COREALIS Antwerp Demo/Training Webinar

CARGO FLOW OPTIMISER

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Mosaic Factor is specialized in Big Data and Artificial Intelligence for mobility and logistics. Know the context, understand the problem and familiarize with the data to find the right answers and extract real value.
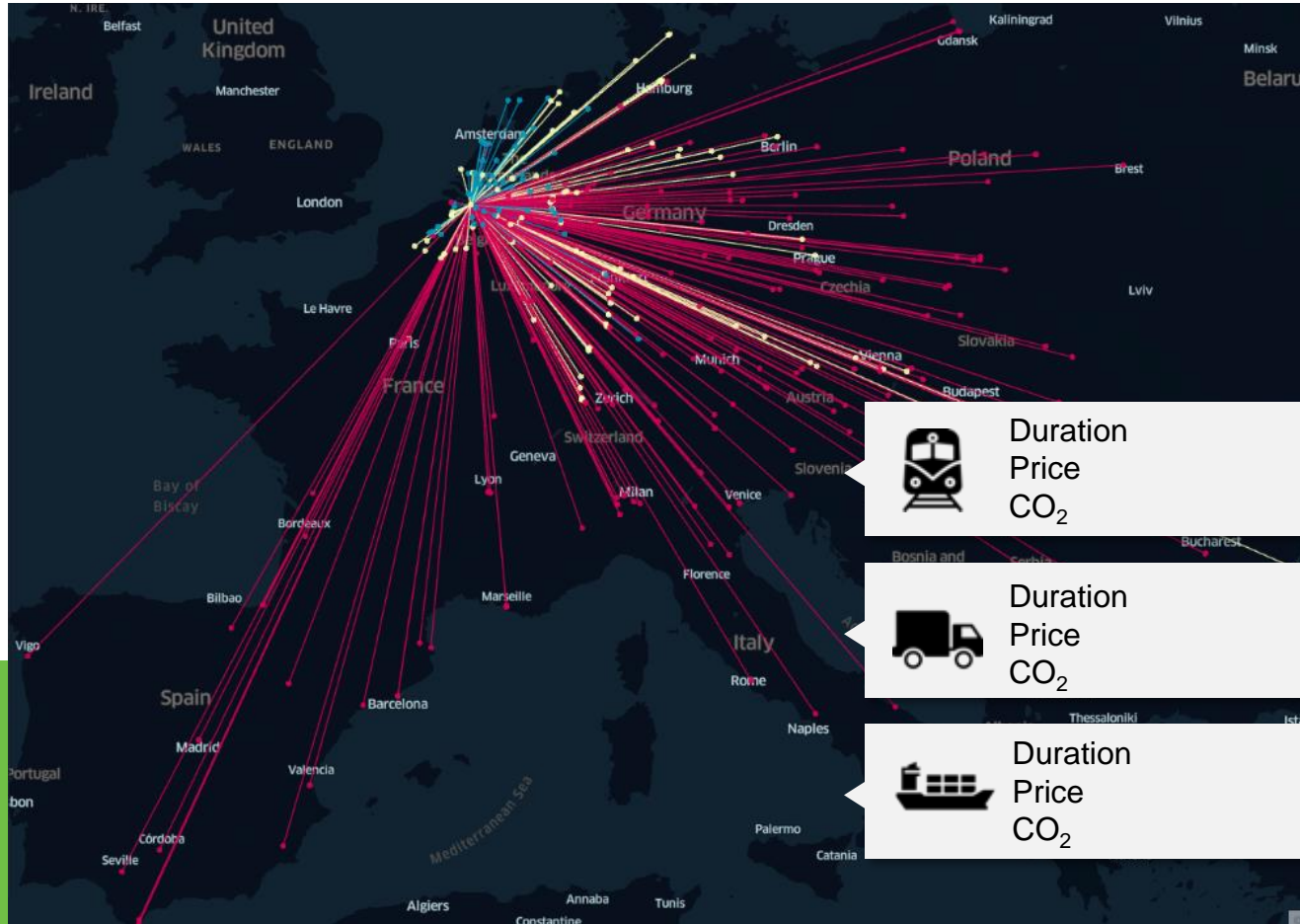
OPTIMIZATION OF PORT OPERATIONS

- **MULTIMODAL INLAND PLANNER**

- **CARGO FLOW PREDICTION**

MULTIMODAL INLAND PLANNER

MULTIMODAL INLAND PLANNER

(i) Complete overview of the most efficient connections from Port of Antwerp to its hinterland by rail, barge or truck.

