



Forecasting And Simulation to Improve Efficiency of Port Operations



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SESSION 5

Creating Smart Ports of The Future Through Port Technology,
Digitalisation And Smart Port Integration

International Group

A full portfolio of services to assist ports and terminals throughout the entire process of optimisation and digitalisation.

Since 1986

+ 300 projects worldwide

+ 38 industry experts

Confidentiality and Discretion



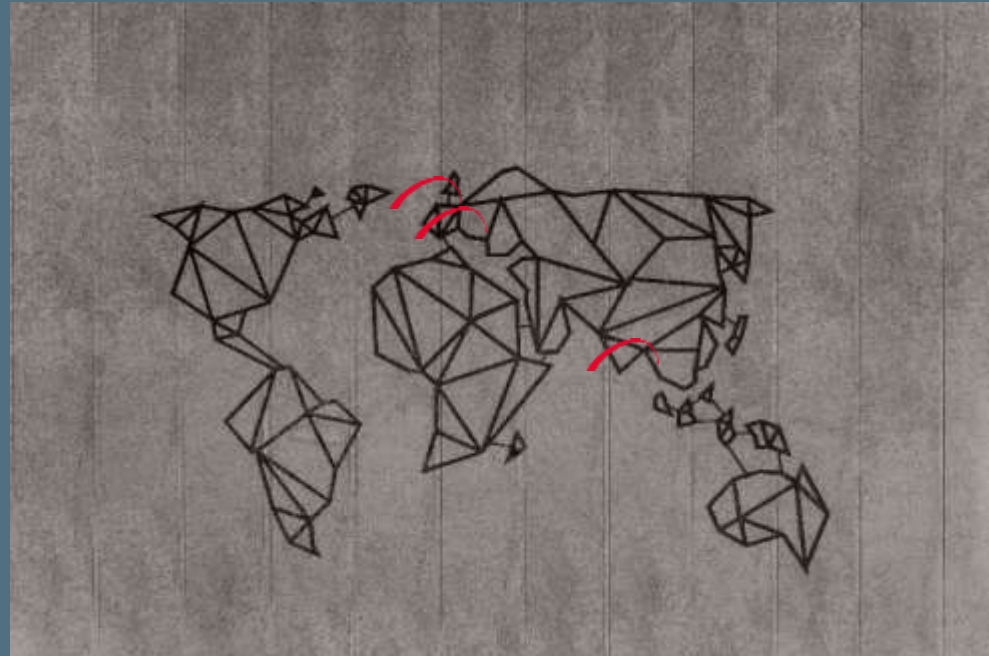
Lugano, CH



Chennai, India



Huis Ter Heide, NL





Products portfolio



DATAVIEW
BI
any data,
anywhere,
all in one view



DATABILL
Billing app
tailored for
you



DATAREBOX
Container
maintenance
and repair app



GREEN+
Energy and
environmental
monitoring



Services portfolio

Tailored on you

Analysis and Design

- Project Management
- IT and OPS Auditing
- Business Process Mapping
- Vendor Assessment
- Change Management
- Revenue and ROI Analysis
- Tender requirements definition



TOS Implementation upgrade support

- Project Management
- Analysis
- Configuration
- Data Migration
- Customisation
- Integration
- Reporting
- Testing
- Training
- Go Live Support
- Post Go Live Assistance
- Support and Administration



Optimisation

- Project Management
- IT and OPS Auditing
- Business Process Mapping
- Change Management
- TOS tuning
- Planning and Execution Strategies



