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Taihoro Nukurangi

RV Kaharoa II

New build review

Presentation at ERVO 2024
by Greg Foothead

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Kaharoa 28m, built in 1981, due for retirement from NIWA Fleet

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Kaharoa II 36.1m, delivered 2024

Skipsteknisk
– freedom to create

ARMON

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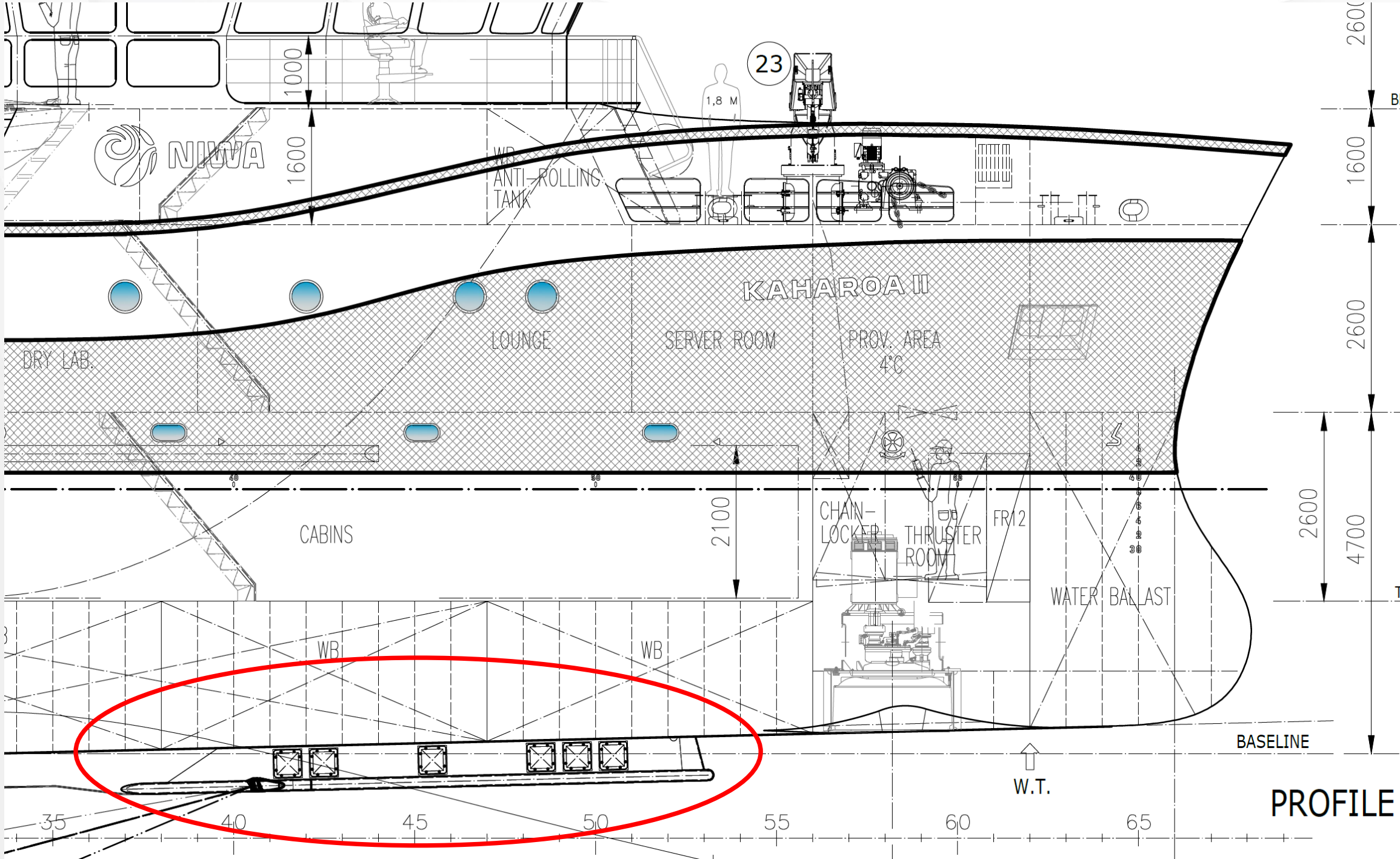
ARMON

