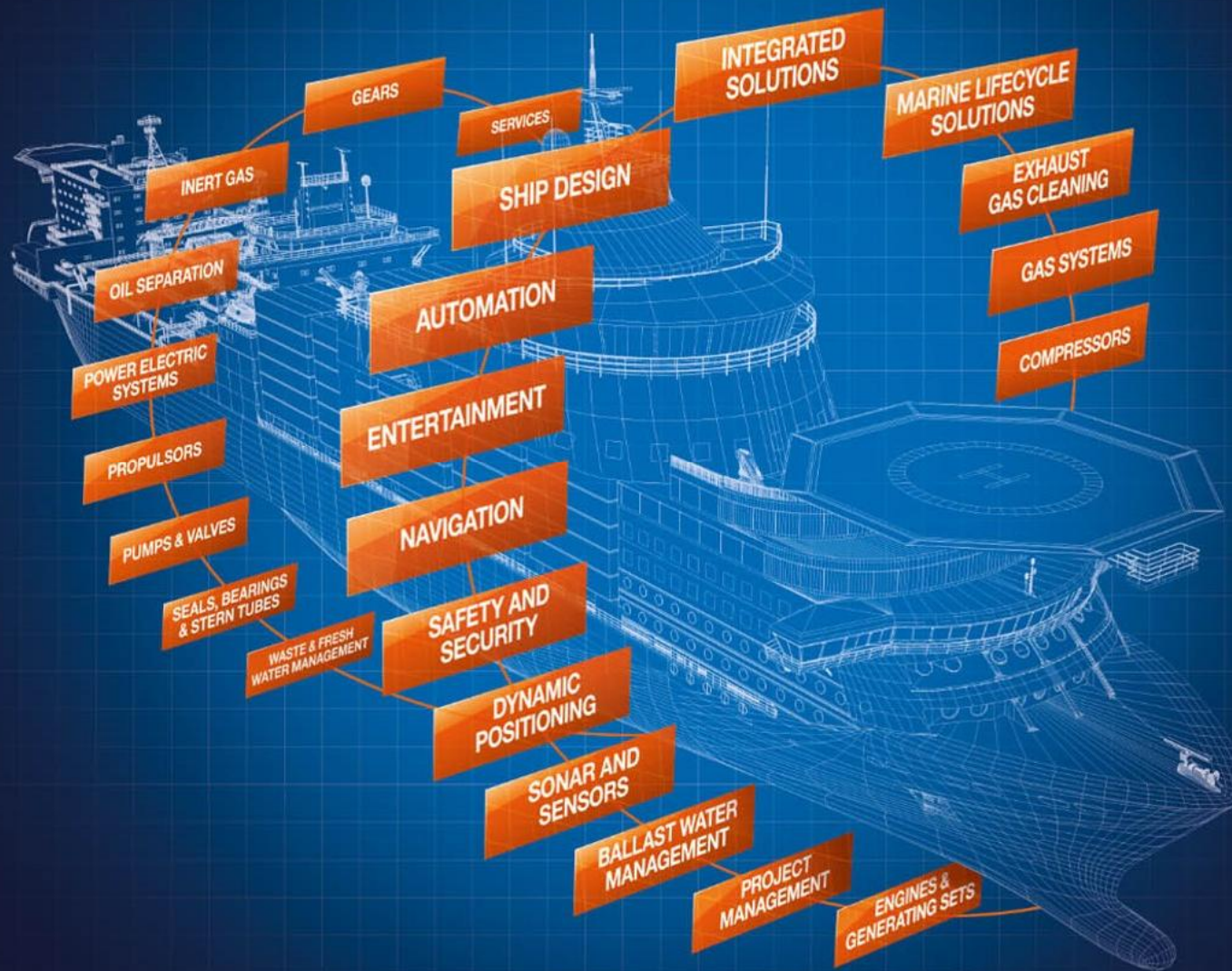


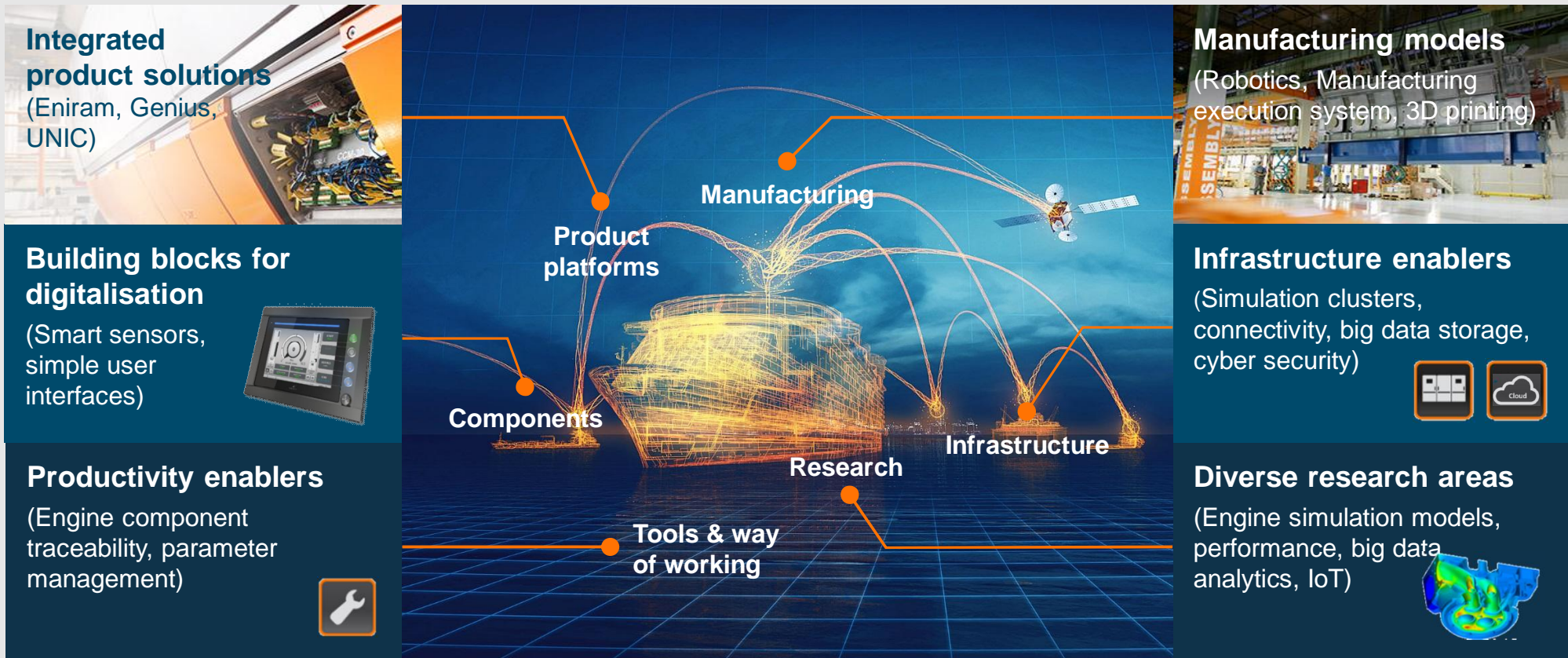
# WÄRTSILÄ

State of the art designs for Russian fleet renewal programs

# MARINE SOLUTIONS THE MOST COMPLETE MARINE OFFERING ON EARTH



# Digital insight combined with solutions – Smart Shipping



## Production and services globally

Our personnel  
**18,000** professionals  
>**200** locations  
>**70** countries



