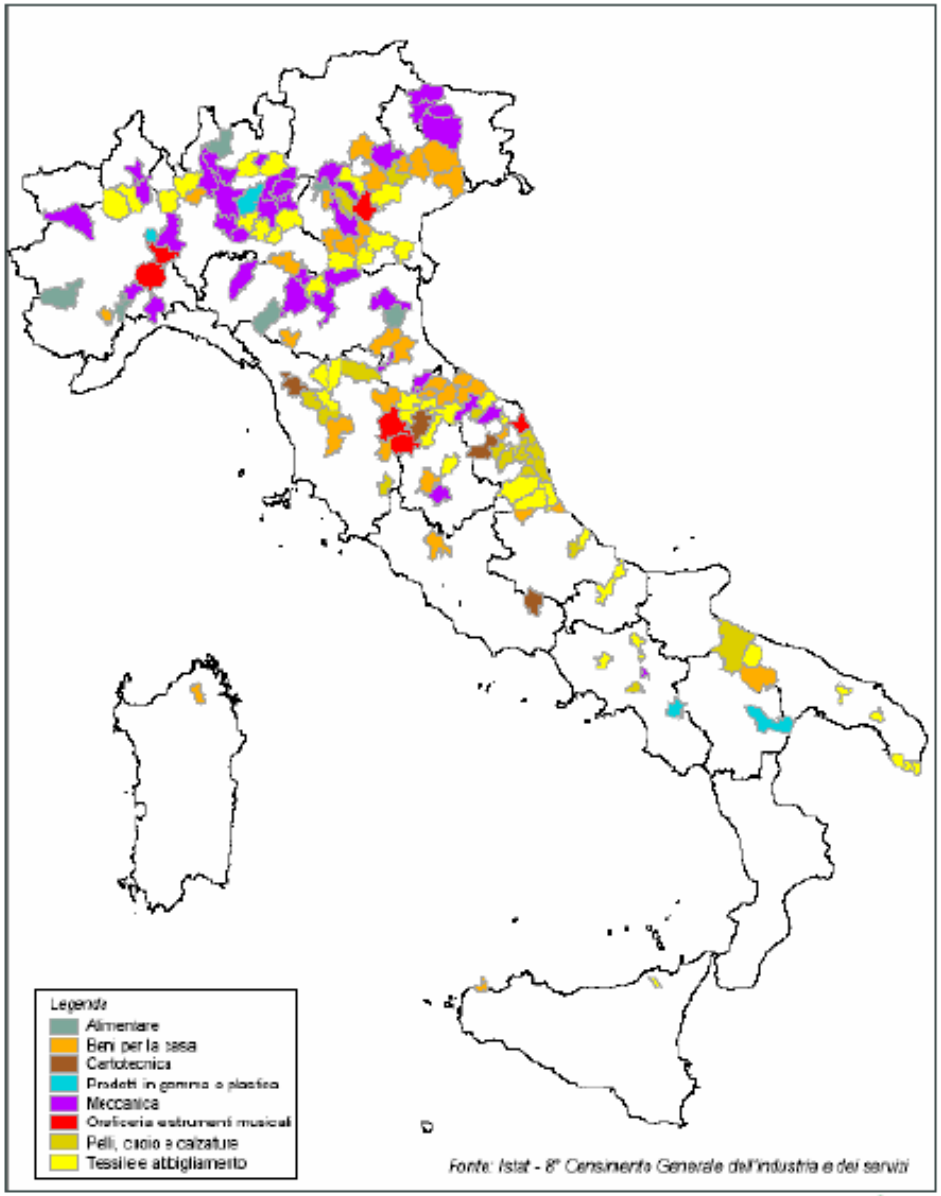


ITALY: a network of Interporti

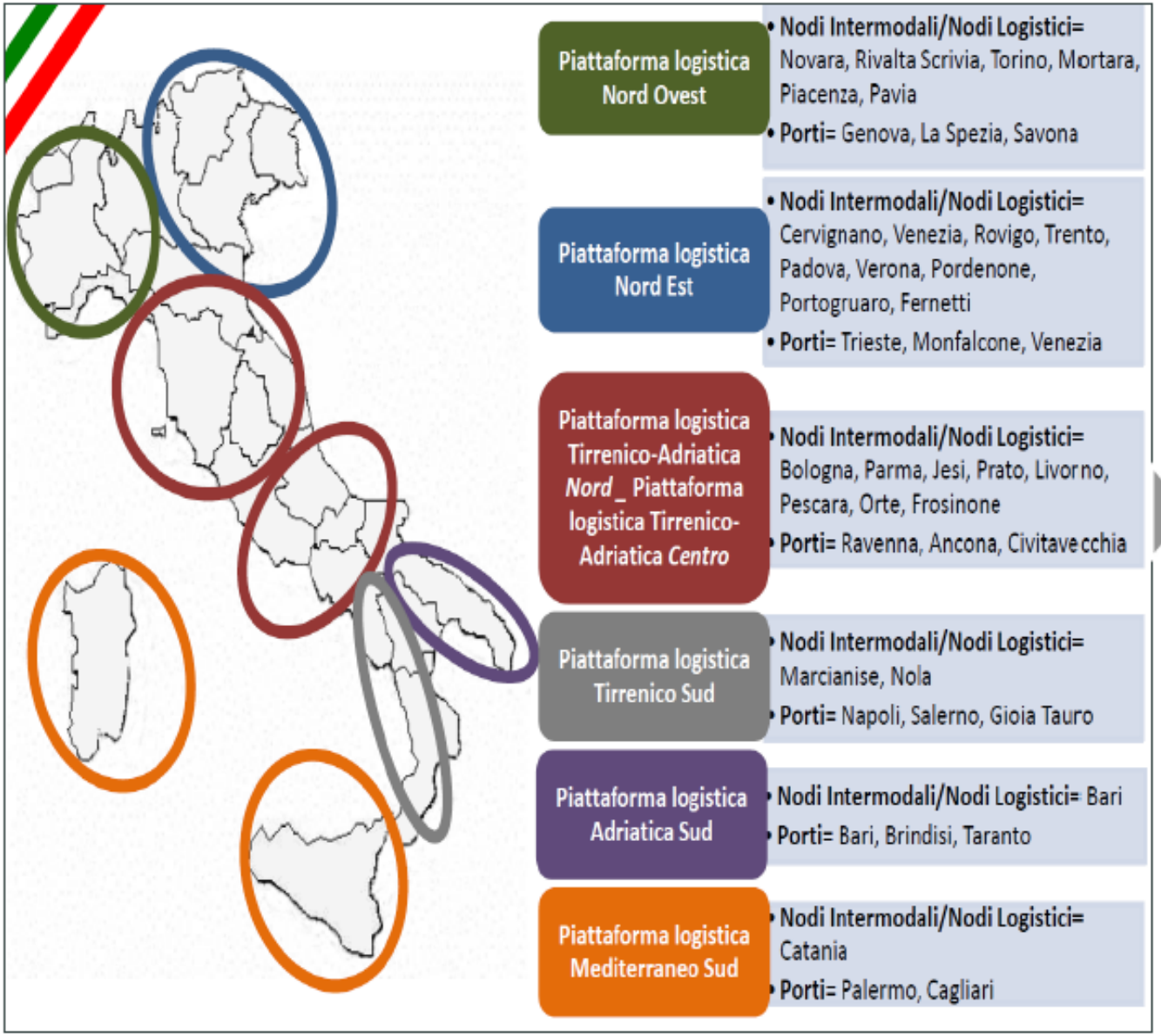
- Scattered production areas
- Economy struggling: need for efficient and cost effective distribution solutions
- Reorganization of rail services:
  - hub & spoke

