EUROFLEETS+
EuroGOOS 9th International Conference

Eurofleets: Fostering Links to Industry in the Advancement of Equipment Innovations for Deep Sea Operations from Research Vessels

Ocean Observing Technologies

Breakout Session 6

Tuesday, May 4th 2021

Aodhán Fitzgerald

Eurofleets+ Project Coordinator

Research Vessel Manager, Marine Institute

This project has received funding from the EU H2020 research and innovation programme under Grant Agreement No 824077

Eurofleets+

42 Partners

9.9M € Budget

27 Research Vessels, **7** ROVs, **5** AUV's

Coordinator: Marine Institute

Duration: 57 Months 2019 -2023

Web: www.Eurofleets.eu

Email: eurofleetsplus@marine.ie

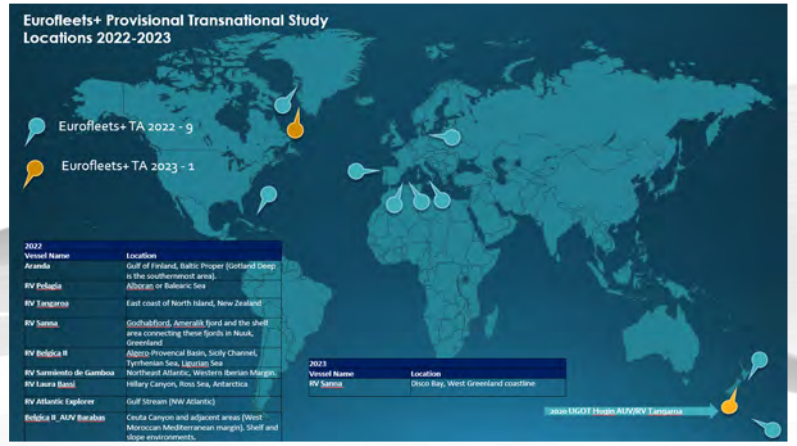
Infrastructures' Locations

Call: Integrating and opening existing national and regional research infrastructures of European interest (INFRAIA Call H2020 2018)

Topic: Integrating Activities for Advanced Communities

WP4 (AWI) Call Management & Proposal Evaluation and WP2 Transnational Access (MI)

- 21 Cruises Scheduled (10 x 2021, 9 x 2022 & 1 in 2023)
- 219 Days Access Approved
- 55 AUV Days Access
- 21 ROV Days Access
- 1 Multi Vessel Cruise
- Co-Principle Investigator **(CoPI)** & Remote Transnational Access **(RTA)** Programmes remain open and accepting applications



Inaugural Transnational Access Project
October 2020

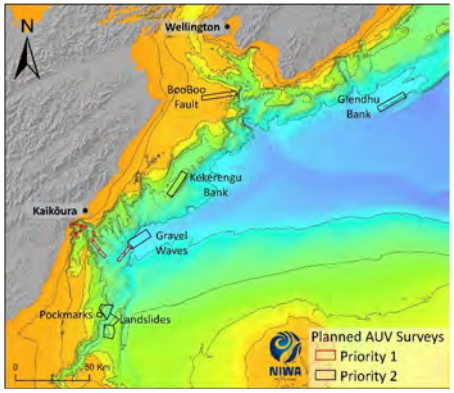
The FOCUS AUV Cruise took place on-board the NIWA RV *Tangaroa* with the University of Gothenburg *Hugin* AUV.

The AUV was used to survey the Kaikōura canyon, off the east coast of the South Island, to measure the ecological and sedimentological impact and recovery following the 2016 Kaikōura Earthquake.

Please check out the cruise video here: https://vimeo.com/472408367

NIWA
Taihoro Nukurangi

UNIVERSITY OF GOTHENBURG



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Next Scheduled Cruises:

May 6th
NE Atlantic
RV Celtic Explorer (MI)
University of Birmingham

May 18th
Mid Atlantic Ridge
RV Pelagia (NIOZ)
University of the Azores

July 10th
SE Alboran Sea
RV Thalassa (IFREMER)
CSIC

Eurofleets+ Networking Activities

WP5 Stakeholder Engagement (EMSO)

- Stakeholder Agenda
- Stakeholder Dialogue:
  - Forum
  - Interviews
  - Workshops

WP6 Education and Training (OGS)

