



SEAFAR

Unmanned inland shipping

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Unmanned shipping

SEAFAR develops technology to remotely operate automated barges for inland shipping.



Accelerating innovation
Shipmanagement 2.0



Inland shipping

Focus

Area

Channels CEMT I, CEMT II and port connections

Vessels

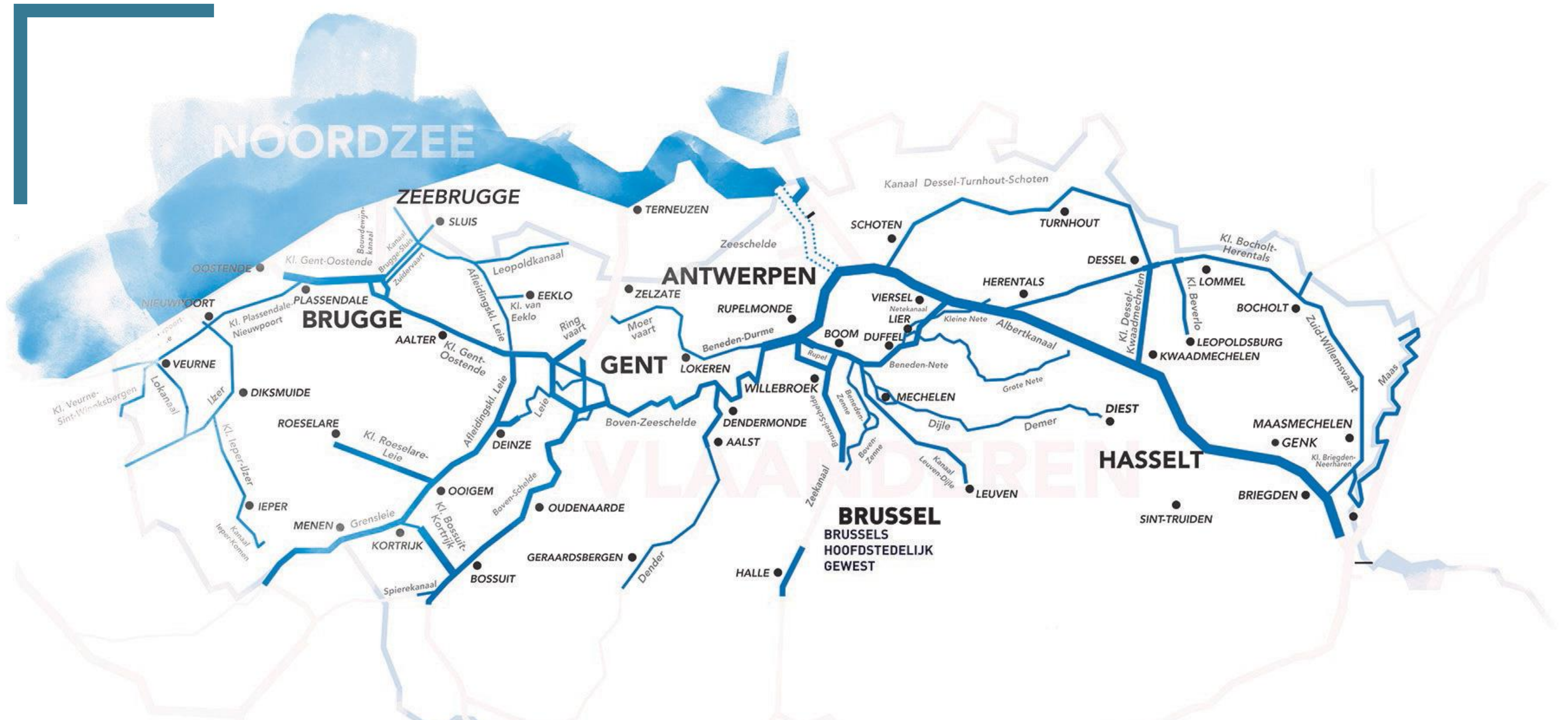
Vessels and barges of maximum 55m and 650 Ton

