



## The acquisition applies to

This acquisition request concerns the rental of an ice-going ship to carry out a MAREANO research-cruise in 2021 in the Barents Sea north of Svalbard with a duration of 4-6 weeks, preferably in the period between August-October. The start and end of the cruise will be in Tromsø, Norway.

The MAREANO voyage aims to map the geological, biological and chemical environment of the seabed to generate knowledge for use in national management plans for Norwegian marine areas according to current identified mapping needs. Knowledge from the MAREANO project is continuously being published, including at [www.mareano.no](http://www.mareano.no).

The MAREANO program is interdisciplinary and cross-institutional, and the survey is carried out in collaboration with the Norwegian Mapping Authority (Kartverket), the Norwegian Geological Survey (NGU) and the Institute of Marine Research (IMR). The MAREANO program is led by a cross-institutional program group, while the steering group is made up of five government ministries.

The mapping of geological, biological and chemical seafloor environments is carried out in areas where the MAREANO program has already acquired high-resolution depth maps through the Mapping Authority. Geological, biological and chemical mapping is carried out using several types of tools such as bottom grabs, multicore samplers, beam trawls, epibenthic sleds, towed HD video footage of the seabed, as well as bottom penetrating sonar and CTDs/water collectors.

See the tender specifications in Merccell for further information.

## SPECIFICATION

The specification describes the requirements for the product. These are also known as technical specifications.

The Contracting Authority has specified requirements for the goods and/or services to be procured. The requirements specified are minimum requirements that must be fulfilled. If a requirement is not fulfilled, the rejection provisions in the Public Procurement Regulations will apply.

The specification is set out in the tender specifications in Merccell. In Merccell the term "requirement" is used for the specification / technical specification.



| Nr        | <b>Specification - Provider must meet the following requirements:</b><br>Requirements for vessels are documented in the form of written statements, technical documentation and drawings (GA in A4 format) for vessels and equipment. |   |
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| <b>1.</b> | <b>General characteristics</b>  |   |
| 1.1.      | Certificates  | The vessel must have all certificates valid for the vessel and equipment including radio equipment for areas A1 to A4 where the vessel will operate. The construction and certification/classification for operating in the high seas and waters around Svalbard.   |
| 1.2.      | Operation in ice  | The vessel must be able to operate in Arctic waters during summer/autumn with old ice inclusions or light ice conditions. Please describe capability and specify ICE-class or Polar Code Certificate.   |
| 1.3.      | Cruising speed  | The vessel must be capable of cruising in open sea at 10 knots or more.   |
| 1.4.      | Endurance   | The vessel must be able to operate continuously on a mission for at least 42 days.  |
| 1.5.      | Availability  | The time period and length of the voyage must be a minimum of 4 consecutive weeks (including mob / demob) in the period between 1st August - 15th October 2021, with an option for 2 extra weeks. A total of 6 consecutive weeks. Available periods must be stated. |

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| <b>2.</b> | <b>Indoor workspace and storage</b> |  |
| 2.1.      | Video rig workspace                 | <p>The vessel must have the following workspace for video acquisition, indoor or optional, space for a video-operation container:</p> <ul style="list-style-type: none"><li>- Pilot room for the towed video rig, minimum 10 m<sup>2</sup> and good heat and ventilation. The pilot room must have winch control and video feed, and the winch is controlled by the vessel crew.</li><li>- Video analysis space for minimum 4 people with good chairs / worksurfaces, two large screens (50 inches), a video rack (60x60x100cm), control unit (60x40cm) and PC / keyboards. Equipment must be able to be arranged so that there is an unobstructed view from all chairs to the screens.</li><li>- The ability to connect to information about the vessel's position, timestamp, station patches, depth etc.</li><li>- Good communication abilities between scientific personnel in the video room and winch operator during video rig operation.</li></ul> |