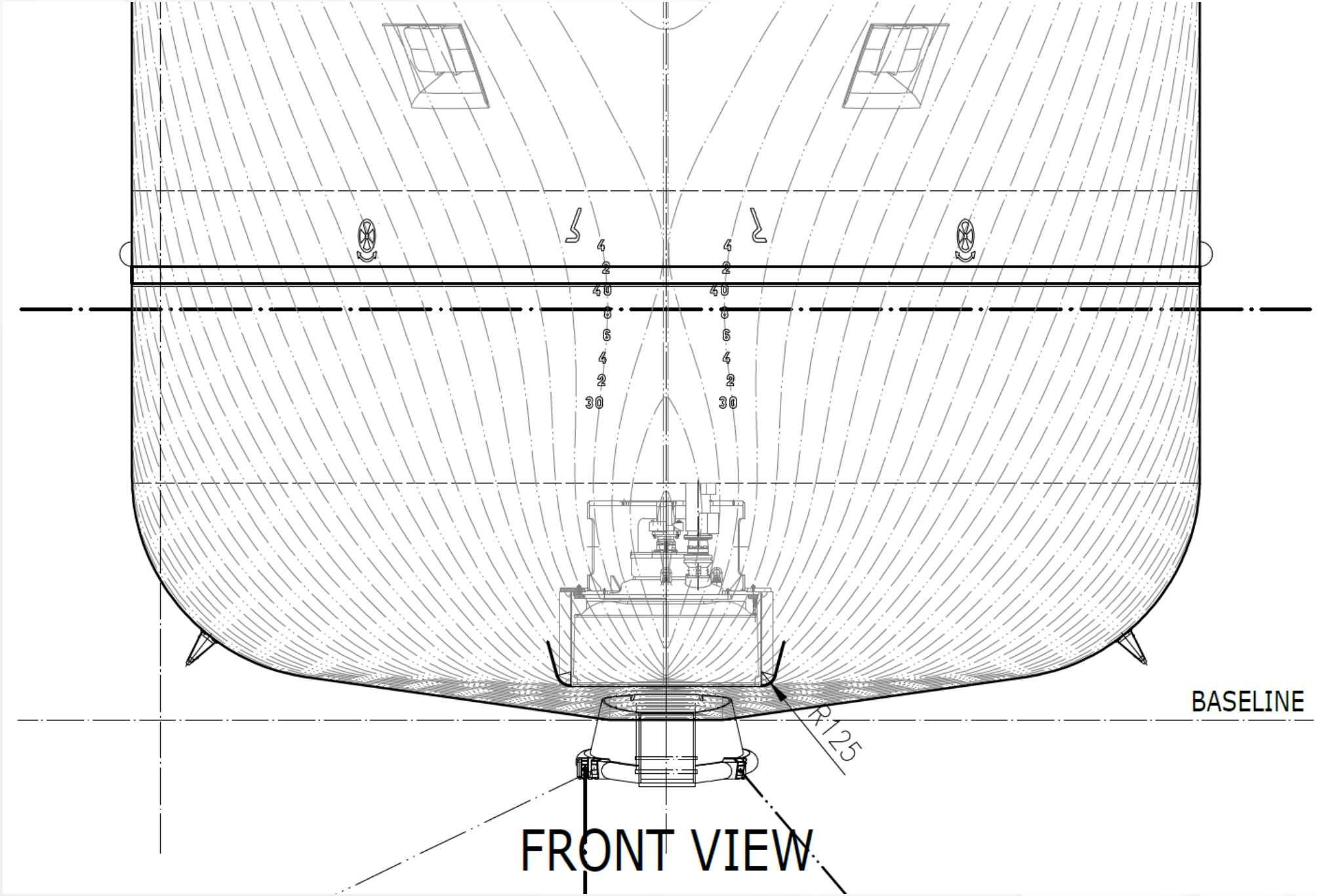
Specifications

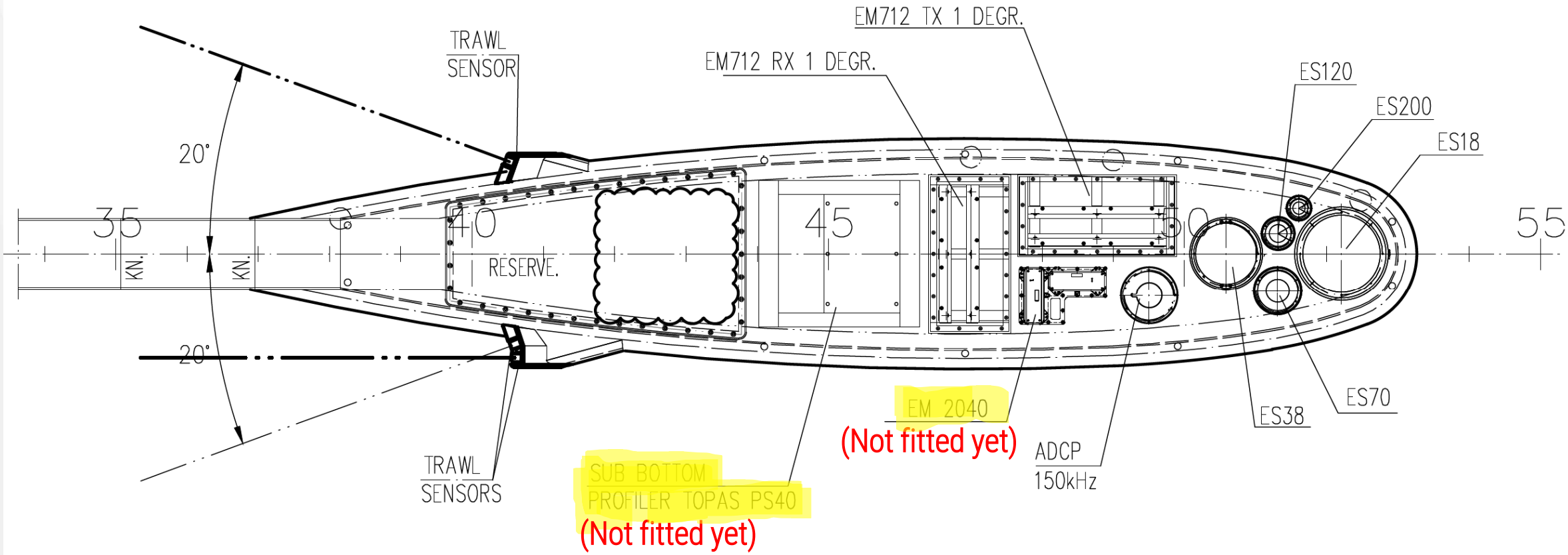
- Class: DNV-GL +1A, “Fishing vessel”, DP1, Silent A-F, E0, ER(TIER III), DYNPOS (AUT)
- Gross Tonnage: <500T
- Length overall: 36.10m
- Beam: 9.50m
- Deepest draft: 3.8m
- Main Engine: Yanmar 6N21A-EWS – 956 kW at 850 rpm, Tier III, Shaft Alternator with 600 kWe
- Auxiliary Genset: Cummins QSK19-DM, 569 kWe
- Speed: max 12.8 Knots, economic speed 9.0 -10 knots
- Total of 15 berths (6 crew single cabins, 8 science double cabins, 1 science single cabin.)

Deck Equipment

- Trawl winches – 2000m of 16mm wire
- CTD Winch – 6500m of 10.59mm Optical/Electric cable
- Oceanographic Winch - 4000m 0f 8mm Dyneema
- T Frame (Starboard side)
- A Frame (Stern)
- Net winch (on A-Frame)
- Mid ship Crane – 6T @ 8m, 3T @ 12m


NIWA
KAHAROA II
1000
1600
1,8 M
23
WB
ANTI-ROLLING
TANK
DRY LAB.
LOUNGE
SERVER ROOM
PROV. AREA
4°C
CABINS
2100
CHAIN-
LOCKER
THRUSTER
ROOM
FR12
WATER BALLAST
WB
WB
BASELINE
W.T.
35
40
45
50
55
60
65
2600
BRIDGE DECK
8900 AB. BL
1600
1st DECK
7300 AB. BL
2600
MAIN DECK
4700 AB. BL
2600
4700
TWEEN DECK
2100 AB. BL
PROFILE


4
2
40
6
6
4
2
30
BASELINE
R125
FRONT VIEW



HULL BLISTER FOR ACOUSTIC TRANSDUCERS

WEIGHT WAS CRITICAL!

- The contracted Lightweight target was 510T. There was a risk of penalties arising if exceeding contract margins.
- The Lightweight result would affect deadweight and draft.
- Close attention was paid to equipment and material weights.
- Initial predictions based on weights provided by the yard, contractors and suppliers were high, causing concern.
- Preliminary “unofficial” incline tests before completion helped confirm
- The “official” test resulted in a lightship of 496.3T

The build contract was signed and the Kick-off Meeting was held at Armon Shipyard, Vigo Spain in March 2022

