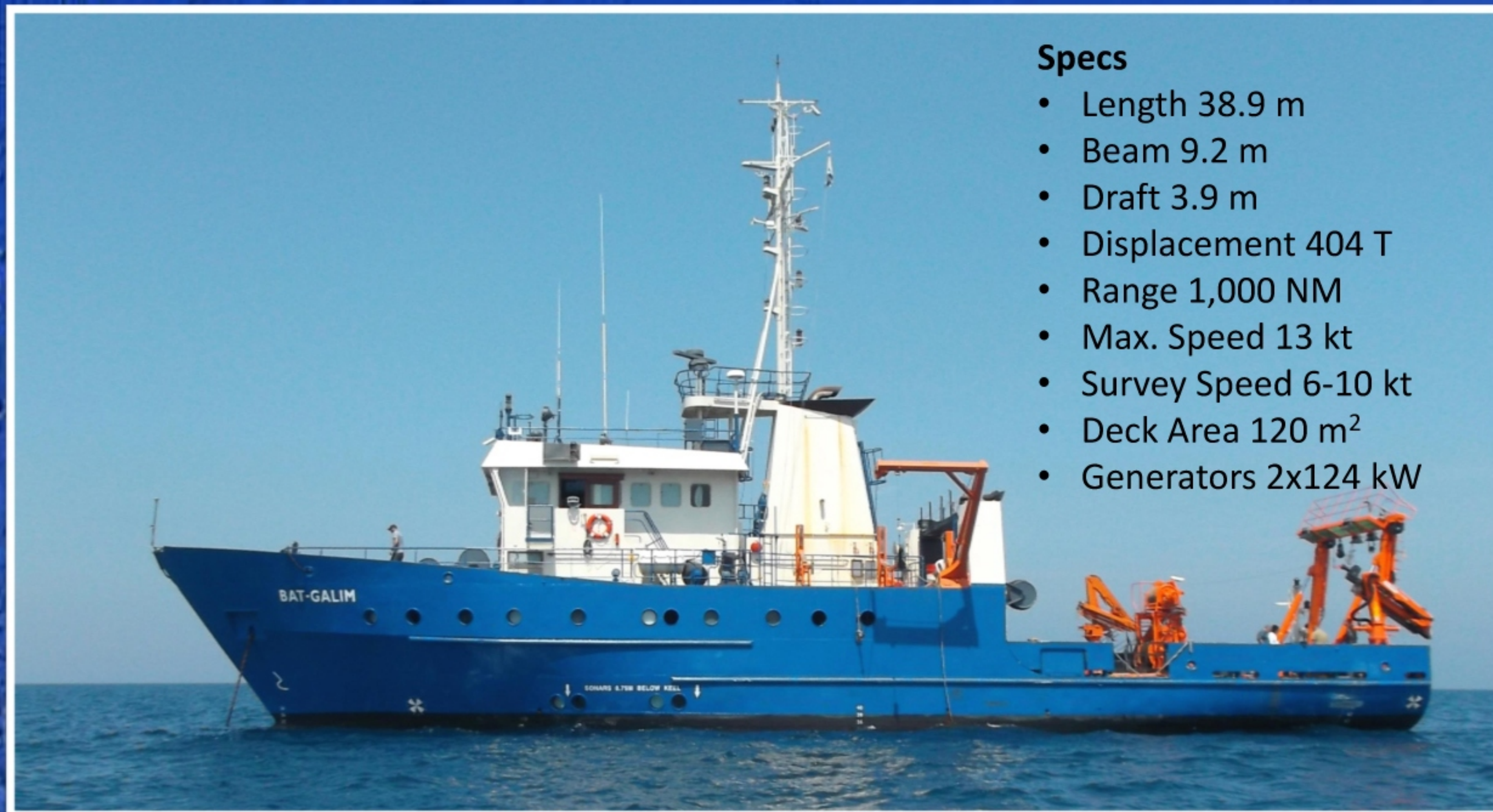


# Mapping the Israeli Mediterranean Waters: *R/V Bat-Galim*

## A New governmental RI with high performance acoustic capabilities



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- Specs**
- Length 38.9 m
  - Beam 9.2 m
  - Draft 3.9 m
  - Displacement 404 T
  - Range 1,000 NM
  - Max. Speed 13 kt
  - Survey Speed 6-10 kt
  - Deck Area 120 m<sup>2</sup>
  - Generators 2x124 kW

### Background

A 1990 German-built Klein-Klasse support vessel has been refitted according to the UNOLS guidelines for Regional Class Research Vessels, with leading acoustic and navigation systems, a survey room, dynamic positioning, wet/dry lab capabilities, a 6-meter Telescopic A-Frame at the stern and a bed capacity for 24.

