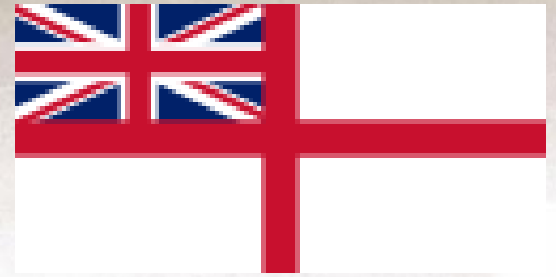


Expanding MCM capabilities using COTS Sonar solutions

Ed Cheesman , Sr. Mgr. – Sales & BD, Teledyne Marine

Underwater Defence & Security 2024





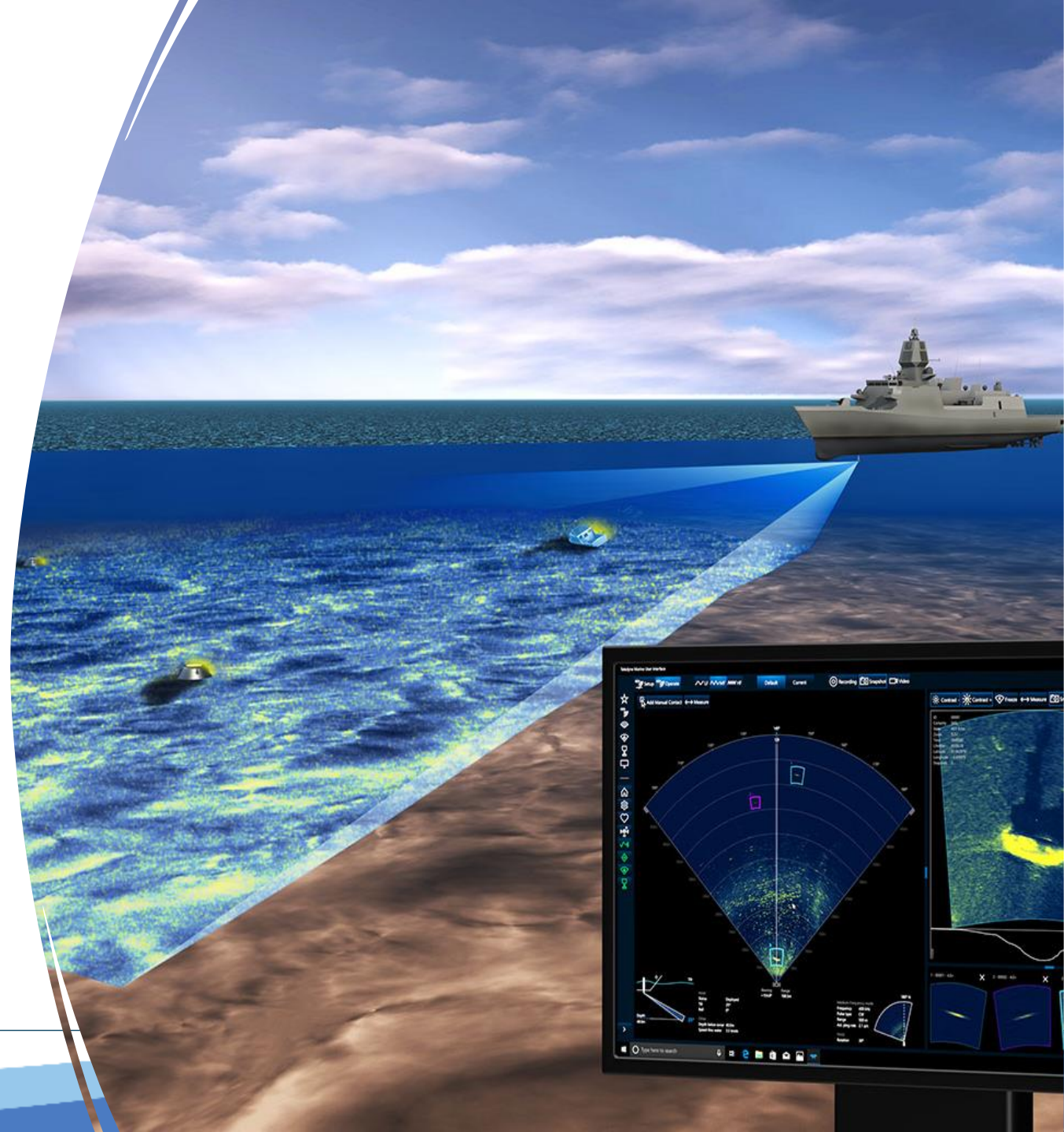
HMS Sphinx

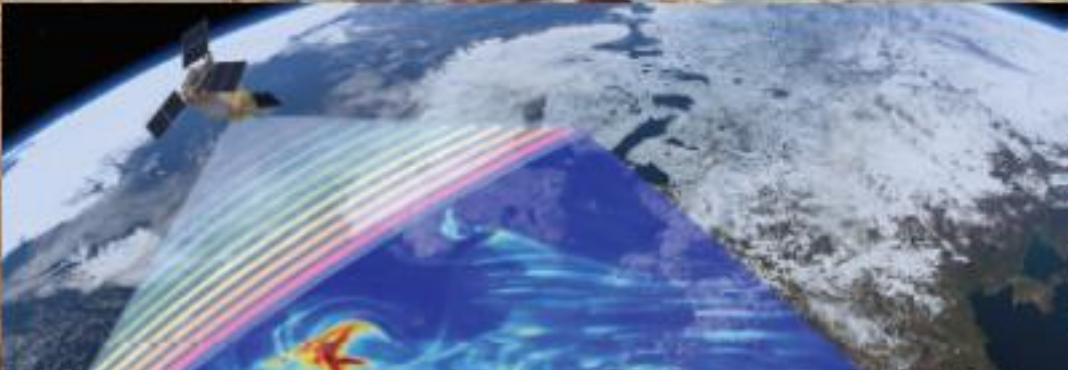
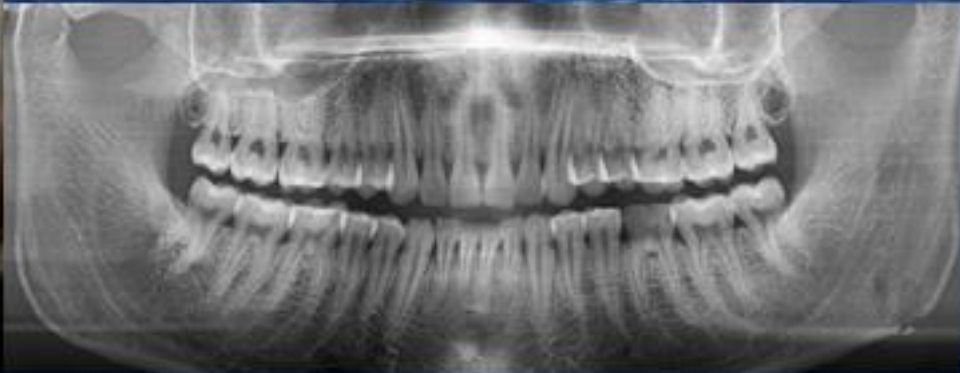
Introduction

