

Regional Marine Advisor - Engineering Report

Application: Maritime Usage Licence (MUL) application for marine environmental surveys for the purposes of site investigation in support of proposed subsea fibre optic cable.

Applicant: Microsoft Ireland Operations Ltd.

Document control			
Rev	Date	Prepared by	Reviewed by
N/A	18/06/2024	██████████	██████████

Consenting Unit,
MARA,
Drinagh,
Wexford.

18/06/2024

Re: Maritime Usage Licence (MUL) application for marine environmental surveys for the purposes of site investigation.

Application Details

Applicant: Microsoft Ireland Operations Ltd.

Site Location: Geophysical survey and site investigations for a proposed subsea fibre optic cable having a landfall in Portmarnock and traversing the Irish Sea to Abergele, Wales

Supporting information considered:

- Completed Application Form dated 17/11/2023.
- AIMU Report, Issue 01 dated 17/11/2023
- Schedule of Works
- Works Methodology Report Dated, November 2023.

Project Overview and Background

Microsoft Ireland Operations Ltd through their agent, McMahon Design and Management Ltd, has applied for Maritime Usage Licence (MUL) for a site investigation for a proposed Fibre Optic Cable. The principal objective of the Marine Survey and Site Investigations is to ascertain a feasible and safe route for cable system design, deployment, survivability, and subsequent maintenance with due regard for environmental and ecological considerations. The survey will also enable decisions to be made on cable armouring and burial. The survey will identify the necessary water depths, route features, seabed obstructions, seabed geomorphology and cable hazards and will also provide detailed information on the seabed sediment, subsurface stratigraphy, and upper sediment layers to support cable route and installation engineering. The site investigations will provide “ground-truthing” of the geophysical data along the route.

The objectives of the marine geophysical survey shall be:-

- To collect up to date high-resolution bathymetry along a 400 – 500m wide cable corridor within the Licence Area.
- To obtain information on the seabed surface (type, texture, variability, etc.) and, to identify any seabed features that may be of interest.
- Identify any shallow geohazards and man-made hazards (including but not limited to outcropping, boulders, shallow gas, wrecks, debris etc.).
- Determine the stratigraphy of the upper layers of the seabed along the cable route and quantify the variability in the lateral and vertical extents to depths of 2-5m.
- Identify any seabed obstructions.
- Identify sensitive marine habitats which will need to be avoided during site investigations and sampling.

The proposed site investigation works will take place between the HWM and the Maritime Boundary with the UK in the Irish Sea. A cable route corridor of approx. 500m width will be surveyed within the Licence Area. The site boundary for all proposed SI works is shown below in in Figure 1. The licensed survey corridor has a total area of 3209.5 hectares within Ireland's EEZ limits.

