

Apply for a Band 1 marine licence

Project description

Project name

QUEST (Quantification, characterisation, source and fate of past and present carbon storage in offshore sediments for effective marine management)

Please provide a brief description of the proposed project, including location.

The QUEST Project is a 4-year research project funded by the Irish Marine Institute. For this survey, the Project Partners propose to use the Marine Institute R.V. Tom Crean (ship details are summarized sections below) to acquire and deliver new offshore seabed mapping and sediment sampling data and knowledge. The primary objective of this survey is to gather data on the seafloor geology within the upper 5 meters below the seabed. This information will be crucial in assessing the Blue Carbon potential of certain areas to coincide with Marine Spatial Planning processes and Marine Protected Area designation. A suite of mapping instruments will be used in this geophysical reconnaissance survey. This includes multibeam and sub bottom profiler, and the deployment of a Shipek grab sampler, Reineck box corer and vibrocorer. In addition, a Unisense MiniChamber Lander System will be deployed on the seafloor for a period of hours (~4) to measure environmental condition data. These will provide appropriate datasets for the various requirements for assessment of Blue Carbon potential. This survey proposes the deployment of the equipment mentioned above and collection of sediment samples from within the UK EEZ area highlighted in Figure 1 in attached documents. Further details of activities and GPS coordinates are provided in method statement sections below.

Does the activity have an estimated project cost for marine works over £1 million? If yes, the activity is no longer eligible for a band 1 application and a band 3 application will be required.

No

Applicant details

To whom the licence will be issued. This must be a legal entity such as an individual, registered company/ charity or public body.

Title	Dr
Full name	Mark Coughlan
Company or trading name	University College Dublin
Company Registration Number (if applicable)	n/a
Name of contact or individual (if different)	n/a
Position in company	Principal Investigator (Survey Senior Scientist) & Assistant Professor
Address (provide registered company address if applicable)	University College Dublin, Belfield, Dublin 4, Ireland
	-
	-
Postcode	D04 V1W8
Telephone number	00 353 17162331
Email address	mark.coughlan@ucd.ie

Details of agent, contractor, vehicles and/or vessels used to carry out works

Does the applicant wish to be included in all correspondence?

Yes

Will the works require the use of vessels?

Yes

Will the works require the use of any vehicles?

No

Proposed project details

Licensable period

Determination of applications will be based on the works taking place during these dates. Please ensure you have included an adequate contingency period. If works are not completed by the requested licence expiry date you may be required to submit a new application. Including a contingency period within your original application does not impact on the licence fee.

Start date (DD/MM/YYYY) 01/11/2024

Requested licence expiry date (DD/MM/YYYY) 31/10/2025

Please detail the location of the proposed project.

This should be either Ordnance Survey National Grid Reference (i.e. SN 12345 67890) or Latitude and Longitude in decimal degrees to 4 decimal places (i.e. Lat 52.1234 Long -4.1234), defining the extent of the project. Please specify which coordinate system has been used and if using GIS co-ordinates, specify which projection has been used.

The EPSG Geodetic Parameter Dataset (1985) (EPSG:27700 OSGB36/British National Grid) projection was used to define the sampling area extent with the following Decimal Degrees (dd) latitude and longitude coordinates representing the scope of area for licence application (see Figure 1 in attached map) :

Latitude (dd) Longitude (dd)

51.0005 -6.0317

51.0027 -6.7992

51.1665 -6.7982

51.1664 -6.9399

51.3307 -6.6943

51.3303 -6.5494

51.4963 -6.5480

51.4995 -6.2966

51.5585 -6.2916

51.5569 -6.0443

Locations of individual proposed sampling locations within that area are:

ID Lat Long

1 51.36626667 -6.16516667

2 51.2417 -6.23428333

3 51.21821667 -6.25385

4 51.51855634 -6.93600462

5 51.52781886 -6.49267086

6 51.5275609 -6.08048438

7 51.19299492 -6.68572137

8 51.43185195 -6.95678419

9 51.32406367 -6.95465543

10 51.19891752 -6.94617822

11 51.19227644 -6.45462628

12 51.28054756 -6.77977414

13 51.41330253 -6.71164495

14 51.35556742 -6.52036112

15 51.45373779 -6.23309177

16 51.21147921 -6.13869181

17 51.2311302 -6.2287845

18 51.2726442 -6.2567265

19 51.0493088 -6.3333786

20 51.1374234 -6.5306184

21 51.075069 -6.5780385

22 51.40164941 -6.36824178

23 51.16450365 -6.13960658

24 51.13746727 -6.48195458

25 51.1335819 -6.22774599

26 51.05931019 -6.61826086

27 51.13634761 -6.48506191

28 51.16370856 -6.1427431

29 51.40099528 -6.372013

Method statement

Are the works within a sensitive area or one of the following activities: boreholes, replacement piles or beach management?