(ii) Calculates the optimal door-to-door container routes comparing the duration, price and CO_2 emissions.
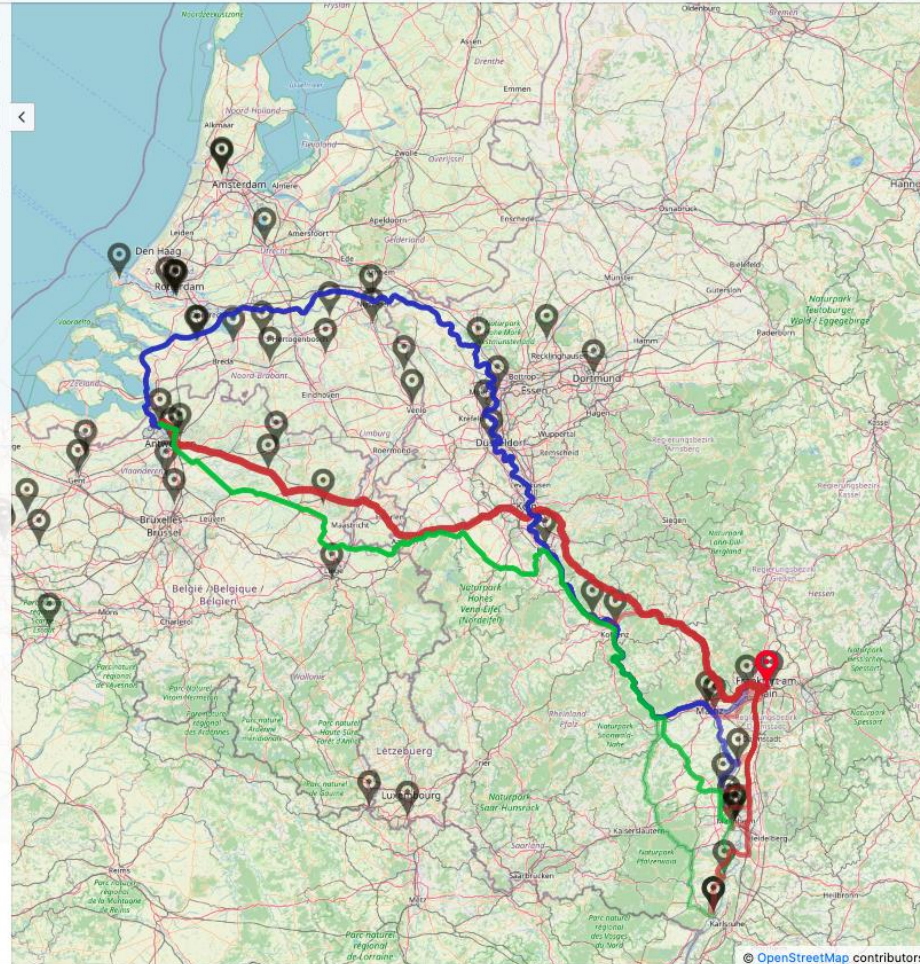
MULTIMODAL INLAND PLANNER

From Port of Antwerp to Frankfurt am Main

MULTIMODAL INLAND PLANNER - BARGE

Available routes to Frankfurt am Main Airport Long distance trains, Frankfurt, Hesse, Germany

