



Tuesday 20 May to Thursday 22 May 2025
Hotel Catalonia Barcelona Plaza, Spain

Hosted by



Port de Barcelona

In Conjunction with



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Operation Council and
Executive Council Meeting 2025

MARCO FEHMER

CEO

DATA AND SYSTEM PLANNING (DSP)
SWITZERLAND

Performance by Design

Business process mapping and simulation to
support innovation





The Power of Experience

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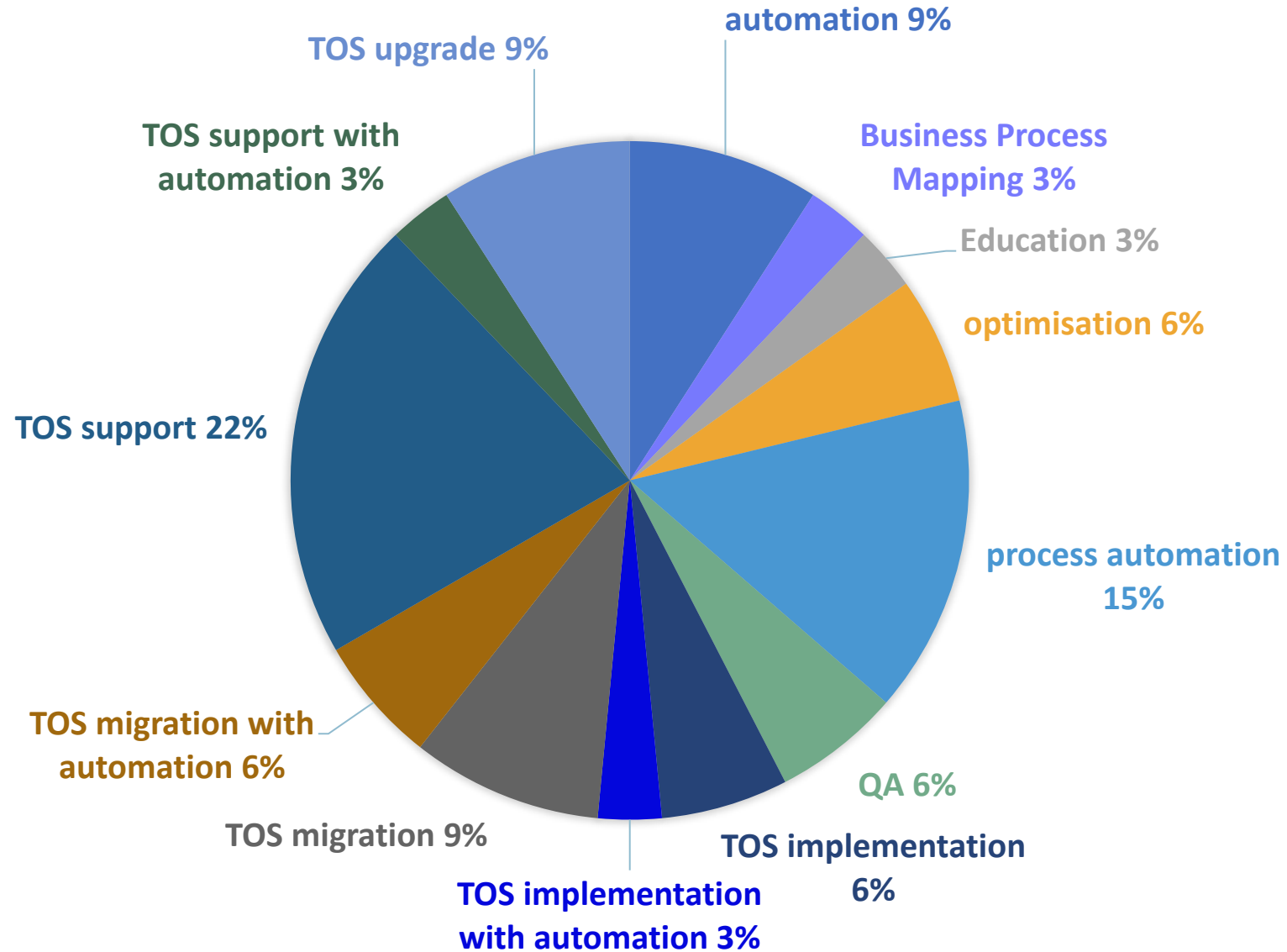
Active Member



