

Working vessels as ocean research platforms

The Strait Hunter conversion
and the path to trusted ocean data

FEMME 2026

Megan Murphy
Sea Centric Inc.

Nick Burchill
Kongsberg Discovery Canada Ltd.



KONGSBERG

The experience behind Strait Hunter



R/V Connor Murphy

Former Canadian Coast Guard rescue vessel
Multipurpose data collection platform

R/V Patrick & William

Former crab vessel
Fisheries science platform

The conversion at a glance

60 m

Existing offshore vessel

52 year old ship

20 year old EM 300

Stripped of most science equipment



7 Months from concept discussion to Sea Acceptance

The conversion at a glance

RV Strait Hunter Sensor upgrades

- EM 304 MK II 1x1
- EM 2042 0.4 degree
- HiPAP 200
- Seapath 380 w MGC R3
SN50 (forward looking)

Conversion within months



The conversion at a glance

RV Strait Hunter Sensor upgrades

- EM 304 MK II 1x1
- EM 2042 0.4 degree
- HiPAP 200
- Seapath 380 w MGC R3
SN50 (forward looking)

Conversion within months



Why vessel conversion matters

27.3%

of the global seafloor mapped
to modern standards in 2025

Purpose-built fleets take time to expand

Suitable working vessels can add capacity
while new research vessels are
developed.

Regional assets can also help reach remote
waters.

Historical baseline: June 2025, Seabed 2030

A research platform is an integrated system

The vessel

Hull, crew, structure and power must support the mission.

The survey system

Sonar, positioning and motion sensors must work together.

The trusted data pathway

Quality checks, protected storage and controlled data transfer support trust.

The right hull makes integration faster

Mission

Does the vessel suit the mission and the environment?

Acoustics

Is the hull form adequate?

Structure and geometry

Can it support the installation, electrical power? reliable sensor offsets? (Pole, Drop keel, GNSS Antennas etc.

Power and approvals

Can the electrical system, class requirements and refit window support delivery?

Proceed, redesign or choose another vessel

A disciplined team must be willing to decide that a vessel is unsuitable.

Clear ownership prevents late redesign

Owner and operators	Define the mission, operating limits and vessel access.
Naval architect and yard	Own structural design, stability and approvals.
Kongsberg and hydrographers	Set equipment configuration, geometry and acceptance.
Cyber team and client	Define data ownership, access and protection requirements.

One shared interface register records decisions and dependencies such as weight, power, approval path and acceptance criteria.

How survey measurements become trusted data

Collect and locate

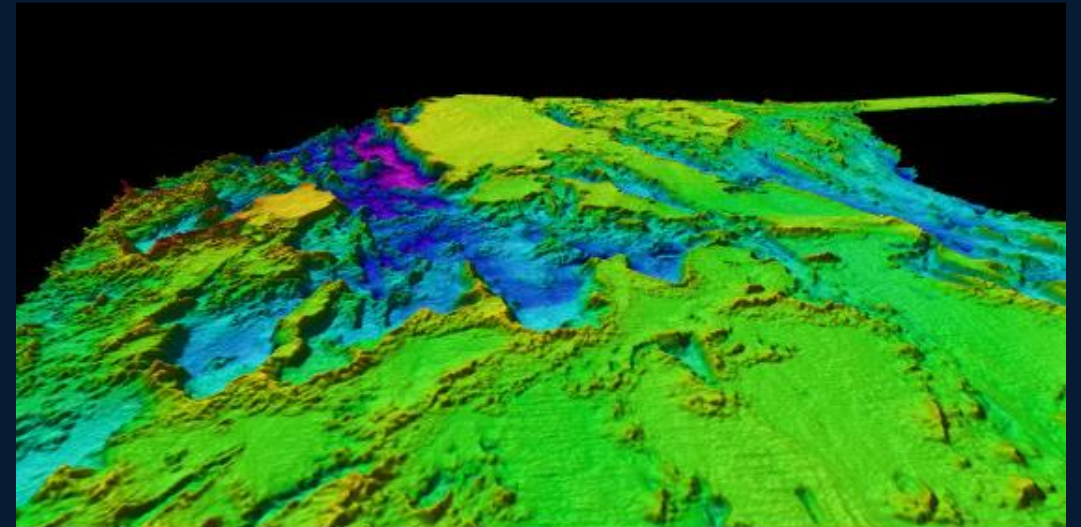
Match sonar readings with position, vessel motion and timings.

Check the quality

Review the data and record how the measurements were collected. Preserve metadata

Protect and share

Store securely. Transfer to approved users.



Data protection starts with the mission

Understand the data

What will we collect, how sensitive is it, and who may use it?

Control the connections

Identify what connects to what. Separate systems and restrict access.

Check it works

Verify the safeguards and plan for operation without reliable internet.

The final protection depends on the mission and client requirements.

Vessel systems and survey systems stay separate

Vessel operations

Navigation, machinery and safety systems remain protected.

Survey and client work

Acquisition, processing and storage use a separate mission network.

Controlled shore access

A security gateway permits approved connections and logs activity.

Conceptual design. Final controls depend on vessel and mission requirements.

A lost connection should not stop the survey

When connected

- Get controlled remote support
- Share data with approved users
- Review results with shore teams

When disconnected

- Continue surveying and checking data
- Keep data and records onboard
- Transfer when the connection returns

Collect now. Store securely. Transfer when available.

The method can be reused on other vessels

Reuse the method

Keep the shared design records, network approach and acceptance tests.

Check every vessel

Assess noise, structure, stability, power and the installation window.

Fit the mission

Choose equipment and approvals for mapping, inspection or other work.

Each vessel and mission still needs its own engineering review.



Five decisions that made the conversion work

01**Select for mission fit**

02**Engineer the complete system**

03**Close interfaces early**

04**Design the data path with the sensor**

05**Separate current capability from the roadmap**

Questions?

Vessel suitability
Kongsberg integration
Cyber-secure ocean data



KONGSBERG

