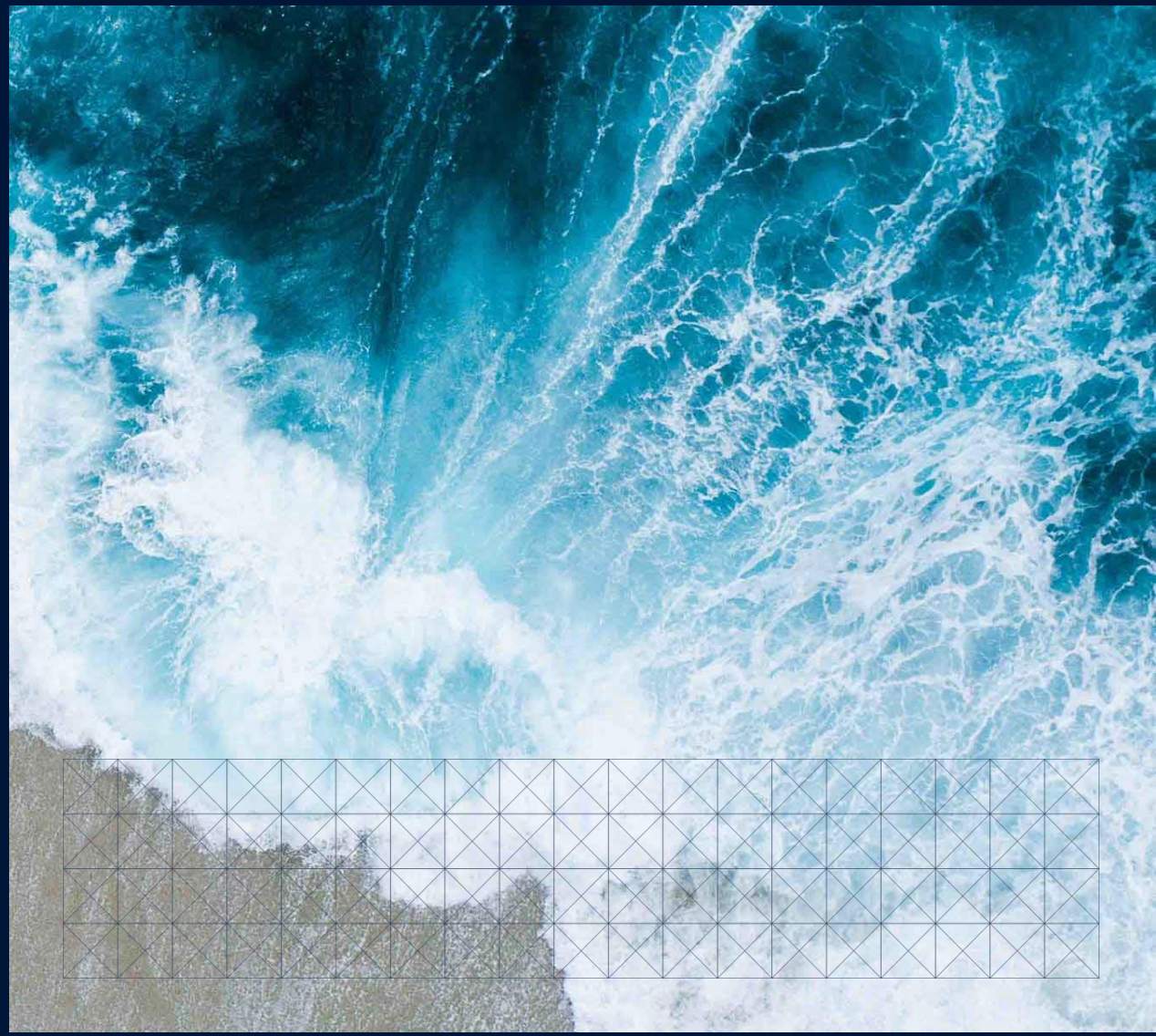
KONGSBERG

FOSFOR KONFERANSE 2019

K-Sim® Fishery

04.12-2019

Bjarne Torkelsen
Area Sales Manager Nordic
Maritime Simulation
Kongsberg Digital



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Maritime Simulation, Kongsberg Digital

«Bruk av simulator i fremtidens undervisning»

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KONGSBERG – A DIVERSIFIED COMPANY

KONGSBERG MARITIME

Global market leader within offshore, subsea and merchant marine applications

- Dynamic positioning
- Integrated automation and control systems
- Hydroacoustic technologies
- Solutions for sustainable fisheries
- Autonomous underwater vehicles, underwater robotics

KONGSBERG DEFENCE & AEROSPACE

Modern product portfolio in growing defence and aerospace niches

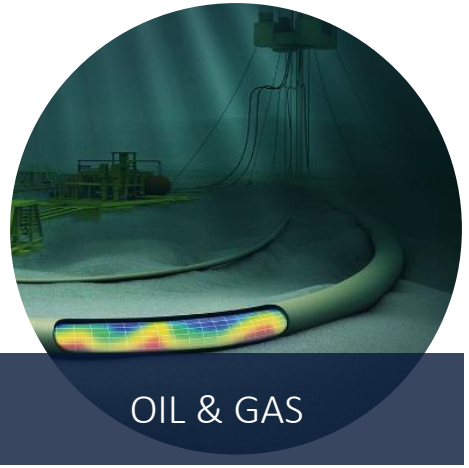
- 5th generation strike missiles
- Air defence
- Command & control systems for land and naval applications
- Complex lightweight structures for the F-35
- Tactical communication
- Space technologies, satellite services and surveillance
- PROTECTOR RWS
- PROTECTOR MCT-30 Medium Caliber Turret
- Other specialized remote weapon stations

KONGSBERG DIGITAL

Provider of next generation digital solutions to customers within maritime, oil & gas, and renewables & utilities

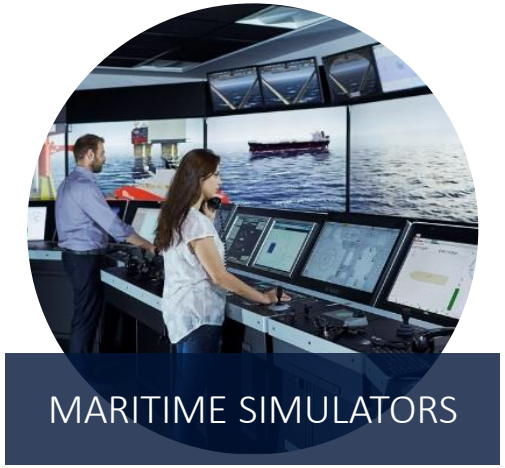
- Oil and gas software
- Maritime simulation
- Renewables and utilities
- Digital Platform
- Group Digital Center of Expertise

KONGSBERG DIGITAL MARKETS



OIL & GAS

RENEWABLES & UTILITIES



MARITIME SIMULATORS

KOGNIFAI

KONGSBERG

TRANSPORT

CLIMATE CHANGE

TECHNOLOGY IS THE
MAIN DRIVER FOR SOLVING OUR
SUSTAINABILITY ISSUES

THE OCEANS PLAY
A KEY ROLE

ENERGY

FOOD

DEFENCE AND SECURITY

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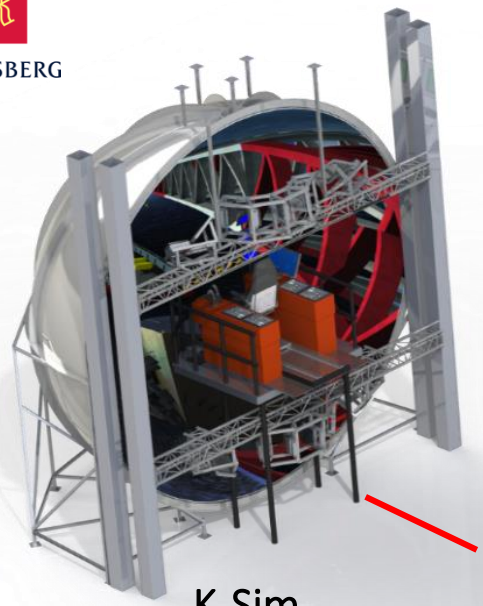
Integrated solutions allow team collaboration across disciplines

