Trans Baltic

Towards an integrated transport system in the Baltic Sea Region

WP5.3. Task meeting
Deployment of ICT toolbox
Progress report

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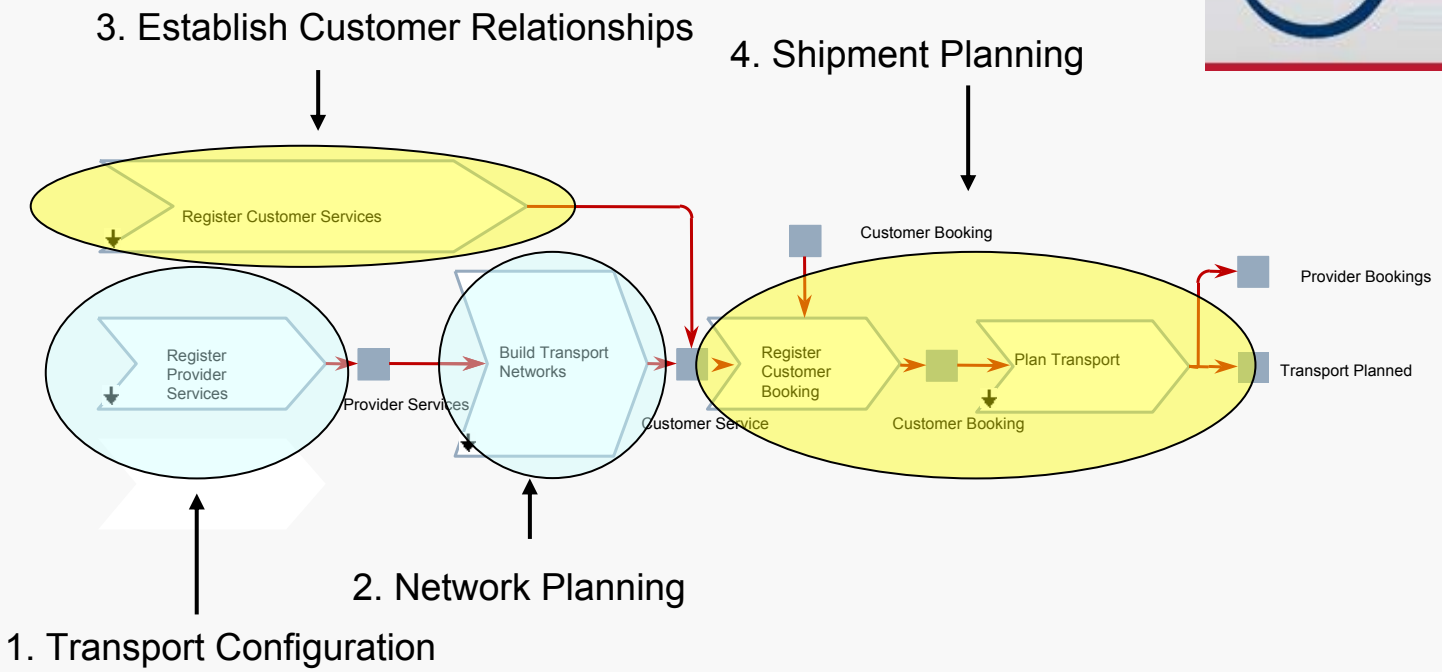
Project part-financed by the European Union (European Regional Development Fund)
Baltic Sea Region Programme 2007-2013
SKANE

ITC application for planning intermodal supply chains

Planning module



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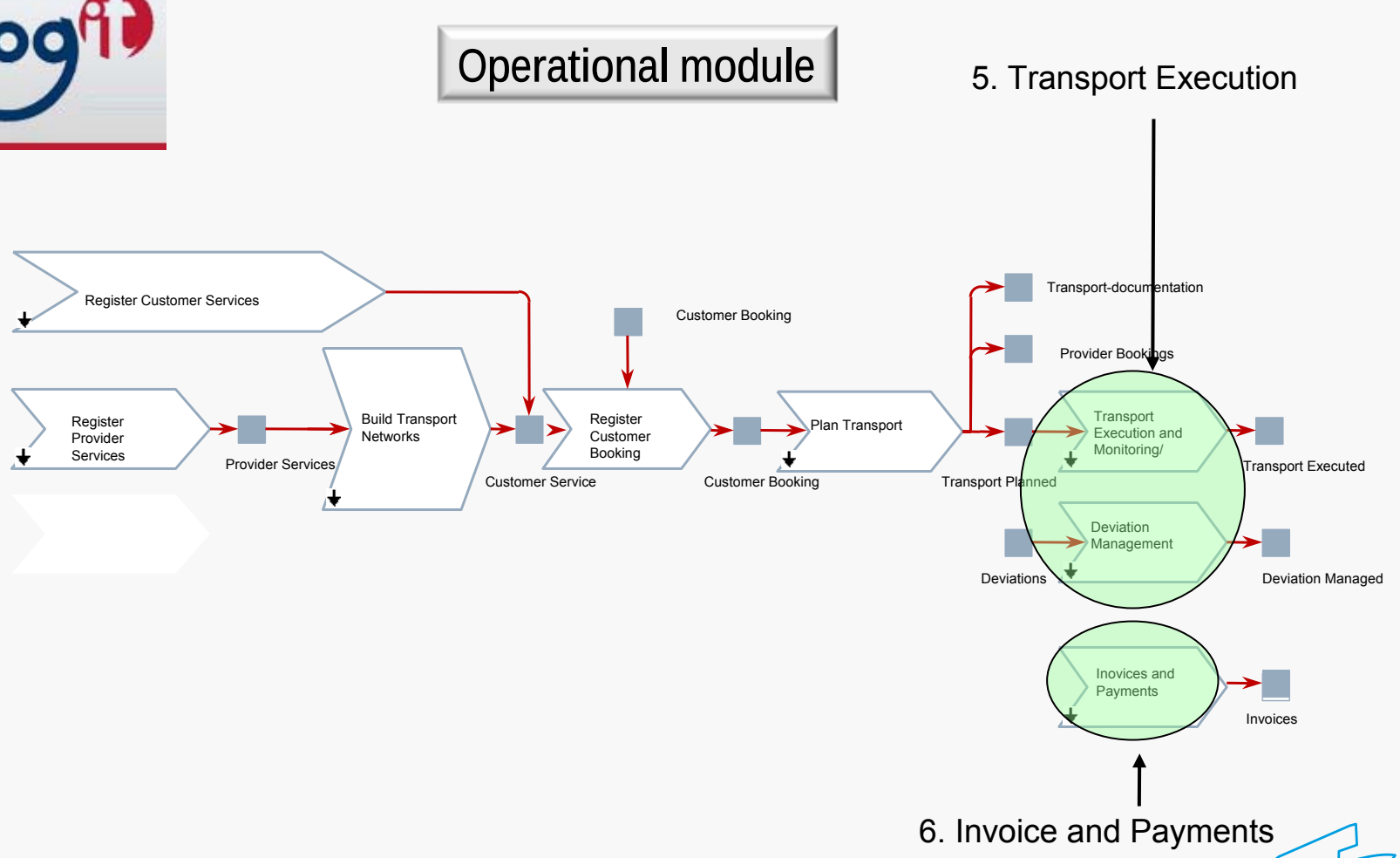
ITC application for planning intermodal supply chains



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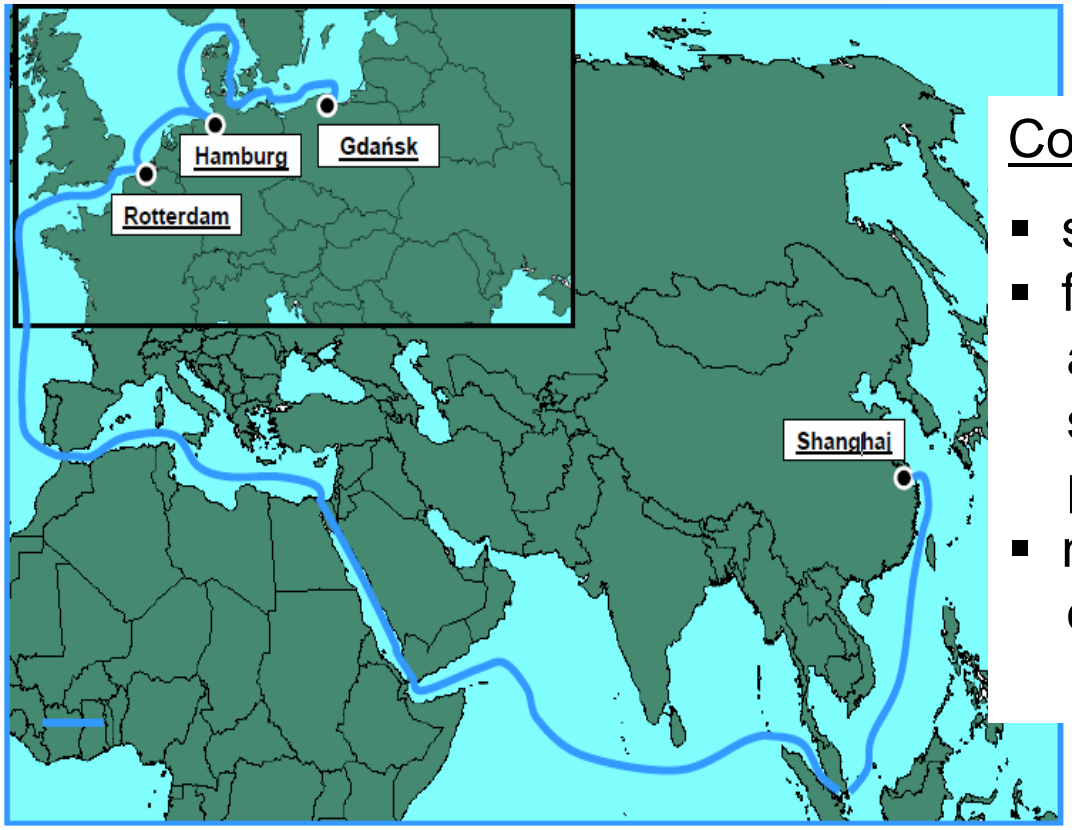
Background

