



National Defence

Défense nationale

National Defence Headquarters
Ottawa, Ontario
K1A 0K2

Quartier général de la Défense nationale
Ottawa (Ontario)
K1A 0K2

**REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION**

**RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:**

Leslie Hawkins
DLP 7-2-1-1
Leslie.Hawkins@forces.gc.ca

Proposal To: National Defence Canada

We hereby offer to sell to His Majesty the King in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods and services listed herein and on any attached sheets at the price(s) set out therefore.

Proposition à : Défense nationale Canada

Nous offrons par la présente de vendre à Sa Majesté le Roi du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens et services énumérés ici et sur toute feuille ci-annexée, au(x) prix indiqué(s).

**Solicitation Closes –
L’invitation prend fin**

At – à: 14 :00 Eastern Standard Time

On - le : 19 July 2024

Title/Titre Loudspeaker Assemblies	Solicitation No – N° de l’invitation W8486-249187/A
Date of Solicitation – Date de l’invitation 26 June 2024	
Address Enquiries to – Adresser toutes questions à Leslie Hawkins DLP 7-2-1-1 Leslie.Hawkins@forces.gc.ca	
Telephone No. – N° de téléphone 343-572-2027	FAX No – N° de fax N/A
Destination: Department of National Defence 25 CF Supply Depot, Receipts Section CFB Montreal 6363 Rue Notre Dame, St. E. Montreal. QC H1N 2E9	

Instructions:

Municipal taxes are not applicable. Unless otherwise specified herein all prices quoted must include all applicable Canadian customs duties, GST/HST, excise taxes and are to be delivered Delivery Duty Paid including all delivery charges to destination(s) as indicated. The amount of the Goods and Services Tax/Harmonized Sales Tax is to be shown as a separate item.

Instructions: Les taxes municipales ne s’appliquent pas. Sauf indication contraire, les prix indiqués doivent comprendre les droits de douane canadiens, la TPS/TVH et la taxe d’accise. Les biens doivent être livrés « rendu droits acquittés », tous frais de livraison compris, à la ou aux destinations indiquées. Le montant de la taxe sur les produits et services/taxe de vente harmonisée doit être indiqué séparément.

Delivery required - Livraison exigée 31 March 2025	Delivery offered - Livraison proposée
Vendor Name and Address - Raison sociale et adresse du fournisseur	
Name and title of person authorized to sign on behalf of vendor (type or print) - Nom et titre de la personne autorisée à signer au nom du fournisseur (caractère d'imprimerie)	
Name/Nom _____	Title/Titre _____
Signature _____	Date _____



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PART 1 - GENERAL INFORMATION

1.1 Security Requirements

There is no security requirement associated with this Bid Solicitation.

1.2 Statement of Work

The requirement is detailed in Annex "A", Statement of Work (SOW).

1.3 Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days from receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

1.4 Trade Agreements

The requirement is subject to the provisions of the Canadian Free Trade Agreement (CFTA).

1.5 Canadian Content

The requirement is subject to a preference for Canadian goods.

2.1 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the Standard Acquisition Clauses and Conditions Manual (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The 2003 (2023-06-08) Standard Instructions – Goods and Services – Competitive Requirements, are incorporated by reference into and form part of the bid solicitation, with the following modifications:

- a) Section 02, Procurement Business Number is deleted in its entirety.
- b) Section 20(2), Further Information is deleted in its entirety.
- c) Section 05, Submission of Bids – Subsection 3 is deleted.
- d) Subsection 2.d. of Section 05, Submission of Bids, is deleted in its entirety and replaced with the following:

Send its bid only to the address specified in the bid solicitation.

- e) Section 06, Late Bids, Is deleted in its entirety;
- f) The text under Section 07, Delayed Bids, is deleted in its entirety and replaced with the following:

It is the Bidder's responsibility to ensure that the Contracting Authority has received the entire submission. Misrouting or other electronic delivery issues resulting in late submission of bids will not be accepted.

g) Subsection 1 of Section 08, Transmission by Facsimile, is deleted in its entirety.

2.2 Electronic Submission of Bids

- a) Bids must be submitted only to the Department of National Defence by the date, time and place indicated on page 1 of the bid solicitation. Bids must be received electronically as noted in subparagraph b).
- b) **Electronic Submissions: Individual e-mails exceeding five (5) megabytes, or that includes other factors such as embedded macros and/or links, may be rejected by the DND e-mail system and/or firewall(s) without notice to the Bidder or Contracting Authority.** Larger bids may be submitted through more than one e-mail. The Contracting Authority will confirm receipt of documents. It is the Bidder's responsibility to ensure that the Contracting Authority has received the entire submission. Bidders should not assume that all documents have been received unless the Contracting Authority confirms receipt of each document. In order to minimize the potential for technical issues, Bidders are requested to allow sufficient time before the closing time and date to confirm receipt. Technical and financial documents received after the closing time and date will not be accepted.

Due to the nature of the bid solicitation, bids transmitted by facsimile will not be accepted.

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than ten (10) calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by Bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated, and the enquiry can be answered to all Bidders. Enquiries not submitted in a form that can be distributed to all Bidders may not be answered by Canada.

2.4 Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the Bidders.

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

Canada requests that Bidders provide their bid in separately bound sections as follows:

Section I: Technical Bid one (1) soft copy in PDF.

Section II: Financial Bid one (1) soft copy in PDF.

Section III: Certifications one (1) soft copy in PDF.

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Bidders may use Attachment 1 to Part 3 to indicate their prices. If Bidders choose to use Attachment 1 to Part 3 to indicate their prices, Bidders must include Attachment 1 to Part 3 in their financial bid.

Canada requests that Bidders follow the format instructions described below in the preparation of their bid:

- (a) use 8.5 x 11-inch (216 mm x 279 mm) format;
- (b) use a numbering system that corresponds to the bid solicitation.

Section I: Technical Bid

In their technical bid, Bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

Section II: Financial Bid

Bidders must submit their financial bid as follows:

Bidders must submit firm prices, Delivered Duty Paid (DDP) at:

25 CFSD – RECEIPTS SECTION
6363 Rue Notre Dame, St. E.
Montreal, QC
H1N 2E9
CANADA

Incoterms 2010, Applicable Taxes excluded. The total amount of Applicable Taxes must be shown separately.

Bids must be submitted in Canadian dollars.

