National Defence
National Defence Headquarters
Ottawa, Ontario
K1A 0K2

Défense nationale
Quartier général de la Défense nationale
Ottawa (Ontario)
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Request for Information (RFI)

National Acoustic Library (NAL) Procurement

CONTENTS

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Request for Information (RFI)

TITLE: **National Acoustic Library**

1. Purpose and Nature of the Request for Information (RFI)

The Department of National Defence (DND) is requesting Industry feedback regarding the development and procurement of a new National Acoustic Library (NAL), as detailed below in:

ANNEX A – Statement of Work for the NAL
ANNEX B – In-Service Support Statement of Work for the NAL
ANNEX C – Evaluation Plan for the NAL
ANNEX D - NAL Questions to Industry
ANNEX E - NAL Costing Estimates

The objectives of this RFI are to:

1) *Provide Industry information about the requirements and obtain suggestions and feedback;*
2) *Collect information from Industry regarding the feasibility of the project and their ability to develop, provide, and maintain the equipment as detailed; and*
3) *Use the information and feedback obtained to help develop a potential, future Request for Proposal (RFP), including an accompanying In-Service Support (ISS) contract.*

This RFI is neither a call for tender nor a Request for Proposal (RFP). No agreement or contract will be entered into based on this RFI. The issuance of this RFI is not to be considered in any way a commitment by the Government of Canada, nor as authority to potential Respondents to undertake any work that could be charged to Canada. This RFI is not to be considered as a commitment to issue a subsequent solicitation or award contract(s) for the work described herein.

Although the information collected may be provided as commercial-in-confidence (and, if identified as such, will be treated accordingly by Canada), Canada may use the information to assist in drafting performance specifications (which are subject to change) and for budgetary purposes.

Respondents are encouraged to identify, in the information they share with Canada, any information that they feel is proprietary, third party or personal information. Please note that Canada may be obligated by law (e.g. in response to a request under the Access of Information and Privacy Act) to disclose proprietary or commercially-sensitive information concerning a respondent (for more information: http://laws-lois.justice.gc.ca/eng/acts/a-1/).

Respondents are asked to identify if their response, or any part of their response, is subject to the Controlled Goods Regulations.

Participation in this RFI is encouraged, but is not mandatory. There will be no short-listing of potential Suppliers for the purposes of undertaking any future work as a result of this RFI. Similarly, participation in this RFI is not a condition or prerequisite for the participation in any potential subsequent solicitation.

Respondents will not be reimbursed for any cost incurred by participating in this RFI.

2. Background Information:

The fundamental objectives of the NAL are to overcome the capability deficiencies of Acoustic Data Analysis Centre's (ADAC) current existing legacy NAL with the procurement of a searchable acoustic database structure with an effective human-machine interface (HMI).

The ADAC is mandated to maintain custody and management of the NAL, which is the sole repository for all acoustic data and Acoustic Intelligence (ACINT) collected by the Royal Canadian Navy (RCN) and Royal Canadian Air Force (RCAF) units. It is the critical information center for all operational and training data used for acoustic anti-submarine warfare (ASW).

The legacy NAL was built in the late 1990s and no lifecycle or maintenance contract was established to support it. As a result, ADAC's capabilities have significantly decreased with respect to its ability to store acoustic data, support operational units, train acoustic data analysts, and distribute ACINT products to clients and international partners. The legacy NAL requires replacement as the present system hardware and software no longer supports the advanced functionality available in modern CAF sonar systems.

3. Legislation, Trade Agreements, and Government Policies:

The following is indicative of some of the legislation, trade agreements and government policies that could impact any follow-on solicitation(s):

a) Canada Free Trade Agreement (CFTA)
b) World Trade Organization Agreement on Government Procurement(WTO-AGP)
c) Controlled Goods Program (CGP)
d) Federal Contractors Program for Employment Equity (FCP-EE)
e) Canada-United States-Mexico Agreement (CUSMA)

4. Schedule:

In providing responses, the following schedule should be utilized as a baseline:

- Request for Information (RFI) – 25 Oct 2021 (closing date)
- RFP issued - Nov 2021 (estimated)
- Contract Award – Feb 2022 (estimated)
- Estimated delivery – Nov 2023 (estimated)

5. Important Notes to Respondents:

Interested Respondents may submit their responses to the DND Contracting Authority, identified below via email:

Name: Dianne Montgomery
Title: Materiel Acquisition & Support Officer
Department of National Defence
Director General Equipment Program Management
D Mar P 2-3-4
Telephone:
E-mail: dianne.montgomery@forces.gc.ca

A point of contact for the Respondent and responses to questions should be clearly indicated included in the package.

Changes to this RFI may occur and will be advertised on the Government Electronic Tendering System. Canada asks Respondents to visit Buyandsell.gc.ca regularly to check for changes, if any.

Responses should address the following points, and must also address questions presented in Annexes D - NAL Questions to Industry and E - NAL Costing Estimates:

- The estimated cost of delivering the equipment in accordance with the Acquisition SOW and TSOR.
- The estimated cost of supporting the equipment in accordance with the ISS SOW.
- The ability of the Respondent to meet this requirement.
- Any constraints that could affect the ability of the Respondent to meet this requirement.
- Any additional information the Respondent should consider prior to proceeding with an RFP.

6. Closing date for the RFI:

Responses to this RFI are to be submitted to the DND Contracting Authority identified above, on or before, 25 Oct 2021.

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ANNEX “A”
Statement of Work For
National Acoustic Library (NAL) Procurement

CONTENTS

LIST OF APPENDICES:

1. SCOPE

1.1. Purpose

1.1.1. The purpose of this Statement of Work (SOW) is to describe the requirements and work effort required from the Contractor by the Department of National Defence (DND) for the supply of items and services to meet the requirements for the acquisition and support of the new National Acoustic Library (NAL).

1.2. Objectives

1.2.1. The fundamental objectives of the NAL are to overcome the capability deficiencies of the current existing legacy NAL in the Acoustic Data Analysis Centre (ADAC) and the procurement of a searchable acoustic database structure with an effective human-machine interface (HMI).

1.2.2. The specific objectives of the NAL are:

1.2.2.1. to provide a processing and acoustic data storage system based on Commercial Off-The-Shelf (COTS)/Military Off-The-Shelf (MOTS) technology that will support the current Canadian Armed Forces (CAF) acoustic analytical tools;

1.2.2.2. to provide a NAL system that uses open-architectures to allow economical and rapid implementation of current capabilities and future capabilities; and

1.2.2.3. to provide a repository for all Acoustic Data and Acoustic Intelligence (ACINT) for the Canadian Armed Forces (CAF) made available through the ADAC-NET and the Consolidated Secret Network Infrastructure (CSNI) networks

1.2.3. The NAL will be used to perform tasks such as data management, data analysis, training, ACINT production, ACINT reporting, and mission debriefing through three fundamental roles:

1.2.3.1. workflow, data, and information management for all levels of analyses;

1.2.3.2. ACINT generation; and

1.2.3.3. ACINT product generation and distribution.

1.3. Background

1.3.1. ADAC is mandated to maintain custody and management of the NAL, which is the sole repository for all acoustic data and Acoustic Intelligence (ACINT) collected by the Royal Canadian Navy (RCN) and Royal Canadian Air Force (RCAF) units. It is the critical information center for all operational and training data used for acoustic anti-submarine warfare (ASW).

1.3.2. The legacy NAL was built in the late 1990s and no lifecycle or maintenance contract was established to support it. Although the NAL was supported internally by Maritime Forces Atlantic (MARLANT), no sustainment funding was provided, resulting in no obsolescence mitigation and a lack of technology refresh. As a result, ADAC's capabilities have significantly decreased with respect to its ability to store acoustic data, support operational units with Requests for Information (RFI), train acoustic data analysts, and distribute ACINT products to clients and international partners.

1.3.3. The legacy NAL requires replacement as the present system hardware and software no longer supports the advanced functionality available in modern CAF sonar systems. There is no system that currently feeds the NAL.

1.4. Supporting Information

1.4.1. In general, the NAL will support the RCAF and RCN ASW missions through the analysis and replay of acoustic data. This will facilitate the search for contacts, the promulgation of ACINT, and the provision of acoustic parametric information to ADAC clients.

1.4.2. Acoustic analysis in the CAF is broadly classified into four categories which generally describe the location where analysis is performed, the degree of granularity, and the latency of analysis results.

1.4.2.1. Level 0. Acoustic analysis is performed by operators in real-time to detect, classify, localize and prosecute contacts, or to collect specific platform data. Narrowband (NB) and Broadband (BB) acoustic sources are tracked, with operators conducting real-time analysis, logging relevant information and recording acoustic data to some media. The raw physical data is collected and the media transferred to the NAL.

1.4.2.2. Level 1. The acoustic data is extracted to dedicated systems. Level 1 acoustic analysis is conducted by analysts in a tactically significant time frame. This is done in dedicated support to the acoustic platforms and units and performed on data gathered during Level 0 analysis. Its overall goal is to:

1.4.2.2.1. enhance real-time operations;

1.4.2.2.2. confirm contact to commanders;

1.4.2.2.3. provide target analysis to Level 0 operators; and,

1.4.2.2.4. filter relevant acoustic information for Level 2 analysis.

1.4.2.3. Level 2. Detailed analysis is performed on contact data through a process in which all detected acoustic sources are accounted for. Once analysts have completed their analysis and revision process, a final revision is provided by the NAL administrator. This completes the quality assurance (QA) process prior to archiving the contact and updating the ACINT database.

1.4.2.4. Level 3. Analysis is conducted by scientists, engineers and acoustic analysts in non-real time to:

1.4.2.4.1. monitor and determine acoustic causation factors in threat and own platforms;

1.4.2.4.2. develop acoustic trend assessments in threat and own platforms; and,

1.4.2.4.3. extract new ACINT and concepts for operational use, such as acoustic source levels or target strength.

1.4.3. Figure 1 illustrates the configuration of ADAC analysis Levels and how information travels from collection to finished product. Note that it includes the future system Underwater Warfare Suite Upgrade (UWSU), which is not part of the scope of this project but will need to be considered for future capability as part of the In-Service Support (ISS) contract.