### Tasks

- Deep sea research.
- High resolution bathymetric mapping.
- Environmental surveys and monitoring.
- Geohazard assessment.
- Academic research and education.
- Oil-spill response.

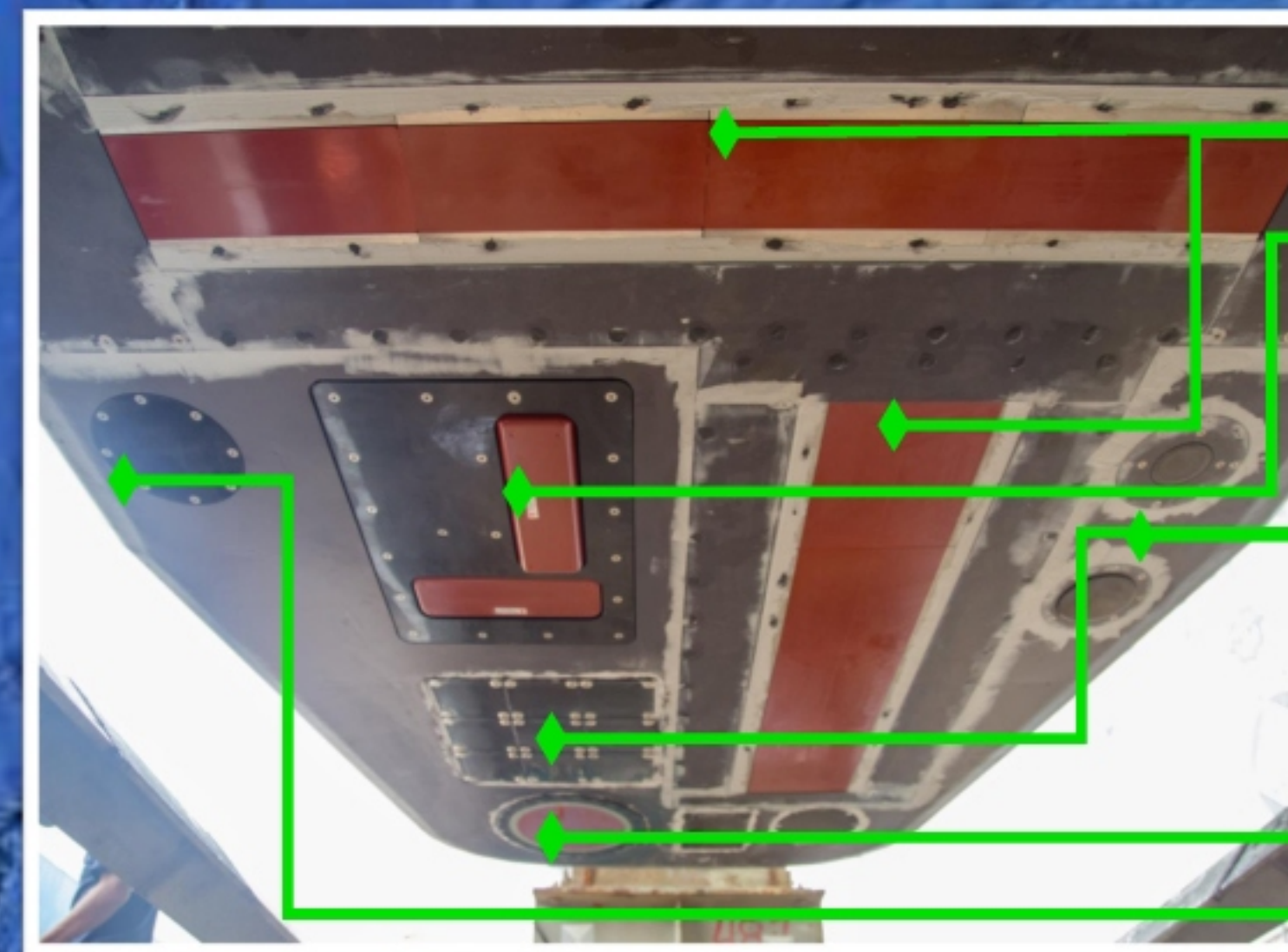


The new Survey Room with multiple displays for navigation, acquisition and processing.