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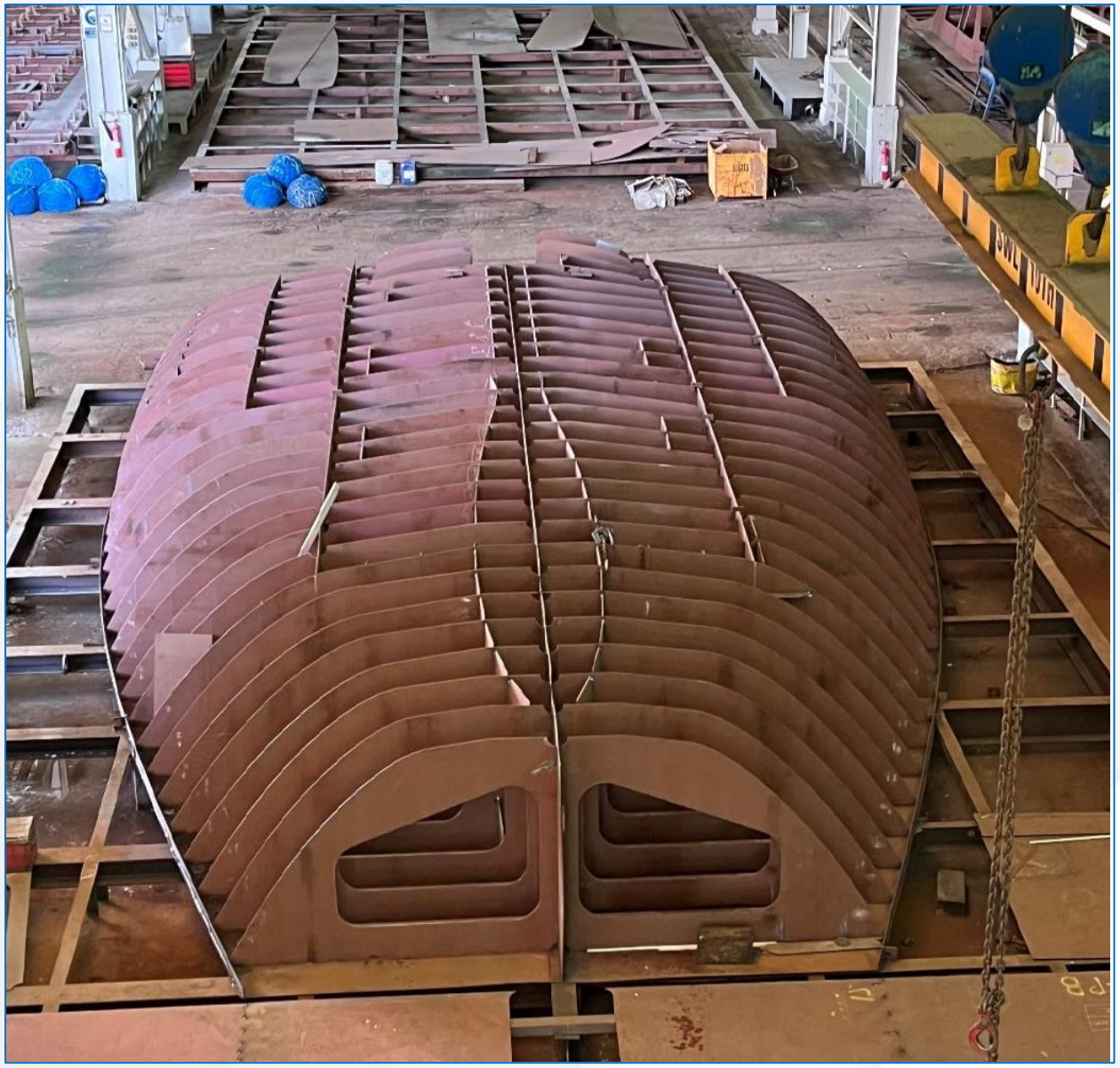
October 2022 – Steel cutting.

December 2022



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20 January 2023 – Official Keel Laying

