



FUEL CONSUMPTION

TRIP:  
**-25%**  
LIVE:  
**+15%**

REMARK

**+5'** delay

ROUTE

ROUTE SELECTED:  
Optimal

SPEED

Economic

DESTINATION

Main Port  
ETA: **13:45 (+5')**

VESSEL  
TO ASSIST

HMS Wave

NEXT TASK

Towage

# DATA DRIVEN SUSTAINABILITY AT KOTUG

PRESENTATION Digital Ship September 22, 2022

# OUR BUSINESS



Driven by our passion 'Ahead in Maritime Excellence' we empower our clients and stakeholders with the complete portfolio. From designing, building, chartering and operating vessels to training people and providing innovative consultancy on a worldwide scale.



## TOWAGE

Harbour Towage  
Offshore & Terminal Towage  
Chartering & Salvage  
Inland Towage



## SUBSEA

SPM Operations & Maintenance  
Asset Integrity Management



## INTELLIGENCE

OptiPort  
Analytics & Reporting  
Drone Line Transfer



## TRAINING & CONSULTANCY

Training  
Consultancy  
Towmaster Services



## MARITIME EXCELLENCE

Ship Management  
Innovations  
Projects & New Building  
Fast Crew Transportation

# SUSTAINABILITY & KOTUG



The heart of our company



Minimal impact through innovation



Embracing new technologies

# HOW DO WE USE DATA AND HOW WE USE IT TO OUR BENEFIT

- To optimize our operations
- To make our operations more sustainable
- To strengthen our commercial position



# DATA GATHERING & PROCESSING

## THE PAST?



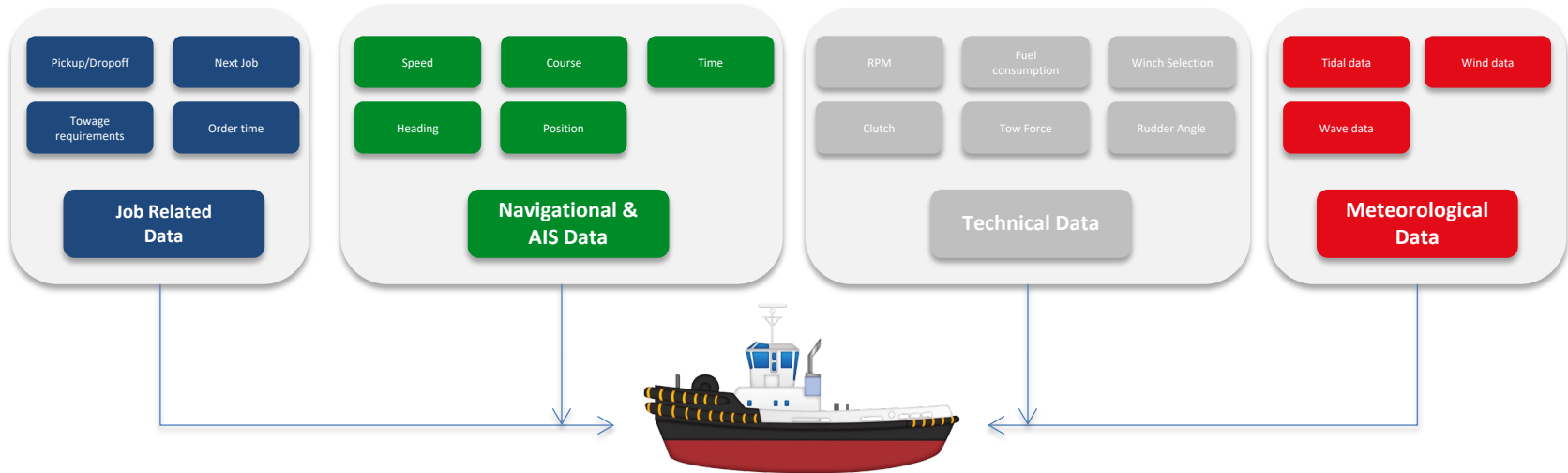
- Visual & Manual
- Logbooks & Excel sheets
- Noon reports
- And calls..... lots of calls.....

