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RCloud Tasking Form – Part B: Statement of Requirement (SoR)

Title of Requirement	HECLA(2) Glider Support Activities and Studies
Requisition No.	RQ0000010289
SoR Version	**1.0**

1.	**Statement of Requirements**
1.1	**Summary and Background Information**
	This Statement of Requirement specifies the requirements for the conduct of glider activities, and studies, in support of NAVY DEV's Project HECLA over the financial year ending in March 31st 2023. It is up to a 1 year long programme and will continue to support the RN's understanding of the capability of gliders. This programme will support the deployment of RN and commercial gliders to: a) provide oceanographic datasets in near-real time and b) to experiment with passive acoustic capabilities, ideally providing near-real time data from hull mounted single hydrophones and towed arrays. The first area of requirement is for the Supplier/Supplier's team to conduct and support the mission planning, glider preparation, glider transport, the communications, command and control of gliders during a variety of RN glider missions and the maintenance of RN gliders to ensure availability for these missions. The second area of requirement is for the Supplier/Supplier's team to work with Dstl and other MoD stakeholders, such as Specialist Geospatial Centres (SGCs) including JOMOC (Joint Operational Meteorological and Oceanography Centre), UKHO (UK Hydrographic Office), UKMO (UK Meteorological Office) and for glider oceanographic data processing/analysis, glider data management, glider data transfer and data assimilation into models and products and to ensure that the models/products are appropriate for integrating into existing and future RN environmental information systems. The suppliers shall include delivery of the data to the BODC (British Oceanographic Data Centre) who will support a secure FTP download site. The third area of work will be the experimentation and evaluation of in-situ acoustic data available from glider systems. Both simple hull mounted acoustic data from a single hydrophone shall be assessed (based around the acoustic sensor capability being procured for the RN gliders) and acoustic towed array on a system of choice. In all cases the aspiration is to provide near-real time acoustic data (in a suitable form) to the end-user (as defined in the second area of requirement).

	The programme of work will aim for main deployments as part of the NATO REPMUS (Robotic Experimentation and Prototyping, Manned and Unmanned Systems) trial in September 2022 (Dstl will assist the team managing the logistics and objectives of the trial). In the event that REPMUS22 cannot be supported, the supplier will offer a similar deployment in local UK waters with the same objectives and same cost. Additionally, the supplier is requested to offer additional options to perform other trials and studies which will be considered as part of the programmes. The RN are keen to exploit the capabilities of real time, in-situ oceanographic and acoustic data offered by underwater gliders. Currently the RN own 3 Slocum gliders: 1 x shallow dive and 2 x deep dive gliders. Project HECLA aims to demonstrate how the collection of oceanographic data using autonomous underwater gliders will provide enhanced understanding of the underwater battlespace. This project will test, validate and mature the RN's use of underwater gliders, through a programme up to March 2023, of relevant glider operations and COTS towed array gliders. The proposed contract will provide key Industry/Academia support to the RN's Project HECLA glider operations and key information to enable the effective exploitation of the environmental information collected during these operations and provide guidance the RN's Future Military Gathering aspirations.
1.2	**Requirement**
	The requirement for this programme of work is to: a) develop and demonstrate continued collection and exploitation of glider oceanographic data and b) experiment with, and derisk, ambient noise sensors on gliders, including methods for the exploitation of the data in near-real time. The projects aim is for a main deployment at REPMUS22. In the event that REPMUS22 is not supportable, equivalent local UK trial will be performed in a suitable timeframe for report by end of March 2023. Additional deployments and studies are requested as options. Over the period from 1st April 2022 to 31st March 2023, the requirement is for: • Support RN Glider operations in FY 22/23 with pilotage, trial management, glider maintenance, glider data management and servicing; • The particular emphasis of HECLA2 will be in the de-risking, development, experimentation and exploitation of underwater gliders for Ambient Noise (AN) data collection (single hull mounted hydrophone), using a planned RN glider upgrade for AN on the RN shallow dive version (RN544) and a non-RN glider (commercial system) fitted with a Towed Array (TA); • Continued collection of oceanographic data sets (standard sensors on the all gliders); • Near-real time delivery of datasets to MoD establishments (including, but not limited to UKMO, UKHO and JOMOC) via BODC secure FPT site.