1. Permanent pressure on logistics costs due to rising competition
2. Sustainable modes of transportation rarely considered as real alternative due to:
   - ❑ rising customers' requirements for
     - short delivery time
     - more frequent and smaller shipments
   - ❑ general lack of awareness of the benefits offered by the various modes of transport
   - ❑ not easily accessible and not transparent offer from railway or sea carriers

Objectives

- building data base of the transport operators and their services in selected transport corridors
  - Far East – Poland
  - Poland – Sweden / Norway
- demonstrations for the freight market stakeholders
  - functionality of a tool and how it may be helpful in freight decision making
  - all possible transport alternatives across different transport modes
  - scale of benefits resulting from the use of specific modes
- expected results:
  - set of Key Performance Indicators for transport service quality evaluation
  - set of KPI for tool's implementation process evaluation
  - demo version of the tool functionalities for further dissemination
  - deployment plan
  - cluster of transport operators

Selected transport corridor No 1
Container transport route from the Far East to Poland with the alternative use of gateway ports of Rotterdam, Hamburg or Gdansk



Corridor profile :

- sufficient volumes
- full range of intermodal alternatives on the last route section (Gateway European port – final receiver)
- modal balance in terms of expense level

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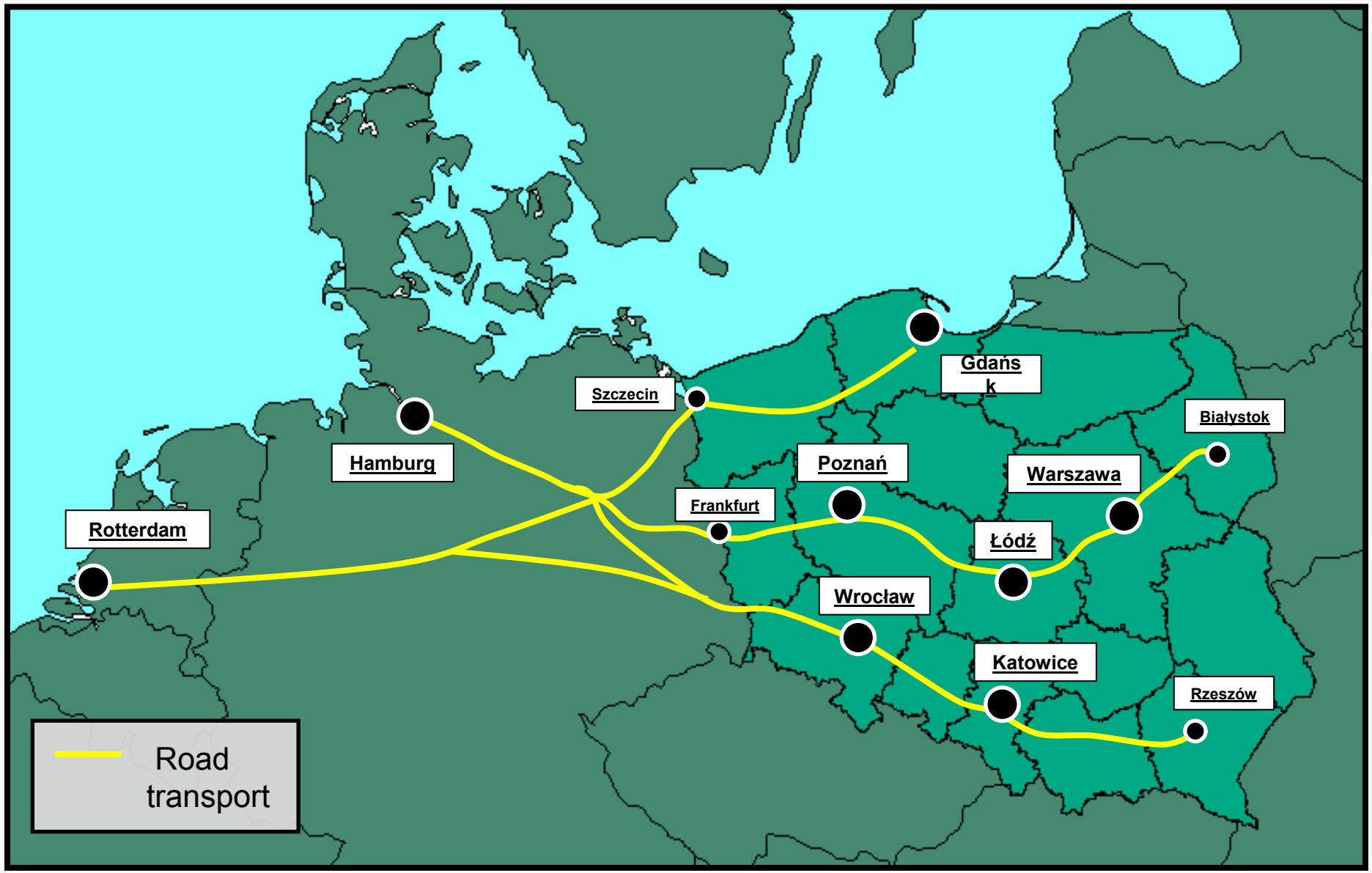
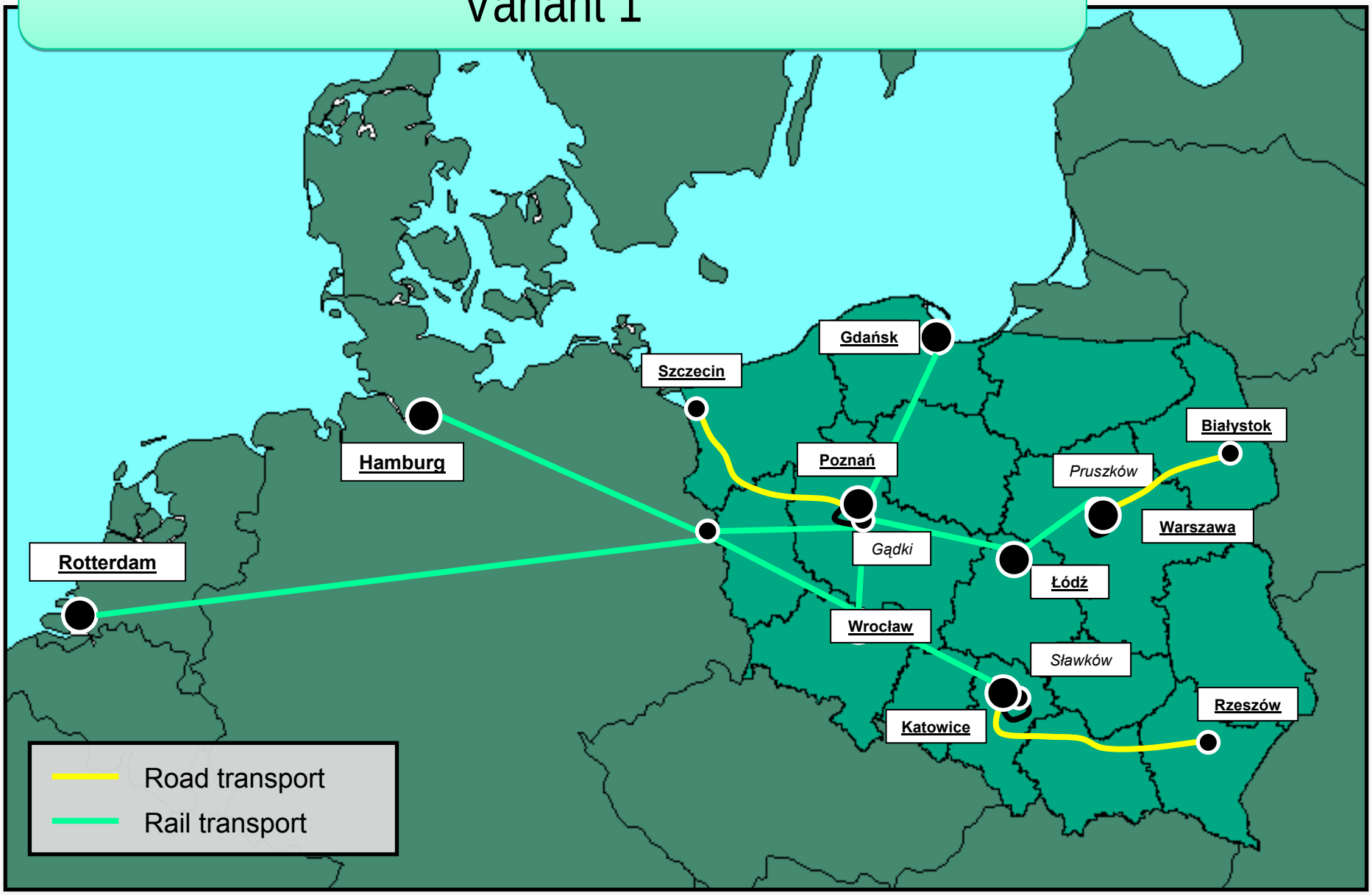
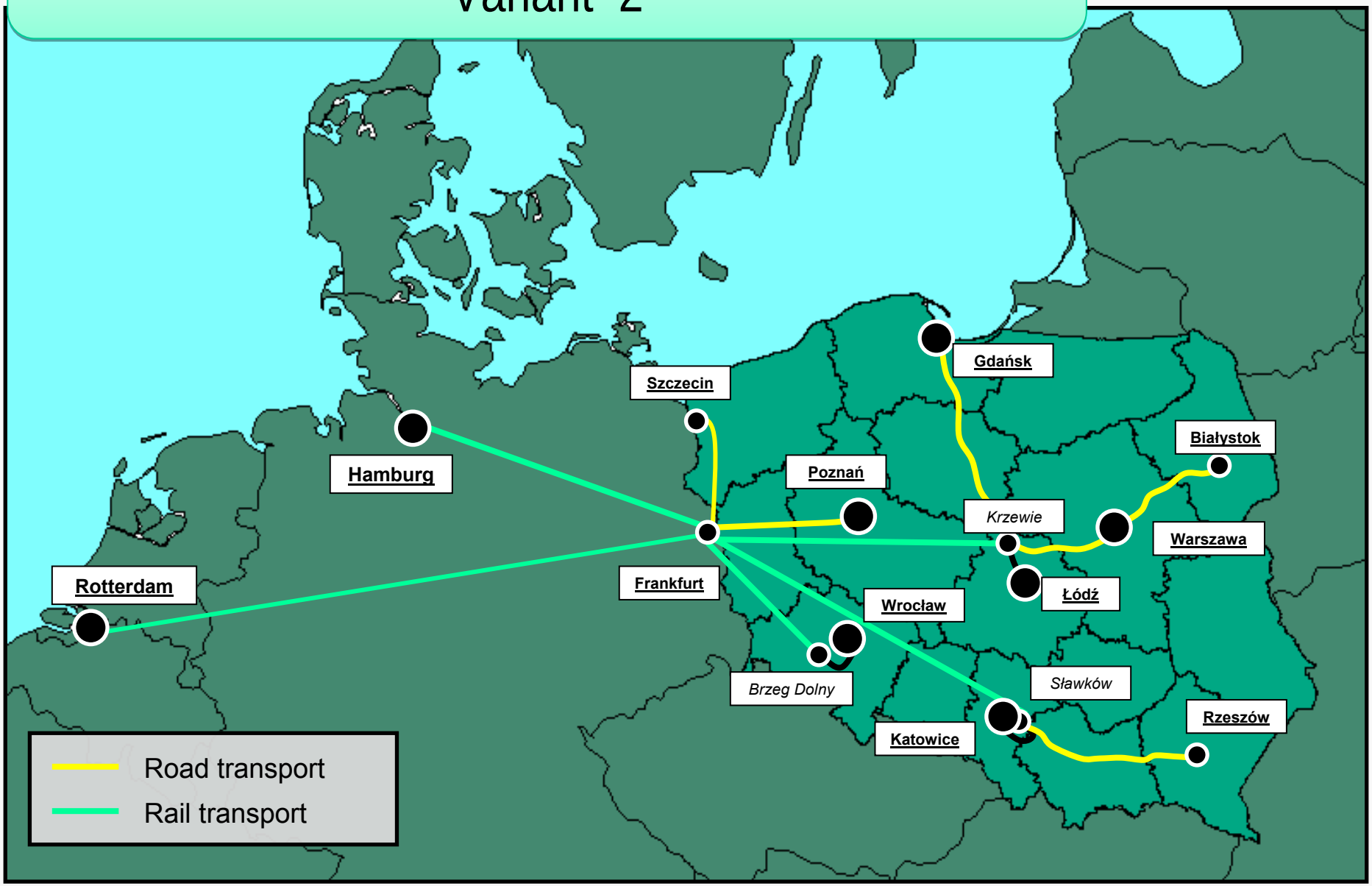
Containers on-carriage – by road