R/V Bat-Galim after refitting.



The Gondola before installation (left), and shown (right) below keel during installation of transducers.



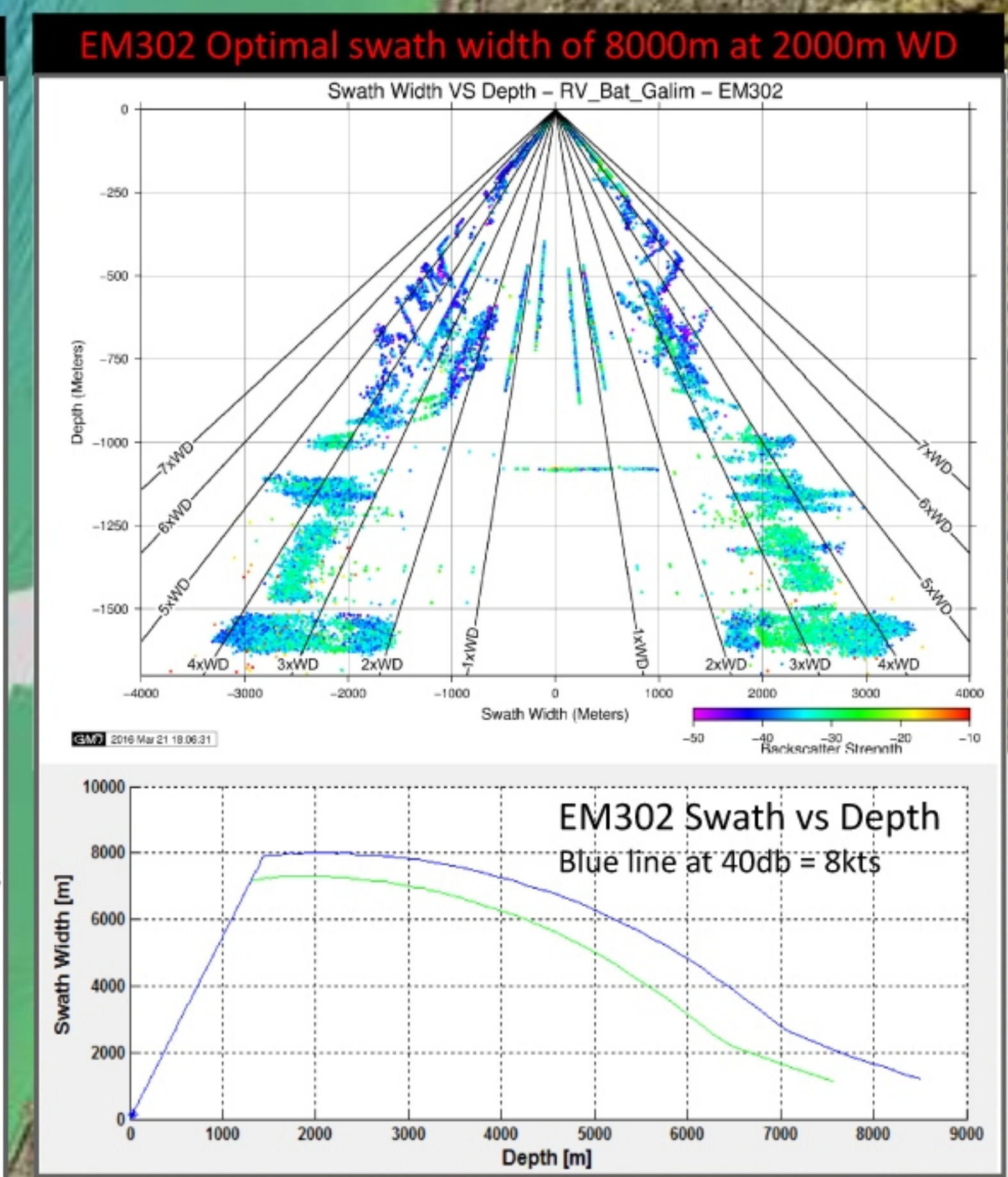
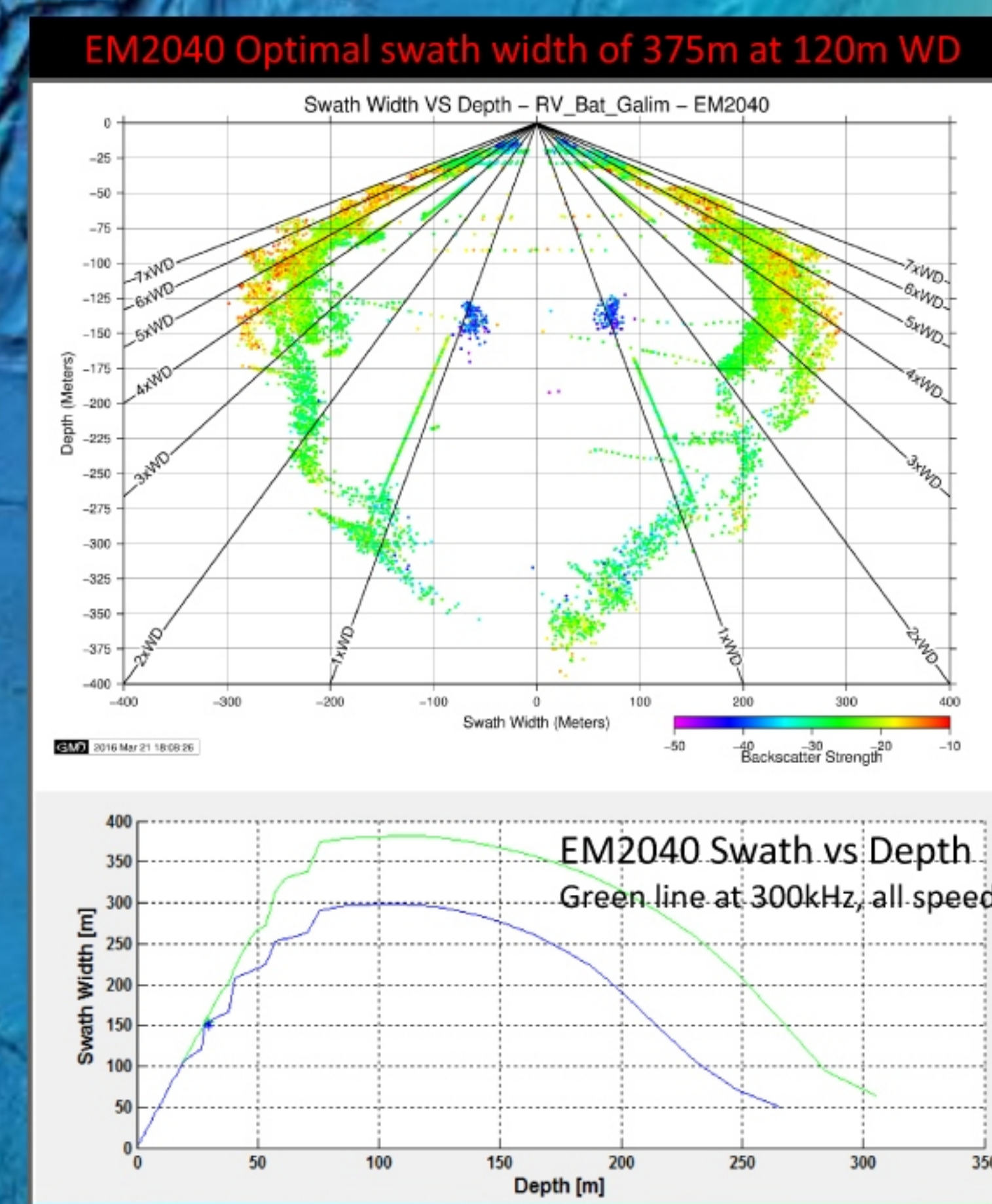
