

RV Tom Crean

Modern Vessel delivering Modern Science



Fisheries Surveys

Oceanographic Surveys

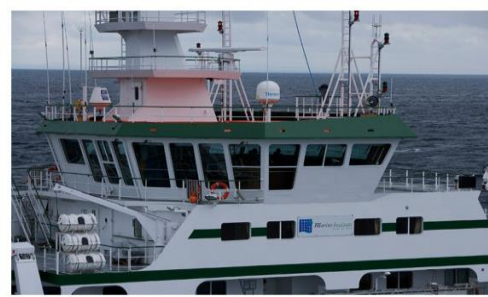
Environmental Monitoring

Seabed Mapping

Deployment of Observational Infrastructures and ROV's

Silent Research Vessel (*ICES 209*)

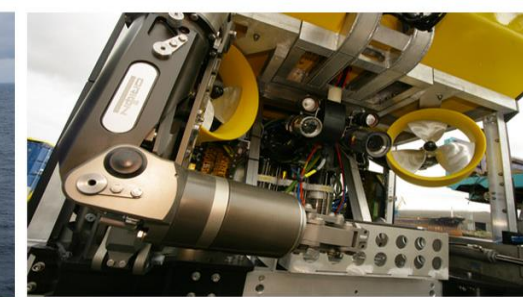
CLASS NOTATIONS: Lloyd's +100A1, UMS, Ice Class 1C FS, DP(AM)



RV Tom Crean Project timeline

- Funding secured from Government to procure a modern replacement vessel in 2018
- Design tender awarded to ST design in January 2019
- Basic design completed June 2019
- Tender issued for construction of vessel in July 2019
- Contract for vessel construction awarded to ASTILLEROS ARMON in December 2019
- Equipment procurement and further detailed design work commenced January 2020
- Steel cutting commenced August 2020, Keel laid November 2020
- Vessel launched on November 19th 2021
- Vessel delivered in Vigo on 8th July 2022
- Vessel arrives in Galway on 18th July

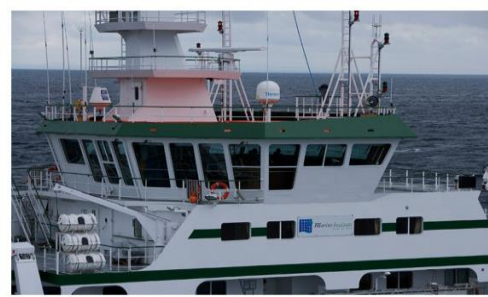




Design

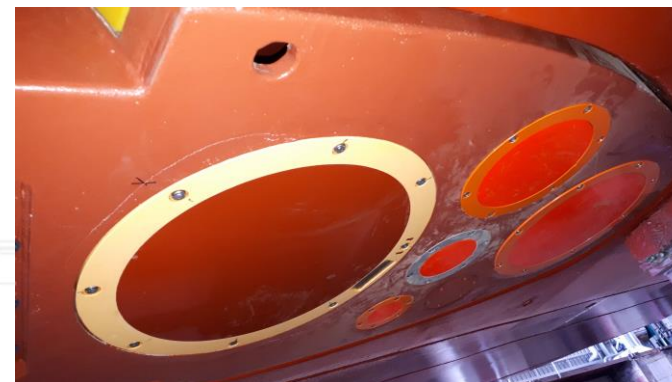
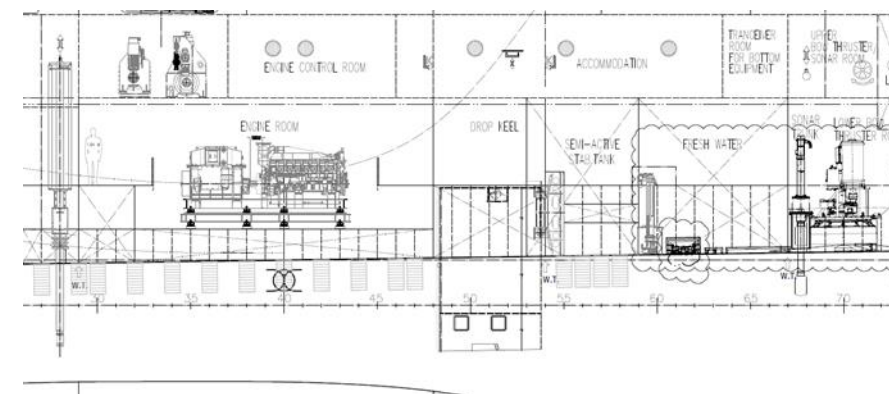
- Diesel electric vessel with 3 generators @ c. 3MW (Ultra low sulphur MGO/HVO)
- 52.8 m length
- Silent vessel (Ices 209)
- Accommodation for 12 crew and 14 scientists
- Endurance of 21 days
- Capability : Fisheries research , Oceanography, Hydrography, Geology, ROV surveys , Buoy Deployments.