# DATA GATHERING AT KOTUG

- Automated data collection
- Digital data processing
- Making data actionable and work for us



# MARITIME DATA IS EVERYWHERE



# WHAT COULD IT BRING TO YOUR ORGANISATION?

## Analysis

Incident Analysis

Strategical

Commercial

Operational

Training requirements

## Reporting

KPI Dashboards

Historical Reporting

Job playback

Speed analysis

Stakeholder Reporting

## Maintenance

Maintenance

Engineering

Predictive & Preventive

maintenance

## Environmental

Carbon emissions

Fuel burn

Effective Asset Use

## Data Sharing

Port Authorities

Terminal Operators

Engine manufacturers

Shipyards



# EU FIT FOR 55

## SUSTAINABILITY & TRANSPARENCY

- European Trading System Directive (ETS)
- FuelEU Maritime Regulation
- Alternative fuels Infrastructure regulation
- Energy Taxation Directive

**Environmental**

**Carbon emissions**

**Fuel burn**

**Effective Asset Use**

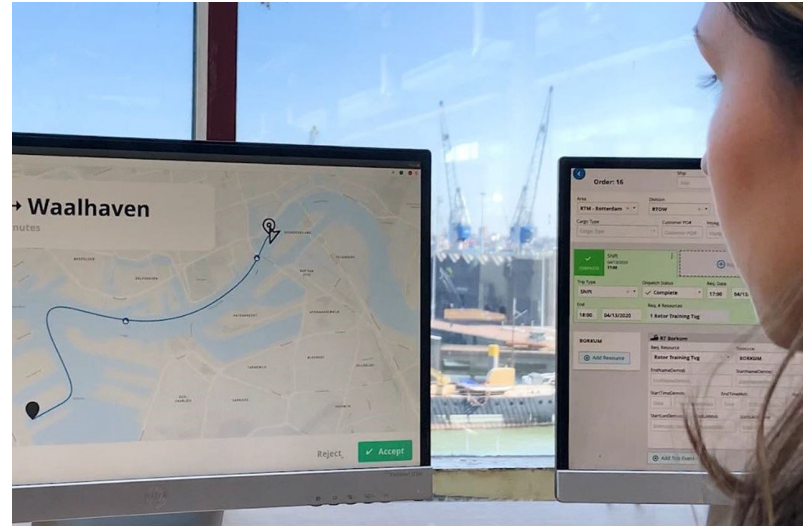
# HOW KOTUG BENEFITS FROM ITS DATA & TECH STRATEGY

- Workflow optimization & Operational analysis
- Identify training needs for crew (and pilots)
- Existing and future fleet composition
- Reduce staff travels
- Data sharing

# WORKFLOW OPTIMIZATION

## KOTUG OPTIPOINT

- OptiPort as an independent tug scheduling tool
- OptiPort helps us and our clients to reduce fuel consumption, improve staff wellbeing and limit delays in busy and complex ports



# WORKFLOW OPTIMIZATION OPTIPOINT

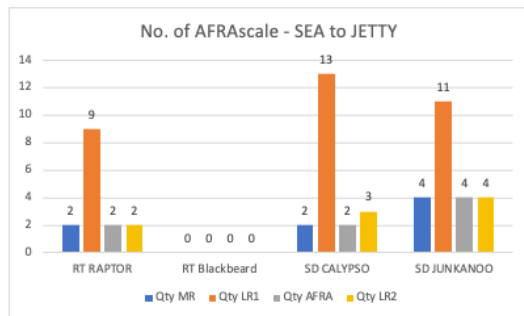
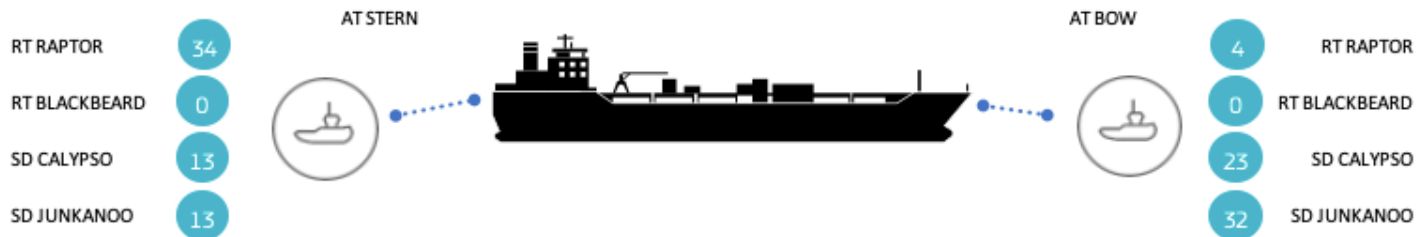


# ONBOARD FUEL SAVINGS & TRAINING NEEDS

- We have installed ONBOARD on specific boats in our fleet
- Delivers behavioral & actionable data



# ONBOARD FUEL SAVINGS & TRAINING NEEDS



## FUEL EFFICIENCY

### RT RAPTOR

Laclare Johnson  
Ethan Dames

### RT BLACKBEARD

Avian Mackey  
Doswell Coackley

### SD CALYPSO

Percival Albury  
Shazim Khan

### SD JUNKANOO

Demetrius Sears  
Kenneth Smith

## TRANSIT L/H

Profile - actuals

120	158
88	

## TOWING L/H

Profile - actuals

210	300
121	

## PINNING L/H

Profile - actuals

160	217
-----	-----

120	n.a.
n.a.	