Containers on-carriage by block trains
Variant 1

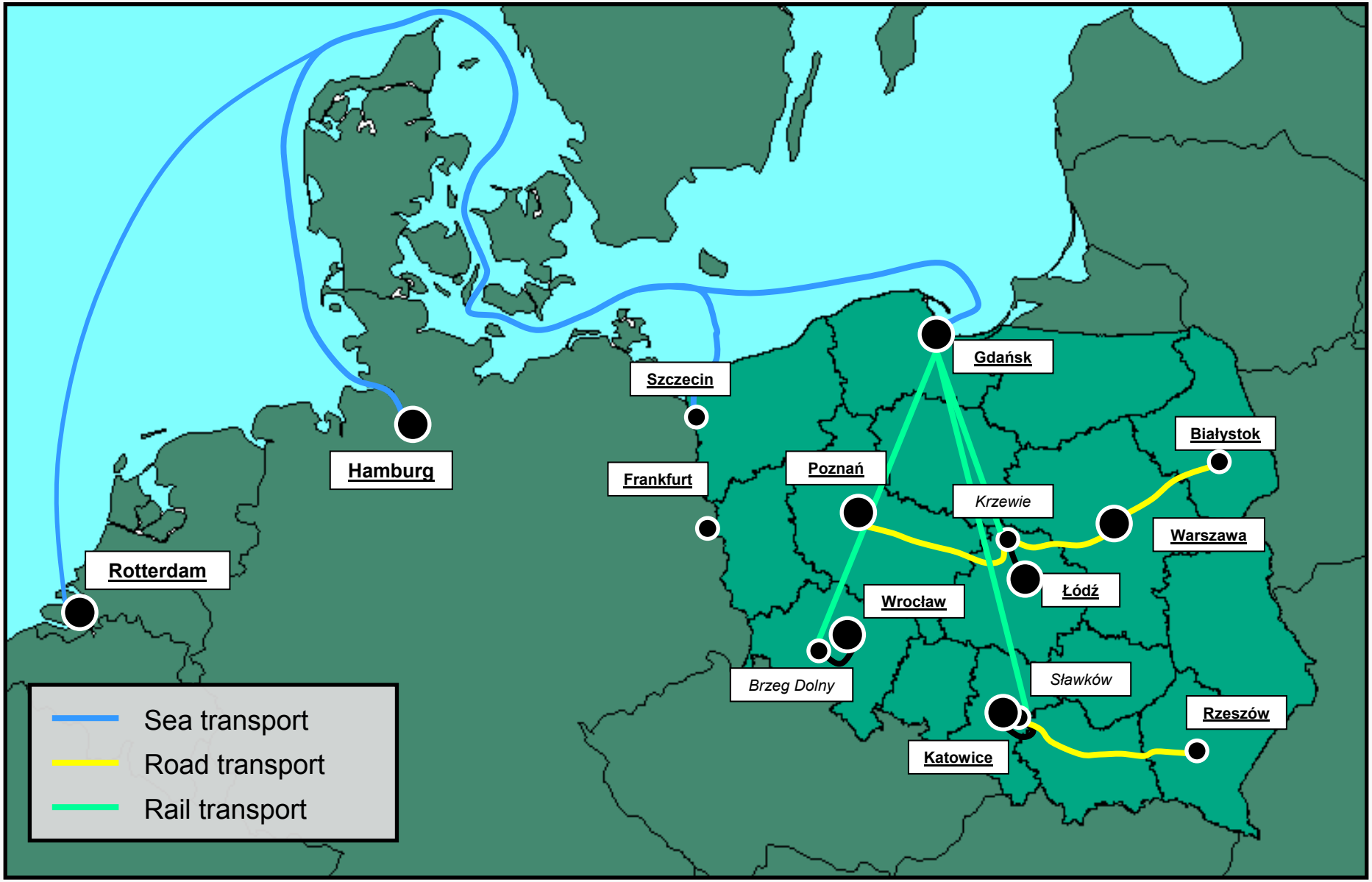


Containers on-carriage by block trains
Variant 2



Containers on-carriage by feeders and on road

Containers on-carriage by feeders on rails and road

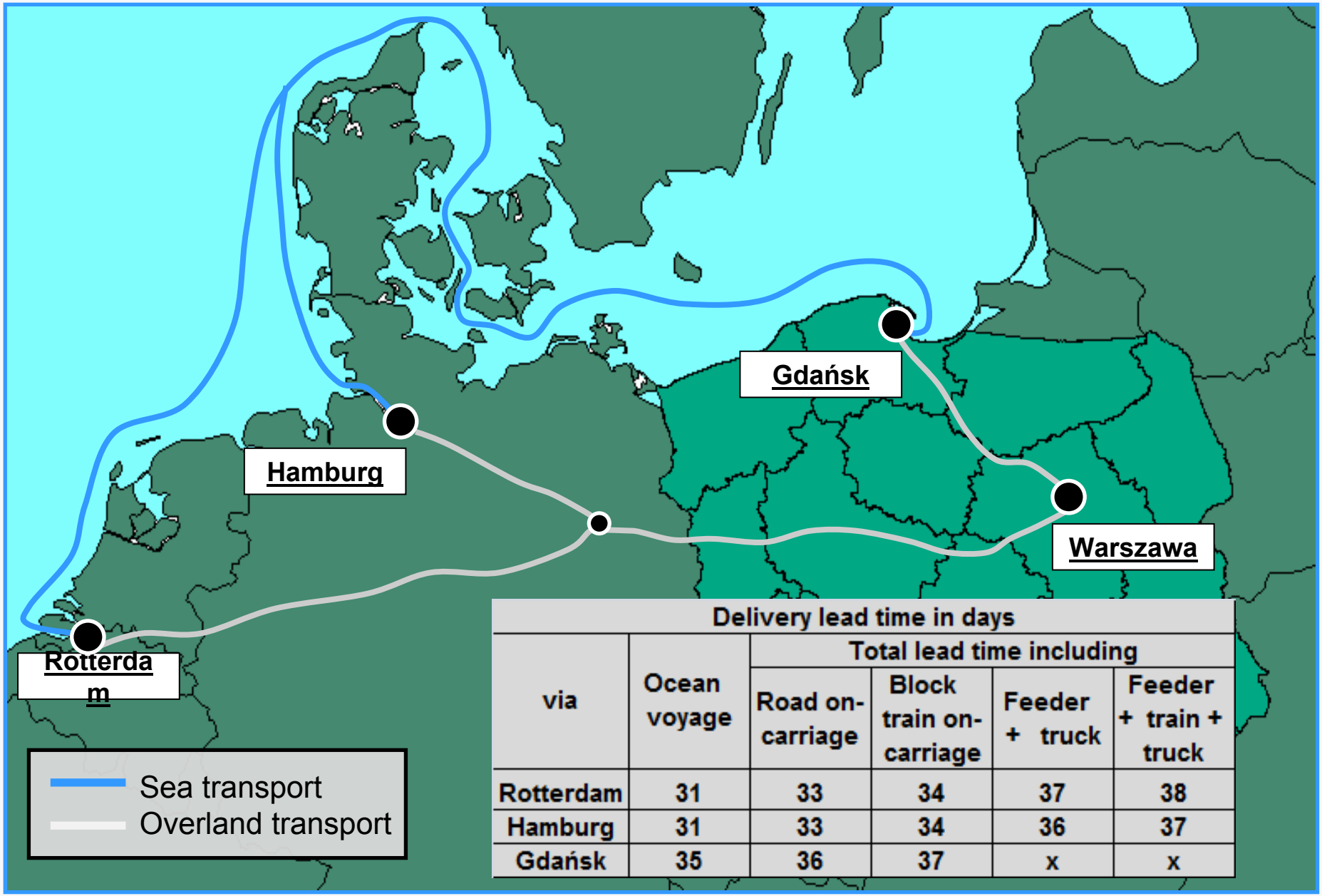


Selected transport corridor No 1
Container transport route from the Far East to Poland with the alternative use of gateway ports of Rotterdam, Hamburg or Gdansk

Conclusions - message to supply chain scheduler

- Delivery time in containerised transports from the Far East is no critical criterion.
- Optimal modal solutions
  - Deiveries CIF Hamburg
    - block trains to Poland are competitive beyond 800 km (40FT)
    - for heavy 20FT containers – on nearly whole territory
    - feeders are the most competitive on the north parts of PL
  - Deliveries CIF Rotterdam
    - block trains are the most competitive mode of transportation
  - Deliveries FOB Shanghai
    - newly implemented direct traffic via port of Gdańsk is revolutionary (and competitive)

Delivery lead time in days



Delivery lead time in days					
via	Ocean voyage	Total lead time including			
		Road on-carriage	Block train on-carriage	Feeder + truck	Feeder + train + truck
Rotterdam	31	33	34	37	38
Hamburg	31	33	34	36	37
Gdańsk	35	36	37	x	x

Cost analysis assumptions

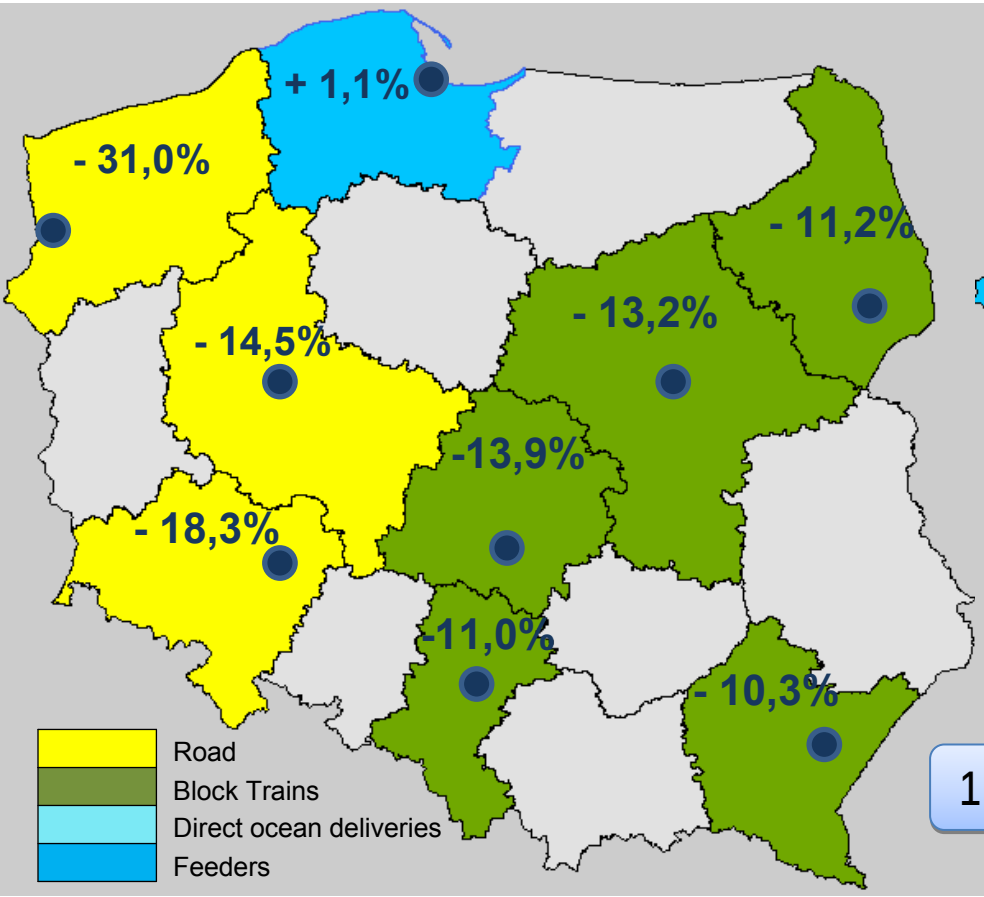
1. Supply patterns in consideration:
   - 1 x 40 FT - representing ca. 65% of supplies
   - 1 x 20 FT - used for transport of heavy loads
   - 2 x 20 FT – used for transport of light loads addressed to different receivers

2. Scope of expense analysis
   - Freight charge for transport of loaded container offered by co-operating transport operators
   - THC - Terminal Handling Charges in sea ports
   - Charge for return of empty container (except ocean section)

3. Freight charges level
   - charges representing level valid in the 1st part of 2011
   - charges do not embrace volume discounts
   - road do not include tolls introduced from the 1st of July

