



“From Data to Value”

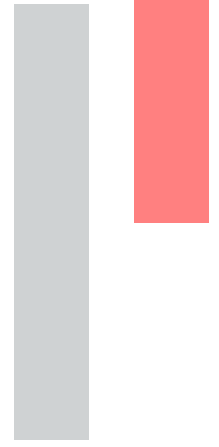
How predictive analytics and optimization can support decisions, improve efficiency and competitive advantage.

Thursday, January 25, 2024 – 11:20 am



Marco Fehmer, DSP
Chief Executive Officer





Part 01

Innovation

The right approach to digitalization and innovation projects

Concretely Innovate

Know your problem, learn the technology, design your solution



Understand

Acknowledge your issue
Define your objective
Set Expectations

Access Technology and
Innovate with the right
tools



Data Strategy



Standardisation



Automation

Process

Equipment

Hybrid operations

Safety

Sustainability



Digital Intelligence

Added Value Application

Digital Model to **mirror,**
simulate, emulate the
reality.

Artificial Intelligence to apply
to the model and to reality to
enhance decisions criteria

Human Supervision

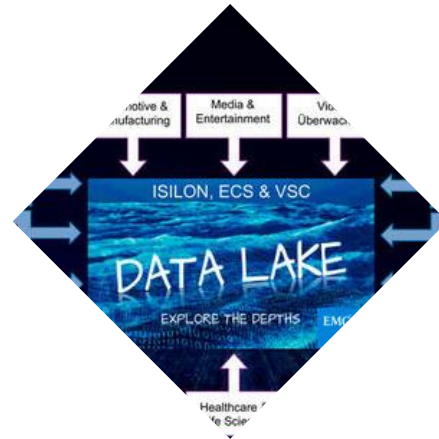
Common obstacles on the road to innovation

Lessons Learned



Preparation

- **Decision Process** can take too long
- Lack of specific **knowledge**
- Lack of **resources**
- Set **expectations**



Strategy

- Ideal desired architecture cannot be achieved immediately, you need **planned comprises**.
- Roll-out in multiple sites shall not stop local evolution, some **rework** shall be expected



Project planning

- Each project, especially involving automation should be **phased**
- Deliver tangible concrete **short term results** is a key-success factor for future adoption



Control

- **Integration** of solutions is never plug&play
- Model **validation** is mandatory
- **Testing** is crucial, especially Live Equipment Testing



Part 02

Why DSP

Who we are



4 Business Entities

380+ Projects completed worldwide

50+ Industry Experts

14+ Languages

38+ Years in the shipping and port industry

20+ Navis Certified consultants

24/7 Global help desk and support services

+40% DSP Product Live Installations in 2023



DSP is compliant with ISO 27001-2022 certification to grant Information security, cybersecurity, and privacy protection to its customers



Our core business

TOS CONSULTING

DSP team supports the Terminal Operations in all the phases of the Terminal Operating System implementation, optimization, support and training.

BUSINESS INTELLIGENCE

Product:  **DATAVIEW**

DATAVIEW is a DSP product. It's a Business Intelligence solution for your terminal showing you any data everywhere in one view



DIGITAL TWIN

Product:  **GEMINI**

GEMINI is a Digital Twin solution. GEMINI is a platform, bespoke on the characteristics of every single terminal organization, able to mirror decisions, strategies and show workers practice during real operations.

SYSTEM INTEGRATOR

DSP is a System Integrator Company with a well-established network specialized in connecting specific solutions to address individual cases.

Part 03

Predictive Analytics with Business Intelligence

Forecast of an event as a singularity

 **DATAVIEW**



Predictive Analytics with BI Tool – Vessel Completion Time

Reading the actual facts to predict a punctual event



REACT
Control
Change / review plan
Notify to Line

Expected Time of completion

Moves to be done

Moves Done

Live Vessel Productivity

Moves per QC & ShiftId

StartShift	FirstLift	EstimatedEndTime	PercentageComplete
08:15:00	07.10.2023 07:00:00	07.10.2023 09:17:24	63.66%
11:50:00	07.10.2023 07:00:00	07.10.2023 13:09:43	65.68%
		07.10.2023 17:00:24	
		07.10.2023 23:04:44	

CarrierVisitId	CHEId	MovesDone	RateMoves	MovesInProgress	Moves	Restow
VESSEL1547212		3	1.80	121	124	0
VESSEL1547212	QC03	110	23.32		110	0
VESSEL1547212	QC04	99	20.84		99	0
Total		212	43.12	121	333	