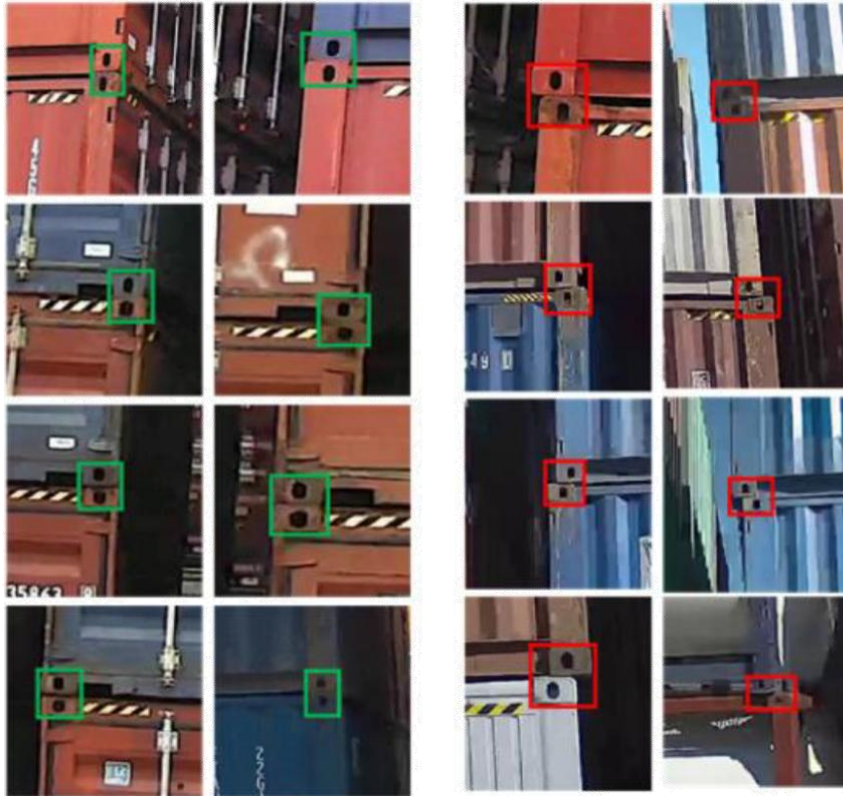
Since 2023, DSP is compliant with the ISO 27001-2013 certification to grant Information security, cybersecurity, and privacy protection to its customers



DSP Running Projects: a picture of the industry



Shaping the future ...



... Fighting the present



Terminal Operators Need To Invest in Analyzing the Terminal's Processes

- We can't piggy-back off the operational research derived from another terminal's configuration
- A terminal operator that wants to investigate the value and risk of any operational change or development has to map their own business processes and design future Standard Operating Procedures
- Think about SIMULATION, before investing in any digitalization or automation process.

What is SIMULATION Used For?

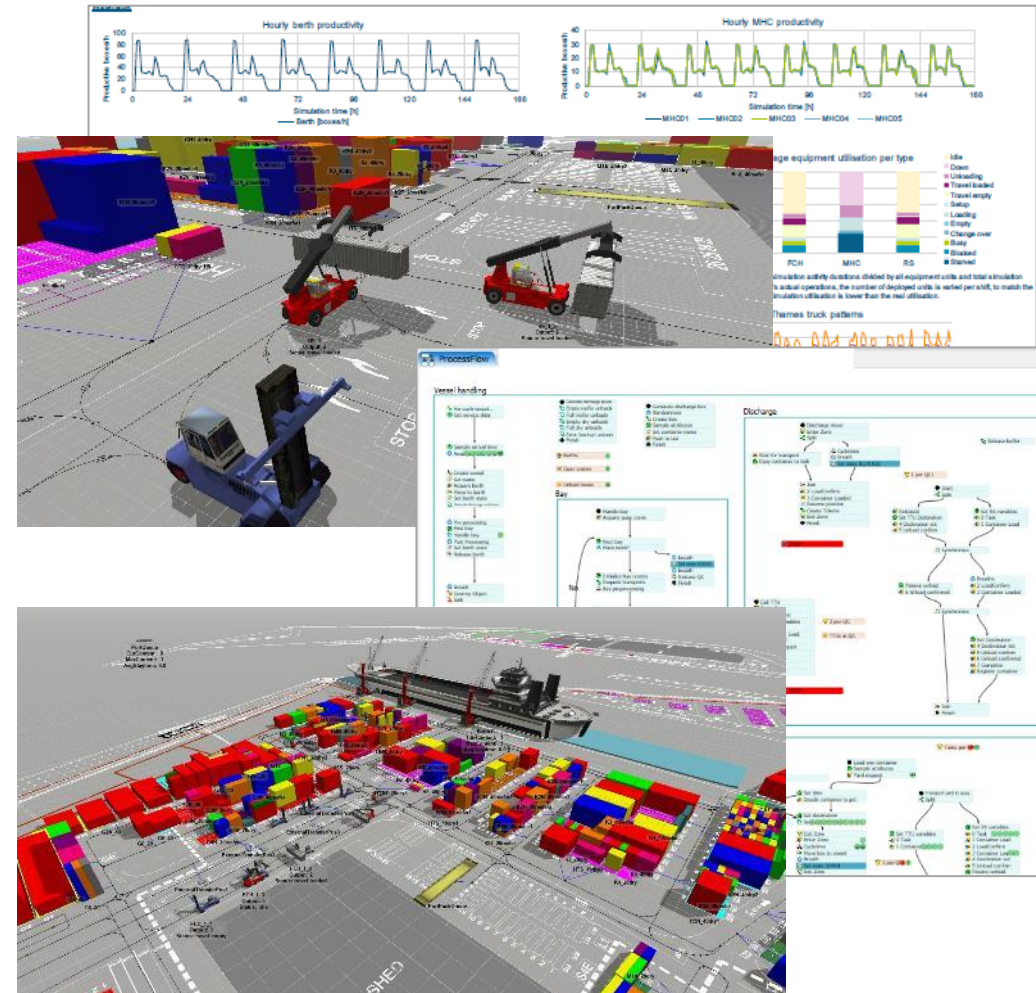
- **Process validation**
- **Layout design validation**
- **Investigating 'what if' scenarios**