-Hubs: Milano, Cervignano, Bologna

-Emergence & organization of INTERPORTI



Source: UIR 2012



Piattaforma logistica Nord Ovest	• **Nodi Intermodali/Nodi Logistici=** Novara, Rivalta Scrivia, Torino, Mortara, Piacenza, Pavia • **Porti=** Genova, La Spezia, Savona
Piattaforma logistica Nord Est	• **Nodi Intermodali/Nodi Logistici=** Cervignano, Venezia, Rovigo, Trento, Padova, Verona, Pordenone, Portogruaro, Fernetti • **Porti=** Trieste, Monfalcone, Venezia
Piattaforma logistica Tirrenico-Adriatica *Nord* _ Piattaforma logistica Tirrenico-Adriatica *Centro*	• **Nodi Intermodali/Nodi Logistici=** Bologna, Parma, Jesi, Prato, Livorno, Pescara, Orte, Frosinone • **Porti=** Ravenna, Ancona, Civitavecchia
Piattaforma logistica Tirrenico Sud	• **Nodi Intermodali/Nodi Logistici=** Marcianise, Nola • **Porti=** Napoli, Salerno, Gioia Tauro
Piattaforma logistica Adriatica Sud	• **Nodi Intermodali/Nodi Logistici=** Bari • **Porti=** Bari, Brindisi, Taranto
Piattaforma logistica Mediterraneo Sud	• **Nodi Intermodali/Nodi Logistici=** Catania • **Porti=** Palermo, Cagliari

-Facilitate exchange of goods

-Rationalize flows

-Integrate:
- Various transport modes
- Services

So to:
- improve capacity
- provide seamless link between regional needs & international requirements

Source: UIR, 2012

LUXEMBURG

Intermodality - multimodality : an answer for optimizing flows

The Luxembourg example on how to create value for transit flows

CFL multimodal

logistics – for our future

Bettembourg as,

A Rail transportation pan-European hub

A logistics platform for the Hinterland of Zeebrugge and Antwerp

An efficient logistic services provider

Source: CFLMM

Luxembourg: General context in terms of multimodal development

- Central location
- Important international transit
- Attractive frame for creating logistical activities
- Important neighbor markets
- Intersection of major rail and road corridors

Few industries,
Few local volumes

Opportunity to stop flows

Limited capacity for developing organic huge rail volume

Need for Luxembourg specific solutions

Need to create
" value for money solutions"
answering to the main pains of rail

QUALITY – FLEXIBILITY – CUSTOMER SERVICE – COSTS EFFICIENCY

Source: CFLMM, GRFC 2012

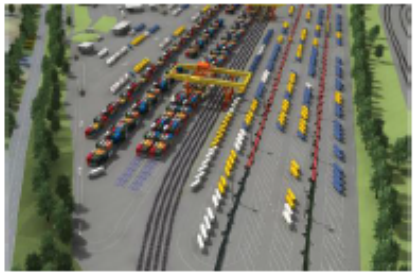
Bettembourg, the **multimodality** challenges to assure future growth

General MULTI approach in an integrated concept

ELO rail network

Future Bettembourg site

Future terminal



MULTI destinations

Current situation

Hinterland of main maritime ports

Central node of road and rail network

Existence of logistic infrastructure

MULTI service

For Attracting volumes

Facilitate work of clients by managing all types of transports mode (trailers, container, tanks, bulk..)

Improve costs and consequent selling conditions

Develop capacity sharing for increasing frequency

MULTI technology

With requirements

Quality of service

Efficiency of infrastructure

Monitoring of operation

Capacity to support locally

Source: CFLMM, GRFC 2012

- Combined transport connections from Bettembourg to:
  - the North Sea , Baltic Sea and Mediterranean Sea
  - the main European industrial centers
- Positioning of Bettembourg at the center of a network of European Rail Motorways under construction

NETWORK

ADDED VALUE

- Client-dedicated logistic solutions
- Freight forwarding & global transport solutions by air and sea
- Rail and road transportation (FTL/LTL)
- Regional distribution
- Parcel services (UPS partner for Luxembourg)
- Warehousing, Stock management
- Handling, Packaging & Picking
- Customs agency services

Source: CFLMM, 2013

OVERALL TRENDS

- Increasing container carriers size: 16000 TEU today
- Congestion restrains storage and marshalling possibilities
- Limited inland connections capacity by all modes
- Delays appear in the supply chains

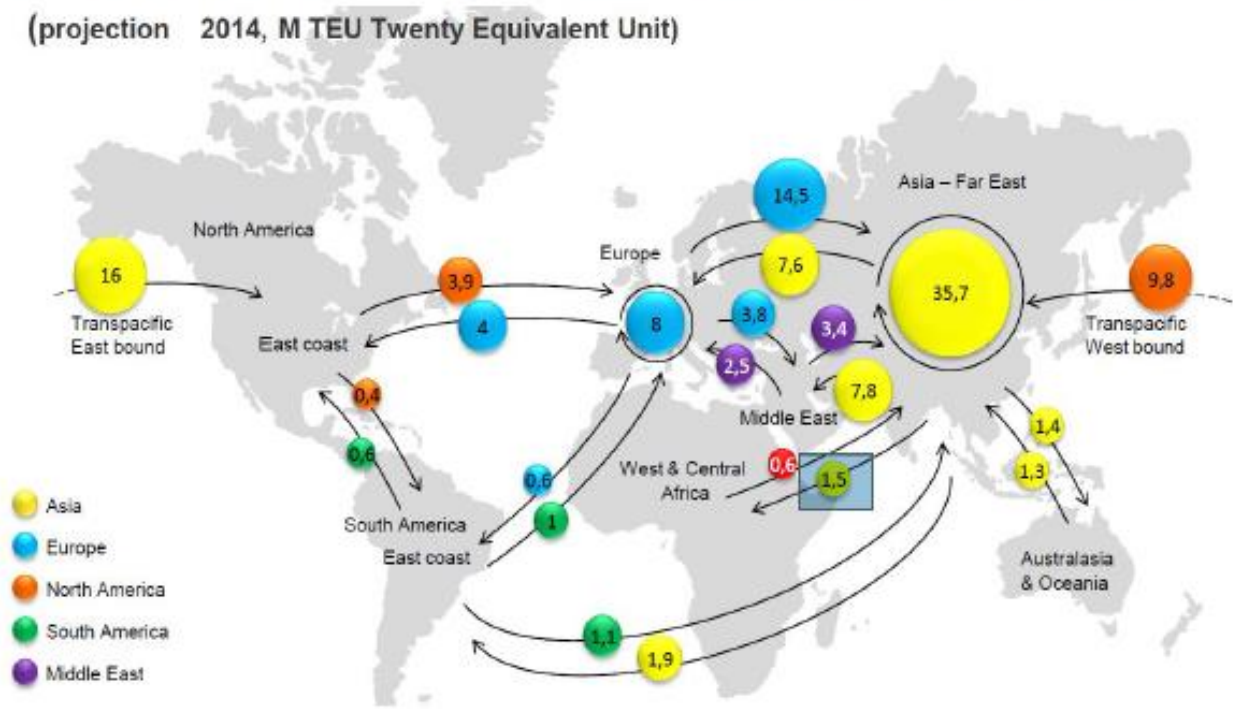
Customer demand according to road	
Punctuality	For many customers punctuality is more important than the actual transit time
Reliability	Continuous compliance of guaranteed capacities
Frequency	Increasing reliability by frequently departures
Flexibility	Ability to respond to varying volumes
Density	Dense hinterland network
Price-Performance	Competitiveness to direct road transport
Security	Avoiding damages or theft
Information	Seamless bi-directional IT-process of booking, order processing, billing as well as tracking and tracing

source HHLA

When East meets West: Global flows need regional distribution

- For rail to be fully competitive with other transport modes like deep-sea shipping in Asian ⇔ European transports it is vital to have regional distribution networks at hand.
- Global supply-chains do not end/begin in a major European hub. There is need for distribution/collection of cargo at the door of our European costumers.
- This means that a reliable network is needed to feed and de-feed the big international rail hubs.