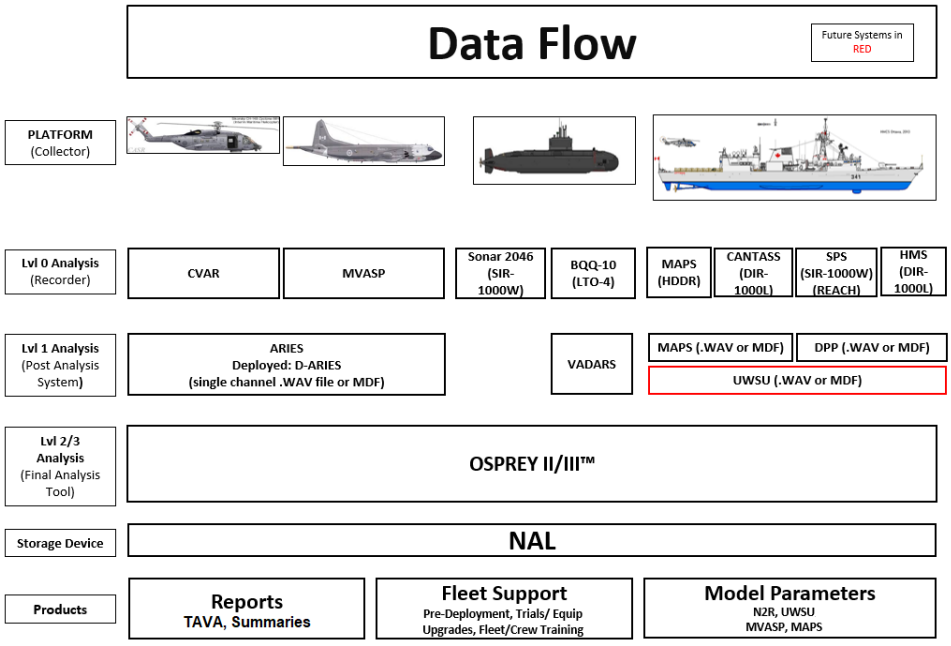

Figure A-1: ADAC Block Diagram of Data Flow

1.4.4. ADAC-NET. The NAL will be operated in a secure environment and connected to the ADAC-NET, an internal secret network.

1.4.5. CSNI. The NAL will be accessed through the CSNI by users in locations including air wings, deployed support centers, naval ships and training facilities across Canada.

1.4.6. OSPREY III Workstations. ADAC uses Sonartech Atlas' software product, OSPREY III, to perform Level2 and Level 3 analyses of acoustic data. The OSPREY III software is capable of processing Microsoft Waveform (.WAV) or Mission Data File (.MDF) formatted data files.

1.4.7. Table 1 lists all the systems that will be supported by the NAL. It gives a brief description of each system as well as the file extensions used. Automatic ingestion of data is required for all file types except where the file format definition is unavailable due to proprietary and/or licensing limitations.

Table A-1 : Supported Systems List

System Acronym	Full Name	Brief Description	File Extension
Level 0 Systems			
CVAR	Conduction-Cooled VME Processor & Receiver	CH-148 Maritime Helicopter onboard acoustic processor	STG, BAT, MSE, IDX
MVASP	Modular VME Acoustic Signal Processor	CP-140M Maritime Patrol Aircraft onboard acoustic processor	STG, BAT, MSE, IDX
BQQ-10		Sonar suite for Victoria Class Submarines	WAV
SQR-10 CANTASS	Canadian Towed Array Sonar System	Passive acoustic towed array on Halifax Class ships	WAV
SPS	Sonobuoy Processing System	Sonobuoy processor on Halifax Class ships	W64
HMS	Hull Mounted Sonar	Hull mounted active sonar on Halifax Class ships	WAV
Level 1 Systems			
ARIES/D-ARIES	(Deployed-) Acoustic Replay and Intelligence Exploitation System	Acoustic replay system for CP140M Aurora and CH-148 Cyclone.	STG, BAT, MDF
Reach ADR	Reach Acoustic Data Recorder	Sonobuoy recorder on Halifax Class ships. At ADAC, data extracted through DPP	W64
VADARS (BQQ-10 PAS)	Victoria-class Acoustic Data Analysis and Replay System	Submarine acoustic post analysis system.	WAV
DPP	Digital Preview Processor	Post Analysis System for replaying CANTASS tapes	WAV, MDF
HMS PAS/MAPS	Hull-mounted Sonar Post Analysis System / Maritime Acoustic Processing System	This is the Post Analysis System for HMS.	WAV
OOS Data	Ocean Observing Systems Data	Civilian data received from Ocean Networks Canada	WAV
Level 2 Systems			
Osprey III		Acoustic analysis software used for Level 2 analysis once acoustic data has been extracted from Level 1 systems	WAV, W64, MDF

1.5. Concept of Operations

1.5.1. Figure 2 illustrates the concept of the NAL server with the four Levels of acoustic analysis, managing storage and transfer of acoustic information at and between each Level. The intent of the block diagram is not to prescribe the final architectural design for NAL, but illustrate the NAL scope and to illustrate the relationship of NAL components.

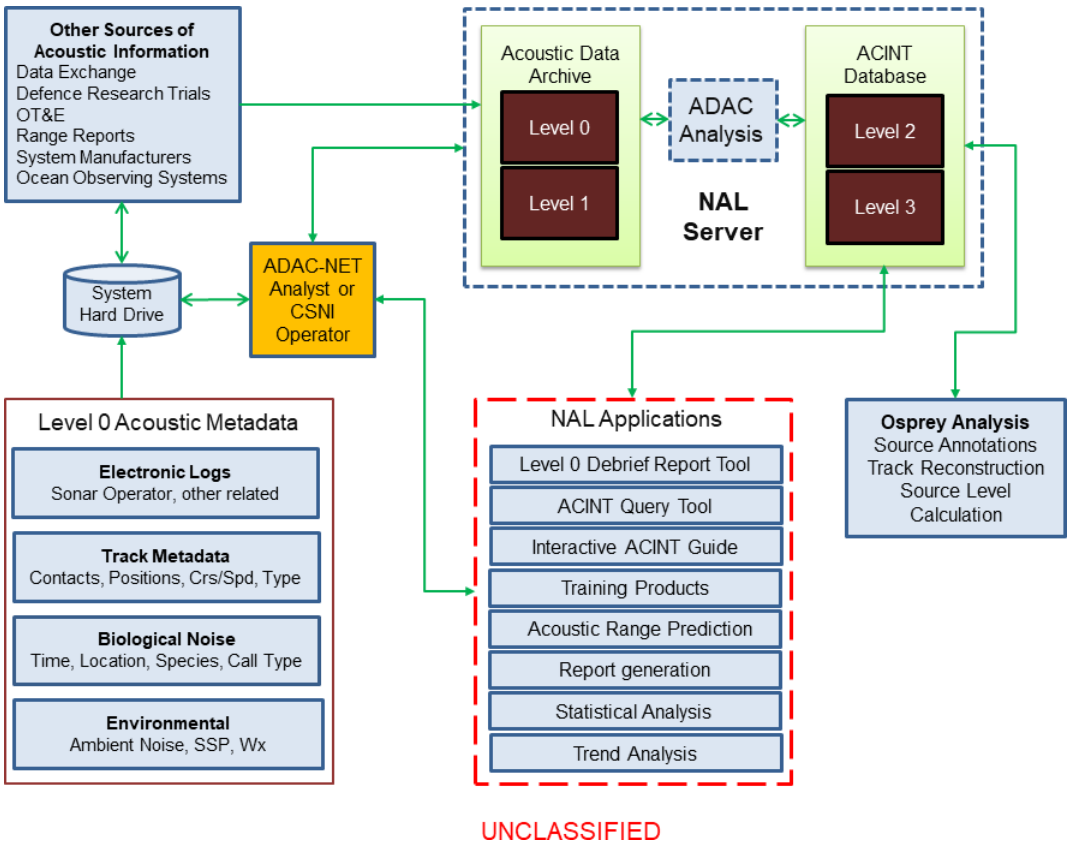

Figure A-2: Concept of the NAL Integration

1.5.2. The NAL will provide capabilities under two distinct but interoperable software components:

1.5.2.1. Acoustic data archive, and

1.5.2.2. ACINT database.

1.5.3. The NAL will act primarily as a data management system for acoustic information by facilitating the collection, storage, retrieval, and utilization of such data. An ADAC or CSNI user will log on with his unique credentials to gain access to the NAL through a web portal. Users will have read and/or write access to one or both network drives depending on their access rights.

1.5.3.1. Once logged on, ADAC users will gain access to the NAL network drives directly from their computer. The NAL Acoustic data archive and ACINT database will show as network drives on the ADAC computer and will become accessible through the file explorer as well as through the web portal. This will allow accredited users to modify Acoustic Information files directly from Level 2 systems that are connected to the ADAC-NET instead of creating a local file and re-uploading the file once Level 2 analysis is done.

1.5.3.2. CSNI users located in Canada will only have read access to the NAL. CSNI users that are abroad will be able to extract a local copy of the acoustic information that they need and will be able to update their data when they have connectivity. CSNI users will be able to submit new acoustic information to be added to the NAL after review from an ADAC analyst.

1.5.4. Provision of Level 0 acoustic information will be performed by CAF personnel from various sources and sent to ADAC through CSNI. The Acoustic Information will be reviewed by an ADAC analyst who will import the Acoustic Information into the NAL. The user will create a NAL record for a mission, and provide acoustic metadata in the form of operator logs, tracks, environmental data and other mission-related metadata. NAL will also support ingestion of acoustic data from a Level 1 system, after Level 1 analysis is complete.

1.5.5. Once acoustic characteristics on a contact have been received, a new entry into the system is created. The system will maintain characteristics on the entry including all subsequent acoustic data related to the contact. A security classification will be assigned to the contact, with compartmentalization so that each discrete component of acoustic information can be classified uniquely.

1.5.6. The NAL will then allow recall of the information in order to use analytical tools for Level 2 and 3 analysis, training, research, and reporting. Once Level 2 and Level 3 analyses are completed, ACINT is stored in the ACINT database by an accredited user, and available for search by any user with access. The NAL applications perform task-specific functions and generate ACINT products.

1.5.7. The NAL hardware will support the software component, consisting of a data management server and a large-volume storage for raw and processed acoustic data in a multitude of formats, including off-site backup.

1.6. List of Acronyms and Abbreviations

Table A-2 : Acronyms and Abbreviations

Abbreviation	Description
ACA	After Contract Award
ACINT	Acoustic Intelligence
AD	Applicable Document
ADAC	Acoustic Data Analysis Centre
AN	Ambient Noise
ASW	Anti-Submarine Warfare
BC	British Columbia
BIS	Base Information Services
BIT	Built In Test
CA	Contracting Authority
CAF	Canadian Armed Forces
CD	Compact Disc
CDR	Critical Design Review
CEO	Canadian Eyes Only
CPA	Closest Point of Approach
CFTO	Canadian Forces Technical Order
COTS	Commercial-off-the-Shelf
CSNI	Consolidated Secret Network Infrastructure
DND	Department of National Defence
DPP	Digital Preview Processor
DSCO	Director Supply Chain Operations
DVD	Digital Versatile Disc
ECP	Engineering Change Proposal

Abbreviation	Description
FAT	Factory Acceptance Test
FSR	Field Service Representative
GSM	Government Supplied Materiel
HDD	Hard Disk Drive
HMCS	Her Majesty's Canadian Ship
HMI	Human Machine Interface
IAW	In Accordance With
ICD	Interface Control Document
ILS	Integrated Logistics Support
ISO	International Organization for Standardization
ISS	In-Service Support
IT	Information Technology
LAN	Local Area Network
MARLANT	Maritime Forces Atlantic
MDF	Mission Data File
MOTS	Military-off-the Shelf
MRP	Mobile Repair Party
MSC	Major Surface Combatants
NAL	National Acoustic Library
NB	Narrowband
NS	Nova Scotia
PA	Procurement Authority
PAL	Passive Aural Listening
PAS	Post-mission Analysis System
PDR	Preliminary Design Review
RCAF	Royal Canadian Air Force
RCN	Royal Canadian Navy
RFP	Request For Proposal
QA	Quality Assurance
RFI	Request for Information
SAT	Site Acceptance Test
SOW	Statement of Work

Abbreviation	Description
SRR	System Requirement Review
TA	Technical Authority
TAVA	Tactical Acoustic Vulnerability Assessment
TB	Terabyte
TDP	Technical Data Package
TFD	Threat Force Database
TIES	Technical Investigations and Engineering Support
TSOR	Technical Statement of Requirement
WAV	Waveform File
WIP	Work-In-Progress

1.7. Terminology

1.7.1. Acoustic Data - Acoustic data consists of recorded raw time-series data or processed spectral information. It may contain annotations or non-acoustic data including date/time, collection equipment or platform identification and sensor position/orientation. An acoustic data recording may be classified if it contains the signatures of naval ships, submarines or other vessels relevant to the security and national defence of Canada.

