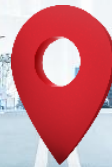




the mind of movement

PTV's technology empowers
transportation and mobility - for a
cleaner and smarter future



the mind of movement



the mind of movement

PTV Intermodal Routing Service

INCLUDING IM DATAMANAGER

Use Cases

- **Tactical planning & execution**
 - Intermodal planning and cost calculation
 - Exception handling
- **Strategic planning**
 - Calculate alternative routings
 - Compare times, costs and emissions
- **Network simulation and assessment**
 - Compare operator and network performance

Select various modes of transportation



Intermodal routing service

- Deep & short sea
- Rail
- Road
- Inland shipping
- Air

Use available content and data

Transport...	Land	Stadt	PLZ	Ortsbezeich...	Tag	Zeit	Entfernung	Dauer	Terminals...
	DE	Stuttgart	70184	Start	0	14 h 59 min	164	2 h 25 min	
	DE	Ludwigshafen	67065	Ludwigsha...	0	17 h 24 min	0	0 min	T_455
	DE	Ludwigshafen	67065	Ludwigsha...	0	22 h 09 min	688	12 h 00 min	T_455
	DE	Lübeck-Tra...	23570	Lübeck Ska...	1	10 h 09 min	0	0 min	T_453
	DE	Lübeck-Tra...	23570	Lübeck Ska...	1	23 h 59 min	278	9 h 00 min	T_453
	SE	Malmö	21124	Malmö RoRo	2	8 h 59 min	0	0 min	SEMAL
	SE	Malmö	21124	Malmö RoRo	2	8 h 59 min	146	2 h 27 min	SEMAL

Earliest departure	Unloading PC	Unloading city	Latest arrival	Type	Di	Pr	Al	Status	NL
18.11./11:00	67059	LUDWIGSHAFEN	21.11./20:00	Lieferung	...	0	...	Planbar	
18.11./06:00	67059	LUDWIGSHAFEN	25.11./20:00	Lieferung	...	0	...	Planbar	
18.11./06:00	67059	LUDWIGSHAFEN	24.11./20:00	Lieferung	...	0	...	Planbar	
18.11./07:00	42327	Wuppertal	24.11./20:00	Lieferung	...	0	...	Planbar	
19.11./07:00	42327	Wuppertal	23.11./20:00	Lieferung	...	0	...	Planbar	
16.11./07:00	42327	Wuppertal	27.11./20:00	Lieferung	...	0	...	Planbar	

Max. Terminal Entfernung

rt	Ziel-Lan	Ziel-Ort	Auslastung
Tr...	SE	Trelleborg	
f ...	DK	Rødbyhavn	
z ...	SE	Trelleborg	
z ...	SE	Trelleborg	
Tr...	SE	Trelleborg	
f ...	DK	Rødbyhavn	
STENA_LINE_Sassnitz_Trelleborg_11...	DE	Sassnitz	
STENA_LINE_Lübeck-Travemünde_M...	DE	Lübeck-Tr...	
STENA_LINE_Burg auf Fehmarn_Rød...	DE	Burg auf ...	
STENA_LINE_Burg auf Fehmarn_Rød...	DE	Burg auf ...	
STENA_LINE_Lübeck-Travemünde_M...	DE	Lübeck-Tr...	
STENA_LINE_Lübeck-Travemünde_M...	DE	Lübeck-Tr...	



Intermodal routing service

- Terminals
- Network
- Transport services
- Time tables
- Real costs
- Emission factors
- Restrictions
- Physical and service network provided by PTV

Take care of correct configuration

Ladeinheit
20 ft. Container
☒ begleitet ☒ Lenkzeiten berücksichtigen
Kosten Limit
10.000,
Zeit/Kosten-Gewichtung (%)
50
Fracht-Tarif-Tabelle
C:\Preise Zusammengefasst_v3.csv
Max. Terminal Entfernung
50
Transport Mode

Anbieter

Code	Aktiv/P...	Name
DAWSON		A. V. Dawson Ltd
AARHUS		Aarhus Stevedore Kompagni A/S
ABERD...		Aberdeen Harbour
ABRA		Abra Terminales Marítimas- s.a.
ADREM		AD REM GROUP
APLISB		Administração do Porto de Lisboa- S.A.
PORT...		Administração do Porto de Sines- SA