Interest for transcontinental rail developments



Fact: Long-term (2030), rail transport between Asia and Europe is forecast to reach around 950,000 TEU p.a. This includes traffic from East Asia, Mongolia and Kazakhstan to the EU in both directions. Traffic from South Asia could add another 150,000 TEU in the long-term.

Fact: Already today, rail could hypothetically achieve a potential of 480,000 TEU p.a providing some adjustments

Fact: Need to create awareness on opportunities, prepare the ground for enhanced rail cargo services between Asia and Europe and to promote rail transport solutions

Source : GGS – Containerisation International 2012 - Drewry

To exploit the huge market potential, Eurasian rail services need to be improved significantly along key levers

ICOMOD
Intercontinental Combined Traffic

Transport time 	• Time is the **key differentiation** between rail and maritime transport.[1)] Only fast transport times enable benefits compared to sea and trigger monetary benefits for shippers • **Priority** should be given **to reliability**/predictability rather than winning 1 or 2 days more
Reliability 	• **Predictability is key** to shippers and customers • Reliability allows for price premiums if time-sensitive or production-critical materials/goods bear high opportunity costs; reliability might differentiate rail if being further improved
Target markets 	• Rail generates highest benefits in **hinterland areas for high-value goods.** It should optimize its product offer for these interfaces (continental consolidation points) • Look for **balanced traffic** or **combine shorter eastbound traffics** along way back to Asia
Pricing 	• Rail can compete with a **comprehensive price view**: D2D, working capital, lead time • Working capital savings, time-to-market and built-to-order benefits allow for a price premium, but are highly dependent on fast and reliable transport times
Infrastruc-ture, Ops 	• Infrastructure requires **continuous updates** and extensions for long-term rail success • In addition, rail needs to complement its westbound services with eastbound solutions to **optimize rolling stock and container availability** at key origins
Frequency, flexibility 	• Unpredictable frequency reduces attractiveness of rail. A **regular service** is entry condition for many customers • Target frequency of at least 1-2 departures per week, ideally more than 3
Customs 	• Improvements **urgently** required, but also related to mistakes by operators/shippers • **CIM/SMGS consignment note** and paperless transport keys to accelerate border crossing • **Transit customs logic**: customs only at O/D terminals

Flexibility and frequency – To dos

ICOMOD
Intercontinental Combined Traffic

Required frequency [trains/day]

Minimum	As a minimum, 1 train per week is enough, two would be nice
Ideal	Ideally, more than 3 trains per week

COMMENTS

- Position rail as a different product than sea/air with their daily departures (individual carrier less frequent)
- Ensure high number of services Asia-Europe from consolidation points/terminals (i.e. minimum volume per train to be ensured for terminals)
- Benefit from feeder trains/trucks to terminals to be able to deal with smaller volumes from original customer points – cooperate with feeder service companies at origins (e.g. Chinese railways)
- Introduce schedule
- For block trains, adapt frequency to specific customer needs (departure when required)/ enhance joint planning with customers

Additional services

- Additional services mentioned during the interviews, examples warehousing, labelling, re-packaging
- Are usually done in the proximity of ports/terminals, i.e. are also common for maritime transport
- Additional services normally offered by logistics/forwarding companies, i.e. rail operators do not need to take care of them or would then compete with their ordering parties
- However, transparency services need to be established to comply with market standards, examples train/container tracking, automatic delay messages
- Additional services incur additional time and hence dilute the time advantage of rail

Little potential for rail differentiation, rather need to close the gap to market standards

UIC

ENHANCEMENT OF CONTAINERIZATION IN EURO-ASIA

INTERNATIONAL UNION OF RAILWAYS - ASIA

Final Report – Volume 1
February 2010

Enhancement of Containerisation in Asia

*connectedthinking

PRICEWATERHOUSECOOPERS

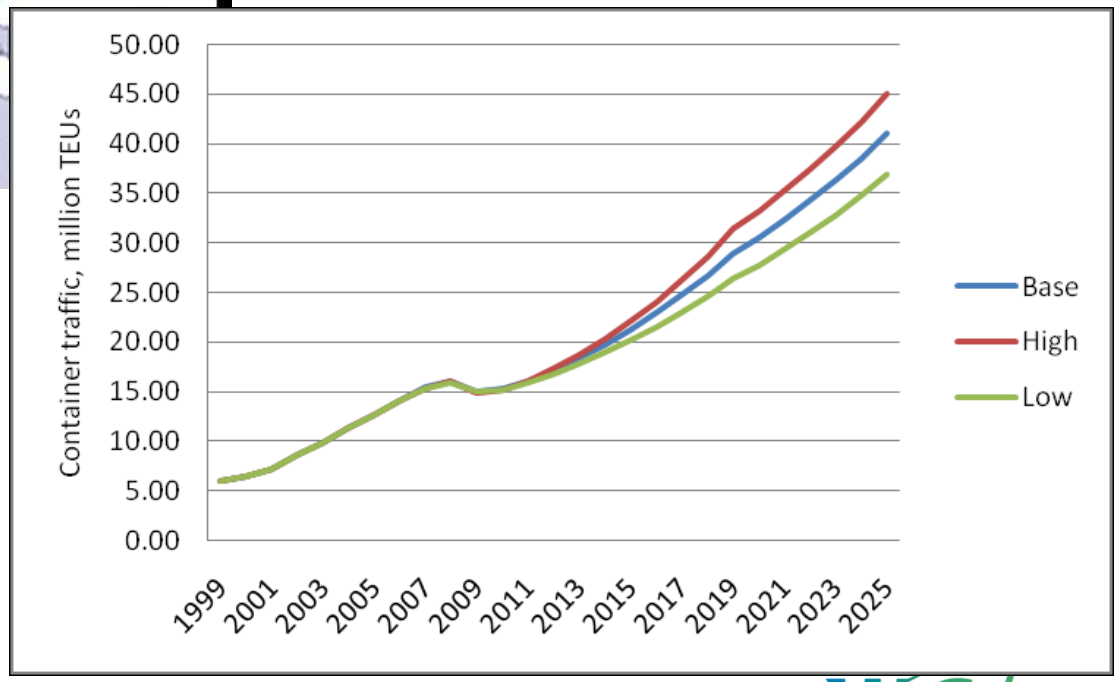
- **Economic growth** of China, CIS and ASEAN countries,
+ Emergence as manufacturing hubs of the world,

=> **Containerization and development of container ports progressed** rapidly in Asian ports.