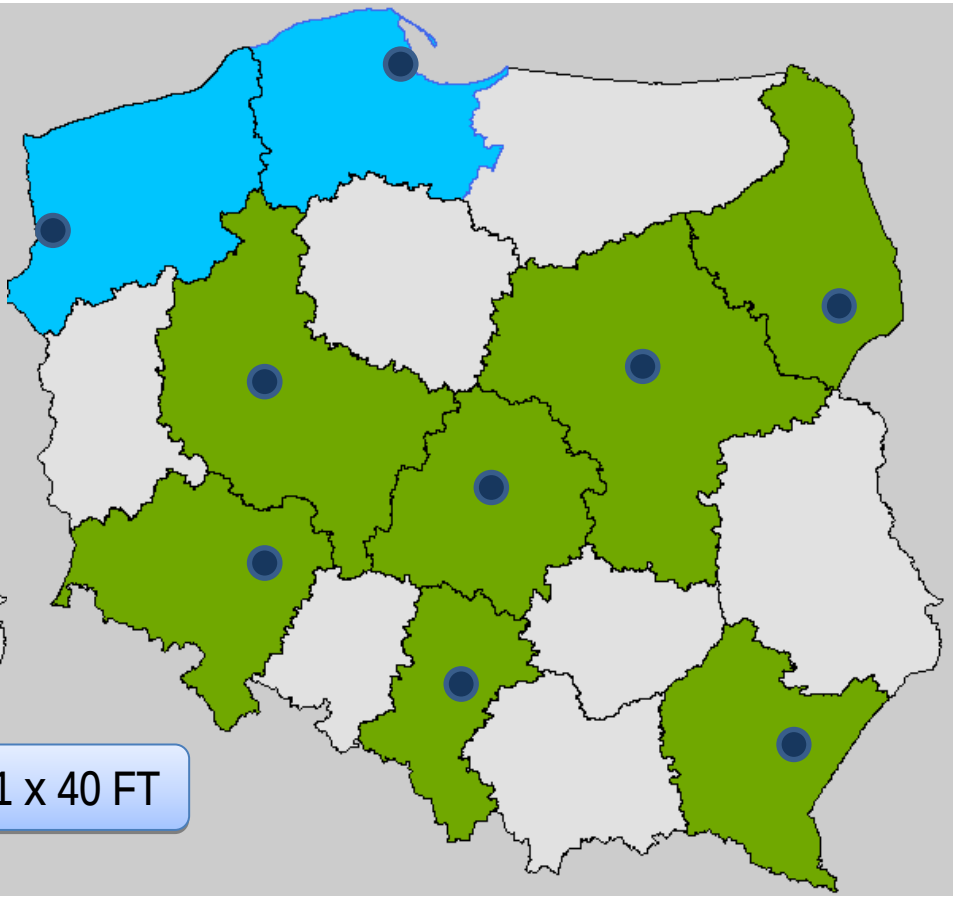
FREIGHT RATES COMPARISONS – THE FIRST MODAL CHOICE

Route: Hamburg - Poland



€ 1 000	€ 1 464	€ 1 695
€ 1 275	€ 1 420	€ 1 507
€ 1 340	€ 1 448	€ 1 668

Route: Rotterdam - Poland

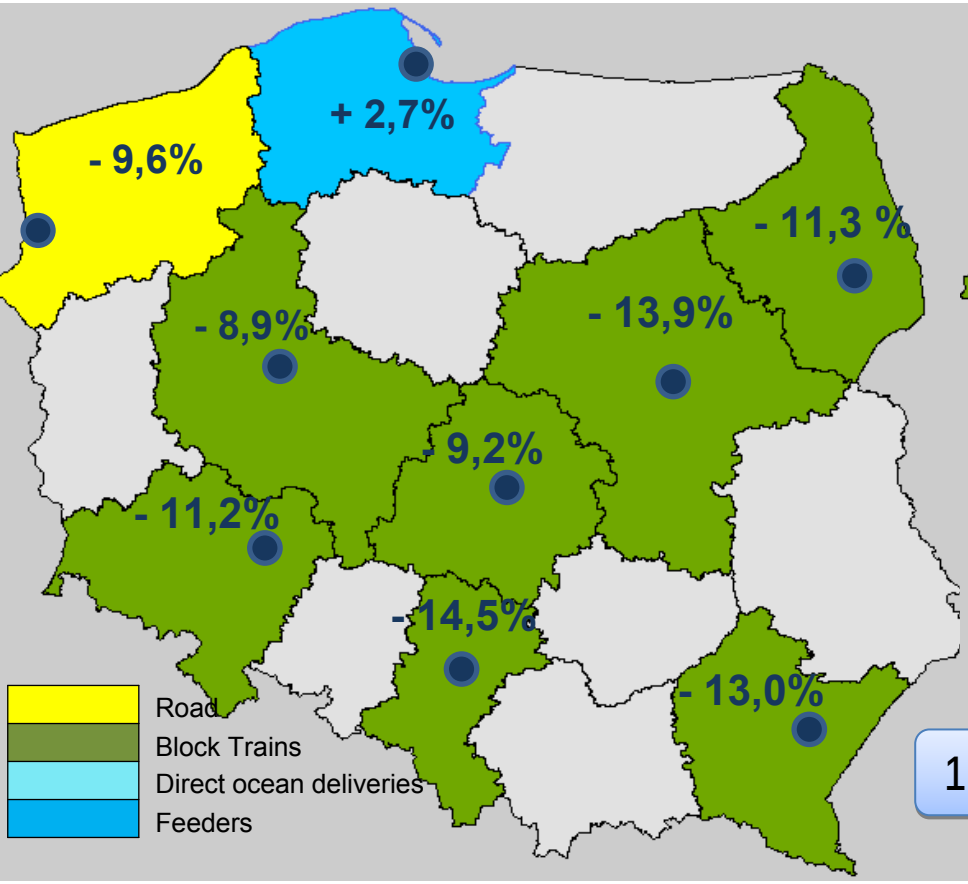


1 x 40 FT

€ 1 449	€ 1 449	€ 1 909
€ 1 491	€ 1 650	€ 1 737
€ 1 641	€ 1 627	€ 1 859

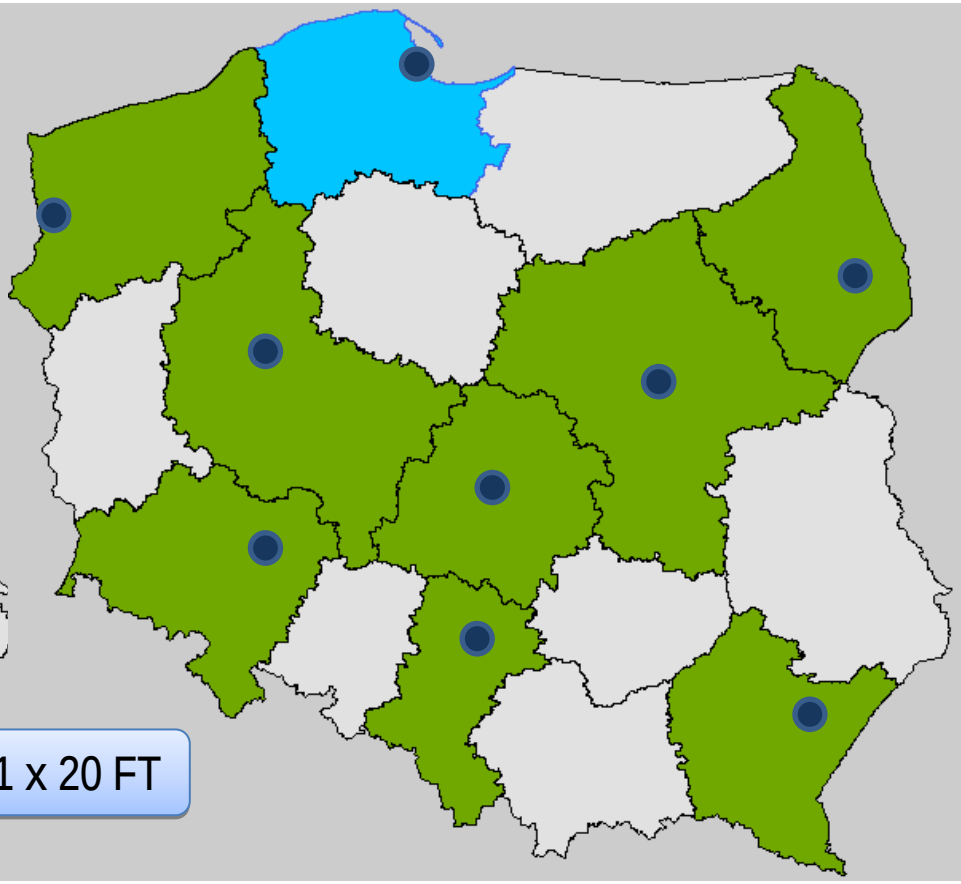
FREIGHT RATES COMPARISONS – THE FIRST MODAL CHOICE

Route: Hamburg - Poland



€ 1 000	€ 1 212	€ 1 308
€ 1 058	€ 1 090	€ 1 108
€ 1 058	€ 1 058	€ 1 278

Route: Rotterdam - Poland