Moves per VesselVisit e QC

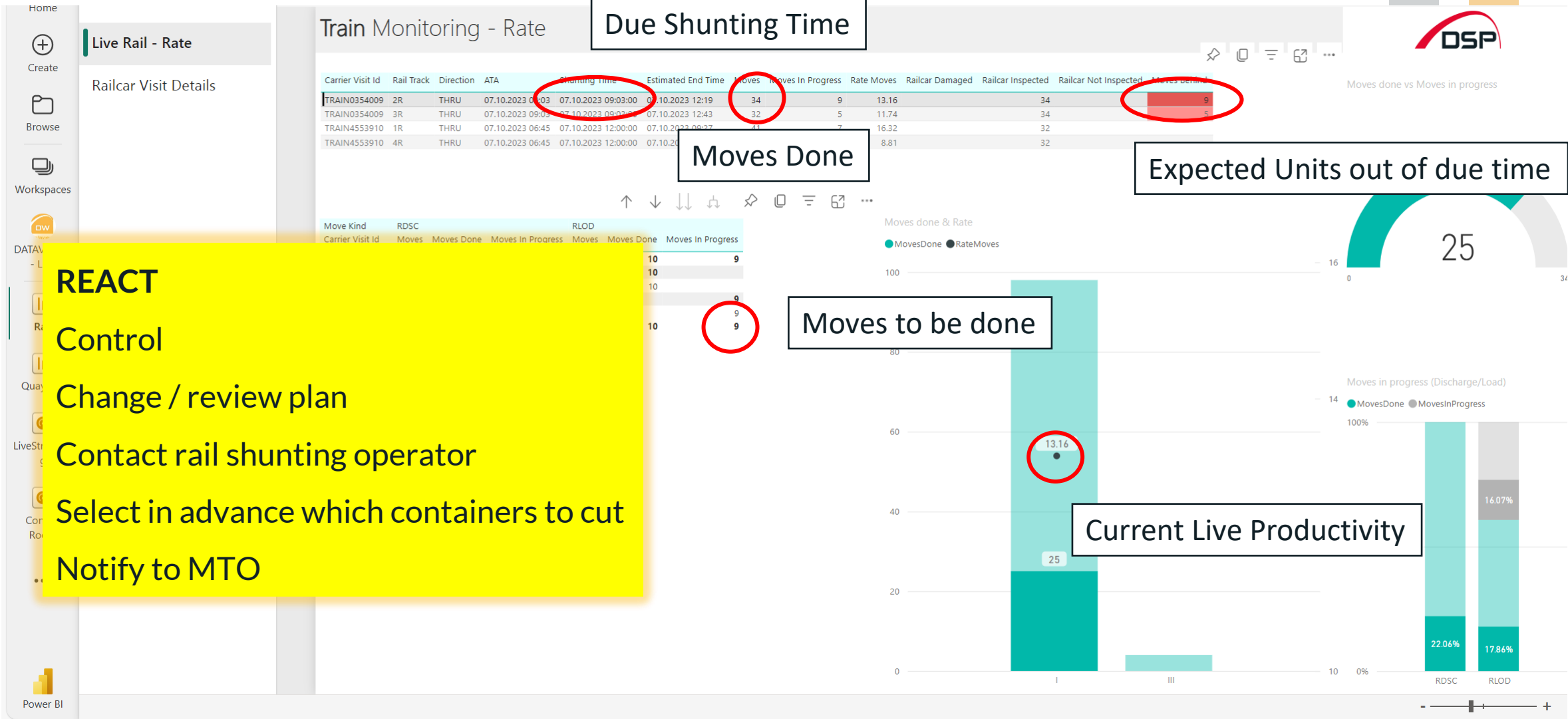
CarrierVisitId ● VESSEL1547212 ● VESSEL5050154

Delays

CarrierVisitId	Delays min.	Description	Type
VESSEL1547212	3.53	Assembly Spec Equipment	TERMINAL
VESSEL1547212	35.68	Crane Operator Change	TERMINAL
VESSEL1547212	5.00	Disch Gear Box	TERMINAL
VESSEL1547212	7.27	Dismantling Spec Equipment	TERMINAL
VESSEL1547212	1.00	Lashing	TERMINAL
VESSEL1547212	3.33	Load Gear Box	TERMINAL
VESSEL1547212	71.00	Ship Cause	NON_TERMINAL
Total	137.80		