Modus	Linienkennung	Startzeit	Start-Lan	Start-Ort	Ziel-Lan	Ziel-Ort	Auslastung	Buchung	Kapazität	Anbieter
> ④	TT_LINE_Lübeck-Travemünde_Trelle...	20.06.2016 11:30	DE	Lübeck-Tr...	SE	Trelleborg	<div><div></div></div>	5	10	TT-Line GmbH & Co. KG
④	STENA_LINE_Burg auf Fehmarn_Rød...	20.06.2016 12:15	DE	Burg auf ...	DK	Rødbyhavn	<div><div></div></div>	1	10	Stena Line Freight
④	STENA_LINE_Sassnitz_Trelleborg_11...	20.06.2016 18:00	DE	Sassnitz	SE	Trelleborg	<div><div></div></div>	4	10	Stena Line Freight
④	STENA_LINE_Sassnitz_Trelleborg_11...	21.06.2016 18:00	DE	Sassnitz	SE	Trelleborg	<div><div></div></div>	3	10	Stena Line Freight
④	TT_LINE_Lübeck-Travemünde_Trelle...	22.06.2016 11:30	DE	Lübeck-Tr...	SE	Trelleborg	<div><div></div></div>	2	10	TT-Line GmbH & Co. KG
④	STENA_LINE_Burg auf Fehmarn_Rød...	22.06.2016 15:15	DE	Burg auf ...	DK	Rødbyhavn	<div><div></div></div>	1	10	Stena Line Freight
④	STENA_LINE_Sassnitz_Trelleborg_11...	22.06.2016 18:00	DE	Sassnitz	SE	Trelleborg	<div><div></div></div>	1	10	Stena Line Freight
④	STENA_LINE_Lübeck-Travemünde_M...	23.06.2016 12:00	DE	Lübeck-Tr...	SE	Malmö	<div><div></div></div>	2	10	Stena Line Freight
④	STENA_LINE_Burg auf Fehmarn_Rød...	23.06.2016 13:15	DE	Burg auf ...	DK	Rødbyhavn	<div><div></div></div>	1	10	Stena Line Freight
④	STENA_LINE_Burg auf Fehmarn_Rød...	23.06.2016 16:15	DE	Burg auf ...	DK	Rødbyhavn	<div><div></div></div>	1	10	Stena Line Freight
④	STENA_LINE_Lübeck-Travemünde_M...	24.06.2016 12:00	DE	Lübeck-Tr...	SE	Malmö	<div><div></div></div>	4	10	Stena Line Freight
④	STENA_LINE_Lübeck-Travemünde_M...	25.06.2016 00:00	DE	Lübeck-Tr...	SE	Malmö	<div><div></div></div>	9	10	Stena Line Freight

