

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

Title of Requirement	Kilchoman Redacted under FOIA Section 26 – Defence LCA compliant Tech Demonstrator
Requisition No.	RQ0000015224
SoR Version	1.0

1.	Statement of Requirements
1.1	Summary and Background Information
	This proposed task to deliver a JARBOT LCA Aligned Redacted under FOIA Section 26 – Defence TD to provide a pathway to maintaining the capability beyond the life of the current hardware platform and allow a flexible approach to deployment in future. Redacted under FOIA Section 26 – Defence Redacted under FOIA Section 26 —Defence This scope of the task will include • OpenCPI Capability Application - o Analyses data form the survey application to provide assurance to the user • OpenCPI survey Application - o Investigate and develop options to run Redacted under FOIA Section 26 —Defence survey applications in alignment with LCA (OpenCPI) on generic transceiver / processor cards. • Develop Data Models for exchange of information at all levels of the system • Hardware platform LCA Alignment Redacted under FOIA Section 26 —Defence
1.2	Requirement
	The aim of the activity is to break the association between a SW capability and the hardware platform that it runs on. This shall be done by dis-embodiment the capability from the extant hardware platform through the creation of a suite of portable modules using the OpenCPI framework. These modules shall be migrated stage-by-stage onto progressively more LCA compliant hardware platforms as support for them becomes available.

The four main system functions that shall be considered are:

- Capture
- o Digitising radio signals and convert them to an IQ stream for processing
- Scan
- o Quickly finding potential signals of interest
- Decode
- o Revealing the content of the signals identified
- Compute
- o Distilling the information content of interest and presenting it to a user

This development shall progress through multiple management phases to ensure a controlled approach to the activities. The four main technical themes that shall be progressed through the execution of these phases can be broadly defined as:

- COTS compute and SDR
- o Training and initial code-base development; no specific LCA alignment
- Extant platform
- o Focus on “gift-wrapping” existing code functions in OpenCPI worker shells
- o Partial SW LCA alignment; no HW LCA alignment
- MOTS digitising remoted head
- o Create OpenCPI SW modules running on a digitised RHD platform
- o Majority SW LCA alignment; partial HW LCA alignment, no OpenVPX
- LCA CEMA radio platform
 - Port OpenCPI SW modules onto an LCA aligned HW platform
 - o Majority SW & HW LCA alignment

Phase 0 (Feasibility):

In this phase the Supplier shall undertake OpenCPI training using a COTS compute node and SW-defined radio. At the end of this activity the foundations phase shall be fully defined and further refinement of the later phases of the project will be possible, allowing long lead time HW items to be purchased.

Phase 1 (Foundations & initial code base development):

This phase is split into two, with the first half defining the system requirements to allow a full project backlog to be detailed, and the second half starting the development of the coding environment ahead of the main development work.

To maintain control of the project, the early exploration into OpenCPI shall be conducted using commercially available platforms that currently support the use of OpenCPI. Although a limited number of platforms are available to run the full capability, there are well-supported COTS compute and SDR platforms that should be used as development environments for progressing the early phases of this activity.

Phase 2 (Extant platform):

This phase shall partially develop the OpenCPI SW aspects of the system whilst re-using the existing FPGA APPs; the HW at this stage need not be LCA aligned.

In this phase an OpenCPI worker library shall be developed to cover the compute functions and will be run on a COTS compute node with an OpenCPI BSP. The OpenCPI decode workers shall be created to interface to the scan & decode APPs; effectively acting as OpenCPI wrappers for these APPs whilst they run on the existing FPGA HW. An OpenCPI application runtime controller shall be created to provide interface and orchestration, whilst a remotely connected UI shall provide system tasking.

The scope of this phase is purposely limited to the OpenCPI SW work, and eliminates any complexity introduced from switching HW platforms.

Phase 3 (MOTS RHD):

This phase shall provide an LCA aligned OpenCPI SW capability, an LCA aligned digital RHD HW capability, but at this stage OpenVPX compatible form factors are not required.

The OpenCPI workers shall still operate from the COTS compute node.

The extant scan & decode APPs shall be merged with the OpenCPI workers to create objects that run on the MOTS platform OpenCPI BSP.

Once the SW has been ported onto the OpenCPI compatible demonstrator platform the missing decode engine shall be created and integrated into an OpenCPI worker.

The interface and orchestration of the OpenCPI workers shall be added to the application runtime controller.

The scope of this phase is purposely limited to the OpenCPI SW & HW work, and eliminates complexity from OpenVPX HW platform availability.

Phase 4 (LCA CEMA radio platform)

This phase shall provide an LCA aligned OpenCPI SW and HW capability.