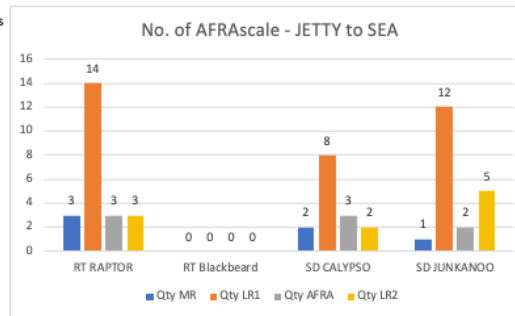
210	n.a.
n.a.	

110	109
111	111

200	219
210	210

110	110
107	107

200	187
147	147



# REDUCE STAFF TRAVELS

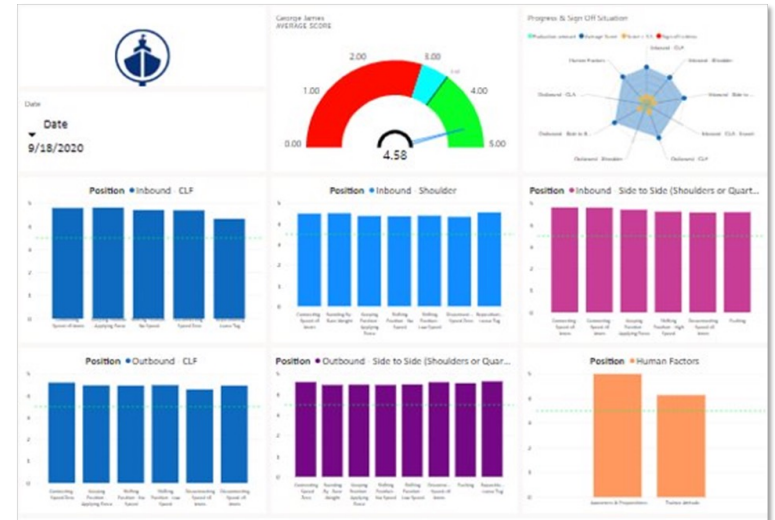
## KOTUG - EYE

- Supporting our staff and contractors
- Tool for remote support and ISO and class audits
- Support business continuity
- Significantly reduced travel cost



# IDENTIFY TRAINING REQUIREMENTS KOTUG ASSESSMENT APPLICATION

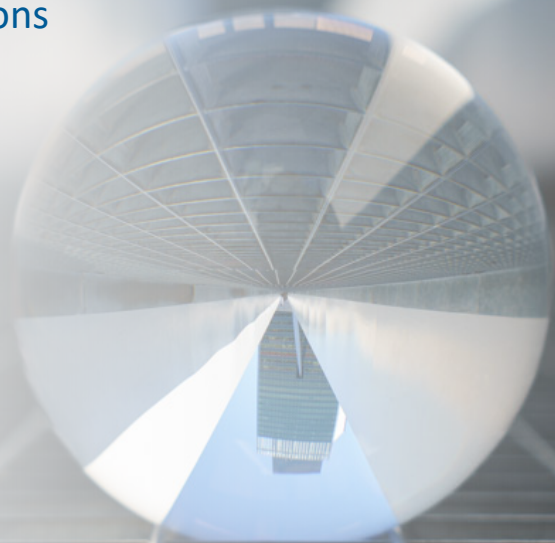
- Data driven
- Objective performance assessment versus baseline performance
- Nautical crew and onshore staff
- Identification of training requirements, plans & progress





# WHAT'S NEXT?

- More and more transparent and cooperative operations
- Being more accountable than we already are
- Expect more reporting obligations





# USE DATA TO YOUR BENEFIT!



### SHIFTING BARGES

FROM: LEKHAVEN  
start **12:02**  
TO: FRISOHAVEN  
finish **15:13**

### ACTUAL SPEED

**4,5**<sup>kts</sup>  
ACTUAL FUEL  
**280** ltr/hour



### SHIFTING VESSEL

**Atlantis**  
FROM: RIJNHAVEN PIER 6  
**13:12**

### ROUTE

TO: WAALHAVEN  
BERTH 7  
finish **15:32**

### MOBILISATION SPEED

SPEED **8**<sup>kts</sup>  
ACTUAL FUEL  
**150** ltr/hour



### DEPARTING VESSEL

**Poseidon**  
FROM: WAALHAVEN  
BERTH 7  
@ **12:15**



### ACTUAL SPEED

**4**<sup>kts</sup>  
ACTUAL FUEL  
**180** ltr/hour

### ROUTE

TO:  
STREAM / FINISH  
@ **12:54**

### ACTUAL SPEED

**4**<sup>kts</sup>  
ACTUAL FUEL  
**320** ltr/hour



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