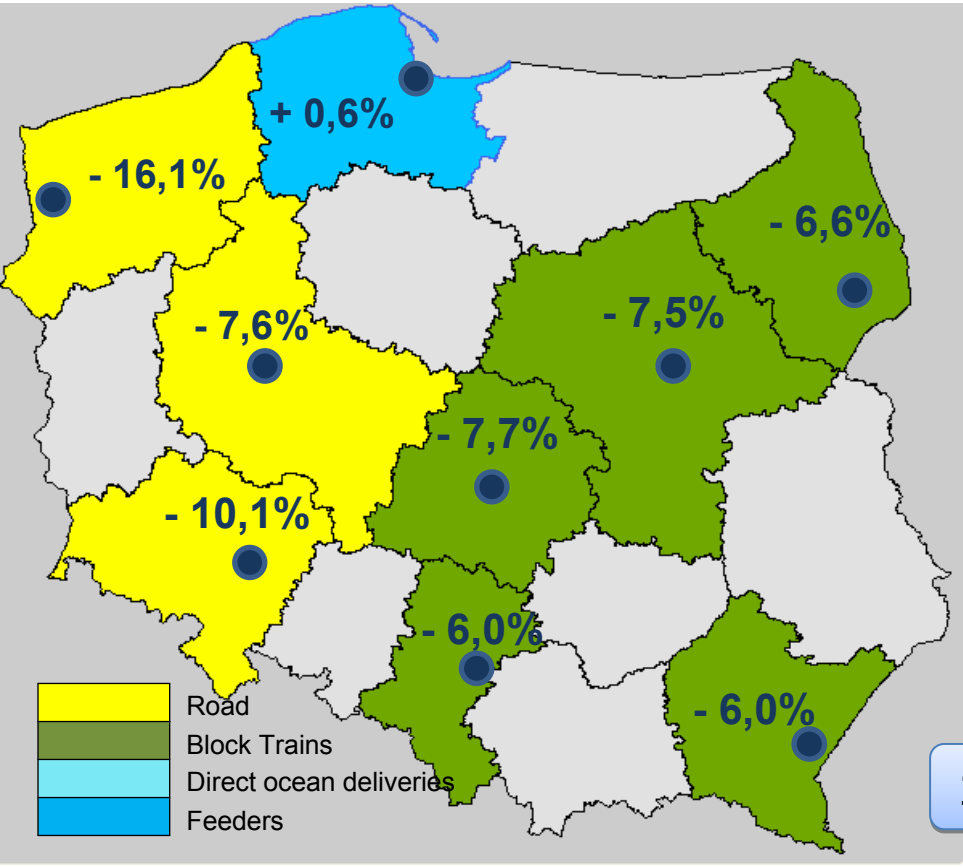


1 x 20 FT

€ 1 106	€ 1 180	€ 1 475
€ 1 161	€ 1 200	€ 1 287
€ 1 191	€ 1 237	€ 1 469

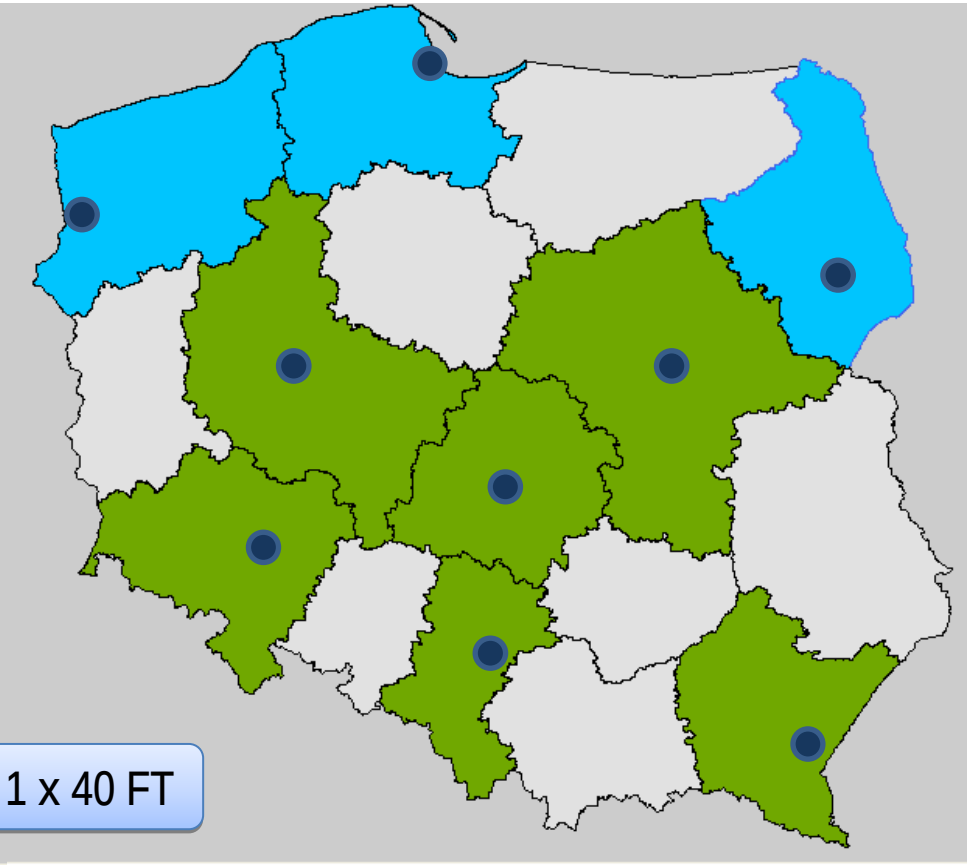
FREIGHT RATES COMPARISONS – THE FIRST MODAL CHOICE

Route: Shanghai – Hamburg - Poland



€ 2 332	€ 2 798	€ 3 027
€ 2 607	€ 2 752	€ 2 839
€ 2 672	€ 2 780	€ 3 000

Route: Shanghai – Rotterdam - Poland

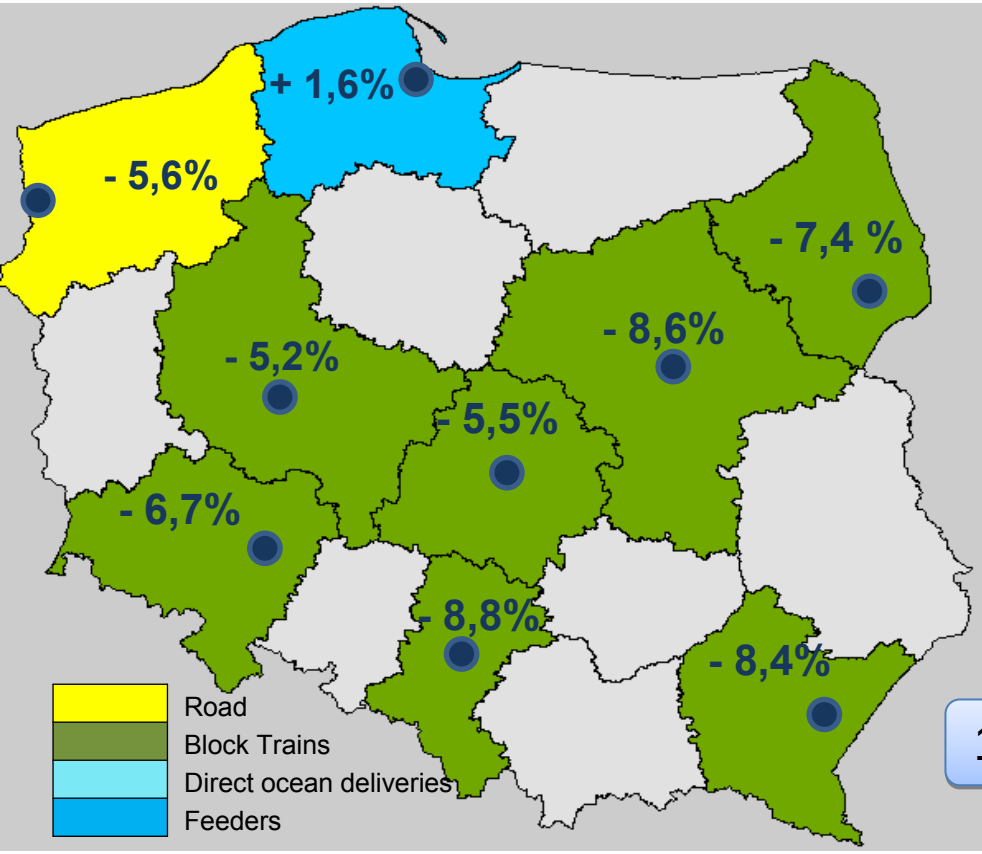


1 x 40 FT

€ 2 781	€ 2 781	€ 3 241
€ 2 822	€ 2 982	€ 3 069
€ 2 973	€ 2 959	€ 3 191

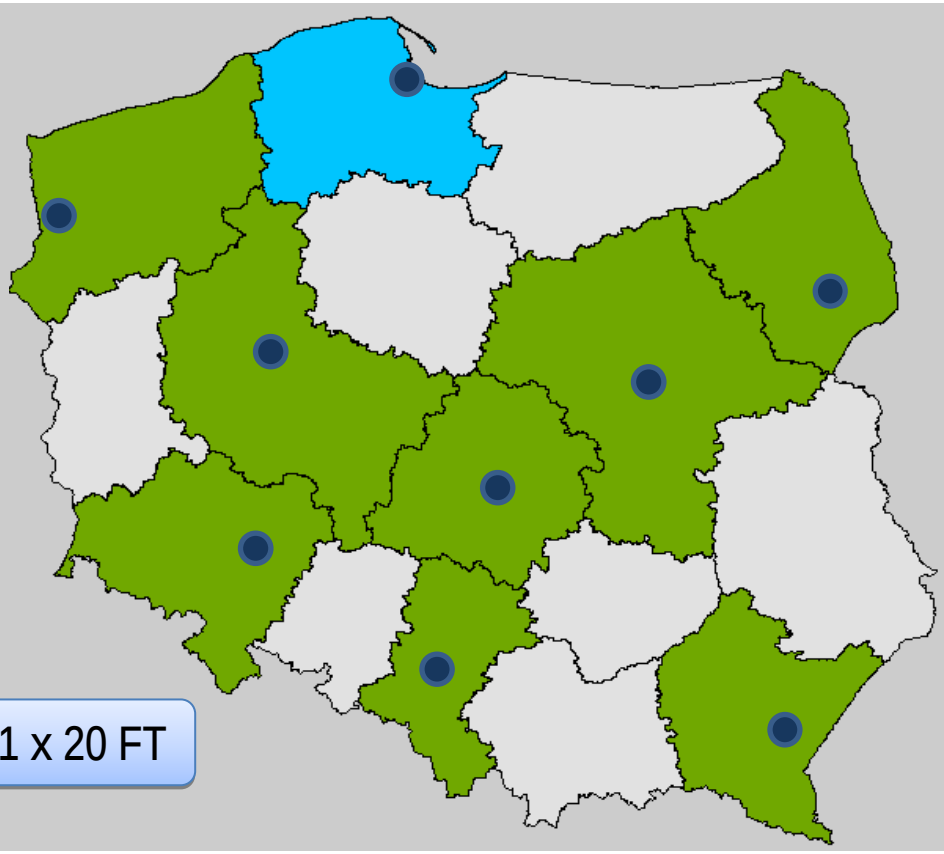
FREIGHT RATES COMPARISONS – THE FIRST MODAL CHOICE