mark.: 0, pass.: 0, total: 12 Zeilen

Linienfahrten Planungsübersicht

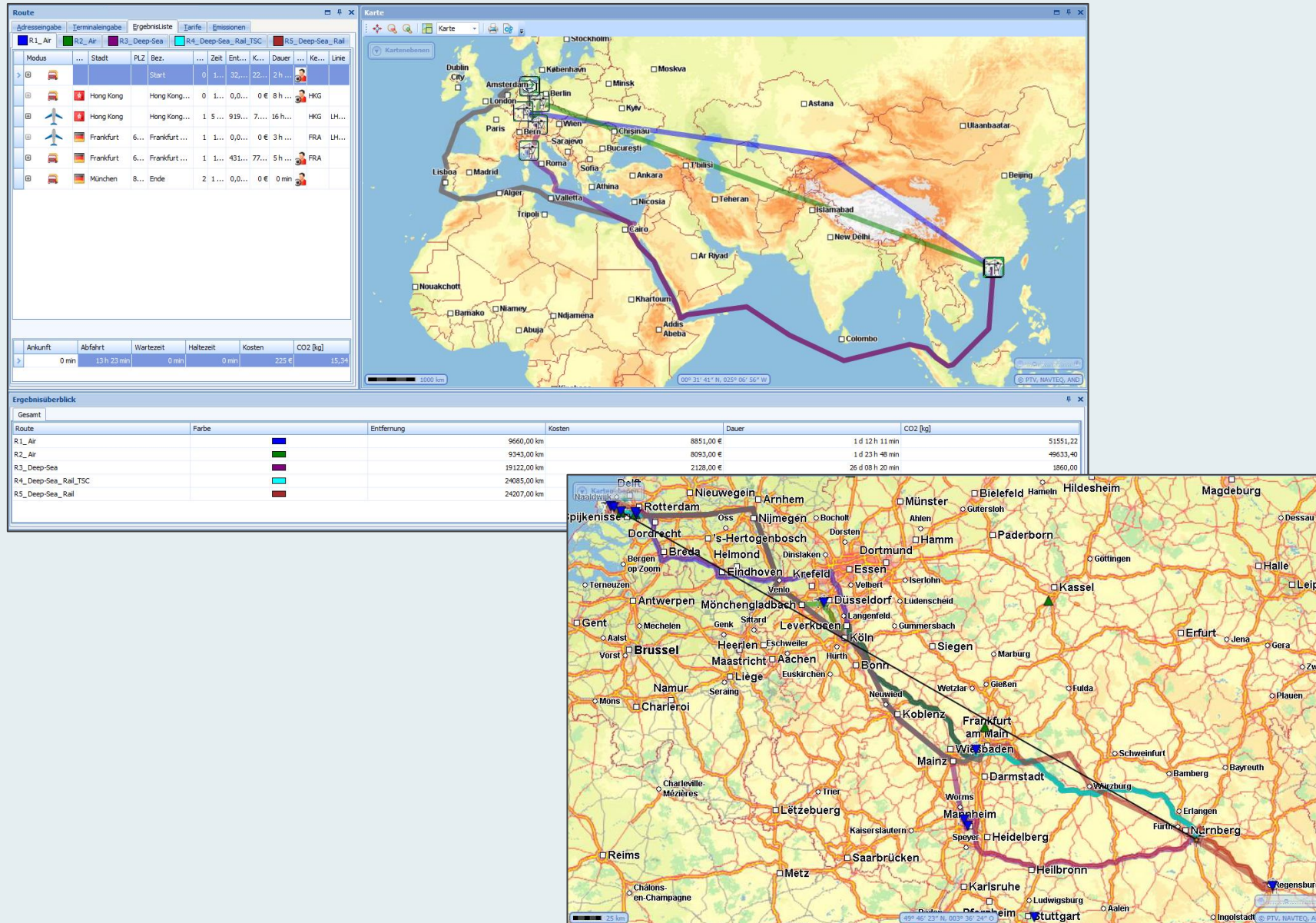
Intermodal routing service

- Accompanied combined transport
- Costs per time & distance
- Freight rate
- Maximum terminal distance
- Transportation mode
- Line identifier
- Capacity
- Hours of services
- Destination

Calculate and optimize intermodal routing

Intermodal routing service • Step 1

- Select available transportation modes
- Door-to-door or terminal-to-terminal routing