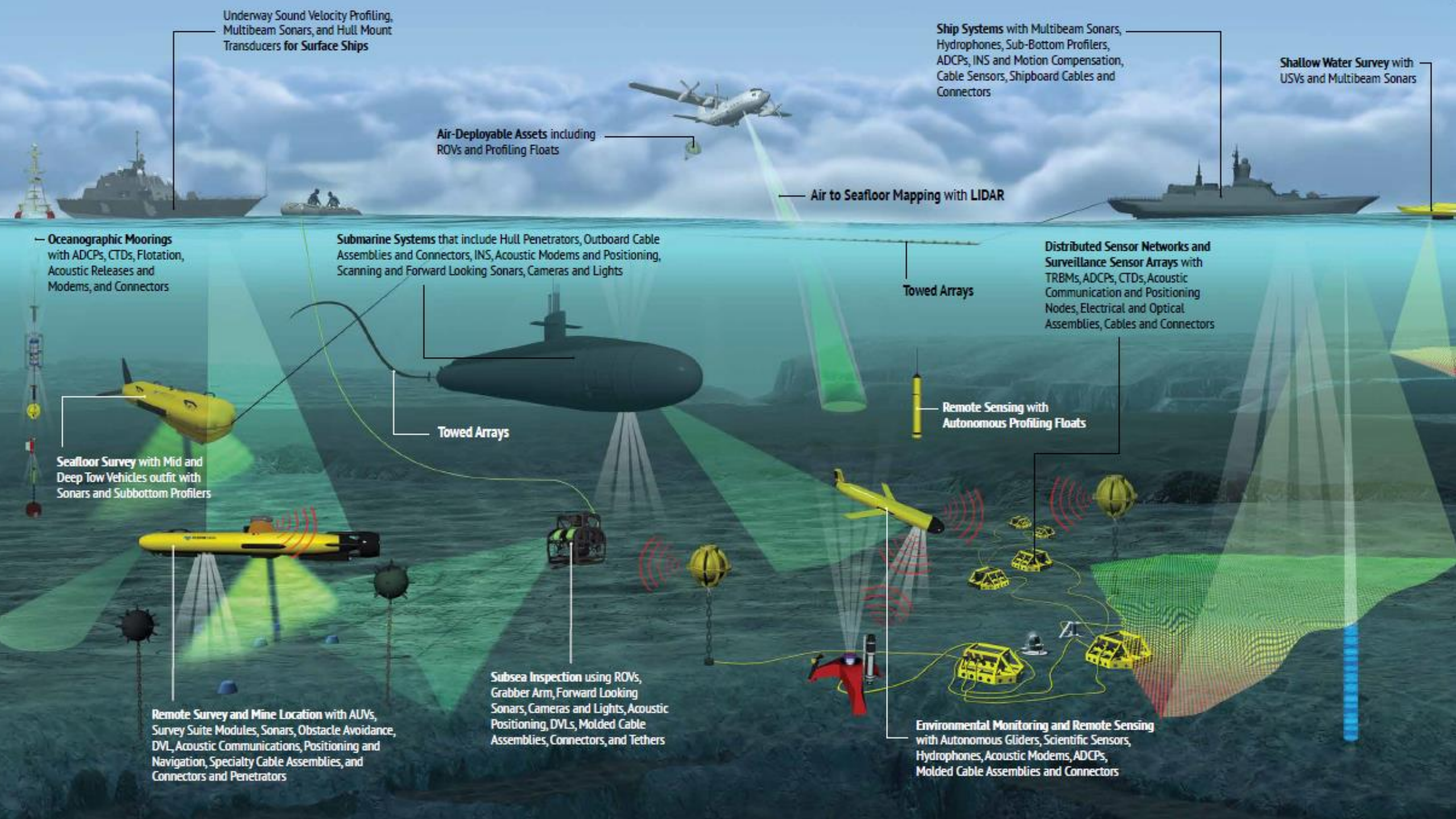
EXPANDING MCM CAPABILITIES USING COTS SONAR SOLUTIONS

Overview:

- In-volume detection, obstacle avoidance & classification of MLOs using FLS & MBES
- Advanced algorithms & processing platforms
- Presentation of results from recent trials







Underway Sound Velocity Profiling, Multibeam Sonars, and Hull Mount Transducers for Surface Ships

Ship Systems with Multibeam Sonars, Hydrophones, Sub-Bottom Profilers, ADCPs, INS and Motion Compensation, Cable Sensors, Shipboard Cables and Connectors

Shallow Water Survey with USVs and Multibeam Sonars

Air-Deployable Assets including ROVs and Profiling Floats

Air to Seafloor Mapping with LIDAR

Oceanographic Moorings with ADCPs, CTDs, Flotation, Acoustic Releases and Modems, and Connectors

Submarine Systems that include Hull Penetrators, Outboard Cable Assemblies and Connectors, INS, Acoustic Modems and Positioning, Scanning and Forward Looking Sonars, Cameras and Lights

Distributed Sensor Networks and Surveillance Sensor Arrays with TRBMs, ADCPs, CTDs, Acoustic Communication and Positioning Nodes, Electrical and Optical Assemblies, Cables and Connectors

Towed Arrays

Remote Sensing with Autonomous Profiling Floats

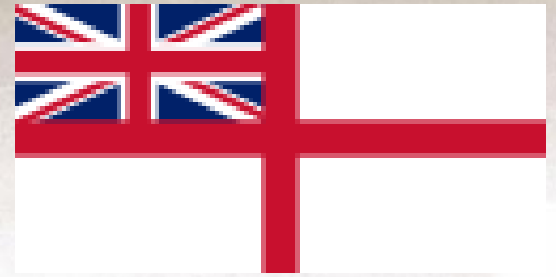
Seafloor Survey with Mid and Deep Tow Vehicles outfit with Sonars and Subbottom Profilers