Sort by

Default

◉ All ○ Barge ○ Train ○ Truck
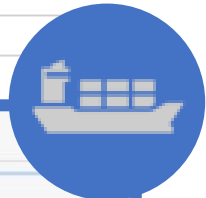
route 1: 4h, 15min - 407.53km - €420.98 - 254.75kg

route 2: 3d, 0h, 38min - 607.64km - €435.50 - 188.97kg

Leg	Transport	Duration	Distance (km)	Price	CO_2 (kg)
1	barge	3d, 0h, 0min	566.18	€285.78	163.05
2	truck	0h, 38min	41.46	€149.72	25.92

route 3: 4d, 0h, 32min - 609.97km - €433.36 - 188.88kg ⌄

route 4: 2d, 0h, 40min - 654.29km - €449.96 - 205.27kg ⌄

route 5: 4d, 0h, 18min - 607.23km - €419.75 - 179.58kg ⌄

route 6: 4d, 0h, 54min - 693.92km - €471.81 - 224.04kg ⌄

route 7: 1d, 1h, 28min - 444.25km - €566.33 - 117.8kg ⌄

route 8: 2d, 0h, 57min - 559.41km - €619.72 - 139.89kg ⌄

route 9: 1d, 1h, 4min - 566.29km - €625.91 - 144.14kg ⌄

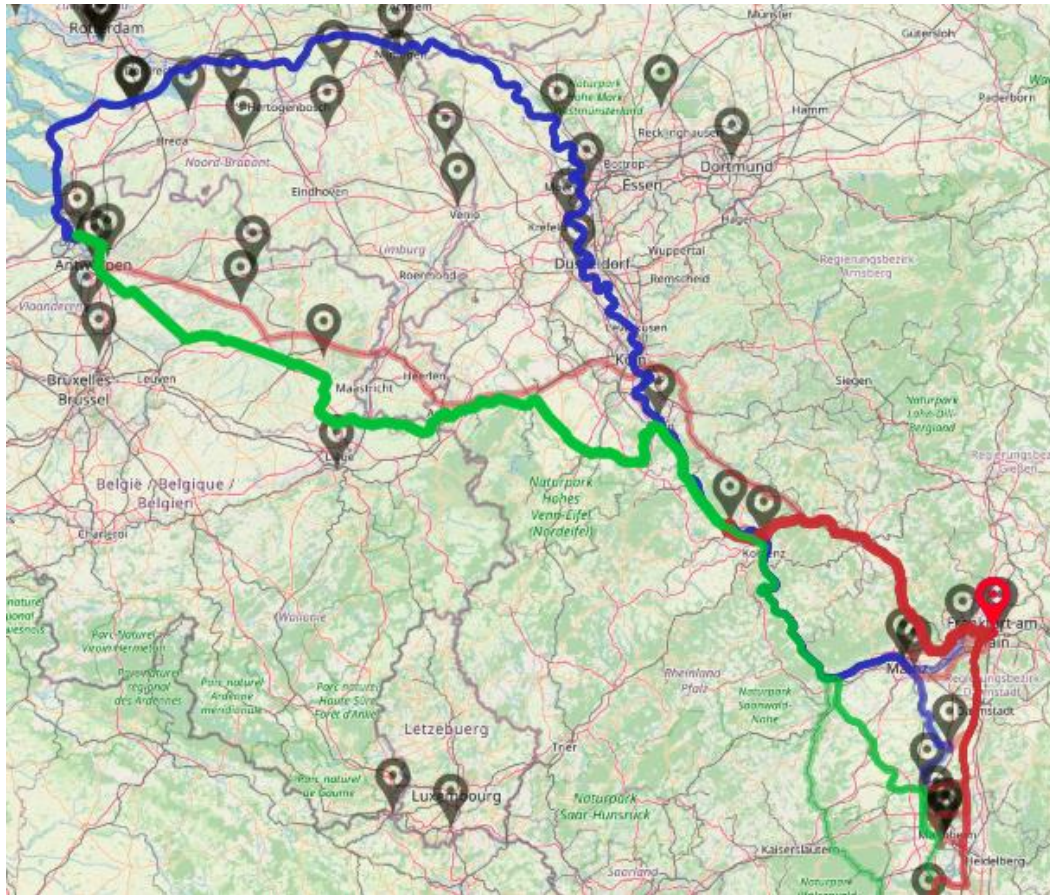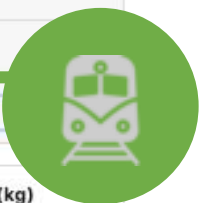# MULTIMODAL INLAND PLANNER - RAIL