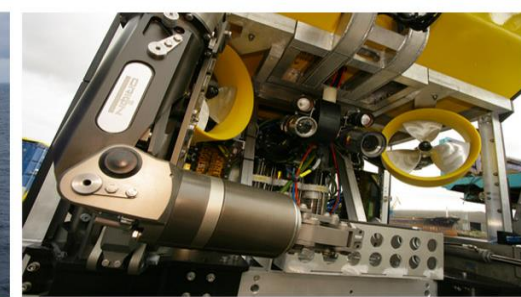




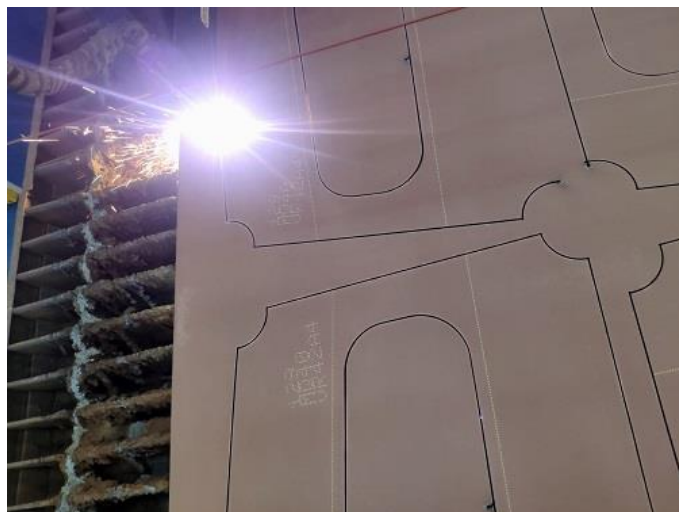
RV Tom Crean Acoustic equipment

- **Multibeam:** 1 x Dual RX EM2040 (retraction unit), 1 X em2040 on drop keel
- Provision for degree EM710 on hull
- **Sub bottom profiler:** Knudsen 3.5/12Khz unit hull mounted
- **Fisheries echosounder:** EK80 , 18,38,70, 120, 200 Khz on Drop keel
- **Fisheries Sonar :** SU93 Long range omnidirectional
- **ADCP:** RDI Teledyne 45Khz Pinnacle (Drop keel), Simrad EC150 150 Khz ADCP
- **USBL:** Sonardyne Ranger 2 on retraction unit
- **Net Monitoring :** Marport on drop keel /FS70 headline system





Construction steps



Steel cutting July 2020



Block construction September 2020



Keel lay November 2020

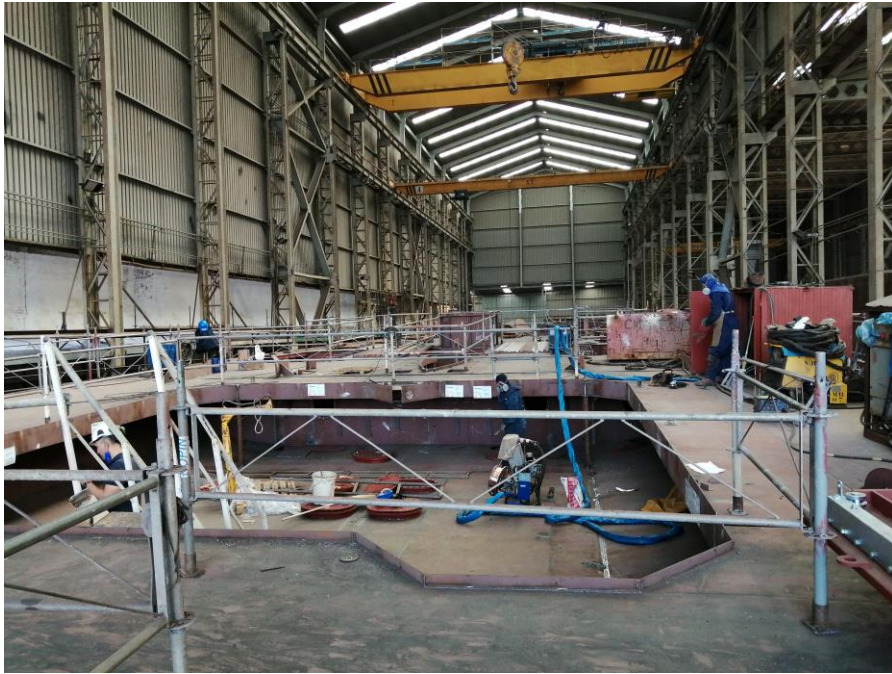
Generator set sound trials February
2021



