Oceyon Method Statement

RoI Dive Licence application South Coast 2025

1. Summary of the proposed works, including purpose and details of duration

Our application for this expedition is to conduct marine surveys of wrecks for the purpose of scientific discovery, research and site investigation.

As a compliance and technology company based in Switzerland, we are developing underwater technology on ROVs and AUVs to survey anthropogenic structures (wrecks) by creating 3D and other models from data. We have already tested this technology in alpine lakes in Switzerland, in full cooperation with the owners and authorities (Lake Constance/Bodensee).

The aim is to augment our proprietary deep learning technology and we will share public data analysis on heritage assets to the community at large.

We now wish to undertake survey in saline waters in the North Atlantic.

We require a range of size, depth and condition of vessel to acquire the needed data sets. We have a list of 10 wreck-sites.

The 10 wreck-sites would take a cumulative total of 2 weeks, depending on weather.

We request that information supplied in any pre-application or application (including the identity of our company or technology and equipment used) should not be disclosed for confidentiality/sensitivity reasons.

2. Site description, including topography and present condition as well as any relevant past usages/events

Oceyon will be undertaking underwater expeditions within a 30 km2 area to the south-east and south-west of Cork. See map.

As we will not rest on the seabed nor the wreck, nor use any equipment that intrudes on the seabed nor wreck, the topography of each site has not been ascertained.

We have not undertaken any past activity at these sites.

3. Relevant background information including (but not limited to):

a. local archaeological and historical context for the site

Of the 10 wrecks, four are unknown regarding historical / archaeological context. Of the six known sites, one is listed on Infomar as a submarine. Of the five known vessels, as listed on Infomar, four are WW1 that were sunk by enemy action : SS East Wales (sunk 1917), SS Minnehaha (sunk 1917), SS Ben Lomond (sunk 1918), SS Pinewood (sunk 1918). One is WW2 sunk by enemy action : MV Daru (sunk 1941).

b. **planning background and development description (if applicable)**

We will use a small chartered vessel (up to 5 people and crew) and remotely operated electric underwater vehicles (ROV and AUV) that will not disturb the wreck. No divers will be used.

The vessel will be at a minimum of 50m offset from the vessel during launch and recovery to ensure the wreck is safe from dropped objects. The ROV will maintain a controlled standoff distance from the wreck using live video as well as depth and altitude sensors to prevent any physical contact. Thruster output will be minimized during close approaches to reduce turbidity and sediment disturbance, ensuring the structural and environmental integrity of the site is preserved.

c. **research aims and objectives**

The main objective of the survey is to collect data to train, debug and validate our computer vision and sonar algorithms, tools and pipelines. We have developed a novel architecture that fully-automatically generates high-resolution 3D models of shipwrecks and we have successfully concluded a proof-of-concept project in a single vessel. The next step is to repeat this exercise in a larger set of diverse shipwrecks, to fine-tune our technology, validate its accuracy and identify edge cases that require a more careful examination. Please note that this could only be achieved through the acquisition and processing of in-situ data originating from actual sunk vessels.
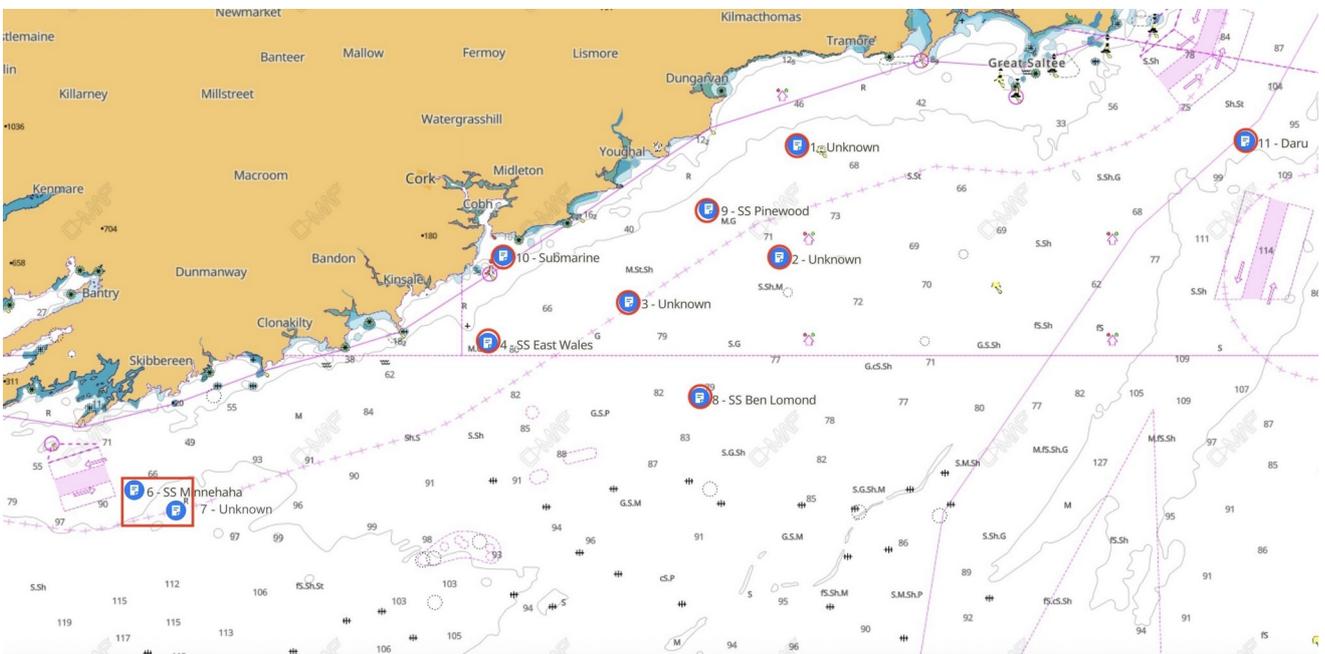

