

FUTURE SUBMARINE PROGRAM - COMBAT SYSTEM INTEGRATOR

DESIGN BUILD AND INTEGRATION CONTRACT

RFP INSTRUCTIONS AND CONDITIONS

Research and Development White Paper

DATA ITEM NUMBER: FSP-CSI-002377

Revision 1

Date: 10 September 2018

RFP NUMBER LMA-RFP-R&D-FSP-CSI-002377

INVITATION TO PROPOSE Research and Development White Paper

RFP CLARIFICATIONS

All enquiries relating to this RFP are to be addressed to the following email address and clearly state the RFP number

jeremy.satchell@icsa.org.au / Jeff.Camburn@sa.gov.au

POINT OF CONTACT (POC) Jeremy Satchell / Jeff Camburn

IMPORTANT RESPONSE CLOSING INFORMATION

Time 5pm Adelaide CST

Initial Release for Questions and Answers – 10 September 2018

Date RFP Open Date – 24 September 2018

RFP Close Date – 22 October 2018

LOCATION <https://gateway.icn.org.au/project/3938/lockheed-martin-australia-future-submarine>

Printed copies of this document are unmaintained unless otherwise indicated.

Change Control Sheet

Revision No.	Revision Date	Brief Outline of Change(s) (Page, Section, Figure, Table)	Approval Reference
Revision 1	10 September 2018	Initial Document	N-0000003784

Table of Contents

1	INTRODUCTION	4
2	PURPOSE.....	4
3	RFP RESPONSE	4
4	SUBMISSION	5
5	QUERIES6	
	5.1 General.....	6
	5.2 Commercial Communications.....	6
	5.3 Technical Communications	6
6	USE OF PROPOSALS	6
7	ACKNOWLEDGEMENTS.....	6
8	RESERVATIONS.....	7
9	NEGOTIATIONS	7
10	FORMATION OF THE CONTRACT	7
11	GOVERNING LAW	8
12	CONFIDENTIALITY	8
	Annex A - R&D Topics.....	9

List of Tables

Table 1: White Paper Particulars	4
Table 2: RFP Response Deliverables.....	5
Table 3: R&D Round 1 Research Topics.....	9

List of Annexures

Annex A	R&D Topics
---------	------------

List of Attachments

Attachment A	General Provisions and Special Conditions for Subcontracts
Attachment B	RFP Response Forms
Attachment C	Non-Disclosure Agreement

1 INTRODUCTION

- 1.1 This Request For Proposal (RFP) seeks a Proposal for the development of a White Paper for the Research and Development (R&D) topics outlined in Table 3. The White Paper will support Lockheed Martin Australia’s (LMA) Design Contract with the Commonwealth of Australia for the Future Submarine Program (FSP).
- 1.2 The information contained in this RFP is furnished for the convenience of the Respondent. LMA does not guarantee, warrant or make any representations regarding the content, accuracy or completeness of any information provided by LMA, or this RFP, and Proposals must be based on the Respondent’s own investigations and determinations.
- 1.3 Where successful, the maximum value of any resultant White Paper is **\$75,000 (ex GST)**.

2 PURPOSE

- 2.1 The intent of the R&D activity is to support Industry in exploring new solutions and sovereign technologies relating to the R&D Topics for potential application to subsequent design activities of the FSP.
- 2.2 Annex A - R&D Topics provides the detailed Scope of the R&D topics.
- 2.3 This White Paper is the first phase of R&D relating to the topics, however respondents are reminded that involvement in this phase does not guarantee involvement in subsequent phases of R&D.
- 2.4 If successful from this RFP process, Respondents shall deliver a White Paper consisting of the particulars listed in Table 1: White Paper Particulars to this RFP.

Table 1: White Paper Particulars

White Paper Particulars
Shall comprise as a minimum:
<ul style="list-style-type: none"> • A detailed literature review of the relevant areas and methods
<ul style="list-style-type: none"> • Identification and evaluation of appropriate models and methods
<ul style="list-style-type: none"> • A detailed plan proposing future research
<ul style="list-style-type: none"> • The identification of suitable measures of effectiveness and/or measures of performance to help quantify the value of the research
The White Paper shall be UNCLASSIFIED
The White Paper shall be delivered electronically, and comply with the following formatting specifications:
<ul style="list-style-type: none"> • A4-A3 size paper, in the either Microsoft Word, version 2010 (note: the document shall not contain macros); or searchable portable document format (pdf), version 9.