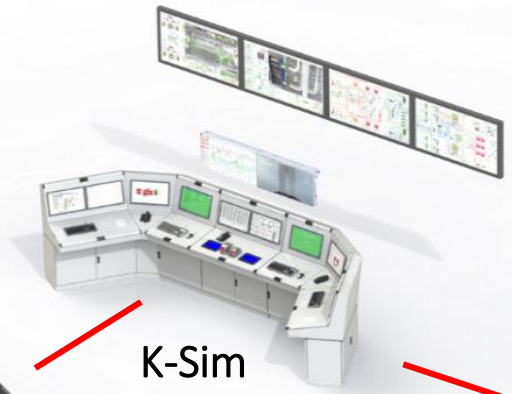
KONGSBERG



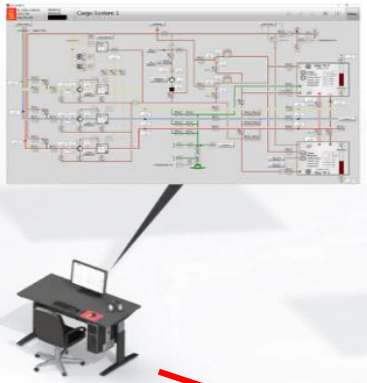
K-Sim Crane

Deck

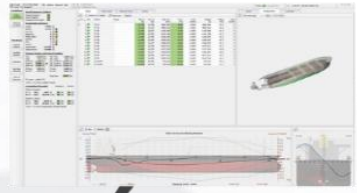
K-Sim Navigation



K-Sim Engine



K-Sim Cargo



K-Load

K-Sim Offshore

K-Sim Dynamic Positioning

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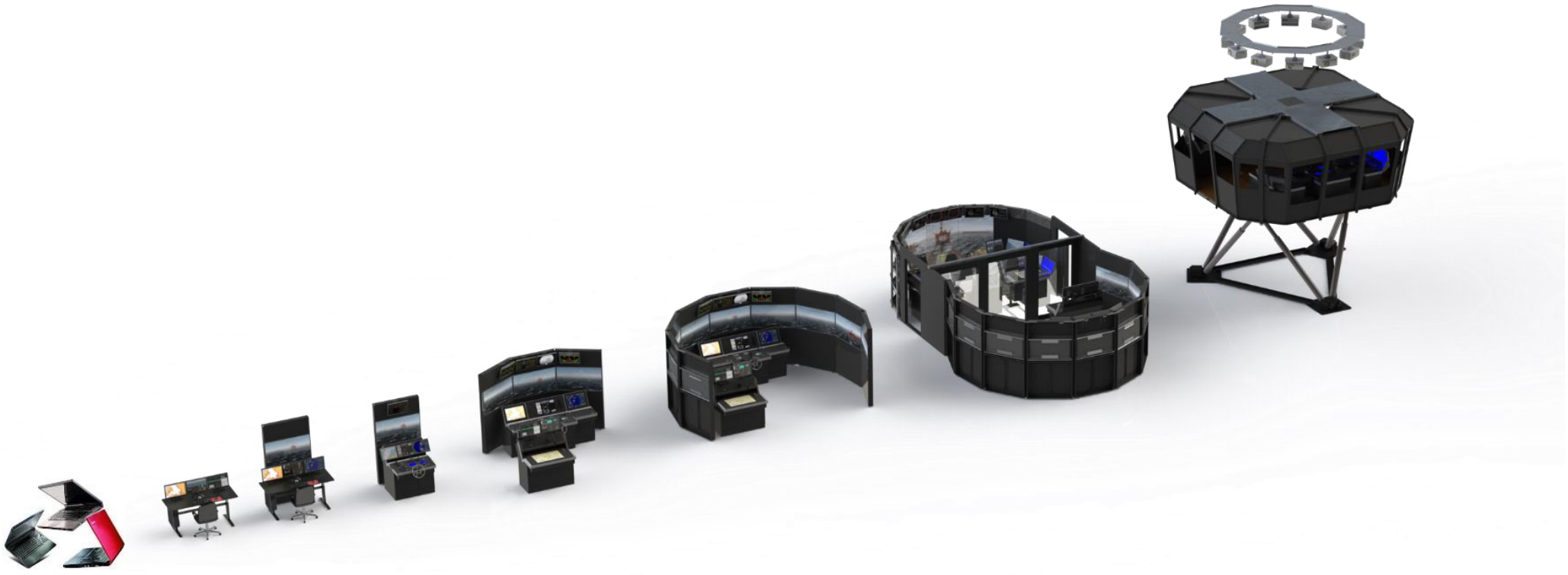
«Anytime & Anywhere» is a service with no hardware requirements and no need for local configuration



ANYTIME & ANYWHERE | DESKTOP | PART TASK TRAINER | FULL MISSION

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Why should we use Fishery Simulator?

- Increased global focus on fishery education due to:
  - Demands for a sustainable fishery industry
  - Implementation of STCW-F requirements
  - Increased safety focus
  - Higher skills = better efficiency = cost savings
- Cost effective training
- Realistic form for training

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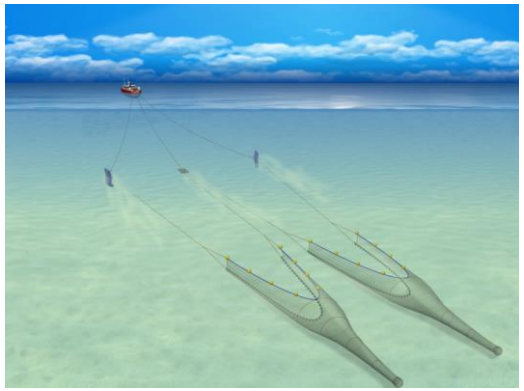
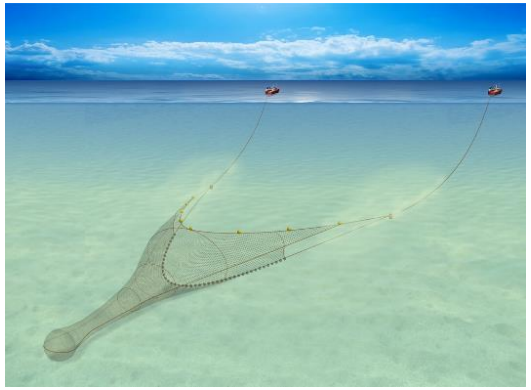
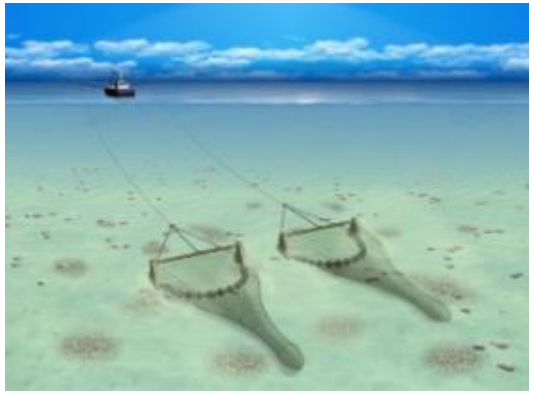
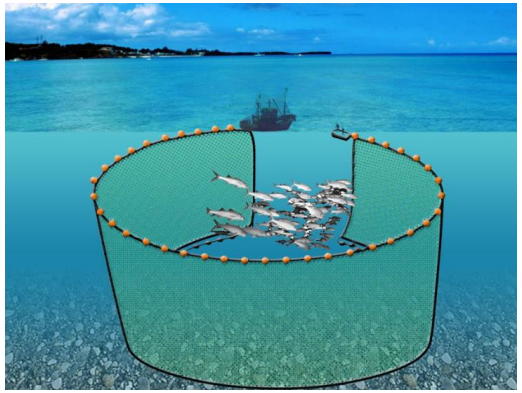
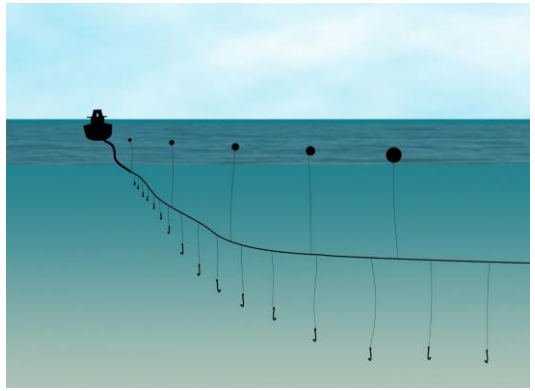
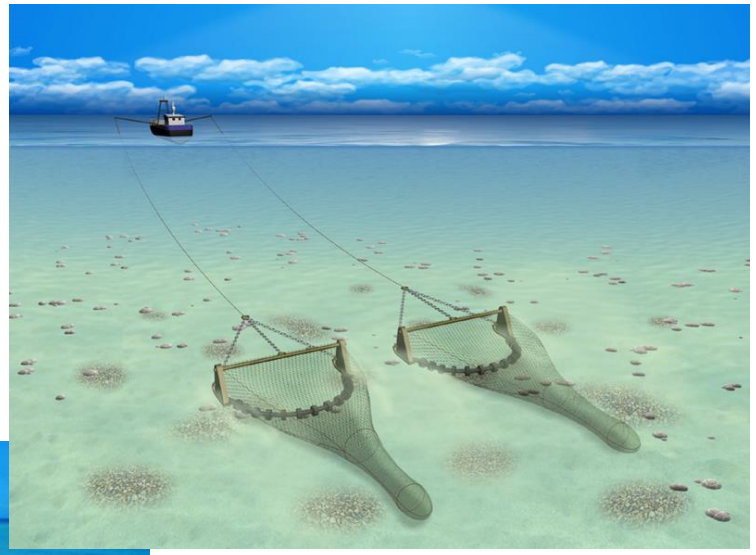
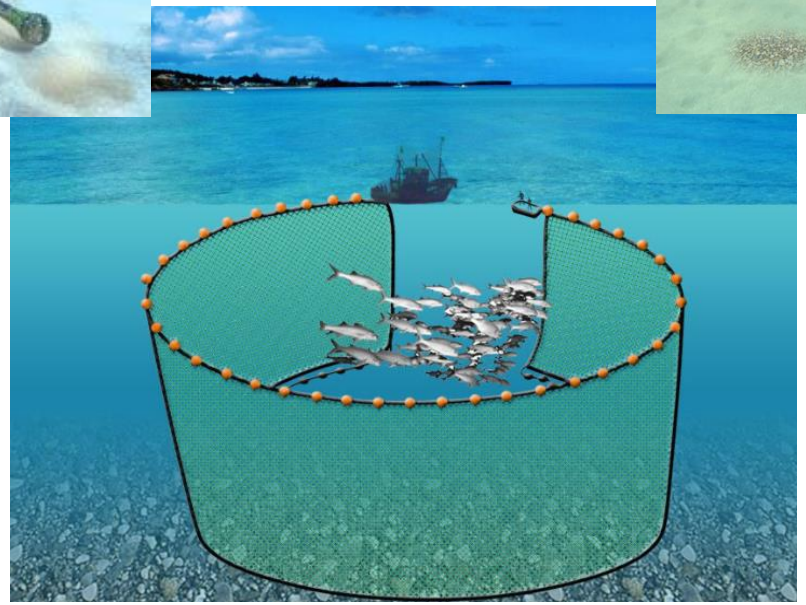
Many Fishing methods, gives many Simulator requirements

