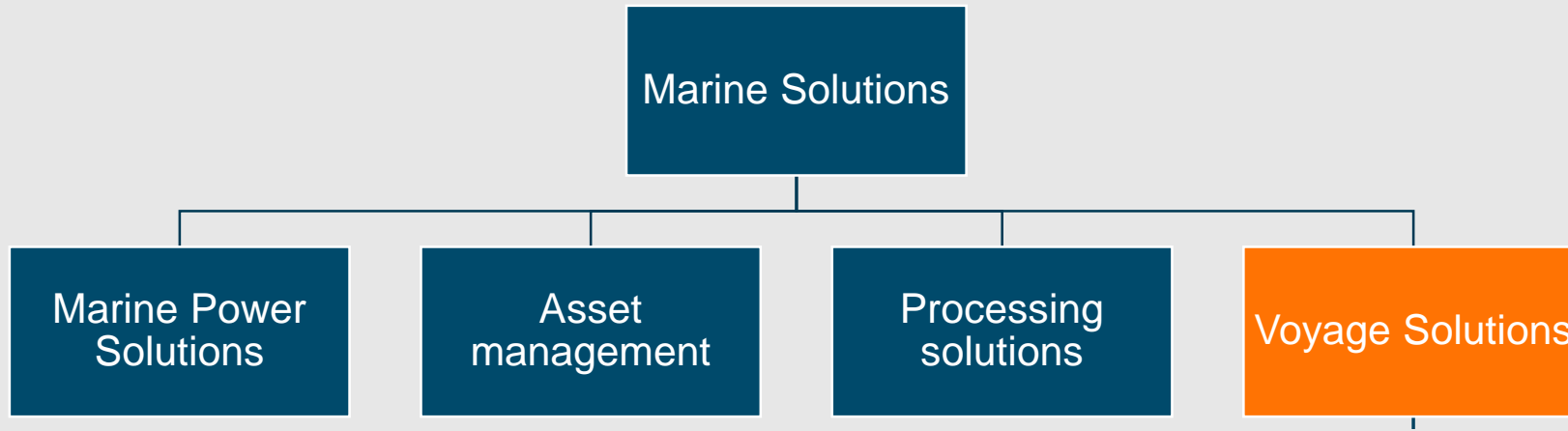


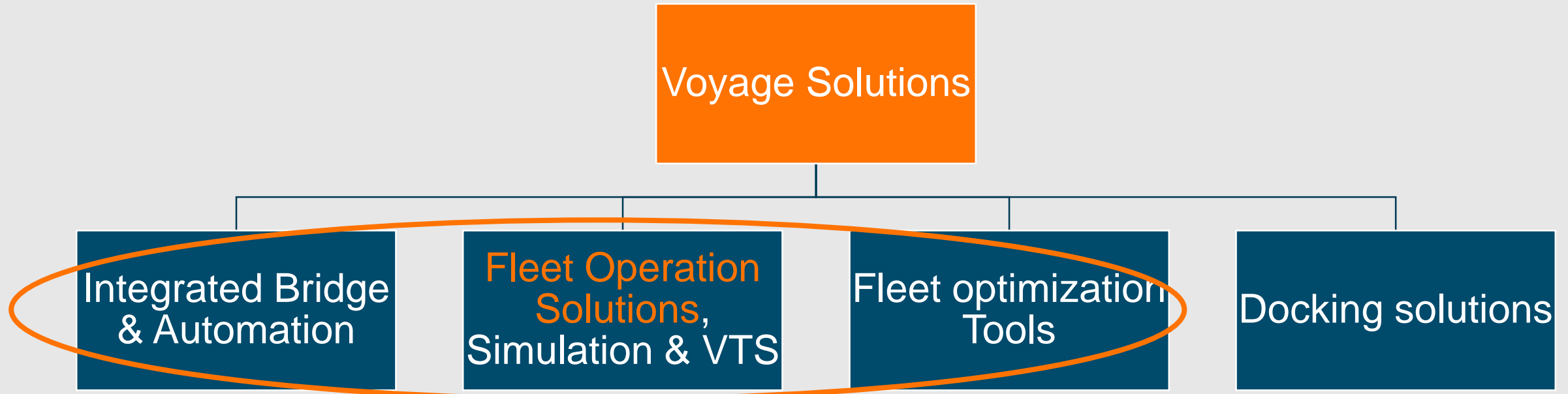
Wärtsilä **Smart Marine**

Enabling sustainable societies with smart technology

Wartsila Voyage Solutions



Wartsila Voyage Solutions



**Driver of Smart Marine within
Navigation and Fleet Performance**

Fleet Operation Solutions



**Shared
capacity**