1.7.2. Acoustic Information - General term encompassing acoustic data, acoustic metadata and ACINT.

1.7.3. Acoustic Intelligence - ACINT is the product of an analysis process where skills, knowledge, and tools are applied to acoustic data to determine the unique characteristics and vulnerabilities of the contact signatures recorded therein.

1.7.4. Acoustic Metadata - Acoustic metadata refers to all related non-acoustic data, including operator logs, recording parameters, tracks or environmental observations.

1.7.5. Acoustic Signature - Refers to the underwater noise generated by ships due to a complex mixture of noise sources. The resulting signature spectrum includes tonal components (individual frequencies or narrow band components) and broadband components.

1.7.6. ADAC-NET - The ADAC-NET is a secure network internal to the Acoustic Data Analysis Centre (ADAC) in Halifax, NS.

1.7.7. Capability Deficiency - Situation where/when the means to exercise a valid operational capability, already formally identified and approved, cannot be achieved – this is generally the result of changes in operational conditions or circumstances, technological developments resulting in new or enhanced threats, or related instances of obsolescence and/or un-supportability.

1.7.8. Class - A group of ships with similar design e.g. Halifax Class, Kingston Class, Victoria Class.

1.7.9. Commercial off-the-Shelf - An adjective describing an item produced and available in substantial quantities in the commercial marketplace, and which can be used in government or military applications in the precise form that it is used by the general public.

1.7.10. Consolidated Secret Network Infrastructure - The CSNI is a SECRET level network that provides a DND/CAF-wide command and control information system. The CSNI network processes information up to, and including, SECRET.

1.7.11. Hull - A specific, individual vessel e.g. HMCS Halifax, HMCS Kinston, HMCS Victoria.

1.7.12. Ingestion - Data ingestion is the process of obtaining and importing data from one or more sources for storage and further analysis in a database. The data might be in different formats and come from various sources.

1.7.13. Integrate - To incorporate the functions of one system into another higher level system.

1.7.14. Interoperability - The ability of military forces to train, exercise and operate effectively together.

1.7.15. Military off-the-Shelf - An adjective describing equipment or systems that are already established in-service with the Canadian Forces or the armed forces of another country, that are sourced from an established production facility, and that require, at most, only minor modifications to deliver interoperability with existing CF equipment or systems.

1.7.16. Modular Open Systems Approach - An integrated business and technical strategy that employs a modular design and, where appropriate, defines key interfaces using widely supported, consensus-based standards that are published and maintained by a recognized industry standards organization.

1.7.17. Obsolescence - A condition describing an item of equipment or a system that is incapable of meeting a defined operational requirement as a direct consequence of the evolution of technology.

1.7.18. Open Architecture Design - A high level design of a computer or software system that uses recognized industry standards and thus facilitates additions and upgrades to components.

1.7.19. Platform - Types of classes with similar characteristics e.g. naval surface ship, aircraft, submarine.

1.7.20. Technology Refresh - The process of updating components (especially hardware) as a way to sustain a system and to address obsolescence. Technology Refresh maintains but does not increment capability.

2. APPLICABLE DOCUMENTS

2.1. References

2.1.1 The following references are provided with the Request for Proposal. Where mentioned, the following specifications, standards and publications must be used for the preparation of deliverables to the extent specified in this SOW:

2.1.1.1. DND Specifications, Standards, and Publications:

Table A-3: DND Specifications, Standards, and Publications

Reference	Promulgation	Reference Title

2.1.1.2. Other Standards and Publications

SOR/86-304	2021	Canada Occupational Health and Safety Regulations

2.2. Order of Precedence

2.2.1. In the event of a conflict between the content in this SOW and the referenced documents, the content of this SOW must take precedence.

3. GENERAL REQUIREMENTS

3.1. Scope of Work

3.1.1. The purpose of this Statement of Work (SOW) is to define the work requirements for the Contractor to design, manufacture, test and deliver a new National Acoustic Library (NAL) system to replace the obsolete NAL system located at the Acoustic Data Analysis Centre (ADAC) in Halifax, NS.

3.1.2. The NAL project will deliver:

3.1.2.1. One (1) NAL system;

3.1.2.2. Engineering Support and Integrated Logistics Support (ILS) documentation; and

3.1.2.3. Operator and maintainer training and training materials.

3.2. Technical Requirements

3.2.1. The Contractor must comply with the requirements as detailed in Appendix 1, Technical Statement of Requirements (TSOR).

4. PROJECT MANAGEMENT

4.1. Organization

4.1.1. The Contractor must provide the management, technical services and support necessary to assure effective, expeditious and economic performance of all project efforts.

4.1.2. The Contractor must designate a Project Manager (PM) with the responsibilities to coordinate, execute, and manage the Contractor's project management program for the Contract.

4.1.3. The Contractor's Project Manager must be the main point of contact with Canada.

4.2. Project Management Plan

4.2.1. The Contractor must include a preliminary project management plan in their proposal under which to conduct the work in this SOW.

4.2.2. The Project Management Plan must describe the Contractor's plan and processes for organizing, staffing, controlling, and directing the activities necessary to deliver the NAL.

4.2.3. The project management plan must include, at minimum:

4.2.3.1. a scope management plan;

4.2.3.2. a schedule management plan (including a draft project schedule with milestones);

4.2.3.3. a communications management plan;

4.2.3.4. a quality management plan;

4.2.3.5. a risk management plan; and

4.2.3.6. a transition to sustainment plan.

4.3. Project Meetings

4.3.1. The Contractor must include a preliminary meetings plan in their proposal that includes at minimum:

4.3.1.1. a Kick-off Meeting;

4.3.1.2. a System Requirement Review (SRR);

4.3.1.3. a Preliminary Design Review (PDR);

4.3.1.4. a Critical Design Review (CDR);

4.3.1.5. Human Machine Interface (HMI) Reviews;

4.3.1.6. a Factory Acceptance Test (FAT);

4.3.1.7. a Site Acceptance Test (SAT); and

4.3.1.8. a Final Project Meeting.

4.3.2. Each meeting must be held in accordance with the Meeting Dates as described in Table A-4.

4.3.3. The Contractor must complete the Meeting Prerequisite(s) for each meeting described in Table A-4 prior to the event.

Table A-4: Key Events and Prerequisites

Meeting	Meeting Date	Meeting Prerequisite(s)
Contract Kick-Off Meeting	30 business days after Contract award	PMP and subsidiary plans complete
		System Engineering Management Plan complete
System Requirements Review (SRR)	30 business days after Contract award	Draft System Specification delivered to Canada
Preliminary Design Review (PDR)	120 business days after Contract award	SRR Minutes Authorized by Canada
		Draft PDR Documentation Package delivered to Canada
Preliminary Human Machine Interface (HMI) Review	120 business days after Contract award	Preliminary HMI ready for review
Critical Design Review (CDR)	90 business days after PDR	Draft CDR Documentation Package delivered to Canada
Subsequent HMI Review	90 business days after Preliminary HMI Review and as needed	HMI ready for review
Factory Acceptance Test (FAT)	In accordance with FAT Event Prerequisites	30 business days' notice for FAT delivered to Canada
Site Acceptance Test (SAT)	In accordance with SAT Event Prerequisites	FAT Report Accepted by Canada
Contract Completion Meeting	30 business days prior to Contract Completion	In accordance with Event Date

4.4. Project Kick-off Meeting

4.4.1. The agenda of items to be reviewed at the Kick-off meeting must include, without being limited to:

4.4.1.1. a review of the contract;

4.4.1.2. a general overview of the project, risks, schedule, and communication channels to follow, and

4.4.1.3. other contractual and programmatic issues associated with the Work as mutually agreed between Canada and the Contractor.

4.5. System Requirement Review Meeting

4.5.1. The agenda of items to be reviewed at the System Requirement Review (SRR) meeting must include, without being limited to:

4.5.1.1. an overview of supporting information and concept of operations;

4.5.1.2. a line-by-line review of the NAL TSOR;

4.5.1.3. a review of critical path activities; and

4.5.1.4. any other queries on issues concerning the technical requirements of the NAL as mutually agreed between Canada and the Contractor.

4.6. Design Review Meetings

4.6.1. The intent of the Design Review Meetings is for the Contractor to demonstrate to Canada that the NAL design and associated documentation is complete and to provide assurance that once the NAL is constructed it will be in full compliance with the technical and contractual requirements of the SOW. Critical Design Review data must include all data necessary to prove that the Contractor's solution meets all the requirements of the SOW. Final documents must include but are not limited to:

4.6.1.1. All final drawings, diagrams, designs, or plans necessary to demonstrate compliance with the requirements of this SOW;

4.6.1.2. Final Inspections and Tests Plans including all applicable information required to complete acceptance testing

4.6.1.3. Final NAL and associated equipment General Arrangement and layout drawings

4.6.1.4. Updated build and delivery schedule

4.7. Human Machine Interface Review

4.7.1. The Contractor must conduct, at minimum, two HMI Reviews with ADAC personnel and the TA. The purpose of these reviews will be for the Contractor to demonstrate their proposed HMI and obtain input from DND for incorporation into the delivered NAL software.

4.7.2. The HMI Review meetings must be held in person unless prohibited by local restrictions. In such cases, the contractor facilitate an online meeting in secure environment where they can share their screen for an interactive presentation.

4.7.3. The Contractor must incorporate operator and technical authority inputs into the HMI.

4.8. Acceptance Review Meetings

4.8.1. The intent of the Acceptance Review Meetings is for the Contractor to demonstrate to Canada that the NAL and all associated documentation and testing/verification have been completed and are in compliance with the technical and contractual requirements of the Contract

4.9. Contract Completion Meeting

4.9.1. The intent of the contract completion meeting is to identify the deliverables that have been accepted by Canada, to plan for the acceptance of all outstanding work in progress, and to identify all actions required to formally close the Contract.

4.10. Project Meeting Arrangements, Location and Facilities

4.10.1. The Contractor must convene and co-chair all meetings at the Contractor's facility, via video or teleconference or elsewhere as agreed to between the Contractor and Canada.

4.10.2. The Contractor must be responsible for all meeting documentation including meeting agenda, presentation packages, action item list and minutes.