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| 2.2. | Office space     | The vessel must have an office space with network, printer and internet, including tables for at least 2 people who have brought their own computers   |
| 2.3. | Laboratory space | <p>The vessel must have lab space or space and facilities for two 20' lab containers.</p> <ul style="list-style-type: none"><li>- A wet lab and a dry lab (with heat) for handling collected material (sediments and biology), which are in close proximity to each other (or combined) and are close to the area where the gear comes on deck (especially the multi-corer).</li><li>- Access to bench space, power, networks and position information screens</li><li>- The lab area must be large enough for workplaces for geology, biology and chemistry tests, for a total of 5 people's workplaces. Lab space can be divided into several rooms.</li></ul> |
| 2.4. | Indoor storage   | <p>The vessel must have indoor storage space for equipment or space for two 20' containers including workspace for opening doors and handling equipment.</p> <p>Minimum area: approx. 50 m<sup>2</sup> (100 cubic meters) to approx. 20 Euro pallets</p>   |
| 2.5. | Cold Storage     | <p>The vessel must have cold storage space for samples in a cold room and freezer compartment</p> <ul style="list-style-type: none"><li>- Volume freezer space: 2 m<sup>3</sup></li><li>- Volume at outside temperature: 2 m<sup>3</sup></li><li>- Area of inside space: minimum 4 m<sup>2</sup></li></ul>   |

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| <b>3.</b> | <b>Deck equipment</b> |  |
| 3.1.      | Trawl deck            | The vessel must have a trawl deck for hauling and setting of the epibenthic sled and beamtrawl.  |
| 3.2.      | Winch - wire          | <p>The vessel must have winches and wire for sampling down to a depth of approx. 3500 m. Please specify (length and dimension).</p> <ul style="list-style-type: none"><li>- Winches with wire to attach sampling equipment (grab, box core, multi-core, mini-trawl and sled) with capacity for loading from sea and lifting from the bottom.</li><li>- The length of the trawl (small beam trawl)/ sled wire must be sufficient length. We assume that a wire dimension of 14 mm diameter will be sufficient, but requesting information on what the vessel can offer.</li><li>- Winch for launching grabs, multicorer and gravity corer from the side amidships.</li><li>- Lift height minimum 3.5 m over working deck.</li></ul> |



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| 3.3.  | Winch - fiber        | <p>The vessel must have a fiber optic cable winch, with conductivity for high voltage current and the possibility of fast fine regulation of cable length. Minimum specification cable 1 x FO 9/125 (single mode fiber) / 2 x EL 1.5 mm<sup>2</sup> 1000V / 2 KVA (electric conductors).</p> <p>Alternatively, the ship must be able to hydraulically attach IMR's own mobile fiber optic winches to a suitable crane with a lift height of at least 3 m and approx. 1.5 tonns lifting capacity, launched from amidships or in a moon pool.</p>              |
| 3.4.  | Crane capacity       | <p>Work cranes must be able to lift containers at the quay. Please specify.</p>  |
| 3.5.  | Deck storage space   | <p>The vessel must have available space and attachments for a minimum of two 10' containers, with the possibility of opening the doors unobstructed and the possibility of power connection.</p> <p>If video room (cf 2.1), indoor lab (cf. 2.3) nor storage space (cf. 2.4) are offered, additional space and attachments for minimum six 20' containers are needed.</p>  |
| 3.6.  | Freeboard amidships  | <p>The vessel must have a freeboard of less than 4m in height (from the waterline to the deck) for loading and unloading of grabs / samplers on the side of the stern deck.</p>  |
| 3.7.  | Deck workspace       | <p>The vessel must have workspace on deck including:</p> <ul style="list-style-type: none"><li>- An area of deck for handling bottom sampling equipment and collected samples: bottom grab, trawl, sled, minimum approx. 25 m<sup>2</sup>.</li><li>- An area for flushing / sieving / rinsing / sorting of bottom samples, approx. 10 m<sup>2</sup>.</li><li>- A reliable seawater pump (a separate system from the fire pump is advantageous).</li><li>- Good drainage for flushing of sediment / sample residue after processing bottom samples.</li></ul> |
| 3.8.  | Hangar/ Covered area | <p>The vessel must have a dry, covered area (possibly a hangar) for the maintenance of a video rig, or space for a service container (20') in the vicinity of working deck for the video equipment (cf. 3.3)</p>   |
| 3.9.  | Equipment launching  | <p>The vessel must be capable of launching various equipment such as the video rig, grabs and the multi-corer, amidships or through a moon pool.</p>   |
| 3.10. | Electricity          | <p>The vessel must have an outlet of 230V minimum 16A.</p>   |
| 3.11. | Seawater pump        | <p>The vessel must have a seawater pump for flushing the deck.</p>   |
| 3.12. | Fresh water          | <p>The vessel must have fresh water for flushing cameras and sensors.</p>  |