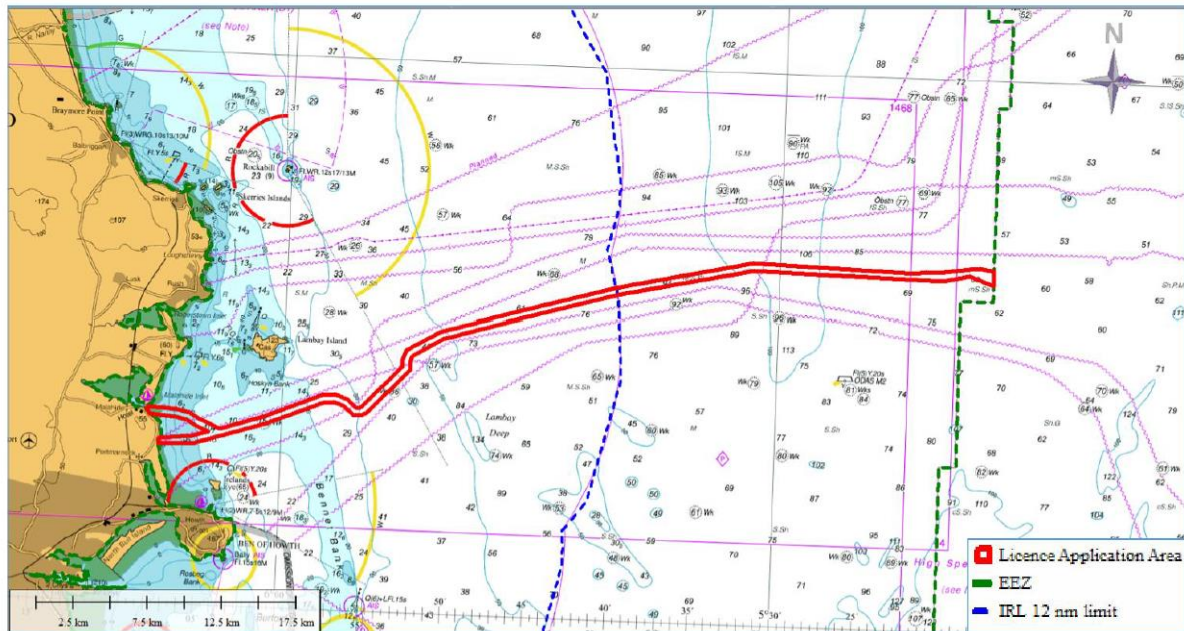


Figure 1. Proposed Survey Area (AIMU 17/11/23)

The proposed SI works comprises as follows;

A: Landfall Beach Survey.

Topographical Survey. Method - The topographical survey would typically be carried out by GPS Rover, Total Station or UAV Aerial Drone using photogrammetry or LiDAR techniques

Terrestrial Geophysical Survey. Method - The terrestrial geophysical survey will comprise remote sensing techniques such as Ground Penetrating Radar or Electrical Resistivity Tomography (ERT) to establish subsurface features and depth to bedrock and magnetometer or handheld marine metal detector to locate buried ferrous objects.

Intertidal and Beach Surveys. Method - Walkover surveys will be carried out on the beach by the project ecologist and the project archaeologist.

Landfall Site Investigations. Method - The focus of the site investigations will be on the upper layers of sediment to assess the feasibility of cable burial and installation techniques. The following may be undertaken at each landfall:

- 3 Trial Pits on the beach (target depth 2.5m).
- Bar probes on the beach at 10m spacing (approx. 6 to 8).
- Bar probes from the Low Water Line to the 3m water depth contour at 10m spacing. (approx. 6 to 8).

B: Geophysical Survey.

Side Scan Sonar. Method - Vessel towing a submerged sonar towbody or fish. Line spacing: The sonar range is dependent on sonar frequency and is expected to vary between 50 - 75m with a 50% overlap between each swath and 100% ensonification in both directions. Location: Survey Area as shown on 1358-A-101 Licence Map

Sub-Bottom Profiler. Method - Hull mounted or Vessel towing a submerged SBP towbody or fish. Line spacing: The sub bottom profiler data will be collected concurrently with the sidescan sonar and magnetometer, therefore line spacing is expected to vary between 50 - 75m. Location: Survey Area as shown on 1358-A-101 Licence Map

Marine Magnetometer. Method - Vessel towing a submerged magnetometer towbody or fish. Line spacing: The magnetometer data will be collected concurrently with the sidescan sonar and sub bottom profiler, therefore line spacing is expected to vary between 50 - 75m. Location; Survey Area as shown on 1358-A-101 Licence Map

Multibeam Echosounder. Method - Hull mounted Line spacing: The swath width for multibeam can vary between 4-6 times the water depth depending on the required bathymetry resolution. The estimated water depth in the survey area is between 4m and 110m, therefore the expected narrowest swath width is 12 to 18m. Location: Survey Area as shown on 1358-A-101 Licence Map

C: Geotechnical and Sediment Sampling.

12 no. Gravity cores / Vibrocores - each core up to 3m depth, diameter 90 – 120mm.

Location: Locations as indicated on 1358-A-102 Site Layout Map. Locations shown are indicative only, locations may vary.

11 no. Surface grab samples - by day grab or similar;

Location: Locations as indicated on 1358-A-102 Site Layout Map, Locations shown are indicative only, locations may vary.

15 no. In situ Cone Penetration Test - on sea bed frame; Location: Locations as indicated on 1358-A-102 Site Layout Map, Locations shown are indicative only, locations may vary.