4.10.3. The Contractor must prepare and submit an agenda at least five (5) business days in advance of each scheduled review or meeting. Canada will provide any comments on the agenda within two (2) business days of receipt.

4.10.4. Canada and the Contractor must mutually agree to the contents of the agenda.

4.10.5. The Contractor must record, prepare, and deliver minutes within ten (10) business days following each meeting and review.

4.10.6. No change to the SOW, Technical Specification, cost, and schedule, as defined in the Contract, may be authorized by the minutes of a meeting. Such action requires formal Contract amendment by the CA.

4.10.7. Until such time as the COVID-19 Pandemic response measures have been lifted all meetings must conform to the prescribed guidelines in effect at the time. These measures include the elimination of all nonessential travel for the Government of Canada and as such, unless otherwise strictly necessary, all meetings must be conducted by web-conference using a secure web-conferencing software suitable for the required number of participants. Participants (representatives of Contractor and/or Canada) are to respect pandemic response guidelines for their location, participants located in the same region may join such meetings as a group.

4.10.8. Where in person meetings are necessary, they must be conducted either at the Contractors facilities or at a third party location, arranged for by the Contractor, within a 50 km radius of the Contractors facilities. For any such necessary, in-person meeting the Contractor must receive consent of Canada before scheduling the meeting. Contractors must note that Canada will require an extended period to obtain approval to travel to any such meetings.

4.10.9. The cost associated with all identified meetings must be included in the total price identified in the Contract. The Contractor must cover all costs associated with the location, equipment and software required to conduct the meetings or review except for the equipment costs associated with representatives of Canada to connect to virtual meeting spaces and any travel costs associated with the attendance of representatives from Canada.

4.11. Action Item List

4.11.1. The Contractor must maintain an historical, chronological and up-to-date electronic Action Item List resulting from reviews, meetings, or correspondence between Canada and the Contractor, for the duration of the Contract. The format for the Action Item List must be acceptable to Canada.

4.11.2. In the Action Items List the Contractor must record, as a minimum: identification number; title and/or description, date opened, action required, priority, organization responsible for taking action, brief statement of results in sufficient detail to clearly identify and track the action taken, date closed, and, status (open/closed).

4.11.3. The Contractor must provide a draft Action Item List within ten (10) business days of the Kick-off meeting. Canada will provide any comments on the format within five (5) business days of receipt.

4.11.4. The Contractor must ensure that, once entered into the Action Item List, no entry is deleted.

5. SYSTEMS ENGINEERING

5.1. Overview

5.1.1. The Contractor must perform Systems Engineering (SE) activities and apply SE processes throughout the design, analysis, development, production, integration, testing and set to work stages of the NAL Contract.

5.2. System Engineering Management

5.2.1. The Contractor must include a Systems Engineering Plan in their proposal under which to conduct the work in the SOW. The System Engineering Plan must detail the Contractor's:

5.2.1.1. technical schedule;

5.2.1.2. technical approach;

5.2.1.3. engineering processes;

5.2.1.4. technical risks; and

5.2.1.5. planned activities.

5.2.2. The Contractor must conduct all hardware engineering including development of requirements, design, implementation and verification.

5.2.3. The Contractor must conduct all software engineering including development of requirements, design, implementation and verification.

5.2.4. The Contractor must demonstrate the use of proven software engineering processes using appropriate design methodologies to ensure delivery of high quality, functional, reliable, efficient, usable and easily maintainable software.

5.2.5. The Contractor must deliver all required software programs required for installation, operation and maintenance of the delivered system.

5.2.6. The Contractor must provide all licenses and license agreements required for Canada to build, operate, modify and maintain the NAL until the end of its life.

5.2.7. The Contractor must be responsible for the physical and logical interface between the NAL and existing ADAC and CSNI information systems.

6. INTEGRATED LOGISTICS SUPPORT

6.1. Technical Data Package

6.1.1. The Contractor must develop a Technical Data Package (TDP) in Contractor defined format. The TDP must include the following:

6.1.1.1. Operation and Maintenance Manual(s);

6.1.1.2. Recommended Spares List;

6.1.1.3. Interface Control Documents (ICD); and

6.1.1.4. Engineering Drawings.

6.1.2. The Operation and Maintenance Manual(s) must contain the following, at a minimum:

6.1.2.1. Equipment Description and Technical Characteristics;

6.1.2.2. Operating Procedures including Controls and Indicators;

6.1.2.3. Functional Description and Block Diagrams;

6.1.2.4. Preventive Maintenance Procedures and Performance Monitoring Instructions;

6.1.2.5. Troubleshooting and Fault Finding;

6.1.2.6. Corrective Maintenance;

6.1.2.7. Maintenance Equipment List; and

6.1.2.8. Parts List.

6.2. TRAINING

6.2.1. The Contractor must provide Initial Training sessions including all of the required training material associated with the training.

6.2.2. The Contractor must provide the Initial Training after delivery of the NAL with the actual date subject to approval by the TA.

6.2.3. The Contractor must provide Initial Training to a group of CAF trainers and project personnel at the ADAC facility.

6.2.4. The Contractor must provide Initial Training consisting of 2 training sessions:

6.2.4.1. One (1) training session for Analysts (train-the-trainer type) given to up to six (6) students. The training must communicate all functions related to NAL operation; and

6.2.4.2. One (1) training session for Maintainers (train-the-trainer type) given to up to six (6) students. The training must communicate all functions related to NAL maintenance, back-up and recovery

6.2.5. The training sessions must be a minimum of two (2) days in length.

7. ACCEPTANCE PROCESS

7.1. Test Plans

7.1.1. The Contractor must produce and deliver test plans that provides an overall outline of the entire spectrum of inspection, test and trial activities associated with the NAL acceptance.

7.1.2. The test plans must contain all conditions, adjustments, expected test results, and test equipment required to verify the proper design, fabrication, and verification of the NAL.

7.1.3. The Contractor must produce the following test plans and instructions in Contractor defined format:

7.1.3.1. Factory Acceptance Test (FAT) Plan and Procedures;

7.1.3.2. Set to Work Instructions; and

7.1.3.3. Site Acceptance Test (SAT) Plan and Procedures.

7.2. Acceptance Testing

7.2.1. The purpose of the acceptance testing is to demonstrate that the performance and functional requirements of the NAL have been satisfactorily met. The Contractor must perform all tests necessary to demonstrate the NAL meet all requirements identified in the SOW and TSOR.

7.2.2. All inspections, test and installations must be witnessed and accepted by Canada and the Contractor.

7.2.3. The Contractor must prepare and deliver an Acceptance Test Report for each Acceptance Test to define all evidence of SOW and TSOR compliance obtained during the test.

7.3. Testing Locations

7.3.1. The Contractor must complete the FAT at their facility prior to shipment to ADAC.

7.3.2. The Contractor must complete the system integration and set to work at the ADAC facility.

7.3.2.1. The Contractor must conduct a site visit to the ADAC to support set to work planning and technical interchange related to interfacing to the existing ADAC network and infrastructure.

7.3.3. The Contractor must complete the SAT at ADAC following the set-to-work.

8. DELIVERABLES

8.1.1. The contractor must deliver all items identified in Table 2.

Table A-5: List of Deliverables

Item	Description	Qty	Delivery Date	Delivery Location
0001	NAL Systems as described in Annex B, TSOR	1 ea	Within 24 months ACA	Department of National Defence Maritime Forces Atlantic Main Supply Bldg Receipts Office Building D-206 HMCS Dockyard Halifax, Nova Scotia Canada B3K 5X5 Attn: ADAC Halifax
0002	NAL System Software with perpetual, object-code device licenses as required	1 ea	Within 24 months ACA	As Above
0003	FAT Plan and Procedures	1 ea	2 weeks prior to FAT	As Above
0004	Set to work Instructions	1 ea	2 weeks prior to Set-to-work	As Above
0005	SAT Plan and Procedures	1 ea	2 weeks prior to SAT	As Above
0006	TDP as specified in SOW Para 5.1	1 ea	Within 24 months ACA	As Above
0007	Training plan, materials and package as specified in SOW Para 5.2	1 ea	4 weeks prior to Training	As Above
0008a	Operator Initial Training as per SOW Para 5.2	1 lot	Within 24 months ACA	ADAC Halifax Facility
0008b	Maintainer Initial Training as per SOW Para 5.2	1 lot	Within 24 months ACA	ADAC Halifax Facility
0009	All documentation in soft copy on DVD/CD media.	5 ea	Within 24 months ACA	MAIL National Defence Headquarters 101 Col By Dr Ottawa, Ontario Canada K1A 0K2 Attn: MSC 7-2

8.1.2. All documentation must be delivered in soft copy on DVD/CD media. Five (5) soft copies must be delivered.

8.1.3. All deliverables must be received in English.

8.1.4. All deliverables must be received and be to the satisfaction of the Crown within twenty-four (24) months of Contract Award.

8.1.5. Soft copy formats must be compatible with Department of National Defence (DND) software applications. Microsoft Office 2013 applications (Microsoft Word, Microsoft Excel, Microsoft PowerPoint and Microsoft Access) are those currently being utilized.

9. GOVERNMENT SUPPLIED MATERIAL (GSM)

9.1. Security Requirements

9.1.1. The Contractor shall apply and be approved for a Third Party Transfer (TPT) before the ADAC-NET network diagram can be provided. The Contractor shall plan for 6 months to complete the TPT approval process.

9.1.2. The Contractor shall hold a Level 2 Security Clearance to access the ADAC-NET network diagram

Appendix A-1

TECHNICAL STATEMENT OF REQUIREMENTS FOR NATIONAL ACOUSTIC LIBRARY (NAL)

1. INTRODUCTION

1.1. The TSOR defines the technical requirements for the design and delivery of the National Acoustic Library (NAL).

1.2. Annex A, NAL Statement of Work (SOW) gives more details on the system background and concept of operations which support the TSOR.

2. INTERFACE REQUIREMENTS

2.1. The NAL must have a network interface with the ADAC-NET. The ADAC-NET network details shall be provided as part of the System Requirement Review (SRR) meeting.

2.2. The NAL must have a network interface with the Consolidated Secret Network Infrastructure (CSNI). The CSNI network details shall be provided as part of the SRR meeting.

2.3. The NAL must be accessible to all ADAC-NET and all CSNI connected computers through the use of a web browser portal unless a significant loss of capability would occur.

2.4. The NAL must be able to import Acoustic Information from all current Level 0, Level 1 and Level 2 systems.

2.5. The NAL must save exported Acoustic Information files to a user-specified location on the local storage or networked attached storage, as selected by the user.

2.6. To the maximum extent practical, NAL must adopt Human Machine Interface (HMI) standards that are consistent with Microsoft Windows, and/or Linux based servers.

2.7. The NAL must provide an interface to ADAC-NET that meets CAF security requirements.

2.8. The NAL must provide an interface to CSNI that meets CAF security requirements identified in the CSNI Security Orders.

3. PERFORMANCE REQUIREMENTS

3.1. The NAL software design must be scalable to allow for future changes to NAL applications and for new acoustic data types.