No

Method statement

You can upload your method statement here or fill in the questions below.

- File: Schedule_of_Work_QUEST.pdf - [Download](#)

Please give a brief method statement outlining the proposed project

We propose to carry out survey work between 26/11/2024 - 04/12/2024 and 10/12/2024 - 15/12/2024 onboard the RV Tom Crean with 24 hour operations, where possible, to maximise shiptime use. The main activities and equipment include:

- Day grab and coring equipment for sediment sampling;
- Deployment of Unisense MiniChamber Lander System;
- Hull-mounted multibeam echosounder (MBES), sub-bottom profiler and acoustic Doppler current profiler acquisition;

A Primary Study Areas for characterising soft sediments, quantifying carbon stock levels, assessing anthropogenic impacts on sediments has been identified from existing data. Further information on sampling is given in the attached Schedule of Works.

26/11/2024

- Mobilise in Cork

27/11/2024 – 03/12/2024

- Leave Port, to the first Primary Study Area south of Ireland.
- we propose a day schedule of deployment of the Unisense MiniChamber Lander System coupled with sediment sampling at targeted locations within the Primary Study Area. The deployment of the Unisense MiniLander System is expected to take approximately 4 hours at each site.
- We propose a night schedule of acquiring geophysical data at targeted locations. Starting in the evening this would include;
 - Perform SVP dip at site and undertake MMO activity
 - Regional and detailed MBES and pinger survey across the site, as dictated by site conditions (8 hours approximately overnight).

04/12/2024

- Transit home to Cork
- Demobilise in Cork.

10/12/2024

- Mobilise in Cork

11/12/2024 – 14/12/2024

- Leave Port, to the first Primary Study Area south of Ireland.
- we propose a day schedule of deployment of the Unisense MiniChamber Lander System coupled with sediment sampling at targeted locations within the Primary Study Area. The deployment of the Unisense MiniLander System is expected to take approximately 4 hours at each site.
- We propose a night schedule of acquiring geophysical data at targeted locations. Starting in the evening this would include;
 - Perform SVP dip at site and undertake MMO activity
 - Regional and detailed MBES and pinger survey across the site, as dictated by site conditions (8 hours approximately overnight).

14/12/2024

- Transit home to Cork
- Demobilise in Cork.

Equipment:

- MBES

We propose using the EM2040 Multibeam echosounder onboard the RV Tom Crean as it offers high-quality MBES data.

- Sub-bottom Profiler

We propose using the Knudsen 3260, with Coda acquisition, onboard the RV Tom Crean

- Sampling

We propose using the existing box corer, vibrocorer, gravity corer and day grab sampling equipment available from the Marine Institute.

- Unisense MiniChamber Lander System

We will utilise the Unisense MiniChamber Lander System available from the AgriFood and Biosciences Institute. The Unisense shallow water instruments can be deployed to up to 300 meters depth and can stay deployed for up to a month, depending on the temporal resolution of measurements. The instruments are controlled online via cables from a PC on a ship or run by an autonomous program until retrieved. The MiniChamber Lander is a lightweight unit for shallow water benthic chamber measurement of multiple parameters, including shallow water sediment chamber studies and measurements for O₂, H₂, N₂O, NO, pH, H₂S and Redox.

- Acoustic Doppler Current Profiler

We propose to use the RDI Teledyne 4 Pinnacle ADCP that is drop keel mounted. This unit measures the absolute speed of water currents with sound waves (Doppler effect) at multiple depths within the water column. It emits acoustic pings at 45 kHz and can profile up to 1000 m water depth.