- Fishing vessels
- Fishing gear
- Simulator functions
- Fishing Instruments
- Simulator Layouts

K-Sim Fishery – Supported fishing methods





- Bottom trawling
- Beam trawling
- Purse Seine

K-Sim Fishery – Kongsberg Amphitrite

K-Sim Fishery – Advanced deck operations

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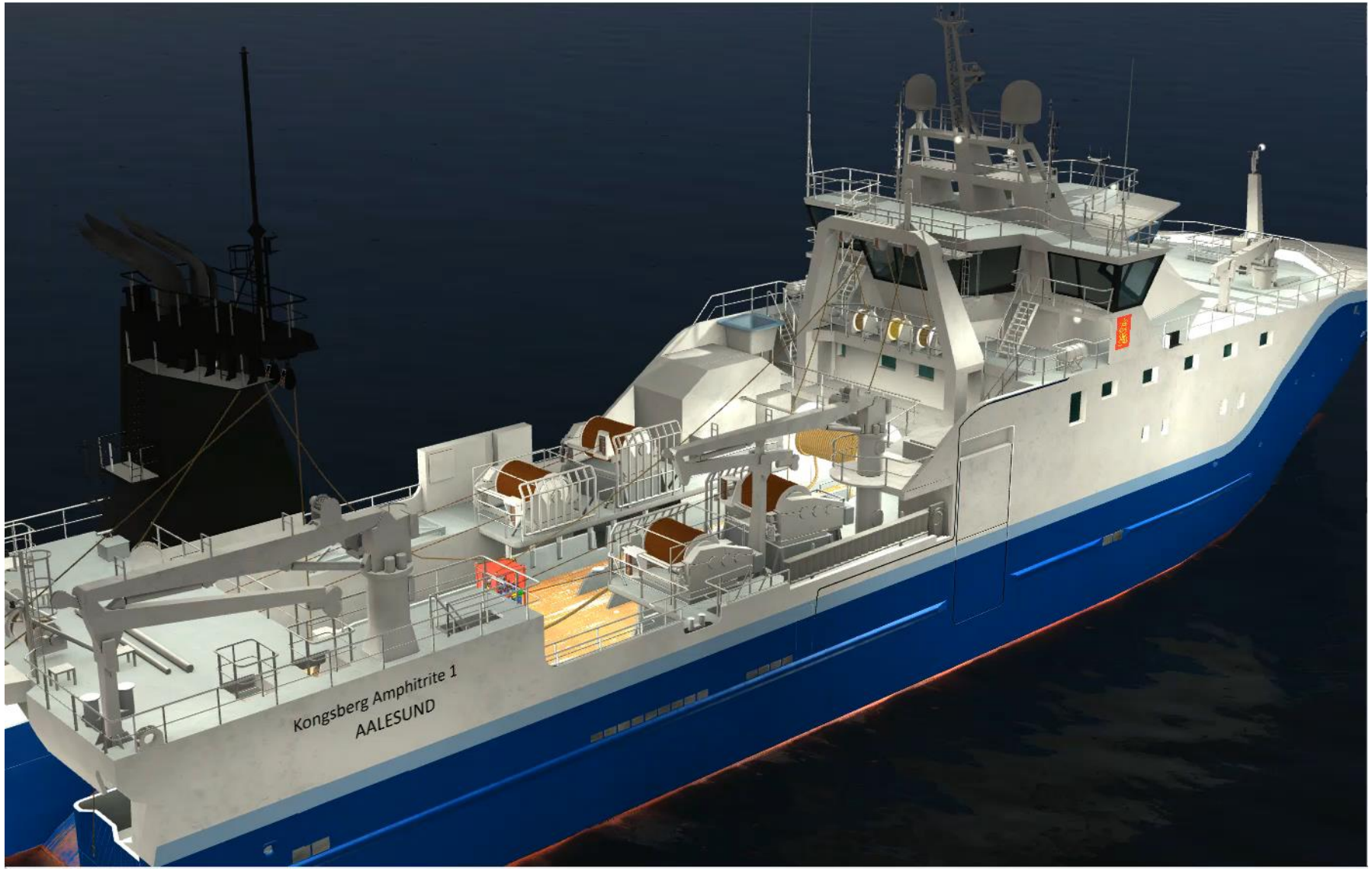
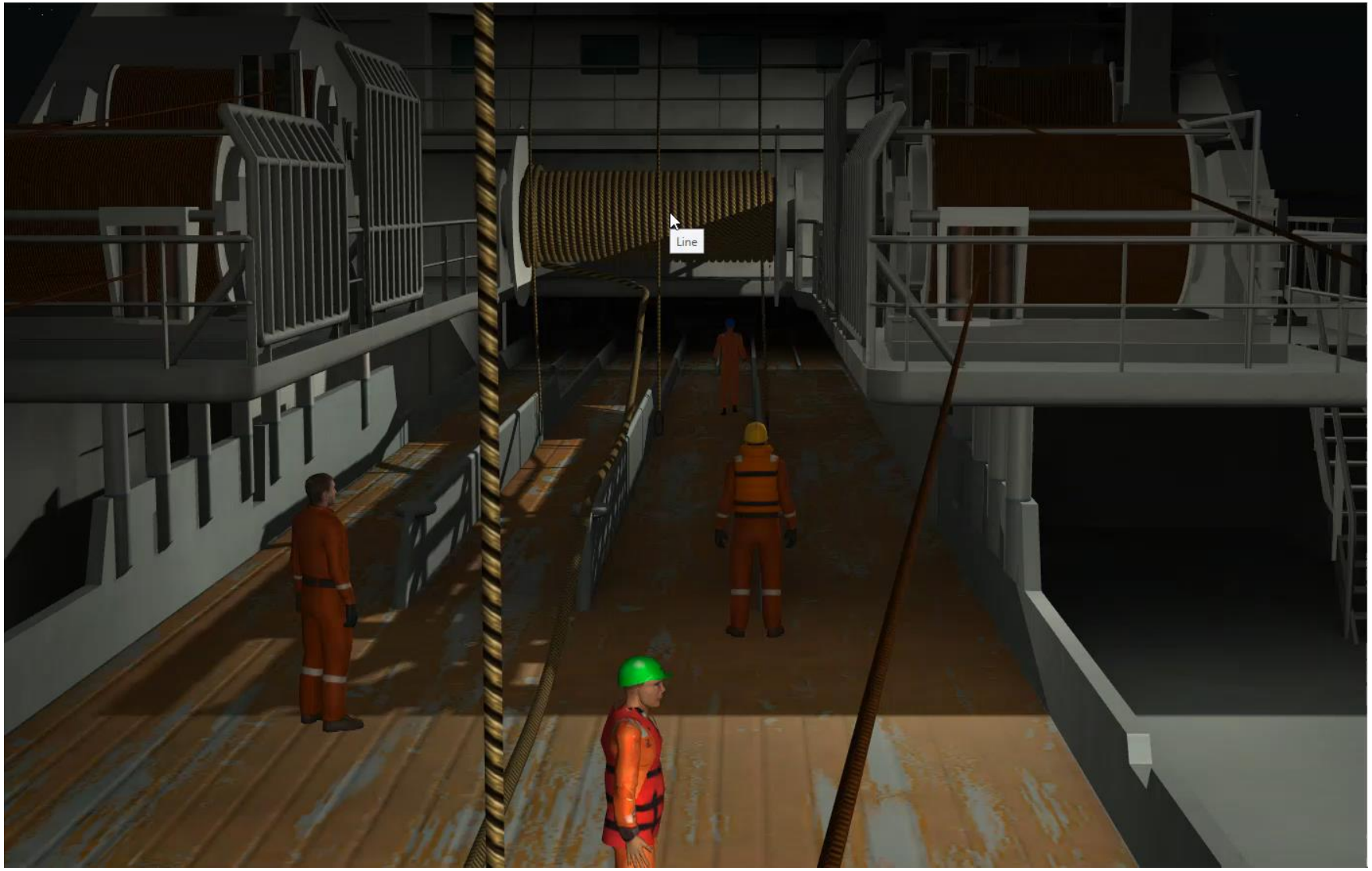
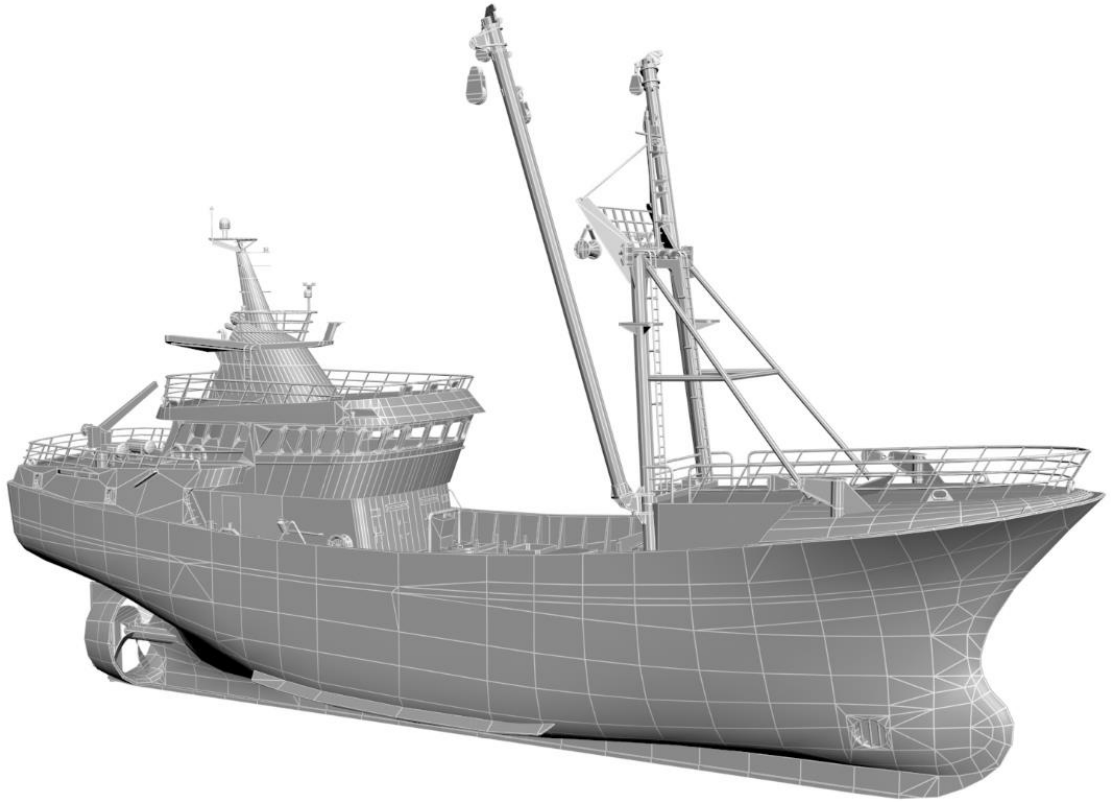