Towed Arrays

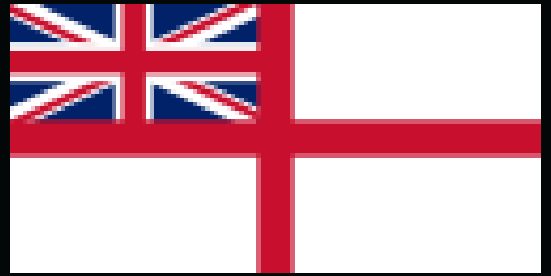
Subsea Inspection using ROVs, Grabber Arm, Forward Looking Sonars, Cameras and Lights, Acoustic Positioning, DVLs, Molded Cable Assemblies, Connectors, and Tethers

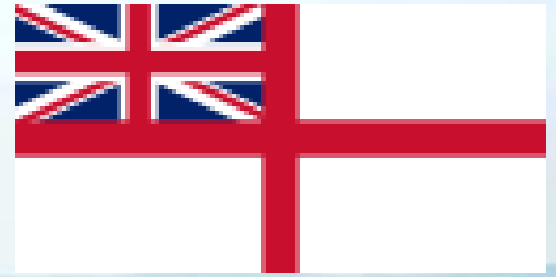
Remote Survey and Mine Location with AUVs, Survey Suite Modules, Sonars, Obstacle Avoidance, DVL, Acoustic Communications, Positioning and Navigation, Specialty Cable Assemblies, and Connectors and Penetrators

Environmental Monitoring and Remote Sensing with Autonomous Gliders, Scientific Sensors, Hydrophones, Acoustic Modems, ADCPs, Molded Cable Assemblies and Connectors