3.1.1 Electronic Payment of Invoices – Bid

If you are willing to accept payment of invoices by Electronic Payment Instruments, complete Annex “B” Electronic Payment Instruments, to identify which ones are accepted.

If Annex “B” Electronic Payment Instruments is not completed, it will be considered as if Electronic Payment Instruments are not being accepted for payment of invoices.

Acceptance of Electronic Payment Instruments will not be considered as an evaluation criterion.

3.1.2 Exchange Rate Fluctuation

C3011T (2013-11-06), Exchange Rate Fluctuation

3.1.3 SACC Manual Clauses

Section III: Certifications

Bidders must submit the certifications and additional information required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada, will evaluate the bids.
- (c) The evaluation team will determine if there are two (2) or more bids with a valid Canadian content certification with the bids coming from two or more Bidders that are not affiliated within the meaning used in the *Competition Act*, R.S.C., 1985, c. C-34. In that event, only those bids with a valid certification will be eligible to be awarded a contract; otherwise, all bids will be eligible. If at any point in the evaluation process it is found, whether by determination of invalidity of certifications, determination that bids are non-responsive or withdrawal of bids by Bidders, that there are no longer two (2) or more responsive bids with a valid certification, then all responsive bids will be eligible to be awarded a contract. Canada may conduct the validation of Canadian content certifications at any time in the evaluation process including doing so concurrently with other steps.

4.1.1 Technical Evaluation

4.1.2.1 Mandatory Technical Criteria

Mandatory Technical Criteria are detailed in Appendix 2 to Annex "A".

4.1.2 Financial Evaluation

The price of the bid will be evaluated in Canadian dollars, Delivered Duty Paid (DDP) at:

25 CFSD – RECEIPTS SECTION
6363 Rue Notre Dame, St. E.
Montreal, QC
H1N 2E9
CANADA

Incoterms 2010, Canadian customs duties and excise taxes included, Applicable Taxes excluded.

4.1.2.1 Taxes - Foreign-Based Contractor

SACC *Manual* clause [C2000C](#) (2007-11-30), Taxes - Foreign-based Contractor

4.2 Basis of Selection

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive. The responsive bid with the lowest evaluated price will be recommended for award of a contract.

PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

Bidders must provide the required certifications and additional information to be awarded a contract.

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Unless otherwise specified, Canada will declare a bid non-responsive, or will declare a contractor in default if any

certification made by the Bidder is found to be untrue whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority will render the bid non-responsive or constitute a default under the Contract.

5.1 Certifications Required with the Bid

Bidders must submit the following duly completed certifications as part of their bid.

5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the Integrity Provisions of the Standard Instructions, all bidders must provide with their bid, **if applicable**, the declaration form available on the [Forms for the Integrity Regime](http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html) website (<http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html>), to be given further consideration in the procurement process.

5.1.2 Additional Certifications Required with the Bid

5.1.2.1 Canadian Content Certification

This procurement is conditionally limited to Canadian goods.

Subject to the evaluation procedures contained in the bid solicitation, bidders acknowledge that only bids with a certification that the good(s) offered are Canadian goods, as defined in clause [A3050T](#), may be considered.

Failure to provide this certification completed with the bid will result in the good(s) offered being treated as non-Canadian goods.

The Bidder certifies that:

() the good(s) offered are Canadian goods as defined in paragraph 1 of clause [A3050T](#).

5.2 Certifications Precedent to Contract Award and Additional Information

The certifications and additional information listed below should be submitted with the bid but may be submitted afterwards. If any of these required certifications or additional information is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to provide the certifications or the additional information listed below within the time frame provided will render the bid non-responsive.

5.2.1 Integrity Provisions – Required Documentation

In accordance with the [Ineligibility and Suspension Policy](http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the [Employment and Social Development Canada \(ESDC\) - Labour's](#) website.

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list at the time of contract award.

Canada will also have the right to terminate the Contract for default if a Contractor, or any member of the Contractor if the Contractor is a Joint Venture, appears on the "[FCP Limited Eligibility to Bid](#)" list during the period of the Contract.

The Bidder must provide the Contracting Authority with a completed annex (Annex "C") [Federal Contractors Program for Employment Equity - Certification](#), before contract award. If the Bidder is a Joint Venture, the Bidder must provide the Contracting Authority with a completed annex Federal Contractors Program for Employment Equity - Certification, for each member of the Joint Venture.

PART 6 - RESULTING CONTRACT CLAUSES

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation.

6.1 Security Requirements

6.1.1 There is no security requirement applicable to this Contract.

6.2 Statement of Work

The Contractor must perform the Work in accordance with the Statement of Work at Annex "A".

6.3 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the [Standard Acquisition Clauses and Conditions Manual](#) (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

6.3.1 General Conditions

[2010A](#) (2022-12-01), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract, with the following modifications:

a. Definition of Minister is modified as follows:

"Canada", "Crown", "His Majesty" or "the Government" means His Majesty the King in right of Canada as represented by the Minister of National Defence and any other person duly authorized to act on behalf of that minister or, if applicable, an appropriate minister to whom the Minister of National Defence has delegated his or her powers, duties or functions and any other person duly authorized to act on behalf of that minister.

6.4 Term of Contract

6.4.1 Delivery Date

All the deliverables must be received on or before **31 March 2025**.

6.4.2 Option to Extend the Contract

The Contractor grants to Canada the irrevocable option to acquire the goods, services or both described at Annex 'A' of the Contract under the same conditions and at the prices and/or rates stated in the Contract. The option may only be exercised by the Contracting Authority and will be evidenced, for administrative purposes only, through a contract amendment.

The Contracting Authority may exercise the option within twenty four (24) months after contract award by sending a written notice to the Contractor. Multiple orders may be exercised during the option period up to the maximum number of units indicated in Attachment 1 to Part 3. Each order will be initiated by a Contract Amendment issued by the PA.

6.4.2 Shipping Instructions

Goods must be consigned and delivered to the destination specified in the contract:

1. Incoterms 2010 "DDP Delivered Duty Paid" (25 CF Supply Depot, Montreal).
2. The Contractor must deliver the goods to Canadian Forces (CF) Supply Depots by appointment only. The Contractor or its carrier must arrange delivery appointments by contacting the Depot Traffic Section at the appropriate location shown below. The consignee may refuse shipments when prior arrangements have not been made.