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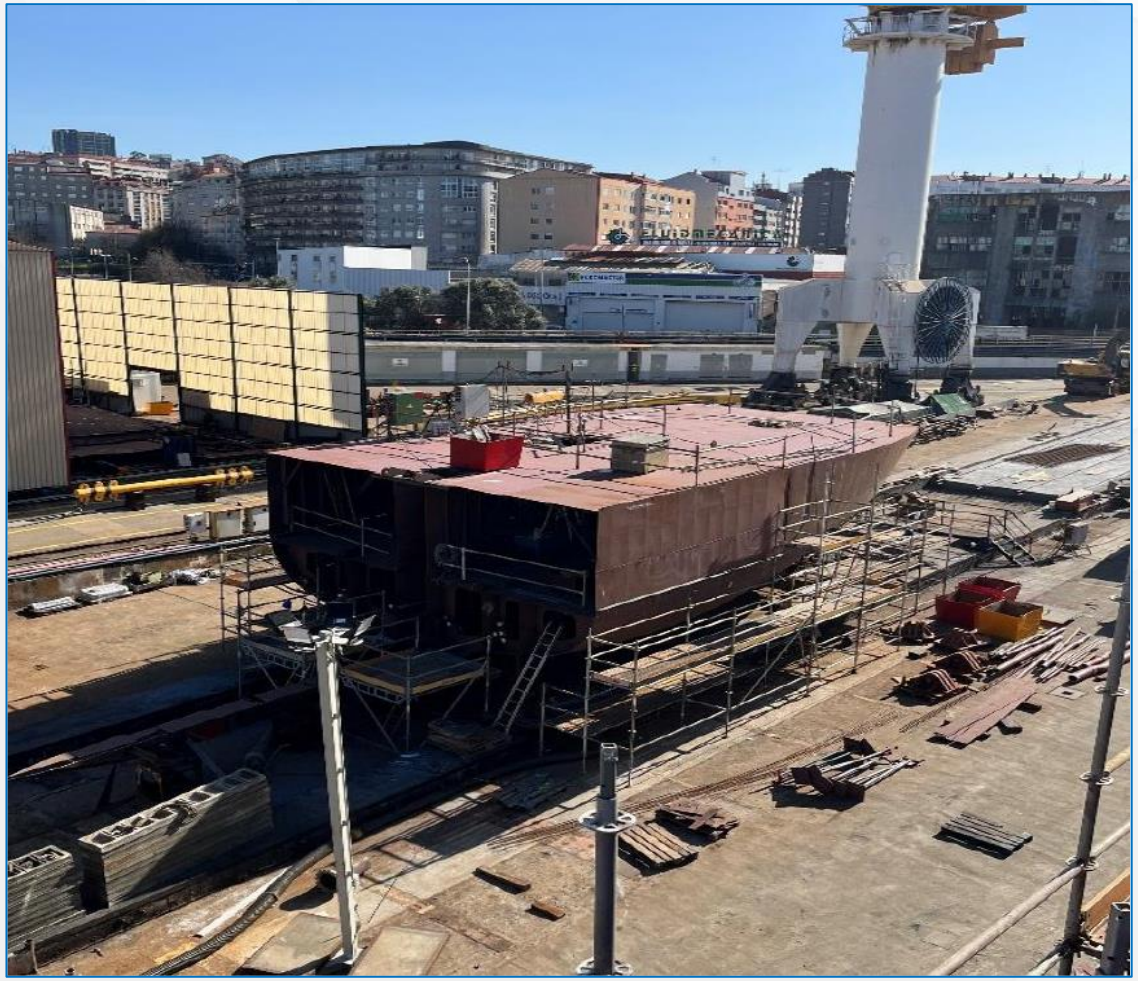