	The core element of the demonstration phase will aim to support the NATO REPMUS22 (Robotic Experimentation and Prototyping, Maritime Unmanned System) trial in September 22. Additional glider deployments, such as NATO DYNAMIC MESSENGER22 and in the North Atlantic will be considered as options if affordable, as well as data exploitation studies. The core programme of work will be: C.1) Support RN Glider operations in FY 22/23 with pilotage, trials management, data management, glider maintenance and servicing for RN shallow dive glider (hull mounted Ambient Noise (AN) sensor fitted, RN544), including purchase of new battery pack and AN sensor fitting; C.2) To test, validate and mature AN GEOINT data collection using RN shallow dive Underwater Glider (RN544) with hull mounted AN sensors, and enable data exploitation. (Note that the supplier shall assume that the hydrophone is fitted and working); C.3)To test, validate and mature acoustic Towed Array AN GEOINT data collection using commercial Underwater Glider(s); C.4) Participation in Anti-Submarine Warfare (ASW) vignette of REPMUS 22 (Sep 22) with RN glider (RN544) for both oceanographic and ambient noise data collection and dissemination. The supplier should plan for 2 weeks of planning conferences and a 4 week deployment (between September 5th and September 30th), with deployment vessels being available through the Portuguese Navy. In the event that REPMUS22 is not supportable, the supplier shall perform an equivalent local UK based trial in a timeframe suitable to be reported by the end of March 2023; C.5) Participation in Anti-Submarine Warfare (ASW) vignette of REPMUS 22 (Sep 22) with COTS TA glider for both oceanographic and ambient noise data collection and dissemination. The supplier should plan for 2 weeks of planning conferences and a 4 week deployment (between September 5th and September 30th), with deployment vessels being available through the Portuguese Navy. In the event that REPMUS22 is not supportable, the supplier shall perform an equivalent local UK based trial in a timeframe suitable to be reported by the end of March 2023.
1.3	**Options or follow on work**
	Please provide separate firm prices for each of the following options: O.1) Participation in DYNAMIC MESSENGER 22 (Sep 22) with RN glider RN554, utilising the oceanographic sensor and AN sensor (assumed fitted and useable). This is a follow-on trial from REPMUS22 (and has the dependency of affordability and battery usage). The supplier should plan for 2 weeks of planning conferences and a 2 week deployment (between September 20th and September 30th), with deployment vessels being available through the Portuguese Navy; O.2) Participation in DYNAMIC MESSENGER 22 (Sep / Oct 22) with COTS TA AN glider identified in core programme item C.3. This is a follow-on trial from REPMUS22 (and has the dependency of affordability and battery usage);

	O.3) Support other RN Glider operations in FY 22/23 with pilotage, glider maintenance and servicing for one RN deep dive glider (RN552), including purchase of new battery pack. Three deployment options will be costed covering: a) the North Atlantic with a potential location of the Iceland Faroes region (or closer to the UK) for up to 6 month deployment; the supplier will arrange launch and recovery from a UK based location; b) Up to a 2 month deployment either in the Northwest or Southwest approaches in support of RN activities. The supplier will arrange launch and recovery from a UK based location and; c) additional deployment of RN552 to REPMUS22, alongside the deployment of RN554 as defined in the core programme (C.4) and for parallel deployment for the option O.1 (DYNAMIC MESSENGER); O.4 Fix and preparation of RN glider RN553 (currently faulty), with the objective of it being available towards the end of the programme in case of loss/damage of the two main RN gliders being used in HECLA2; O.5 Demonstration of the transfer of the AN sensor capability between RN544 (extant capability) and RN552 and a short duration proving trial O.6 Perform analysis of the COTS TA AN glider data, with four optional objectives: a) defining the background AN field in the region of the trial, b) assessing the performance of beamforming for directional noise, c) cross-calibration of the acoustic data with RN AN glider (see O.7) and d) making the data available for Tactical decision tools; O.7 Perform analysis of the RN AN glider data, with optional three objectives: a) defining the background AN field in the region of the trial, b) cross-calibration of the acoustic data with COTS TA data (see O.6) and c) making the data available for Tactical decision tools O.8 Evaluate glider based ocean measurements towards an internal wave characterisation tool; O.9 Evaluate ocean and AN fluctuations and variability correlations with co-located oceanographic data measured from the glider(s); O.10 Evaluation of additional sensors that could be fitted to any of the gliders used in the project.
1.4	**Contract Management Activities**
	Monthly progress reports and quarterly progress meetings
1.5	**Health & Safety, Environmental, Social, Ethical, Regulatory or Legislative aspects of the requirement**

	N/A

[redacted]