25 CF Supply Depot Montreal
Montreal, QC.
Telephone: 1-866-935-8673 (toll free), or
514-252-2777, ext. 2363 / 4673 / 4282

E-mail: 25DAFCTrafficRDV@forces.gc.ca

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Leslie Hawkins
Title: Material Acquisition and Support Officer
Department of National Defence
Directorate: DGLEPM, DLP 7
Address: 101 Colonel By Drive, Ottawa, ON K1A 0K2

Telephone: 343-572-2027
E-mail address: Leslie.Hawkins@forces.gc.ca

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

6.5.2 Technical Authority

The Technical Authority for the Contract is:

[To be inserted at Contract Award]

Name: _____

Title: _____
Organization: _____
Address: _____

Telephone : _____
Facsimile: _____
E-mail address: _____

The Technical Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Technical Authority, however the Technical Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

6.5.3 Contractor's Representative

[To be inserted at Contract award]

6.6 Payment

6.6.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm unit price as specified in Attachment 1 to Part 3 for a cost of \$ [to be inserted at Contract award]. Customs duties are included and Applicable Taxes are extra.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

6.6.2 Multiple Payments

SACC Manual Clause [H1001C](#) (2008-05-12), Multiple Payments

6.6.3 Electronic Payment of Invoices – Contract

The Contractor accepts to be paid using the following Electronic Payment Instrument(s):

- a. Direct Deposit (Domestic and International);
- b. Electronic Data Interchange (EDI);
- c. Wire Transfer (International Only).

6.7 Invoicing Instructions

The Contractor must submit invoices in accordance with section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.

Each invoice must be supported by:

A copy of the packing slip(s);

Invoices must be distributed as follows:

- a. The original and one (1) copy must be forwarded to the following address for certification and payment:

Attn: Accounts Payable
Department of National Defence
25 CFSD MONTREAL
6560 HOCHELAGA ST
MONTREAL QC H1N 1X9
25dafccontrat@forces.gc.ca

- b. One (1) soft copy must be forwarded to the Contracting Authority identified in the section titled "Contracting Authority".

6.8 Certifications

6.8.1 Compliance

Unless specified otherwise, the continuous compliance with the certifications provided by the Contractor in its bid or precedent to contract award, and the ongoing cooperation in providing additional information are conditions of the Contract and failure to comply will constitute the Contractor in default. Certifications are subject to verification by Canada during the entire period of the Contract.

6.8.2 Federal Contractors Program for Employment Equity - Default by the Contractor

The Contractor understands and agrees that, when an Agreement to Implement Employment Equity (AIEE) exists between the Contractor and Employment and Social Development Canada (ESDC)-Labour, the AIEE must remain valid during the entire period of the Contract. If the AIEE becomes invalid, the name of the Contractor will be added to the "[FCP Limited Eligibility to Bid](#)" list. The imposition of such a sanction by ESDC will constitute the Contractor in default as per the terms of the Contract.

6.8.3 SACC Manual Clauses

SACC Manual clause [A3060C](#) (2008-05-12), Canadian Content Certification

6.9 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

6.10 Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement;
- (b) the general conditions [2010A](#) (2022-12-01), Goods (medium complexity);
- (c) Annex "A", Statement of Work;
- (d) Attachment 1 to Part 3, Pricing Schedule;
- (e) the Contractor's bid dated [to be inserted at Contract award].

6.11 Defence Contract

SACC Manual clause [A9006C](#) (2012-07-16) Defence Contract

6.12 Excess Goods

SACC Manual clause [B7500C](#) (2006-06-16), Excess Goods

6.13 Insurance

SACC Manual clause [G1005C](#) (2016-01-28) Insurance - No Specific Requirement

6.14 Packaging Requirement

The Contractor must prepare items for delivery in accordance with the latest issue of the Canadian Forces Packaging Specification *D-LM-008-036/SF-000*, DND Minimum Requirements for Manufacturer's Standard Pack.

The Contractor must package the items in quantities of one (1) by package.

SACC Manual clause [D2000C](#) (2007-11-30), Markings

SACC Manual clause [D2001C](#) (2007-11-30), Labelling

SACC Manual clause [D2025C](#) (2017-08-17), Wood Packing Materials

6.15 Quality Assurance

SACC Manual clause [D5545C](#) (2019-05-30), ISO 9001:2015 – Quality Management Systems Requirement (Quality Assurance Code C)

ANNEX "A"

STATEMENT OF WORK

1. SCOPE

1.1. Purpose

- 1.1.1. The purpose of this Statement of Work (SOW) is to define the technical requirements related to the procurement of 2-watt 4-inch diameter permanent magnet loudspeaker assemblies for the Department of National Defence.
- 1.1.2. Technical specification of the loudspeaker assembly is provided in Appendix 1 to this SOW.

1.2. Background

- 1.2.1. Loudspeakers are used by DND within Military Armoured Vehicles (MAV) equipped with internal Voice Communication Systems (VCS). The loudspeaker is connected to the VCS in order for the audio to be amplified and broadcast inside the MAV compartment.
- 1.2.2. The loudspeakers currently in use were manufactured and installed more than two decades ago. Many of them are no longer in service and must be replaced in order to maintain acceptable stock levels.

1.3. Terminology

ASTM	American Society for Testing and Materials
CA	Contracting Authority
CSE	Canadian Security Establishment
°C	Degree Celsius
dB	Decibel
DND	Department of National Defence
ESD	Electrostatic Discharge
GHz	Giga Hertz
Hz	Hertz
kΩ	Kilo Ohm
kHz	Kilo Hertz
mA	Milli-ampere
MAV	Military Armoured Vehicles
MHz	Mega Hertz
MTBF	Mean Time Between Failures
P/N	Part Number
SOW	Statement of Work
SPL	Sound Pressure Level
TA	Technical Authority
THD	Total Harmonic Distortion
VCS	Voice Communication System

VDC	Volts Direct Current
V/m	Volt per Meter
Vrms	Voltage-Root Mean Square

2. APPLICABLE DOCUMENTS

2.1. References

2.1.1. The documents below form part of this document to the extent specified herein.

1. Writing, Format and Production of Technical Publications, Document No. C-01-100-100/AG-006.
2. Writer's Guide for Technical Documentation, Document No. C-01-100-100-AG-008.
3. DND Minimum Requirements for Commercial Packaging, Document No. D-LM-008-036-SF-000.
4. Identification Marking of Canadian Military Property, Document No. D-02-002-001/SG-001.
5. General Specification for Loudspeakers, Permanent Magnet (Encased, 2-watt, Fungus-, Gunblast-, and Immersion-Resistant), Detail Specification, MIL-DTL-12632E, 18 May 2020.