Problem

Low inflow of new personnel
High OPEX for small vessels

Shortage of personnel and high opex for small tonnage vessels call for a new approach: unmanned vessels with support of Shore Control Center

Area of operations: Flemisch Waterays



SEAFAR Company

Mission

Automate small waterway transport to counter the shortage of personnel and increase profit margin for ship owners

Team

Maritime robotics and software specialists,
Shore Captains in training

Location

Antwerp



An aerial photograph of a narrow canal winding through green agricultural fields. A long, narrow barge is positioned in the middle of the canal. Two bright green lines are overlaid on the image, extending from the barge along the edges of the canal, likely representing automated navigation paths or sensor ranges. The fields are divided into various plots, some with trees and small structures.

Unmanned Automated control

Integration

Integrate technology, so automated barges can navigate unmanned

Operation

Monitor and control automated barges with the assistance of our shore control center

Legislation

Legal framework approved by Flemish Government.

How we work.



INTEGRATE

Technology

Integrating developed technology.

Communication
Software
Sensor Systems



OPERATE

Shore Control Center

Operating vessels from the Shore Control Center.

Operator training
Safety management
Administration



SERVICE

Maintenance

Maintaining the vessels to the industries standards.

Maintenance
Monitoring
Repairs



SHIPMANAGEMENT

Partner

As a result SEAFAR is responsible for the a to z process of unmanned vessels and so the ideal partner for shipping companies

SEAFAR's focus is "unmanned" vessels, where the vessel is operated from a Shore Control Center. In the second stage more autonomy is added to the vessel, where the operator transforms from an active to a passive roll.

Shore Control Center Antwerpen

SCC

From the SCC the shore captain can navigate the vessel:

- direct steering
- waypoints

All vessel data is visualized in the control center. Shore Captains can supervise multiple vessels.

Shore Captains

Active shore captains have all permits for navigation with inland vessels.