Please state the measures to be taken to minimise risk to the marine environment

Joint Nature Conservation Committee (JNCC) provides guidance to manage the risk to marine mammals from manmade sound sources in UK waters. This document provides guidance and mitigation measures to address key potential sources of anthropogenic sound that may impact negatively on marine mammals in UK waters. The guidance set out by JNCC will be fully implemented to minimise risk to the marine environment.

During sampling, all appropriate protocols according to the sampling technique will be implemented to minimise risk to the marine environment. The equipment we are using is standard, certified sampling equipment.

Please state the measures to be taken to prevent undue interference to others

The vessel is equipped with state-of-the-art communication allowing contact with all other vessels in the area. During operations we will liaise with relevant parties to prevent undue interference to others. All operations will be carried out in accordance with safe operating practices regarding MMO procedures and cognisant of fishing gear.

Please state the measures to be taken to maintain navigational safety, including marking and lighting of works

A marine notice to mariners will be issued prior to the survey detailing the location and timing of all activities. The vessel will display appropriate lights and signals. Where equipment is deployed at the seafloor, appropriate marker buoys with winky lights and radar reflectors will be attached, marking its position. Whilst equipment is deployed at the seabed, the vessel will maintain an appropriate distance to maintain a watch.

In compliance with mitigation measures put forward by MCGA, we will:

1. Comply with all maritime safety legislation
2. Issue local notification to marine users, including fishermen's organisations, relevant authorities and other local stakeholders, to ensure that they are made fully aware of the activity at least five days before commencement of the works;
3. Notify Zone24@hmcg.gov.uk and Zone28@hmcg.gov.uk prior to commencement of activities.

Materials of the project

Delivery method of materials to site

If sea delivery, details of vessels to be used with a chart of proposed route and transshipment area is required. If delivery is by vehicle, the details about the proposed access route are required. Please indicate if you are providing details in a separate file.

n/a

Will the works involve removals seaward of MHWS?

No

Description of objects/materials to be removed seaward of MHWS, including quantities to be removed.

n/a

Additional information

Please provide the following:

You must include a suitably scaled extract of an Ordnance Survey Map or Admiralty Chart with location of project complete with north arrow and scale

You must include details of correspondence with MCA, Trinity House and The Crown Estate

You must include any pre application advice/correspondence with NRW

Correspondence with RCAHWW (B1 removals only)

Please upload these below

- File: Supplementry Info.pdf - [Download](#)
- File: QUEST_Survey_Map.pdf - [Download](#)
- File: University College Dublin Mail - QUEST Survey - MCGA.pdf - [Download](#)
- File: University College Dublin Mail - QUEST Survey - Trinity House.pdf - [Download](#)
- File: University College Dublin Mail - QUEST Survey - Crown Estate.pdf - [Download](#)
- File: University College Dublin Mail - QUEST Survey - RCAHWW.pdf - [Download](#)
- File: Schedule_of_Work_QUEST.pdf - [Download](#)

Please list below all supporting documents that have been submitted with this application.

1) A schedule of work detailing the survey plan along with survey equipment and sample locations, as well as the approximate amount of material remover per sample method, as well as each type of sample we intend to take at each location.

2) supplemental information on the vessel and equipment to be used

3) A map of the proposed survey area

4) Correspondence With MCA

5) Correspondence with Trinity House

6) Correspondence with Crown Estate

7) Correspondence with RCAHWW

Statutory powers

Does the applicant have statutory powers to consent any aspect of the project? e.g. coast protection authority, dredging powers, statutory undertakers

No

Public register

Is there any information contained within or provided in support of this application that you consider should NOT be included on the Public Register on the grounds that its disclosure:

	Yes	No
Would be contrary to the interest of National Security?		X
Would prejudice to an unreasonable degree you, or some other person's commercial interest or those of a third party?		X

Application fee

Please provide the method of payment

BACS

Reference number (not BACS remittance no.)
PRCAPPUCD07082024

Declaration

I declare that to the best of my knowledge and belief that the information given in this application form and supporting documentation is true.

WARNING: It is an offence under the Marine and Coastal Access Act 2009, under which this application is made, to fail to disclose information or to provide false or misleading information. This could invalidate any licence granted.

Name Mark Coughlan
Date 6th September 2024
Position in company Assistant Professor

If you would like a copy of your completed form, please add your preferred email address below:

mark.coughlan@ucd.ie