K-Sim Fishery – Avatars on deck



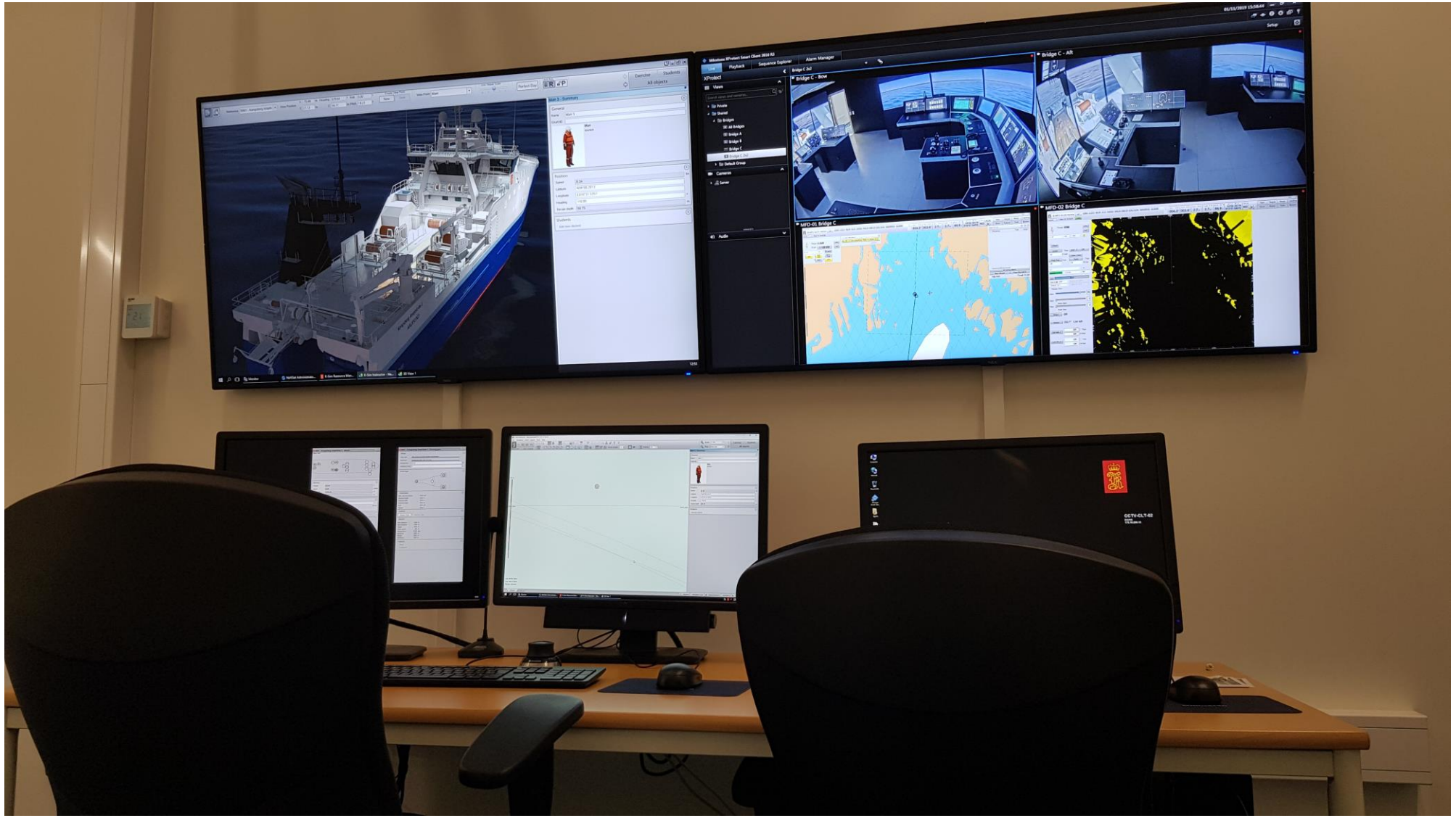
K-Sim Fishery – Trawl in water

K-Sim Fishery – Beam trawlers

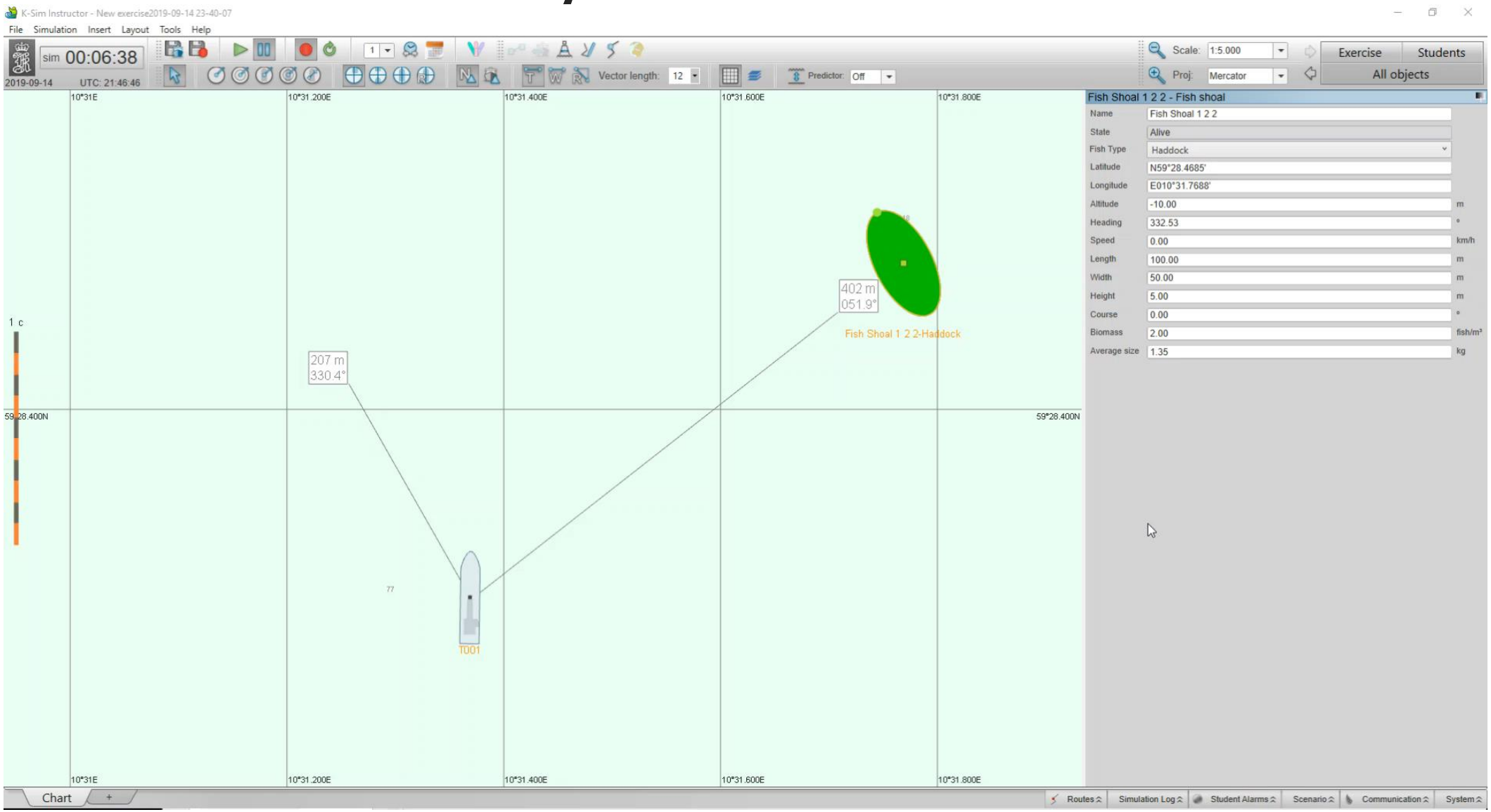


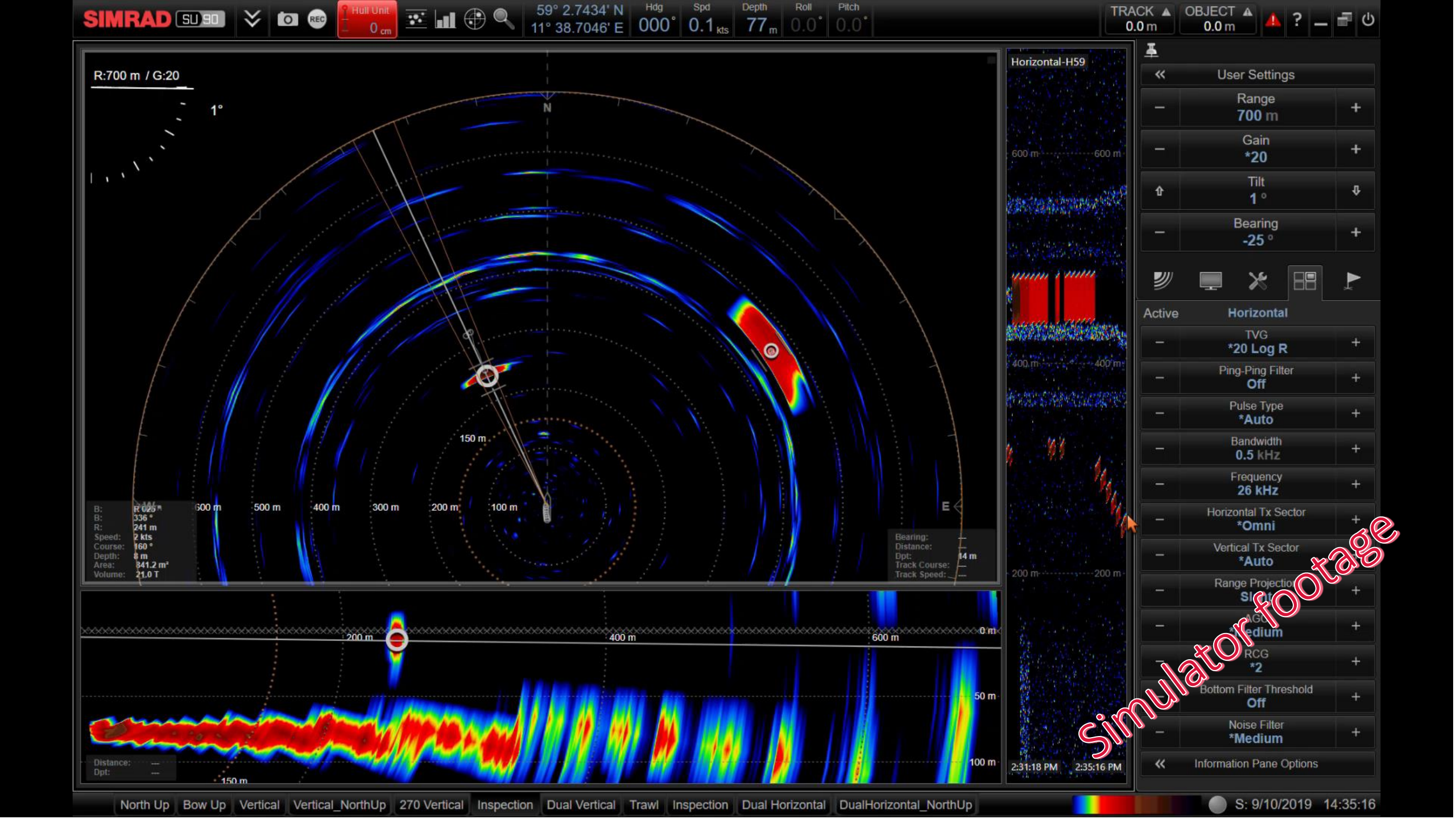