3.2. The NAL must use an open architecture design to ensure that the system components can be supported and upgraded over the in-service life of the NAL. The design software shall be such as to allow for introduction of new algorithms and techniques into appropriate points in the processing chain for the purpose of evaluation and eventual technology insertion.

3.3. The NAL Database must be designed to catalog the following data:

i. Active metadata

ii. Active acoustic data

iii. Passive metadata

iv. Passive acoustic data

v. Marine mammal metadata

vi. Marine mammal acoustic data

vii. Torpedo metadata

viii. Torpedo acoustic data

3.4. The NAL Database must be composed of two separate physical network drives, the NAL ACINT Database and NAL Acoustic Database.

3.5. The NAL Database must be updatable and modifiable by ADAC analysts or maintainer through ADAC-NET, CSNI or directly at the NAL computer terminal.

3.6. Users must be able to search the NAL Database based on one or more user defined parameters.

3.7. The NAL Database must be designed for real-time access.

3.8. The NAL Database must feature architecture that allows performance to maintain at least 90 percent of its clean configuration as volume of data and processing demand increases.

3.9. Users must be able to access the NAL Database through the latest version of the Microsoft Edge browser available on ADAC-NET and CSNI. The current version is Microsoft Edge version 87.0.664.75.

3.10. The NAL must be able to replicate parts or all of its data into a stand-alone device.

3.11. The NAL Server and database must maintain real-time responsiveness (less than 300 ms) when under the maximum load from at least 30 users simultaneously accessing the database.

4. PHYSICAL REQUIREMENTS

4.1. The NAL must make use of commodity, Commercial Off-The-Shelf (COTS) hardware where feasible. Any non-COTS hardware must be justified technically or programmatically and have approval from the Technical Authority.

4.2. The NAL physical design must be a modular open systems approach to allow for future changes to the NAL applications, to new acoustic information, to new external system interfaces, and for additional storage requirements.

4.3. The NAL must have a computer terminal. The terminal must have, at a minimum, the following features:

i. a standard monitor with minimum corner-to-corner dimension of 21.9 inches;

ii. a standard wired keyboard;

iii. a standard wired mouse;

iv. standard stereo speakers for audio playback; and

v. a standard PC audio headset jack for audio playback using external headsets.

4.4. The NAL must have, at minimum, ten (10) Terabytes (TB) of storage for acoustic database, five (5) TB of storage for ACINT database, and fifteen (15) TB of storage for the back-up.

4.5. The NAL must be located in the ADAC Server Room (Figure 1).

4.6. The NAL Backup must be located at the Base Information Services (BIS) data warehousing facility and connected via existing Tactical Local Area Network Encrypted (TACLANE).

4.7. The NAL hardware must be designed to fit into existing footprint (Figure 1) unless authorized by the Crown.

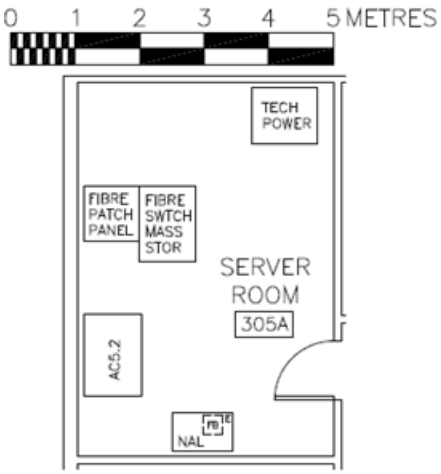

Figure 1. ADAC Server Room Floor Plan

4.8. All NAL hardware must conform to EMSEC requirements within ADAC Shield.

5. RELIABILITY, AVAILABILITY AND MAINTAINABILTY REQUIREMENTS

5.1. Reliability

5.1.1. The NAL must have a mean time between maintenance of greater than 90 days.

5.1.2. The NAL must have a mean time between failures of greater than 30 days.

5.1.3. The NAL must have a mean time between critical failures of greater than 5 years.

5.1.4. The NAL must have a mean time to repair of one hour, not including database recovery time.

5.1.5. The NAL must be designed with sufficient redundancy such that power failure of essential systems will not result in data being lost or destroyed.

5.2. Availability

5.2.1. The NAL must be available a minimum of 350 days per year.

5.2.2. The NAL must be capable of operating unattended at all times during the availability period.

5.2.3. The NAL must not be unavailable for more than 48 hours at one time for maintenance, repairs or upgrades.

5.2.4. The NAL must be designed to allow operators access to ACINT data products regardless of current NAL system status.

5.3. Maintainability

5.3.1. The NAL must include integrated electronic technical manuals to support preventative maintenance, corrective maintenance and fault finding.

5.3.2. The NAL must include a Built in Test (BIT) to run diagnostics on the NAL software, NAL hardware, internal interface and external interfaces.

5.3.3. The NAL must have the ability to notify maintainers when preventative and corrective maintenance are needed and recommend what actions are required.

5.3.4. The NAL must have the ability to continuously monitor and display system health, software processes and configuration metrics.

5.3.5. The NAL must be able to conduct an automatic daily, complete system back-up to a specified network-connected storage location.

5.3.6. The NAL back-up time and network location must be configurable by a Maintainer.

5.3.7. The NAL must be able to completely recover from a back-up in no longer than 12 hours.

6. ENVIRONMENTAL, HEALTH AND SAFETY REQUIREMENTS

6.1. The NAL must run in a low power mode during periods of inactivity.

6.2. The NAL must comply with all Government of Canada safety and health guidelines as identified in the Canada Occupational Health and Safety Regulations (SOR/86-304).

7. SECURITY CONTROL REQUIRMENTS

7.1. Access Control

7.1.1. The NAL must have, at minimum, the following four account types:

i. Administrator;

ii. Analyst;

iii. Operator; and

iv. Maintainer.

7.1.2. The NAL must allow simultaneous access to the databases and NAL tools for all users.

7.1.3. The NAL must employ the concept of least privilege, allowing only accesses for accounts which are necessary to accomplish their tasks. The detailed account privileges must be mutually agreed upon with the Contractor and Technical Authority.

7.1.4. The NAL must only allow an Administrator Account to:

i. create, edit, unlock or delete accounts;

ii. change account access privileges; and

iii. edit the ACINT Database and accept Level 2 analyses for entry into the ACINT Database.

7.1.5. The NAL must have three tiers of Analyst accounts defined by look-levels: 1st-look, 2nd-look and 3rd-look.

7.1.6. The NAL must allow an Analyst Account read access to all Levels of analysis and NAL applications/tools; however, an Analyst must only be able to progress a work package as far as their look-level permits.

7.1.7. The NAL must allow Operator Accounts to access and retrieve ACINT data products and reports.

7.1.8. The NAL must allow Maintainer Accounts to:

i. monitor system health configuration;

ii. display and download history logs; and

iii. run diagnostics.

7.1.9. The NAL must lock an account after 10 unsuccessful login attempts.

7.1.10. The NAL must display a DND-defined system use notification message or banner which must be acknowledged by the user before granting access to the system.

7.1.11. The NAL must prevent further access to the system by initiating a session lock after a defined time period of inactivity or when requested by the user.

7.2. Configuration Management

7.2.1. The NAL must maintain version control over all Levels of analyses, NAL Acoustic Database entries and ACINT Database entries,

7.3. Identification and Authentication

7.3.1. The NAL must implement single factor authentication for access to the NAL portal.

7.3.2. The NAL must not have unencrypted static authenticators embedded in applications or access scripts or stored on function keys.

7.4. Risk Assessment

7.4.1. The NAL must employ vulnerability scanning tools and techniques that promote interoperability among tools and automate parts of the vulnerability management process by using standards for:

i. Enumerating platforms, software flaws, and improper configurations;

ii. Formatting and making transparent, checklists and test procedures; and

iii. Measuring vulnerability impact.

7.5. System Integrity

7.5.1. The NAL must detect unauthorized changes to software and information.

7.5.2. The NAL must provide near real-time alerts when indications of compromise or potential compromise occur.

8. ACOUSTIC INFORMATION MANAGEMENT REQUIREMENTS

8.1. Acoustic Information Ingestion

8.1.1. The NAL must allow ingestion of Level 0 Acoustic Information files from all Level 0 systems.

8.1.2. The NAL must allow ingestion of Level 1 Acoustic Information files from all Level 1 systems.

8.1.3. The NAL must allow ingestion of Level 2 Acoustic Information files from OSPREY II and OSPREY III.

8.1.4. The NAL must automatically create a corresponding NAL record for Level 0, Level 1, and Level 2 acoustic data based on all electronic data and metadata available except where the file format definition is unavailable due to proprietary and/or licensing limitations.

8.1.5. The NAL record must contain the following fields:

i. reporting sensor;

ii. reporting unit;

iii. location of audio source;

iv. name of contact;

v. quality of contact;

vi. security classification;

vii. date tracked;

viii. date added; and

ix. reviewed by.

8.1.6. The NAL record must contain a field to mark Ambient Noise files.

8.1.7. When creating a NAL record, the NAL must prompt the user to fill out acoustic data and metadata that can't be filled out automatically.

8.1.8. The NAL must require the acceptance of a new NAL record by an analyst or administrator before updating the NAL Acoustic Database.

8.1.9. The NAL must allow the fields of the NAL record to be edited by an analyst or administrator.

8.1.10. The NAL must be able of ingesting multiple similar Acoustic Information files in batches.

8.1.11. The NAL must be able to complete a one-time, automated ingestion of all acoustic information and NAL entries from the legacy NAL database at ADAC upon delivery, store the acoustic information and produce NAL entries in accordance with this document.

8.2. ACINT Database

8.2.1. The NAL must have an ACINT database that stores ACINT entries for all known platforms, classes and hulls.

8.2.2. The NAL must store the following parameters in an ACINT entry:

i. Platform;

ii. Class; and

iii. Hull;

8.2.3. The NAL must be capable of ingesting all historical ACINT entries from the existing NAL at ADAC.

8.2.4. The NAL must be able to generate ACINT entries from completed Level 2 analysis in OSPREY.

8.2.5. The NAL ACINT database must track Threat Force Databases of adversary platforms and Own-ship Signature Databases with acoustic ranging information for use in counter detection range modelling.

8.2.6. The NAL must be able to generate ACINT entries manually by an administrator.

8.2.7. The NAL must have autonomously generated ACINT entries reviewed by administrator before updating the ACINT database.

8.2.8. The NAL must be able to reproduce a portion to all of the NAL Acoustic Database and ACINT database associated with any platforms, classes, hulls or multiple of the aforementioned for use by a user without NAL connectivity.

8.3. Acoustic Analysis Workflow Management

8.3.1. The NAL must have an Acoustic Analysis Workflow Management application that allows management of Level 0-3 acoustic analysis.

8.3.2. The NAL Acoustic Workflow Management application must allow administrators to create analysis work package and identify the following:

i. Work Package Name

ii. Work Package Description

iii. Reference to applicable acoustic information or NAL Record

iv. Completion Date

v. Priority

vi. Look-Level

8.3.3. The NAL Acoustic Workflow Management application must allow assignment of analysis work packages to an analyst.

8.3.4. The NAL Acoustic Workflow Management application must allow prioritization of analysis work packages with the following scale:

i. High (1);

ii. Medium-High (2);

iii. Medium-Low (3); and,

iv. Low (4).