POTENTIAL BENEFITS

- Increase throughput, Improve equipment utilization
- Reduce bottlenecks, Balance workload,
- Study alternative approaches
- Train operators in system behavior
- Compare yard strategies, Review impact of yard layout changes

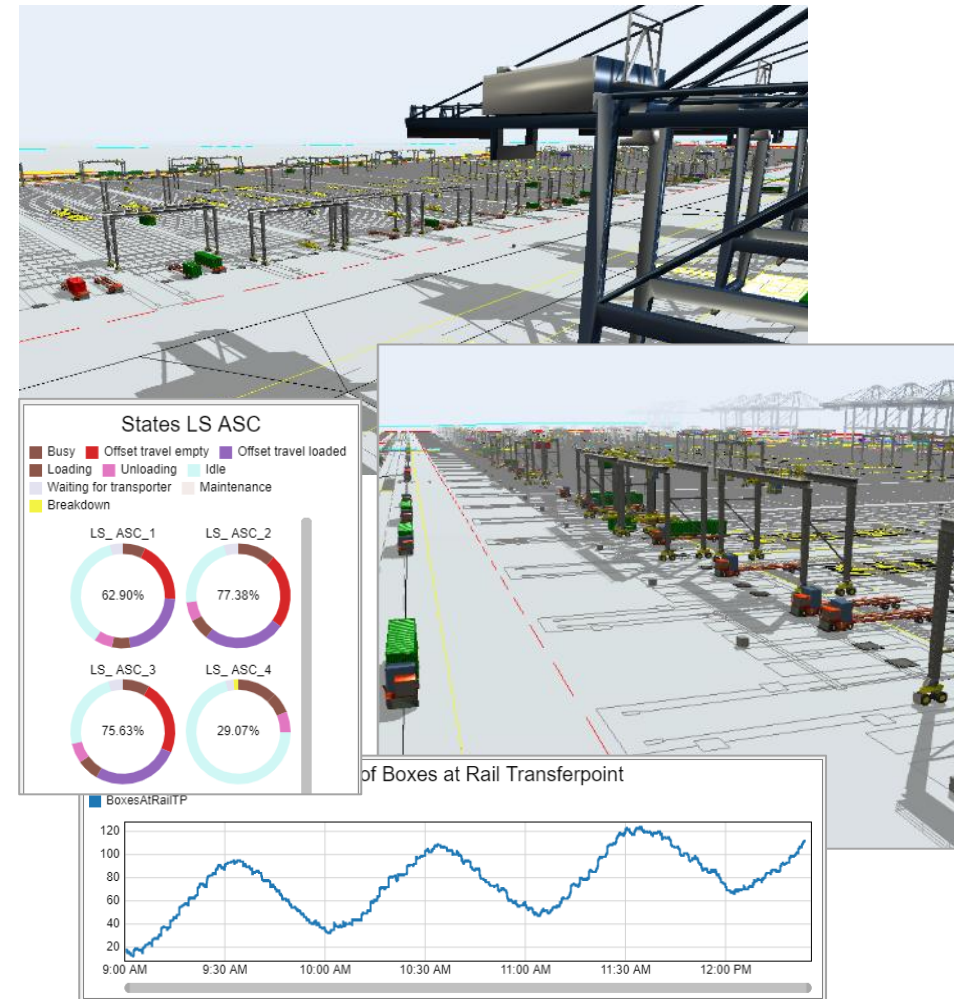
Example Brownfield optimization project

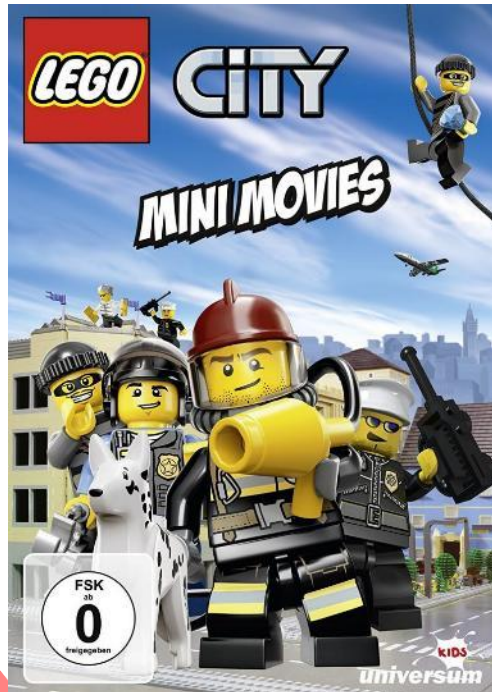
- Volume growth scenarios
- Different equipment and lay-out combinations tests
 - Reachstacker/handlers
 - (A)RTG
 - ASC
 - ShuttleCarriers/ TTUs/AGV
