COREALIS
THE PORT OF THE FUTURE

COREALIS FINAL CONFERENCE

CARGO FLOW OPTIMISER

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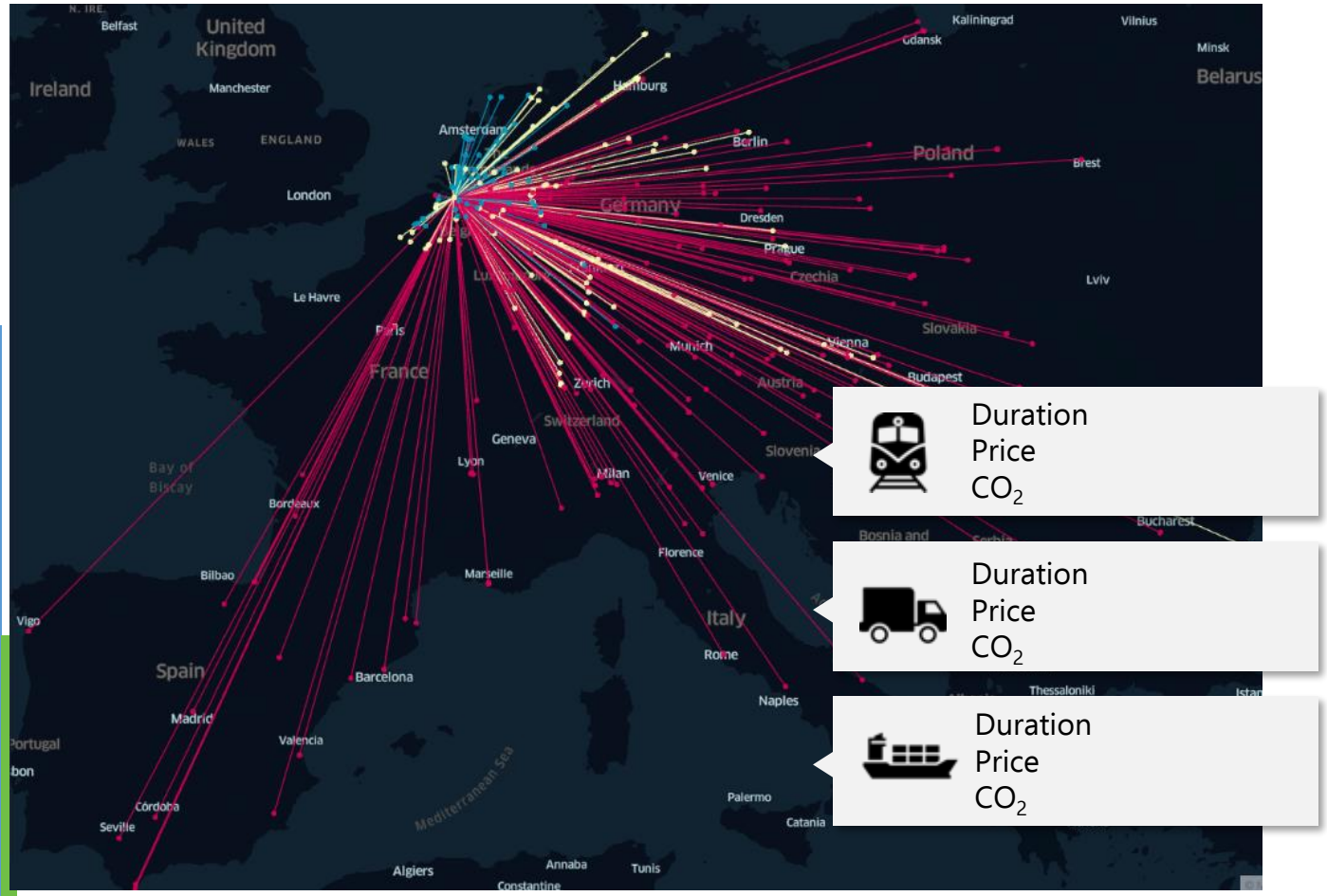
Mosaic Factor is specialized in Big Data and Artificial Intelligence for mobility and logistics. Know the context, understand the problem and familiarize with the data to find the right answers and extract real value.