8.3.5. The NAL Acoustic Workflow Management application must allow status tracking of analysis work using the following designators:

i. Unassigned;

ii. In Queue;

iii. Analysis In Progress;

iv. Analysis Complete; and

v. Administrator Reviewed.

8.3.6. The NAL Acoustic Workflow Management application must notify the assigned analyst and administrators of creation and status tracking changes in an analysis work package.

8.3.7. The NAL Acoustic Workflow Management application must allow analysts and administrators to check-out acoustic files from the NAL Acoustic Database and store locally to conduct Level 1, Level 2 and Level 3 analysis.

8.3.8. The NAL Acoustic Workflow Management application must allow administrators to force-unlock a checked-out acoustic file when required.

8.3.9. The NAL Acoustic Workflow Management application must allow analysts to update the work package with new reference acoustic files and submit for administrator review.

8.3.10. The NAL Acoustic Workflow Management application must allow administrators to accept and reject work package submissions.

8.3.11. The NAL Acoustic Workflow Management application must allow for comments to be entered by Analysts and Administrators when submitting, accepting and rejecting submissions. All entered comments must be retained and be reviewable as part of the work package history.

8.3.12. The NAL Acoustic Workflow Management application must be capable of transferring accepted Level 2 analysis work packages to the ACINT Database.

9. ACOUSTIC INFORMATION RETRIEVAL AND REPORTING REQUIREMENTS

9.1. Level 0 Debrief Report Tool

9.1.1. The NAL must have a Level 0 Debrief Report Tool that provides Level 0 debrief reporting for a specified mission.

9.1.2. The Level 0 Debrief Report Tool must provide mission tactical synopsis from OSPREY III Analysis Work Station (AWS) files which includes the following:

i. Primary contact track;

ii. Dynamic events including turns, speed changes and depth changes;

iii. Buoy positions;

iv. Secondary contacts;

v. Weapon launches; and

vi. Active transmission times and detection confirmation for each transmission.

9.1.3. The Level 0 Debrief Report Tool must provide acoustic summary for the primary contact which includes the following:

i. All passive sources and received level detected;

ii. Best detection and tracking sources; and

iii. Observed active and passive sonar detection range.

9.1.4. The Level 0 Debrief Report Tool must provide a summary of Level 0 analysis from the mission operator logs stored in the NAL.

9.1.5. The Level 0 Debrief Report Tool must provide an assessment of the Level 0 analysis against the Level 2 Analysis using the following metrics:

i. All passive sources and received level detected;

ii. Best detection and tracking sources; and

iii. Observed active and passive sonar detection range.

9.2. ACINT Query Tool

9.2.1. The NAL must have an ACINT Query Tool for searching the ACINT database.

9.2.2. The ACINT Query Tool must be able to search the ACINT database based on a single ACINT entry parameter or multiple ACINT entry parameters.

9.2.3. The ACINT Query Tool must have a toggle to return results that match any of the multiple ACINT parameters or match all the ACINT parameters.

9.2.4. The ACINT Query Tool must identify the percentage of ACINT parameters

matched for each search result.

9.2.5. The ACINT Query Tool must display the following fields in the search results:

i. Contact Number;

ii. Mission Date;

iii. Sensor type;

iv. Security Caveat;

v. Platform;

vi. Class; and

vii. Frequency.

9.2.6. The ACINT Query Tool search result fields must be sortable alpha-numerically and reverse-alphanumerically as appropriate for the field.

9.2.7. The ACINT Query Tool search result fields must be sortable chronologically and reverse-chronologically as appropriate for the field.

9.2.8. The ACINT Query Tool must allow the operator to access an ACINT entry directly from the search results field.

9.2.9. The ACINT Query Tool Search results must be retained and accessible until closed or a new search conducted by the operator.

9.3. Interactive ACINT Guide

9.3.1. The NAL must have a tool for generating an Interactive ACINT Guide summarizing acoustic information for all available classes and hulls.

9.3.2. The Interactive ACINT Guide format must work with standard DND/RCN desktop software such as ADOBE Acrobat, Microsoft Word and Internet Explorer.

9.3.3. The Interactive ACINT Guide must have a hyperlinked directory at the beginning that allows quick access to any section (class) and subsection (platform).

9.3.4. The Interactive ACINT Guide must be organized alphabetically by Class and Platform.

9.3.5. The Interactive ACINT Guide contents (i.e. Classes and hulls) must be specified by the operator prior to generating the guide.

9.3.6. The Interactive ACINT Guide must include the following acoustic information for selected classes and hulls:

i. Source and frequency of all signature components for each platform;

ii. Source level mean and standard deviation for each ACINT component;

iii. Speed, operating mode and other dependence of the source;

iv. Sonogram images visualizing source characteristics;

v. Platform metadata including nation, photos, systems including propulsion, weapons, sonar and radar, classification of ACINT, and open-form details; and

vi. Embedded Passive Aural Listening (PAL) formatted recordings of unique signature components and transients.

9.3.7. The Interactive ACINT Guide must have a "Print Guide" option at the beginning of the guide, a "Print Class" option at the beginning of each section and a "Print Hull" option at the beginning of each subsection that automatically selects and prints the respective content.

9.4. Training Tools

9.4.1. The NAL must be able to create a Training Package Tools from any completed Level 2 contact.

9.4.2. The Training Package Tool must be able to generate a training package that includes:

i. An unannotated processed OSPREY AWS file for the student;

ii. The associated raw Acoustic Data file;

iii. An annotated OSPREY AWS file for the instructor; and

iv. A making guide listing all sources, harmonics, aural characteristics, Closest Point of Approach (CPA) time and CPA speed.

9.5. Acoustic Range Prediction

9.5.1. The NAL must be able to provide a customizable ACINT Database output in .csv format. The file will be used by environmental range prediction and acoustic modeling applications. These applications use the ACINT Database parameters as inputs to their acoustic models.

9.6. ACINT Reports

9.6.1. The NAL must be capable of generating the following reports:

i. ACINT summary for a selected class;

ii. ACINT summary for a selected platform;

iii. ACINT summary for a group of contacts;

iv. ACINT summary for single contact;

v. Regional threat summaries; and

vi. Tactical Acoustic Vulnerability Assessment (TAVA);

9.6.2. The ACINT Report format must work with standard DND/RCN desktop software such as ADOBE Acrobat, Microsoft Word or Internet Explorer.

9.6.3. All ACINT Report must be printable using standard letter paper size.

9.6.4. The ACINT Summaries must include the same information identified in paragraph 9.3.6.

9.6.5. The Regional Threat Summary Report must include all contacts of interest known to operate in the specified regions.

9.6.6. The Regional Threat Summary must have selectable regions from all regions currently in the ACINT database.

9.6.7. The Regional Threat Summary must include the same information identified in paragraph 9.3.6.

9.6.8. The TAVA report for a hull must include:

i. Sound level of the most recent hull ranging;

ii. Trend analysis for the hull;

iii. Trend analysis across other hulls in the same class;

iv. Current class average sound levels; and

v. Historical class average sound levels.

10. ACOUSTIC ANALYSIS TOOLS

10.1. Statistical Analysis Tool

10.1.1. The NAL must provide a Statistical Analysis Tool which calculates and displays statistical properties for all classes and hulls in the ACINT database.

10.1.2. The Statistical Analysis Tool must update automatically once a new ACINT entry is added to the ACINT database.

10.1.3. The Statistical Analysis Tool must be able to calculate and display the following statistical information for all classes and hulls across all detections:

i. Mean;

ii. Standard Deviation;

iii. Probability Density Function (function and graph);

iv. Minimum and Maximum values; and

v. Probability of Detection.

10.1.4. The Statistical Analysis Tool must display relevant information of the data set including:

i. Class;

ii. Hull Number;

iii. Current Name;

iv. Date last updated; and

v. Number of NAL entries in data set.

10.1.5. The Statistical Analysis Tool must allow the operator to display statistical information across a whole class or for a specific hull.

10.1.6. The Statistical Analysis Tool must allow the operator to generate up to six (6) display windows for different platforms or hulls at one time.

10.2. Trend Analysis

10.2.1. The NAL must provide a Trend Analysis Tool which calculates and displays trends in signature data for classes and hulls from all available entries in the ACINT database.

10.2.2. The Trend Analysis Tool must compare data from all previous range events of the same hull, and across other hulls in the class.

10.2.3. The Trend Analysis Tool must calculate current and historical class average sound levels.

10.2.4. The Trend Analysis Tool must display graphs illustrating signature trends as a function of time.

10.2.5. The Trend Analysis Tool must display ACINT entry data points on the signature trend lines.

10.2.6. The Trend Analysis Tool must display each signature trend line using different, distinct colours.

i. The Trend Analysis Tool must allow the operator to interact with the graph and displayed data to:

ii. Change start and end time of the analysis;

iii. Change what signature trend lines are displayed;

iv. Change the display size of the graph

10.2.7. The Trend Analysis Tool must allow the operator to generate up to six (6) graphs for different platforms or hulls at one time.

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ANNEX “B”
In-Service Support Statement of Work For National Acoustic Library (NAL) Procurement

1. SCOPE

1.1. Purpose

1.1.1. The Department of National Defence (DND) has a requirement for In-Service Support (ISS) in support of the National Acoustic Library (NAL).

1.2. Scope

1.2.1. Services are required in order to maintain the NAL operational availability requirements. The work detailed in this SOW includes, but is not limited to:

1.2.1.1. Repair and maintenance the NAL, its sub-systems and its components, both at the Contractor's facility and at sites designated by DND;

1.2.1.2. Integrated Logistics Support (ILS) Services;

1.2.1.3. Modification and Improvement;

1.2.1.4. Configuration Management;

1.2.1.5. Obsolescence Management and Mitigation;

1.2.1.6. Packaging and preservation;

1.2.1.7. Quality Assurance

1.2.1.8. Travel; and

1.2.1.9. Technical Investigations and Engineering Support (TIES).

1.3. Material and Services

1.3.1. The Contractor must supply all labour, equipment material, system maintenance kits (i.e. tools, IT consumables etc.), test equipment (i.e. laboratory system), technical, engineering and administrative services necessary to complete support to the NAL.

1.4. fMaintenance Philosophy

1.4.1. The NAL will be installed and held at a DND facility. Basic maintenance and troubleshooting will be done by trained DND personnel. Maintenance issues that can’t be resolved by DND will be tasked to the contractor. Testing and repairs will be done at the DND facility, the NAL will not be taken out to be repaired at the contractor’s facility. Improvements and modifications can be developed at the contractor’s facility but will be installed at DND’s facility

2. APPLICABLE DOCUMENTS

2.1. Applicability

2.1.1. The following documents form part of this SOW to the extent specified herein and are supportiveof the SOW when referenced. Unless otherwise specified, the issue or amendment of documents effectivefor this contract shall be those in effect on the date of contract award. In the event of a conflict between the documents referenced herein and the contents of the SOW, then the contents of the SOW shall take precedence.