Available routes to Frankfurt am Main Airport Long distance trains, Frankfurt, Hesse, Germany

Sort by

Default

● All ○ Barge ○ Train ○ Truck

route 1: 4h, 15min - 407.53km - €420.98 - 254.75kg	⌄
route 2: 3d, 0h, 38min - 607.64km - €435.50 - 188.97kg	⌄
route 3: 4d, 0h, 32min - 609.97km - €433.36 - 188.88kg	⌄
route 4: 2d, 0h, 40min - 654.29km - €449.96 - 205.27kg	⌄
route 5: 4d, 0h, 18min - 607.23km - €419.75 - 179.58kg	⌄
route 6: 4d, 0h, 54min - 693.92km - €471.81 - 224.04kg	

route 7: 1d, 1h, 28min - 444.25km - €566.33 - 117.8kg

Leg	Transport	Duration	Distance (km)	Price	CO_2 (kg)
1	train	1d, 0h, 0min	311.21	€348.74	34.64
2	truck	1h, 28min	133.05	€217.59	83.17

MULTIMODAL INLAND PLANNER - TRUCK
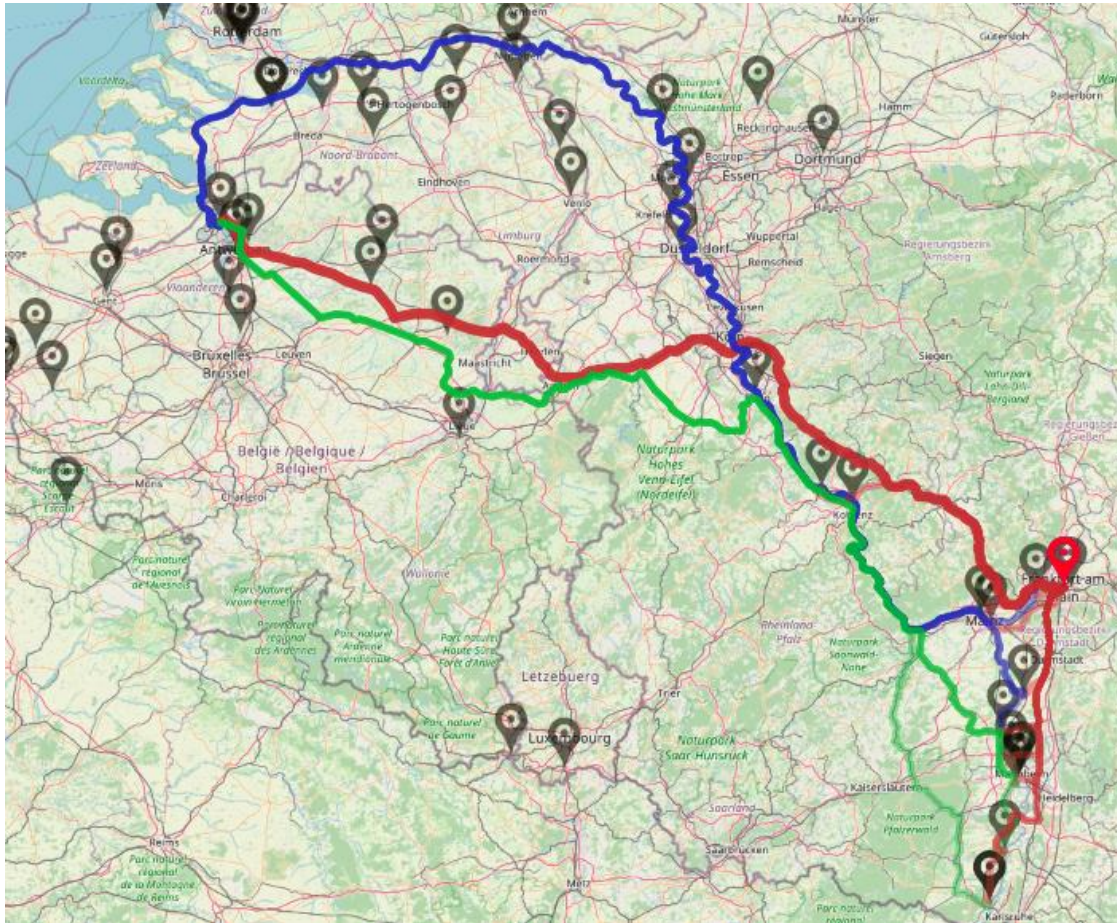
Available routes to Frankfurt am Main Airport Long distance trains, Frankfurt, Hesse, Germany