- Blue skills workshops
- Floating Universities
- Access and Exchange
- Ocean Literacy Classroom

WP7 Innovation Management (RIBNS)

- Exploitation and Innovation Management Process
- Guidelines for TA User Groups
- Exploitation Roadmap

WP8 Roadmap and Legacy (CNR)

- Long term sustainable TA system for RV's
- Eurofleets Legacy
- Roadmap and guidelines for a future entity

Dissemination and Communication (EurOcean)

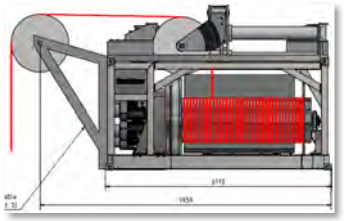
WP3 Joint Research Activities with Industry Partners

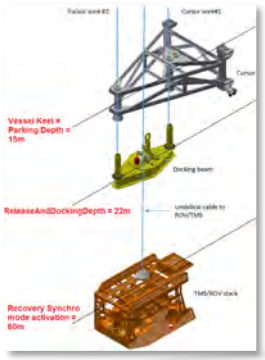
WP3.1 Advanced Shipboard Data Mgt (MARIS)

- Eurofleets Automatic Reporting System
- EVIOR Portal

WP 3.2 Equipment innovations for deep sea operations from vessels (CSIC)

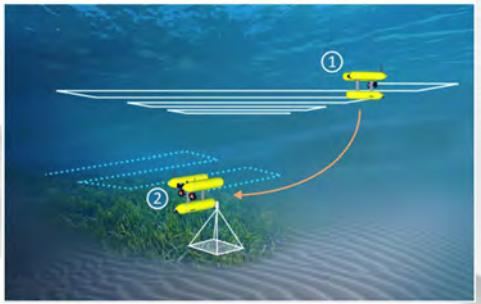
- New **Portable Electric Winch** design and
- **Dual Mode Handling System** developed with industry.
- **Multipurpose** crane handling system for deep sea operations





3.3 Intelligent AUV Mapping (UdG)

- Intelligent AUV Mapping
- AUV-ASV Cooperation



MARIS · Voyager IP Marine Broadband Service and Solutions · MacArtney Underwater Technology · SEAONICS™ · HAMPIÐJAN · FERRI · iqua robotics · CORONIS COMPUTING Computer Vision and Machine Learning

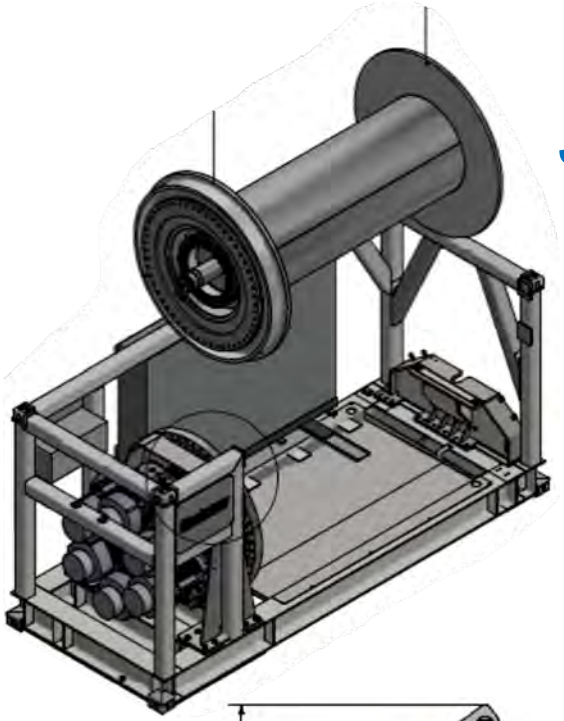
T3.2.2 New Deep-Sea Winch design

Eurofleets+ **MERMAC RCRA AHC Winch**

System Requirements

- 20’ container footprint
- Welded steel structure -
- Right angle level wind for optimized deck space
- Optional davit, for stand alone applications
- Modular build
- Swappable drum
- Optional Active Heave Compensation
- Optional Constant Tension functions

The winch is based on MacArtney’s more than 30 years of experience with winches and handling equipment