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| <b>4.</b> | <b>Navigation and communication</b> |  |
| 4.1.      | Positioning                         | The vessel must have / be able to provide positioning and stabilization of the vessel<br>- Dynamic positioning.<br>- Underwater positioning (e.g. HiPAP or similar).<br>- Underwater positioning for towed platforms (e.g. tilted HiPAP).<br>- A transponder option for sampling equipment, e.g. grab, multicore, if the system is different from Kongsberg HiPAP. The client has 5 transponders, including 3 MST342 and 2 C-node (the new upgraded type). |
| 4.2.      | Communication                       | The vessel must have:<br>- Network for internal communication<br>- Intercom for communication between bridge, crew and scientific key personnel<br>- The vessel must be equipped with satellite communication.   |
| 4.3.      | Olex electronic chart system        | The vessel must have Olex electronic chart system or equivalent. If a system other than Olex, there will be a need to connect GPS signal to Mareano's Olex computer and network access to broadcast Olex data. Please specify navigation system.   |

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| <b>5.</b> | <b>Measuring Equipment</b> |   |
| 5.1.      | SBP                        | The vessel must have a sediment sonar (sub-bottom profiler) that can be used down to 3500 m. The sediment sonar must be roll, pitch and yaw stabilized, calibrated for position and with a frequency source within 2.5 kHz to 20 kHz. Please specify. |

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| <b>6.</b> | <b>Facilities on board</b> |  |
| 6.1.      | Capacity                   | The vessel must have a staff capacity of the client's personnel, a minimum of 16 persons, and have its own crew sufficient to operate 24 hours a continuous operation of the vessel, the equipment to be used, cranes, winches, and catering for a two-shift scheme. |
| 6.2.      | Cabins                     | The vessel must have cabins for scientific staff, a minimum of 10 cabins, of which there should be a minimum of 4 single-person cabins. Confirm the number of cabins that can be used by the Client.   |
| 6.3.      | Living quarters            | The vessel must have at least one mess and common living room.   |
| 6.4.      | Food service               | Food service information must be provided, including the number of meals per 24-hour period and how many of these are hot.   |



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| 6.5. | Rescue equipment                 | The vessel must have the necessary rescue equipment, checked and approved, including rescue suits for all personnel from the Client.  |
| 6.6. | Wardrobe/<br>Changing facilities | The vessel must have wardrobe space with drying facilities (for overalls, gloves etc)   |
| 6.7. | Disease reducing measures        | <p>The vessel must have procedures and equipment for reducing risk of spreading contagious diseases such as Covid-19 among personnel, including cleaning procedures, and good wardrobe space, toilet facilities, and living quarters.</p> <p>The vessel must have extra cabins in case the need for isolating sick personnel, if single-person cabins cannot be offered to all.</p> <p>Confirm procedures and the number of available cabins.</p> |

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| <b>7.</b> | <b>Professional requirements for crew</b> |   |
| 7.1.      | Language                                  | Captain and crew of Norwegian registered (NOR) vessels must be able to master the Norwegian language, for foreign registered vessels and NIS registered vessels they must be able to communicate in English or a Scandinavian language, this also applies to all safety instructions and safety equipment and posters. Provide information on language. |