# RUSSIAN FLEET RENEWAL PROGRAM

**New quota legislation will boost renewal of the Russian fishing fleet**

## FISHING VESSEL INTEGRATED SOLUTIONS



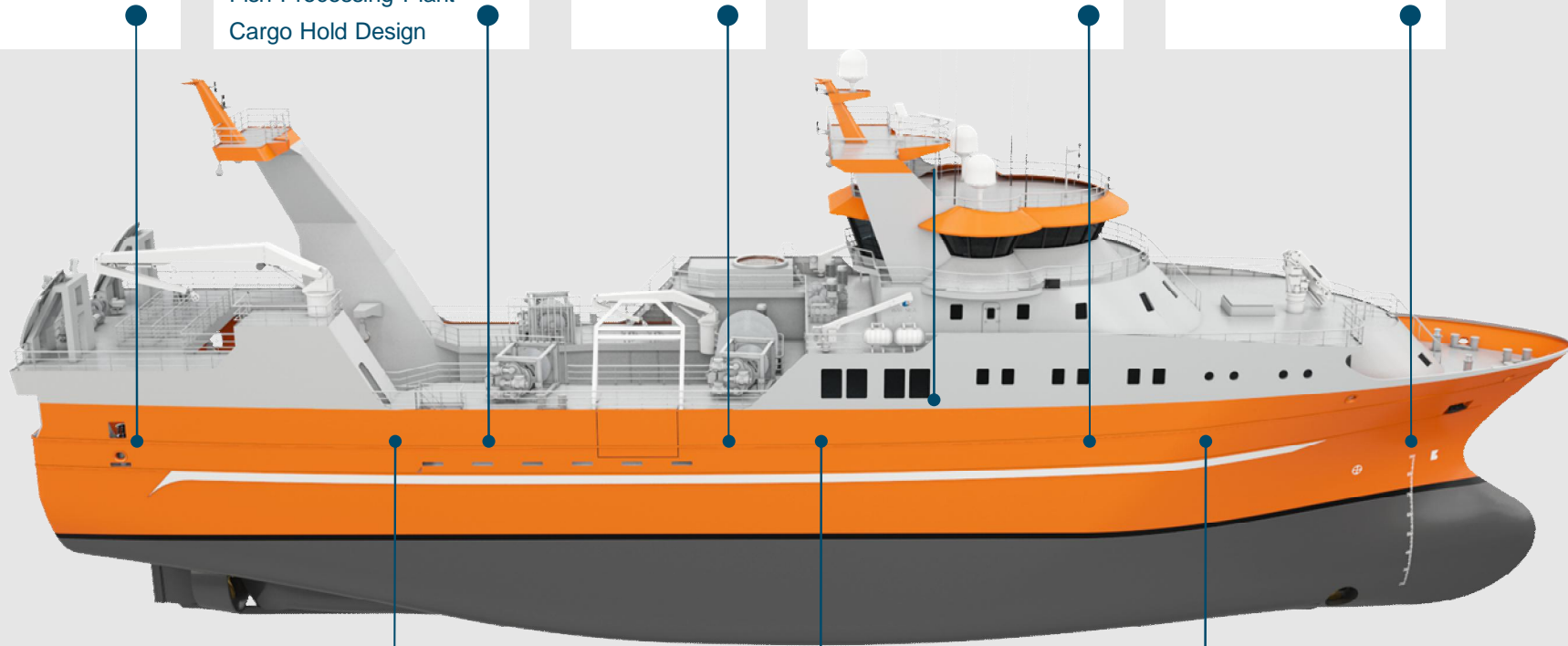
Engineering of all fishing gear arrangements, deck machinery, winches and cranes.

Ship Design: Conceptual and Class Drawings.  
Hull Model Testing  
Fish Processing Plant  
Cargo Hold Design

Fuel Supply System

Automation  
Power Control System  
NavCom

Engineering of all fish handling, storage and unloading systems



Machinery  
Engines  
Gearbox  
Propulsion

Electrical power production and distribution  
Switchboards  
PTI/PTO  
Battery hybrid

Waste  
Oil and fresh water management  
Ballast water treatment

## Wärtsilä's high end stern trawlers for optimal catch



Wärtsilä's new series of stern trawlers from 50 to 120 m LOA is a modular concept which includes a variety of different options depending on fishing methods, onboard processing factory, requested storage capacity and efficient off-loading functions. We're known for our outstanding hull performances and state of the art equipment for optimal catch and highest reliability available.