Block assembly on slipway

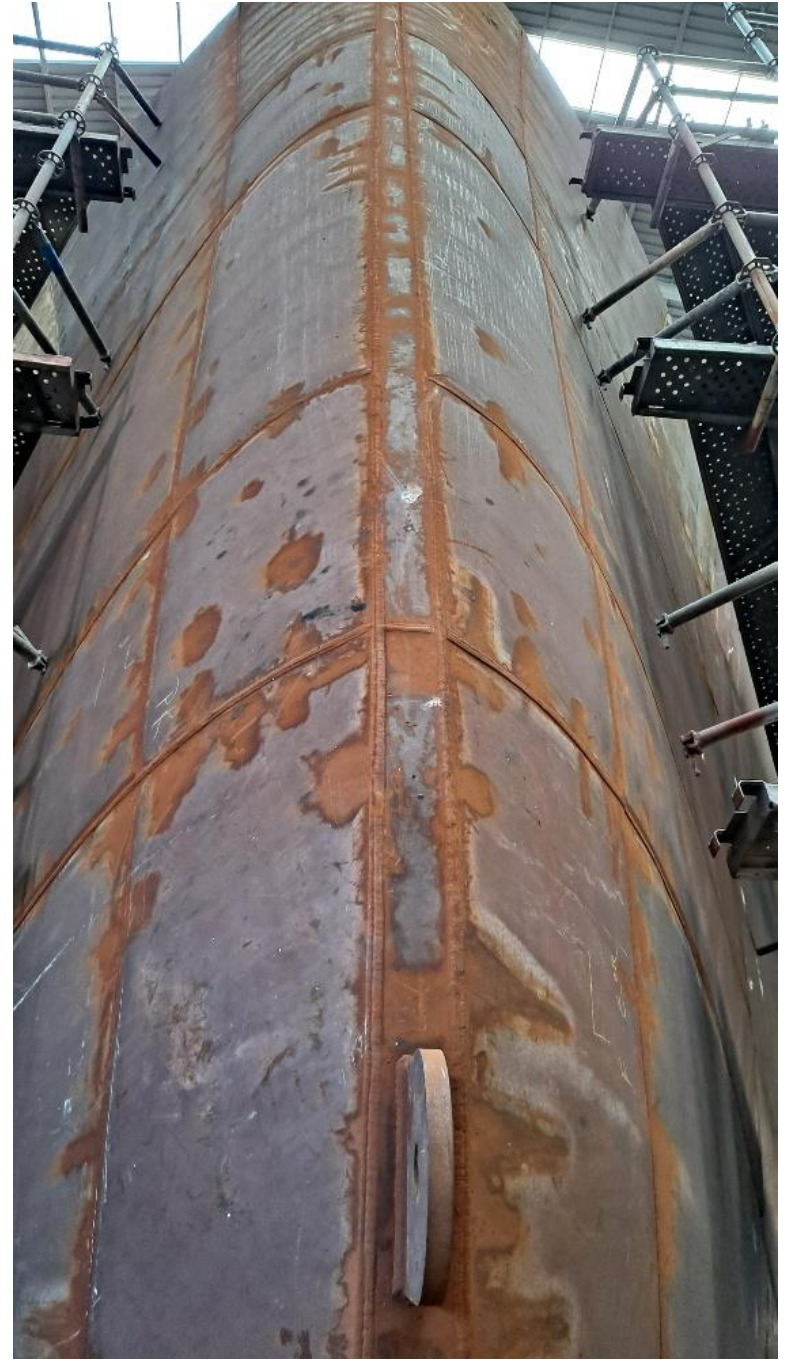
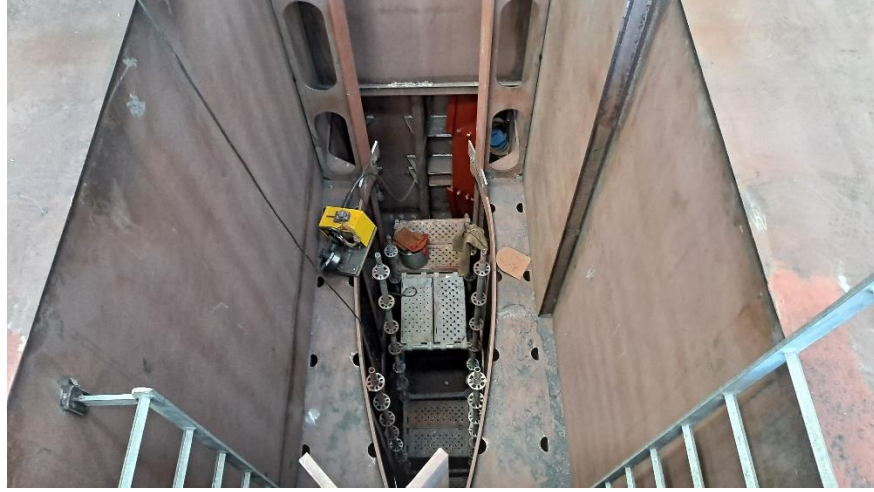