Calculate and optimize intermodal routing

Intermodal routing service • Step 2

- Assign transport orders
- Consider time, cost and capacity restrictions

Aufträge																
Alle Aufträge																
ID	# Trnsp.alternativen	Assigned	Weig	Loading PC	Loading city	Earliest departure	Unloading PC	Unloading city	Latest arrival	Type	Di	Pr	Al	Status	Nr	Objektinformation
AU-001010	2	1	10...	3088	Rotterdam	18.11./11:00	67059	LUDWIGSHAFEN	21.11./20:00	Lieferung	...	0	...	Planbar		
AU-001011	3	1	10...	3088	Rotterdam	18.11./06:00	67059	LUDWIGSHAFEN	25.11./20:00	Lieferung	...	0	...	Planbar		
AU-001012	3	1	14...	3088	Rotterdam	18.11./06:00	67059	LUDWIGSHAFEN	24.11./20:00	Lieferung	...	0	...	Planbar		
AU-001013	10	1	14...	3197	Botlek	18.11./07:00	42327	Wuppertal	24.11./20:00	Lieferung	...	0	...	Planbar		
AU-001014	8	1	15...	3197	Botlek	19.11./07:00	42327	Wuppertal	23.11./20:00	Lieferung	...	0	...	Planbar		
AU-001015	3	1	14...	3197	Botlek	16.11./07:00	42327	Wuppertal	27.11./20:00	Lieferung	...	0	...	Planbar		
Zeile 31, sel.: 1, mark.: 0, pass.: 0, total: 54 Zeilen																
Aufträge Logistikzentren Terminals																
Linienfahrten																
Alle Linienfahrten																
Modus	Kennung	Startzeit	S-Land	S-Stadt	Z-Land	Z-Stadt	Auslastung	Aufträge	Kapazität	Betreiber						
ECT	ECT/EGS_642_534_0101101_08:00	17.11.2013 08:00	NL	Rotterdam	DE	Neuss		2	20	ECT (Europe Container Terminals)						
ECT	ECT/EGS_642_705_1010100_10:00	18.11.2013 10:00	NL	Rotterdam	DE	Stuttgart		1	10	ECT (Europe Container Terminals)						
ECT	ECT/EGS_642_702_0110010_06:00	19.11.2013 06:00	NL	Rotterdam	FR	Strasbourg		9	20	ECT (Europe Container Terminals)						
ECT	ECT/EGS_642_529_0101001_06:00	19.11.2013 06:00	NL	Rotterdam	DE	München		2	10	ECT (Europe Container Terminals)						
ECT	ECT/EGS_642_534_0101101_08:00	19.11.2013 08:00	NL	Rotterdam	DE	Neuss		5	20	ECT (Europe Container Terminals)						
ECT	ECT/EGS_642_621_0101001_15:00	19.11.2013 15:00	NL	Rotterdam	DE	Regensburg		10	10	ECT (Europe Container Terminals)						
ECT	ECT/EGS_642_702_0110010_06:00	20.11.2013 06:00	NL	Rotterdam	FR	Strasbourg		3	20	ECT (Europe Container Terminals)						
ECT	ECT/EGS_642_702_0101101_06:00	21.11.2013 06:00	NL	Rotterdam	FR	Strasbourg		1	10	ECT (Europe Container Terminals)						
ECT	ECT/EGS_642_534_0101101_08:00	21.11.2013 08:00	NL	Rotterdam	DE	Neuss										
KV	KV_649_529_1111000_08:00	21.11.2013 08:00	NL	Rotterdam	DE	München										
KV	KV_200_548_0111000_09:40	21.11.2013 09:40	DE	Duisburg	IT	Novara										
IFB	IFB_31_702_0101100_14:15	21.11.2013 14:15	BE	Antwerpen	FR	Strasbourg										
HUPAC	HUPAC_638_484_1111000_17:30	21.11.2013 17:30	NL	Rotterdam	DE	Mannheim										
HUPAC	HUPAC_638_234_1111000_22:00	21.11.2013 22:00	NL	Rotterdam	DE	Frankfurt am Main										



Calculate and optimize intermodal routing

Intermodal routing service • Step 3

- Define relevant transport chain alternatives
- Select the cost optimum routing

Intermodale Planung x IM Routenplanung x

Route

Adresseingabe Terminaleingabe Ergebnisse Tarife

R1_Road R2_Rail_SSV R3_Rail_SSV R4_Rail_SSV R5_Rail R6_SSV R7_SSV

Transport...	Land	Stadt	PLZ	Ortsbezeich...	Tag	Zeit	Entfernung	Dauer	Terminalke...	Linie	Anbieter
🚗	DE	Stuttgart	70184	Start	0	14 h 59 min	164	2 h 25 min			
🚗	DE	Ludwigshafen	67065	Ludwigsha...	0	17 h 24 min	0	0 min	T_455		
🚗	DE	Ludwigshafen	67065	Ludwigsha...	0	22 h 09 min	688	12 h 00 min	T_455	ECL_Ludwigshafen_Lübeck-T...	European ...
🚗	DE	Lübeck-Tra...	23570	Lübeck Ska...	1	10 h 09 min	0	0 min	T_453	ECL_Ludwigshafen_Lübeck-T...	
🚗	DE	Lübeck-Tra...	23570	Lübeck Ska...	1	23 h 59 min	278	9 h 00 min	T_453	STENA_LINE_Lübeck-Travem...	Stena Line...
🚗	SE	Malmö	21124	Malmö RoRo	2	8 h 59 min	0	0 min	SEMAL	STENA_LINE_Lübeck-Travem...	
🚗	SE	Malmö	21124	Malmö RoRo	2	8 h 59 min	146	2 h 27 min	SEMAL		
🚗	SE	Halmstad	30594	Ende	2	11 h 26 min	0	0 min			