Predictive Analytics with BI Tool – Rail Moves before Shunting

Reading the actual facts to predict a punctual event



- REACT**
- Control
- Change / review plan
- Contact rail shunting operator
- Select in advance which containers to cut
- Notify to MTO

Part 04

Predictive Optimization

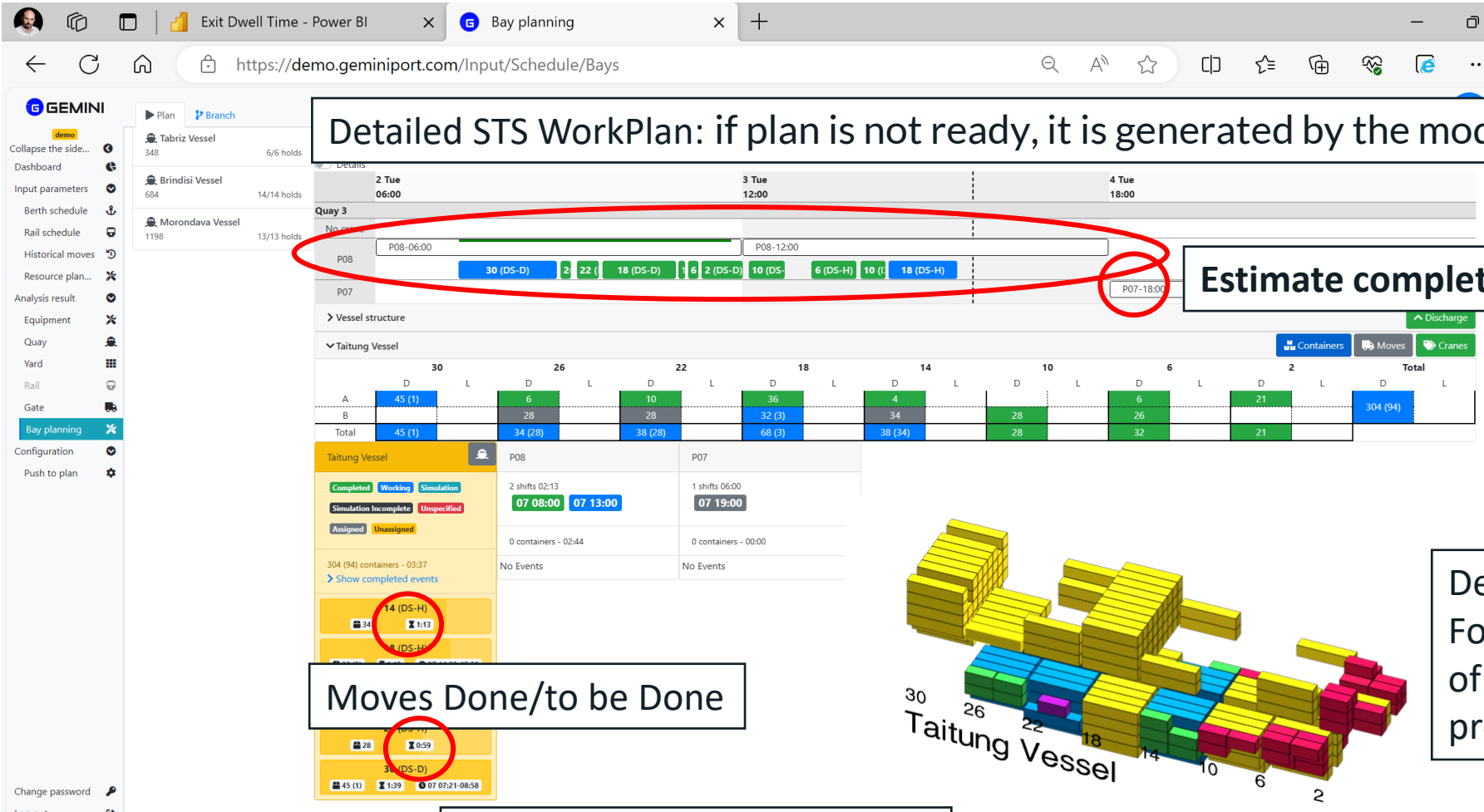
Correlate events using an Holistic Model