### Wärtsilä scope of supply:

- Ship Design, initial, basic, class, detailed and workshop design.
- Main engine from 740 kW to 9000 kW.
- Propulsion, gearbox, optimized controllable pitch propeller and PTI/PTO with battery hybrid.
- Auxiliary generating sets.
- Tunnel thrusters.
- Electrical and automation system, navigation and smart vessel functionality.
- Exhaust gas cleaning, pumps, valves, seals, bearings and stern tubes.
- Waste, oil, fresh water and ballast water management.

## RECENT DEVELOPMENTS

### Pelagic Trawlers



### Stern Trawlers



### Long Liners



### Factory Freezer Trawlers



### Crab Catchers





## Ocean Star – Optimized hull lines for efficient operations

Ocean Star is a large pelagic trawler with a fish storage capacity of 3200 m<sup>3</sup> in refrigerated sea water tanks. The vessel has been developed in close collaboration between owner, yard and several business lines within Wärtsilä. The result is a vessel with outstanding performance in fish handling and storage capacity, extremely low fuel consumption and environmental impact. The results from the model tank test proves that the hull lines are 15-25% more efficient than competition at high speed.

Ocean Star is equipped with a Wärtsilä 12V32E with rated power of 6960 kW @ 750 rpm for main propulsion, a single-in/single-out gearbox with two step speed for the 4400 mm controllable pitch propeller and a power take off (PTO) of 4375 kW @ 1200 rpm.

### Wärtsilä scope

- Ship Design: Initial, basic and detail design
- 1 x Main engine Wärtsilä 12V32 6960 kW @ 750 rpm
- 1 x Main gearbox, 2 propeller steps, PTO of 4375 kW @ 1200 rpm
- 1 x Main controllable pitch propeller 4400 mm.
- 2 x Auxiliary gensets Wärtsilä 8L20 1480 kW @ 900 rpm