**Big data
analytics**



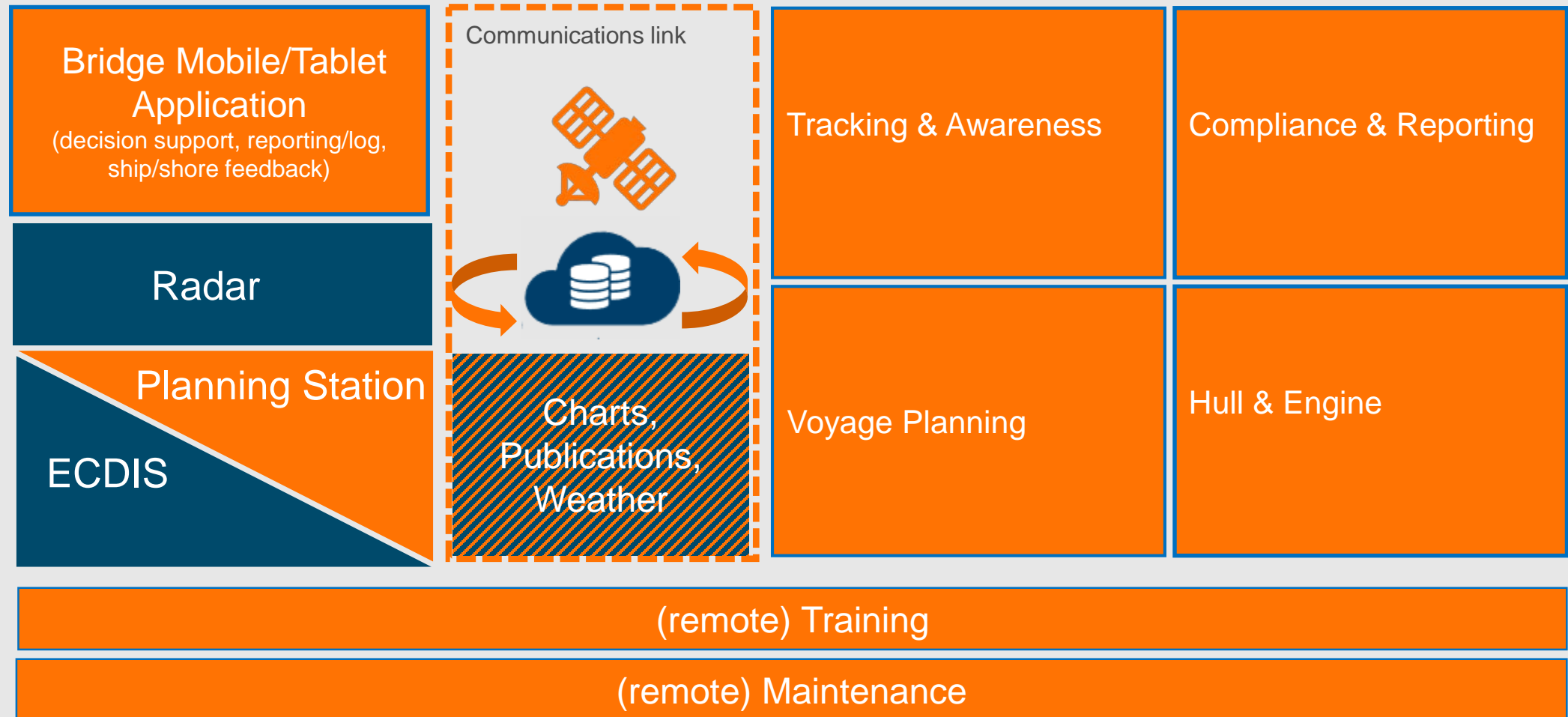
**Smart
vessels**



**Automated
ports**

Fleet Operations Solution

Enabling safe and efficient navigation and operations



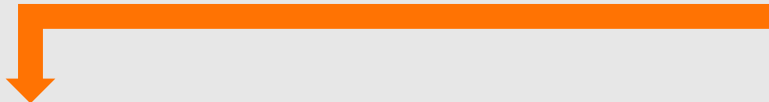
On board

Transas ECDIS delivers proven usability while fully integrated into our Fleet Operations Solution