Predictive Optimization with Digital Holistic Model – 1st Step

Use live and historical data to predict correlated events

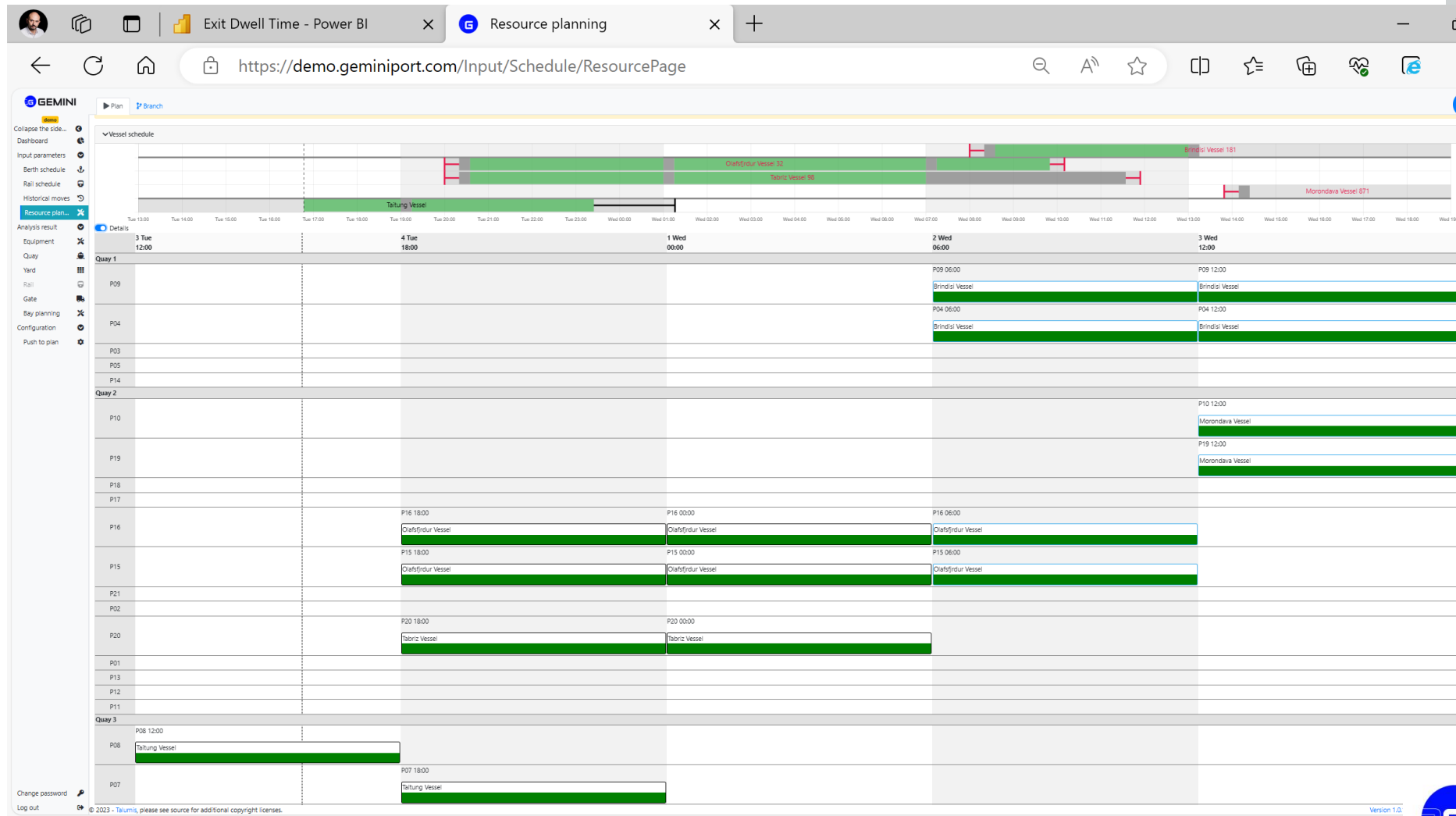
For each Vessel:



Predictive Optimization with Digital Holistic Model – 2nd Step

Use live and historical data to predict correlated events

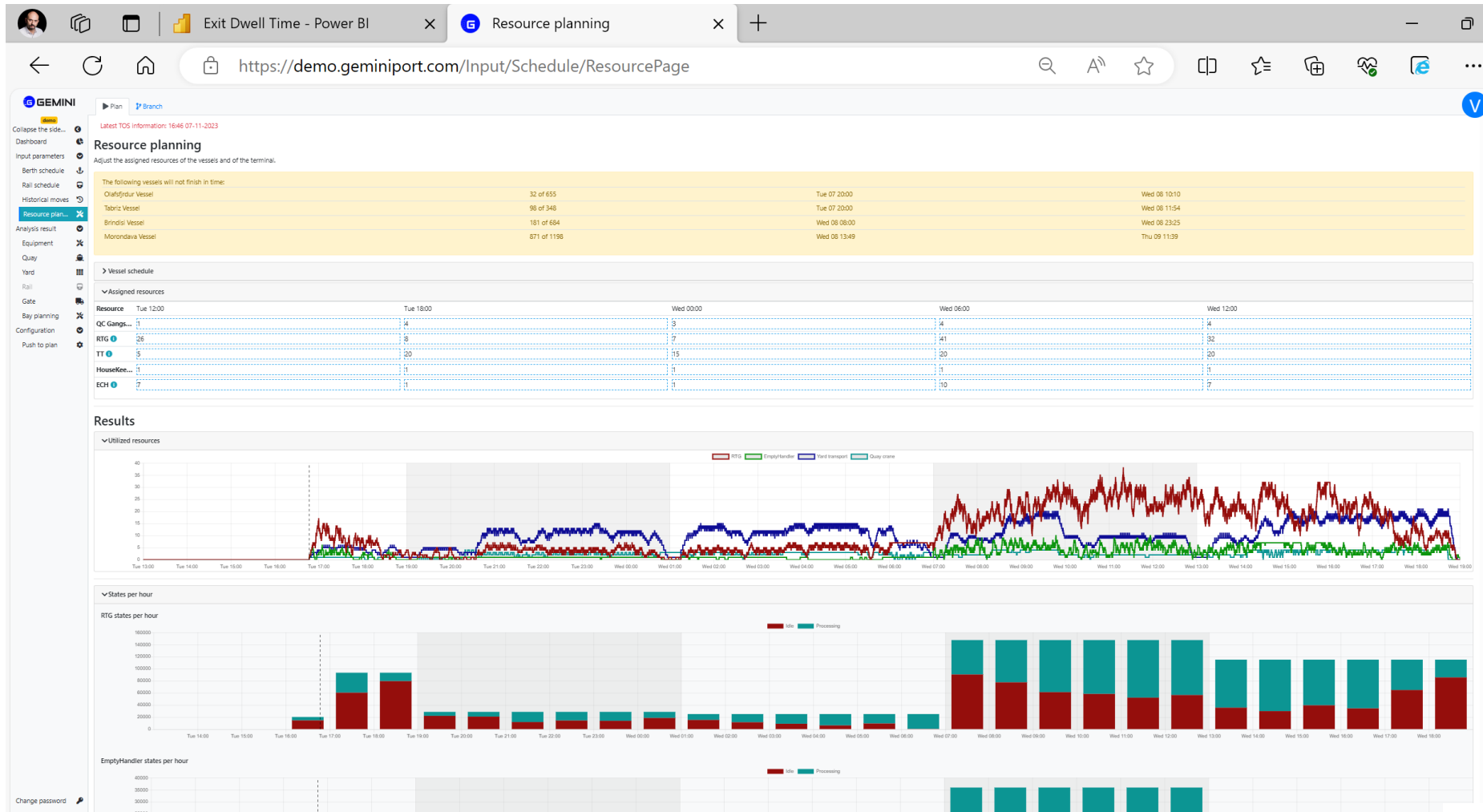
STS WorkPlan for all Vessels scheduled



Predictive Optimization with Digital Holistic Model – 3rd Step

Use live and historical data to predict correlated events

Planned Yard Resources



Advanced Predictive Analytics with Digital Holistic Model – Result

Use live and historical data to predict correlated events

Expected time of completion predicted taking in account all vessels scheduled (regardless if planned or not) and all terminal operations

REACT

- Optimize STS Schedule
- Verify occupation of yard resources and generate savings or prevent bottlenecks
- Plan STS Maintenance intervention
- Deep dive at container work sequence level and add additional feature:
 - Discharge time → dwell time → gate appointment
 - Loading time → receipt patterns → gate appointment



Thank you!

TOS CONSULTING

 **DATAVIEW**

 **GEMINI**

www.dsp.team