40 no. Bar probes - 2m depth Location: Between HWM and 3m water depth at Portmarnock / Malahide beach.

6 No Trial Pits - 2.5m depth. Location: Between LWM and upper beach at Portmarnock / Malahide beach. Location: Locations as indicated on 1358-A-104 Site Layout Map. Locations shown are indicative only, locations may vary.

Marine Advisor Review and Assessment

Appropriate Consent Instrument

Under the Foreshore Act the Minister for Agriculture, Food and the Marine (MAFM) retains the function for authorisations in relation to a fishery harbour centre, an activity which is wholly or primarily for the use, development or support of aquaculture, or an activity which is wholly or primarily for the use, development or support of sea-fishing including the processing and sale of sea-fish and manufacture of products derived from sea-fish.

As the proposed Site Investigation works are not in relation to a retained function of the MAFM, the appropriate instrument for authorisation is the MAP Act. More specifically, Schedule 7 (3) of the MAP Act 2021 includes “Marine environmental surveys for the purposes of site investigation”. The proposed Site Investigation works, the subject of this application, therefore requires a Maritime Usage Licence under Schedule 7(3) as applied for by the applicant.

Site Inspection, Existing Use and Activities

I inspected the proposed landfall sites on 29/01/2024. The licence application area covers two potential cable-landfalls at Portmarnock and Malahide. At Portmarnock the landfall location is adjacent to the R106 Strand Road and north of the Portmarnock Hotel. The landfall location at Malahide is adjacent to the public car park at Malahide South Beach.



Photograph 1 – Portmarnock Beach in the Vicinity of the Proposed Cable Landfall Site Investigations



Photograph 2 – Malahide Beach in the Vicinity of the Proposed Cable Landfall Site Investigations

The two proposed beach survey areas are high value amenity areas which appear to be regularly used by the general public year round. Trial pits works will require a mechanical excavator to access the beach, however due to the limited number of trial pits proposed (3 at each location), any disturbance to the general public should be limited to a maximum of 1-2 days at each location. Considering the scale and nature of the trial pit and bar probe SI works, a beach closure should not be necessary. During the course of the intertidal trial pit operations the applicant should ensure that existing public access arrangements are maintained, where possible, and all necessary precautions are put in place to protect the public in accordance with relevant Health and Safety Legislation. Subject to Specific Condition 8, the site investigation works will not significantly injure the public use of, access to or enjoyment of the maritime area in question.

Existing Consents and Applications

The proposed licence area does not overlap with any existing or proposed Maritime Area Consents or Maritime Usage Licences. Based on DHLGH publically available information and the internal Foreshore Web Map viewer, this application overlaps quite a number of Foreshore Act applications and/or existing Foreshore Act consents as detailed in Table 1 below.

File Reference Number	Applicant/ Holder	Consent Type and Details	Expiry Date	Comments	Further Consideration Required
FS004523	Eircom Limited	Telecommunications Cable - Licence to lay use and maintain cable	25/05/2024	- Overlaps with proposed survey area. - Licenced cables are identified on Admiralty Charts and therefore require protection by the Licence Holder. - Foreshore Licences for cables are non-exclusive and therefore should not impact the issuing of a Licence from an engineering perspective.	No
FS005358	Virgin Media	Telecommunications Cable - Licence to lay use and maintain cable	1/11/2033	- Overlaps with proposed survey area. - Licenced cables are identified on Admiralty Charts and therefore require protection by the Licence Holder. - Foreshore Licences for cables are non-exclusive and therefore should not impact the issuing of a Licence from an engineering perspective.	No
FS005439	WTI Telecom (Ireland) Ltd	Site Investigation Licence for Communications Cable	30/06/2000	Expired SI Licence. Does not require further consideration.	No
FS004027	Celtic Pipeline Limited	Site Investigation Licence for Gas Interconnector Pipeline	11/12/2001	Expired SI Licence. Does not require further consideration.	No
FS006241	Codling Wind Park Limited	ORE Site Investigation Licence Application	N/A	Does not appear to have progressed beyond application stage. Investigative licence would in any event be non-exclusive and would not prevent the issuing of a Licence from an engineering perspective.	No
FS004532	Eirgrid Plc	SI Licence Application for Electrical	N/A	Does not appear to have progressed beyond	No