HMS Sphinx





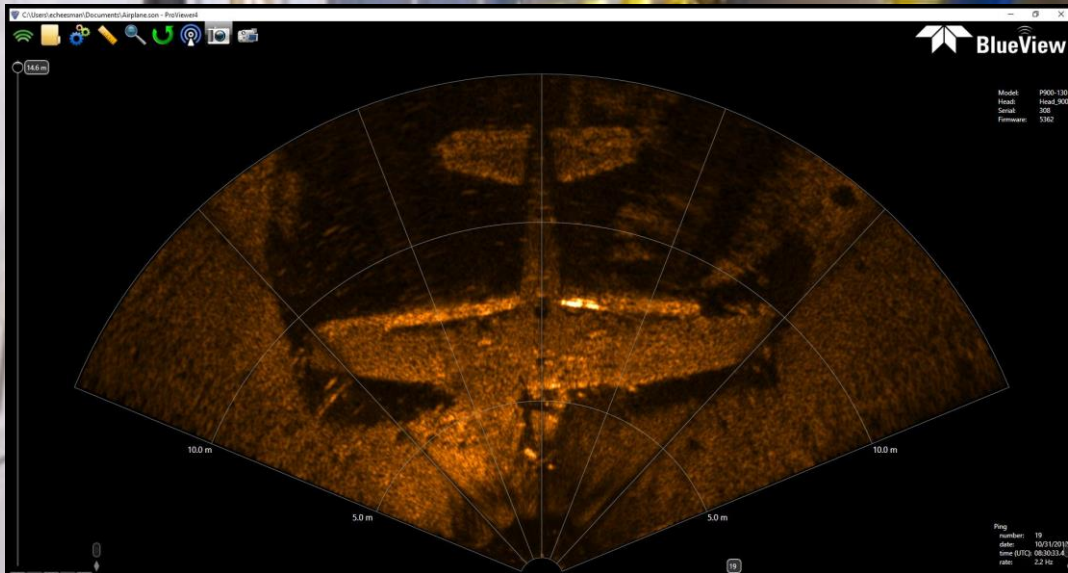
M30

HMS Ledbury

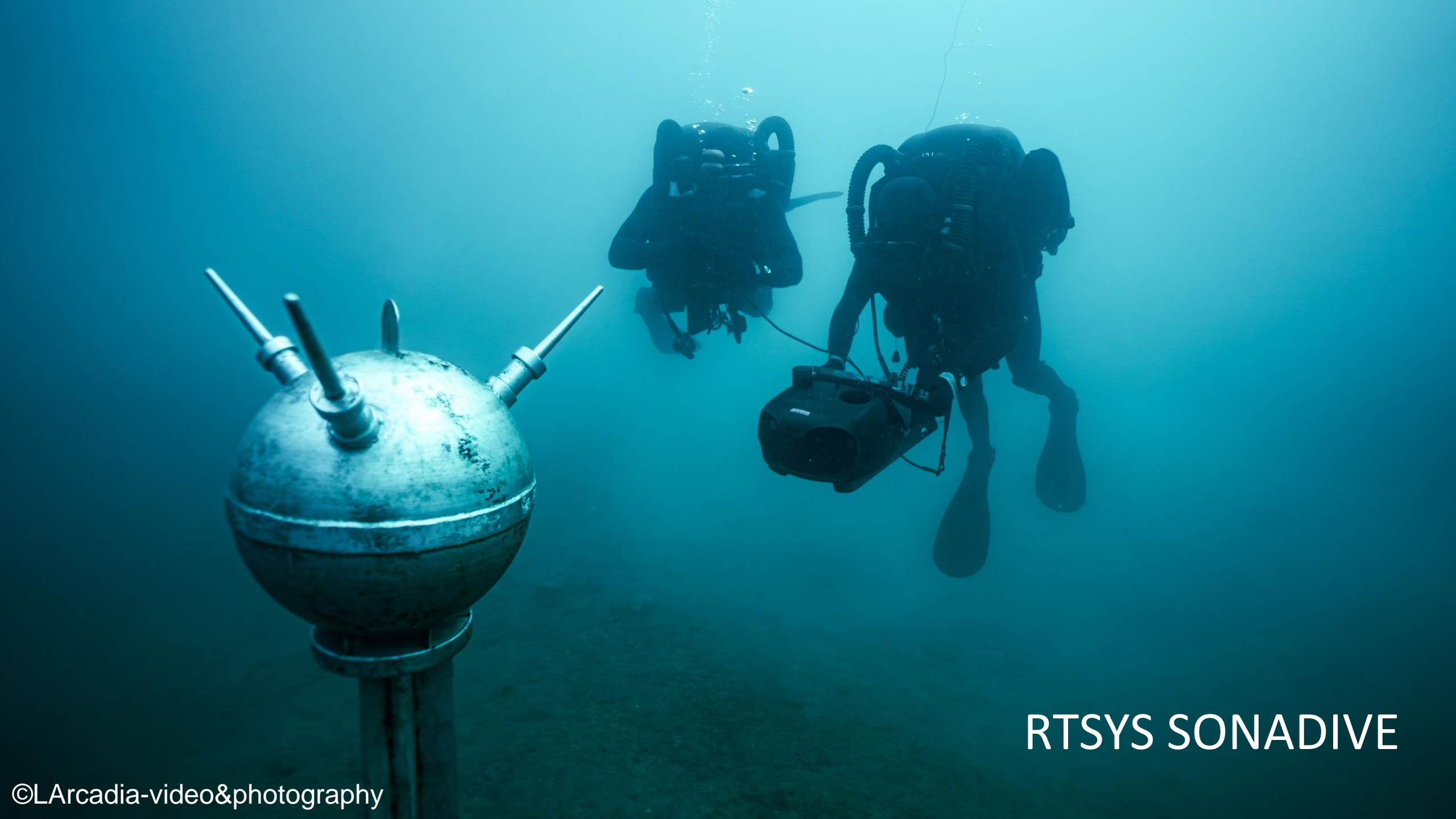


ATLAS ARCIMS

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COTS ARE GREAT!



RTSYS SONADIVE

SeaBat 7123-MkII for MCM



2 x SeaBat 7123MkII order for Asia with hoist system

C2 System supplier:



\$Multi Million orders for delivery in 2023-2024

- First order delivered the base system and a well working sonar with CAD Box
- Strong pipeline for further orders
- Additional functionality added with ongoing orders



HMS Quorn will be refurbished before being handed over to Lithuania in 2024 (MOD photo)

1 x SeaBat 7123-MkII for Europe

C2 System supplier:



SeaBat 7123MkII order for Asia with hoist system

C2 System supplier:



FLS selected for trial with ATLAS



BlueView
450/900/2250 kHz

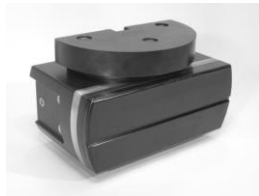


Compact imaging sonar

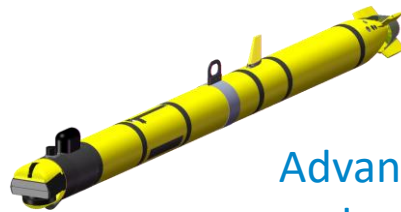


SeaBat F20 / F50
200/400 kHz

High Performance Obstacle Avoidance Sonar



SeaBat F30
200/675 kHz



Advanced Terrain Mapping
and navigation Sonar



SeaBat 7123-MkII
100/200/400 kHz

Search & Detection Sonar, and MCM Sonar

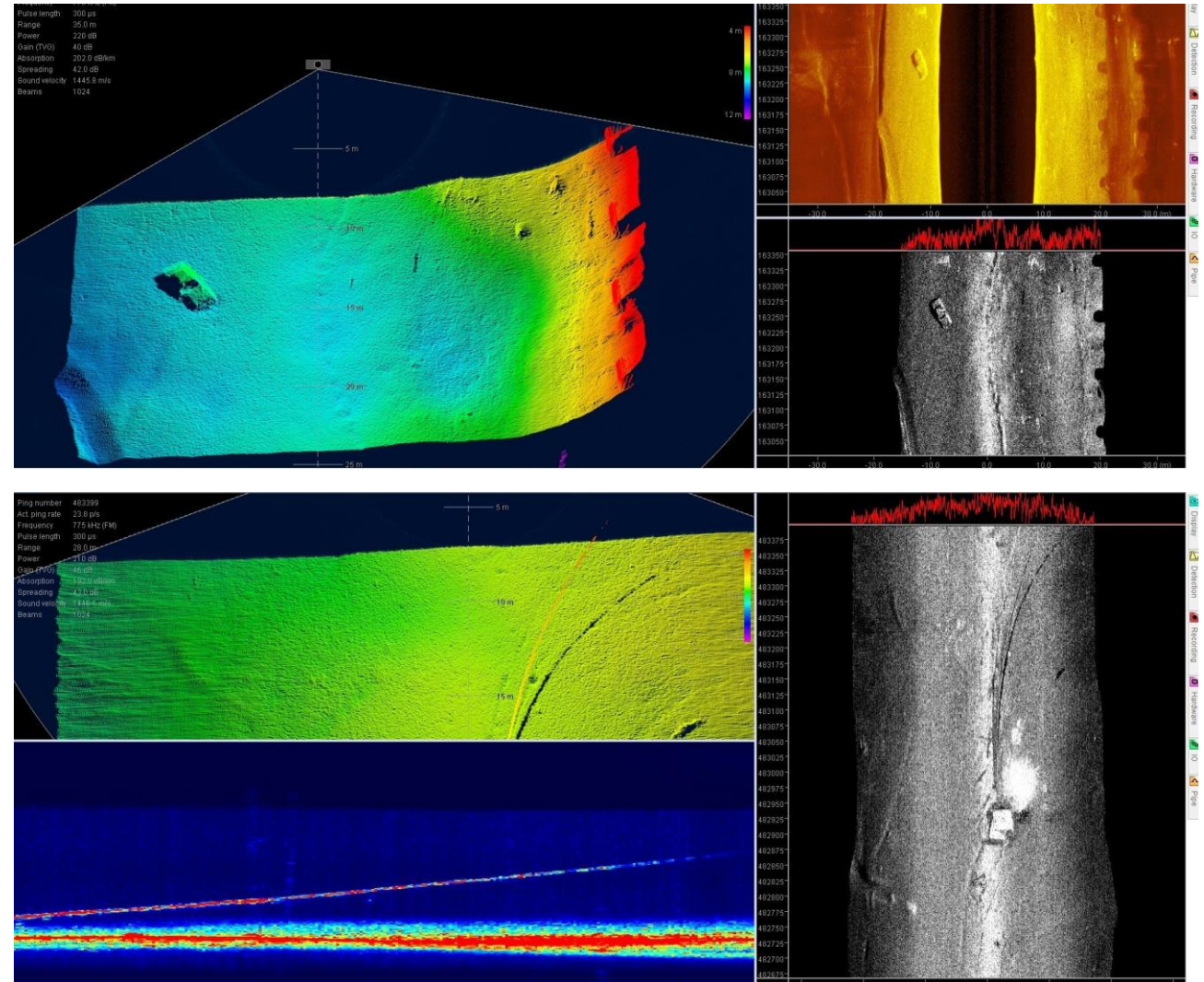


MBES selected for trial with ATLAS

RESON SeaBat T51-R

Dual Frequency = 350/800kHz full swath MBES

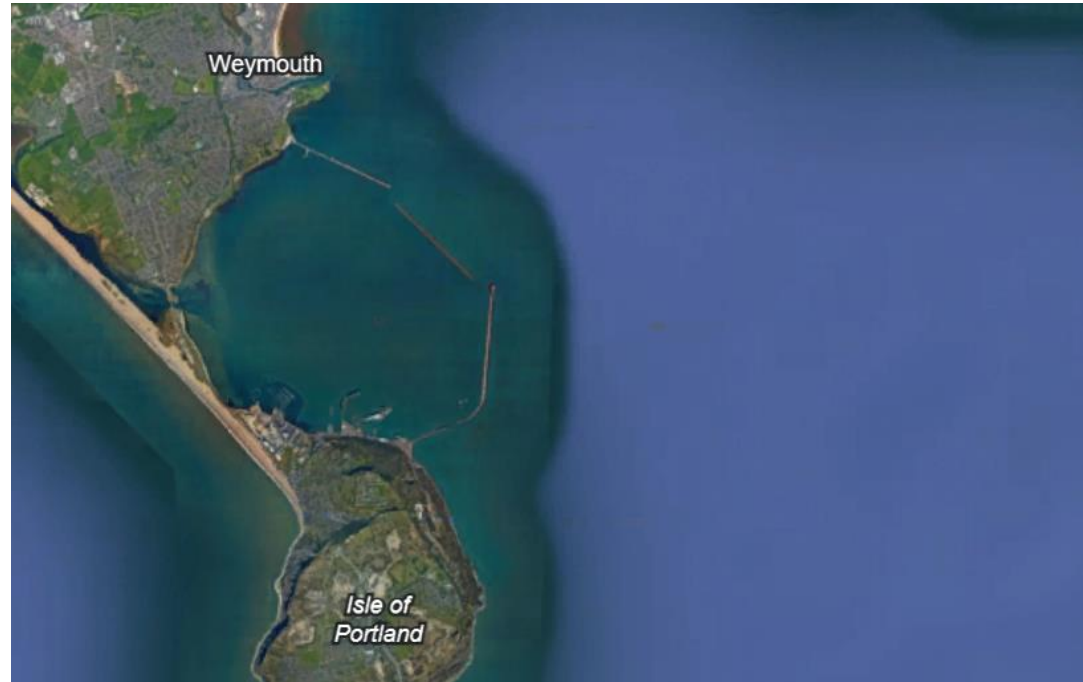
0.25x0.5 deg beams at 800kHz



Location

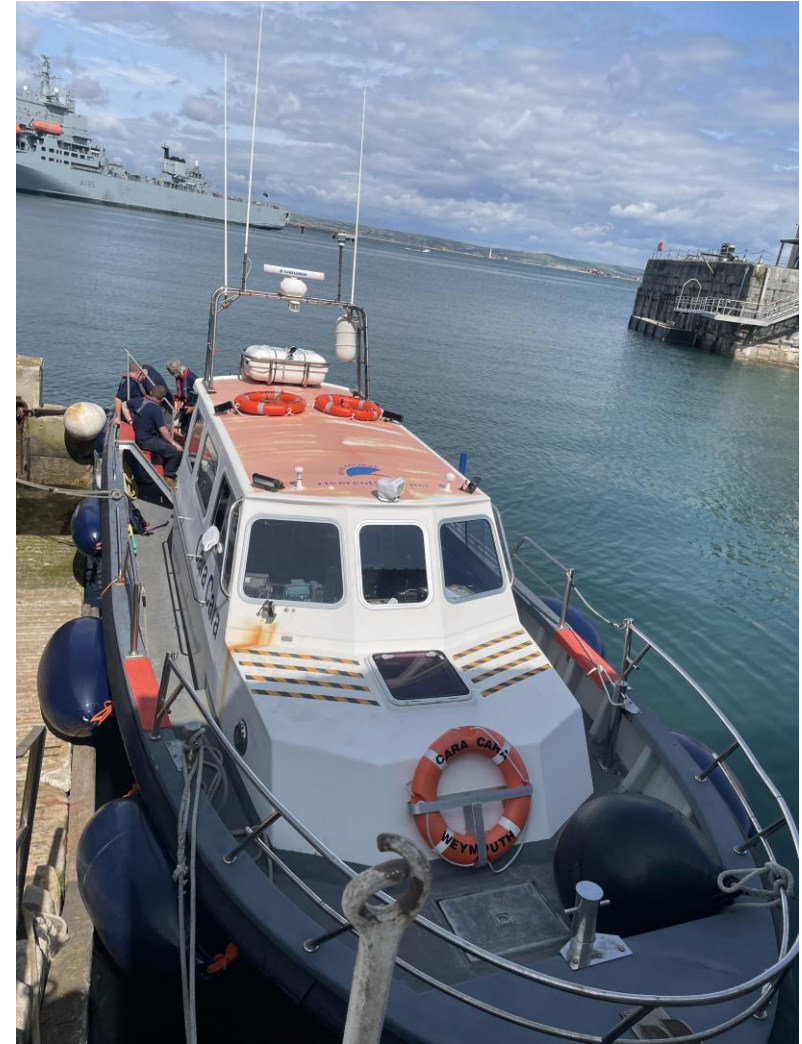