Route: Shanghai – Hamburg - Poland



€ 1 796	€ 2 008	€ 2 104
€ 1 854	€ 1 886	€ 1 904
€ 1 854	€ 1 854	€ 2 074

Route: Shanghai – Rotterdam - Poland

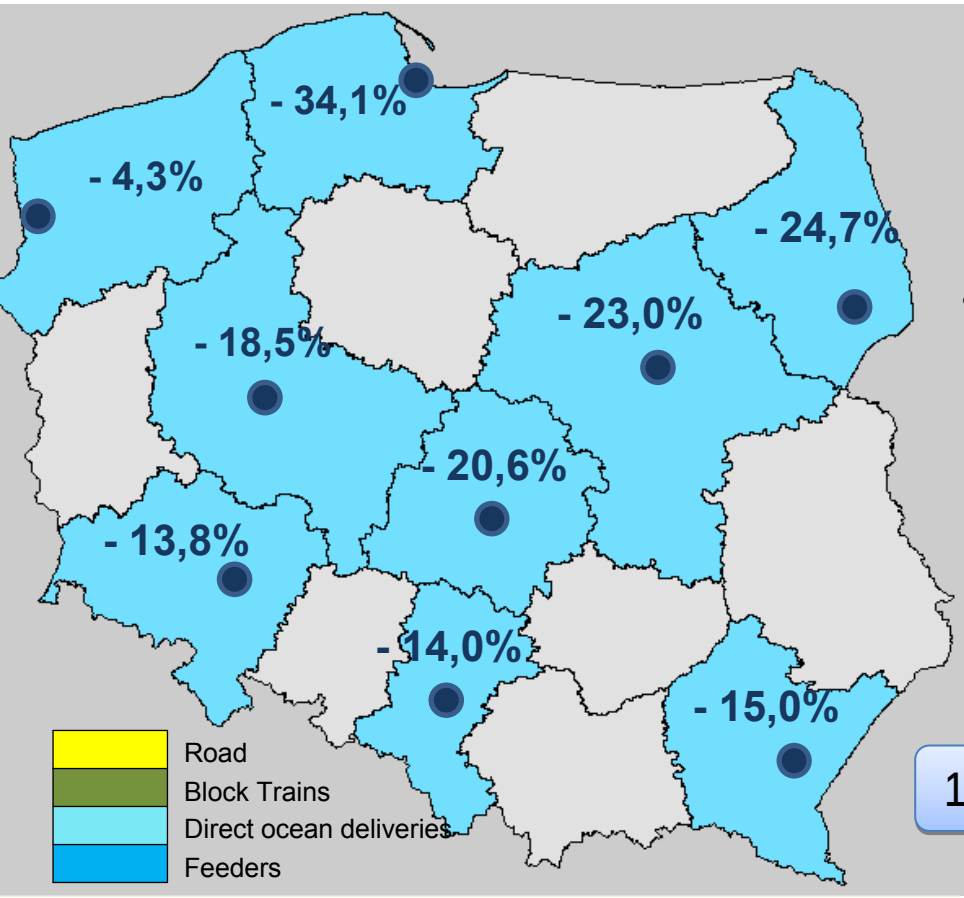


1 x 20 FT

€ 1 902	€ 1 976	€ 2 271
€ 1 956	€ 1 996	€ 2 839
€ 1 987	€ 2 033	€2 265

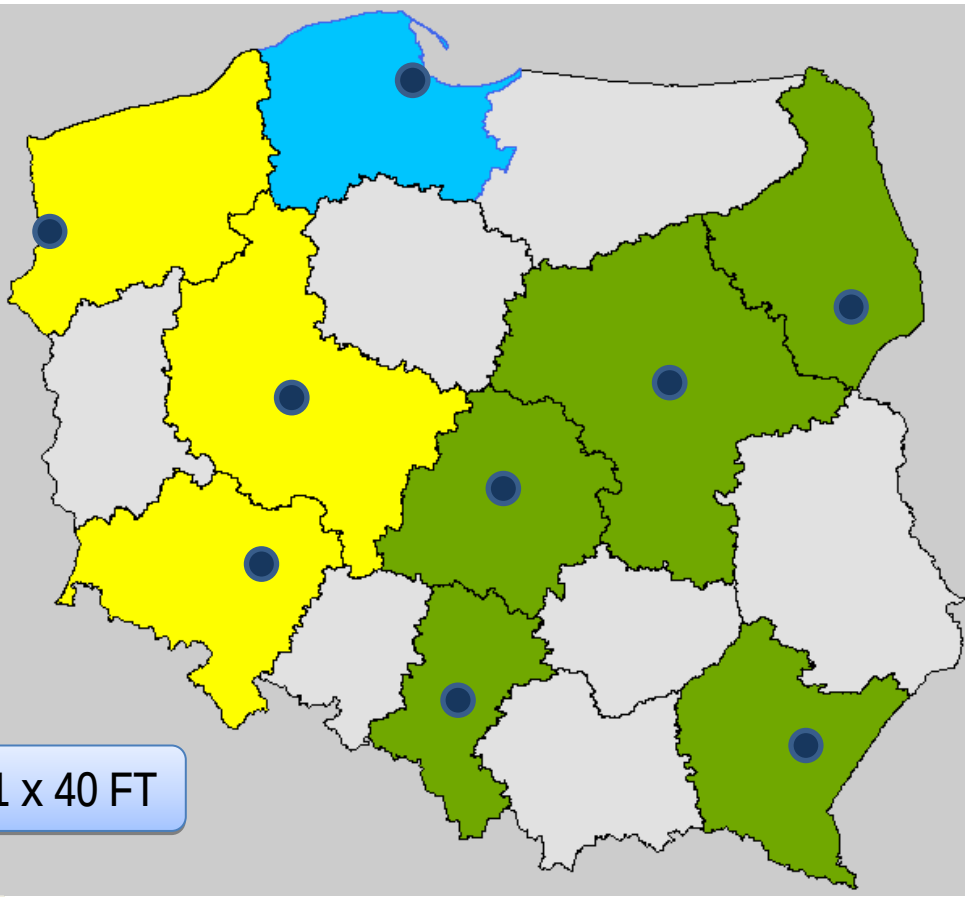
FREIGHT RATES COMPARISONS – THE FIRST MODAL CHOICE