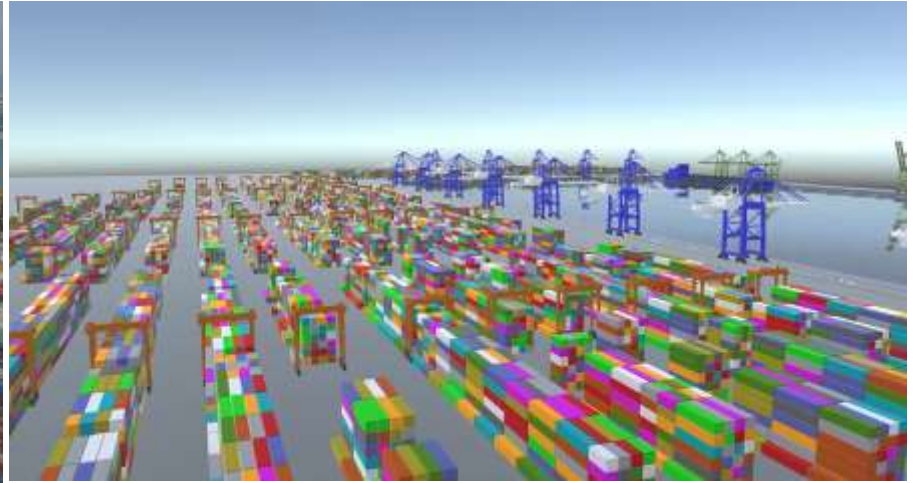
Automation Digitalisation

- Project Management
- Simulation
- Automation architecture
- Reporting
- EDI
- Interfaces and Integration
- Live Equipment Testing
- Agile Software Development



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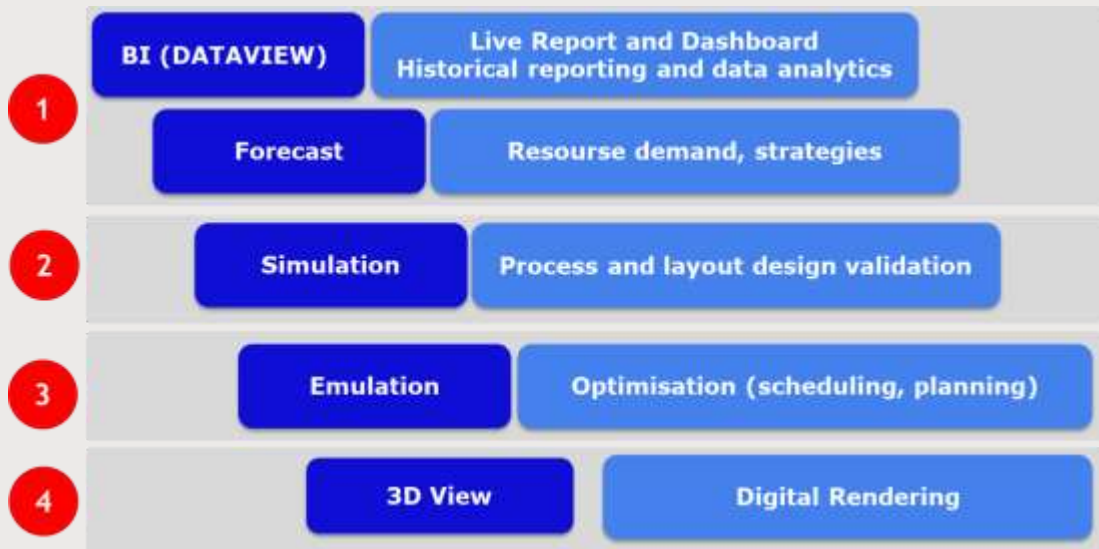
Real World