OPTIMIZATION OF PORT OPERATIONS

- MULTIMODAL INLAND PLANNER
- CARGO FLOW PREDICTION

MULTIMODAL INLAND PLANNER

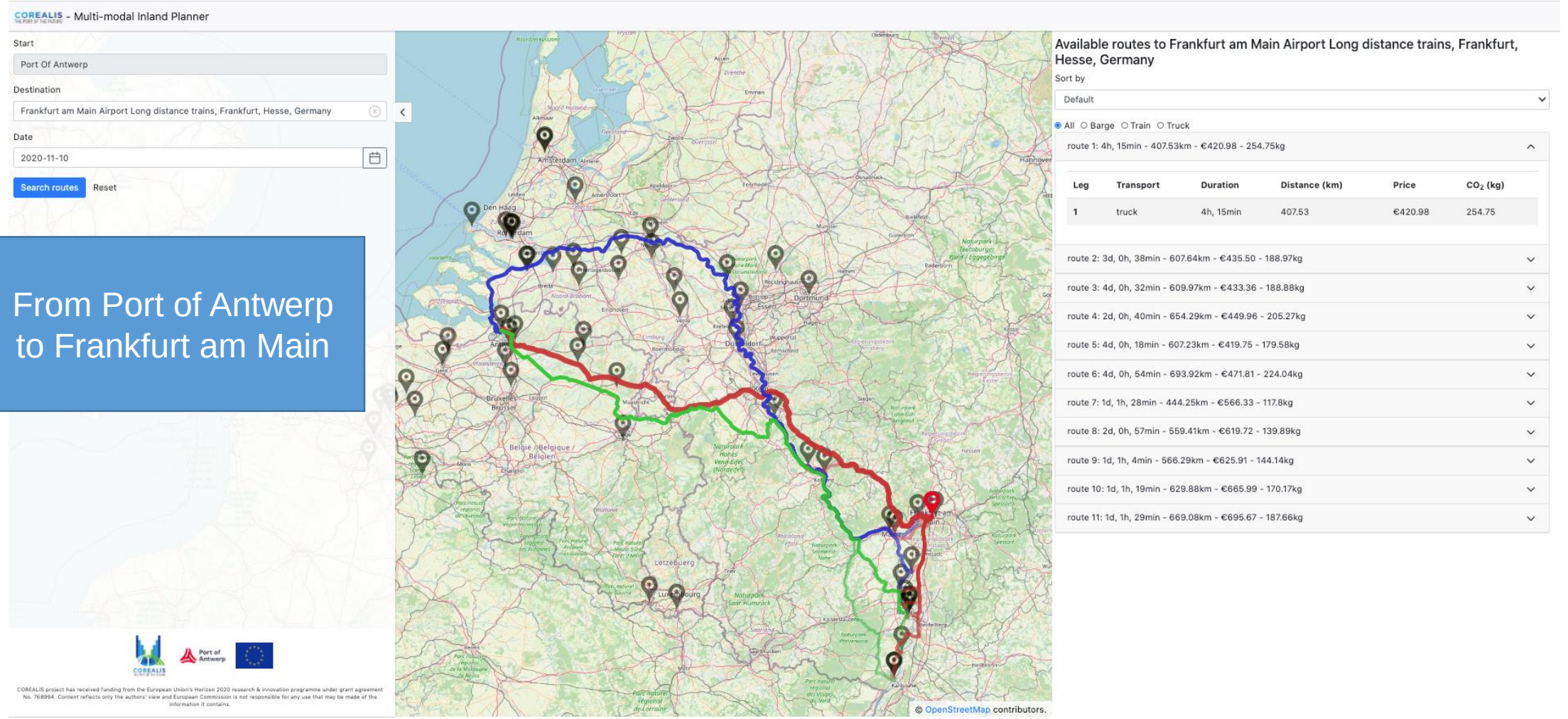
MULTIMODAL INLAND PLANNER



(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



MULTIMODAL INLAND PLANNER

COREALIS - Multi-modal Inland Planner

Start

Port Of Antwerp

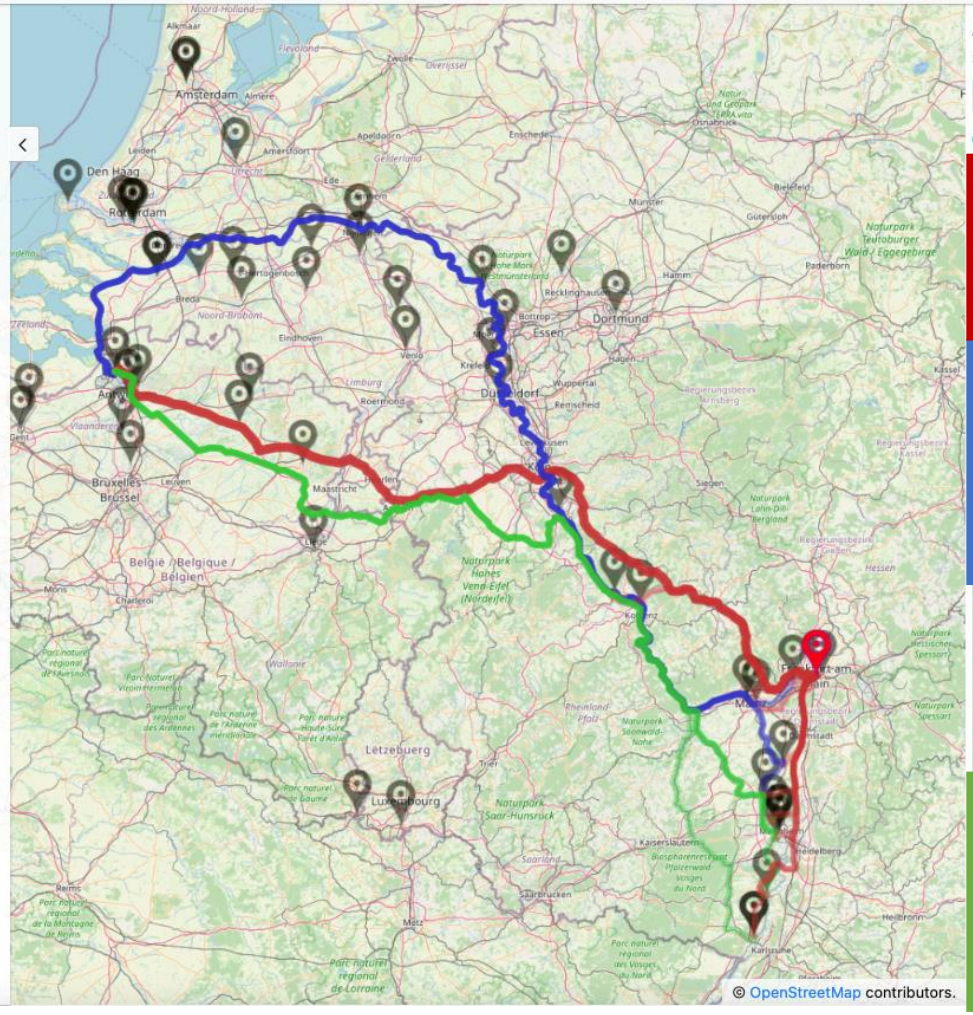
Destination

Frankfurt, undefined, Hesse, Germany

Date

2021-04-20

Search routes Reset



Available routes to Frankfurt, undefined, Hesse, Germany

Sort by

Default

All Barge Train Truck

route 1: 4h, 18min - 410.14km - €422.91 - 256.38kg

Leg	Transport	Duration	Distance (km)	Price	CO_2 (kg)
1	truck	4h, 18min	410.14	€422.91	256.38

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 - 610.6km - €433.83 - 189.28kg