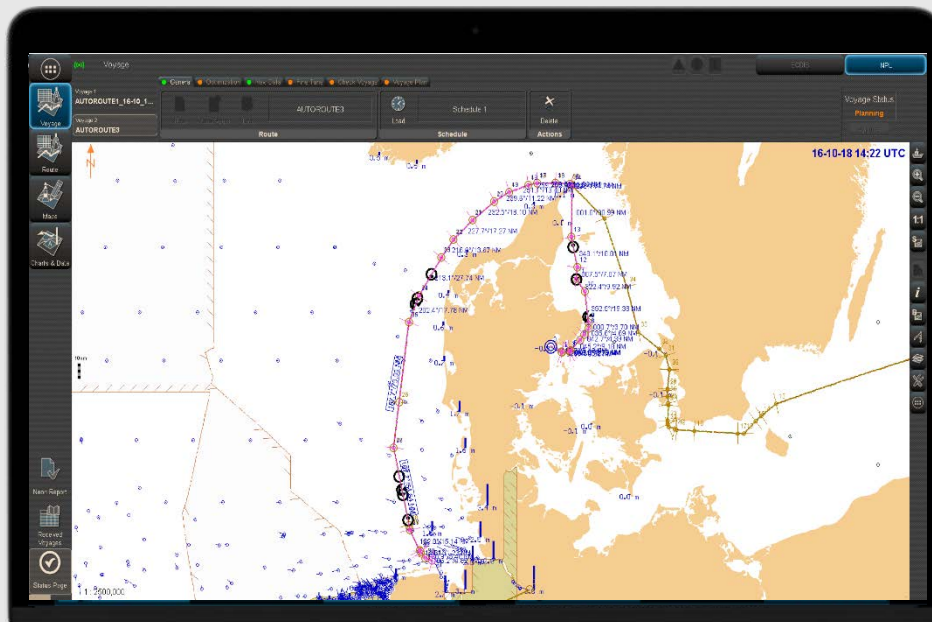


- Data Control Unit (DCU) – enables connection between the navigation system and data sensors.
- Data Management Server (DMS) – built-in on board data processing and storage solution.
- Telemetric Sensor (TMS) – built-in sensor providing smart collection of dynamic motion parameters for extended diagnostics and behaviour analytical services.
- Automatic data delivery keeps charts, publications and planning tools updated.

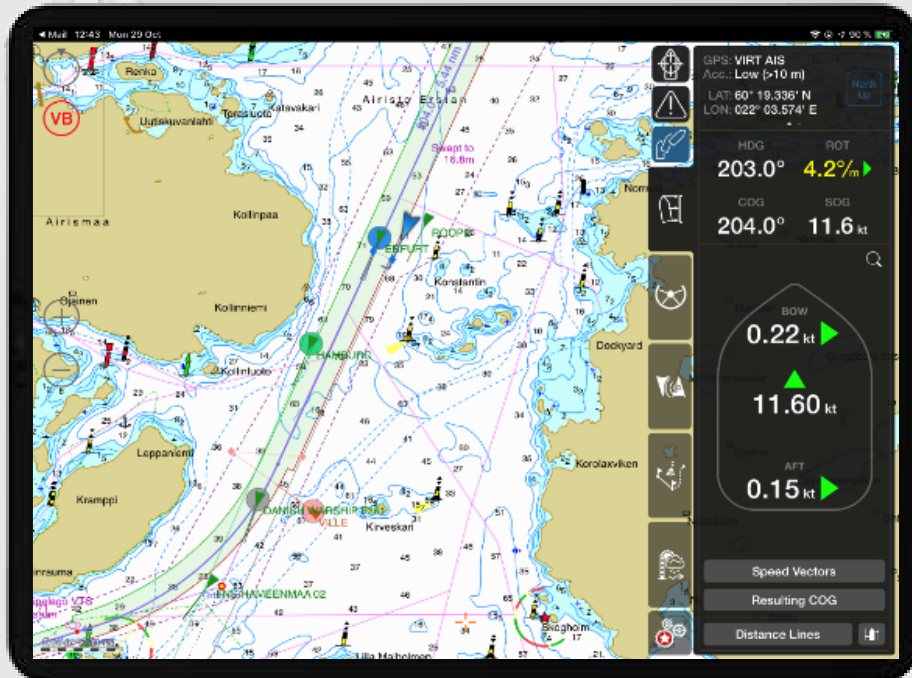
Time for planning decreases from 4-5h to 30min!