2.1.2. Applicable documents shall be made available upon request and meeting the controlled good and security requirements.

2.2. DND Specifications, Standards, and Publications:

Reference	Promulgation	Reference Title
A-LM-187-002/JS-001	1994-12-16	Packaging of Electrostatic Sensitive Electronic Devices
C-01-100-100/AG-006	1996-03-01	Specification - Writing, Format and Production of Technical Publications
D-LM-008-036/SF-000	2013-12-01	Department of National Defence Minimum Requirements for Manufacturer's Standard Pack

2.3. Other Standards and Publications:

ISO 9001:2015	2015	Quality Management Standard
MIL-STD-973	1992	Military Standard, Configuration Management
MIL-HDBK-263B	1994	Military Handbook, Electrostatic Discharge Control Handbook for Protection of Electrical and Electronic Parts, Parts, Assemblies & Equipment
MIL-STD-1686C	1995	Department of Defence Standard Practice, Electrostatic Discharge Control Program for Protection of Electrical & Electronic Parts, Assemblies & Equipment

2.4. Order of Precedence

2.4.1. In the event of a conflict between the content in this SOW and the referenced documents, the content of this SOW must take precedence.

3. REQUIREMENTS/TASKS

3.1. General

3.1.1. The Contractor must provide maintenance support as tasked by the TA. Each task must be authorized by a Task Authorization Form (DND 626) on the Contract, accompanied by a SOW detailing the level of effort.

3.2. On-Site Maintenance

3.2.1. The Contractor must maintain and test, and where required, calibrate all NAL systems and

associated equipment.

3.2.2. In the event of a fault, the minimum scope of each arising must include:

3.2.2.1. Inspecting mechanical and electrical components;

3.2.2.2. Cleaning, visually inspecting and bench testing;

3.2.2.3. Cleaning and testing necessary to locate and isolate defects, deficiencies and determine nature and extent of work;

3.2.2.4. Disassembling to the extent necessary to inspect for needed maintenance/repairs of parts or sub-assemblies;

3.2.2.5. Performing necessary rework and/or replacement of parts or sub-assemblies;

3.2.2.6. Inspect to ensure rectification of defects and deficiencies;

3.2.2.7. Re-assembling, performing calibrations functionally testing, performing acceptance inspection as defined in the Technical Data Package (TDP) and preparing for shipment; and

3.2.2.8. Conducting final inspection in accordance with approved test procedures.

3.2.3. The Contractor must maintain a supply of maintenance kits as described in the NAL Operation and Maintenance Manual, tools, sub-assemblies and component parts to ensure minimum turn-around-times not to exceed two (2) business days.

3.2.4. The Contractor must determine nature and extent of work for software, fix identified software deficiencies, and employ version control of updated software.

3.2.5. The Contractor must maintain a failure database on all DND repairs by component name, part number, assembly number, serial number, and cost of repairs where applicable. The report must be made available to the client upon request.

3.3. Integrated Logistic Support Services

3.3.1. The Contractor must provide Integrated Logistic Support (ILS) services for the ADAC systems and associated equipment as tasked by the TA. The Contractor must provide support to DND by providing user training. The Contractor must manage the inventory and dispose of obsolete assets.

3.3.2. The Contractor shall maintain a database of DND owned inventory held by the Contractor.

3.3.3. The Contractor shall provide an annual report for year ending 31 March, or upon request from the TA, of all DND owned inventory holdings in accordance with Government Furnished Resource (GFR) whichwill be supplied as needed.

3.3.4. The Contractor shall provide an annual report for year ending 31 March of all repairable and consumable inventory purchased, acquired, consumed or removed from holdings in accordance with GFR which will be supplied as needed.

3.3.5. The Contractor must maintain and deliver to the TA logs of all activities regarding support to DND, as applicable and as defined in the individual DND 626 tasks.

3.4. Liaise with User Units

3.4.1. The Contractor must communicate with user units as directed by the TA to maintain currency on

equipment usage, operational requirements, stores/equipment performance. The Contractor must provide users with insight into technical developments within the company. User units include but are not limited to the following: the Acoustic Data Analysis Center (ADAC), the Defence Research and Development Canada (Atlantic) (DRDCA)) and the Canadian Forces Maritime Experimental and Test Ranges (CFMETR).

3.4.2. The Contractor must maintain and deliver to the TA records of all discussions and meetings, the deliverable format and media will be defined in the individual DND 626 tasks.

3.5. Modification and Improvement

3.5.1. All items returned must be repaired with all approved modifications and/or improvements incorporated.

3.5.2. Upon mutual agreement, the Contractor must design and provide proven modifications proposed by DND or by the Contractor. The Contractor must provide estimates of the cost of modification kits in relation to the design and modifications.

3.6. Configuration Management

3.6.1. All Systems, equipment, assemblies, sub-assemblies and components are subject to Configuration Management. The Contractor must use Military Handbook MIL-STD-973 for guidance.

3.6.2. The Contractor must maintain and update all specifications, drawings and in-plant support documentation (i.e., Quality Assurance), which defines the configuration item.

3.7. Obsolescence Management and Mitigation

3.7.1. In order to ensure an acceptable material readiness level at the ADAC facility, the Contractor must procure or design and manufacture acceptable Fit, Form and Function (FFF) replacements assemblies in a relatively short period of time (less than one calendar year).

3.7.2. The Contactor must maintain a Obsolescence Management Plan and Report that details the five (5) years outlook for existing equipment in order to help DND determine the requirement for equipment replacement.

3.8. Document Support

3.8.1. The Contractor must produce and/or amend equipment documentation support work on an as required basis. Technical publications must be written in accordance with C-01-100-100/AG-006 - Specification - Writing, Format and Production of Technical Publications.

3.8.2. Specific work will be identified in a separate SOW and issued under a DND 626 Tasking.

3.9. Mobile Repair Parties (MRPs)

3.9.1. The Contractor must perform emergency repairs or fit modifications developed at the Acoustic Analysis Center in Halifax NS.

3.9.2. Specific work will be identified in a separate SOW and issued under a DND 626 Tasking.

4. TECHNICAL INVESTIGATIONS AND ENGINEERING STUDIES (TIES)

4.1. The Contractor must carry out Technical Investigations and Engineering Studies (TIES) as directed by the TA. Specific work will be identified in a separate SOW and issued under a DND 626 Tasking. All necessary engineering and support activities associated with, and in satisfaction of, this tasking by the TA must be performed by the Contractor. The scope of the work includes the following:

4.1.1. Undertake technical investigations as requested by the TA;

4.1.2. Investigation, Sourcing and Procurement of Suitable Replacement Parts;

4.1.3. Availability, Reliability, and Maintainability Studies;

4.1.4. Designing and developing equipment or software modifications;

4.1.5. Providing software or firmware updates as required, and

4.1.6. Preparing documentation and drawings.

4.2. Deliverables for TIES taskings will be defined in TIES Statement of Work.

4.3. Cost Limitation

4.3.1. The Contractor must submit a cost estimate for approval to the PA for the completion of the TIES tasking requested. The TA will review the cost estimate and a task authorization, DND 626, will be provided to the Contractor to proceed with the tasking.

4.4. Upon completion of the task, the Contractor must submit to the PA/TA a written report on the results of the tasking.

5. DELIVERABLES

5.1. Deliverables for maintenance requirements and taskings include:

5.1.1. Test Procedures (delivered 10 business days prior to testing);

5.1.2. Test Results (delivered within 10 business days following test event);

5.1.3. System Maintenance Kit List (delivered 10 business days after contract award);

5.1.4. Historical records (delivered within 5 business days of TA's request);

5.1.5. Minutes of Meetings (delivered within 10 business days of meeting); and

5.1.6. ILS Document Updates (as required based on system changes).

5.2. Work-In-Progress (WIP) Report: The Contractor must provide a quarterly status report that details the work in progress for each task and/or maintenance activity.

5.3. Obsolescence Management Plan and Report: - The Contractor must provide an Obsolescence Management Plan and report bi-annually.

5.4. Other reports - Reporting requirements for work completed under a DND 626 Tasking will be identified in the SOW for the individual tasking.

6. PACKAGING AND PRESERVATION

6.1. Repaired items must be packaged in accordance with A-LM-187-002/JS-001 - Packaging of Electrostatic Sensitive Electronic Devices and D-LM-008-036/SF-000 - DND Minimum Requirements for Manufacturer's Standard Pack.

6.2. If there is a requirement to repair, replace or provide a reusable container or other packaging material, it will become a charge against the contract at a negotiated rate shown in the basis of payment and on the work order.

7. QUALITY ASSURANCE

7.1. Although certification under ISO 9001:2015 is not mandatory, the Contractor must demonstrate that the International Standard ISO 9001:2015, Quality Management Standards – Requirements, are met in the performance of the work.

7.2. If the Contractor is certified compliant of the International Standard ISO 9001:2015, the Contractor must provide a copy of the certification.

8. TRAVEL

8.1. The Contractor will be required to travel and conduct on-site work at the Acoustic Data Analysis Centre in Halifax, NS.

8.2. All travel and living must be pre-authorized by the technical authority prior to travel.

9. PERSONNEL

9.1. General

9.1.1. The Contractor must utilize sufficient personnel who are fully qualified, experienced and familiar with the equipment to carry out the requirements of the contract.

9.1.2. The Contractor must ensure that personnel are trained on the equipment on which they are employed. Such training/certification is the Contractor's responsibility.

9.1.3. The Contractor must ensure that personnel are trained and experienced in performing, other engineering support activities for the following disciplines:

9.1.3.1. Conduct of Technical Investigations and Engineering Studies (TIES);

9.1.3.2. Computer Software;

9.1.3.3. Computer Hardware;

9.1.3.4. Design of modifications and evaluation of the effects on other systems; and

9.1.3.5. Assessment of repair requirements and design of repair schemes, including responding to urgent requests for engineering dispositions.

9.2. Project Management

9.2.1. The Contractor must designate a Project Manager as the single point of contact with the TA who makes decisions on all matters with respect to the work under this contract.

10. FACILITIES AND CAPABILITIES

10.1. The Contractor must maintain in-house capabilities to perform all the requirements of this SOW. Capabilities such as special and general purpose test equipment, fixtures and tooling which will be utilized by the Contractor to fulfill the work must be clearly identified.

10.2. The Contractor must provide a support capability by maintaining a supply of maintenance kits as described in the NAL Operation and Maintenance Manual, tools, sub-assemblies and component parts. All parts must be in accordance with parts lists, drawings and/or specifications approved by the TA.

10.3. The Contractor or sub-contractor performing maintenance on electronic components must have an ESD control program in accordance with MIL-HDBK-263B and MIL-STD-1686C.

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ANNEX “C”
Evaluation Plan For
National Acoustic Library (NAL) Procurement

CONTENTS

TABLES

1. INTRODUCTION

1.1. The bid will be evaluated using a highest combined rating of technical merit, price and point-rated criteria.

1.2. This document identifies the procedure by which bids for the National Acoustic Library (NAL) will undergo technical evaluation by Canada.