2.1.2. Unless specified otherwise, the document version that is in effect on the closing date of the Request for Proposal must be used.

2.1.3. The documents referenced herein are available publicly and will not be provided by Canada. The Contractor may request assistance from the TA in obtaining DND originated documents not commercially available.

2.2. Order of Precedence

2.2.1. In the event of conflict between the content of this SoW and the referenced documents, the content of this SoW takes precedence.

3. GENERAL REQUIREMENTS

3.1. Scope of Work

3.1.1. The Contractor must supply the loudspeaker assembly including mounting metalwork (bracket, wing nut and other hardware) as per Figure 1 of MIL-DTL-12632E, in quantities and within timelines specified in Appendix 3 to this SOW.

3.1.2. Packaging of the loudspeaker assemblies must be in conformance with requirements of D-LM-008-036-SF-000 document.

3.1.3. The Contractor must supply a Loudspeaker Product Description Manual and an Operator Manual as end-user documentation.

3.1.4. Documentation

3.1.5. The Loudspeaker Product Description and Operator Manuals must be in accordance with C-01-100-100/AG-006 and C-01-100-100-AG-008 documents.

- 3.1.6. The Product Description and Operator Manuals must be bilingual, in English and in French.
- 3.1.7. Electronic copies (searchable pdf files) of the manuals above must be provided to the DND Technical Authority (TA) before the initial delivery of the equipment.
- 3.1.8. The Contractor must grant DND the right to reproduce the Product Description and Operator Manuals for DND purposes.

3.2. Product Identification and Marking

- 3.2.1. The Contractor must provide identification marking of the loudspeaker in accordance with Document No. D-02-002-001/SG-001.
- 3.2.2. The Contractor must submit drawings of product identification marking/label for approval to the DND TA in accordance with Appendix 3.
- 3.2.3. The Contractor must use the product identification marking/label, including serial number, in production only upon approval by the DND TA.
- 3.2.4. The identification marking/label of the loudspeaker assembly must be affixed to the left side of loudspeaker case.

4. ACQUISITION PROCESS AND REQUIREMENTS

4.1. Qualification Inspection

- 4.1.1. The Contractor must conduct a qualification inspection of the loudspeaker product to confirm the compliance of the product with corresponding technical requirements specified in Appendix 1 to this SOW. Compliance must be confirmed by the contractor in Appendix 2 Compliance Verification Matrix to this SOW.
- 4.1.2. Qualification inspection must be performed at a location acceptable to the government.
- 4.1.3. Qualification inspection must be supported by a Certificate of Compliance that certifies compliance of the loudspeaker product with specific requirements.
- 4.1.4. The Certificate of Compliance must meet the following criteria.
 - The Certificate must be signed by an authorized representative of the manufacturer and be provided on company letterhead.
 - The Certificate must attest that the delivered loudspeaker assemblies have been manufactured according to the manufacturers published specifications and have been verified to function as designed.
- 4.1.5. Qualification Test Reports that include the test conditions and results must be provided by the Contractor to the DND Technical Authority when requested for certain tests in accordance with Appendix 2: Compliance Verification Matrix.
- 4.1.6. The Contractor must make the results of the qualification inspection available for review and approval by the DND Technical Authority (TA).

4.2. First Article Inspection

- 4.2.1. The Contractor must conduct first article inspection of the loudspeaker assemblies after award of the contract and prior to production.

- 4.2.2. The Contractor must conduct the first article inspection in accordance with Section 4.5 of MIL-DTL-12632E.
- 4.2.3. Each sample selected for first article inspection must be subjected to the tests listed in Table II of MIL-DTL-12632E, with the exception of the Strain Relief test which is not applicable for the loudspeaker assembly being procured.
- 4.2.4. The Contractor must provide a first article inspection report to the TA upon successful completion of the first article inspection. TA acceptance of the first article inspection report will indicate success.
- 4.2.5. The Contractor must provide a minimum of two (2) sample units if requested by the DND Technical Authority, in order for DND to verify the compliance of the first article inspection Report. Verification will be conducted at a DND test facility.
- 4.2.6. The Contractor must not commence or continue with production or make any deliveries until the Contractor has received notification from the TA that results of the first article inspection are approved. Any production or delivery of items before first article inspection approval will be at the sole risk of the Contractor.
- 4.2.7. First article inspection must be performed as defined in Appendix 2 loudspeaker Assembly Compliance Verification Matrix to this SOW.

4.3. Conformance Inspection

- 4.3.1. The Contractor must conduct a conformance inspection of the loudspeaker units on each lot prior to delivery of the equipment.
- 4.3.2. The Contractor must conduct the conformance inspection in accordance with Section 4.6 of MIL-DTL-12632E.
- 4.3.3. The Contractor must notify the DND Technical and Contracting Authorities of the date and time of the conformance inspection session no later than thirty (30) days before the session start.
- 4.3.4. The DND Contracting Authority will witness the conformance inspection of in person if requested by the TA.
- 4.3.5. The conformance Inspection must consist of Group A and Group B inspections.
- 4.3.6. Group A inspection must include visual inspection for mechanical defects and acoustic quality verification as per Table III of MIL-DTL-12632E.
- 4.3.7. Group B inspection must include frequency response verification as per Table V of MIL-DTL-12632E.
- 4.3.8. A Sampling Plan of loudspeaker Group A and Group B inspections is given in Table IV of MIL-DTL-12632E.
- 4.3.9. Group A and Group B inspections must be performed as defined in Appendix 2 Loudspeaker Compliance Verification Matrix to this SOW.
- 4.3.10. The Contractor must provide a Certificate of Conformance included in the shipping documentation package for each equipment shipment.
- 4.3.11. The Certificate of Conformance must meet the following criteria:
 - The Certificate must be signed by an authorized representative of the manufacturer and be provided on company letterhead.

- The Certificate must attest that the delivered loudspeaker assemblies have been manufactured according to the manufacturers published specifications and have been verified to function as designed.

5. SCOPE OF SUPPLY

5.1. General

- 5.1.1. The Contractor must deliver the loudspeaker product and end-user documentation in quantities and within timelines defined in Appendix 3 - List of Deliverables to this SOW.