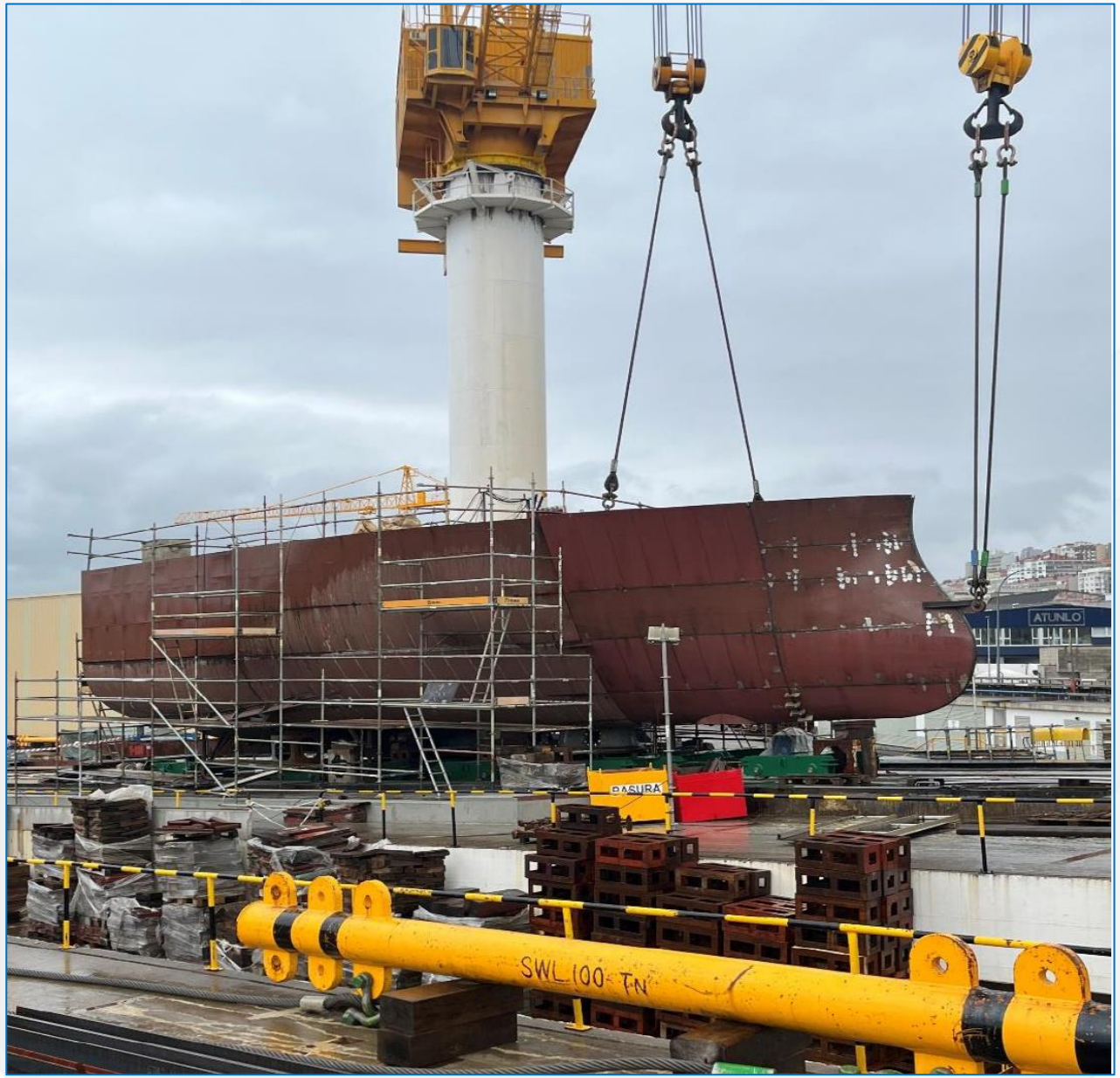
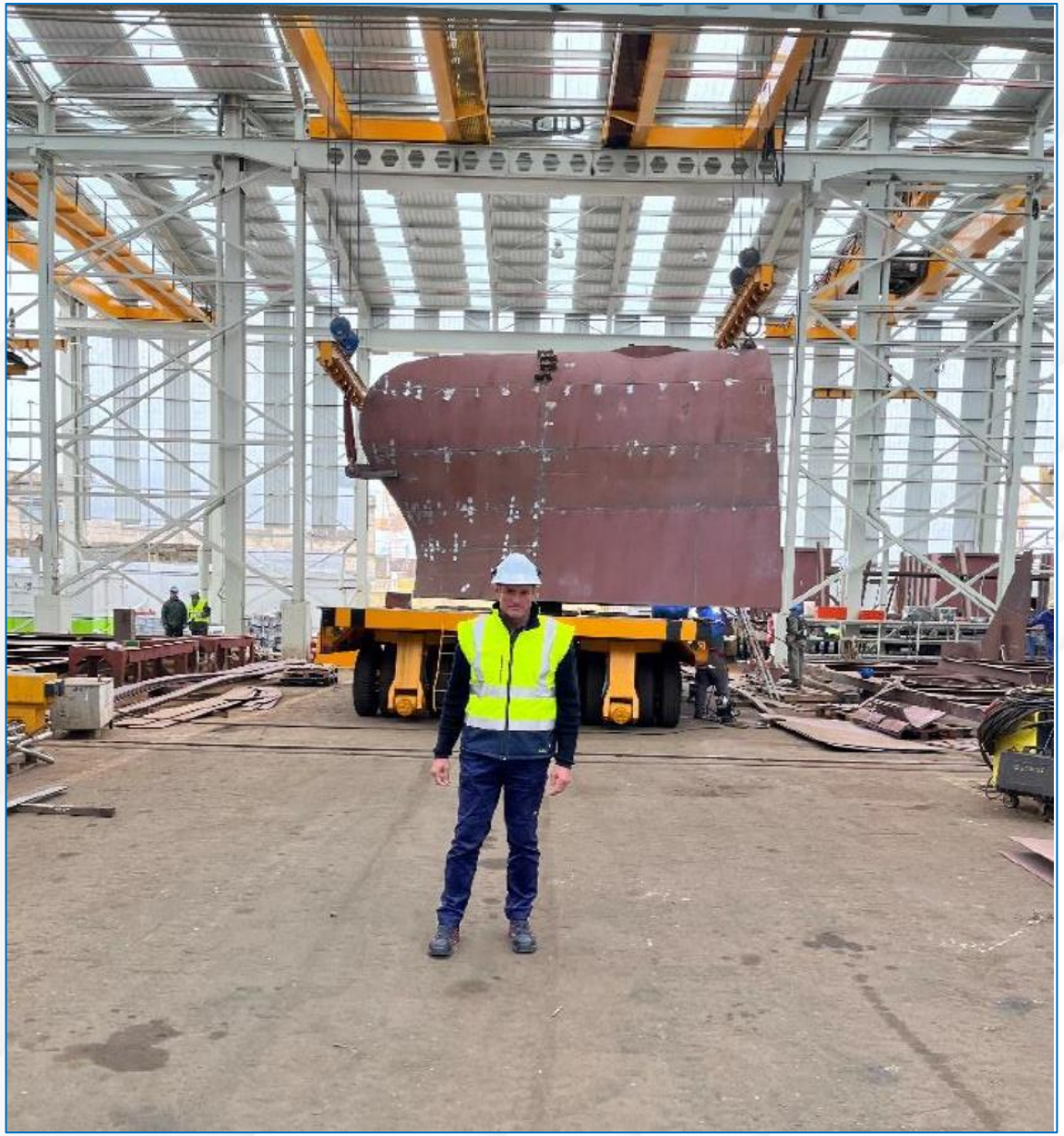
February 2023 - Week 7