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

route 5: 4d, 0h, 19min - 607.23km - €419.75 - 179.58kg

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

route 7: 1d, 1h, 29min - 444.23km - €566.31 - 117.79kg

Leg	Transport	Duration	Distance (km)	Price	CO_2 (kg)
1	train	1d, 0h, 0min	311.21	€348.74	34.64
2	truck	1h, 29min	133.02	€217.57	83.15

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CARGO FLOW PREDICTION

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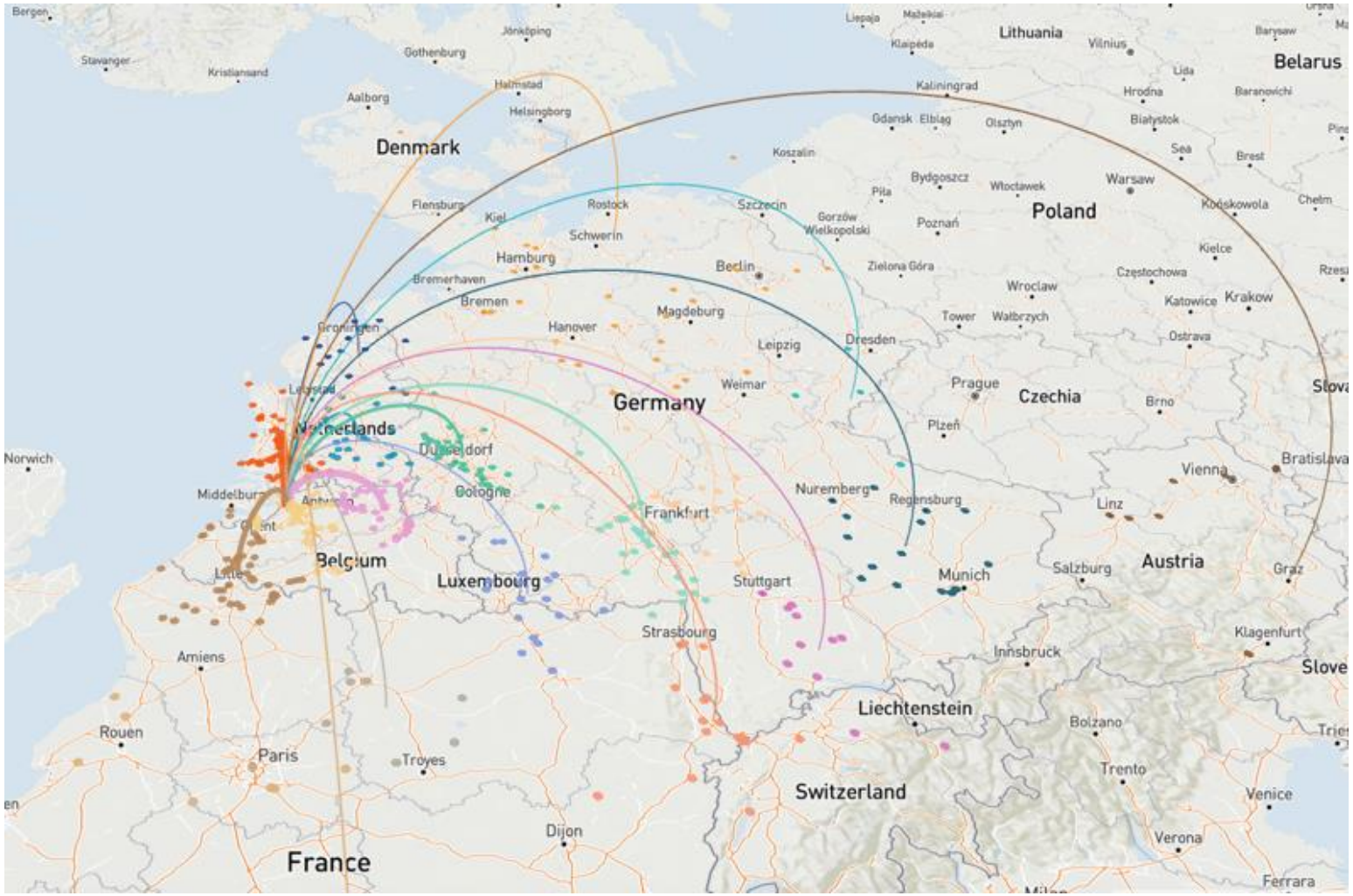


Forecast model of the flow of containers departing from the Port of Antwerp.