Digital Model



GEMINI



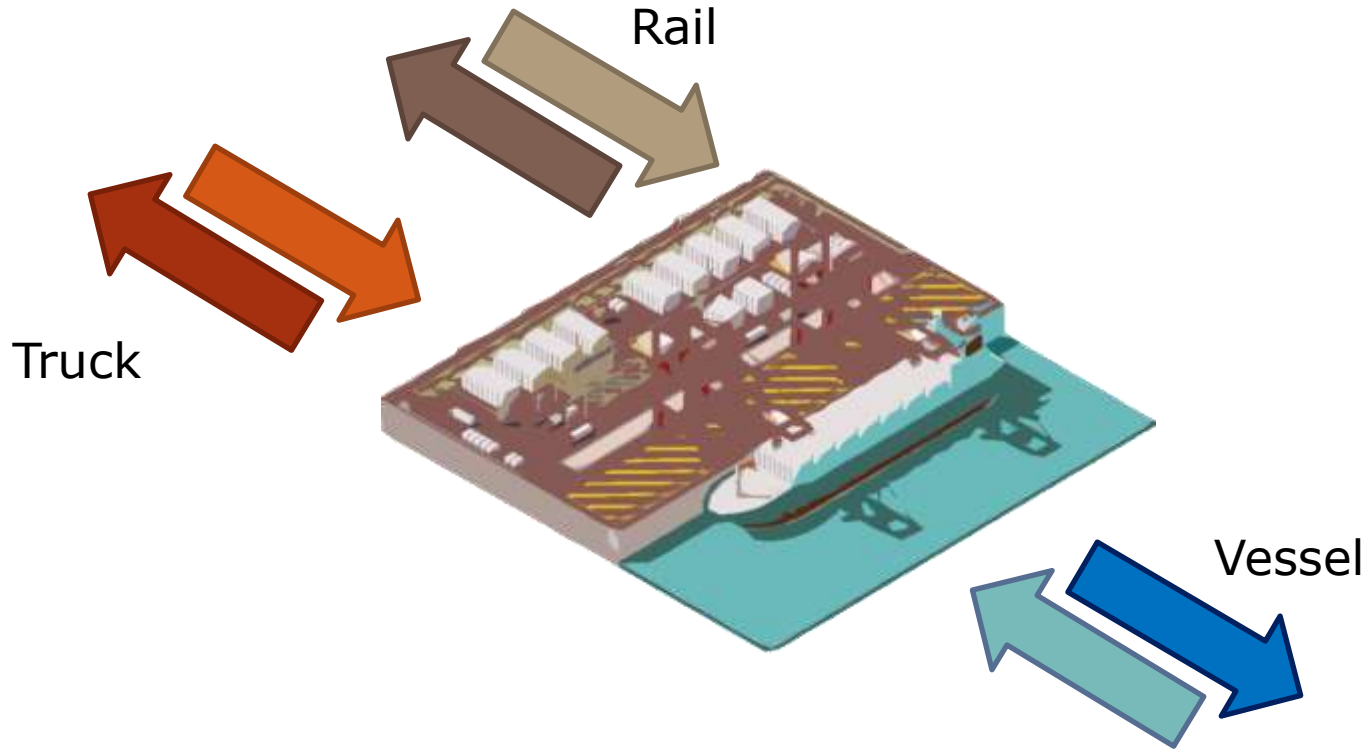
CSP Valencia Terminal is at the side of DSP and TALUMIS since the beginning of GEMINI design and development.

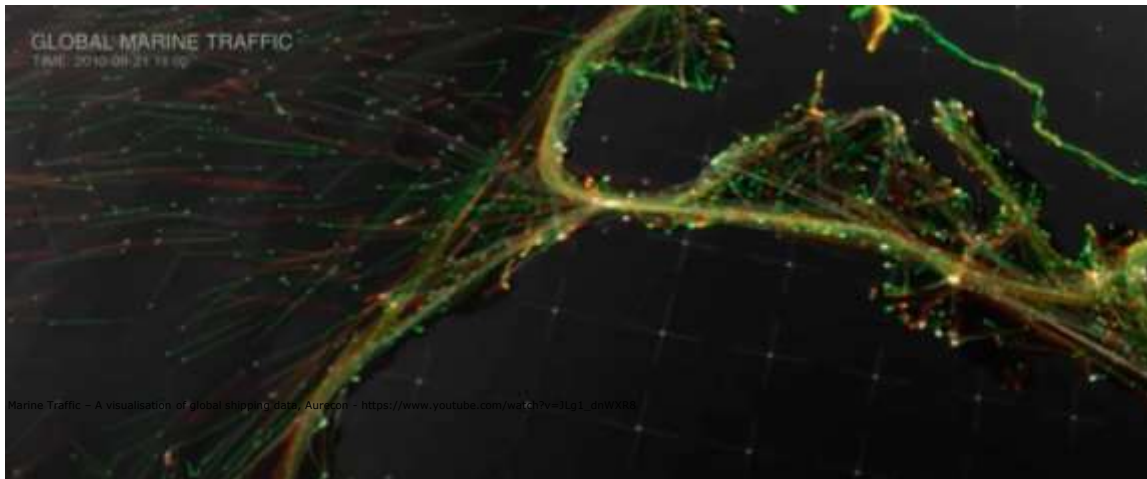
"We believe digital twins will be a revolution in the way container terminals make decisions, offering operational efficiency and avoiding dangerous situations, which will lead to safer and more efficient decision making, increasing the overall performance of the terminal."