		Interconnector		application stage. Investigative licence would in any event be non-exclusive and would not prevent the issuing of a Licence from an engineering perspective.	
FS006196	Emerald Bridge Fibres Limited	Telecommunications Cable - Licence to lay use and maintain Cable to Wales	13/09/2047	- Overlaps with proposed survey area. - Licenced cables are identified on Admiralty Charts and therefore require protection by the Licence Holder. - Foreshore Licences for cables are non-exclusive and therefore should not impact the issuing of a Licence from an engineering perspective.	No
FS006262	GEO Networks Ltd	Site Investigation Licence for energy infrastructure	8/9/2010	Licence has expired. No need to consider further	No
FS006355	Individual	Licence Application for Resource Abstraction – Removal of Sand	N/A	Application lodged 25/12/2000 did not progress beyond application stage.	No
FS006292	Irish Water	Site Investigation Licence for Proposed Outfall (Greater Dublin Drainage Project)	N/A	At MLVC Assessment stage of application process. Licences are non-exclusive and therefore should not impact the issuing of another SI licence from an engineering perspective.	No

Table 1 – Existing Consents and Consent application overlain by current application.

Section 120 Part 7 of the MAPA which relates to Conditions attached to a MUL states that *“It shall be deemed to be a condition of each licence that the part of the maritime area the subject of the licence is **not for the exclusive use** of the Schedule 7 usage the subject of the licence except where the licence expressly states that such part is for the exclusive use of such usage.”* Accordingly it is assumed that any MUL issued will not be for exclusive use. This non-exclusive element together with the nature and short duration of the works proposed means that any potential MUL issued can coexist with all existing Foreshore Consents. While completing their maritime usage the holder of a MUL has a responsibility not to damage or interfere with any third party’s property, infrastructure or fishing gear. (See Special Condition) Considering the proposed maritime usage is for geophysical and very minor geotechnical surveys there is no significant potential for conflicts between existing licenced or proposed maritime usages.

The Sirius South, Emerald Bridge Fibre, ESAT 2, BT-TE1 and Hibernia Atlantic submarine fibre optic cables cross the survey route in Irish waters. The applicant has stated that they will confirm the positions of these cables by the marine geophysical survey (marine magnetometer). The applicant further states that any proposed sampling or intrusive site investigations will be positioned a minimum of 100m from the as-found position of existing cables or 250m from the as-laid position if

the position is not confirmed during the geophysical survey. It should be a specific condition of any licence that the applicant must consult with existing asset owners in advance of any survey works commencing and agree suitable mitigation measures to avoid potential accidental damage to existing subsea assets.

All maritime area within the 12NM (Territorial Sea) limit is presumed state owned unless proven otherwise. Beyond the 12NM Limit the state holds the sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil, and with regard to other activities for the economic exploitation and exploration of the zone, such as the production of energy from the water, currents and winds. This licence area includes Maritime Area within and outside the 12NM limit.

Please note any potential environmental cumulative impacts of the proposed usage with any other proposed or existing licenced activity will be considered by the Assessments, Research and Data (ARD) Unit of MARA through the Environmental and Appropriate Assessment processes.

Privately Owned Maritime Area

This licence area is entirely within Irelands Maritime Area. All Maritime Area is presumed state owned unless proven otherwise. Having reviewed the map submitted against the LandReg (<https://www.landdirect.ie/index>) records it appears that the proposed works does not include any registered (under the Registration of Title Act 1964) privately owned part of maritime area, as required under Section 99 of the MAPA. Furthermore, I am not aware of any claims of private ownership of maritime area within the vicinity of the licence application.

Coastal and Seabed Morphology and Sediment Transport Processes

Given the nature of the proposed works, and the limited range of potential disturbance impacts on seabed sedimentation, even in the absence of mitigation measures, the project will have no significant impact on coastal and seabed morphology or existing sediment transport processes.