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

Cargo data

Traffic data

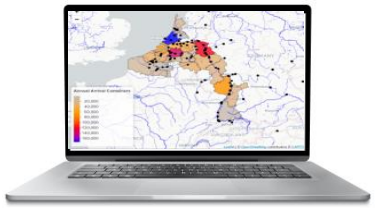
SOLUTION

Exploration data analysis & time-series analysis

Predictive modelling

Results evaluation

OUTPUT



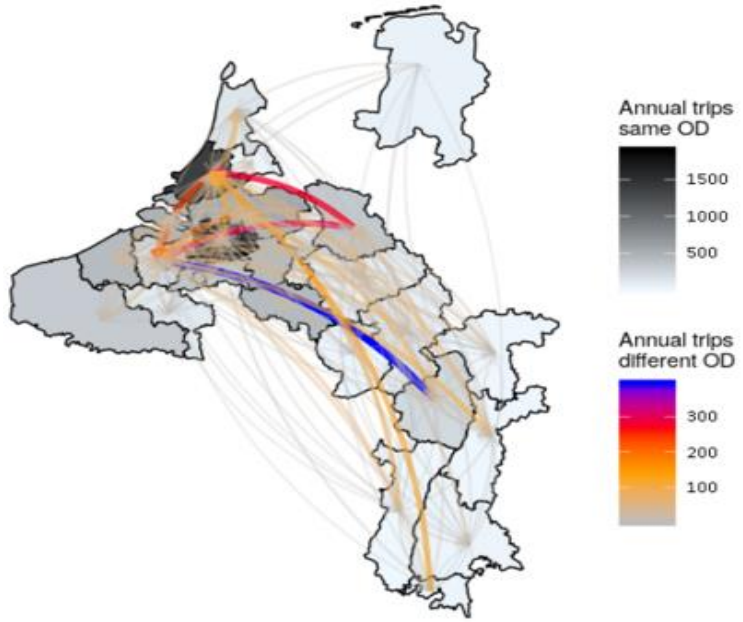
Predicted cargo destination and mode of transport

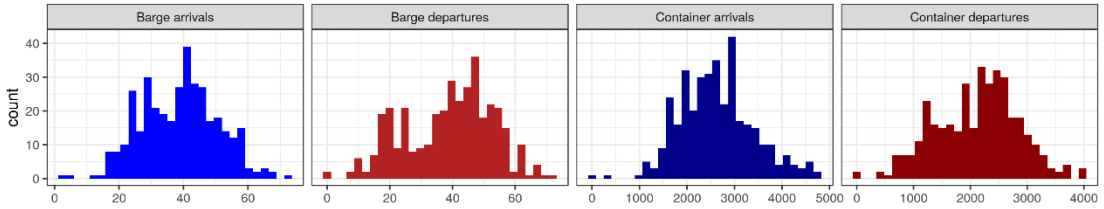
CARGO FLOW PREDICTION

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





WHO ARE THE DRIVERS?

PORT AUTHORITIES

Are the main potential customers of the CFO, more specifically Port Authorities that want to deliver a service to its stakeholders that advises on the **most efficient multi-modal hinterland connections**