Ivan Deosdad i Lopez, Director of Projects
Department at CSP Iberian Valencia Terminal



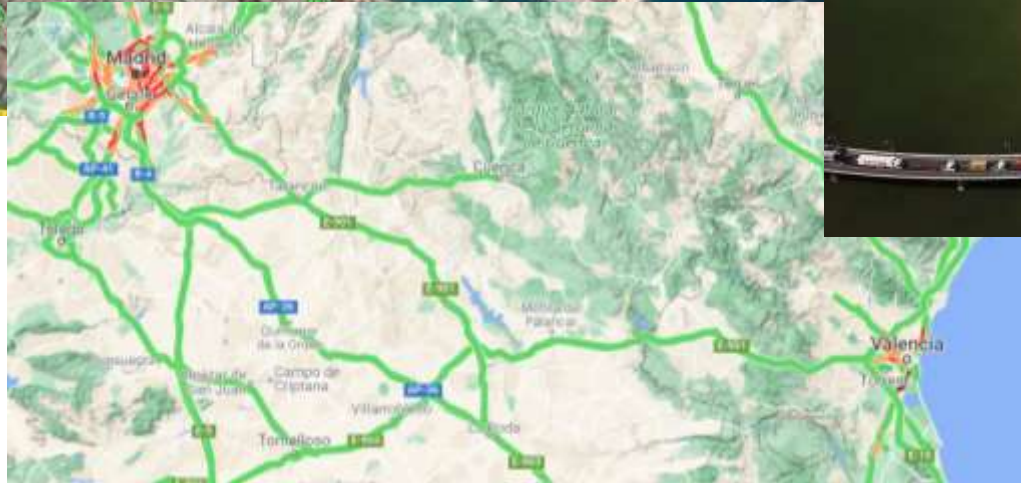
Container Flows at the Terminal





Marine Traffic - A visualisation of global shipping data. Aurore - https://www.youtube.com/watch?v=41g1_gow988





Turning facts into numbers

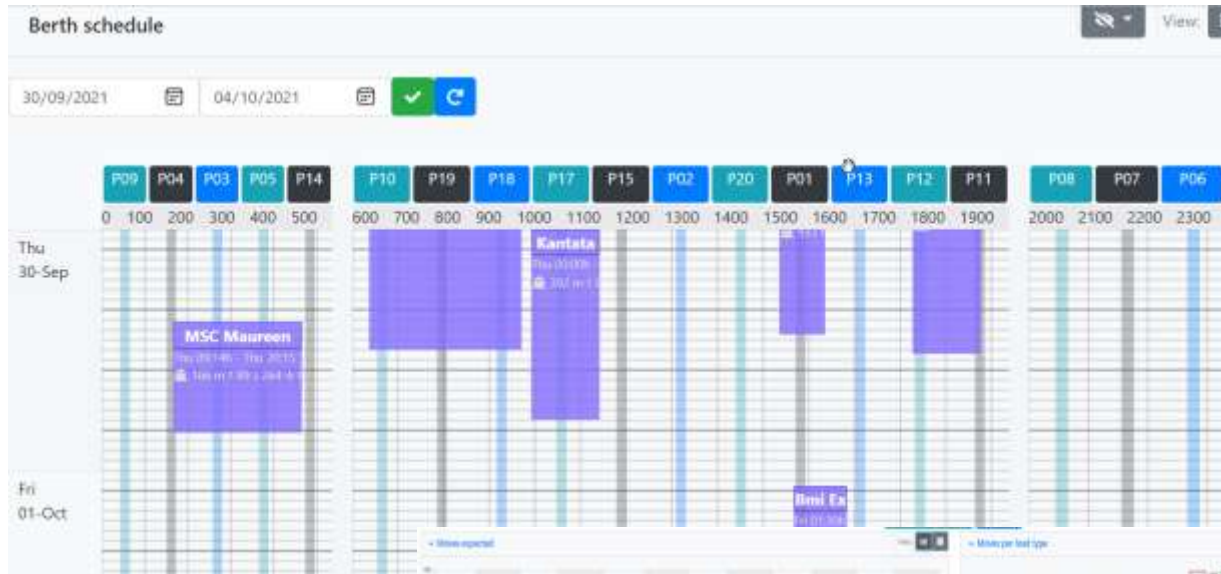


Identify the different characteristics of the containers per incoming modality and distinguish by time horizon the different forecast scenario:

- Short term → Containers planned in TOS and certain to arrive at the Terminal
- Mid term → Containers announced and expected
- Long term → Containers not even announced but, based on repetitive patterns and historical data, future handlings and volumes can be forecasted.

Moves per hour forecast will be predicted accordingly and based on deviations of the actual situation, number of equipment utilized or supposed to be utilized (CHE and cranes), productivity (actual and estimated), manual parameters input for breakdowns and similar, historical information basis, service information basis.