APPENDIX 1 TO ANNEX "A"

TECHNICAL REQUIREMENTS SPECIFICATION

1. INTRODUCTION

1.1 Scope

1.1.1 The Technical Requirement Specification (TRS) document defines product requirements for a 2-watt 4-inch diameter Permanent Magnet Loudspeaker (loudspeaker) assembled inside a metal case (Loudspeaker).

1.1.2 The loudspeaker is the subject of procurement initiated by the Department of National Defence.

1.1.3 The TRS constitutes an appendix to the Statement of Work document and, as such, appears as a part of the procurement documentation package.

1.2 System Overview

1.2.1 The loudspeaker is an audio device that provides voice and alarm/warning tones to military personnel who do not have personal audio devices such as headsets.

1.3 Intended Use

1.3.1 The loudspeaker will be used within Military Armoured Vehicles (MAV) equipped with an internal Voice Communication System (VCS).

1.3.2 The loudspeaker will be connected to the VCS for the audio to be amplified and broadcasted inside the MAV compartment.

2. APPLICABLE DOCUMENTS

2.1 References

2.1.1 The documents below form part of this document to the extent specified herein. Unless specified otherwise, the document version that is in effect on the closing date of the Request for Proposal must be used.

2.1.2 The documents referenced herein are available publicly and will not be provided by Canada. The Contractor may request assistance from the TA in obtaining DND originated documents not commercially available.

1. General Specification for Loudspeakers, Permanent Magnet (Encased, 2-watt, Fungus-, Gunblast-, and Immersion-Resistant), Detail Specification, MIL-DTL-12632E, 18 May 2020.
2. Loudspeaker, Permanent Magnet (Encased, 3-inch and 4-inch Diameter Cone, 2-watt, Fungus-, Gunblast-, and Immersion-Resistant), Type LS-445/U, M12606-01 and M12606-02, Detail Specification MIL-DTL-12606F w/Amendment 1, 18 May 2020.
3. General Specification for Connectors, Electrical, Circular, Miniature, Quick Disconnect, Environment Resisting, Receptacles and Plugs, MIL-DTL-26482J, 5 February 2021.
4. General Specifications for Transformers and Inductors (Audio, Power and High-Power Pulse), Performance Specification, MIL-PRF-27G w/Amendment 1, 12 June 2020.

5. Electrical Cable Assemblies and Cord Assemblies, Detail Specification, MIL-DTL-3885H w/Amendment 1, 23 November 2020.
6. Department of Defence Design Criteria Standard, Human Engineering, MIL-STD-1472H, 15 September 2020.
7. Department of Defense Interface Standard, Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment, MIL-STD-461G, 11 December 2015.
8. Finishes for Ground Based Electronic Equipment, Detail Specification, MIL-DTL-14072G, 17 May 2021.
9. Colors Used in Government Procurement, SAE AMS-STD-595, 14 February 2017.
10. Corrosion Prevention and Deterioration Control in Electronic Components and Assemblies, SAE AS12500, 24 April 2018.
11. Characteristics of 28 Volt DC Input Power to Utilization Equipment in Military Vehicles, Department of Defense Interface Standard, MIL-STD-1275F, 7 September 2022.
12. Salt Atmosphere Testing: MIL-STD-202-101.
13. CSE, Compromising Emanations Laboratory Test Requirements, Electromagnetics, CID/09/15A.

2.2 Order of Precedence

- 2.2.1 Specifications provided in the documents listed in Section 2.1 above and in this TRS are mandatory for the Loudspeaker.
- 2.2.2 In case of inconsistency or conflict between specifications of this TRS and specific provisions of documents in Section 2.1, the requirements of this document prevail over the corresponding requirements of the documents in Section 2.1.

3. PRODUCT PHYSICAL REQUIREMENTS

3.1 General

- 3.1.1 The loudspeaker must be composed of a power conditioning circuit, an audio transformer, an amplifier module, and a speaker unit. All components of the loudspeaker must be assembled inside a case.
- 3.1.2 The loudspeaker case must be a ruggedized metal case with a mounting bracket as shown in Figure 1 below.

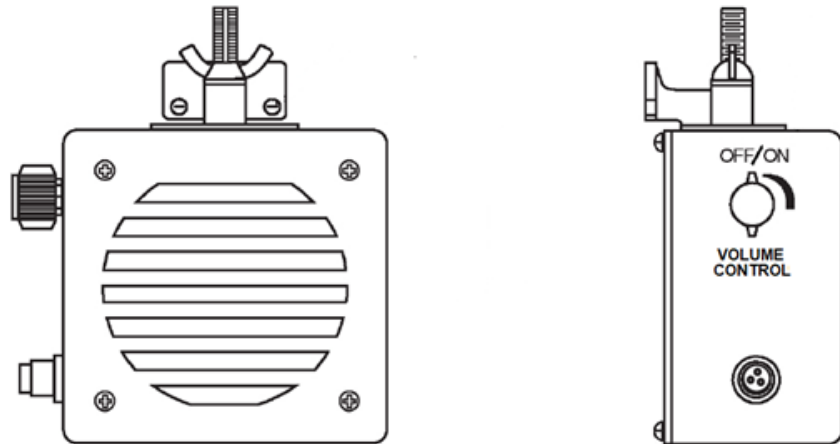


Figure 1 Loudspeaker Assembly

- 3.1.3. The loudspeaker case must be in accordance with Figures 1A through 1G of MIL-STD-12632E.
- 3.1.4. The loudspeaker must be equipped with a ON/OFF switch combined with a rotary volume control knob. The knob must be mounted on the side wall of the case as shown in Figure 1 above.
- 3.1.5. The construction of the switch and of the control knob must be in accordance with specifications provided in Sections 3.4.5 and 3.4.6 of the MIL-DTL-12632E document.
- 3.1.6. Dimensions and the torque of the volume control knob must be in accordance with requirements defined in Figure 10 of the MIL-STD-1472H document for fingertip grasp.
- 3.1.7. The loudspeaker must be equipped with a 3-pin MIL-DTL-26482J cylindrical connector, Amphenol P/N MS3474W8-33P, that delivers audio signal and power supply inside the loudspeaker case. The connector must be mounted on the side wall of the case as shown in Figure 1 above.
- 3.1.8. The speaker unit must be Type LS-445/U compliant with the MIL-DTL-12606F document.
- 3.1.9. The audio transformer must be of Grade 4, Class R, Family 21 in accordance with the MIL-PRF-27G document.
- 3.1.10. The wiring and cabling inside the loudspeaker case must conform to the specifications defined in the MIL-DTL-3885H document, for materials, construction, and overall assembly requirements.
- 3.1.11. The schematic diagram of the loudspeaker assembly must be reproduced on the inner side of the case cover as shown in Figure 1B of the MIL-DTL-12632E document.