- Ancillaries' operations impact
- Detailed storage analysis
- Power consumption quantification



Example Greenfield design

- Validating and determining equipment numbers
 - Waterside cranes
 - Landside automated cranes
 - Horizontal transport
 - Rail cranes
 - Number of chassis needed
- Results include:
 - Berth & vessel productivity
 - Truck turnaround time
 - Traffic congestions
 - Utilizations over time









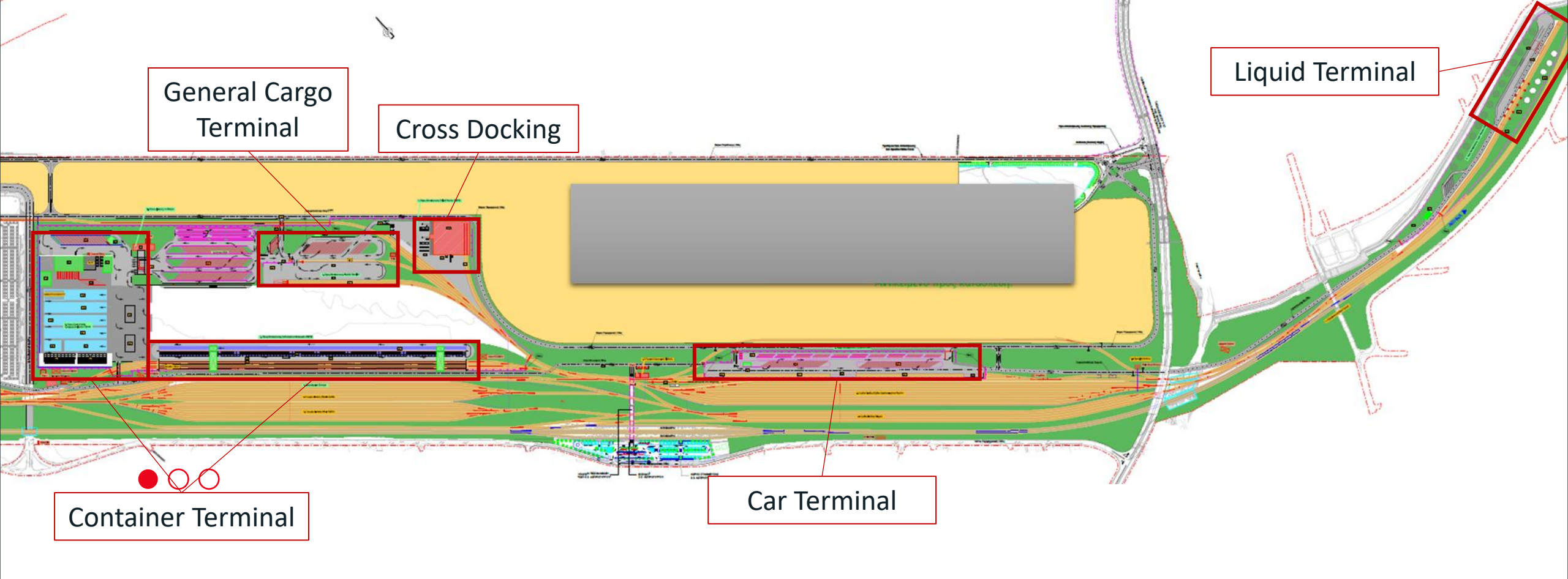
Possible Result Without SIMULATION *to analyze risks...*