JRA 3.2.2 WINCH

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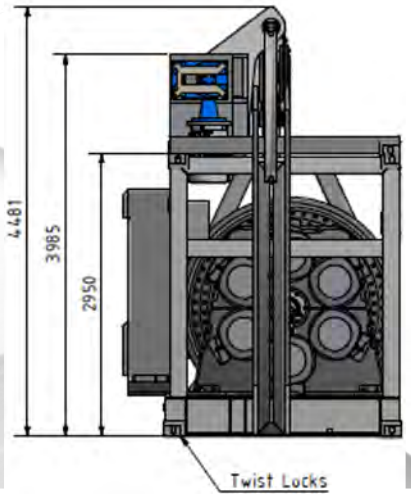
T3.2.2 Multipurpose winch

MacArtney
UNDERWATER TECHNOLOGY

Modular build

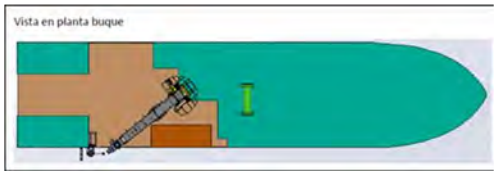
- Allowing for shipping in parts (lower weight)
- Shipping frame for :
  - Level wind
  - Optional davit

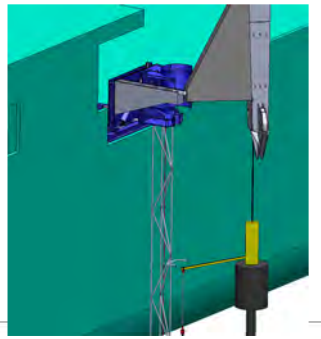


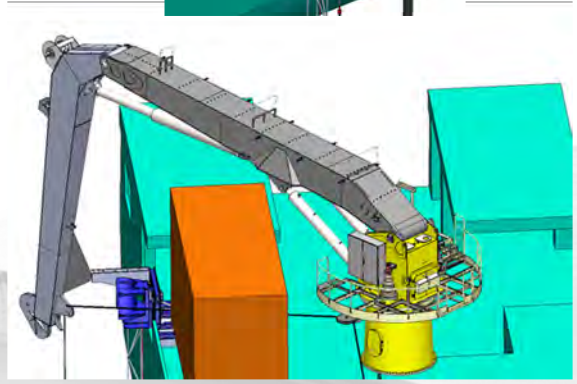
Swappable drum

- Allowing for shipping in parts (lower weight)
- Allowing for more than one preconfigured drum, with rope or umbilical.
- The drum is prepared for electrical/optical slipring

T3.2.3 Multipurpose crane/handling system for deep water operations.







- Deployment of heavy equipment over the side using vessels own lifting equipment
- Studying possible adaptations of the **usual deck rigging for its use in deep sea** operations.
- Two Options:
  - conventional knuckle-jib crane and make minor modifications to it for the deployment and recovery operations
  - design a crane specifically to be used in the deployment operations of a piston corer but not to affect the crane functions of the ship

CSIC FERRI

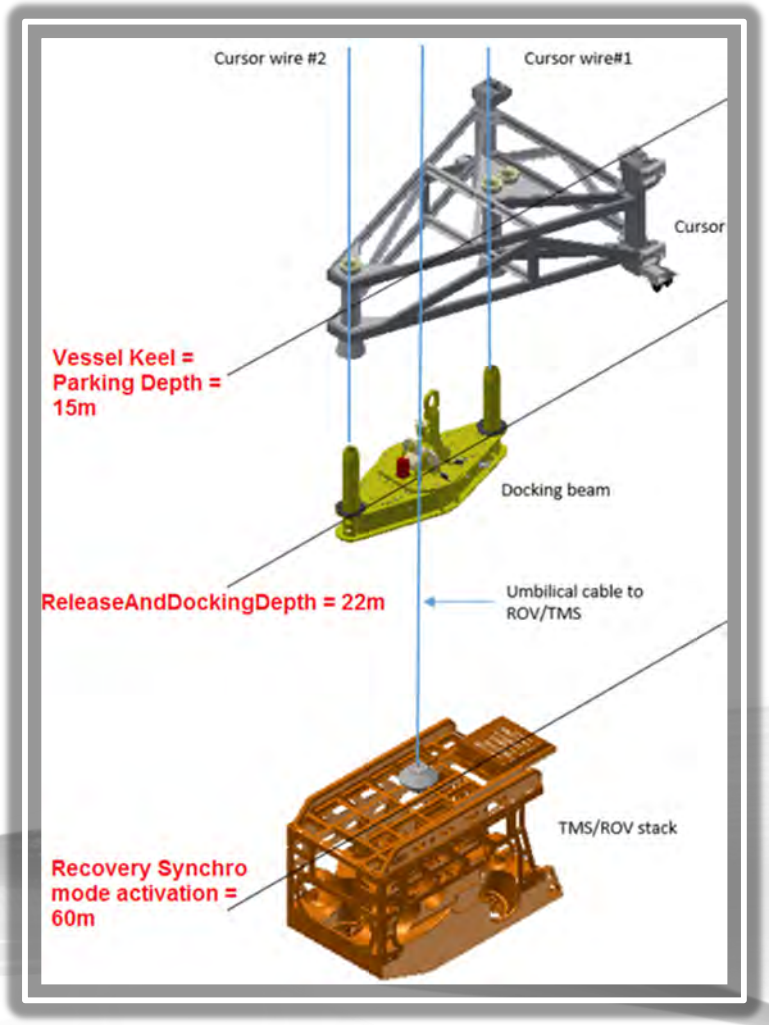
T3.2.4 Moon-pool use for deployment and recovery of research tools