K-Sim Fishery – Purse Seine model

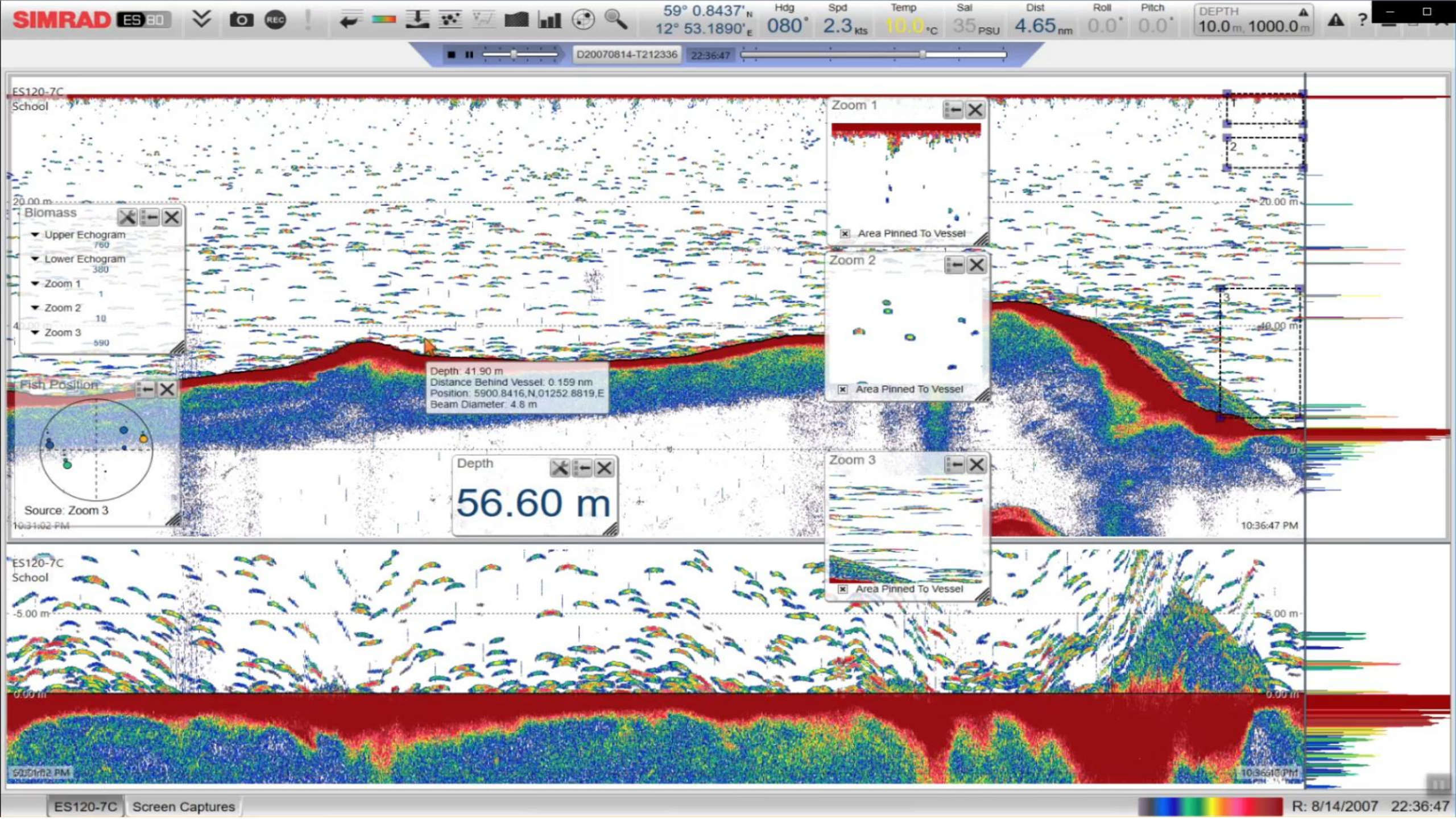
K-Sim Fishery – Instructor setup



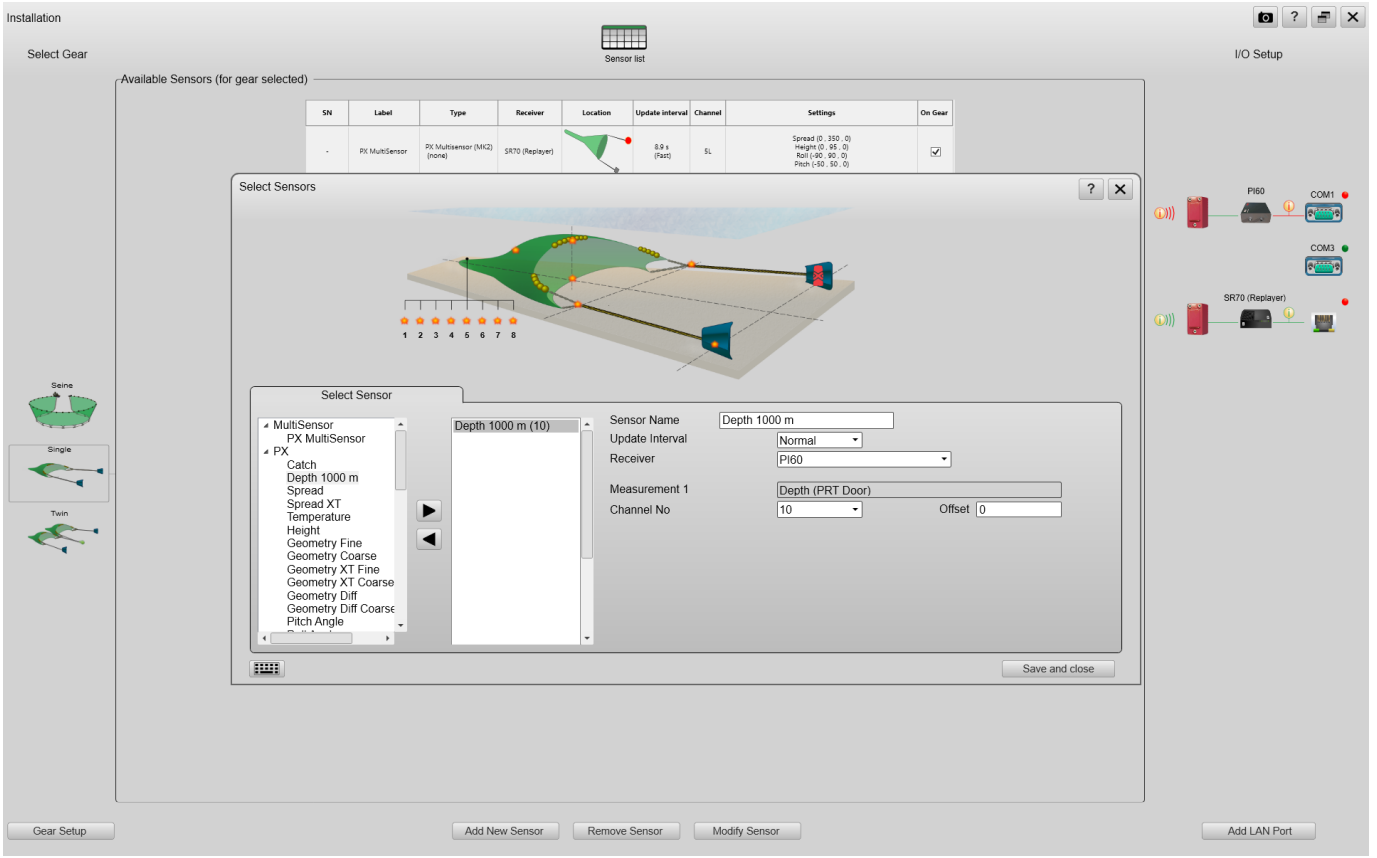
K-Sim Fishery Instructor - Fish in the Sea