Sort by

Default

● All ○ Barge ○ Train ○ Truck

route 1: 4h, 15min - 407.53km - €420.98 - 254.75kg

Leg	Transport	Duration	Distance (km)	Price	CO_2 (kg)
1	truck	4h, 15min	407.53	€420.98	254.75

route 2: 3d, 0h, 38min - 607.64km - €435.50 - 188.97kg

route 3: 4d, 0h, 32min - 609.97km - €433.36 - 188.88kg

route 4: 2d, 0h, 40min - 654.29km - €449.96 - 205.27kg

route 5: 4d, 0h, 18min - 607.23km - €419.75 - 179.58kg

route 6: 4d, 0h, 54min - 693.92km - €471.81 - 224.04kg

route 7: 1d, 1h, 28min - 444.25km - €566.33 - 117.8kg

route 8: 2d, 0h, 57min - 559.41km - €619.72 - 139.89kg

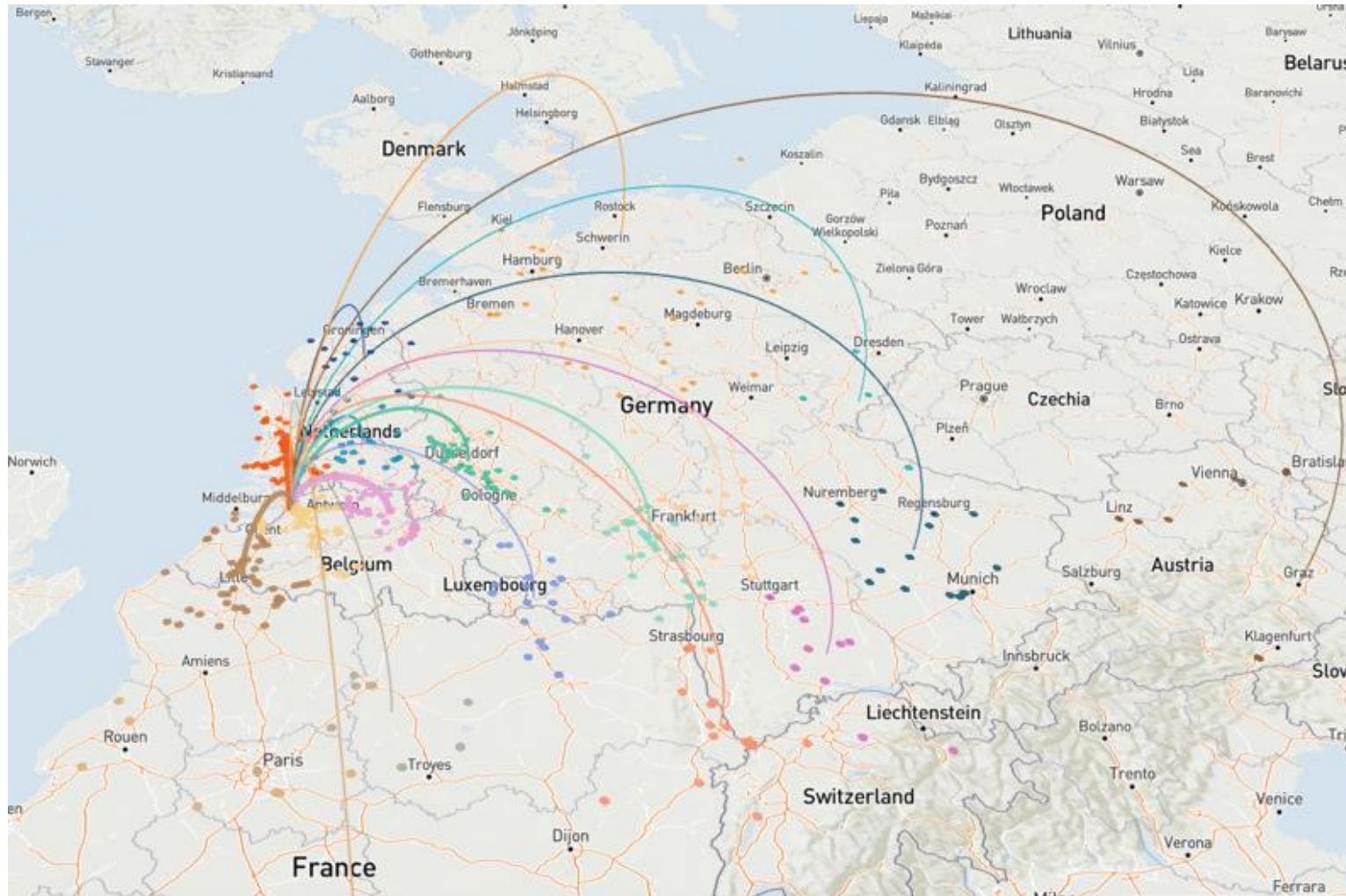route 9: 1d, 1h, 4min - 566.29km - €625.91 - 144.14kg