Hull taking shape



7 bladed prop





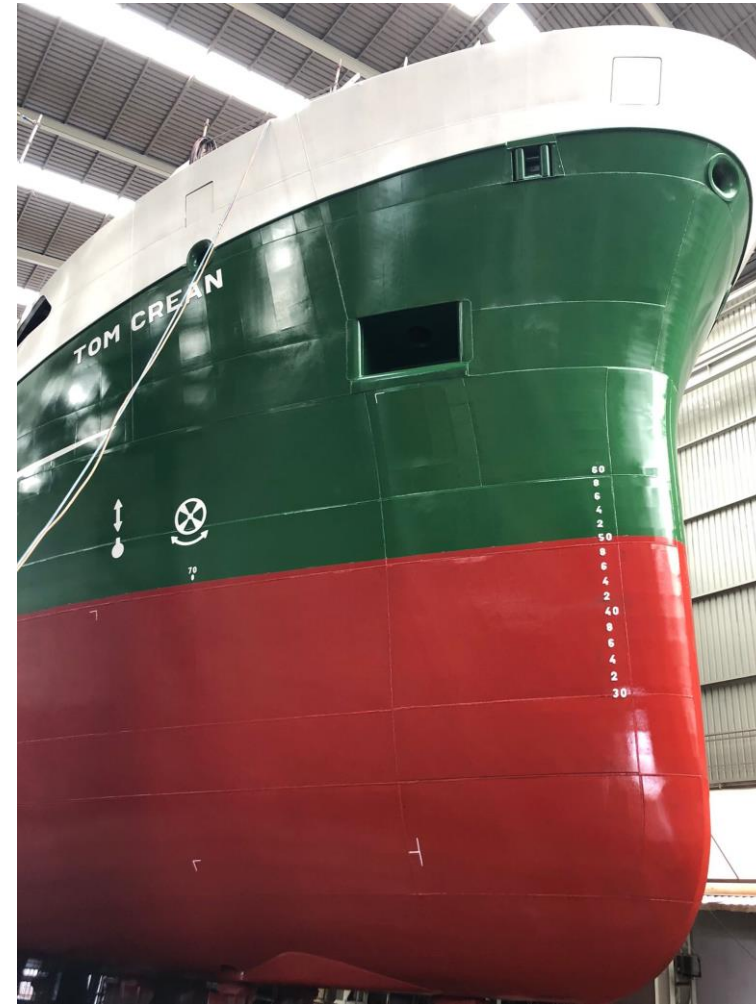
25 Tns.