USE CASE

**A Business Process Mapping and Design
Project As Input for Simulation**

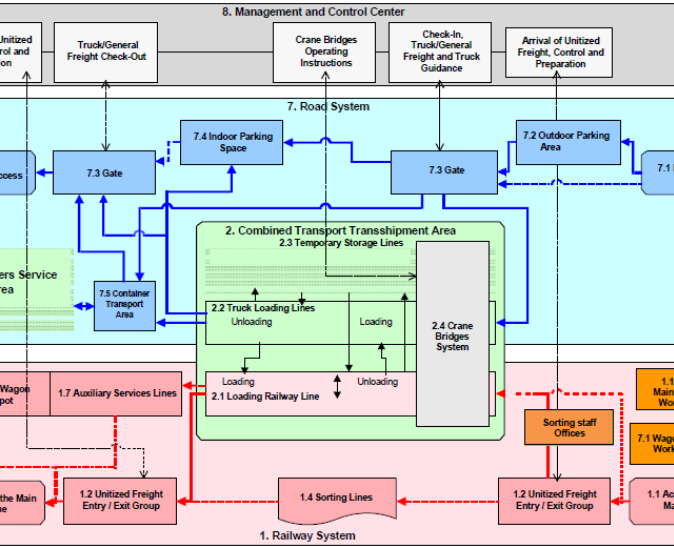




SCOPE: Evaluate the operations of a complex multi-modal terminal.

Methods:

- Analysis of operational activities and processes - Business Process Mapping.
- Analysis of the terminal's layout.
- Analysis Equipment utilization from operational and technical perspectives.



Tender Constraints

- Already built infrastructure which could not be demolished or relocated.
- Binding agreements on the equipment to be used.



Traffic Analysis

- Uncertain traffic volumes and limited analysis on traffic flows.

Documentation

- Old, outdated and complicated documentation from the first attempt for privatization, approx. 20 years ago.



Operations Knowledge

- Customer with limited operational knowledge.
- Difficulties in explaining the advantages / disadvantages of each operational mode and equipment.



- Discussions to unpack the customer's vision.
- Interviews with Subject Matter Experts.
- Establishment of communication channels with key team members and other stakeholders.

- Confirm DSP team experience on similar projects.
- Establish BPM format, introduce labeling system for tracking each BPM step.
- Develop BPMs in a flexible manner.

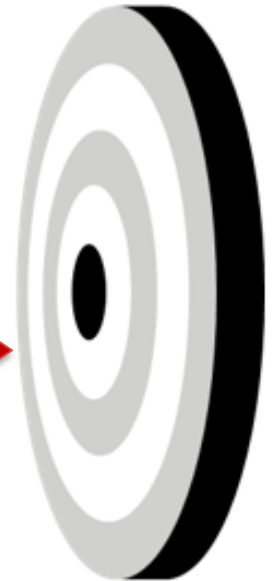
- Distribution of work.
- Regular alignment meetings.
- Continuous BPM suitability reviews based on proposed terminal layouts.