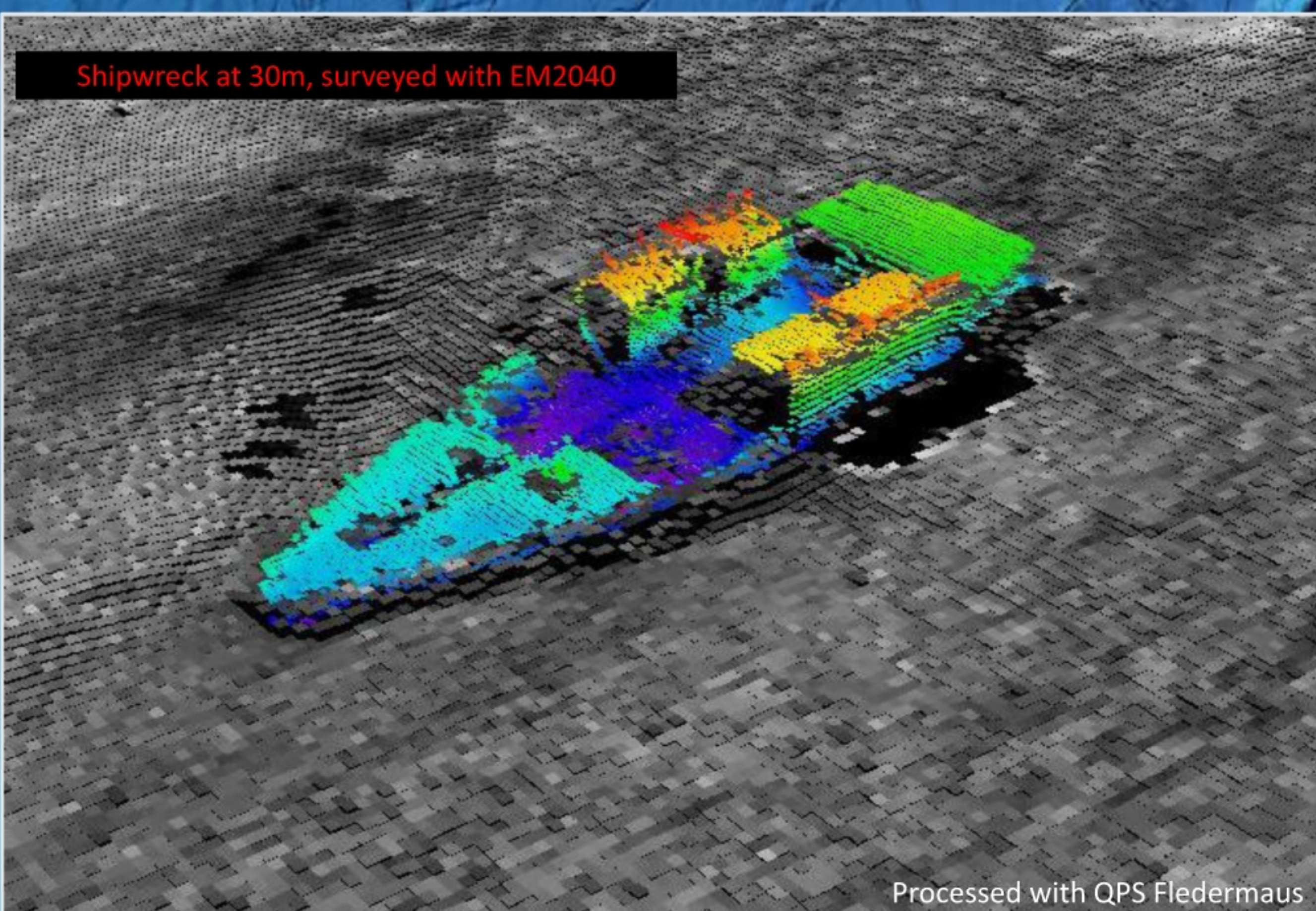
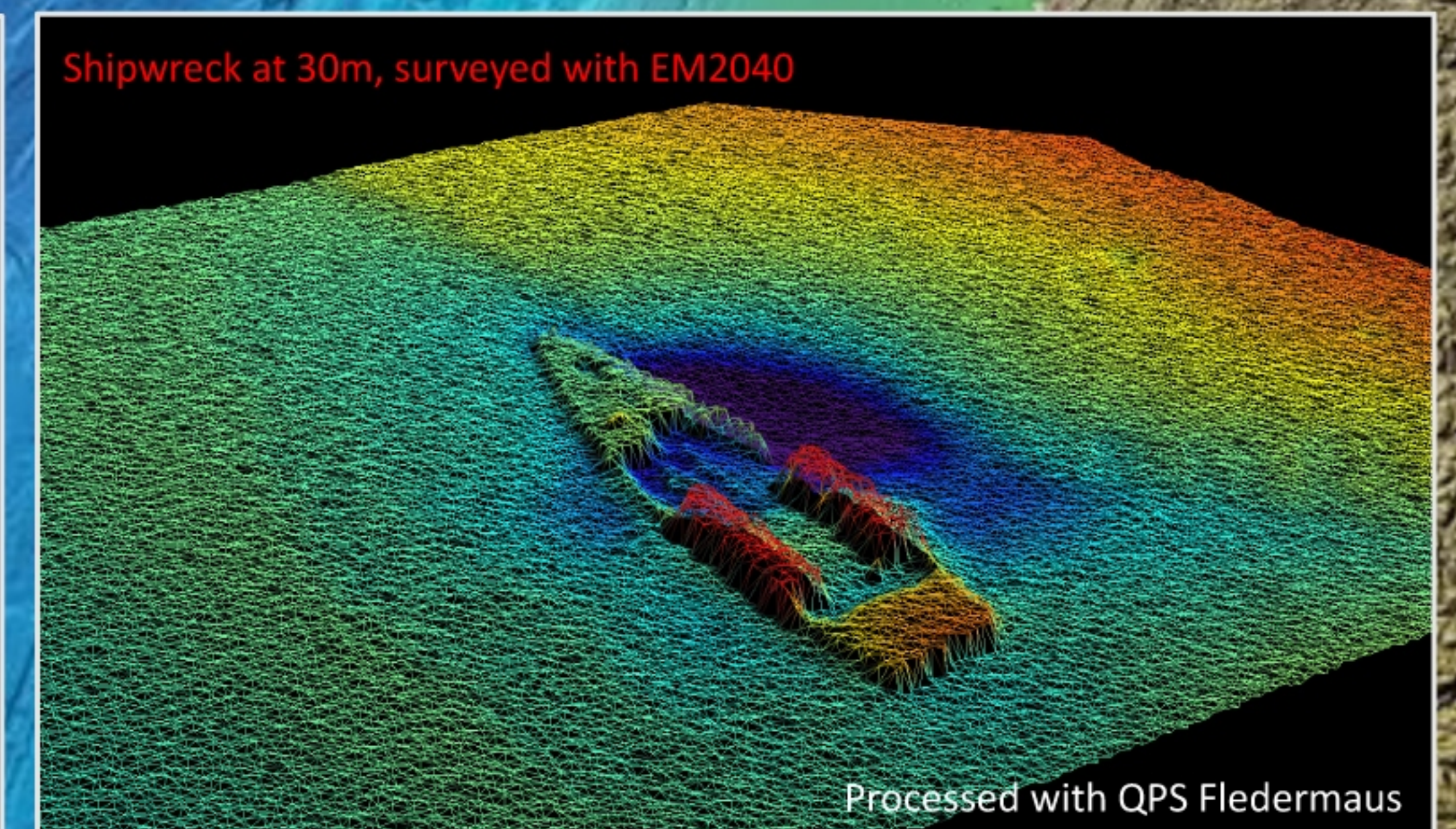
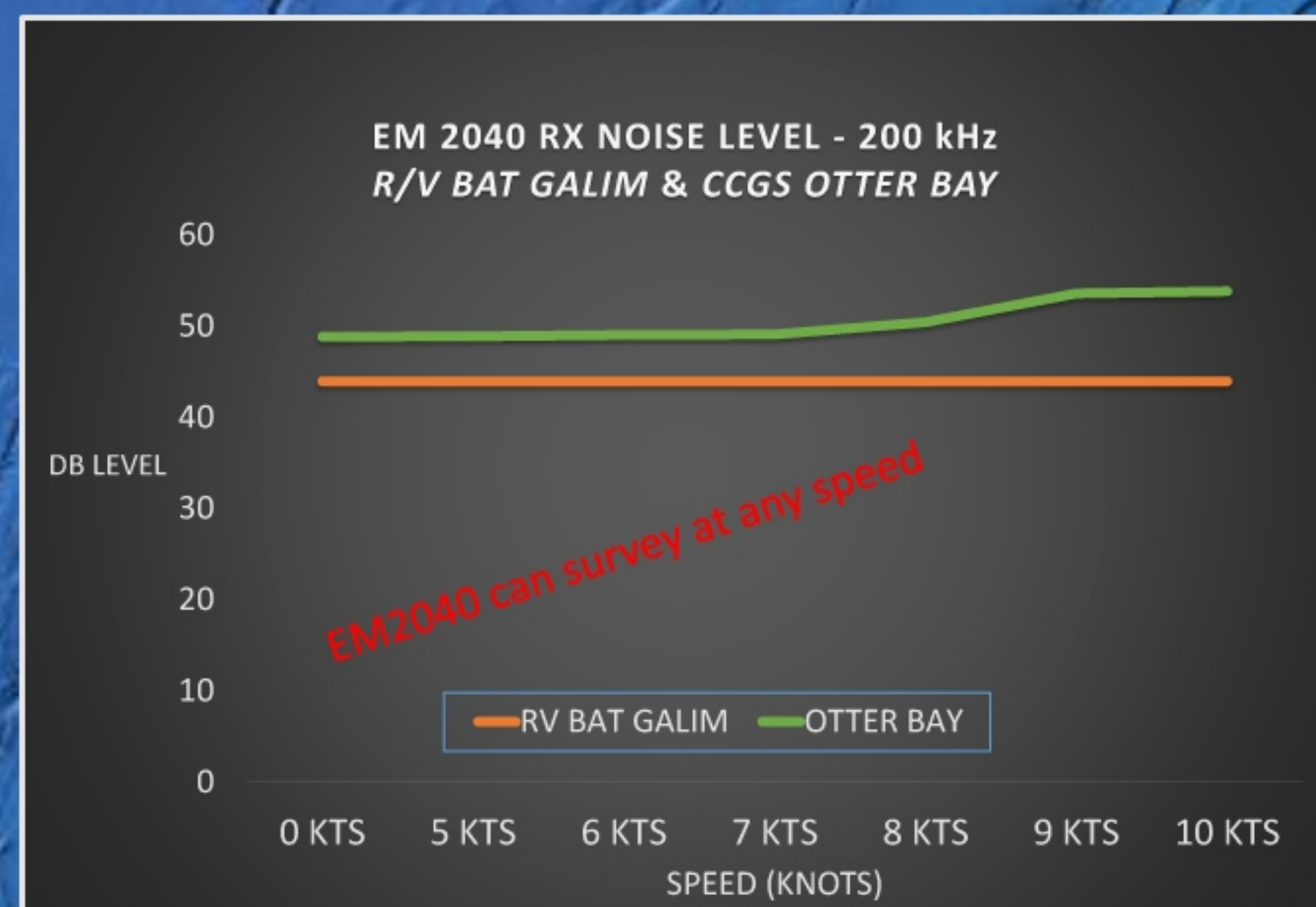
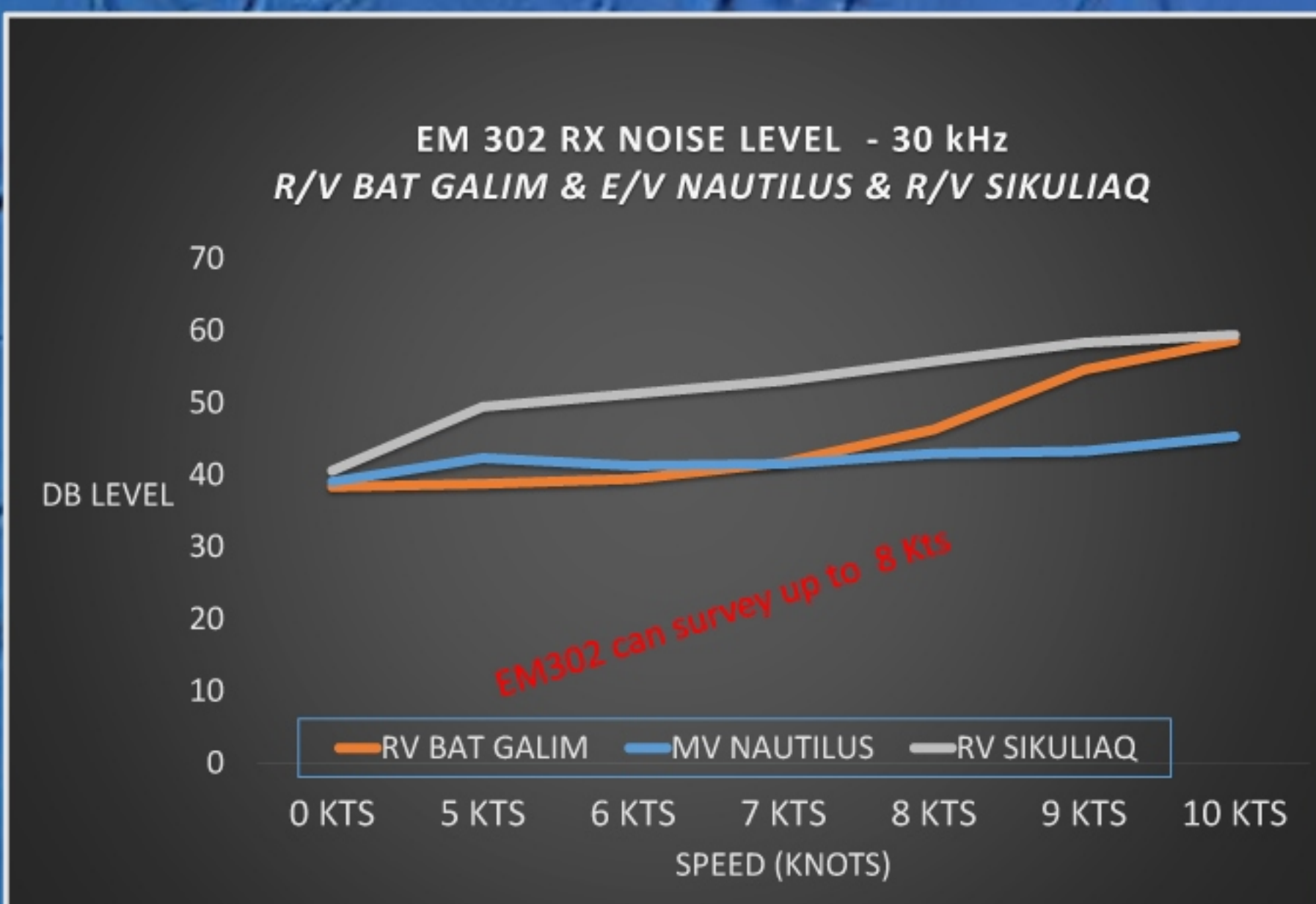
The Gondola installed below the keel, with all the transducers in place.

- Kongsberg EM302 (2x2) 30kHz
- Kongsberg EM2040 (0.7x0.7) 200-400kHz
- LinkQuest TrackLink 5000LR
- Knudsen 3x3 chirp 3260 ver. 5
- Dual Channel 3.5 kHz & 12/200 kHz
- Teledyne RDI Ocean Surveyor 75kHz
- 2x Teledyne Reson TC-4032 5Hz-120kHz Omnidirectional

The Acoustic equipment installed in the Gondola.

## Multibeam Capabilities: World Class Acoustic Performance

### Sea Trials and Calibration Results



Background EEZ Bathymetry from: Hall J.K., Lippman S., Tibor G., Gardosh M., Sade A.R., Sade H., Golan A., Amit G., Gur-Arie L., Nissim I. A New Bathymetric Map for the Israeli EEZ: Preliminary Results. State of Israel, Ministry of Energy and Water Natural Resources Administration (2015)

Acoustic Data for R/V Bat-Galim, M/V Nautilus, R/V Sikuliaq, and CCGS Otter Bay, from Tim Gates and Marisa Yearta, Gates Acoustic Services. Swath coverage plots from Paul D. Johnson, UNH/CCOM, and from Rune Smith, Kongsberg Maritime.