route 10: 1d, 1h, 19min - 629.88km - €665.99 - 170.17kg

CARGO FLOW PREDICTION

CARGO FLOW PREDICTION

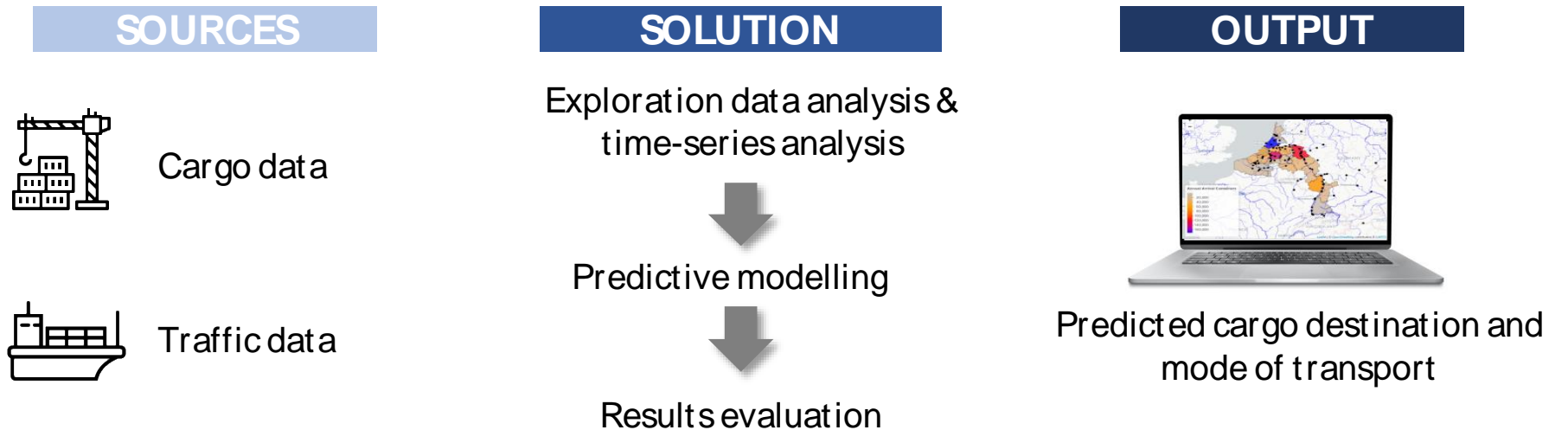Forecast model of the flow of containers departing from the Port of Antwerp.