Communication

Adding value

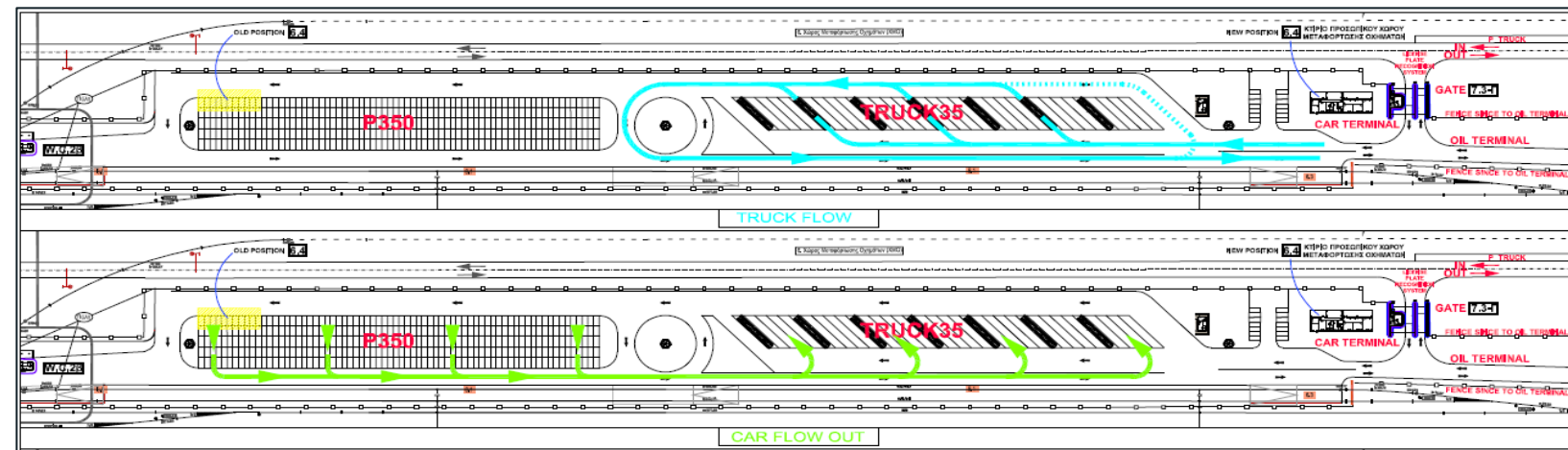
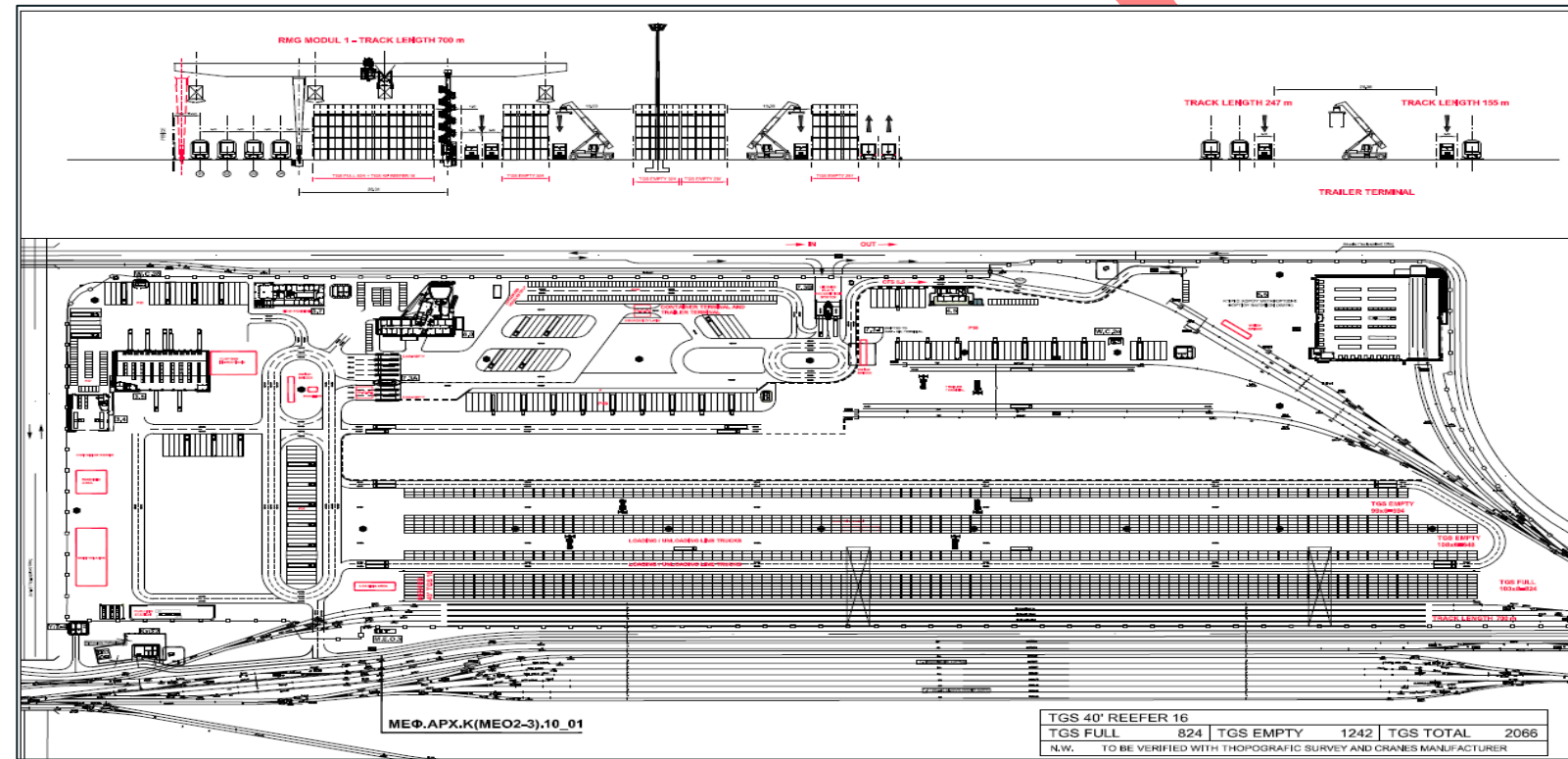
Work Management