G VIGRA
Surface treatments

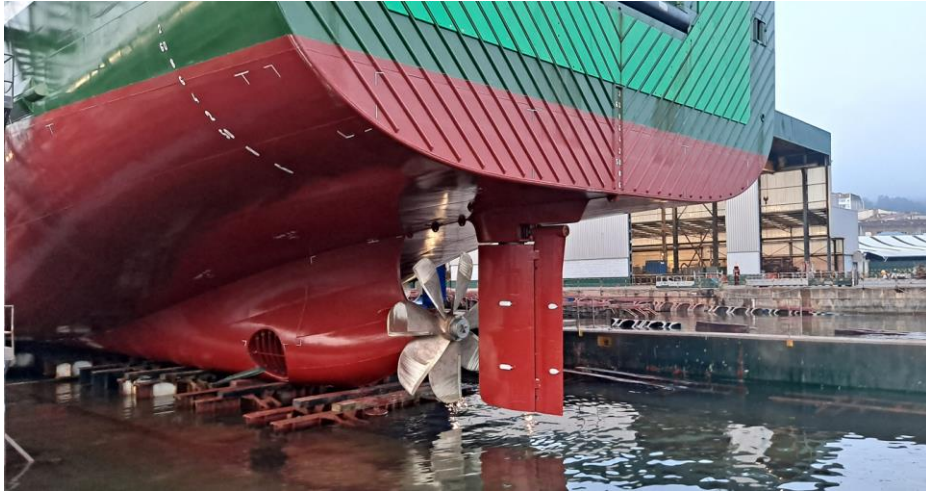
ST-366



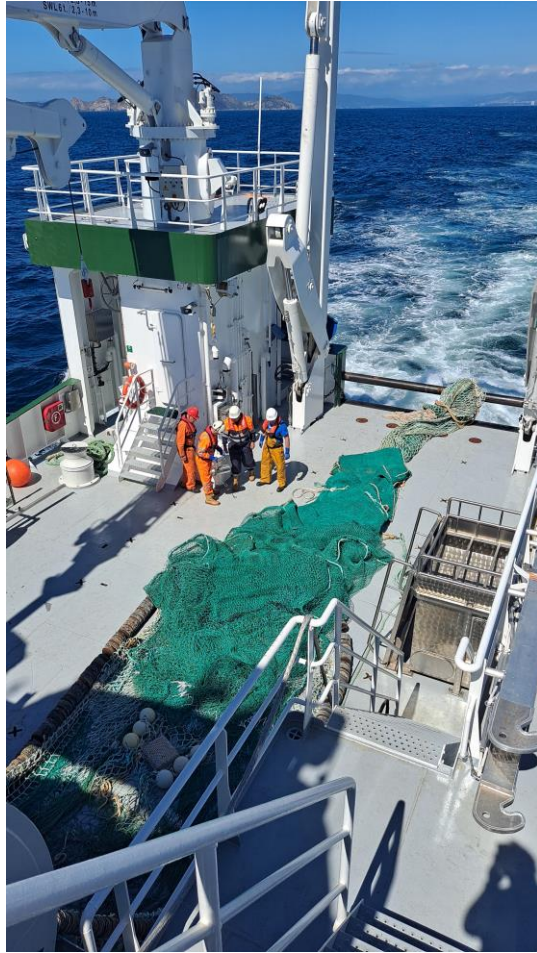
Hull complete October 2021



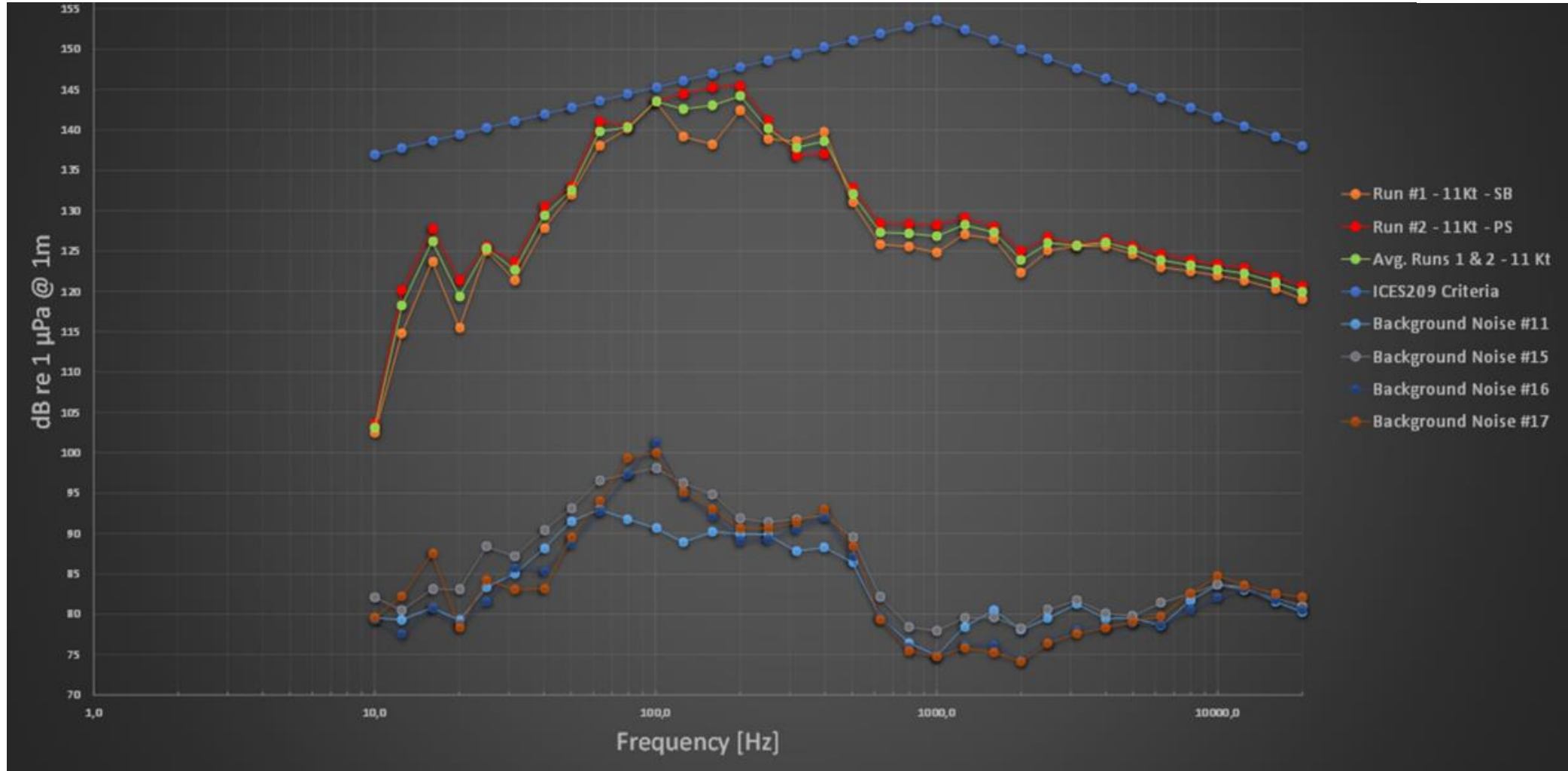
Final dry dock before delivery



Sea trials



Silent vessel



Delivery Day!