2. BID COMPLETENESS

2.1. It is the sole responsibility of the Bidders to provide sufficient information to allow an adequate assessment of their bid in accordance with this Bid Evaluation Plan.

2.2. The Bidders are to enter references to where their bid's compliance information can be found under the "Location in Bid" column of Tables 1 and 2 prior to submitting the bid.

2.3. All documentation and information required to substantiate the Bidders claims in the checklist must be provided with the bid package. Failure to substantiate any one (1) element of the Mandatory Requirements Checklist will render the entire bid non-compliant

3. EVALUATION PROCESS

3.1. The evaluation process will be conducted by the Bid Evaluation Team as follows:

3.1.1. A review of bids to ensure compliance with all mandatory requirements of Table 1 will be conducted. The Bid Evaluation Team will identify where demonstration of compliance with mandatory requirements has been provided in a bid, assess this information for compliance. Proposals which fail to meet all of the Mandatory Requirements will not be evaluated further.

3.1.2. The Proposals, which have met all of the Mandatory Requirements, will be evaluated against the rated requirements outlined in Tables 2.

3.2. Comments will be provided in the Canada's Response column.

3.3. The point-rated requirements are based on management and technical features of the bid that are beyond the mandatory requirements These features are assessed and scored to determine the bid's added value.

3.4. Scores for each rated item evaluated will be added up to determine a technical score total.

4. SUPPORTING DOCUMENTATION AND DEFINITIONS

4.1. Evaluations will be based solely on the proposal documentation provided by Bidders in accordance with the solicitation.

4.2. The bids will be scored with respect to each point-rated requirements of Table 2. The Bid Evaluation Team will use the provided "Location in Bid" column to acquire where point-rated information has been provided in the bid. Each point-rated requirement will be assessed and scored by the Bid Evaluation Team in accordance with the "Description" column in Table 2. The scores will be input into the "Score" column in Table 2 by the Bid Evaluation Team. For some rated requirements, the level of information provided will be evaluated as follows:

4.2.1. Exceptional: The proposal fully demonstrates that the Bidder would meet this requirement in a comprehensive manner. The proposal includes at least one example of previous project experience which details how the area being evaluated was addressed in that project. It appears that the requirement is fully understood and clearly demonstrates an understanding of the difference between mandatory scope of work and performance above the mandatory. There are no apparent weaknesses that would affect the achievement of the work associated with this requirement.

4.2.2. Reasonable: The proposal reasonably demonstrates that the Bidder would meet this requirement. It appears that the requirement is understood; however, there are weaknesses for which a risk must be raised, which should not impact the accomplishment of the requirement, however, these weaknesses may adversely affect project schedule, cost or scope.

4.2.3. Unsatisfactory: The proposal does not demonstrate that the requirement is understood and there are weaknesses that would affect the achievement of the work associated with this requirement.

Table 1: Mandatory Requirements Checklist

Ref	Evaluation Criteria	Criteria Description	Location in Bid	Canada's Response
M01	Company Experience	The bidder must demonstrate a minimum of 5 years of company experience in the last 10 years in the field of Data Management and/or Acoustic Data Processing Systems.		
M02	Project Manager	The Bidder must identify, at time of bidding, the individual whom the Bidder, if they are awarded this Contract, intends to use as the Project Manager for this work. The identified individual must meet the following criteria; - a minimum of 5 years' experience in the last 10 years managing Acoustic Data related projects. The Bidder must provide a curriculum vitae (CV) that demonstrates the proposed Project Manager has the required experience. Notes: The Bidder does not need to have the individual identified on-staff staff at time of bidding.		
M03	Systems Engineer	The Bidder must identify, at time of bidding, the individual whom the Bidder, if they are awarded this Contract, intends to use as the Systems Engineer for this work. The identified individual must meet the following criteria; -a minimum of 5 years' experience in the last 10 years working on Acoustic Data and/or Data Management related projects. The Bidder must provide a curriculum vitae (CV) that demonstrates the proposed Systems Engineer has the required experience. Notes: The Bidder does not need to have the individual identified on-staff staff at time of bidding. The Project Manager and Systems Engineer may be the same person provided they meet all requisite criteria.		

M04	Software Engineer	The Bidder must identify, at time of bidding, the individual whom the Bidder, if they are awarded this Contract, intends to use as the Software Engineer for this work. The identified individual must meet the following criteria; - a minimum of 3 years experience in the last 10 years working on Data Management related projects. The Bidder must provide a curriculum vitae (CV) that demonstrates the proposed Software Engineer has the required experience. Notes: The Bidder does not need to have the individual identified on-staff staff at time of bidding. The Project Manager and Software Engineer may be the same person provided they meet all requisite criteria		
M05	Project Management Plan	The bidder's proposal must include a preliminary Project Management Plan. The bidder must submit a preliminary Project Management Plan per SOW paragraph 3.2.		
M06	Systems Engineering Plan	The bidder's proposal must include a Systems Engineering Plan. The bidder must submit a Systems Engineering Plan per SOW paragraph 5.2.		
M07	Hardware Configuration	The bidder's proposal must include a proposed hardware configuration. The bidder must submit a System Diagram or Drawing including a high level equipment list (e.g. processors, monitors, interface boxes). Specific part and part numbers not required for proposal.		
M08	Software Environment	The bidder's proposal must identify the software environment including operating system, middleware and programming language(s).		
M09	Experience Delivering ILS Packages	The bidder's proposal must demonstrate experience in delivering ILS packages to DND and/or other Canadian-allied militaries.		
M10	Experience Delivering Training	The bidder's proposal must demonstrate experience in delivering training to CAF and/or DND personnel and/or other Canadian-allied militaries.		

Table 2: Rated Requirements

Ref	Evaluation Criteria	Description	Location in Bid	Score	Canada's Response
R01	Company Experience	Company experience in delivering Acoustic Data and Data Management systems to DND/RCN or foreign navies (only systems delivered in the last 20 years are to be considered). The Bidder must submit specific examples of systems in development or delivered to DND/RCN or foreign navies and the time period when the work was performed. <u>Experience:</u> 6+ Systems = 5 pts 4-6 Systems = 4 pts 2-3 Systems = 2 pts 1 System = 1 pts 0 Systems = 0 pts			
R02	Project Manager	Project Manager total years of experience as a Project Manager above the mandatory 5 years (does not need to be Acoustic Data related): <u>Experience</u> 15+ yrs =5 pts 10 to 15 yrs = 4 pts 7 to 10 yrs =2 pts 5 to 7 yrs = 0 pts			
R03	Systems Engineer	Lead Systems Engineer total years of experience as a System Engineer above the mandatory 5 years (does not need to be Acoustic Data and/or Data Management related): <u>Experience</u> 15+ yrs =5 pts 10 to 15 yrs = 4 pts 7 to 10 yrs =2 pts 5 to 7 yrs = 0 pts			
R04	Software Engineer	Lead Software Engineer total years of experience as a Software Engineer above the mandatory 3 years (does not need to be Data Management related): <u>Experience</u> 12+ yrs =5 pts 8 to 12 yrs = 4 pts 5 to 8 yrs =2 pts 3 to 5 yrs = 0 pts			

R05	Modular Design	The bidder's proposal demonstrates that the NAL design will use a modular open system approach and be scalable in order to allow for future changes to the NAL applications, including insertion of new acoustic data types and additional storage requirements. Exceptional = 5 pts Reasonable = 3 pts Unsatisfactory = 0 pts			
R06	Open Architecture Design	The bidder's proposal demonstrates that the NAL will use an open architecture design to ensure that the system components can be supported and upgraded over the in-service life of the NAL, as well as details on how the system design and components would be supported. Exceptional = 6 pts Reasonable = 4 pts Unsatisfactory = 0 pts			
R07	Automatic Acoustic Data Ingestion	TSOR Reference: Section 8.1 The bidder's proposal demonstrates that their NAL solution will be able to automatically ingest all Acoustic Information files by recognizing the data format and filling out all available metadata fields. The proposal should have a detailed description on software design that would allow for automatic ingestion of Acoustic Information file types with their available metadata and how this information would be stored. Exceptional = 5 pts Reasonable = 3 pts Unsatisfactory = 0 pts			
R08	Workflow Management	TSOR Reference: Section 8.3 The bidder's proposal demonstrates that the NAL will have an Acoustic Analysis Workflow Management application which includes a detailed description of the proposed Acoustic Analysis Workflow Management and its features relative to the requirements contained in Section 8.3 of the TSOR. Exceptional = 6 pts Reasonable = 4 pts Unsatisfactory = 0 pts			

R09	Acoustic Information Retrieval and Reporting Requirements	TSOR Reference: Section 9 The bidder's proposal contains a detailed description of all the proposed Acoustic Information Retrieval and Reporting Applications relative to the requirements contained in Section 9 of the TSOR. There are 6 applications defined in Section 9 (Sections 9.1 through 9.6) of the TSOR and points will be rated and given individually per application for a possible maximum of 12 points. Exceptional = 2 pts/application Reasonable = 1 pts/application Unsatisfactory = 0 pts/application			
R10	Acoustic Analysis Tools	TSOR Reference: Section 10 The bidder's proposal contains a detailed description of all the proposed Acoustic Analysis Tools relative to the requirements contained in Section 10 of the TSOR. There are 2 tools defined in Section 10 (Sections 10.1 and 10.2) of the TSOR and points will be rated and given individually per tool for a possible maximum of 6 points. Exceptional = 3 pts/tool Reasonable = 2 pts/tool Unsatisfactory = 0 pts/tool			

Compliant: Y N

Max Score = 60 Score = _____

Proposal: _____

Evaluator: _____

Date: _____

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ANNEX "D"
National Acoustic Library (NAL)
Questions to Industry

1. Is the information given in the Introduction, Background, Supporting Information, Concept of Operations and Terminology in Annex A SOW sufficient to understand the project?

   a. Specifically, is the concept of operation defined in section 1.5.3 of the SOW feasible for development?

2. Are there any technical requirements that need additional clarification? Please list the section and describe the uncertainty.

   a. TSOR, section 2.1 & 2.2, what specifics would be required from a network diagram to properly develop the NAL and connect to ADAC-NET and CSNI?

   b. TSOR, section 4.7, would overall dimension limits be sufficient or is a floor plan necessary?

3. What are the limitations or issues, if any, that industry foresees in developing or delivering the NAL?

4. What Government Supplied Material (GSM) (i.e. equipment, information, reference document, etc.) would be required to properly develop and deliver a successful NAL project?

5. What is the timeline for industry to develop and deliver the NAL after contract award?

6. Does the potential Bidder have a facility geographically located in Canada?

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ANNEX “E”
National Acoustic Library (NAL)
Costing Estimates

Propose a costing structure approach and provide high level cost estimates based on current or recent similar projects. Please include the following:

a) Key cost drivers and risks;

b) Hardware acquisition costs;

c) Development costs by NAL application defined in sections 9 & 10 of the TSOR;

d) Overhead costs such as project management, system integration, and training;

e) In-service support costs; and

f) Estimated life span of the solution.

Please identify and define any and all metrics required to determine pricing scenarios and cost structures.