Shipowner: Mewstead, Fraserborough, Scotland

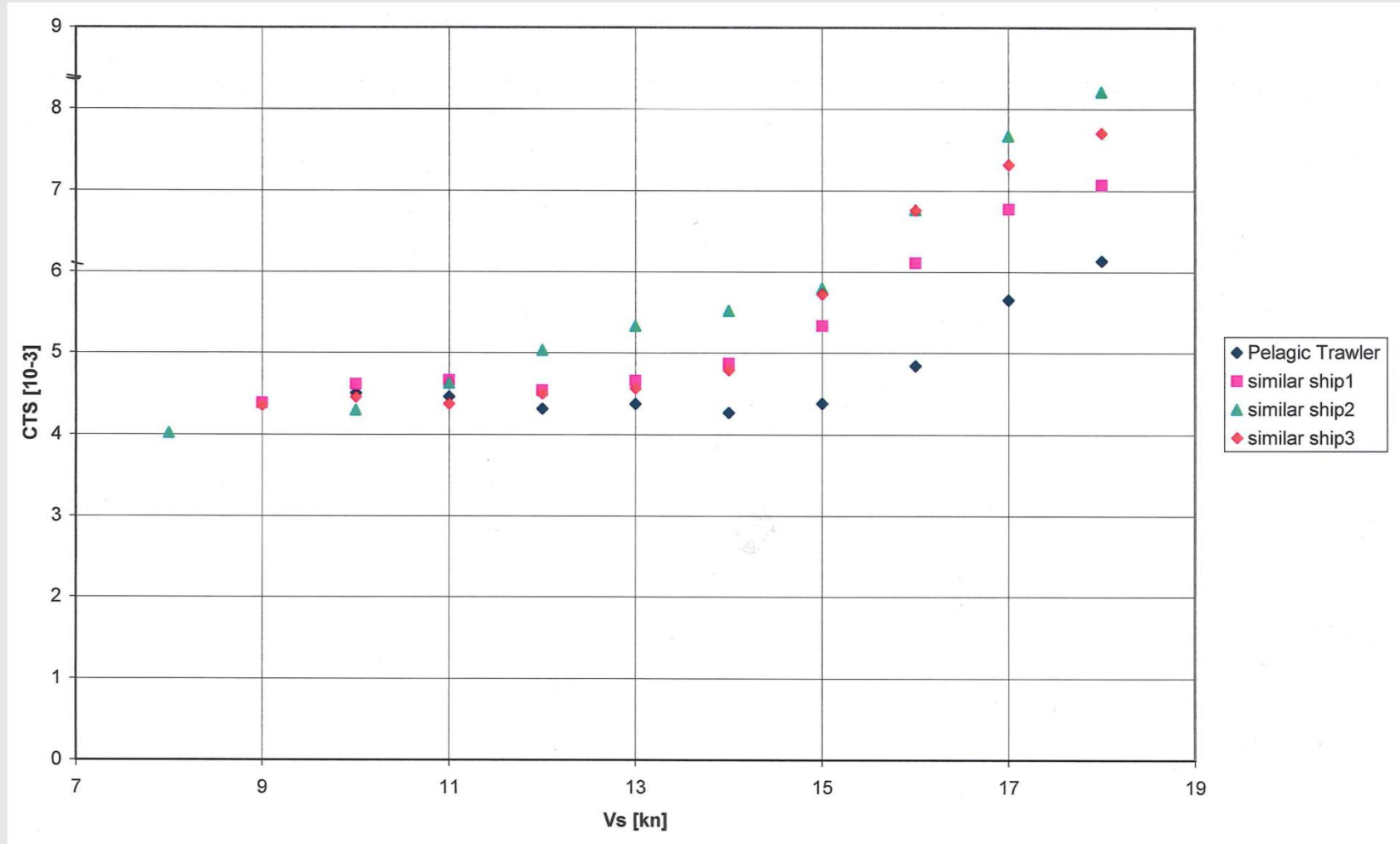
Shipyard: Nauta Shipyard, Gdansk, Poland