	With the core OpenCPI capability developed, its portability shall be demonstrated by moving it onto an LCA aligned HW platform. RHDs and SDRs connected over an ML2B interface.
1.3	Options or follow on work
	. The Authority proposes to include a maximum Limit of Liability (LoL) of Redacted under FOIA Section 26 – Commercial for additional work to be provided under the contract, via a tasking mechanism for White Board Options. The scope of these White Board Options may include, but is not limited to: • Phase 5 (capability enhancements): This optional phase could demonstrate the deployment of the LCA aligned HW & SW aspects into a remotely deployable front-end, whilst keeping the C2, tasking, UI, and enterprise aspects local to the user. This optional step should take the demonstration work a step closer to the deployable scenario that it is intended to be applied to. It shall provide an opportunity to develop additional features and capabilities which arise from developments in the Users requirements or become evident during the previous 4 phases. Note: Dstl sets out to confirm that the above list is provided for reference, and as an example of the type of work that might be subject to additional tasking. At this stage Dstl sets out to confirm that these examples are not funded and Dstl does not offer a guarantee that any additional tasks may be placed. Where the Authority does identify a requirement, Dstl will request that the supplier provides a detailed proposal when each additional task arises and this will undergo technical and commercial review to ensure it is in scope with the aims of this requirement and offers value for money.
1.4	Contract Management Activities
	Bronze, to be managed locally by the Dstl project manager
1.5	Health & Safety, Environmental, Social, Ethical, Regulatory or Legislative aspects of the requirement
	N/A

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
D1	Kick Off Meeting	CA +2Wks	Meeting	NA	Redacted under FOIA Section 26 – Commercial	Work Packages, Technical approach, Milestone and delivery review.
D2	Monthly Progress Meetings:	Every month	Meeting – MS Teams or Face to Face as appropriate	N/A	Redacted under FOIA Section 26 – Commercial	Review and update of Work Packages, Technical approach, Milestone and delivery review.Dummy data with infrastructure in place
D3	Phase 0 Summary JARBOT Development Report	CA +3 months	Formal Report	N/A	Redacted under FOIA Section 26 – Commercial	Summary report detailing the OpenCPI implementation approach which has been

						developed and long lead time HW items ordered.	
D4	Phase 1 Summary JARBOT Development Report	CA +5 months	Formal Report	N/A	Redacted under FOIA Section 26 – Commercial	Summary report detailing the System Requirements definition and the initial code base development.	F to
D5	Phase 2 Summary JARBOT Development Report	CA +9 months	Formal Report	N/A	Redacted under FOIA Section 26 – Commercial	Summary report detailing the OpenCPI worker library developed and runtime controller implemented.	F to
D6	Phase 3 Summary JARBOT Development Report	CA +17 months	Formal Report	N/A	Redacted under FOIA Section 26 – Commercial	Summary report detailing the LCA aligned OpenCPI SW capability, and LCA aligned digital RHD HW capability.	F to

D7	Phase 4 Final JARBOT Development Report & System Demonstration	CA +21 months	Formal Report	Redacted under FOIA Section 26 – Commercial	Redacted under FOIA Section 26 – Commercial	Full formal report detailing the LCA aligned OpenCPI SW and HW capability produced with Updated SyOps & CDS documentation, Demonstration of system and associated hardware and software. To include presentation/slide pack containing project overview and work carried out to date.	F to
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1.7	Deliverable Acceptance Criteria
	As per the R-Cloud terms and conditions
1.8	Quality Control and Quality Assurance processes and standards that must be met by the contractor
	☒ ISO9001 (Quality Management Systems) ☐ ISO14001 (Environment Management Systems) ☐ ISO12207 (Systems and software engineering — software life cycle) ☐ TickITPlus (Integrated approach to software and IT development) ☐ Other: (Please specify below)

2. Government Furnished Assets (GFA)					
GFA to be Issued - No					
<i>If 'yes' – add details below. If 'supplier to specify' or 'no,' delete all cells below.</i>					
GFA No.	Unique Identifier/ Serial No	Description: <i>Classification, type of GFA (GFE for equipment for example), previous MOD Contracts and link to deliverables</i>	Available Date	Issued by	Return Date or Disposal Date (T0+) <i>Please specify which</i>

3	Evaluation Criteria
2.1	Method Explanation

	As the requirement is being offered on a non-competitive bases, the proposal shall be subjected to an informal review, and where required feedback shall be issued to the supplier.
2.2	Technical Evaluation Criteria
	Provision of a detailed Technical Proposal that fully meets the Statement of Requirements which should include, as a minimum and where appropriate: • Breakdown of Deliverables and any Interim Payments (Milestone/stage) due dates; • A work breakdown structure/project plan with key dates and Deliverables identified including required delivery dates for Government Furnished Assets; • A clear identification of Dependencies, Assumptions, Risks and Exclusions which underpin your Technical Proposal.
2.3	Commercial Evaluation Criteria
	The commercial evaluation shall consists of the following Pass / Fail questions: 1. Has the proposal been submitted a firm price, using the accepted RCloud rate card for non-competitive tasks? 2. The proposal is fully compliant, and accepts, the RCloud v4 terms in full 3. The proposal has included a Supplier Assurance Questionnaire (SAQ) in response to the specified Cyber Risk Assessment detailed in RCloud Document Part A, and the response has included the DCPD correspondence. 4. The supplier has submitted One (1) Full Technical proposal excluding all commercial and price details, and has submitted One (1) Full Commercial and Technical proposal including all price data. 5. The Supplier has acknowledged and shows content with the additional terms outlined in Part A as part of their proposal.