Ankunft Abfahrt Wartezeit Haltezeit Kosten CO2 [kg]

> Sonntag, 18. September 2016... 0 min 0 min 270 € 135,9

Ergebnisüberblick

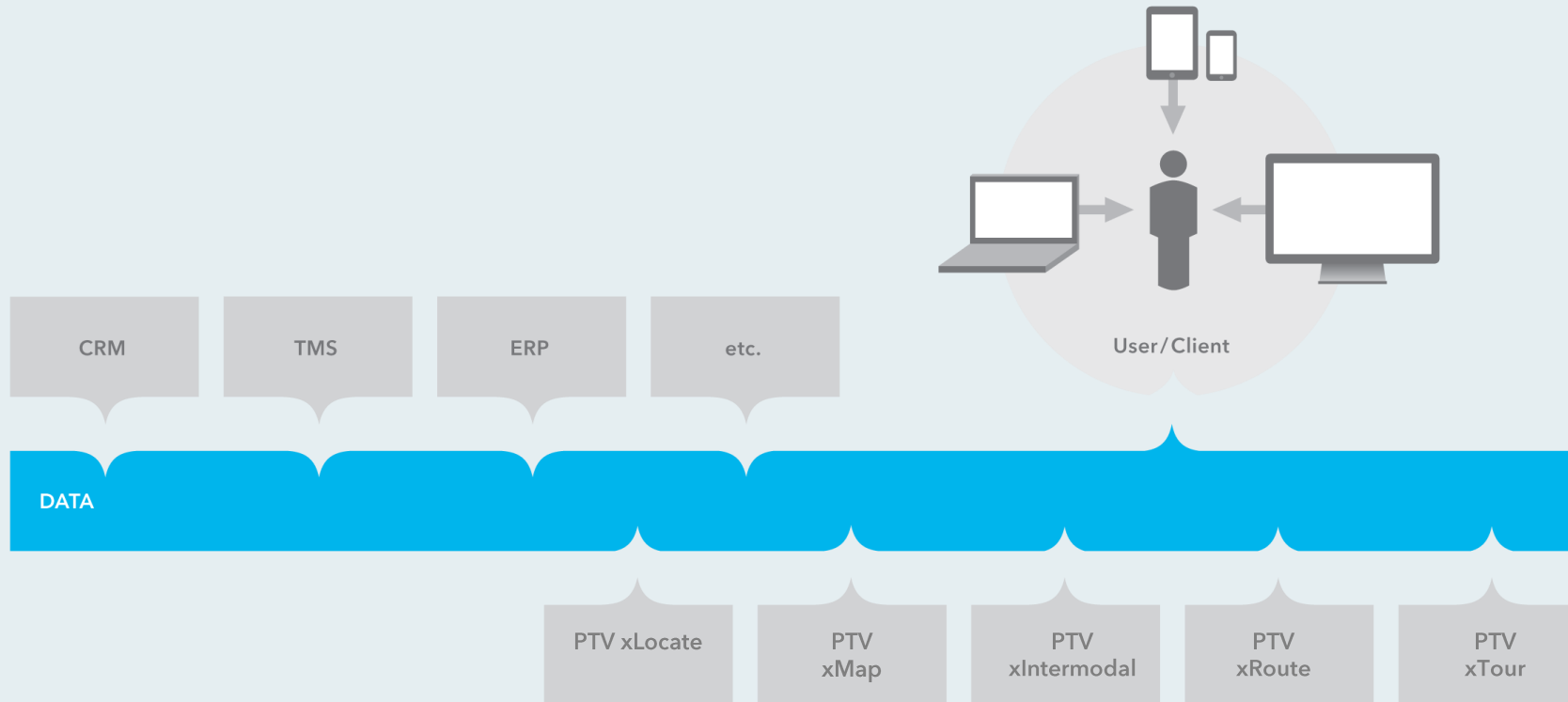
Gesamt	Route	Farbe	Entfernung	Kosten	Dauer	CO2 [kg]
R1_Road		🚗	1220,00 km	1.621 €	18 h 01 min	1.162,9
R2_Rail_SSV		🚆	1276,00 km	749 €	1 d 20 h 27 min	681,6
R3_Rail_SSV		🚆	1276,00 km	749 €	1 d 08 h 27 min	681,6
R4_Rail_SSV		🚆	1278,00 km	777 €	1 d 06 h 29 min	727,3
R5_Rail		🚆	1304,00 km	1.014 €	4 d 06 h 14 min	891,9
R6_SSV		🚗	1213,00 km	1.407 €	1 d 00 h 57 min	1.186,4