⇒ International container movement relies extensively on maritime transportation, with road transportation being used for first-mile and last-mile connectivity, **but a larger role for railway transportation** could be targeted in future.

=> **Analyzes the present level of container traffic in Asia, estimates potential container traffic growth by 2025, analyses modal mix of container movement in Euro-Asia, identifying and analyzing key challenges for increase role of railways in container transportation in future.**

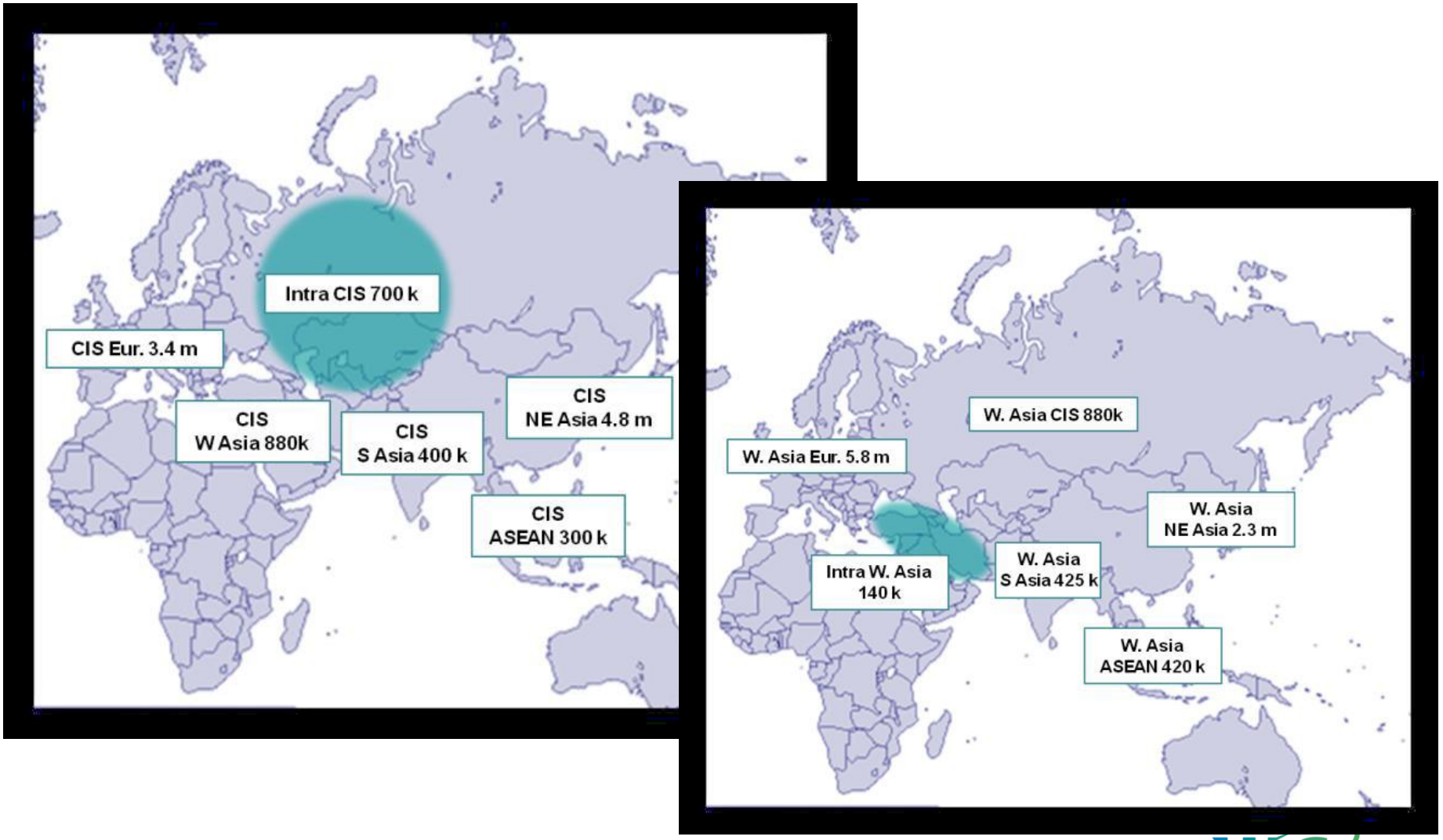
SOME TRENDS TO 2025



International container traffic with Europe and other Asian regions (including intra-regional trade)

Regions	2025 (million TEUs)	CAGR		
		2014-19	2020-25	2007-25
ASEAN	22.8	7.42%	4.72%	5.36%
South Asia	13.8	12.88%	9.09%	9.89%
North-East Asia	73.1	9.62%	6.90%	7.03%
CIS	10.6	10.70%	6.93%	7.75%
West Asia	9.8	7.99%	5.62%	6.02%