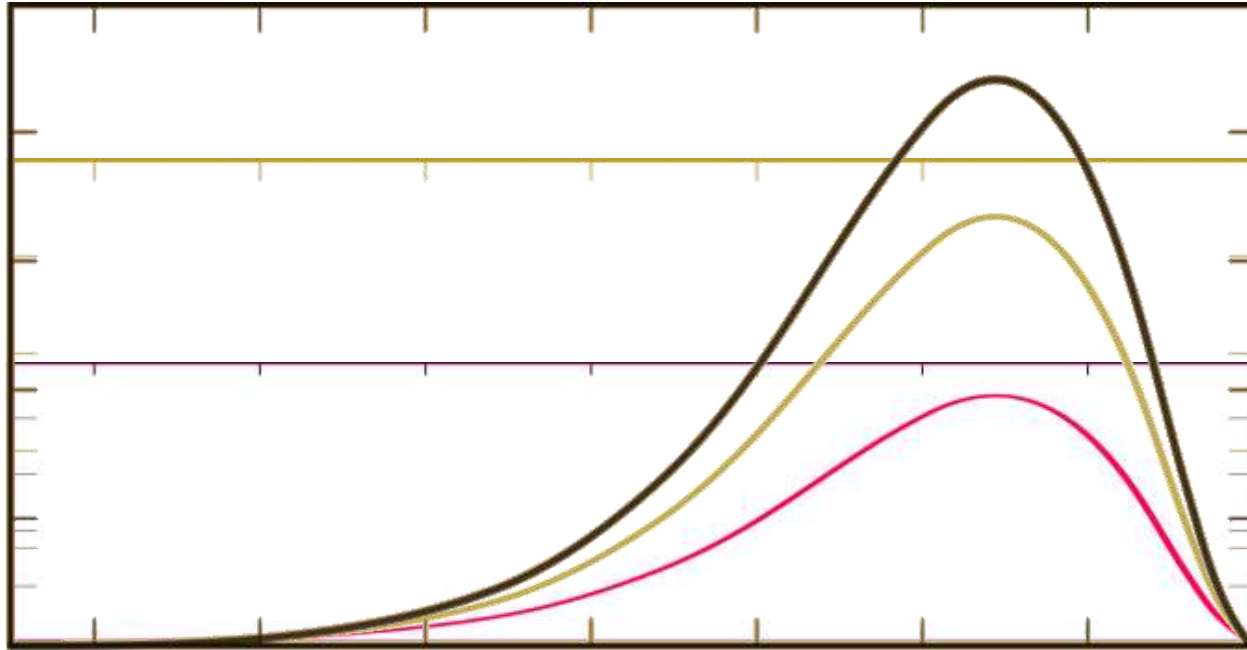
Berth Plan and Long Term Schedule



The long Term Vessel Schedule and live TOS populates the berth plan. The mathematical model derived from historical data allows to forecast crane split and loading/discharging.