3 RFP RESPONSE

- 3.1 Respondents shall provide a complete RFP Response package per topic consisting of the deliverables listed in Table 2 in Response to this RFP.

Table 2: RFP Response Deliverables

RFP Response Deliverables:	
Cover Letter Cover letter shall detail the R&D Topic (one letter per topic) that the Respondent wishes to be considered for as well as the experience that the Respondent has in regards to those topics.	<input type="checkbox"/>
Respondent’s response to the General Provisions and Special Conditions of Subcontracts (Attachment A), which should detail: <ul style="list-style-type: none"> Any queries or concerns in regards to clauses within Attachment A Any proposed changes to clauses within Attachment A 	<input type="checkbox"/>
Respondent’s response to the Non-Disclosure Agreement (NDA) (Attachment C), which should detail: <ul style="list-style-type: none"> Any queries or concerns in regards to clauses within Attachment C Any proposed changes to clauses within Attachment C <i>Note: Respondents who already have an active NDA with LMA are to attach the active NDA to their response in lieu of Attachment C.</i>	<input type="checkbox"/>

4 SUBMISSION

- 4.1 RFP response Submission Details, including location, closing date, and time is on the cover page.
- 4.2 If no Proposal is received by Proposal Closing Date and Time, the Authorised Buyer will consider this a ‘No bid’. LMA requests Respondents adhere to the requirements contained herein.
- 4.3 Please provide written acceptance/concurrence in your Proposal submission in accordance with Table 2: RFP Response Deliverables
- 4.4 Respondents may choose to submit Proposals for multiple Topics. Where there are multiple Topics, each Proposal is to be standalone and clearly marked identifying the Topic ID.
- 4.5 LMA requests that Responses to this RFP be UNCLASSIFIED as far as possible.
- 4.6 Where information contained in the RFP Response is subject to security and/or export control restrictions, please notify the Point of Contact (POC) as soon as practical upon becoming aware, PRIOR TO PROVISION OF THIS INFORMATION such that applicable disclosure arrangements and export authorisations can be verified.
- 4.7 The Respondent is responsible for obtaining any security and export authorisations necessary to enable a Response to the RFP be submitted.
- 4.8 Please note all Security Information (SI) and Export Controlled Information (ECI) submitted by the Respondent must be clearly marked and identified (physically and electronically) in accordance with the applicable security and/or export authorisation.

5 QUERIES

5.1 General

- 5.1.1 Respondents can seek clarification from LMA in relation to this RFP. In seeking clarification, Respondents are to direct any queries in writing to the POC on the cover of this RFP via the RFP Query email address.
- 5.1.2 Any questions regarding any portion of this RFP must be coordinated through the POC. No written or verbal correspondence will be permitted without coordination through the POC. Failure to comply with this requirement may result in the Respondent's disqualification from consideration for award.
- 5.1.3 No material change to this RFP will be considered or accepted unless delivered in writing to the POC.
- 5.1.4 Any question submitted by Respondents is submitted on the basis that LMA may circulate questions and LMA's Responses to other Respondents without disclosing the source of the questions or revealing the substance of the proposed Respondent. The issue of such information will be subject to any extant security or export control limitations.

5.2 Commercial Communications

- 5.2.1 All commercial communication concerning LMA's RFP or the Respondent's Response shall be made through the POC identified in this RFP.

5.3 Technical Communications

- 5.3.1 Acting reasonably, the Contractor may discuss the technical requirements of the deliverables with the LMA R&D Manager via fsm-r-d.gr-rms@lmco.com

6 USE OF PROPOSALS

- 6.1.1 All proposal documents submitted in response to this RFP become the property of LMA. Respondents submit documents in response to this RFP on the basis that LMA may use, retain and copy the information contained in those documents for the purposes of:
- evaluation and selection of any proposal;
 - preparation and negotiation of any resultant Contract with respect to the RFP; and
 - verifying the currency, consistency and adequacy of information provided under any other RFP process conducted by LMA.
- 6.1.2 LMA may disclose all or part of the proposal documents to a third party for the purposes of assisting LMA in the conduct of the RFP process. LMA may obtain appropriate confidentiality undertakings from the third party prior to disclosure.
- 6.1.3 Nothing in this clause 6 changes or affects the ownership of IP in the information contained in the proposal documents.