PORTLAND DORSET

- Trials were conducted in open water inside and outside Portland harbour



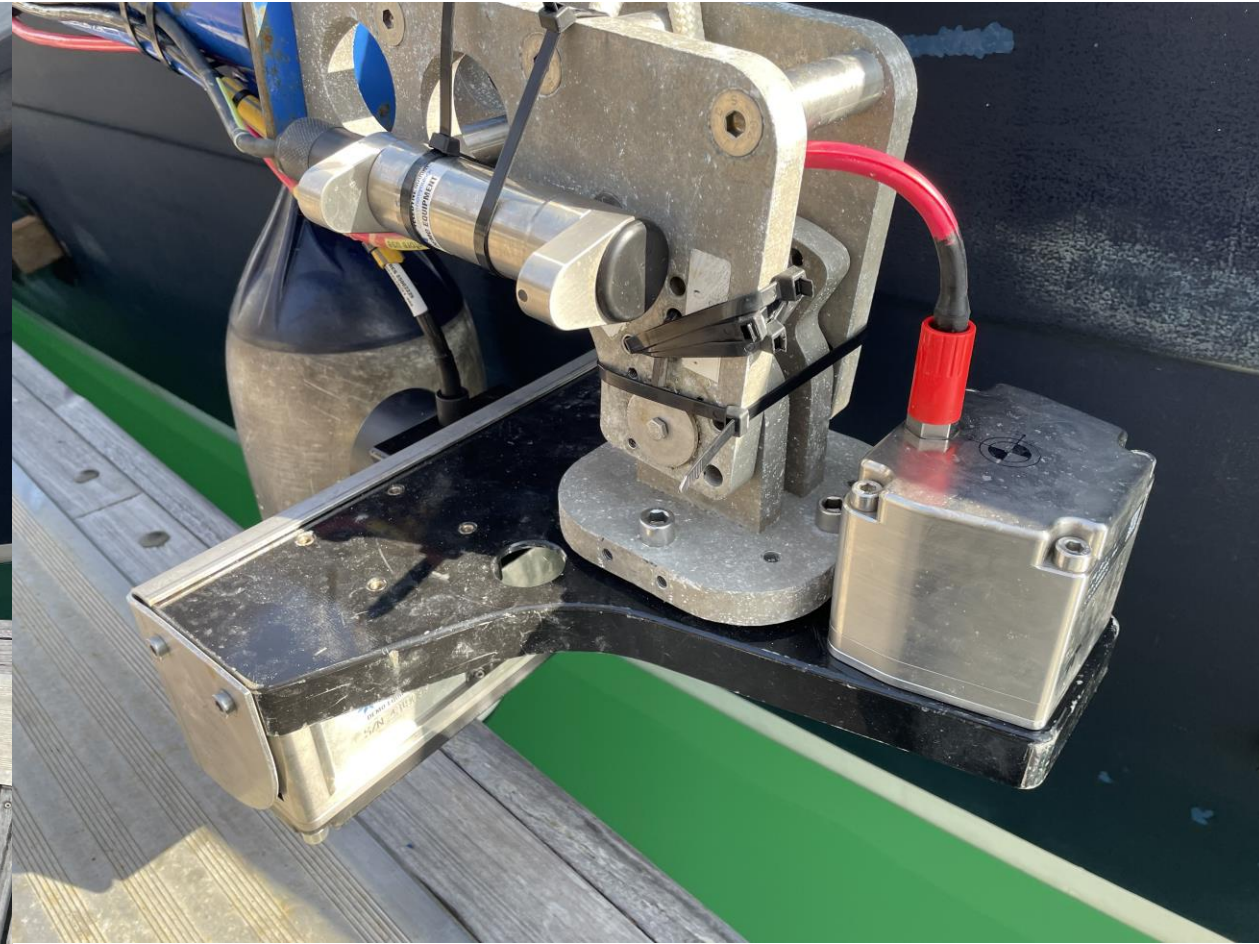
VESSEL

CARA CARA = Vessel of opportunity



INSTALLATION

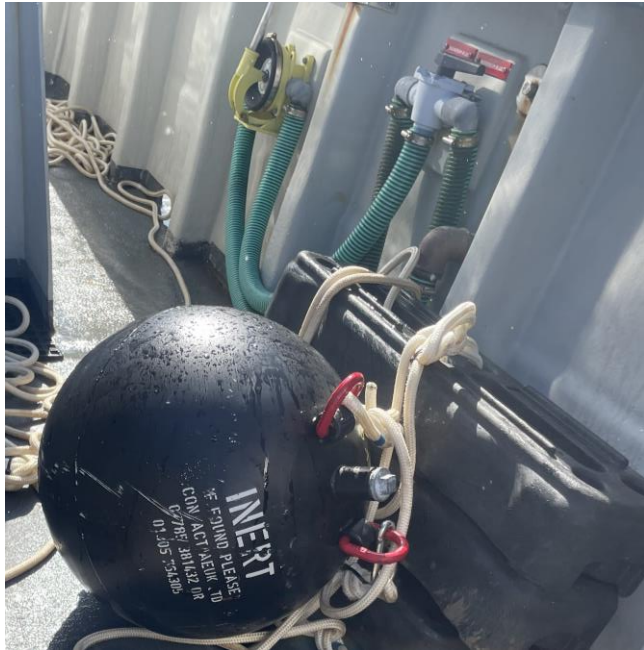
OVER THE SIDE POLE, MANUAL TILT



TARGETS

MINE LIKE OBJECT

- Tethered MLO (target): suspended in the water column at a range of depths (adjustable from near surface to 20m)

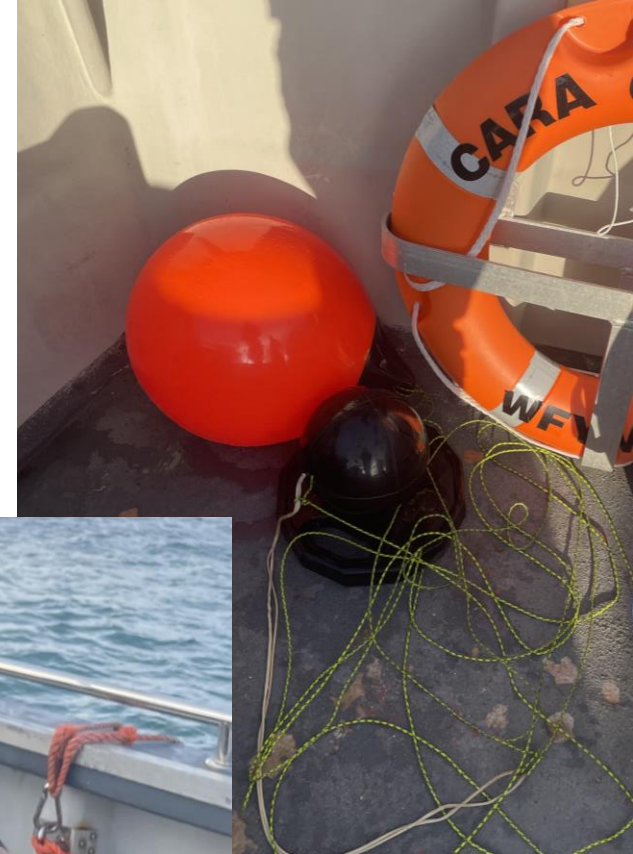


TARGETS

SONAR BELL

- Tethered Sonar Bell (target): suspended in the water column at a range of depths (from near surface to 20m)

Omni-directional fully passive sonar reflector
Supplied by Clearwater HydroAcoustics