Ex: CIS and WA with neighbouring regions in 2025

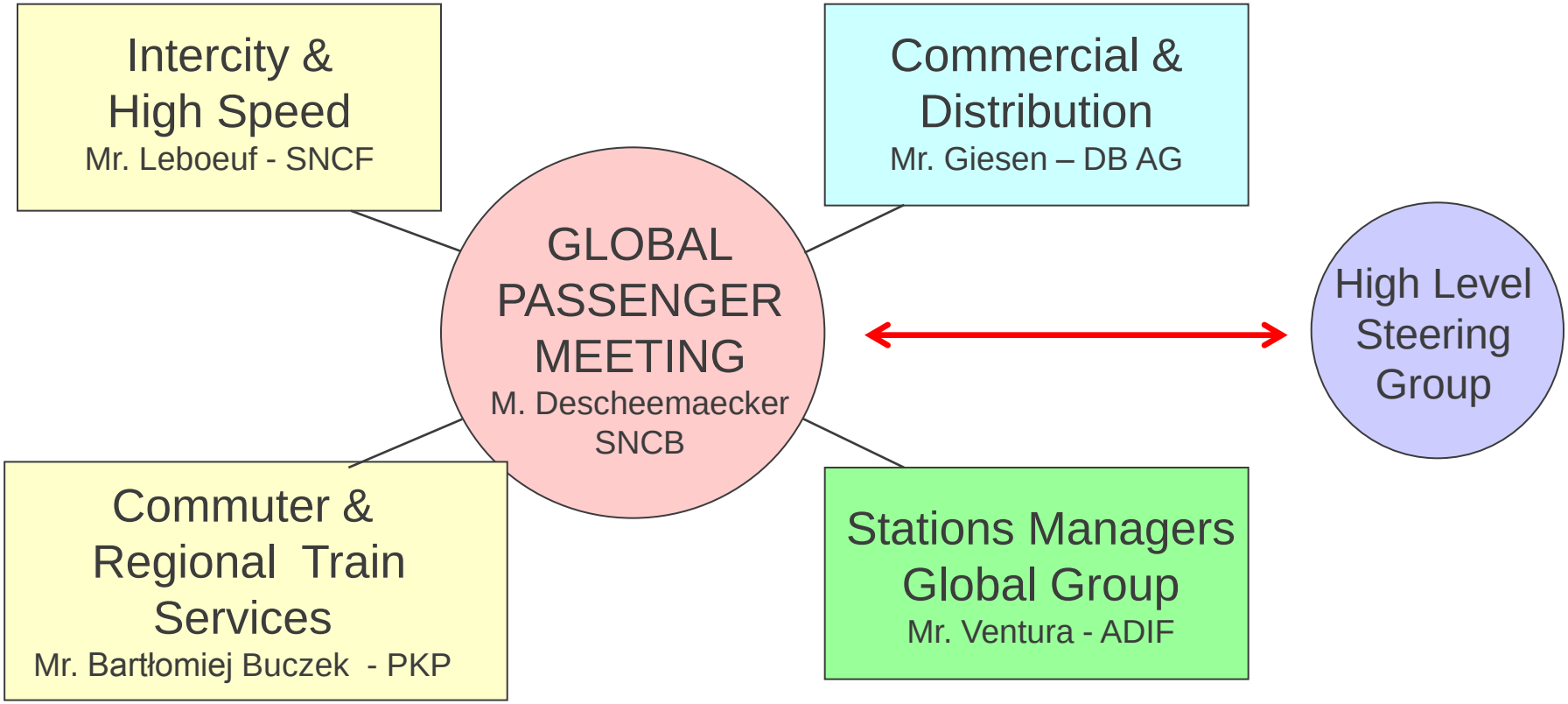


Scenario Analysis for GDP variation - Impact of GDP variation on container traffic (in mn TEUs)

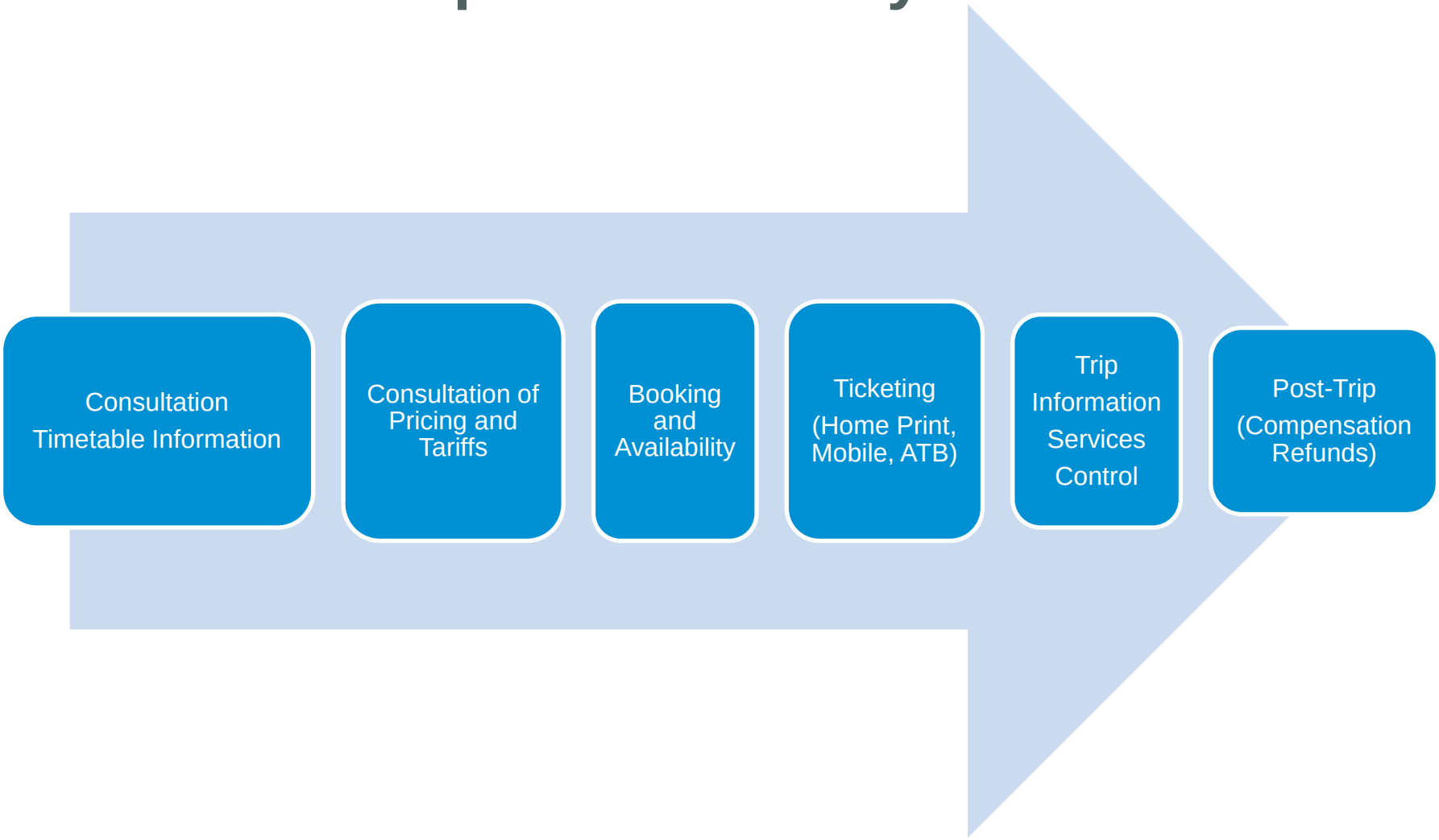
	CAGR		
	2007-25 Base	2007-25 High	2007-25 Low
Asia's Trade with Europe	5.57%	6.13%	4.98%
ASEAN Trade with Europe and Asia	5.36%	5.94%	4.79%
S Asia Trade with Europe and Asia	9.89%	11.03%	8.78%
NE Asia Trade with Europe and Asia	7.03%	7.80%	6.27%
CIS Trade with Europe and Asia	7.75%	8.54%	6.92%
W Asia Trade with Europe and Asia	6.02%	6.57%	5.30%

	CAGR for 2007-25 (Base)	CAGR for 2007-25 (Base with additional containerisation)
Asia's Trade with Europe	5.90%	8.22%
ASEAN Trade with Europe & Asia	6.18%	8.44%
S Asia Trade with Europe & Asia	12.67%	13.84%
NE Asia Trade with Europe & Asia	7.67%	9.35%
CIS Trade with Europe & Asia	9.28%	14.20%
W Asia Trade with Europe & Asia	8.57%	10.58%

UIC Passenger activity
Four sectors



Customer Experience Lifecycle



What do Customers Want?

>On-the-go connectivity to Internet

Mobile/Internet booking and more (real-time information)

- Booking/Modification
- Train Status Information
- Boarding Passes
- Station Information (services, contact, maps, stores, hours, etc)
- Platform Information
- Connections

You’re Mobile, Are We ?

What do the Railways Want?

- **Increased operational efficiency**
  - Improve productivity from existing systems
  - Streamline and optimize business procedures
- **Provide a Hassle-free travel experience, and more travel booking options beyond core rail services which form only one portion of the consumer's door-to-door journey**
  - One-stop trip planning and purchase
  - Seamless door-to-door travel (using several transport modes)
  - Convenient and easy connections at the transportation hubs

What do the Railways Want?