3.2 Materials and Finish

- 3.2.1. Metals used in the loudspeaker must conform to the specifications defined in Sections 3.2.1 and 3.2.2 of the MIL-DTL-12606F document.
- 3.2.2. The final finish and primer of the loudspeaker assembly must meet the requirements of the MIL-DTL-14072G document for Type I (Exposed) surfaces.
- 3.2.3. The color of the loudspeaker assembly must be Green 383 Camo, Color ID 34094, as per the SAE AMS-STD-595 document.

3.2.4. Parts that are fungi-nutrient (not fungus resistant) must be treated with a moisture resistant varnish, ASTM D3955, with an added fungistatic in accordance with the SAE AS12500 document.

4. ELECTRICAL SPECIFICATIONS

4.1 Electrical Interface

4.1.1. The 3-pin Amphenol MS3474W8-33P connector must have the following pinout.

Pin	Signal Description
A	Audio Line Input
B	Common/Ground
C	DC Power Input

Figure 2. 3-pin Amphenol MS3474W8-33P Connector Pinout

4.1.2. The input impedance of the loudspeaker audio line must be no less than $R=1.5\text{ k}\Omega$ when measured at 1 kHz.

4.1.3. The Pin B Common/Ground must not be connected to the connector back shell or cord shield.

4.2 Power Supply

4.2.1. The loudspeaker must be powered from a 28 VDC power plant of the MAV.

4.2.2. The current draw of the loudspeaker must be no more than 200 mA.

4.2.3. The loudspeaker must maintain its performance parameters defined in Section 0 below with voltage limits and transient voltages of 28 VDC electrical power defined in Section 5.1 of the MIL-STD-1275F document.

4.2.4. The loudspeaker must meet the general power supply requirements for utilization equipment defined in Section 4 of the MIL-STD-1275F document.

5. AUDIO PERFORMANCE REQUIREMENTS

5.1 Audio Response

5.1.1. The loudspeaker must provide no less than 95 dB Sound Pressure level (SPL) within frequency range 500 Hz – 2000 Hz at 1-meter distance from the case when 1 Vrms signal is applied to the loudspeaker audio line input with Volume Control set to maximum gain.

5.1.2. SPL variations within frequency range 300 Hz – 7,000 Hz must be as shown in Figure 4 of the MIL-DTL-12606E document when a 1 Vrms signal is applied to the loudspeaker audio line input with Volume Control set to maximum gain.

5.1.3. The loudspeaker must provide 65 ± 6 dB SPL at 1 kHz at 1-meter distance from the case when a 1 Vrms audio signal is applied to the loudspeaker audio line input with Volume Control set to minimum gain.

5.2 Audio Quality

- 5.2.1. The loudspeaker must reproduce an intelligible voice signal without buzzes, rattles, or other spurious sounds when a 1 Vrms signal with frequency varying from 300 Hz to 7,000 Hz and back to 300 Hz is applied to the loudspeaker audio line input with Volume Control set to maximum gain.
- 5.2.2. The Total Harmonic Distortion (THD) in the acoustic output of the loudspeaker must not exceed 10% within frequency range 300 Hz – 3400 Hz when a 1 Vrms audio signal is applied to the loudspeaker audio line input with Volume Control set to maximum gain.

6. ENVIRONMENTAL CHARACTERISTICS

6.1. Operational and Storage Temperature Ranges

- 6.1.1. The storage temperature of the loudspeaker must be within the range of -50°C to +65°C.
- 6.1.2. The operating temperature of the loudspeaker must be within the range of -30°C to +50°C.

6.2. Salt Spray (Corrosion)

- 6.2.1. The loudspeaker must completely resist failure of any kind due to corrosion when exposed to salt atmosphere conditions in accordance with the MIL-STD-202-101 document.

6.3. Bounce

- 6.3.1. The loudspeaker must maintain its frequency response, harmonic distortion level and must not exhibit loosened components or any other mechanical failure when tested for shock durability in accordance with Section 4.7.14 of the MIL-DTL-12606F document.

7. ELECTROMAGNETIC INTERFERENCE REQUIREMENTS

7.1 Conducted Emissions, RF Potential, Power Leads

- 7.1.1. The loudspeaker must not corrupt the power quality of the MAV power plant. Conducted emissions of the loudspeaker must not exceed voltage limits specified in Figure CE102-1 of the MIL-STD-461G document.

7.2. Conducted Susceptibility, Power Leads

- 7.2.1. The loudspeaker must maintain its frequency response and harmonic distortion level, when subjected to a voltage ripple from an external source with maximum limits specified in Figure CS101-1 of the MIL-STD-461G document with the values used at 150kHz extended to 250 kHz.

7.3. Personnel Borne Electrostatic Discharge

- 7.3.1. The loudspeaker must maintain its frequency response and harmonic distortion level after applying ESD levels specified in Section 5.16.2 of the MIL-STD-461G document.

7.4. Radiated Emissions, Electric Field

- 7.4.1. An electrical field created by the loudspeaker must not exceed the levels specified in Figure RE102-4 of the MIL-STD-461G document for Army applications.

7.5. Radiated Susceptibility, Magnetic Field

- 7.5.1. The loudspeaker must maintain its performance parameters defined in Section 0 above, when subjected to magnetic fields with strength limit levels specified in Figure RS101-2 of the MIL-STD-461G document.

7.6. Radiated Susceptibility, Electric Fields

- 7.6.1. The loudspeaker must maintain its performance parameters defined in Section 0 above, when subjected to an electrical field of 50 V/m strength within 2 MHz – 18 GHz frequency range as specified in Table XI of the MIL-STD-461G document.

8. TEMPEST COMPROMISING EMANATIONS REQUIREMENTS

8.1. Applicable Standards

- 8.1.1. The loudspeaker must meet the requirements for Level II information protection for Electrical Radiation defined in the CID/09/15A Compromising Emanations Laboratory Test Requirements, Electromagnetics document.

8.2. Conformance Condition

- 8.2.1. Electrical radiation emanations from the loudspeaker must meet the requirements of the CID/09/15A document within a 500 Hz – 1 GHz frequency range.