Route: Shanghai – Gdańsk - Poland



€ 2 232	€ 1 844	€ 2 280
€ 2 125	€ 2 186	€ 2 186
€ 2 303	€ 2 390	€ 2 551

Route: Shanghai – Hamburg - Poland

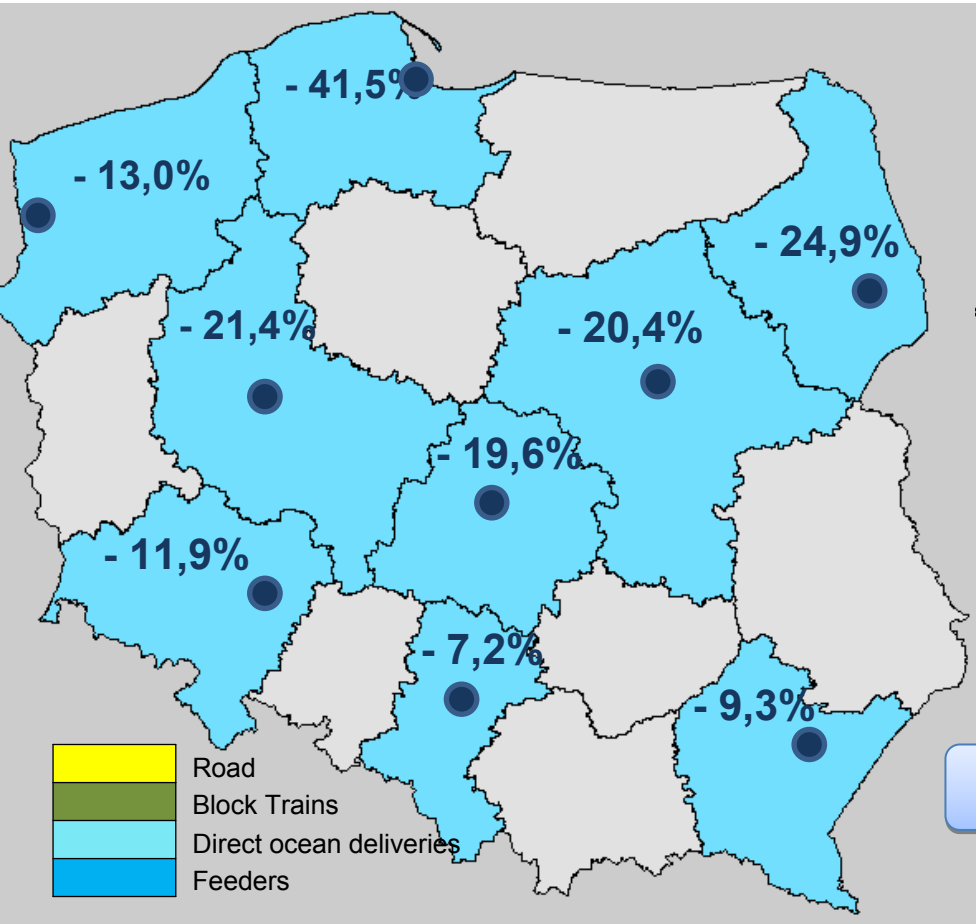


1 x 40 FT

€ 2 332	€ 2 798	€ 3 027
€ 2 607	€ 2 752	€ 2 839
€ 2 672	€ 2 780	€ 3 000

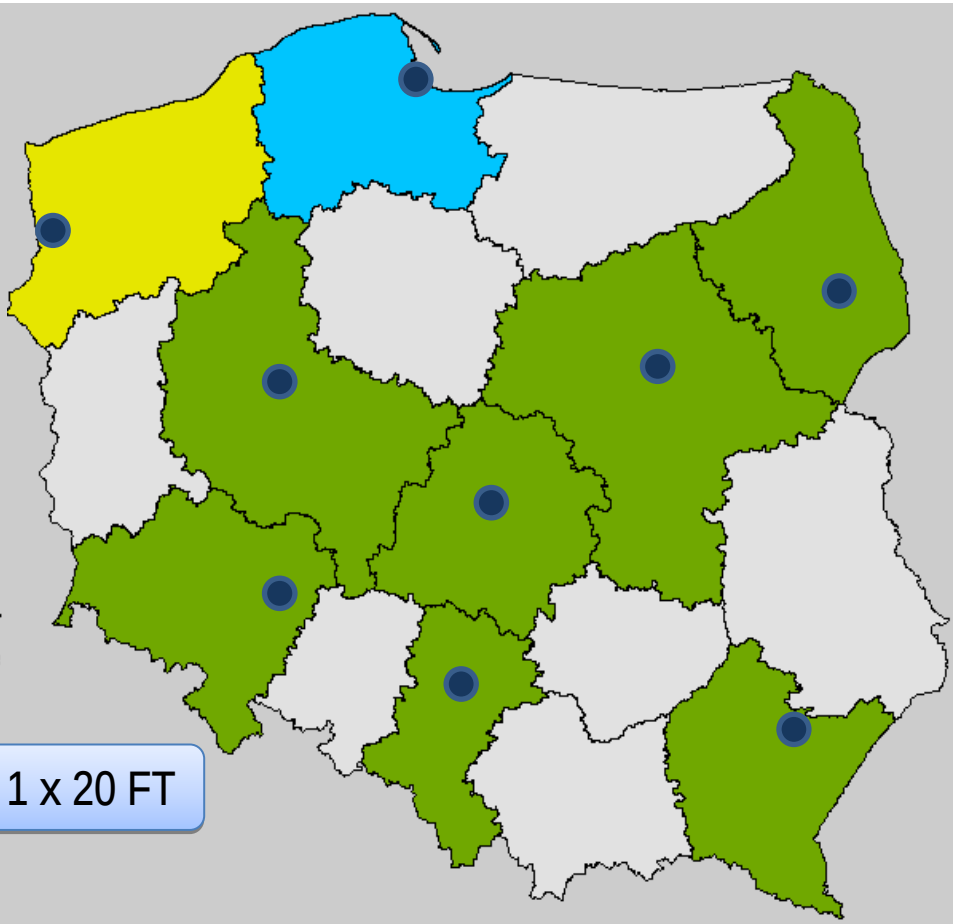
FREIGHT RATES COMPARISONS – THE FIRST MODAL CHOICE

Route: Shanghai – Hamburg - Poland



€ 1 562	€ 1 175	€ 1 580
€ 1 458	€ 1 516	€ 1 516
€ 1 634	€ 1 721	€ 1 881

Route: Shanghai – Rotterdam - Poland



1 x 20 FT

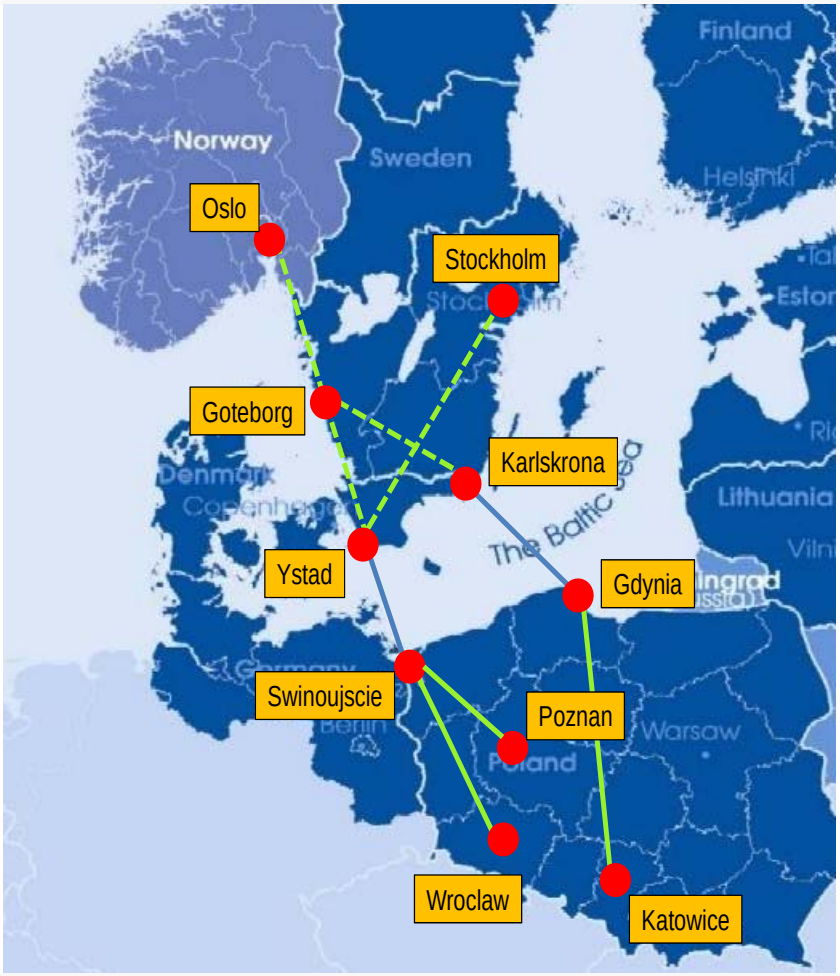
€ 1 796	€ 2 008	€ 2 104
€ 1 854	€ 1 886	€ 1 904
€ 1 854	€ 1 854	€ 2 074

Selected transport corridor No 1
Container transport route from the Far East to Poland with the alternative use of gateway ports of Rotterdam, Hamburg or Gdansk

Conclusions concerning– building database of the ICT tool

- Building data base of the tool is long lasting process
  - Sea and rail carriers are focused on large customers mainly
  - Reluctance of many carriers and freight forwarders to offer their services through open internet platforms what results in incomplete data bases
  - Fortunately the attitude of transport operators gradually changes
- Representativity of the obtained indications of freight charges
  - Final market rates of sea and rail transports depend much on volumes. Price negotiation module of the tool is required.

Selected transport corridor No 2: - Poland – Sweden / Norway



Corridor profile :

- moderate volumes
- incompatible national transport systems
- ferries as bottlenecks for block container trains
- no demand for containerised transports
- domination of truck on ferry solution

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Selected transport corridor No 2: Poland – Sweden / Norway

- Much longer transit times of railway deliveries
- Significant freight rates differentiation between operators
- No real container train services between countries
- Intermodal charges in Poland based on dispersed traffic
- Pure cost analysis of block trains proves intermodal cost competitiveness

Transit time

Truck

31 h 30’

Intermodal deliveries (40FT container)

Cargo Net / PKP Cargo

79 h 18’

Green Cargo / PKP Cargo

103 h 18’

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Freight rates (€)