- **Gain Market Share for Rail Transport, the operators need to better use technology to differentiate their brands and services in customers' mind**
- **Retain control over their products and distribution, due to the fact that they may no longer be the primary recipients of customer data and could lose out on selling ancillary services. They need to develop their multichannel strategies to better connect with and understand online consumers**
- **On-the-go connectivity**

  Provide Mobile booking and more

Integration: a political priority

Vice-President of the European Commission, Sim Kallas, commissioner of transport

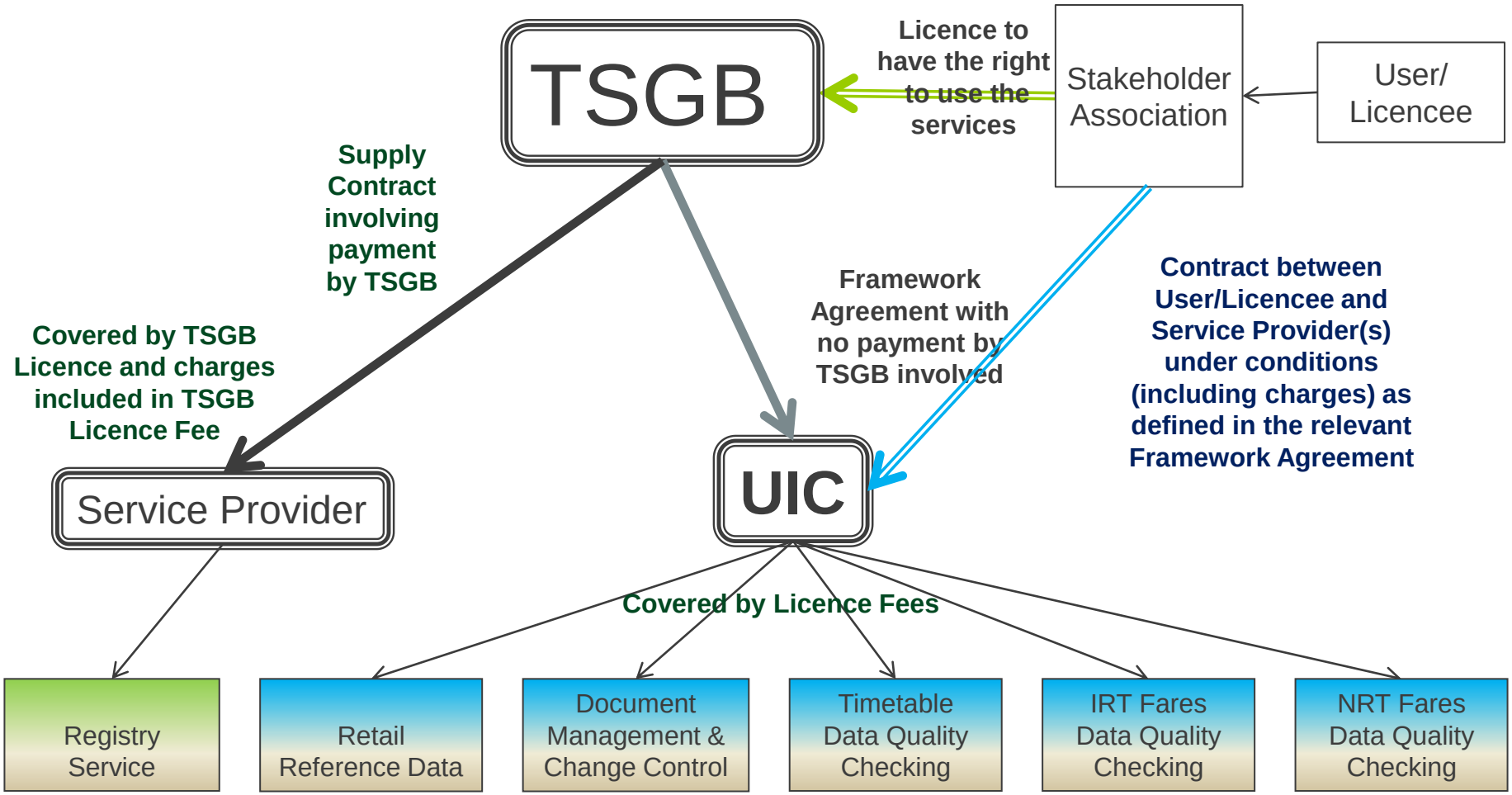
- "A Single European Transport Area depends on effective and interoperable Europe-wide systems for multi-modal travel planning and integrated ticketing"
- "Why can't I, as a European traveler, plan my travel from Helsinki to Lisbon, using different transport modes, book my travel and get the ticket in one go?"

Where does Europe go from now?

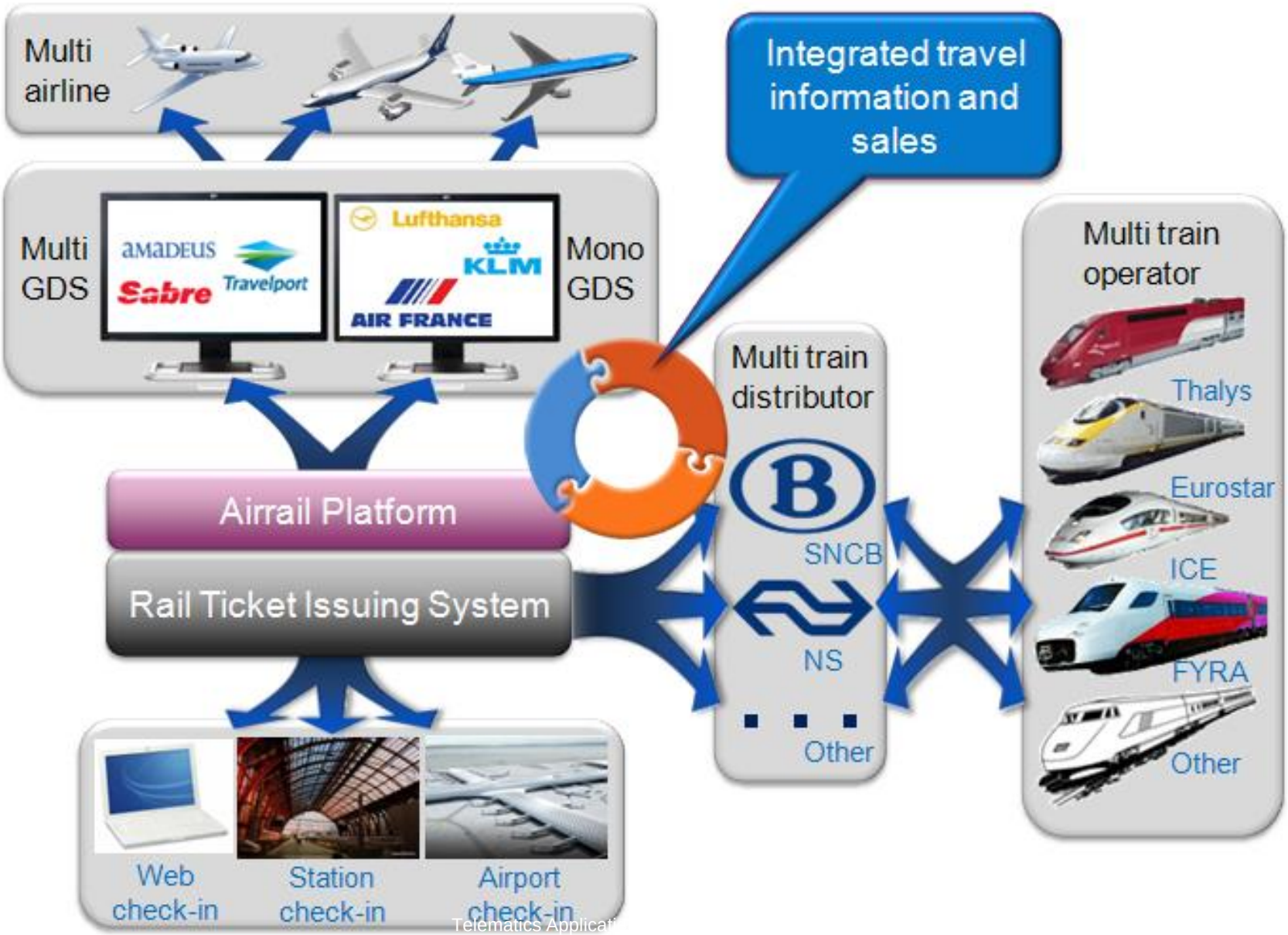
- **Next step: Development of a sector's strategy for international (cross-modal) distribution**