Unmanned, not autonomous SCC

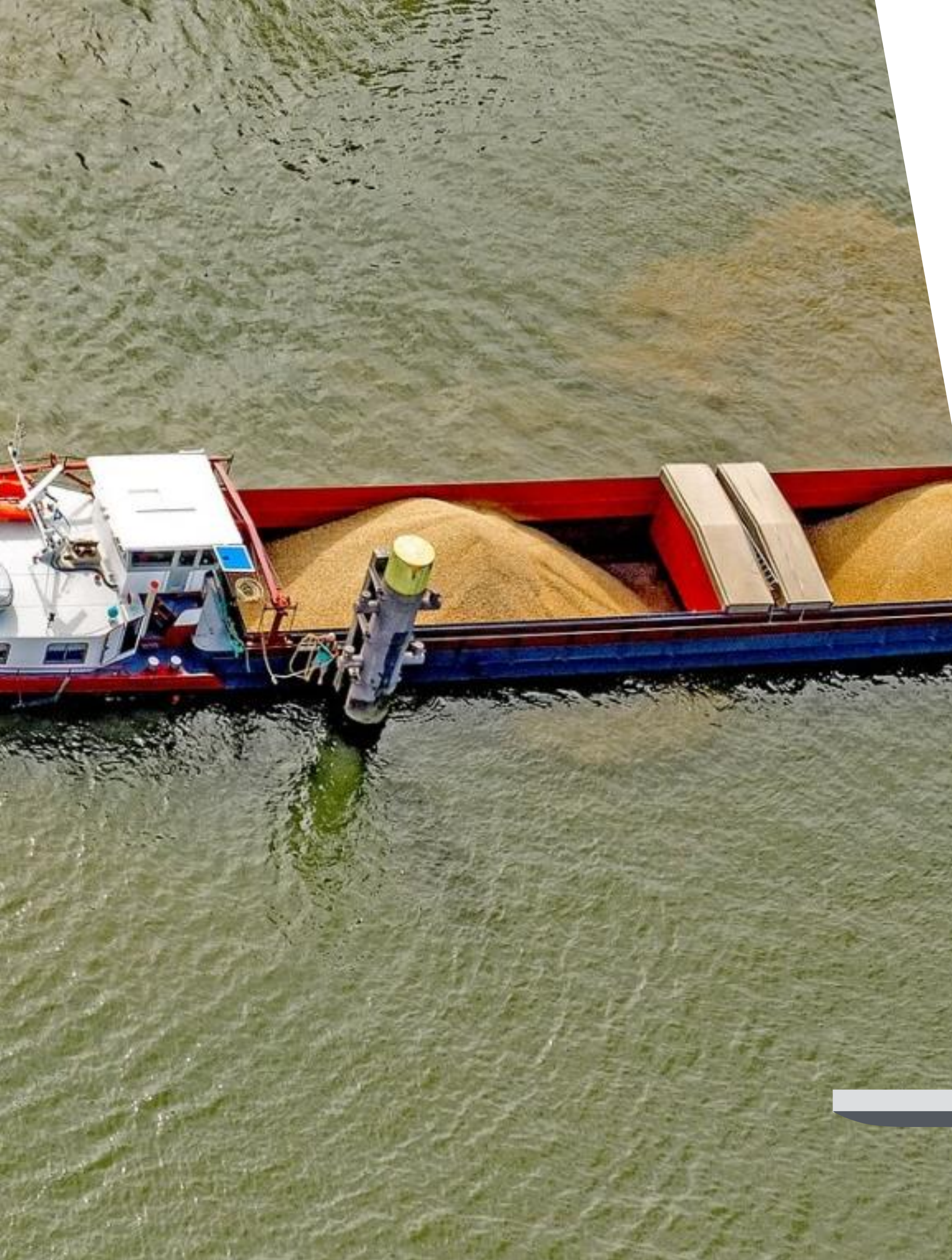
Currently we are using our new Shore Control Center infrastructure in The BEACON (Technology hub in Antwerp).

The goal is to develop a new role for an control center operator.

SCC ambition: 1 operator for 3 vessels.

Vessel owner platform

Online



Workspace

Home Controllers Admin Help

SYSTEM: Joystick State Details SYSTEM: Ship State Details Electronic Navigation Chart Route Conning Display

General	Operating	Movement	Waypoint Following
Running <input type="button" value="Stopped"/>	Mode <input type="button" value="RemoteControl"/>	Latitude <input type="text" value="51° 17' 12.600° N"/>	Mission Id <input type="text" value=""/>
Auto Pilot <input type="button" value="Stopped"/>	Option <input type="button" value="RemoteControlLocal"/>	Longitude <input type="text" value="4° 14' 00.400° E"/>	Mission State <input type="text" value="Undefined"/>
		Heading <input type="text" value="0°"/>	Waypoint Id <input type="text" value="-1"/>
		Speed <input type="text" value="0 Km/h"/>	Waypoint Distance <input type="text" value=""/>

Ship Info (more) Controllers Messages

Sent By User Sent (Acknowledged) Received For User Received

#	Sent DateTime	Ack	Dlv	Message Type	Message Body	Message Id

Ship Id

Pilot Projects

Tuimelaar

Tuimelaar

20m vessel, 2x 450Hp

Automation

Tested in 2018, fully operational

Cooperation Port of Antwerp

Continuous improvement and development



**Port of
Antwerp**





Commercial Projects 2019

Projects

First projects currently being integrated
and tested

First operations

First operational inland vessel in Q3 2019,
expanding operations in 2020.

Operational focus

Close cooperation

Operations

Close cooperation with shore side personnel and Shore Control Center.





SEAFAR

Unmanned shipping

*De beste stuurlui staan
aan wal.*

"The best helmsmen stand on shore"

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