7 ACKNOWLEDGEMENTS

- 7.1 In responding to this RFP the Respondent acknowledges that:

LMA-RFP-R&D-FSP-CSI-002377 – Research and Development White Paper
Request for Proposal Instructions and Conditions

- a. LMA may approach other suppliers to provide information relevant to the FSP, including information the same or similar to that requested by this RFP.
- b. LMA may conduct other industry engagement activities and future procurement processes in relation to the FSP, which the Respondent may or may not be invited to participate.
- c. a response to this RFP does not of itself entitle, qualify or disqualify the Respondent to be invited to participate in any future industry engagement activity or procurement process.

7.2 The Respondent's participation in this RFP process, or in relation to any matter concerning this RFP, is at the Respondent's own risk and cost. LMA will not be responsible for any costs or expenses incurred by any Respondent in preparation or lodgement of a response to this RFP.

8 RESERVATIONS

8.1 LMA reserves the right to amend, suspend, defer or terminate this RFP by providing notice to Respondents. If LMA amends this RFP after Responses have been submitted, LMA reserves the right to request amended Responses.

8.2 LMA reserves the right to award the contract without discussing the RFP response.

8.3 LMA is not obligated to make any award as a result of this RFP.

8.4 LMA reserves the right to make multiple awards.

8.5 LMA reserves the right to request a Best and Final Offer (BAFO).

8.6 LMA reserves the right to:

- d. Consider Proposal Offers or modifications to Proposal Offers in the best interest of LMA or the Commonwealth; and/or
- e. Make award without written or oral discussion.

8.7 LMA reserves the right to limit the number of Respondents considered for this activity.

9 NEGOTIATIONS

9.1 LMA reserves the right to negotiate with one or more Respondents after the closing date.

9.2 As part of the evaluation process, LMA may negotiate with one or more Respondents to vary the documents forming the Contract and the relevant Response on any grounds or in any respects, including but not limited to:

- f. Work to be performed;
- g. Period of performance and milestone delivery schedule;
- h. Terms and conditions; and
- i. Working relationships.

10 FORMATION OF THE CONTRACT

10.1 The Terms and Conditions that apply to any resultant Subcontract are provided as Attachment A to this RFP.

10.2 No direction to proceed or other instruction to begin work shall be binding upon LMA except when specifically issued and confirmed in writing by LMA.

11 GOVERNING LAW

11.1 This RFP is governed by the laws of South Australia. LMA and Respondents submit to the non-exclusive jurisdiction of the courts of South Australia.

12 CONFIDENTIALITY

12.1 Respondents must not disclose any information in this RFP to anyone who does not need to know.

12.2 By submitting a response to this RFP, the Respondent consents to LMA providing the data and information contained in the RFP response, including but not limited to any Proprietary Information disclosed by the Respondent to LMA pursuant to any NDA, and the Commonwealth of Australia for the purposes of the FSP.

Annex A - R&D Topics

Note: R&D Topics are not released in number order. R&D Topics 4, 5, 10, 11 are not included in this RFP.

Table 3: R&D Round 1 Research Topics

Topic ID	Title	Description
FSP-CS-RT-1	Novel methods to improve the automated detection and tracking of passive acoustic contacts.	This R&D activity seeks to improve and ideally automate the passive acoustic localisation (range and bearing) of contacts from a moving host including low signal to noise ratio scenarios. The goals include identifying novel methods to reduce the time from sensor to ear, increase the sensitivity of detection, and improve the accuracy of localisation. The R&D should consider different levels of background noise, the changing propagation environment, and other effects pertaining to host vessel motion.
FSP-CS-RT-2	An investigation into novel methods and technologies for high resolution underwater surveys.	This R&D activity will explore novel methods and technologies relevant to high resolution underwater surveys focussing on improved situational awareness for surfacing submarines and precision navigation in shallow waters. The aim is to provide improvements in: resolution/distortion; operational depth and area of coverage; and storage and processing performance. The host vessel / submarine may be stationary or moving and there is no assumption of onboard versus offboard systems. Techniques to explore could include but are not to be limited to mosaicing, Structure from Motion (SFM), and photogrammetry.