- Voyage planning is automatically done on up-to-date nautical charts, so the computer gives a draft route which is safe to sail
- Route is then weather optimized – further improving safety and fuel efficiency of the route
- All needed (and only the needed) charts are automatically downloaded and put along the route
- Flexible, fast and user-friendly route manual correction tools
- Voyage plan is automatically created



Portable device on the bridge as central resource for decision support, automatic reporting and ship/shore communication



- Redundant „Take me home” solution for navigation
- Extensive reporting and log functionality with automatic pre-filling (SmartLog TM)
- Decision support notifications on safety and efficiency
- 20-30 min traffic forecast and maneuver prediction

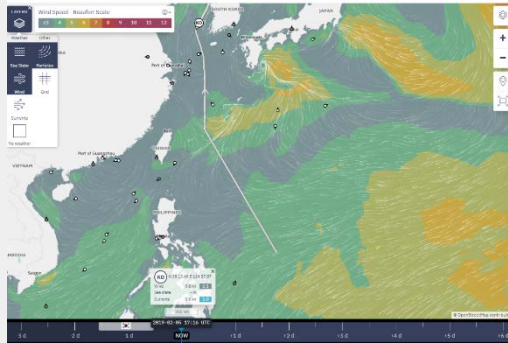


- Intended for docking and mooring operations
- Operates in portrait or landscape mode
- Selectable chart orientation
- Predictor functionality
- Customized fender lines
- Automatic distance functionality
- Speed vectors: resulting COG and fore-and-aft vectors
- Vessel Parking System: audiovisual information on external objects and manual “parking”-safe distance limits

On Shore

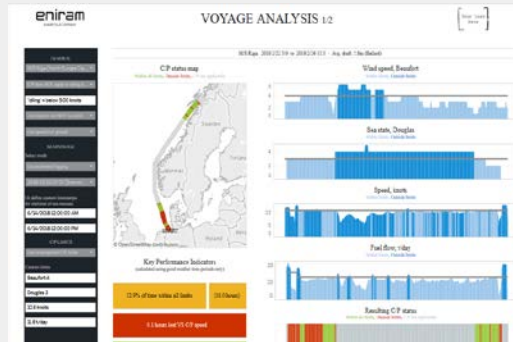
Tracking & Awareness

Transparency of navigation enables onshore fleet operators/owners/managers to monitoring their vessels in real-time, record navigational near misses, playback & support incident investigation & emergencies.



Compliance & Reporting

Ensuring Charter Party and Environmental compliance (e.g. MRV)



Voyage & Ports

Optimize voyage and speed behaviour as well as port stays



Engine & Hull

Optimize hull, propeller and engine condition as well as engine usage



Performance management reduces fuel consumption by 5-10% and allows to defend claims!