9. RELIABILITY METRICS

9.1. Mean Time between Failures

- 9.1.1. Mean Time between Failures (MTBF) of the loudspeaker must not be less than 30,000 hours.

10. PRODUCT MAINTENANCE AND REPAIR

10.1. Preventive Maintenance

- 10.1.1. The loudspeaker must require no preventive maintenance.

10.2. Corrective Maintenance and Repair

- 10.2.1. The loudspeaker must require no corrective maintenance in a field environment.

APPENDIX 2 TO ANNEX "A"

COMPLIANCE VERIFICATION MATRIX

1 INTRODUCTION

1.1. Scope

This Compliance Verification Matrix (CVM) is a means to determine the compliance of the proposed Loudspeaker Assembly with the technical requirements.

Each requirement represents one of the following items:

- A Technical requirement specified in Appendix 1 Loudspeaker Assembly Technical Requirement Specification (TRS) document,
- A Test procedure that must be followed to verify compliance with the Technical Specifications,
- A Certificate of Compliance or Test Report that must be provided to support the compliance declaration.

1.2. Verification Matrix Layout

Each line of the CVM constitutes a compliance declaration statement corresponding to a specific requirement.

The "Compliance" field of the CVM line is used by the Bidder to declare compliance of the proposed Loudspeaker to the specific technical requirement(s) or to confirm that a specific procedural instruction is fulfilled.

The "Note" field of the CVM line is used by Bidder to provide additional information related to the corresponding requirement which is deemed to be helpful for the DND Technical Authority to accept the compliance declaration.

1.3. Matrix Filling Instructions

The Bidder must declare compliance with each specific requirement by inserting the word "Yes" or "No" in the Compliance field against the description of the corresponding requirement.

The Bidder must provide additional information related to the corresponding specification when requested by either the Technical or Contracting Authorities.

2. Compliance Verification Matrix

##	Description	Compliance	Notes
1	PRODUCT PHYSICAL REQUIREMENTS		
1.2	General		
1.1.1	The loudspeaker must be composed of a power conditioning circuit, an audio transformer, an amplifier module, and a speaker unit. All components of the loudspeaker must be assembled inside a case.		
1.1.2	The loudspeaker case must be a ruggedized metal case with a mounting bracket as shown in Figure 1 of Appendix 1 Loudspeaker Assembly TRS document.		
1.1.3	The loudspeaker case must be in accordance with Figures 1A through 1G of MIL-STD 12632E.		
1.1.4	The loudspeaker must be equipped with a ON/OFF switch combined with a rotary volume control knob. The knob must be mounted on the side wall of the case as shown in Figure 1 of Appendix 1 Loudspeaker Assembly TRS document.		
1.1.5	The construction of the switch and of the control knob must be in accordance with specifications provided in Sections 3.4.5 and 3.4.6 of the MIL-DTL-12632E document.		
1.1.6	Dimensions and the torque of the volume control knob must be in accordance with requirements defined in Figure 10 of the MIL-STD-1472H document for fingertip grasp.		
1.1.7	The loudspeaker must be equipped with a 3-pin MIL-DTL-26482 cylindrical connector, Amphenol P/N MS3474W8-33P, that delivers audio signal and power supply inside the loudspeaker case. The connector must be mounted on the side wall of the case as shown in Figure 1 of Appendix 1 Loudspeaker Assembly TRS document.		

##	Description	Compliance	Notes
1.1.8	The speaker unit must be Type LS-445/U compliant with the MIL-DTL-12606F document.		
1.1.9	The audio transformer must be of Grade 4, Class R, Family 21 in accordance with the MIL-PRF-27G document.		
1.1.10	The wiring and cabling inside the loudspeaker case must conform to the specifications defined in the MIL-DTL-3885H document, for materials, construction, and overall assembly requirements.		
1.1.11	The schematic diagram of the loudspeaker assembly must be reproduced on the inner side of the case cover as shown in Figure 1B of the MIL-DTL-12632E document.		
1.2 Materials and Finish			
1.2.1	Metals used in the loudspeaker must conform to the specifications defined in Sections 3.2.1 and 3.2.2 of the MIL-DTL-12606F document.		
1.2.2	The final finish and primer of the loudspeaker assembly must meet the requirements of the MIL-DTL-14072G document for Type I (Exposed) surfaces.		
1.2.3	The color of the loudspeaker assembly must be Green 383 Camo, Color ID 34094, as per the SAE AMS-STD-595 document.		
1.2.4	Parts that are fungi-nutrient (not fungus resistant) must be treated with a moisture resistant varnish, ASTM D3955, with an added fungistatic in accordance with the SAE AS12500 document.		
2 ELECTRICAL SPECIFICATIONS			
2.1. Electrical Interface			
2.1.1	The 3-pin Amphenol MS3474W8-33P connector must have the pinout shown in Figure 2 of Appendix 1 Loudspeaker Assembly TRS document.		

##	Description	Compliance	Notes
2.1.2	The input impedance of the loudspeaker audio line must be no less than R=1.5 kΩ when measured at 1 kHz.		
2.1.3	The Pin B Common/Ground must not be connected to the connector back shell or cord shield.		
2.2. Power Supply			
2.2.1	The loudspeaker must be powered from a 28 VDC power plant of the MAV.		
2.2.2	The current draw of the loudspeaker must be no more than 200 mA.	NA	
2.2.3	The loudspeaker must maintain its performance parameters defined in Section 0 below with voltage limits and transient voltages of 28 VDC electrical power defined in Section 5.1 of the MIL-STD-1275F document.		
2.2.4	The loudspeaker must meet the general power supply requirements for utilization equipment defined in Sections 4 of the MIL-STD-1275F document.		
3 AUDIO PERFORMANCE REQUIREMENTS			
3.1 Audio Response			
3.1.1	The loudspeaker must provide no less than 95 dB Sound Pressure level (SPL) within frequency range 500 Hz – 2000 Hz at 1-meter distance from the case when 1 Vrms signal is applied to the loudspeaker audio line input with Volume Control set to maximum gain.		
3.1.2	SPL variations within the frequency range 300 Hz – 7,000 Hz must be as specified in Figure 4 of the MIL-DTL-12606E document when a 1 Vrms signal is applied to the loudspeaker audio line input with Volume Control set to maximum gain.		

