

RFT 8768547 LA3798C - UL - CFT for the Supply and Delivery of a Coastal and Offshore Autonomous Surface Vehicle (ASV) for University of Limerick (UL)

Q1	Could the University please clarify whether the moonpool is a mandatory requirement and, if so, its intended operational purpose, including the equipment or sensors it is expected to deploy or support? Please confirm whether a moonpool is an essential requirement for compliance, or whether alternative solutions that achieve the intended operational outcome would be acceptable.
A1	The integrated moonpool is a mandatory requirement. Its intended purpose is the protected, through-hull deployment, operation and recovery of subsea instrumentation, in particular the launch, operation and recovery of a small ROV, drop camera systems, survey sensors such as multibeam and sub-bottom profiler transducers, USBL/acoustic positioning and water-column instruments. In accordance with the RFT, a tenderer may propose an alternative arrangement provided it meets or exceeds this operational capability; the onus is on the tenderer to demonstrate equivalence.
Q2	Operational / survey water depth: Please confirm the anticipated minimum and maximum water depths in which the USV will be required to conduct hydrographic and geophysical survey operations.
A2	Survey operations are anticipated across coastal and offshore water depths typically in the range of approximately 5 m to 300 m. Payload/sensor selection remains a matter for the Contracting Authority and does not form part of this competition.
Q3	Vessel dimensions: The specification defines a minimum vessel length of 6.5 m LOA. Please confirm whether there is also a maximum permitted vessel length, or any other dimensional limitations that tenderers should take into account.
A3	The specification sets a minimum of 6.5 m length overall and does not impose a maximum length. No further dimensional limitations to the vessel apply, save that the proposed vessel must be suitable for sustained coastal and offshore operation.
Q4	Draught: Is there a maximum permitted vessel draught? The specification asks tenderers to state draught and indicates shallow-draught operation is desirable but does not define a maximum.
A4	The specification does not define a maximum draught. Tenderers are required to state the draught of their proposed vessel (A2).
Q5	Sea State 4: Please clarify whether "capable of operations in Sea State 4" means full survey/autonomous operations in Sea State 4, or safe navigation/transit/survivability.
A5	Capable of operations in Sea State 4" means the vessel must be able to safely navigate and transit, and to conduct autonomous and remotely-piloted operations in Sea State 4 with stable, precise track-keeping and heading/speed control suitable for survey line-following. The Contracting Authority expects to be able to deploy and recover instrumentation from the vessel in Sea State 4
Q6	Range: Please confirm the payload, environmental and sea-state assumptions to be used when demonstrating/calculating the minimum 2,000 km range at 5 knots.
A6	The requirement is as stated as minimum range of 2,000 km at 5 knots. The specification does not impose fixed payload, environmental or sea-state assumptions for this figure. Tenderers MUST state the range, endurance and fuel capacity of the proposed vessel,

RFT 8768547 LA3798C - UL - CFT for the Supply and Delivery of a Coastal and Offshore Autonomous Surface Vehicle (ASV) for University of Limerick (UL)

	together with the fuel type(s) supported, and the conditions (including payload and sea state) under which the stated range is achieved.
Q7	Fuel capacity: Please confirm whether 1,500 liters is a mandatory minimum physical fuel capacity, or whether a vessel with a smaller capacity that nevertheless demonstrates $\geq 2,000$ km range at 5 knots would be compliant.
A7	A minimum physical fuel capacity of 1,500 litres is a requirement. Tenderers MUST state their fuel capacity and the fuel type(s).
Q8	Classification: The specification refers specifically to DNV craft/vessel class certification. Please confirm whether an equivalent classification from another recognized IACS classification society, such as Bureau Veritas (BV), would be considered acceptable, provided an equivalent level of vessel certification can be demonstrated.
A8	Yes. Classification by DNV or by an equivalent classification society that is a member of the International Association of Classification Societies (IACS) and an authorised Recognised Organisation is acceptable, provided the tenderer demonstrates an equivalent level of vessel class certification. Where the specification refers to the DNV AROS notation, an equivalent autonomous/remotely-operated vessel class notation from another recognised society (or an equivalent demonstrable safety case) is likewise acceptable. The onus is on the tenderer to demonstrate equivalence of both the class certification and the autonomous-operations notation.
Q9	FAT/SAT: Will UL provide quantitative FAT and Sea Acceptance Test acceptance criteria, or are tenderers expected to propose the test programme and performance thresholds?
A9	The Factory Acceptance Test (FAT) and Sea Acceptance Test (SAT) programme will be developed and agreed jointly between UL and the successful tenderer following award, based on the requirements set out in Appendix 1. Tenderers should, as part of their submission, outline their proposed approach to FAT and SAT, including indicative test methods and the performance parameters they would demonstrate.
Q10	With reference to requirement A10 <i>“The vessel MUST include a Launch and Recovery System (LARS) / towing system suitable for towed-body operations capable of towing a payload of up to approximately 30 kg. State type, rated line pull, drum / line capacity, towed payload and control interface.”</i> – Is there a specific payload in mind for the LARS / towing system?
A10	No specific payload is mandated. The LARS / towing system is required to be suitable for deploying, towing and recovering a towed body (for example a towed sensor such as a side-scan sonar or magnetometer, or a small tethered vehicle/platform), with the final payload to be confirmed by the Contracting Authority. Tenderers should provide a system suitable for this envelope and state its rated line pull, drum / line capacity, towed-payload capacity and control interface.
Q11	With reference to requirement A13 <i>“The vessel SHOULD be fitted with a secondary, independent GNSS / INS navigation and motion-reference system providing positioning and heading redundancy to the primary system, with automatic or manual failover. State make</i>

RFT 8768547 LA3798C - UL - CFT for the Supply and Delivery of a Coastal and Offshore Autonomous Surface Vehicle (ASV) for University of Limerick (UL)

	<i>/ model, positioning mode (e.g. RTK), heading, heave, pitch and roll output and update rate, and the degree of independence from the primary unit"</i> <i>Is this redundancy in the sensors, or the whole system?</i>
A11	As set out in requirement A13, the requirement is for a secondary, independent GNSS / INS navigation and motion-reference system providing positioning and heading redundancy to the primary navigation system. The redundancy applies to the navigation/positioning solution as a whole.
Q12	<i>With reference to requirements</i> <i>A20 "The vessel MUST be delivered certified, or capable of being certified, to DNV (craft / vessel class certification, obtained by the builder), and the system MUST support the owner in obtaining the DNV (Autonomous and Remotely Operated Ship) class notation (operations certification, obtained by the owner with builder support).</i> <i>State the certification status of the proposed vessel, the scope of certification delivered by the builder, and the support provided to the owner in obtaining the AROS notation. A brief overview of how full certification pathway is achieved would be beneficial."</i> <i>And A21 "The vessel MUST incorporate fault-tolerant redundancy in its critical systems (propulsion, power, datalinks, control and positioning) and appropriate safety systems (e.g. emergency stop, fire suppression, central alert management, object detection and autonomous emergency braking). State the redundancy and safety provisions."</i> <i>DNV compliance includes the Remote Operating Centre, could you confirm if there is a requirement to provide the ROC along with the USV.</i>
A12	As required at A15, the system MUST be supplied with a Remote Operating Centre / control station, including remote controller(s) and the manufacturer's autonomy and mission-planning software, as part of the supply.