Ping number 24508
Act. ping rate 8.3 p/s
Frequency 200 kHz (FM)
Pulse length 780 μ s
Range 40.0 m
Power 208 dB
Gain (TVG) 30 dB
Absorption 60.0 dB/km
Spreading 30.0 dB
Sound velocity 1515.6 m/s
Beams 256

26 m

24 m

22 m

20 m

18 m

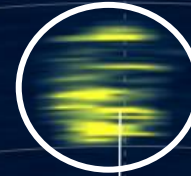
16 m

14 m

12 m

10 m

Sphere

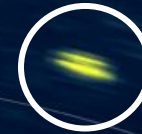


Contrast: 10

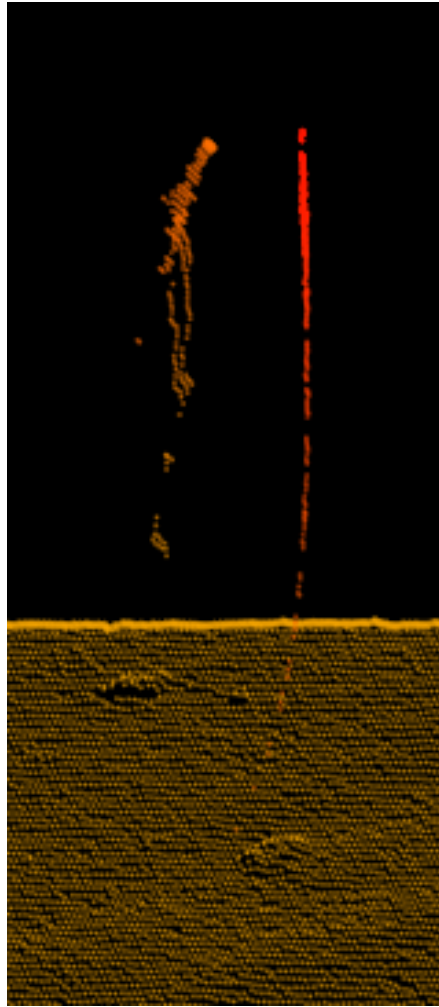


5.40 m

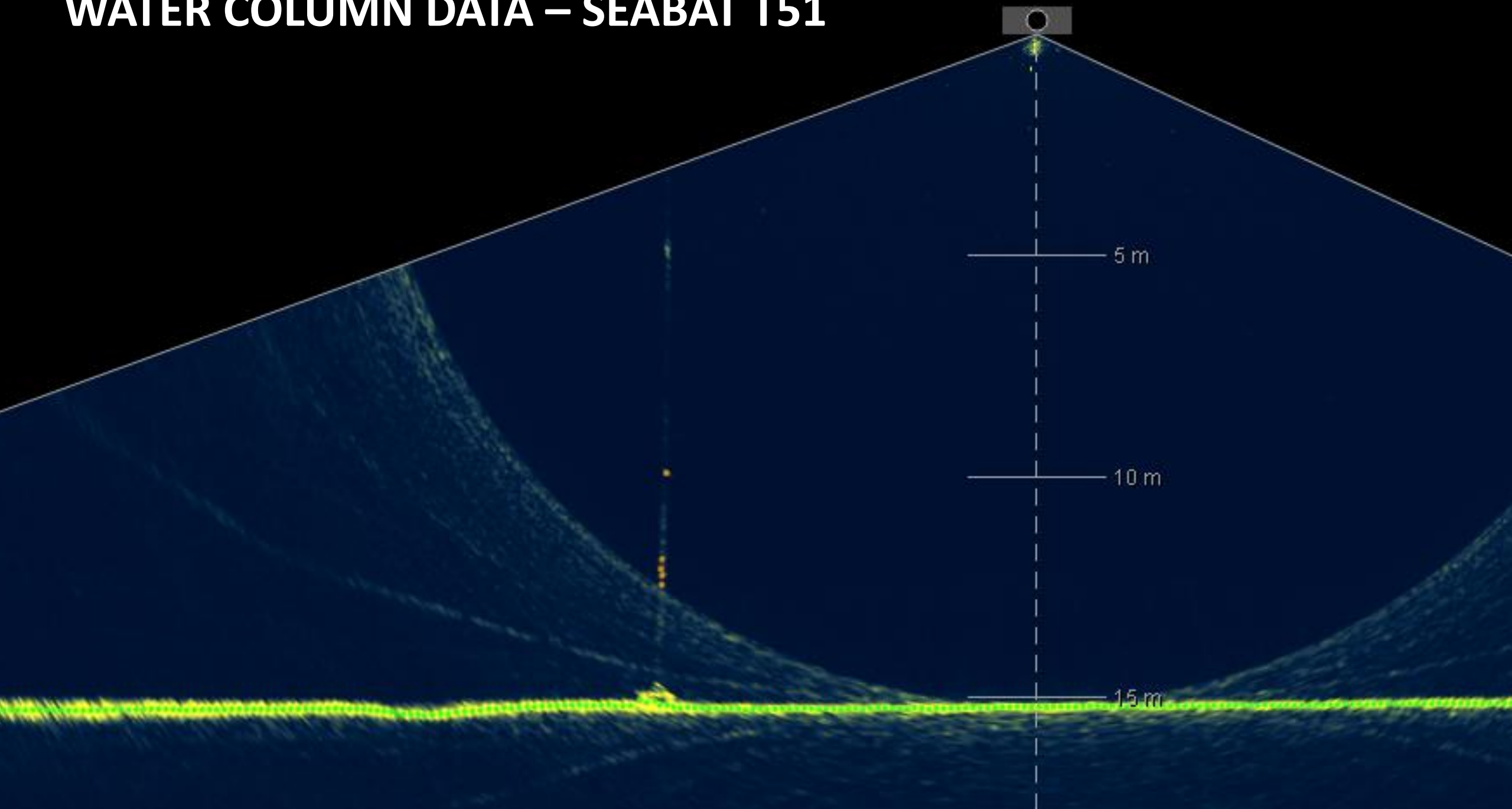
Weight blocks



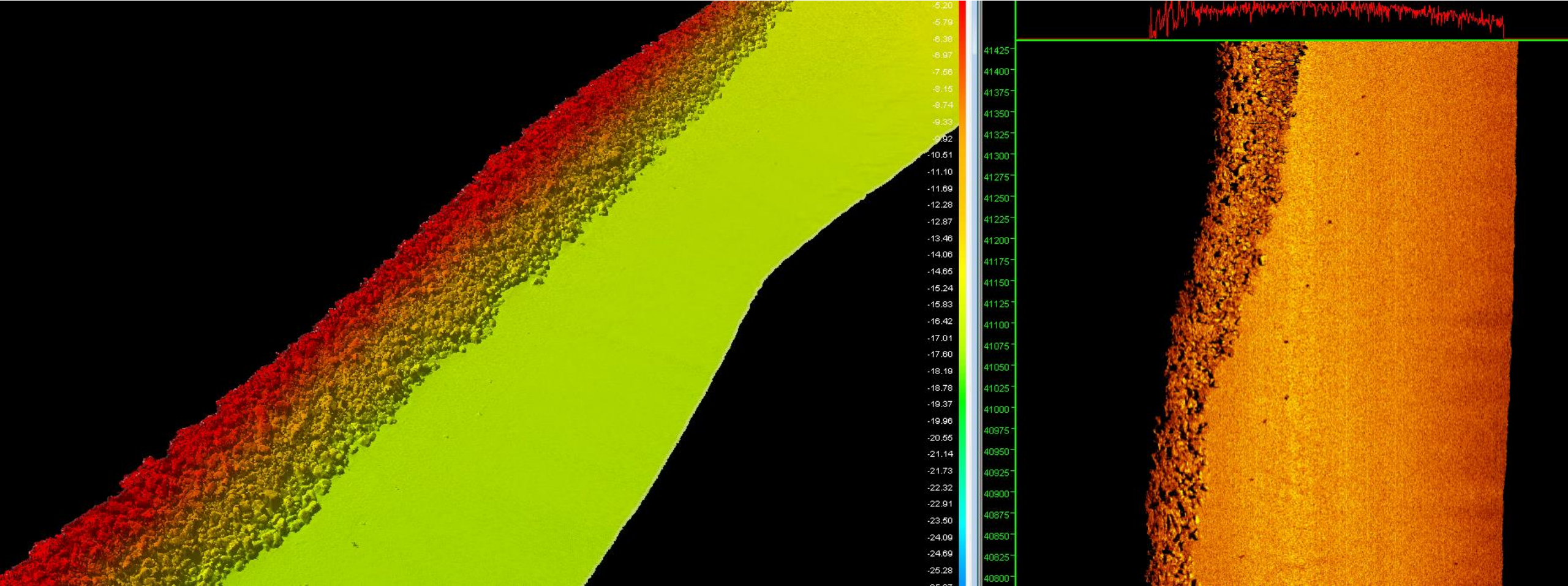
BATHYMETRIC DATA SEABAT T51 - MOORING LINES AND TARGET



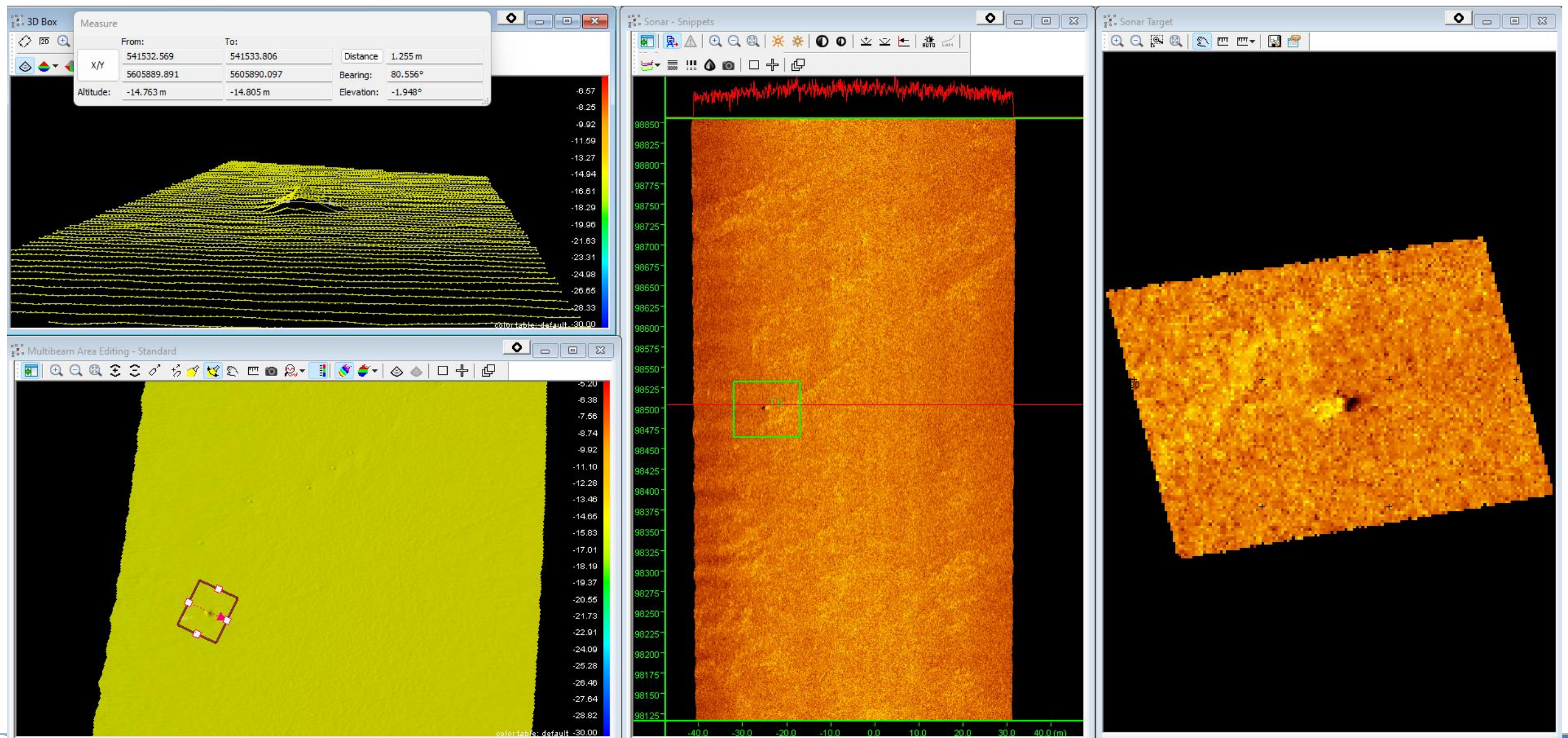
WATER COLUMN DATA – SEABAT T51



SEABAT T51 - BREAKWATER & CRAB POTS



SEABAT T51- MINE REPLICA -ROCKAN?





TELEDYNE MARINE
Everywhere you look™