Sea Fishing and Aquaculture

Subject to the comments of the SFPA and relevant public submissions, it is my opinion that,

- Considering the scale and nature of the proposed maritime usage, there is no potential for significant negative impacts on the spawning and nursery grounds of commercial fish and shellfish species during the proposed Site Investigation works.
- During the completion of the proposed maritime usage there is no significant potential for impact upon legitimate fishers operating in the vicinity.
- There are no aquaculture sites in proximity to the proposed Site Investigation works and therefore no impact is envisaged.

Navigation

MARA shall in the performance of its functions under the MAP Act have regard to the rights of the public in relation to navigation. To mitigate any obstruction or risk to navigation, the applicant/holder shall arrange for the publication of a Marine Notice through the Maritime Safety Policy Division of the MSO. It should be noted that any vessels conducting the survey will be moving at slow speeds and will comply with the Convention on the International Regulations for Preventing Collisions at Sea (COLREGs).

Cultural Heritage

The National Monuments Service (NMS) is tasked with addressing the protection and preservation of our underwater cultural heritage and in this regard the Underwater Archaeology Unit (UAU) of NMS has a wide remit, including quantification of the record, research, underwater survey, excavation and regulation. The UAU also assesses potential development impacts on underwater archaeology by making recommendations to the relevant planning authorities and other regulatory bodies on developments which have the potential to impact on underwater archaeology.

The proposed Site Investigation works have a limited potential to impact underwater archaeology. To mitigate any risk the licensee shall, in advance of operations, consult and comply with the requirements of the Underwater Archaeology Unit of the National Monuments Service.

Water Framework Directive (WFD)

Section 121 Part 2b (ii) of the MAP Act requires MARA to have regard to the WFD when considering a licence application. Council Directive 2000/60/EC (the WFD) on establishing a framework for community action in the field of water policy was adopted by all member states in October 2000. Since 2000, the WFD has been the main law for water protection in Europe. It applies to inland, transitional and coastal surface waters out to 1nm as well as groundwater. It ensures an integrated approach to water management, respecting the integrity of whole ecosystems, including by regulating individual pollutants and setting corresponding regulatory standards. It is based on a river basin district approach to make sure that neighbouring countries cooperate to manage the rivers and other bodies of water they share.

The key objectives of the WFD are set out in Article 4. It requires Member States to use their River Basin Management Plans and Programmes of Measures to protect and, where necessary, restore water bodies in order to reach good status, and to prevent deterioration. Good status means both good chemical and good ecological status. The WFD is the primary legislation, which is supported by the Groundwater Directive, and other directives targeting the quality of surface waters.

There will be no planned release of potentially harmful substances from the survey vessels, however any accidental release of potentially harmful substances has the potential to negatively impact water quality in the survey area. The mitigation measures outlined in Section 8 (AIMU) will reduce or avoid the likelihood of these potential effects occurring. Given the large area over which the survey operations will be carried out and the type of equipment to be deployed, the relative area of the seabed which will be disturbed, will be very small and an increase in the suspended sediment concentration in the water column will be negligible.

Considering the scale and nature of the works and the mitigation measures outlined in Section 8 of the AIMU there is no significant risk of these works impacting the chemical or ecological status of inland, transitional, coastal surface waters and ground waters.

National Marine Planning Framework (NMPF)

The NMPF is a national plan for Ireland's maritime area. It sets out, over a 20-year horizon, how we want to use, protect and enjoy our marine area. The NMPF sits at the top of the hierarchy of plans and sectoral policies for the marine area and provides a coherent framework in which those sectoral policies and objectives can be realised. All decisions on individual applications determined under the MAP Act, must secure and be consistent with the objectives of the plan, similar to the way that terrestrial plans form part of the decision-making tool-kit in the on-land planning process. NMPF objectives are supported by specific policies that articulate factors that can form part of objective consideration.

Having reviewed and assessed the information on file for this application to complete site investigations works against the objectives of the NMPF, and subject to any comments by Department of Environment, Climate and Communications, I am satisfied the proposed works are consistent with the objectives of the NMPF. In particular the proposed usage is consistent with Telecommunications objectives and Telecommunications Policy 1 of the NMPF which states

Proposals that guarantee existing and future international telecommunications connectivity which is critically important to support the future needs of society, Government, the provision of Public Services and enterprise in Ireland, should be supported.