SIMRAD SU90
Hull Unit
0 cm
59° 2.7434' N
11° 38.7046' E
Hdg
000°
Spd
0.1 kts
Depth
77 m
Roll
0.0°
Pitch
0.0°
TRACK
0.0 m
OBJECT
0.0 m
R:700 m / G:20
1°
N
E
150 m
600 m
500 m
400 m
300 m
200 m
100 m
Horizontal-H59
600 m
400 m
200 m
2:31:18 PM
2:35:16 PM
User Settings
Range
700 m
Gain
*20
Tilt
1 °
Bearing
-25 °
Active
Horizontal
TVG
*20 Log R
Ping-Ping Filter
Off
Pulse Type
*Auto
Bandwidth
0.5 kHz
Frequency
26 kHz
Horizontal Tx Sector
*Omni
Vertical Tx Sector
*Auto
RCG
*2
Bottom Filter Threshold
Off
Noise Filter
*Medium
Information Pane Options
Simulator footage
200 m
400 m
600 m
0 m
50 m
100 m
150 m
North Up
Bow Up
Vertical
Vertical_NorthUp
270 Vertical
Inspection
Dual Vertical
Trawl
Inspection
Dual Horizontal
DualHorizontal_NorthUp
S: 9/10/2019
14:35:16


SIMRAD ES80
59° 0.8437' N
12° 53.1890' E
Hdg 080°
Spd 2.3 kts
Temp 10.0 °C
Sal 35 PSU
Dist 4.65 nm
Roll 0.0°
Pitch 0.0°
DEPTH 10.0 m, 1000.0 m
D20070814-T212336
22:36:47
ES120-7C
School
20.00 m
40.00 m
Biomass
Upper Echogram
760
Lower Echogram
380
Zoom 1
1
Zoom 2
10
Zoom 3
590
Fish Position
Source: Zoom 3
10:31:02 PM
Depth: 41.90 m
Distance Behind Vessel: 0.159 nm
Position: 5900.8416,N,01252.8819,E
Beam Diameter: 4.8 m
Depth
56.60 m
Zoom 1
Area Pinned To Vessel
Zoom 2
Area Pinned To Vessel
Zoom 3
Area Pinned To Vessel
10:36:47 PM
ES120-7C
School
-5.00 m
0.00 m
10:36:47 PM
ES120-7C
Screen Captures
R: 8/14/2007 22:36:47

TV80 – Real Simrad Catch Control



TV80 – Real Simrad Catch Control

Simulator footage

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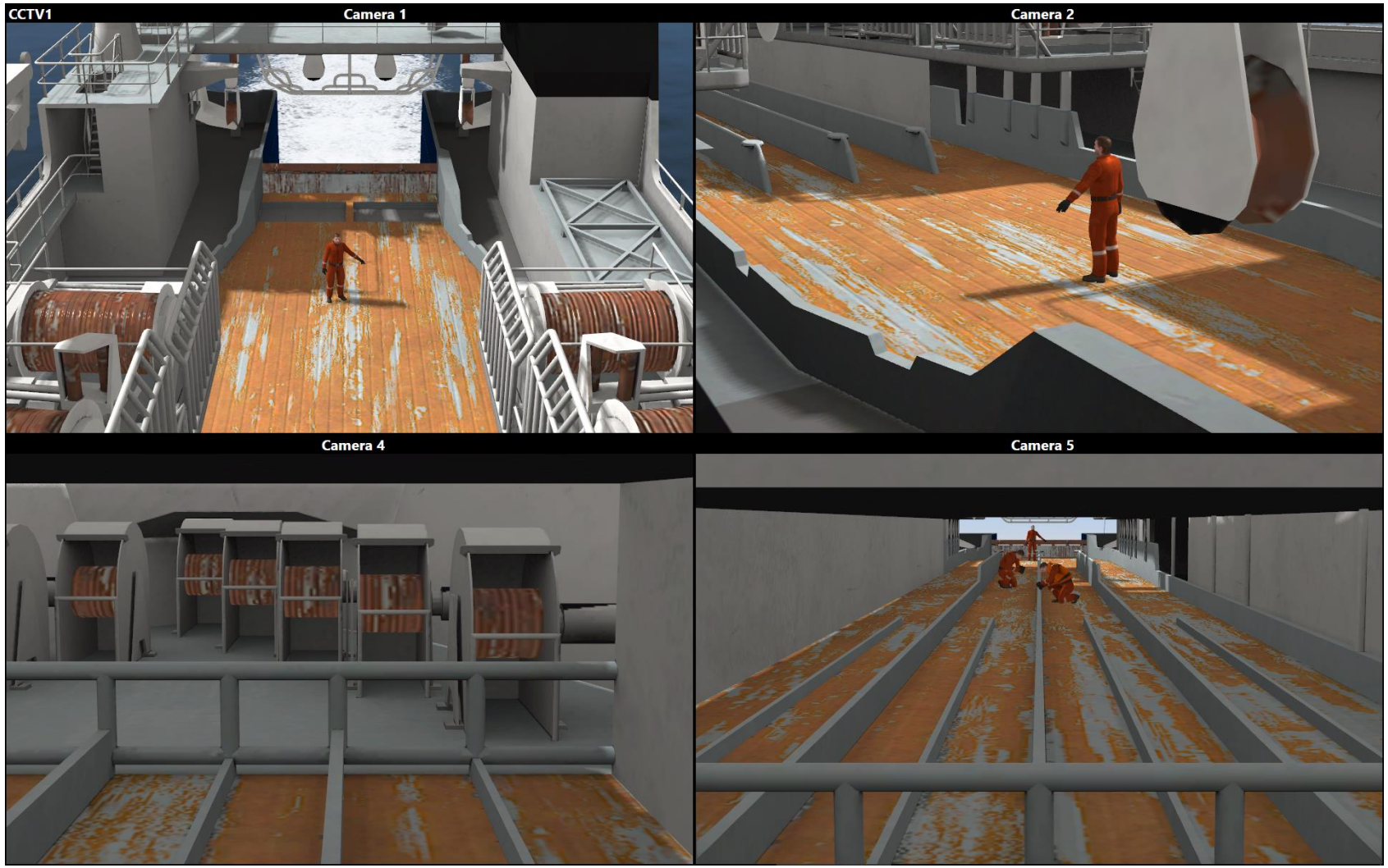
CCTV