Karte

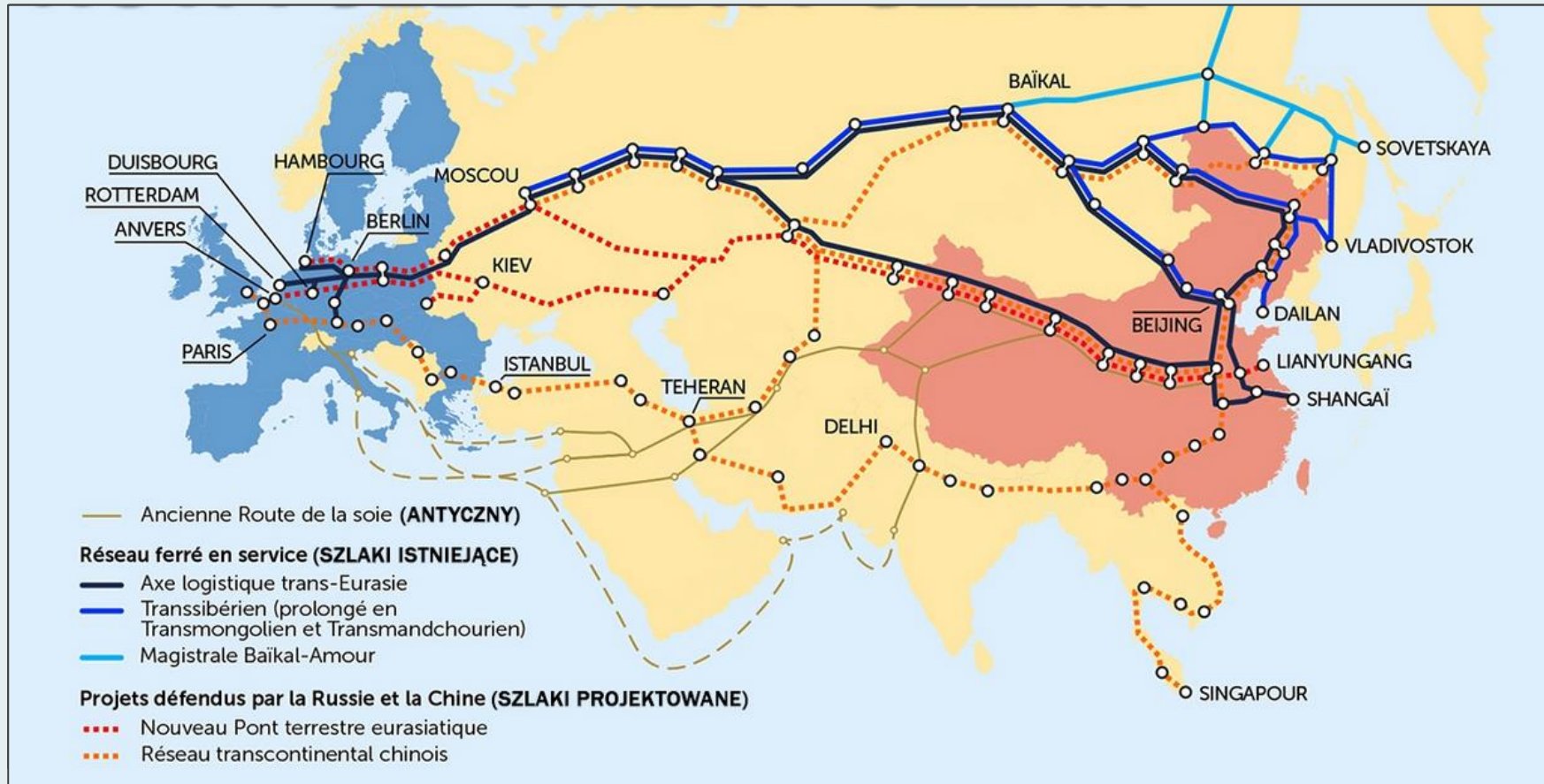
Calculate and optimize intermodal routing