The accuracy of predicting cargo operations contributes to the planning and control in port terminals and increases reliability and resiliency of port operations in an ecosystem with high uncertainties and a turbulent and ever-shifting demand.

CARGO FLOW PREDICTION

An Artificial Neural Network (ANN) algorithm has been developed that can predict the daily traffic flow of containers, the destination and the mode of transport by means of historical and real-time data .

SOURCES	SOLUTION	OUTPUT
Cargo data	Exploration data analysis & time-series analysis	Predicted cargo destination and mode of transport
Traffic data	Predictive modelling	
	Results evaluation	

CARGO FLOW PREDICTION

Understand the context and dynamics of traffic flows arriving and departing the port.

Extract container flow patterns using:

→ Container operations at terminals data
→ Arrival and departure traffic data
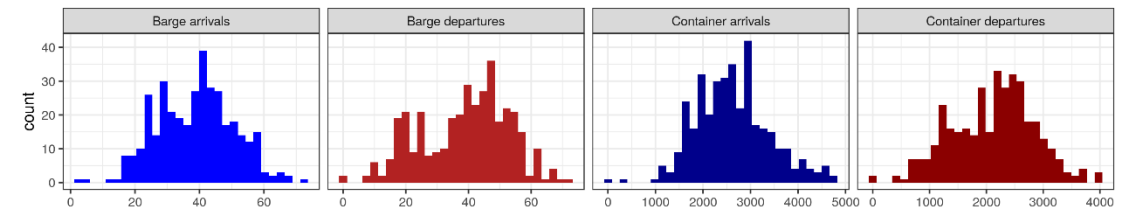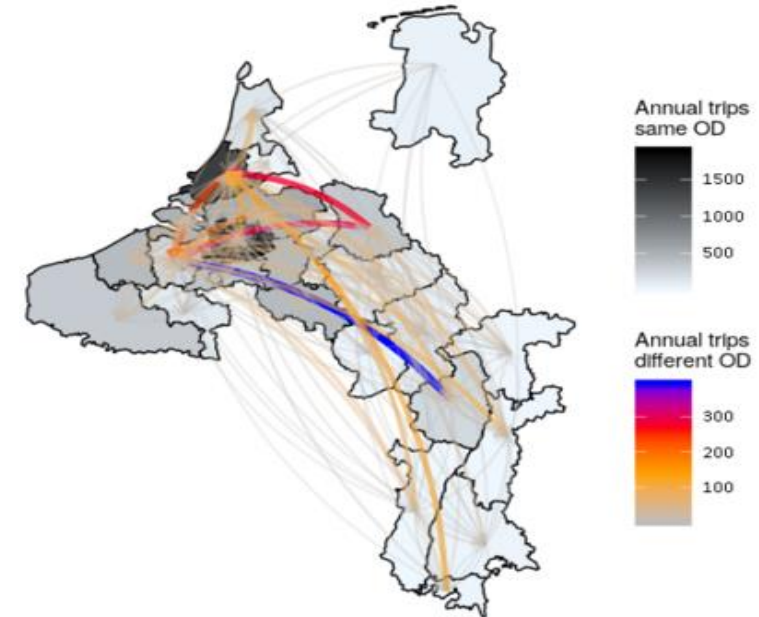
LESSONS LEARNED

WHO ARE THE DRIVERS?

SHIPPERS

FREIGHT FORWARDERS

RAIL OPERATORS

Bring the demand together
Make the demand visible

DATA ARE THE KEY

www.corealis.eu

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COREALIS EU Project

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THANK YOU FOR YOUR ATTENTION

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