4. **Project strategy, including (but not limited to):**

a. **size and extent of survey area**

30 km2 area to the south-west, south-east and north-east of Cork:
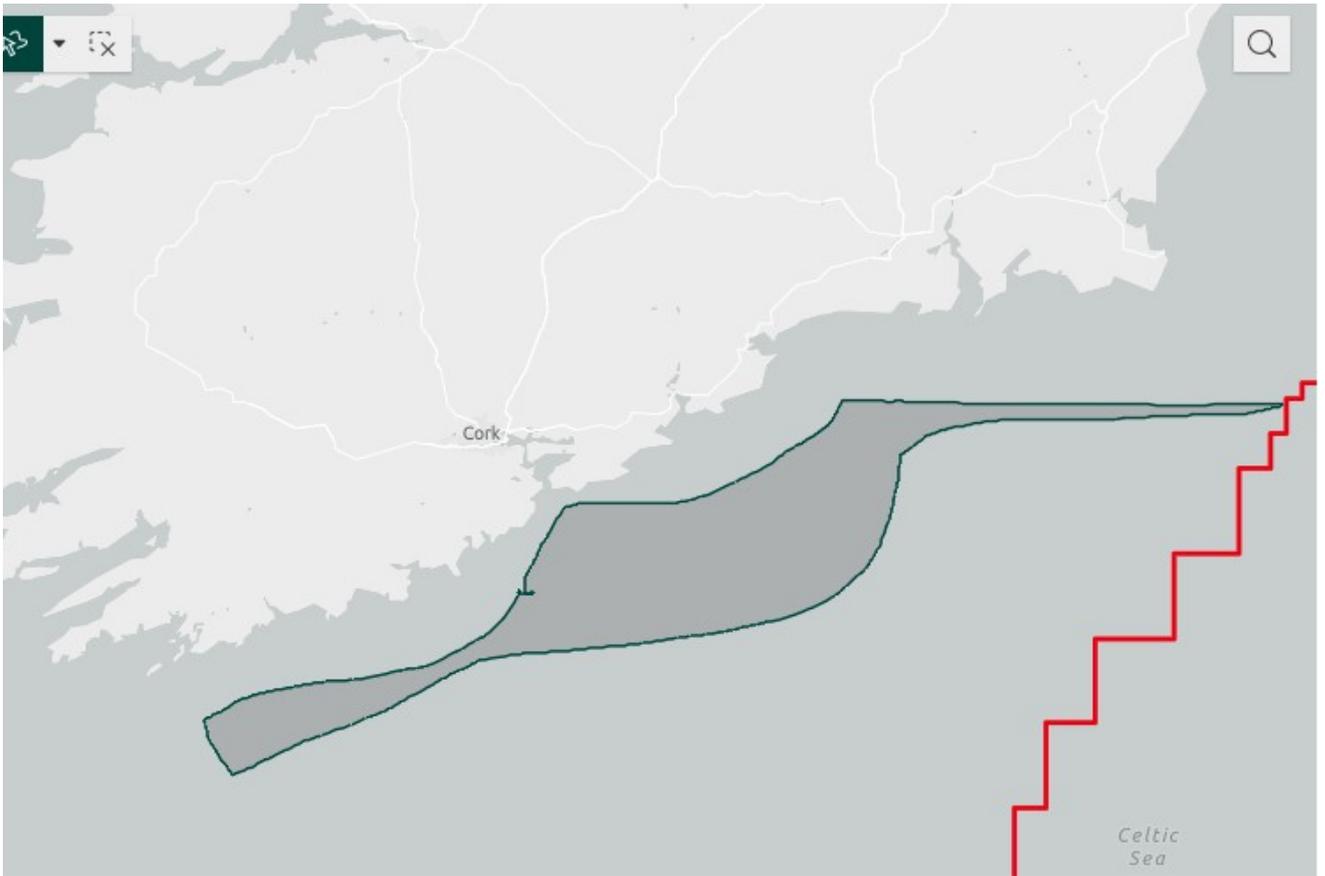
Within this area are 10 sites. Each site is a wreck – submerged vessel or submarine – and the activity will be undertaken around an average of 300m2 per site in the water around the wreck:

b. survey and recording methods

We will use a dynamic positioning (DP) system to position a vessel above each wreck-site, with no disturbance nor intrusion to the seabed, nor to the wreck itself. The ROV will conduct a systematic

visual survey using high-definition video and still photography, supported by onboard positioning and depth sensors. All data will be geo-referenced and time-stamped to produce an accurate visual and positional record of the wreck site. There will be a log of events kept which will detail the operation in chronological order.

c. **constraints on archaeological methods**

Not applicable.

d. **health and safety requirements and/or restrictions**

All operations will be conducted under a site-specific Hazard Identification Risk Assessment and follow job specific procedures. Only trained personnel will operate the ROV, with vessel-based safety briefings, emergency procedures, and exclusion zones established to prevent interference with equipment or crew during deployment and recovery.

Careful ROV operation with use of sonar and cameras together with tether awareness should ensure that the ROV doesn't become entangled. In the event of an ROV malfunction or entanglement, operations will be immediately suspended and recovery procedures initiated using the tether management system and vessel-based retrieval equipment. Optionally we might deploy a second ROV to assist recovery or dis-entanglement.

5. Description of dive and its schedule (where relevant)

The operation will involve deployment of a small inspection-class ROV from a support vessel to conduct a non-intrusive visual and positional survey of the wreck site. The survey is expected to take approximately 12 hours per wreck and will be completed within a single daylight window, subject to weather and sea-state conditions.

6. Constraints on Archaeological methods (if applicable)

The operation will not physically touch or interfere with the seabed or wrecks so the constraints are not applicable.

7. Project team and structure, including number of divers/archaeologists/supervisors; backup measures, logistical support

The project team will consist of an ROV pilot/technician, a vessel master, and a surveyor overseeing data acquisition and site recording. No divers will be deployed. There will be a certified marine mammal observer onboard. Backup ROV systems and power supplies will be available onboard, with logistical support provided from the vessel for data management, communications, and safety coordination.

8. Reporting strategy, including delivery dates

All video, photographic, and positional data will be reviewed and processed post-survey to produce a detailed report and 3D model. A draft report will be available within six weeks of survey completion, with final deliverables provided following any requested revisions. The report, 3D model and images will be issued to the Department of Housing, Local Government and Heritage

9. **Mapping and illustrations, including (but not limited to):**

a. **site location map: Admiralty Chart** ~~or OSi map (1:5000) for rural areas and (1:1000) for urban area~~ **(or appropriate equivalent)**

A copy of the Admiralty chart is included with this application and the electronic GIS files are available and can be requested via email.

b. ~~relevant historical mapping~~ N/A

c. **site plan (scaled) showing clearly the location, extent and layout of the proposed excavation**

No excavation will be undertaken.

d. ~~plan of proposed development (if applicable)~~ N/A