- **Objective: ensure railways have a large range of options at their disposal:**
  - Own distribution
  - Distribution via third parties
  - Common standards and interfaces
  - Join forces with IATA

UIC service proposal for TAP-TSI Service Governance Body (TSGB)



Joint intermodal concept



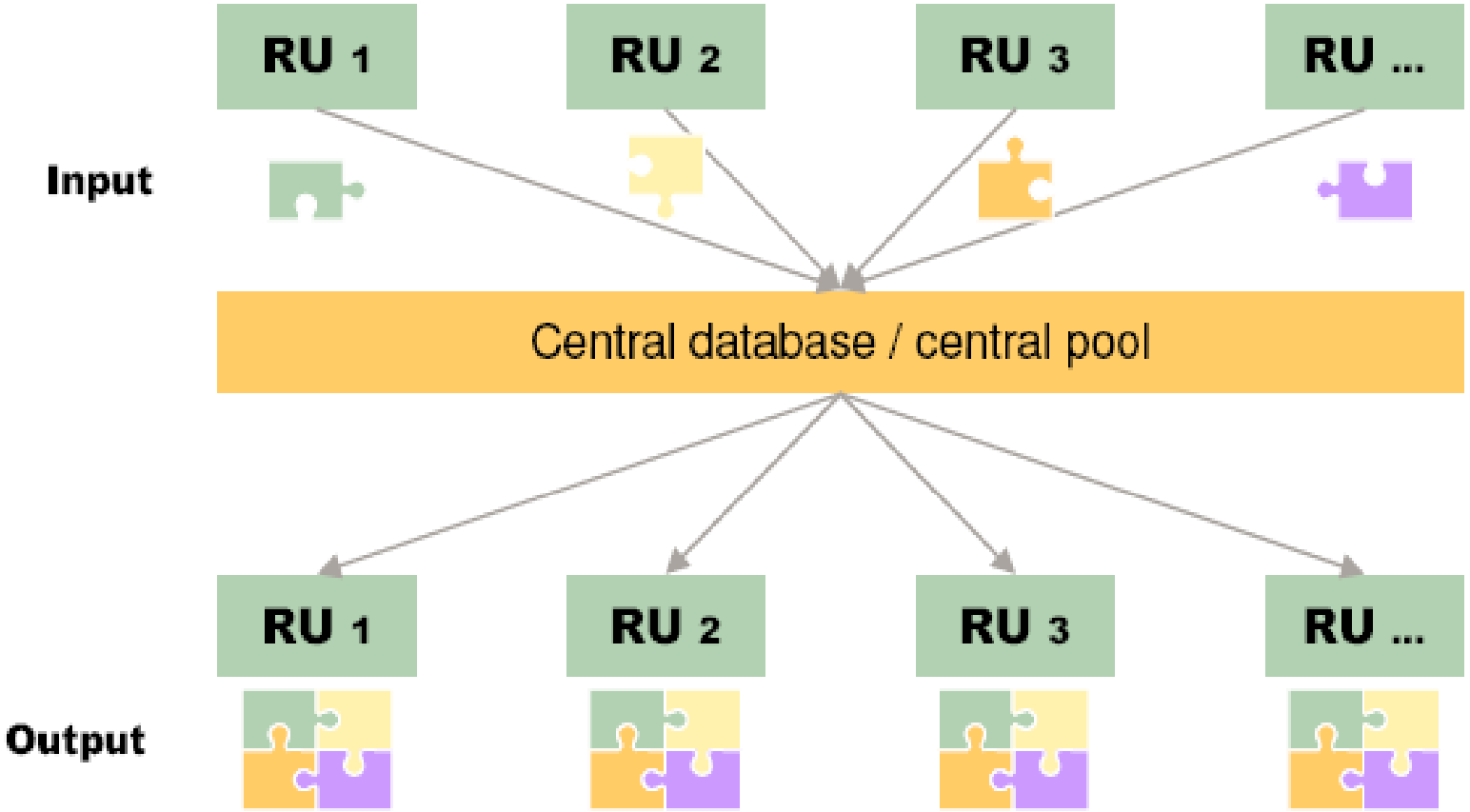
MERITS: UIC tool for timetables

MERITS

Multiple **E**uropean **R**ailway **I**ntegrated **T**imetable **S**torage

- The database of UIC for
  - Timetable
  - Stations

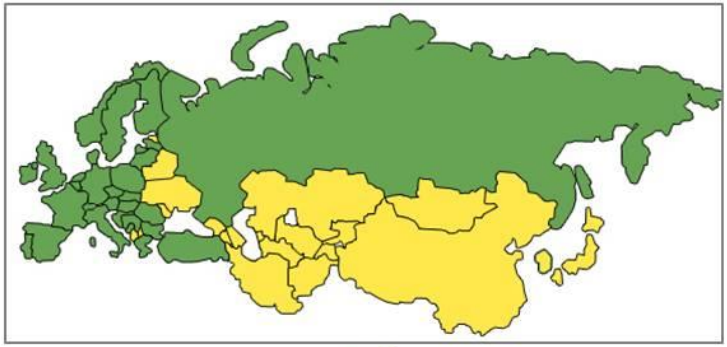
Concept


RU 1
RU 2
RU 3
RU ...
Input
Central database / central pool
RU 1
RU 2
RU 3
RU ...
Output

Stakes of MERITS

- To provide its own schedules to the community in order to develop an international clientele
- To have schedules of the other railways to develop the international rail traffic
- To have schedules to be able to position RUs as suppliers of IT software solution, journey planner ...