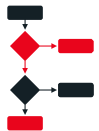


Terminal Design

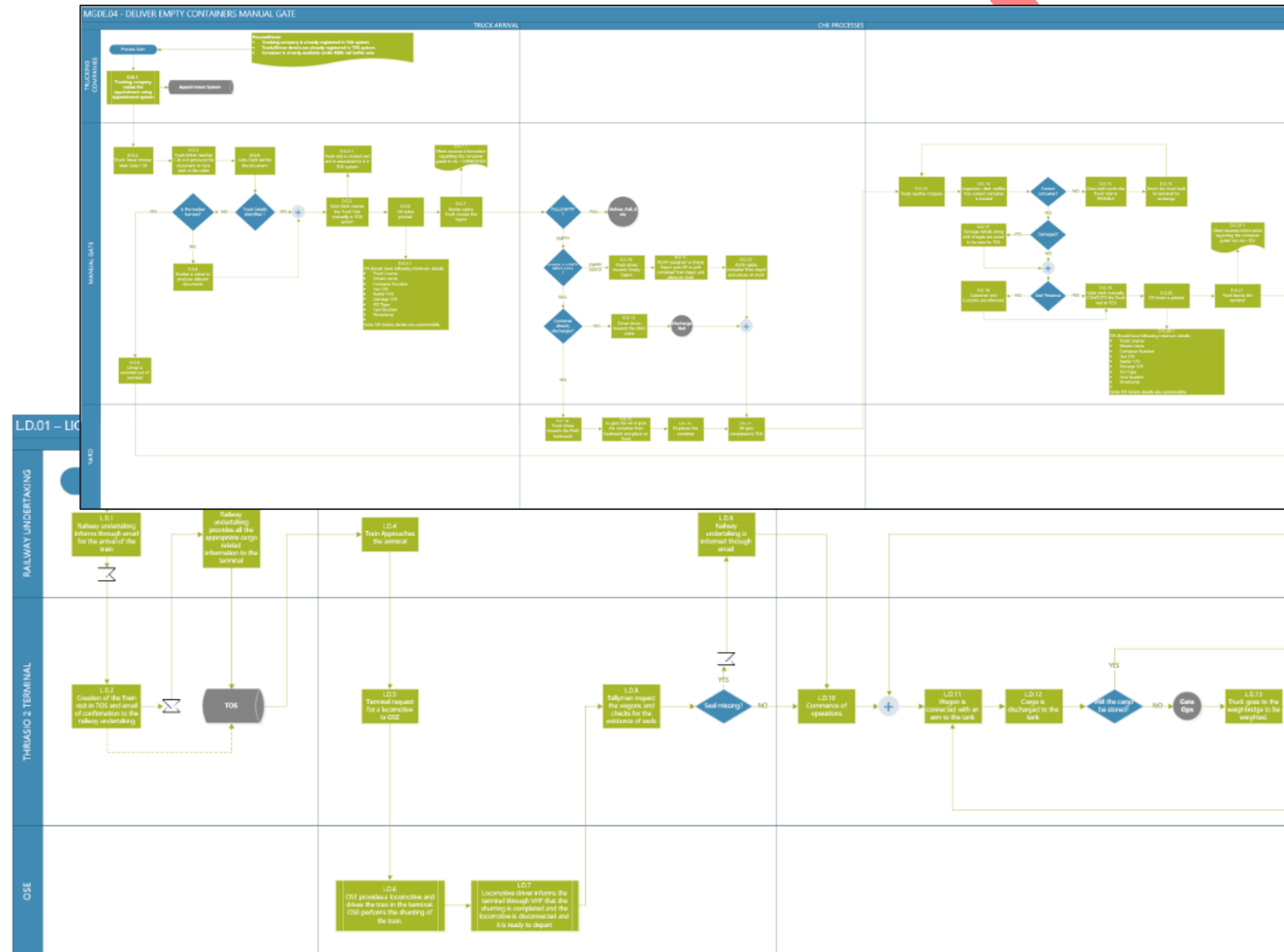
- 6 rail operations concepts.
- 3 different terminal layouts based on the rail operations concepts.
- Suggested layouts for the car and liquids terminal.