REAL TIME MONITORING OF FLEET VESSELS

Wärtsilä FOS Center

Overview

Monitoring

Fleet

Issues

Voyages

Training

Eniram



Overview

Vessel Issues

Scheduling & Efficiency



0



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Navigational Safety

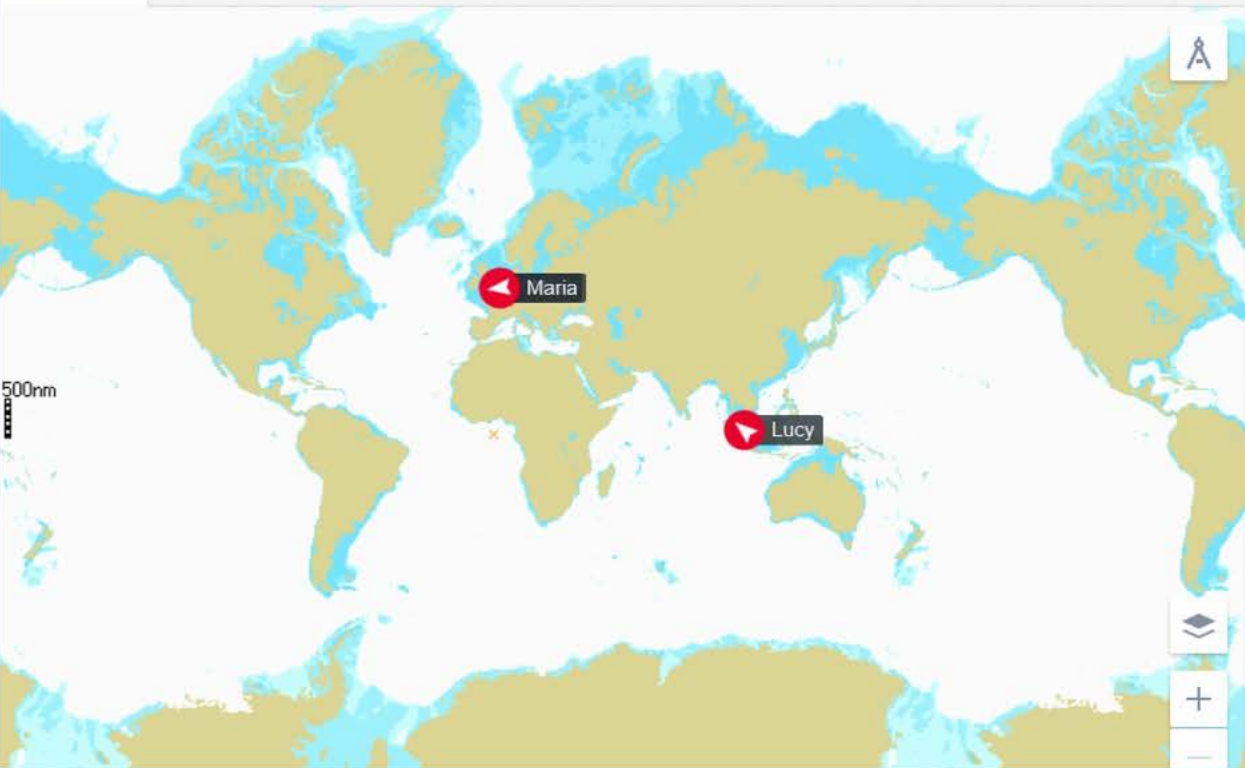


9



2

Chart



Passages

VESSEL

CURRENT PASSAGE, UTC
TIME
ROTTERDAM - NEW
YORK CITY

PTA 17 Mar 2019 21:21
ETA 24 Mar 2019 10:50

NEXT PASSAGE

Maria -
ROTTERDAM

Lucy

PASIR GUDANG,
JOHOR - MUAR

PTA 08 Mar 2019 13:31
ETA N/A

Lucy -
SINGAPORE

Alina

ROTTERDAM - NEW
YORK CITY

PTA 17 Mar 2019 21:21
ETA 24 Mar 2019 10:50

No planned
passage

Liza

No active passage

No planned
passage

Ashok

No active passage

No planned
passage

Pearl

No active passage

No planned
passage

Vessels Current Issues

Lucy

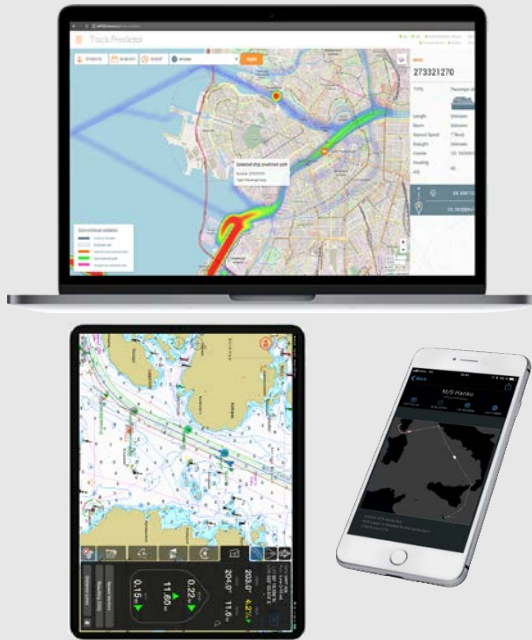
Alina

Maria

Ashok

Pearl

Fleet Operations Solution can be scaled from a single user (PC, tablet, smart phone) to a whole operations center



e.g. charter party alert



e.g. full fleet tracking, incl. speed and ETA management