Delivery: 2017/2018

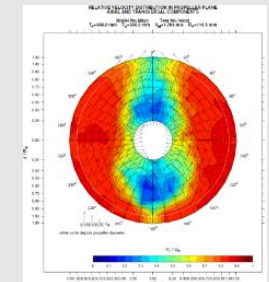
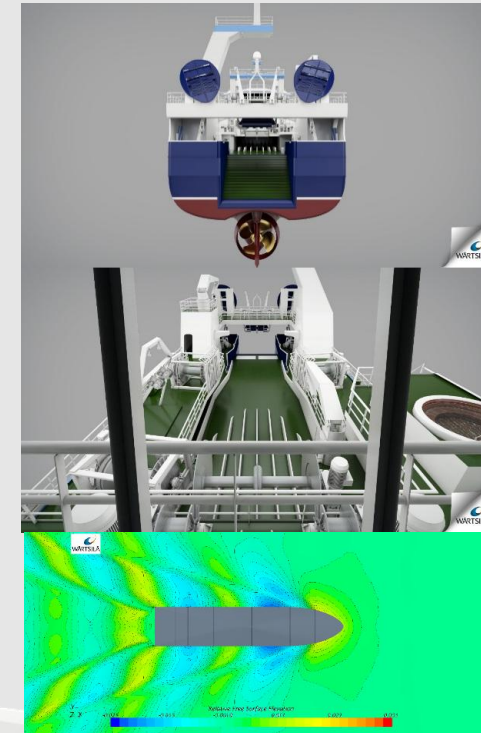
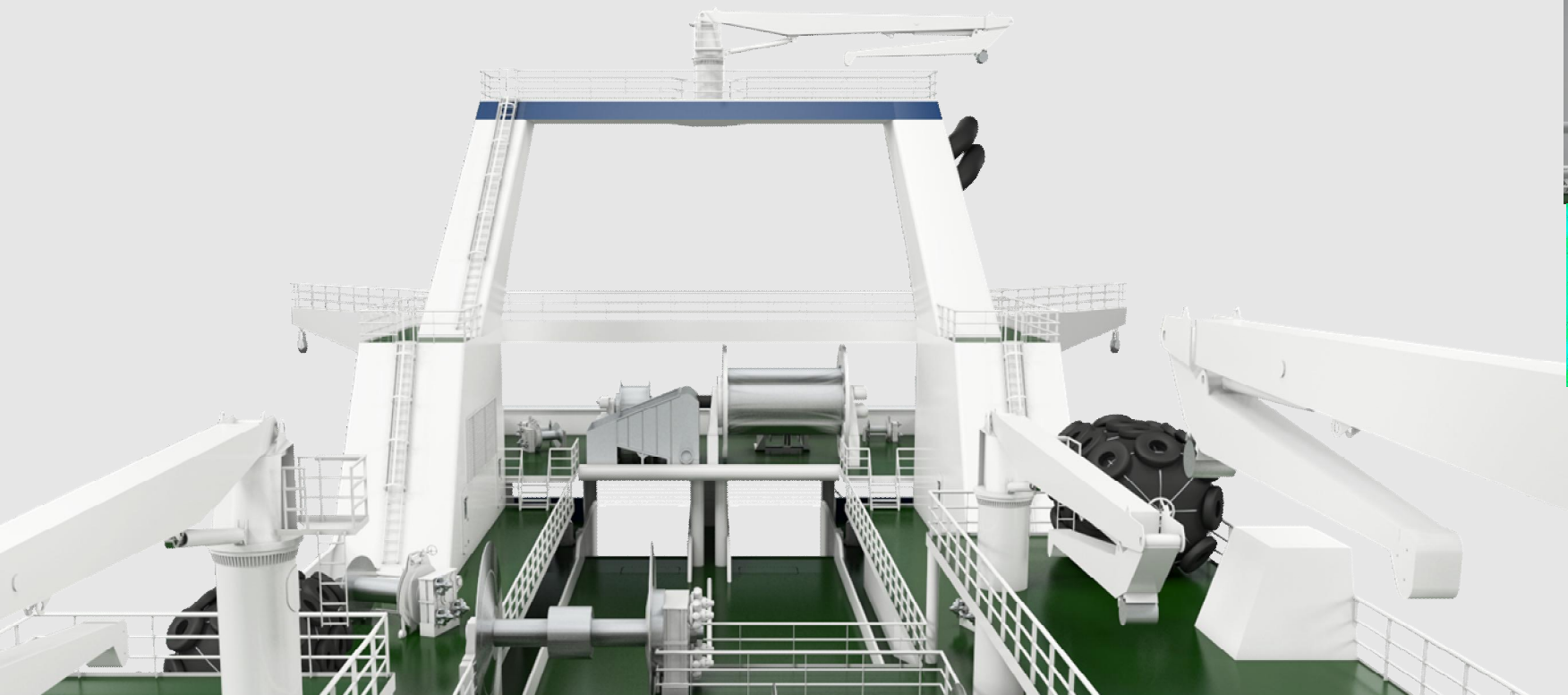


“We’re very satisfied with the design process. The hull model test results show a remarkable performance and we’ve selected state of the art equipment with high reliability. The construction at the yard has been closely supervised and the quality of the work is superior. We’re looking forward to test our new ship at the fishing grounds.”

Captain and owner Michael Tait, Mewstead, Fraserborough, Scotland.



- CREW SAFETY AND COMFORT
- EFFICIENCY AND ENVIRONMENT
- RELIABILITY AND USE OF BIG DATA



THANK YOU!



WÄRTSILÄ