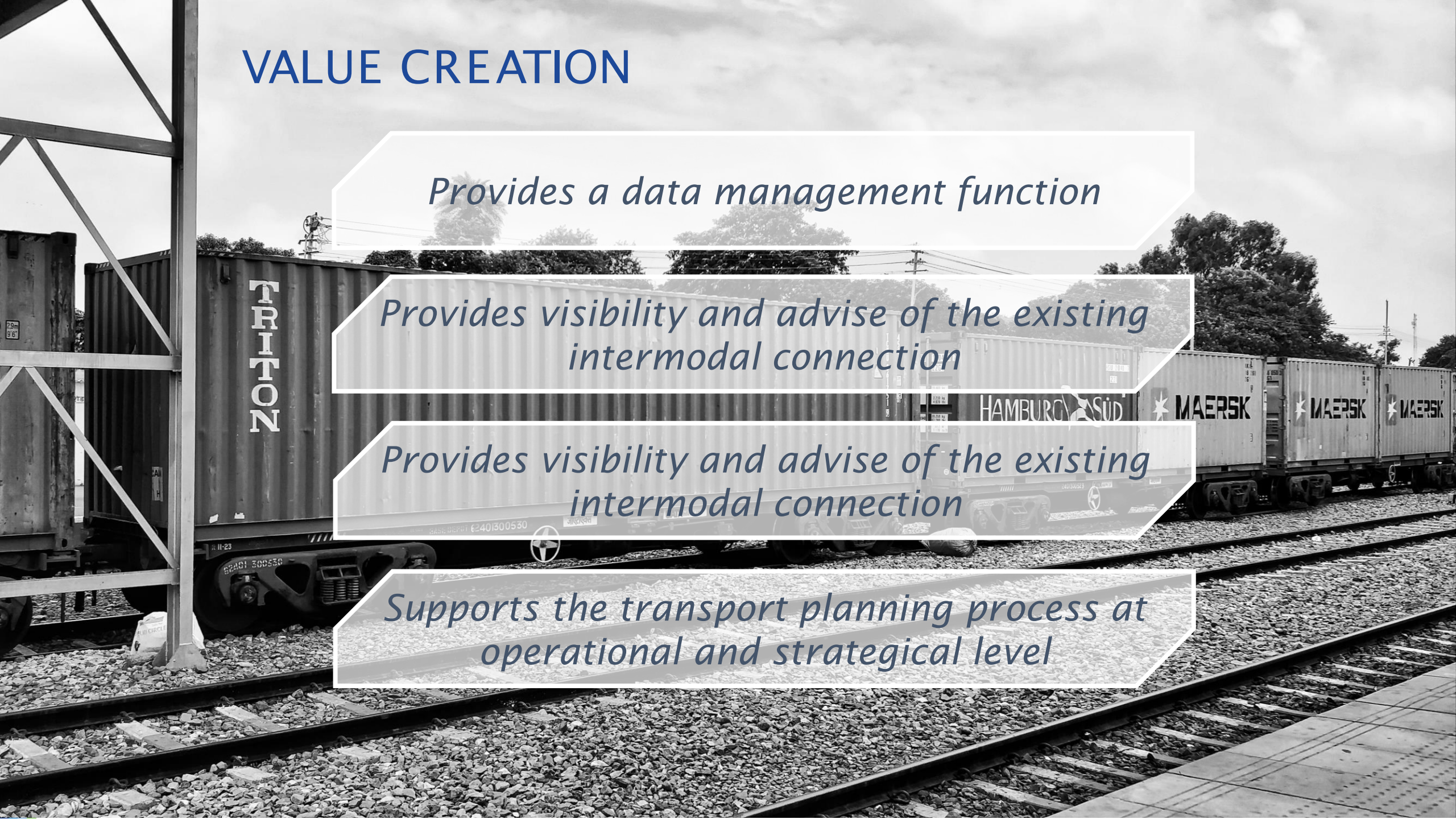
SHIPPERS, FREIGHT FORWARDERS

Actors that are looking for a **modal shift potential** are the main users of the tool. The CFO provides advise on the available intermodal connections stating the price, duration and CO2 emissions

TRANSPORT OPERATORS

They contribute with the **intermodal data offering** that helps to have in a centralised way the connectivity data from the transportation system of the port

VALUE CREATION



Provides a data management function

Provides visibility and advise of the existing intermodal connection

Provides visibility and advise of the existing intermodal connection

Supports the transport planning process at operational and strategical level

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THANK YOU FOR YOUR ATTENTION

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