BPMs



- 8 BPMs for the Gate.
- 1 BPM for the free zone.
- 2 BPM for container washing / repairing.
- 4 BPM for wagon services.
- 4 BPM for RMG operations.
- 2 BPM for container cross-docking.



SUMMARY

Business Process Mapping and Design Project

➤ ***Communications best practices***

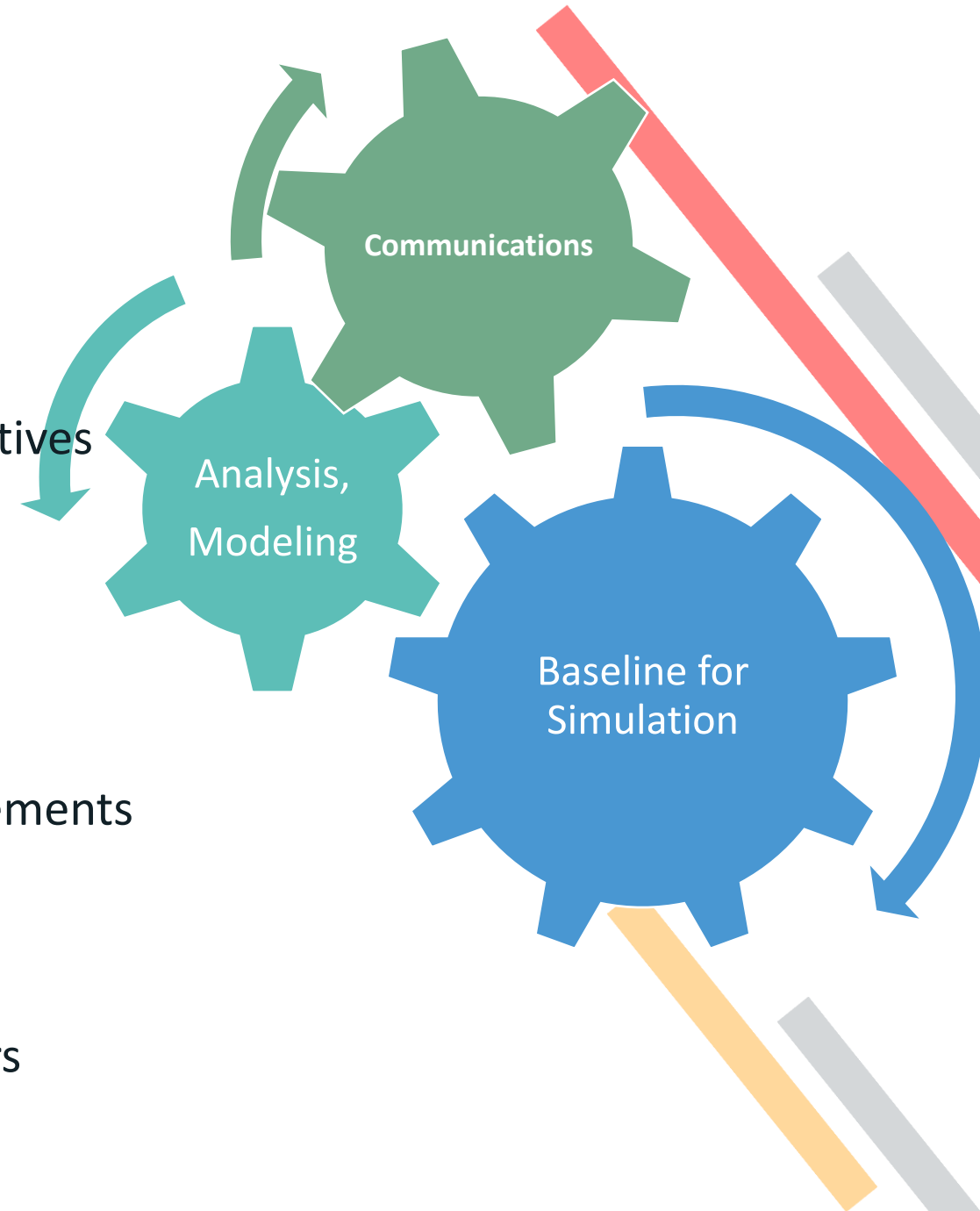
- support the team in assimilating the project objectives
- address areas of limited customer knowledge

➤ ***Professional analysis, modeling tools***

- mitigate challenges of outdated documentation / information gaps
- ensure that results produced meet project requirements

➤ ***Solid baseline prepared for simulation exercises***

- enable risk assessment and decision-making
- essential preparation BEFORE approaching vendors





THANK YOU!



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