March 2023 – Greg on Site





May 2023 – Week 17

June 2023 - Week 21

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June 2023 - Week 21

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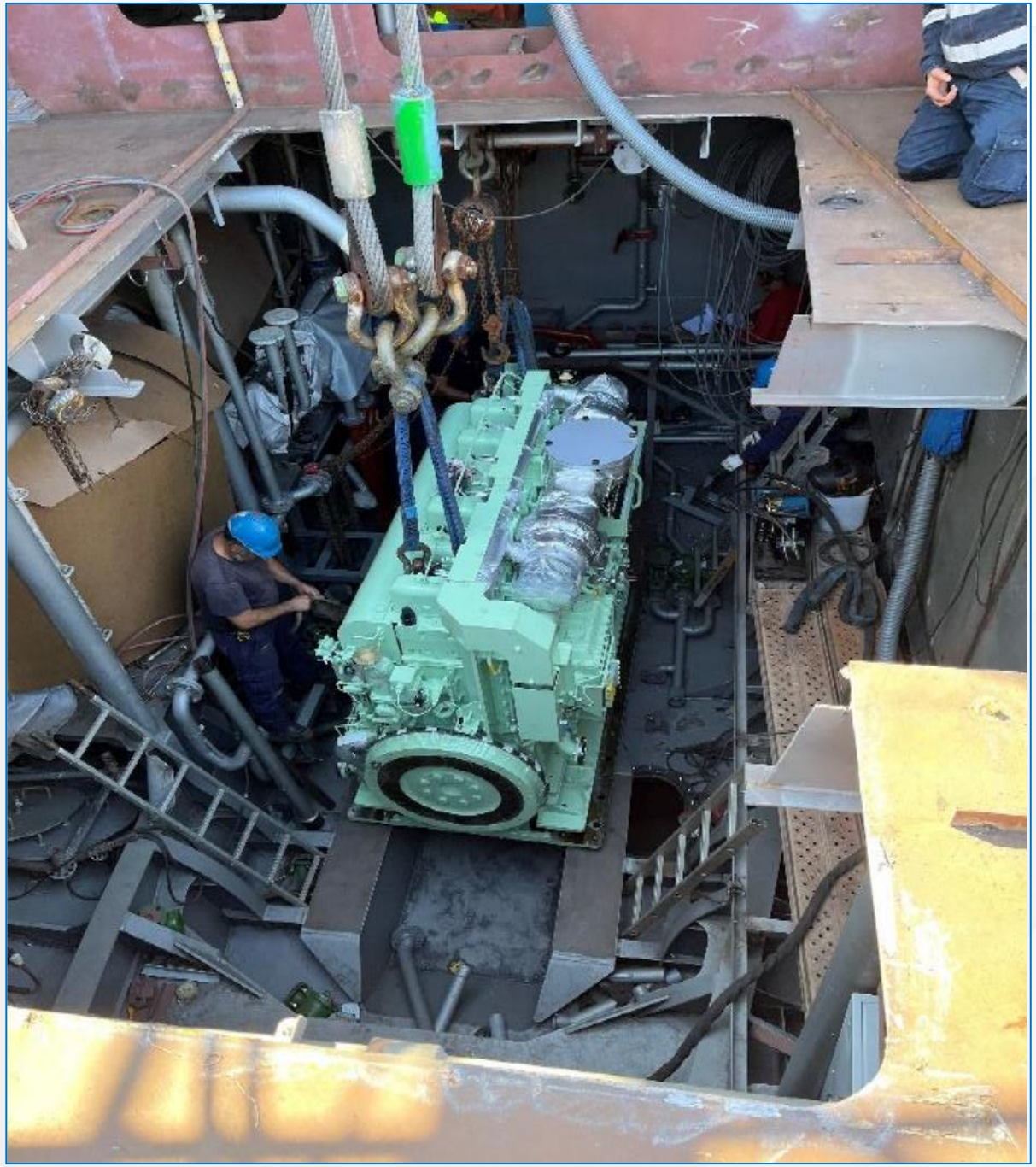