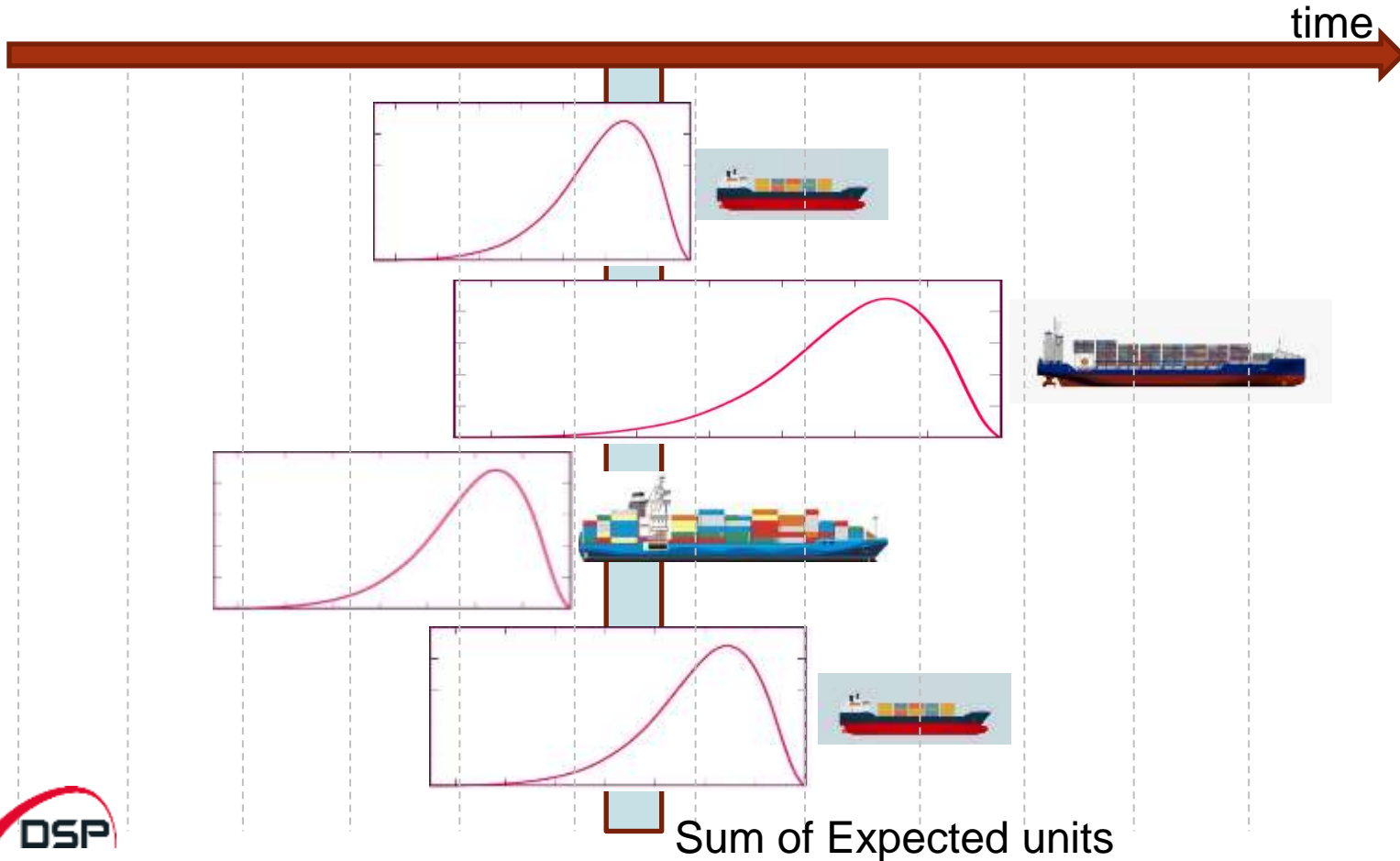


Export Arrivals per Outbound Vessel



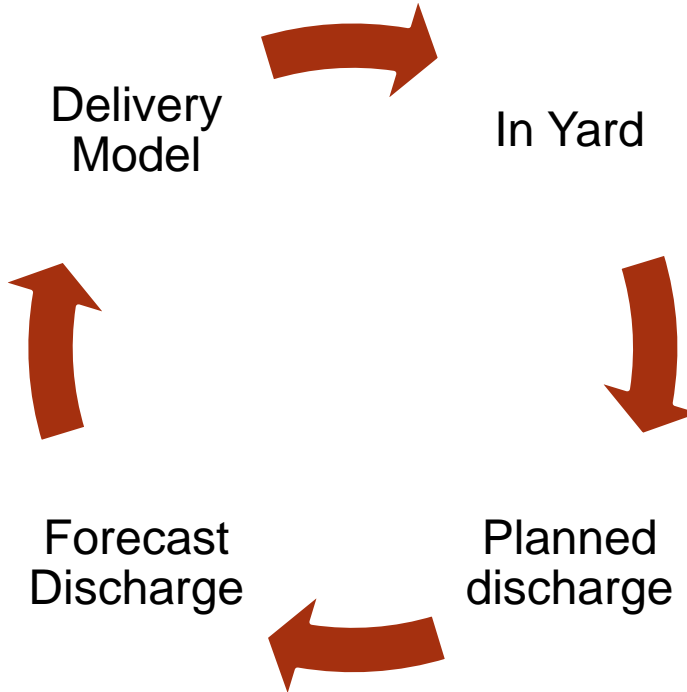
Magnitude of the curve is calculated based on Service historical analysis, Vessel Voyage actual data (Baplie, COPRAR, information)

Export Receival and Berth Plan



Import Delivery

Storage contractual terms
Cargo typology (bills of lading)
Customs procedures
Regional logistics
(wharehoues/distribution centres)



Dashboard and indicators to support operational decisions and improve overall gate process



- Facilitates Appointment Strategy
- Traffic Forecast and waiting time available to truck drivers
- Reduction of turnaround time
- Prevent Traffic Congestions
- Terminal Resource optimisation
- Decision support for Yard planning strategies
- CO2 reduction

Forecast Control Dashboard



Get in touch



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