Truck

€ 1.100 – 1.600

Intermodal deliveries (40FT container)

Cargo Net / PKP Cargo

€ 3.200

Green Cargo / PKP Cargo

€ 3.700

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Freight rates comparison based on:

- ❑ Market rates for trucks
- ❑ Cost analysis of block intermodal trains

Routes				Freight rates for trucks €/trip		Freight rate per 40FT Container €/trip *	
				One way	Round trip/2	50 TEU/train	75 TEU/train
Wrocław	Swinoujście	Ystad	Stockholm	1 900	1 375	1940	1293
Wrocław	Swinoujście	Ystad	Goteborg	1 480	1 000	1500	1000
Wrocław	Swinoujście	Ystad	Oslo	1 900	1 250	1860	1240
Poznan	Swinoujście	Ystad	Stockholm	1 780	1 200	1820	1213
Poznan	Swinoujście	Ystad	Goteborg	1 300	900	1420	947
Poznan	Swinoujście	Ystad	Oslo	1 900	1 140	1780	1187

* Cost + analysis based on block trains departing twice per week carrying 50/75 TEUs each.

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New initiative

Review of research works on implementing ICT tools for optimizing transport activities within INTERREG transport projects

<u>Scope of works</u>

- ❑ description of a tool (functionalities, users' profiles, SWAT analysis)
- ❑ implementation of a tool (expected durability, bottlenecks, challenges)
- ❑ synergies between individual tools
- ❑ recommendations for further steps (research areas, pilot cases etc)

Summary

Works completed

- Basic data base of transport services in selected transport corridors:
  - Shanghai – Poland via ports of Rotterdam, Hamburg and Gdansk
  - Sweden/Norway - Poland
- Alternative modal comparison of transit times and transport expenses
- Demonstrations of ITC tool and potential benefits from different modal solutions
  - Poznan – June' 2010
  - Poznan - October '2010 (workshop of the FLAVIA project)
  - Warsaw – June'2011
  - Gdansk – October 2011 (planned)
  - Katowice – November 2011 (planned)

Summary

Ongoing works

- Set of Key Performance Indicators for transport service quality evaluation
- Review of ICT tools being built in different INTERREG projects
- Cluster of transport operators willing to participate in the future tool's implementation

Planned works

- Set of KPI for tool's implementation process evaluation
- Demo version of the tool functionalities for further dissemination
- Tool's deployment plan