Licence Term

Following an RFI request the applicant has confirmed by correspondence dated 19th of April 2024 that a licence term of 24 months is required in order to undertake the surveys. Considering the programming of the survey activities around plant availability and suitable weather windows, I have no objection to the granting of a licence of up to 24 months in duration to ensure that the works are safely completed within the term of any licence issued.

Licence Map

The applicant submitted a map entitled "Licence Map Ref 230018" dated 17/11/2023 and shapefiles for the application area. This map and the shapefiles were used as the basis for MARA to draft "**Maritime Usage Licence Map LIC230018**" Dated: 18/06/2024 Drg. No: LIC230018-001 which should be attached to any licence issued. It should be noted that the applicant calculated the MUL Area to be 3,211ha in their application. Having reviewed the submitted shapefile and maps, MARA is satisfied that the correct MUL Area is 3,209.5ha and this figure has been used in the official MUL Map.

Assessment & Conclusion

If completed as proposed and in accordance with the conditions below, in my opinion, the works proposed will not have significant adverse impacts on the public use of, access to and enjoyment of the maritime area, to navigation or to sea fishing or aquaculture. The works are aligned with Telecommunications Policy 1 of the NMPF.

Recommendation

I have no objection to the granting of a Maritime Usage Licence under Section 119 of the MAP Act for this application subject to the following general and specific conditions:-

General Conditions

1. The Holder shall use that part of the Maritime Area labelled Area A and shown outlined red on the attached Drawing titled: "**Maritime Usage Licence Map LIC230018**" Dated: 18/06/2024 Drg. No: LIC230018-001 the subject matter of this licence, for the purposes as outlined in the application except as may otherwise be required in order to comply with the following conditions.

Reason: In the interest of clarity.

2. The Holder shall notify the Grantor 14 days prior to the commencement of the Permitted Maritime Usage or any subsequent part or phase of the Permitted Maritime Usage. This notification shall include an up to date Programme of Works for the completion of the Permitted Maritime Usage.

Reason: To ensure the orderly undertaking of the proposed maritime usage.

3. The licence shall be for a duration of 24 months from the Commencement Date.

Reason: To ensure the orderly administration of licenced usages in the maritime area.

4. The Holder shall ensure that contractors, and their subcontractors, are furnished with a copy of this licence and made aware of all project specific requirements.

Reason: In the interest of orderly administration of the maritime area.

Specific Conditions

5. Prior to the commencement of the Permitted Maritime Usage the Holder shall consult and comply with the requirements of the Underwater Archaeology Unit of the Department of Housing Local Government and Heritage. National Monuments Service, G37, Custom House, Custom House Quay, Dublin 1, D01 W6X0.
Reason: To ensure the continued preservation of objects of archaeological interest.
6. Prior to the commencement of the Permitted Maritime Usage the Holder shall, through consultation and agreement with the Department of Transport, Marine Survey Office and Commissioners of Irish Lights, arrange for the publication of a Marine Notice through the Maritime Safety Policy Division. Navtext and radio broadcast warnings frequency to be agreed with the Irish Coast Guard.
Reason: In the interest of navigational safety.
7. On completion of the Permitted Maritime Usage, the Holder shall submit to MARA a statement from a suitably qualified Chartered Engineer confirming that works are completed in accordance with the documents submitted and the Maritime Area has been restored to its natural condition.
Reason: In the interest of orderly administration of the maritime area.
8. During the course of the intertidal trial pit and bar probe operations the Holder shall ensure that existing public access arrangements are maintained, where possible, and all necessary precautions are put in place to safeguard the public and other legitimate users in accordance with relevant Health and Safety Legislation.
Reason: To ensure the orderly undertaking of the Permitted Maritime Usage.
9. The Holder shall not damage or interfere with any third party's property, infrastructure or fishing gear while conducting the Permitted Maritime Usage.
Reason: To ensure the protection of existing subsea infrastructure.

[Redacted Signature]

[Redacted Name] C.Eng. M.E.I.
Senior Executive Marine Advisor