Intermodal routing service

- Planning component for the integration into TMS



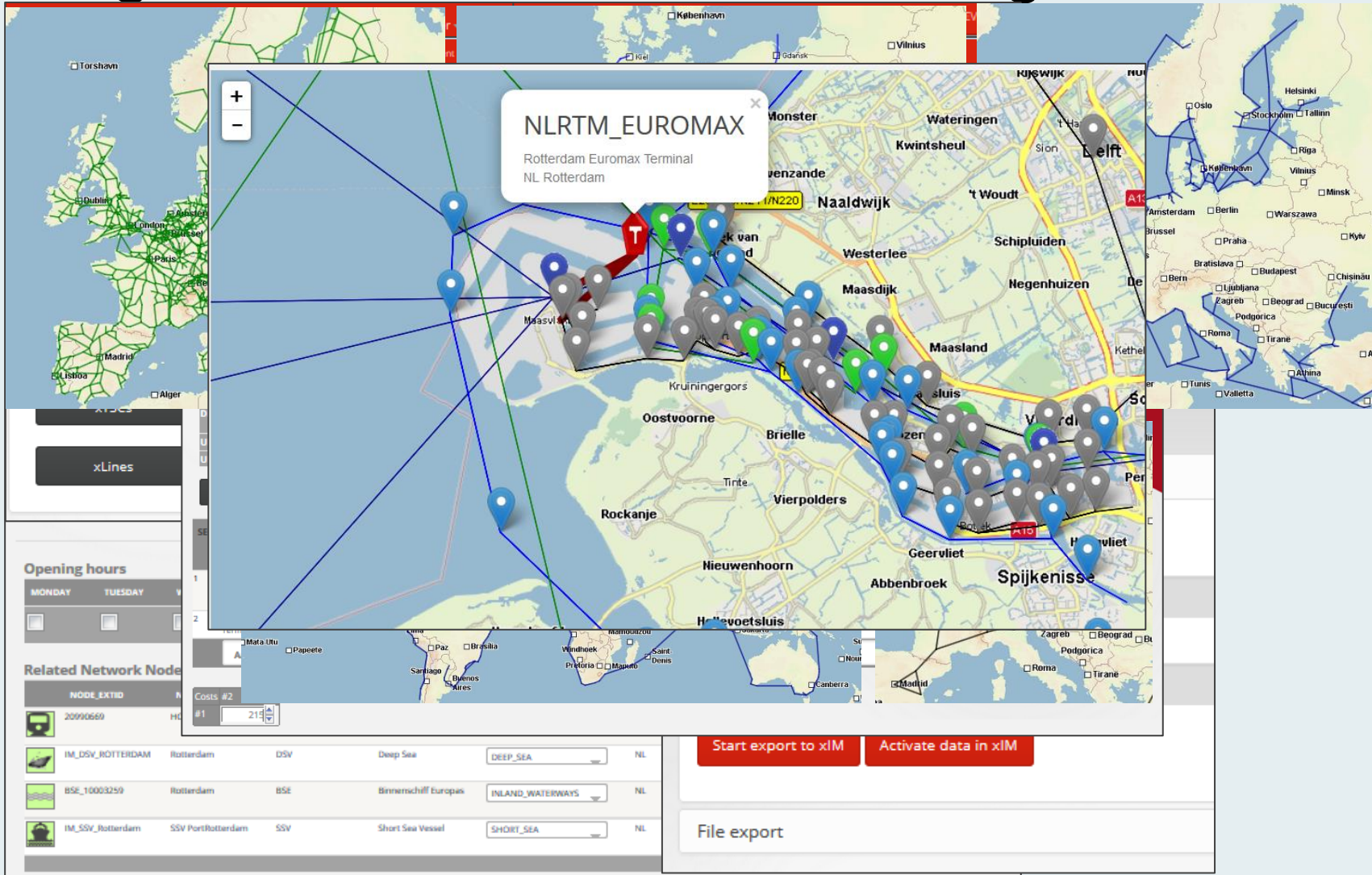
Plan worldwide



Intermodal routing service

- Deep sea route
- by air
- by Silk Route

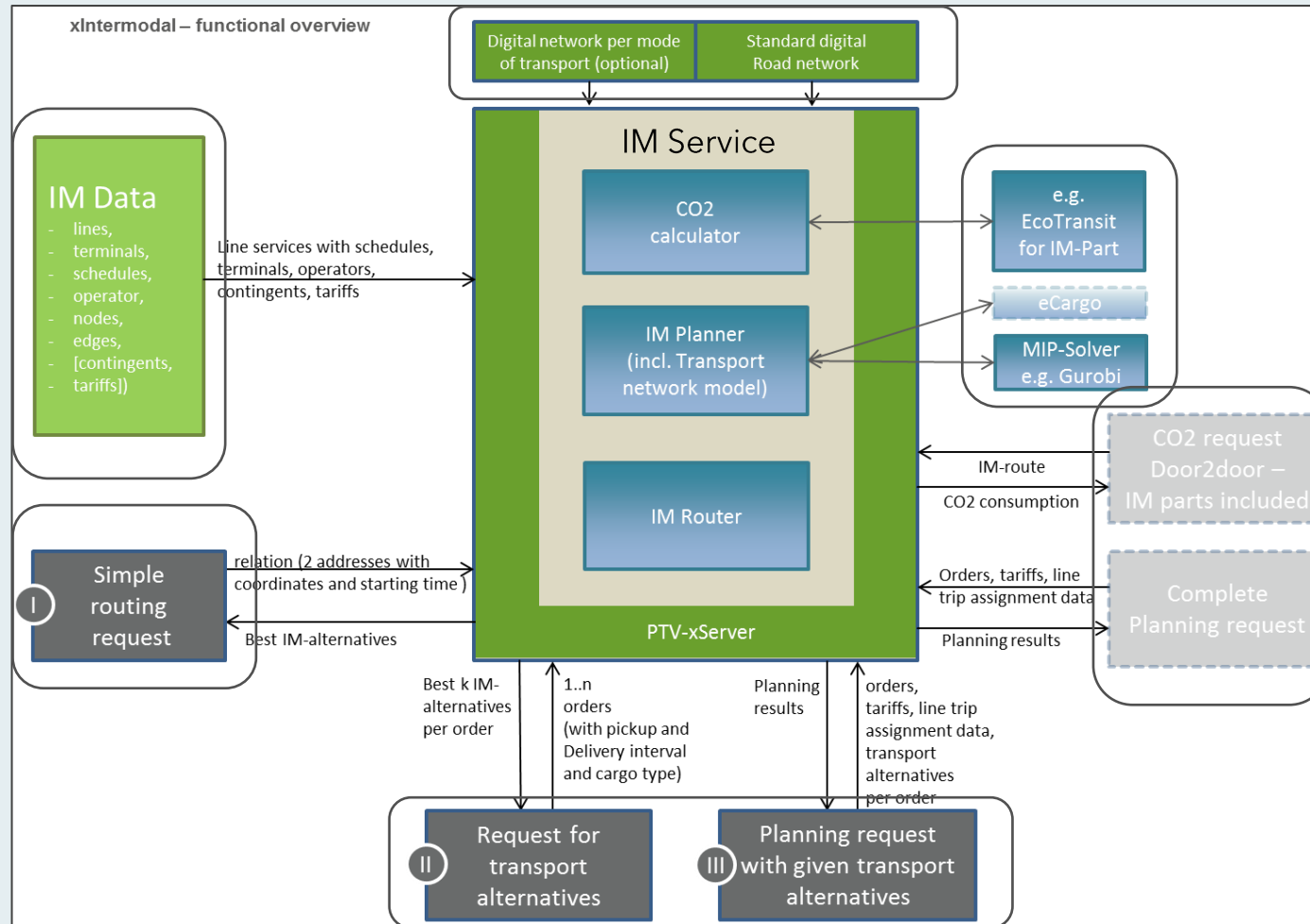
Manage data with PTV's IM Datamanager



Intermodal routing service

- Maintenance of your master data
- Import data from various international data providers
- Terminals
- Time tables
- Line operators
- Network
- Visualize input

How does it look like?



Intermodal routing service

- Service architecture
- External data providers
- IM Datamanager
- A-B relation
- Determine transport alternatives
- Complete request with additional data
- PTV's service for digital networks