Railways companies members of the MERITS in 2013 - Asia-



The railways companies members in 2013
The railways companies who are not yet members in 2013

RDZ
KTZ
MRA
JR-E
JR-C
JR-K
JR-W
TCDD
GR
SCR
AZ
ADDY
TRK
CR
RAI
NIR00
ANR
500km
N

MERITS Asian partners

- **UIC would like to integrate the following countries in the MERITS-PRIFIS community:**
  - **China**
  - **Belarus**
  - **Ukraine**
  - **Kazakhstan**
  - **Kyrgyzstan**
  - **Mongolia**
  - **Moldova**
  - **Tajikistan**
  - **Uzbekistan**
  - **Iran, …**
- **We can provide the access of the MERITS-PRIFIS tool, help the railway undertaking to join the community**

Program of work for 2014

- Commercial and distribution
    - Participation of all interested members in MERITS and PRIFIS
    - Participation in UIC Technical group about “Universal train Ticket”
    - Accessibility: participation in the PASSAGE project
    - e-ticketing workshop (1 or 2 per year)

- Stations :
    - participation in the SMGG (Station Manager Global Group)

- Intercity and Highspeed
    - Working groups about environment, financing…
    - Training on High Speed Systems (June)

- TOPRAIL (Tourist Opportunity for Passenger Trains)
- Signage (UIC leaflet 413)

Deliverables in 2013 « AGCS»

Task 1: Documentation of current systems

Objective: To summarize in a application in practice

INTERNATIONAL UNION OF RAILWAYS

ZENTRUM TRANSPORTWIRTSCHAFT LOGISTIK Schulungs- & Beratungs-GmbH

Railway Research Institute VNIIZhT

Report on the Work Performed under the Contract № 13.010 within the Framework of the Joint Working Group UIC / OSJD

Task 2:

Market Research

Vienna - Moscow, November 2013

ПРОЕКТ "СИСТЕМ АВТОМАТИЧЕСКОГО ИЗМЕНЕНИЯ ШИРИНЫ КОЛЕИ"

Проекты "Систем автоматического изменения ширины колеи"

Задача 5:

Отчет по оптимальному использованию ресурсов с учетом экологических аспектов, рисков для окружающей среды и уменьшения значительных рисков с помощью использования систем автоматического изменения ширины колеи

ineco

Проекты "Систем автоматического изменения ширины колеи"

Задача 4:

Описание согласованной процедуры утверждения систем автоматического изменения ширины колеи

	Имя	Подпись	Дата
Автор	Беатрис Эрнандес Хименес Тамара Родригес Гонсалес Педро Лилло Полайна		27/11/2013
Проверено	Эдуардо Маркос Гомес		27/11/2013

ACHIEVED BY UIC IN 2013 FOR TAF Regulation (Telematic Applications for Freight) –first IT-related Technical Specification for Interoperability in Europe

- **Core Text Change Requests** for the revision of the Regulation
- Development and delivery of the sector Monitoring Plan
- Development and delivery of the Change Requests to add the **Electronic Consignment Note** to the Technical Catalogue
- Development and delivery of the Change Requests to modify and align the RID **Dangerous Goods Representation** in the Technical Catalogue
- Provision of technical analysis for the Change Management process

1st INTERNATIONAL RAILWAY STANDARDS: IRS 1501

501.899 **Application 1: International Boundaries between standards and broad gauge vehicles (1435/1520 mm)**

501.900 **Application 1.1 - Wagons and coaches**

501.901 The vehicles (wagons and coaches) will be admitted in international traffic on all t
UIC and OSJD lines if they meet the requirements of IRS 1501 – General P
regarding the UIC kinematic gauge and those of OSJD Leaflet 500 regarding t
OSJD static gauge 03-WM (see figure "Reference profile of the static 03-WM upp
part").

501.902 Figure "reference kinematic gauge" shows the upper parts of the contours used
determine the widths and the admissible heights of the vehicles. The calculati

R.1501.944 **Application 2: Enhanced Europe-Asia**

R.1501.945 **AP 2.1 - Wagons**

R.1501.946 This application is valid for all type of wagons.

Free circ
the static
parts)": A
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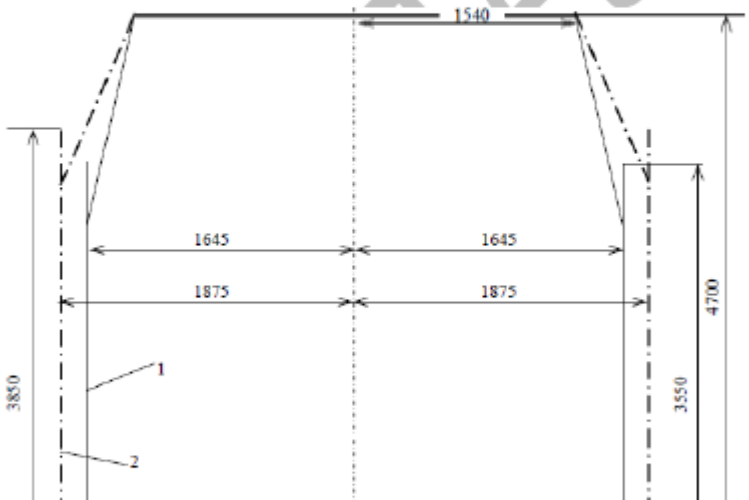
R.1501.947 **Application 3: 1520 mm High-Speed**

The kinematic gauge GC was recommended in Council Directive 96/48/EC of 23 July 1996 on the interoperability of the trans-European high-speed rail system (see figure 3.1 (line 1)).

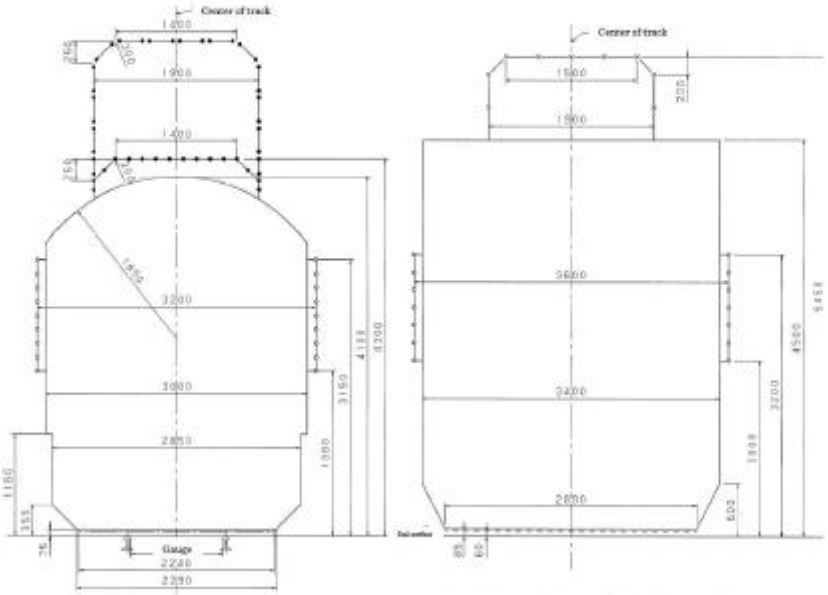
According to the Directive railways are obliged to observe kinematic gauge GC on high speed lines due to be built. National specifications must also be taken into account.

For this purpose the GC_{ru} gauge (see Figure "Operating gauges (traffic at speeds up to 250 km/h)" - line 2 - was developed.

It is to be observed when planning the construction of broad gauge high speed lines, and is the result of a harmonisation of the GC gauge with the T gauge, the latter being geared towards future systems.



Application 4: Japanese load-gauge application



Conventional Train
(Gauge : 1,067 mm)

High Speed Train (Shinkansen)
(Gauge : 1,435 mm)

AP 2.2

The requ
re open

TRAINING

- Moscow State University of Railway Engineering, Moscow

“International logistics chain including PPP issues”

<u>Provisional date: 19-23 May 2014</u>

=> First training session dedicated to EATL corridors issue

SECURITY ON EATL

- On 26 27 March in Helsinki, meeting of the security platform working group “security of international corridors – border crossings” led by PKP PLK.

- Seminar on comprehensive protection, safety and security in Ankara on 6 and 7 May : a session will dedicated to freight

Thank you for your kind attention

Vincent VU
Director Institutional Relations, UIC