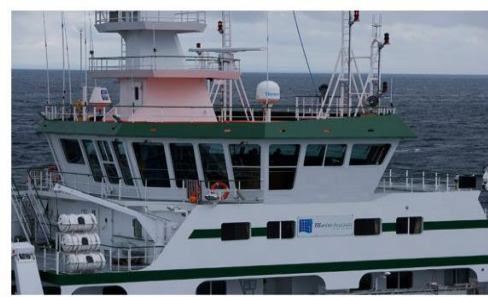


Delivery and departure to Ireland





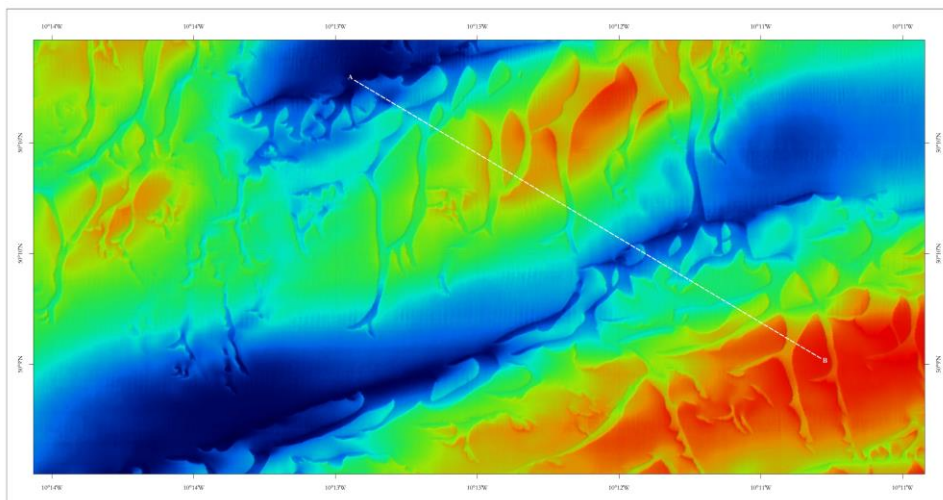
TOM CREAN



Activities since delivery

INFOMAR PROGRAMME

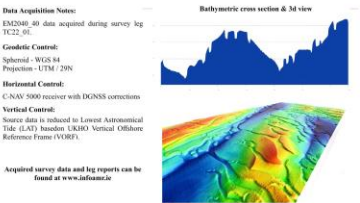
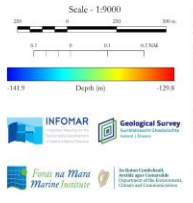
RV TOM CREAN - AUGUST 2022, CELTIC SEA



INFOMAR is a DECC funded joint programme between the Geological Survey Ireland and the Marine Institute, supporting our integrated marine survey and creating a range of integrated mapping products of the physical, chemical and biological features of the seabed.

INFOMAR aims to provide comprehensive and accurate marine datasets for Irish waters that underpin and add value to marine research, SEAAS Commission objectives and government policy. These products will foster growth within the national blue economy, maintain the health and integrity of our natural marine environment while facilitating international collaboration and best practice in the sustainable development of Ireland's marine resources.

With the first two year phase (2016-2018) now complete, we are beginning to achieve the knowledge for the products to other available results for the island of Ireland. A range of diverse geographical, environmental, cultural and historical legislative obligations must also be addressed. These include a crucially important body of work to deliver a mapping our valuable inshore and offshore waters before the programme completion in 2026.



Data Acquisition Note:
E30000-30 data acquired during survey leg TC22_01.

Geoidetic Control:
Spheroid - WGS 84
Projection - UTM (32N)

Horizontal Control:
C-NAN 5000 receiver with DONSS corrections

Vertical Control:
Source data is reduced to Lowest Astronomical Tide (LAT) basison UKHO Vertical Offshore Reference Frame (VORF).

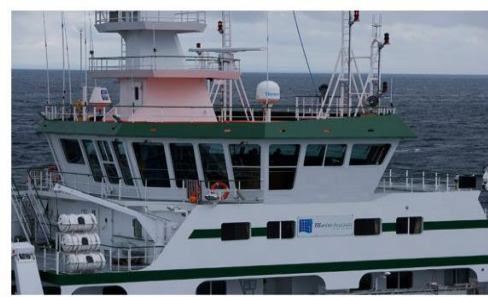
Acquired survey data and log reports can be found at www.infomarine.ie

1ST Survey 25th July 15 day seabed mapping survey as part of INFOMAR program 1000km² of Celtic sea mapped.

Some teething issues with SIS Version 5 , but vessel performing excellently with no bubbles and excellent acoustic performance

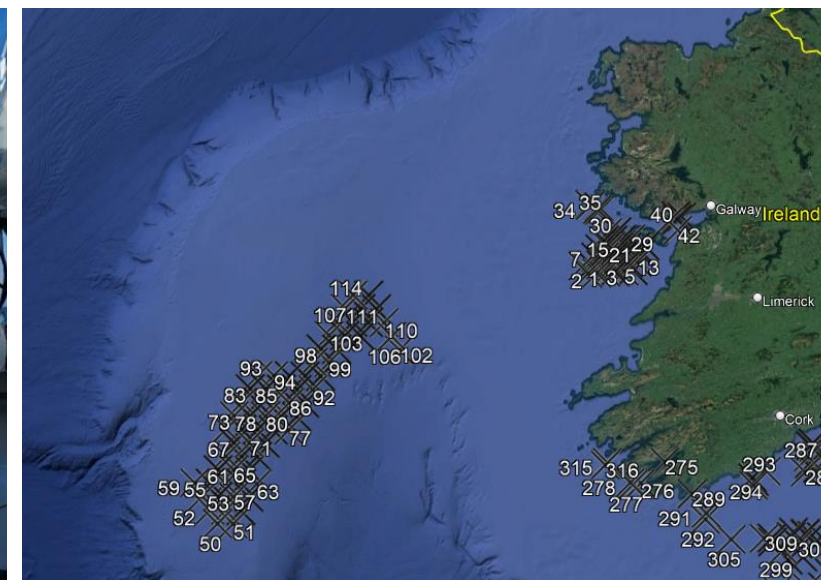


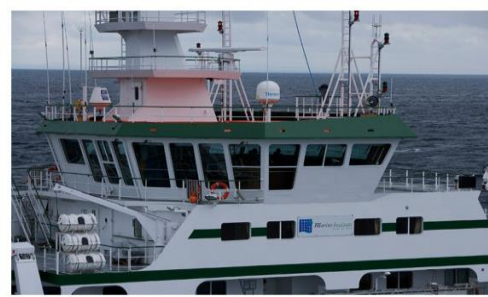
Experienced Marine Institute team essential to get to grips with new systems