FSP-CSI-002377 – RFP Research and Development White Paper
 Request for Proposal Instructions and Conditions - Annex A

Topic ID	Title	Description
FSP-CS-RT-3	Novel methods to improve the optical detection, recognition and identification of above water objects using near sea surface sensors.	This R&D activity seeks to identify novel methods and technologies that improve, ideally via the use of automating, aspects of the detection, recognition and identification of above water objects utilising sensors mounted in a submarine periscope, however, other novel covert methods should also be considered. The objective is to improve performance under challenging sea-air boundary conditions. Proposed methods must be cognisant of detectability, as well as Size, Weight and Power (SWAP). The R&D may consider enhancements to systems and sensors, and incorporation of state of the art technologies in terms of machine vision/cognition.
FSP-CS-RT-6	Methods and technologies to improve communications with and between submarines.	The aim of this R&D activity is to identify methods and technologies that improve the performance of external submarine communications, both underwater to other submerged units, and to surface units consistent with the idea of a networked fleet. The dimensions of performance include bandwidth, throughput, range, error, error resilience, and latency. The research may include quantum techniques and explore burst communications. Proposed solutions must also be cognisant of detectability, as well as Space, Weight, Power and Cooling (SWAP-C).

FSP-CSI-002377 – RFP Research and Development White Paper
Request for Proposal Instructions and Conditions - Annex A

Topic ID	Title	Description
FSP-CS-RT-7	The identification of novel operational concepts associated with the use of uninhabited and autonomous systems by a submarine.	Uninhabited and Autonomous Systems (UxV) are rapidly emerging technologies with a potential to provide operational benefits for submarines. This R&D activity is to identify novel operational concepts related to the use of UxVs by submarines. The research can consider solutions for both recoverable and disposable systems that vary in size consistent with existing submarine ejection systems, such as torpedo tubes, signal ejectors, and payload bays. The objective is to identify operational scenarios and benefits in the use of UxVs, as well as areas where further research and development may be required. The research may also consider operational methods that support the control of multiple UxV systems through supervisor 'on-the-loop' technologies.
FSP-CS-RT-8	Improving the performance of video communications for use between a submarine and emergency rescue forces.	This R&D activity is to investigate how to improve the performance (such as bandwidth, range and latency) of video communications between a submarine and rescue forces in the event of an emergency. The R&D should consider a variety of undersea environments, and a variety of emergency scenarios. The R&D will need to explore the art of the possible with the communications link as well as be cognisant of the Space, Weight, Power and Cooling (SWAP-C) issues.

FSP-CSI-002377 – RFP Research and Development White Paper
 Request for Proposal Instructions and Conditions - Annex A

Topic ID	Title	Description
FSP-CS-RT-9	An investigation into methods and technologies for improving the performance of submarine launched bathymetric probes.	This R&D activity is to investigate how to improve the performance of submarine launched bathymetric probes with respect to their operating speed, accuracy, and operator confidence in their use. Proposed solutions must also be cognisant of detectability, existing submarine ejection systems (e.g. signal ejectors) as well as Space, Weight, Power and Cooling (SWAP-C).
FSP-CS-RT-12	An investigation into innovative training approaches for submariner operator, maintainer and command team training.	This R&D activity is to identify emerging methods and technologies that will increase the effectiveness of submariner operator, maintainer and command team training. A holistic approach is required to not only consider the applicability of new technologies, but to also introduce new methods to measure how well submariners learn, retain, and apply new knowledge over time. Training systems may be offboard and/or onboard and be undertaken through a combination of live, virtual and constructive methods. The research should explore a diverse range of industries for potential solutions which have not traditionally been employed by Defence.