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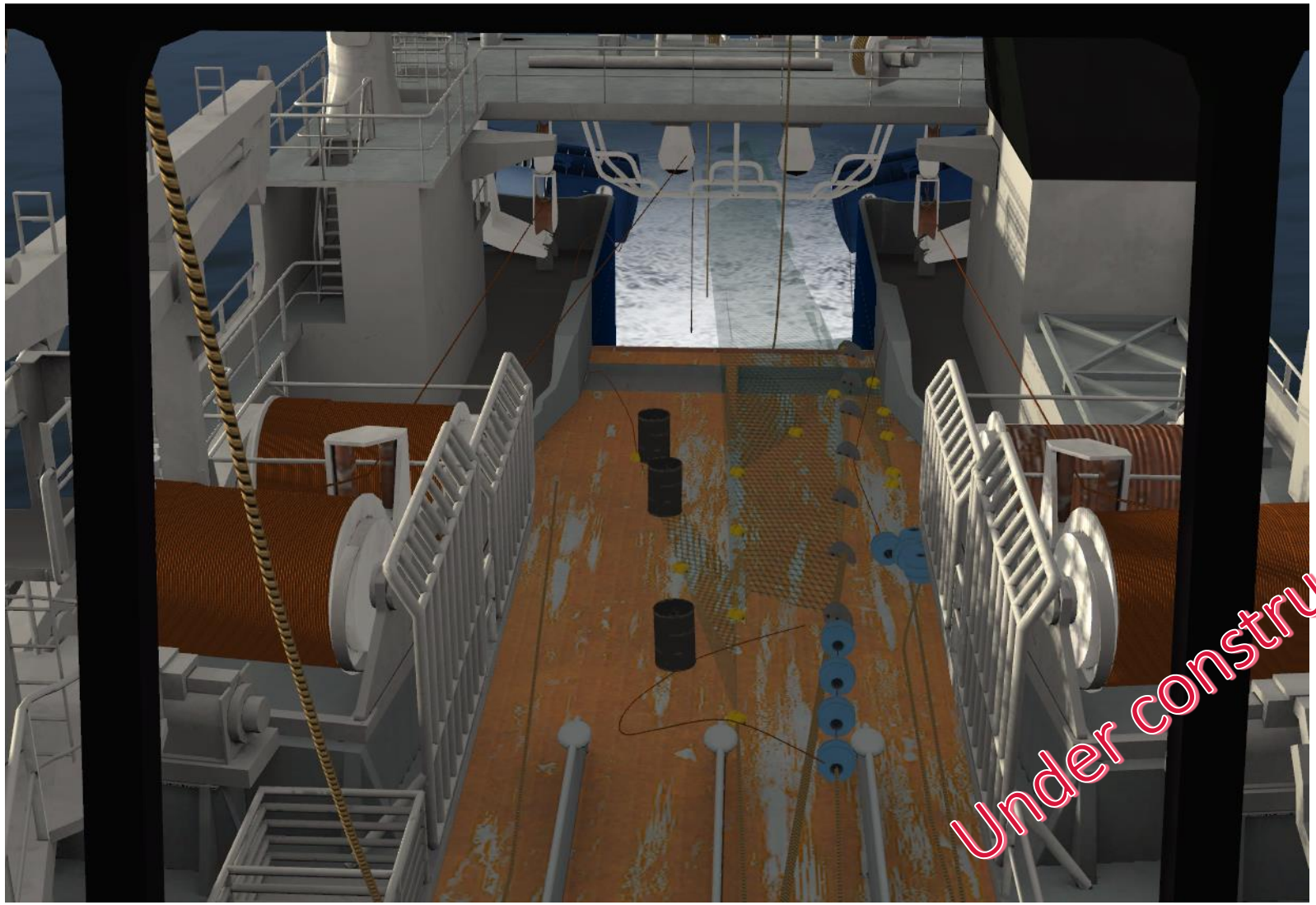
Advanced deck winch operations – Trawl on deck



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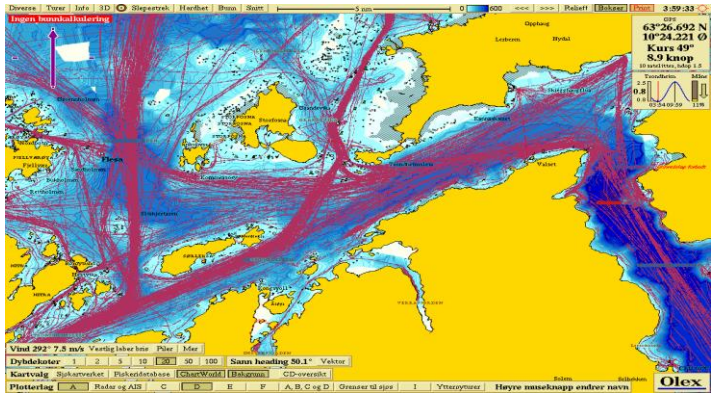
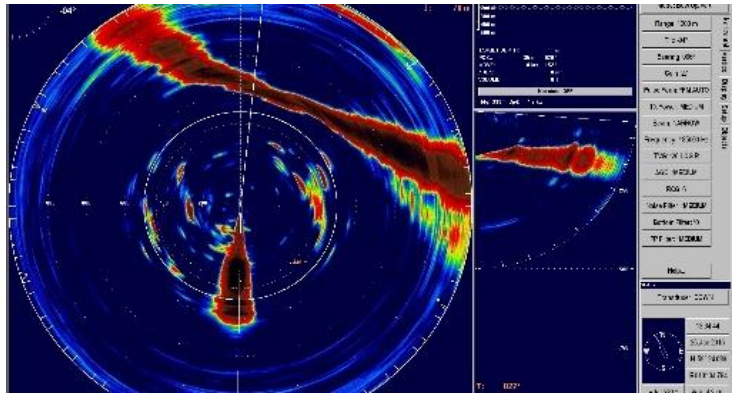
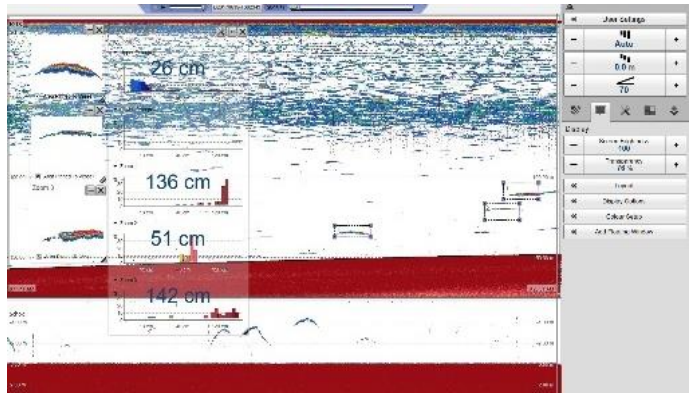
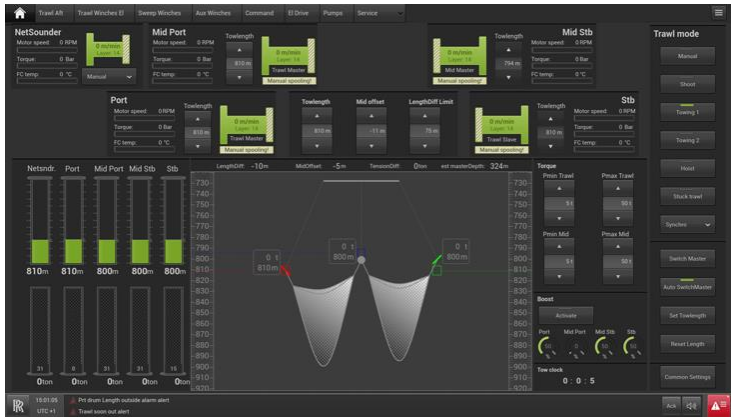
K-Sim Fishery – Student instruments









Plan | Search | Evaluate | Prepare | Catch

KONGSBERG

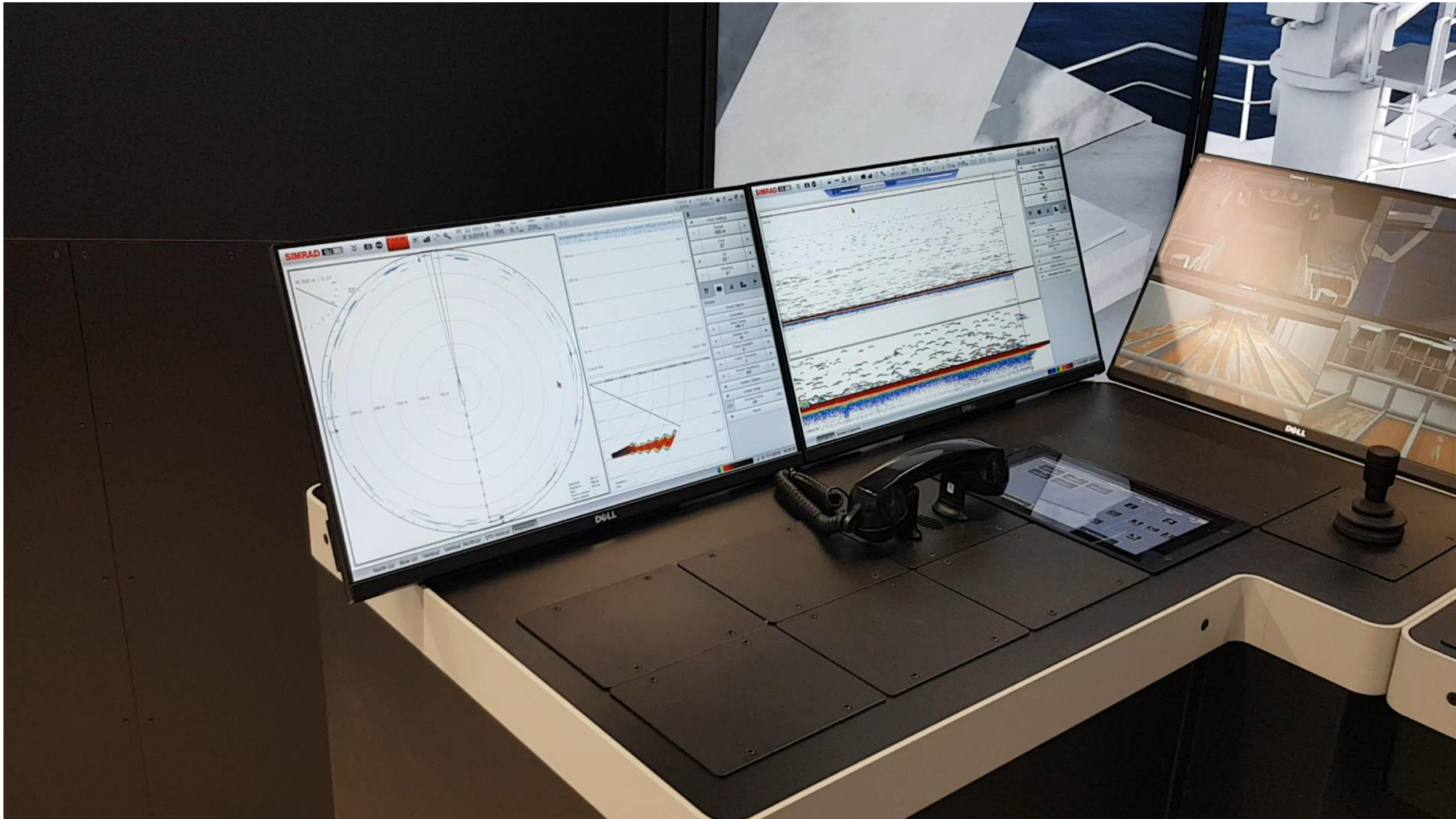
Lofoten

Our very first
K-Sim Fishery Simulator
delivery

Simulator layout – Trawling and Purse Seine

Simulator layout – Trawling and Purse Seine

Simulator layout – Trawling and Purse Seine


SIMRAD
DELL
SIMRAD
DELL
DELL

Simulator layout – Beam Trawler

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Instrument trainer

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K-Sim Fishery – Alternative layout