Activities since delivery UWTV survey

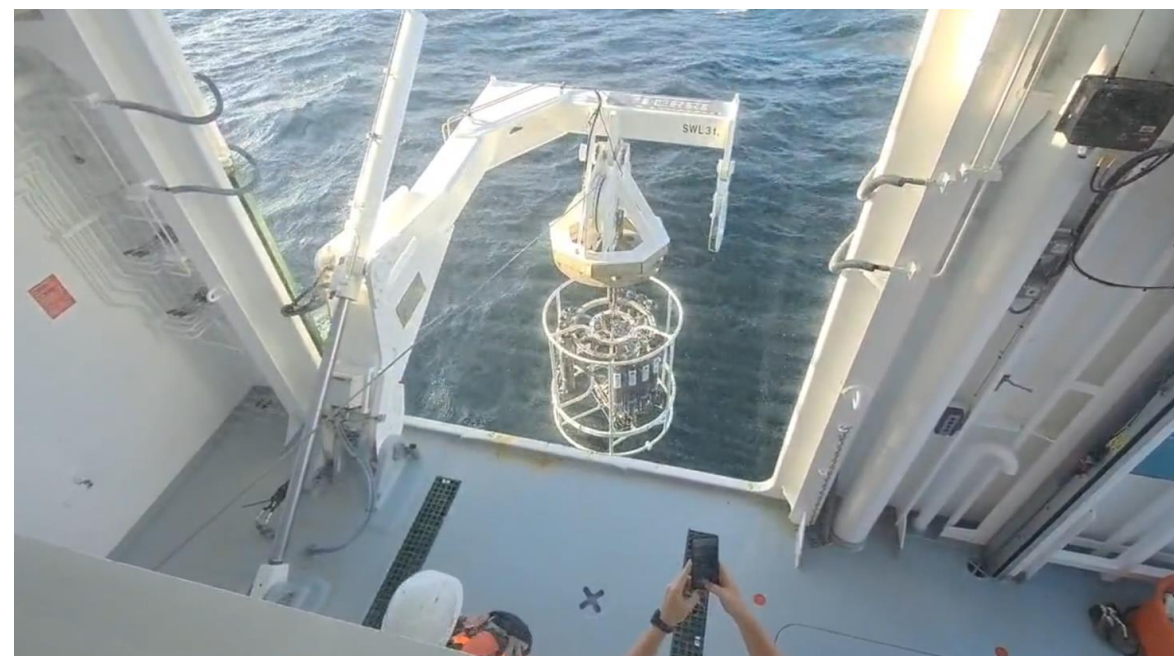
- Following a week of crew familiarisation/Training the Annual Porcupine bank Prawn Underwater TV survey was completed
- Vessel generally performed well with much higher weather window for operation compared to Celtic Voyager
- Sonardyne ranger 2 performing very well in tows to c. 700m water depth, speed restriction on USBL when fully deployed
- A frame working well and excellent visibility from Bridge





Activities since delivery... Oceanographic survey

- Short 6 day shelf Oceanographic survey (Harmful algal blooms)
- Good trial for CTD system
- Active Heave taking some getting used too
- Potential modification identified to CTD Docking head to prevent wire wear
- Automated deployment and recovery working well
- Underway systems (SooGuard) up and running





Current survey Meso pelagic scouting survey

Survey to determine temporal and spatial distribution of meso pelagic species

Equipment in use:

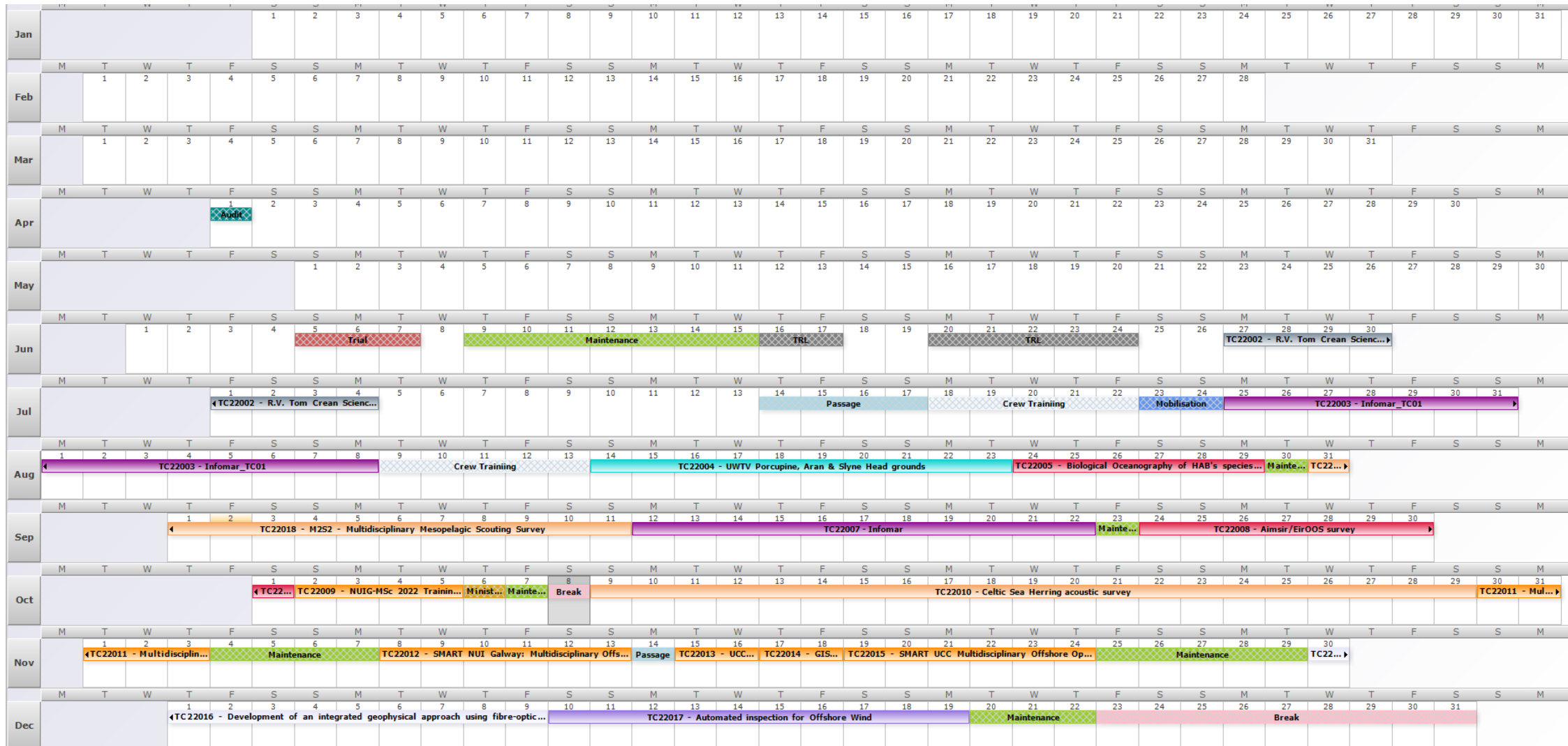
- EK80
- Pelagic trawl
- CTD
- Multinet
- SU 92

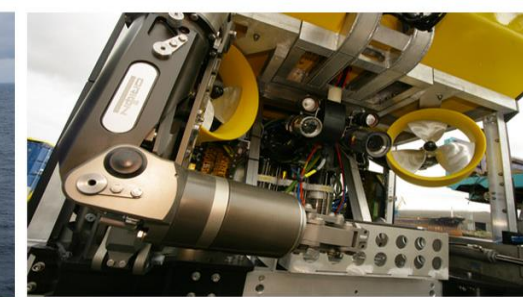
12 day survey with full crew underway at present

Challenging survey with Fishing, acoustics, CTD (1000m), Multinet but a good trial of many systems



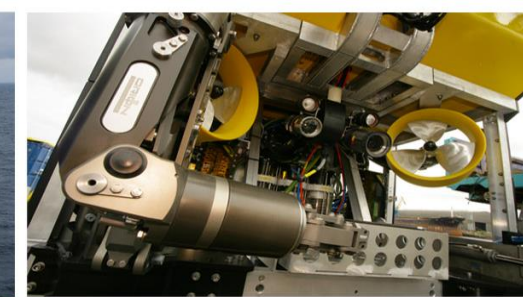
Busy Schedule for remainder of 2022





Challenges /lessons learned

- Difficult to take over a new vessel while operating old vessel! (Celtic Voyager finished operations on 12/07/2022 and Tom Crean sailed for Ireland on 15/07!) This limited time for training/ crew familiarisation
- As a result training is very much “ on the job” at present
- More time for sea trials preferred A lot of pressure to commence work program when vessel in service
- More time to be allowed for crew training / addressing minor issues
- Flag state had very severe interpretation of MLC standards e.g. No exemption for vessels below 3000gt and MLC applied fully from 500GT
- Some owner supplied science equipment , challenging for owner and yard as commissioning responsibilities lie with different owners so a lot of management of suppliers
- Single cabins only for future vessel !



Challenges /lessons learned

- Fuel consumption seems very good and power management system is excellent ,
- Harbour set proving its worth (750 -800 L/24hrs) and creates quiet engine room
- Awaiting suitable port with connection to use Shore power
- Energy efficiency review of design has resulted in excellent HVAC/water heating and low hotel loads
- Scientists and crew very happy with the vessel , light , spacious , good sea keeping
- Winch system very advanced so some training for scientists required also
- Owner supplied KVM system /Network too a lot off effort and time to commission
- Experienced crew help make new vessel transition easier but its still a pressurised time with a full survey schedule to complete