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Re: MUL230024- Deep Sea Fibre Networks Ltd.

Dear Sir or Madam

Regarding the above Marine Usage Licence (MUL) there are a number of pertinent issues with this application.

Works Methodology

In the Works Methodology it is stated that deep water Multi-beam Echosounders (MBES) will be used from 1500m into deeper water but the datasheets on some such equipment states it can be used in 50m water depth. So a larger area of operation for this equipment may occur. The deeper water MBES systems uses lower frequencies in the hearing range of a larger range of marine mammals and much higher source levels and have been implicated as the possible cause of a stranding by Southall et al (2013).

With regards to the parametric sub-bottom profiler (SBP) the quoted reference Hartley Anderson (2020) states *“There is greater uncertainty in the potential for effects from parametric SBPs”*

Page 27 suggests using table values in Table 4 for parametric SBPs and elsewhere throughout the documents should match that in the reference example Hartley Anderson (2020) page 131 shown below:

Sub-bottom profiling

Source	Generation mechanism	Waveform (broad category)	Range of operational frequencies*	Typical pulse width (ms)	Typical source level ($L_{p,pk}$ dB re 1 μ Pa at 1m)	Typical beam width (degrees)
Sparker	Electrostatic discharge	Pulsed	Broadband, 100 Hz - 5 kHz (200 Hz - 3 kHz)	0.5 - 5.0	215 - 225	Approximately omnidirectional
Boomer	Accelerated water mass	Pulsed	Broadband, 100 Hz - 15 kHz (200 Hz - 8 kHz)	0.5 - 1.0	205 - 215	~75
Pinger	Piezoelectric transducer	Periodic	2 kHz - 15 kHz	0.5 - 3	210 - 220	30 - 55
Chirper	Piezoelectric transducer	Periodic	500 Hz - 22 kHz	5 - 40	185 - 215	36 - 80
Parametric	Piezoelectric transducer	Periodic	Primary: 15 kHz - 120 kHz Secondary: 1 kHz - 29 kHz	1 - 5	Primary: 230 - 250 Secondary: 200 - 210	<5

Page 28 Cone penetration Testing (CPT) to drilling sound levels in section 4.30 and use of drilling sound levels is inappropriate. Table 7 indicating a 28 Hz frequency and source levels for drilling and seems unlikely to match that of CPT.

Natura Impact Statement (NIS)

Deepwater coral SACs are not considered in the NIS and therefore the assessment is not complete. The route passes close to the Hovland Mound SAC and Belgica Mound SAC and these and others require consideration and without which the application cannot be considered.

Risk Assessment for Annex IV species

Dwarf sperm whale (*Kogia sima*) (Levesque et al, 2023), Bowhead Whale (*Balaena mysticetus Linnaeus*) (Whooley & Berrow 2019) and Blainville's Beaked Whale (*Mesoplodon densirostris Blainville*) (Richardson et al, 2018) should be added to the cetacean list as they have been recorded in Irish waters (references supplied).

Page 9 states *"The survey activity which poses the greatest threat to cetacean species is the underwater noise levels produced by the survey equipment. However, these levels have been kept within an acceptable range as described by (Southall et al., 2019)."* Southall et al (2019) does not define an *"acceptable range"* and the risk assessment needs to define what they mean by this. Is it Permanent Threshold Shift (PTS) or TTS (Temporary Threshold Shift) or Behaviour disturbance?

Page 10 *"The mitigation measures proposed for the protection of cetacean species in proximity of the proposed survey works are as follows: "Having an ecologist/MMO on site during the marine works. All works will be carried out in compliance with the Guidance to Manage the Risk to Marine Mammals from Manmade Sound Sources in Irish Waters and as previously stated, the levels of noise produced from the survey works will be kept within an acceptable range as described by (Southall et al., 2019) and the vessel will travel at speed at which cetacean species will be able to deviate course and move away with ease and under no pressure from the survey vessel."*

What speed limit will be applied? Survey work usually necessitates slow speed of the vessel but for transit to and from port will speed restrictions apply if cetaceans are encountered and how? This should be defined.

Having an ecologist/MMO for marine works maybe insufficient to comply with DAHG (2014) guidelines which state a qualified MMO with 6 weeks marine mammal experience is required and *"A sufficient number of MMO personnel must be assigned to ensure that the role is performed effectively. Avoidance of observer fatigue is essential "*. Therefore suggesting a single individual should not be stated at this stage.

Typically operations offshore run 24 hours a day and therefore consideration for mitigation should match this requirement. The DAHG (2014) guidelines present three scenarios, one for drilling (a low risk activity, a second for a high resolution survey similar to this one in a bay with low importance for cetaceans and a third scenario for a high resolution survey in a bay with key ecological functions for a discrete population. As this survey is going through an SAC for harbour seals (Galway Bay Complex SAC, NPWS (2013)) and the Porcupine Seabight and Bank IMMA (Important Marine Mammal Area) as designated by IUCN (IUCN-MMPATF, 2024) then it should be considered the survey is passing through areas which performs key ecological functions for harbour seal (*Phoca vitulina*), Blue whale

(*Balaenoptera musculus*), Fin whale (*Balaenoptera physalus*), Sei whale (*Balaenoptera borealis*), Sperm whale (*Physeter macrocephalus*) Long-finned pilot whale (*Globicephala melas*), Common bottlenose dolphin (*Tursiops truncatus*) and Common Dolphin (*Delphinus delphis*). For further information on IMMAs in Irish waters see the IMMA atlas <https://www.marinemammalhabitat.org/imma-eatlas/>.

Given that the sound sources in this given scenario in the guidelines (DAHG, 2014) are higher frequency (with higher attenuation) and lower source level than that in the proposed survey, it would seem appropriate to at least apply suggested mitigation for this scenario which is as follows:

“in light of the particular sensitivity of this location a full exclusion will operate around the vessel conducting the survey. MMOs will remain on permanent watch and a full shut-down will occur if dolphins enter a specified exclusion zone [this could be precautionary or based on case-specific propagation and attenuation data].”

Given that IMMAs represent the only identification of ecologically sensitive areas for Annex IV species in Ireland then it would seem prudent to apply 24 hour mitigation with a shutdown based on determined PTS levels and in the absence of sound modeling an exclusion zone that will comfortably encompass the PTS zone. As the survey is to operate in areas where deep diving species are found there is a need for caution given the large increase in strandings of deep diving species in Irish waters in recent years. As such species spend considerable time underwater then an ability to detect such species especially underneath the vessel where sound levels are highest is critical. As such Passive Acoustic Monitoring (PAM) is an obvious solution.

Screening for AA document

There is no consideration of offshore deep water coral SACs in this document, similar to the NIS and many of these now include harbor porpoise (*Phocoena phocoena*) and bottlenose dolphin as annex II species (for example the Belgica Mound SAC which is close to the survey route (NPWS 2025). These SACs are included in figure 30 page 48 but are not listed in the document.

Figures 33 and 34 need updating to show all SACs with harbour porpoise or bottlenose dolphins newly designated as Qualifying Interests.

This is a brief assessment of this application.

Yours sincerely



References

DAHG (2014) Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters. Dept. of Arts Heritage and Gaeltacht.

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IUCN-MMPATF (2024) Porcupine Seabight and Bank IMMA Factsheet. IUCN Joint SSC/WCPA Marine Mammal Protected Areas Task Force, 2024.

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Whooley, P. & Berrow, S. (2019) Bowhead Whale (*Balaena mysticetus* Linnaeus), a cetacean species new to Irish waters. *Irish Naturalists Journal*. 36. 169-172.