The **Dual Mode Handling System** (DMHS) designed for operation in a tough and corrosive offshore environment.

The DMHS will facilitate launch over side and through moonpool.

Umbilical winch equipped with active heave compensation with all required functionality for safe and efficient lifting operations.

Possible to route the umbilical winch to both over side and moonpool systems.

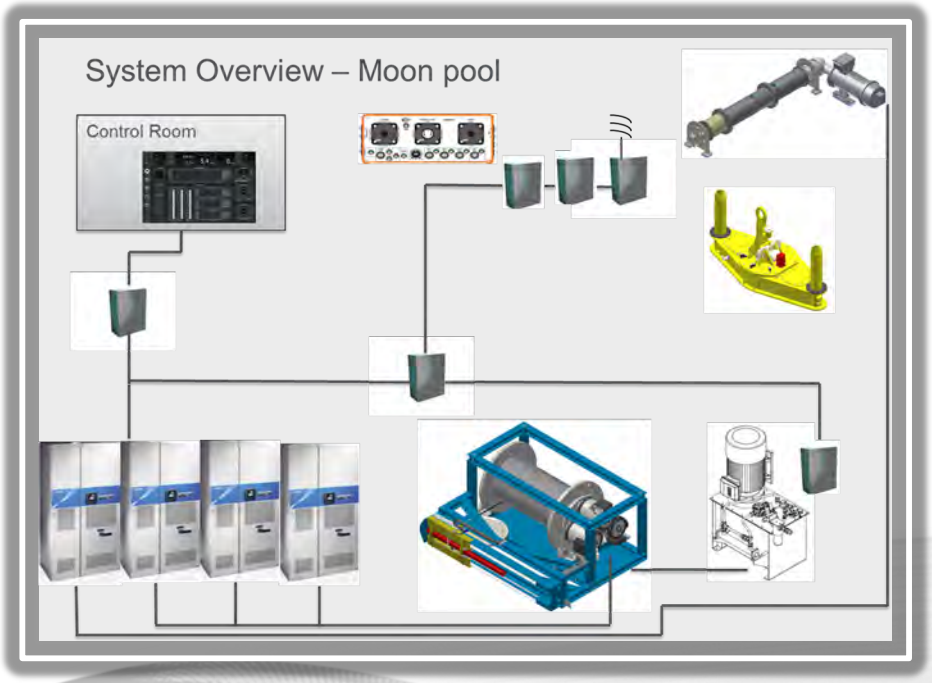


SEAONICS

T3.2.4 Moon-pool use for deployment and recovery of research tools

- The system is designed to accept other winches (oceanographic) as well as the dedicated umbilical winch
- Operation of the system can either be performed from the operator cabinet located in the operation room or from a remote control on deck.
- Emergency operations are performed from emergency panels placed on the various components.

Full HAZOP/HACID/FMECA to be performed to validate the design



SEAONICS

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to meet the evolving needs of the research and industrial communities

THANK YOU

www.eurofleets.eu

Email: eurofleetsplus@marine.ie

Marine Institute
Foras na Mara

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