1.6	Deliverables & Intellectual Property Rights (IPR)					
Ref.	**Title**	**Due by**	**Format**	**Expected classification (subject to change)**	**What information is required in the deliverable**	**IPR Condition**
P - 1	Start-up meeting and minutes	Contract start date + 10days	Soft copies: Minutes - MS Word format; Start-up meeting presentations	[redacted]	Soft copies of the minutes/presentations covering the start-up meeting and resulting actions. Email.	Default RCloud Agreement Terms and Conditions shall apply
P - 2	Monthly contract and technical progress reports/teleconference	Contract/Technical report 5 days before monthly contract and progress teleconference	A monthly contract and technical progress report by email and teleconference	[redacted]	Contract/Technical Report. Email.	Default RCloud Agreement Terms and Conditions shall apply
P - 3	Quarterly technical progress meetings	Minutes and presentation material to be supplied 10	Soft copies: Minutes - MS Word/powerpoint format;	[redacted]	In-person meetings at contractor site. Minutes and presentation material. Email	Default RCloud Agreement Terms and Conditions shall apply

		days after meeting				
W - 1	RN Glider operations and maintenance	End of February 2023	Soft copies: MS Word format;	[redacted]	Final Report on all RN glider activities (covering all core tasks). Technical report covering all RN glider activities. Email	Default RCloud Agreement Terms and Conditions shall apply
W - 2	RN Ambient Noise (AN) Glider	End of February 2023	Soft copies: MS Word format;	[redacted]	Technical Report on all RN AN glider activities (covering core task C.2 and C.4). Email	Default RCloud Agreement Terms and Conditions shall apply
W - 3	Commercial Towed Array Ambient Noise (TA AN) Glider	End of February 2023	Soft copies: MS Word format;	[redacted]	Technical Report on all Commercial TA AN glider activities (covering core task C.3 and C.5). Email	Default RCloud Agreement Terms and Conditions shall apply
W - 4	Delivery of all data collected to Dstl	End of February 2023	Tbd by supplier. Hard disk delivery is acceptable	[redacted]	Delivery of all data collected in a suitable format at the end of the project Digital datasets covering all data collected in standard format (agreed between Dstl and the supplier), plus data read instructions	Default RCloud Agreement Terms and Conditions shall apply
Options	The supplier shall define a suitable timeframe for			[redacted]		Default RCloud Agreement Terms and Conditions shall apply

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	delivery of the options programme					

1.7	**Deliverable Acceptance Criteria**
	As per Framework terms and conditions

2	**Evaluation Criteria**
2.1	Method Explanation
	The proposal shall demonstrate sufficient understanding of the requirement in order to provide confidence that the outputs are achievable. The proposal must achieve a Pass in each of the technical categories listed in the below table. The proposal must be affordable.
2.2	Technical Evaluation Criteria

Scoring Category	**Description**	**Pass/Fail**
C1 – Experience and use of underwater gliders in general and particularly the RN gliders	Evidence of the supplier's use/experience of RN's underwater gliders, covering a) maintenance and servicing, deployment and recovery and c) operating gliders in different types of environments.	P/F
C2 – Experience and use of ambient noise sensors from gliders. Both hull mounted and towed arrays	Evidence of the supplier use/experience in using ambient noise sensors in underwater gliders. Of particular importance are hull mounted hydrophones and towed arrays. This includes the management and exploitation (in near real time) of the data collected	P/F
C3 – Ability to manage and exploit data provided by gliders (both in near real time and post mission)	Evidence of the suppliers ability to manage, and quality control, all the data that is available from the gliders and allow access to users identified by Dstl.	P/F
C4 – Team Experience	Note that the authority is looking for a highly experienced team to perform this work across all the requirements. The supplier shall clearly identify the roles and responsibilities of the team, including any partners, and provide evidence of subject matter expertise across all the areas described in the requirement including: RN glider maintenance and servicing, operation of gliders within various types of operation, management and exploitation of glider data (oceanographic and acoustic) and experience of acoustic towed arrays on gliders. The team should identify previous experience of NATO REPMUS trials (if this trial can be supported)	P/F

	C5 – Project Plan	Quality of the plan - the supplier shall provide a detailed work breakdown structure, project plan, and schedule for meeting project requirements to time, cost and quality plus a clear stakeholder communications plan to be used throughout the project.	P/F	Each

category will be assessed as per the criteria below to determine pass/fail.

Has demonstrated inadequate experience or provided inadequate supporting evidence which gives no confidence of the Potential Tenderer's competence and an unacceptably high level of risk to the project	FAIL
Has demonstrated sufficient experience and provided adequate supporting evidence which gives confidence of the Potential Tenderer's competence and a moderate level of risk to the project.	PASS

2.3	Commercial Evaluation Criteria
	Please submit your full firm price breakdown for all costs to be incurred to fulfil this requirement, including: • What rates are being used for what role • Quantity of manpower hours per role • Any Materials costs • Any Facility costs • Any sub-contractor costs • Any travel and subsistence costs • Any other costs. Please note the MOD operates a policy of No Acceptable Price No Contract (NAPNOC). The placing of any contract will depend upon consideration of the proposal received and the Authority reserves the right, at its sole discretion, not to proceed to contract for any part or all of a contractors proposal. And if necessary, not to place any contract as a result.