August 2023

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August 2023 – Hull coating

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August 2023

EK80 and EM712

Marport hydrophones

30 August 2023 – Launch day

Morten Eskedale (ST) and Greg Foothead

Alperi and Santiago watching the launch


ODÓN DE BUEN

Ibercisa factory visit

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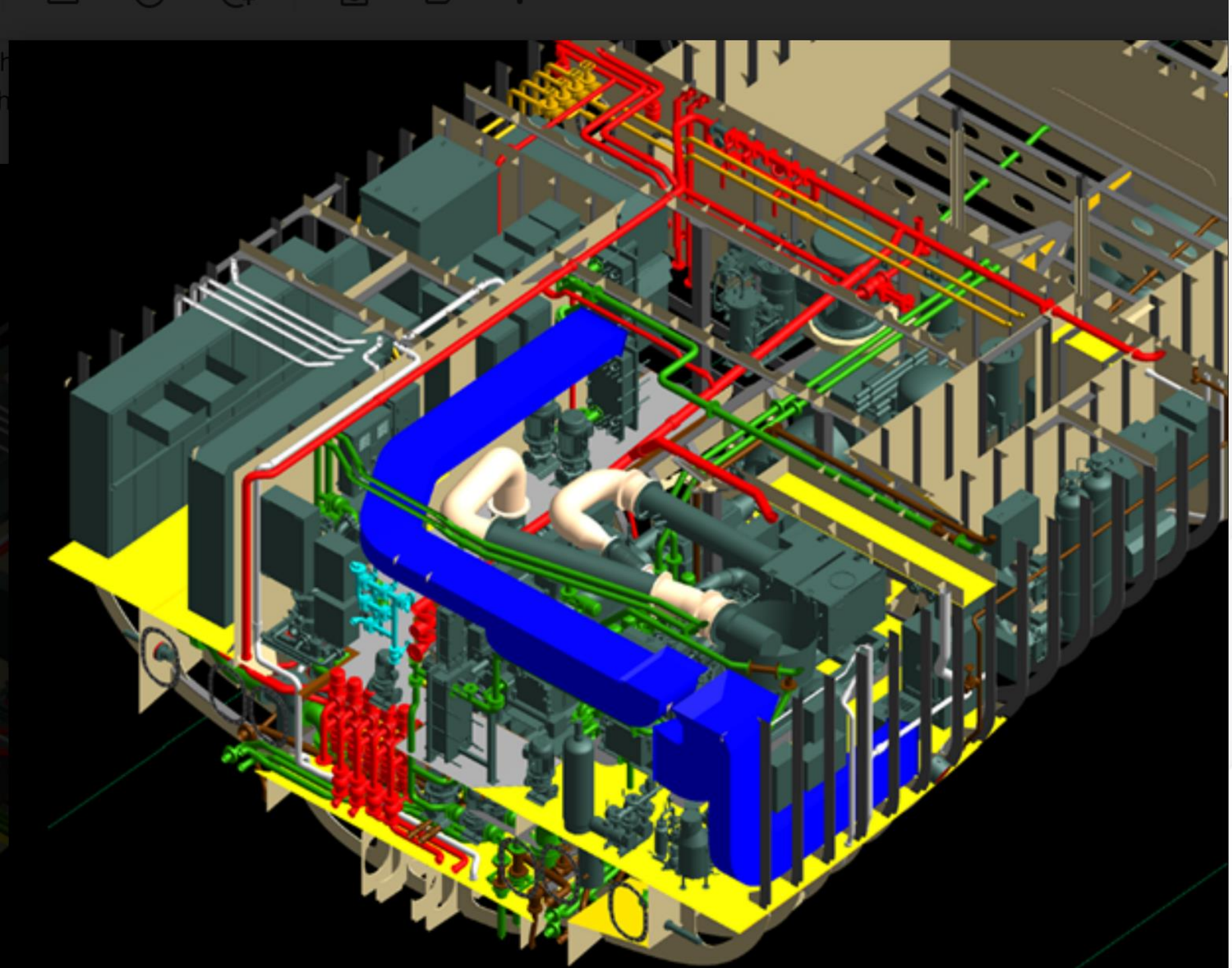

3D modelling helped with equipment placement and pipe runs

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Delivery - March 2024

Learnings

1. Skipsteknisk, Armon and NIWA collaborated very well throughout the project.
2. The Skipsteknisk project team are experienced and were very responsive. Having Morten on site representing ST was extremely valuable.
3. Armon were in a transition phase having just taken over the Ria de Vigo yard. Multiple RV's being built. Resources were stretched.
4. Armon senior management were all involved in the project, the Director, project manager, production manager.
5. This build was a challenge, a small vessel with a lot of equipment to install. Good coordination of trades was necessary and shift work was required.
6. Painting in Vigo during Autumn/winter is a major problem. Build undercover if possible.
7. keep a paint rep involved until the end of the project as quality can suffer.
9. Delays due to labour strikes, delivery of components and weather made it very difficult to schedule travel for our crew and technicians. Having to fly halfway around the world didn't help.
10. The quality and duration of scientific trials and training on ships equipment really suffered due to delays.
11. If we were to do it again, we would have an electrical supervisor on site for the fitout.
12. Would we consider Armon for a future build? **Yes.**
13. Would we recommend Skipsteknisk as an experienced and competent RV designer? **Yes.**

Thank you

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