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Kongsberg Digital – Havbruk

New Model Customer specific "Aqua Work Boat"

New Model Customer specific "Live-hauling boat"

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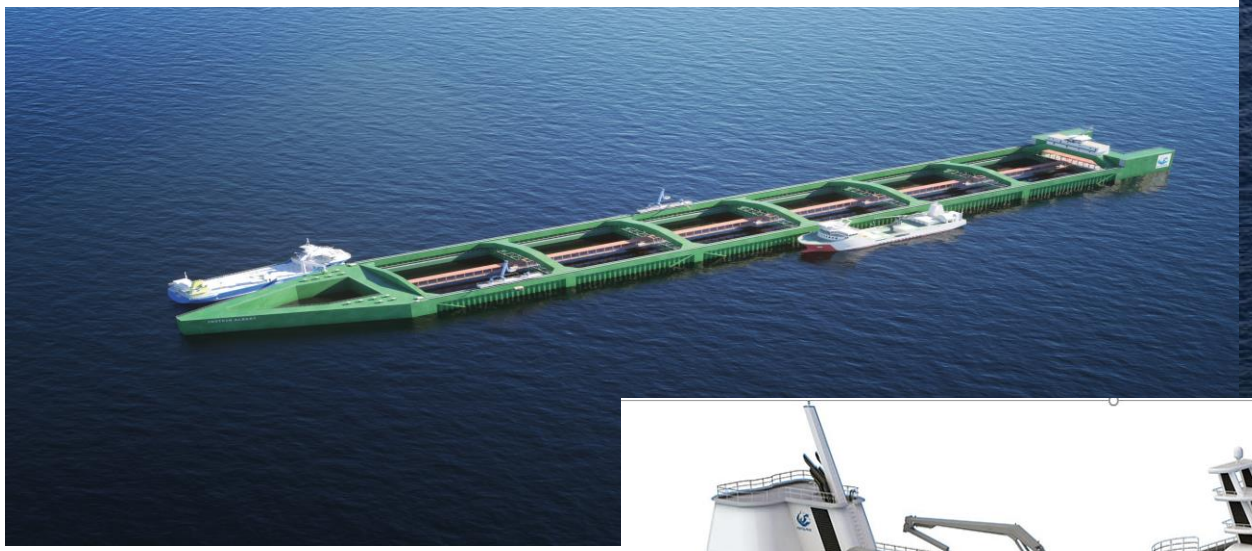
KONGSBERG PROPRIETARY – See Statement of Proprietary Information

Kongsberg Digital – Simulation and training

KONGSBERG

Trening innen Havfarm



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K-Sim Fishery benefits

DNV·GL

STATEMENT OF COMPLIANCE

Statement No: 002/190626
DNV GL Id No: 10564901

Particulars of Product

Function Area: **Fishery Operation Simulator**
Class notation: **Fishing vessel, Stern trawler**
Name and type designation: **K-Sim® Fishery**

Particulars of Manufacturer

Manufacturer: **KONGSBERG DIGITAL AS - Maritime Simulation**
Manufacturer address: **Horten, Norway**

This is to confirm:

That the above product is found to comply with Class A- Standard for Certification of Maritime Simulators No. DNVGL-ST-0033 May 2019.

Application

The above Standard is based on requirements in the STCW Convention, Regulation I/12 and corresponding industry standard and guidelines.

This Statement is valid until **2019-12-26**, provided the requirements for the retention of the Statement will be complied with.

Issued at **Sandefjord** on **2019-06-26**

for DNV GL

Capt. Aksel David Nordholm
Manager Simulator Certification

This Statement is subject to terms and conditions overleaf. Any significant change in simulation performance may render this Statement invalid.
Form code: MSS 301 Revision: 2019-03 www.dnvgl.com Page 1 of 4
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- Meets STCW-F and DNV GL's (class A,B,C) training requirements
- Realistic training scenarios through advanced simulation of vessel- and equipment behavior in a realistic hydrodynamic, physical and visual environment.
- Increases the efficiency of fishery operations
- Safe environment for training of fishery operations. Education is no longer a Father - Son thing.
- Enables the fishing industry to do a more economical fishery
- Add on functionality to existing K-Sim Navigation Simulator
- Realistic fish finding training by integration of real market leading Simrad fishing instruments: Beam Echo Sounder and Omni Directional Sonar and Catch Monitoring System

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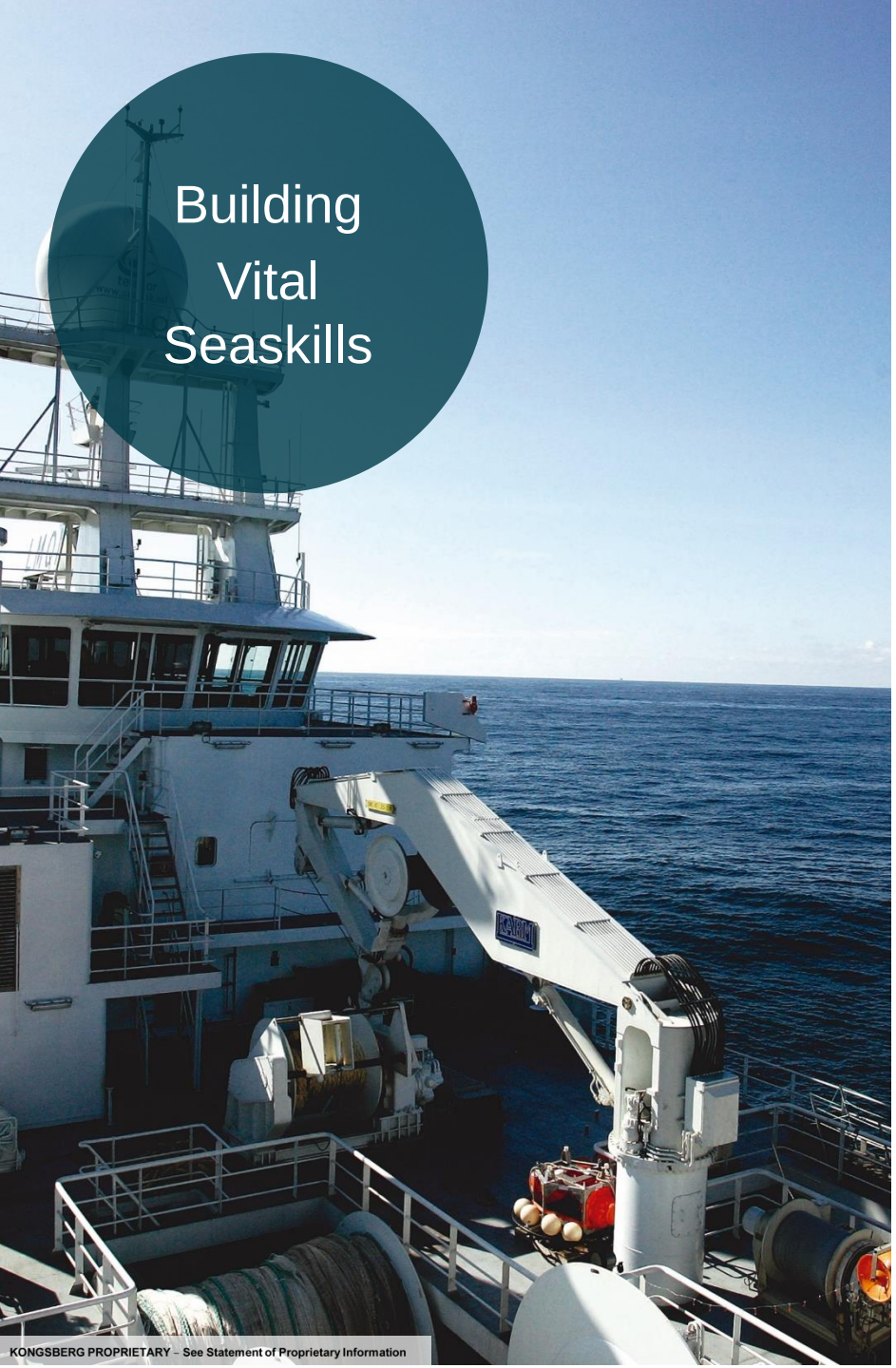

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Learning Objectives

K-Sim Fishery allow students to :

- Train on utilizing the vessel’s navigational equipment
- Learn how to be efficient and optimize working hours
- Learn how to optimize fuel consumption
- Choose the best routes and vessel position
- Carry out appropriate maneuvers to control the fishing gear to ensure quantity and quality of the catch.
- Familiarize with as well as operate different types of fishing gear
- Build understanding that different fishing techniques require different approaches and that different fish species behave in different ways.
- Learn how to plan a fishing campaign, find, catch, and safely and efficiently store the fish, whilst monitoring vessel stability during the loading process.

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Thank you for your attention!

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