##	Description	Compliance	Notes
3.1.3	The loudspeaker must provide 65±6 dB SPL at 1 kHz at 1-meter distance from the case when a 1 Vrms audio signal is applied to the loudspeaker audio line input with Volume Control set to minimum gain.		
3.1.4	A Certificate of Compliance must be provided to confirm the required level of SPL produced by the loudspeaker at maximum and minimum gains.		
3.2. Audio Quality			
3.2.1	The loudspeaker must reproduce an intelligible voice signal without buzzes, rattles, or other spurious sounds when a 1 Vrms signal with frequency varying from 300 Hz to 7,000 Hz and back to 300 Hz is applied to the loudspeaker audio line input with Volume Control set to maximum gain.		
3.2.2	The Total Harmonic Distortion (THD) in the acoustic output of the loudspeaker must not exceed 10% within the frequency range 300 Hz – 3400 Hz when a 1 Vrms audio signal is applied to the loudspeaker audio line input with Volume Control set to maximum gain.		
3.2.3	A Certificate of Compliance must be provided to acknowledge the required level of THD.		
4 ENVIRONMENTAL CHARACTERISTICS			
4.1. Operational and Storage Temperature Ranges			
4.1.1	The storage temperature of the loudspeaker must be within the range of 50°C to +65°C.		
4.1.2	The operating temperature of the loudspeaker must be within the range of -30°C to +50°C.		
4.2. Salt Spray (Corrosion)			
4.2.1	The loudspeaker must completely resist failure of any kind due to corrosion when exposed to salt atmosphere conditions in accordance with the MIL-STD-202-101 document.		

##	Description	Compliance	Notes
4.3. Bounce			
4.3.1	The loudspeaker must maintain its frequency response, harmonic distortion level and must not exhibit loosened components or any other mechanical failure when tested for shock durability in accordance with Section 4.7.14 of the MIL-DTL-12606F document.		
5 ELECTROMAGNETIC INTERFERENCE REQUIREMENTS			
5.1. Conducted Emissions, RF Potential, Power Leads			
5.1.1	The loudspeaker must not corrupt the power quality of the MAV power plant. Conducted emissions of the loudspeaker must not exceed voltage limits specified in Figure CE102-1 of the MIL-STD-461G document.		
5.1.2	The CE102 Test described in Section 5.5 of the MIL-STD-461G document must be carried out to verify that the conducted emissions of the loudspeaker are within the 10 kHz – 10 MHz frequency range for a 28 VDC power supply do not exceed the levels specified in Figure CE102-1 of the MIL-STD-461G document.		
5.1.3	A Certificate of Compliance must be provided to confirm compliance of the loudspeaker assembly with the CE102 Test requirements.		
5.2. Conducted Susceptibility, Power Leads			
5.2.1	The loudspeaker must maintain its frequency response, and harmonic distortion level, when subjected to a voltage ripple from external source with maximum limits specified in Figure CS101-1 of the MIL-STD-461G document with the values used at 150kHz extended to 250 kHz.		
5.2.2	The CS101 Test described in Section 5.7 of the MIL-STD-461G document must be conducted to verify the ability of the loudspeaker assembly to operate with a voltage ripple specified in Figure CS101-1 of the MIL-STD-461G document, Curve #1 (DC ≥ 28 V).		

##	Description	Compliance	Notes
5.2.3	A Certificate of Compliance must be provided to confirm compliance of the loudspeaker assembly with the CS101 Test requirements.		
5.3. Personnel Borne Electrostatic Discharge (ESD)			
5.3.1	The loudspeaker must maintain its frequency response and harmonic distortion level after applying ESD levels specified in Section 5.16.2 of the MIL-STD-461G document.		
5.3.2	The CS118 Test described in Section 5.16 of the MIL-STD-461G document must be carried out to verify the ability of the loudspeaker assembly to withstand personnel borne ESD during the power up configuration.		
5.3.3	A Certificate of Compliance must be provided to confirm ESD resistance of the loudspeaker assembly.		
5.4. Radiated Emissions, Electric Field			
5.4.1	An electrical field created by the loudspeaker must not exceed the levels specified in Figure RE102-4 of the MIL-STD-461G document for Army applications.		
5.4.2	The RE102 Test described in Section 5.18 of the MIL-STD-461G document must be carried out to verify that electric field emissions from the loudspeaker assembly do not exceed the levels specified for ground applications within the 2 MHz – 18 GHz frequency range.		
5.4.3	A Certificate of Compliance must be provided to confirm compliance of the loudspeaker assembly with the RE102 Test requirements.		
5.5. Radiated Susceptibility, Magnetic Field			
5.5.1	The loudspeaker must maintain its performance parameters defined in Section 0 above, when subjected to magnetic fields with strength limit levels specified in Figure RS101-2 of the MIL-STD-461G document.		

##	Description	Compliance	Notes
5.5.2	The RS101 Test described in Section 5.20 of the MIL-STD-461G document must be conducted to verify the ability of the loudspeaker assembly to operate in areas with magnetic fields generated by minesweeping or mine detection equipment installed on a MAV.		
5.5.3	A Certificate of Compliance must be provided to confirm compliance of the loudspeaker assembly with the RS101 Test requirements.		
5.6. Radiated Susceptibility, Electric Field			
5.6.1	The loudspeaker must maintain its performance parameters defined in Section 0 above, when subjected to an electrical field of 50 V/m strength within 2 MHz – 18 GHz frequency range as specified in Table XI of the MIL-STD-461G document.		
5.6.2	The RS103 Test described in Section 5.21 of the MIL-STD-461G document must be conducted to verify the ability of the loudspeaker assembly to operate in areas with electrical fields of up to 50 V/m strength generated by surrounding equipment in a 2 MHz – 18 GHz frequency range.		
5.6.3	A Certificate of Compliance must be provided to confirm compliance of the loudspeaker assembly with the RS103 Test requirements		
6 TEMPEST COMPROMISING EMANATIONS			
6.1. Applicable Standard			
6.1.1	The loudspeaker must be compliant with Level II information protection for Electrical Radiation defined in the CID/09/15A Compromising Emanations Laboratory Test Requirements, Electromagnetics document.		
6.2. Conformance Condition			
6.2.1	Electrical radiation emanations from the loudspeaker must meet the requirements of the CID/09/15A document within a 500 Hz – 1 GHz frequency range.		

##	Description	Compliance	Notes
6.2.2	A Certificate of Compliance must be provided to confirm compliance of the loudspeaker assembly with the TEMPEST requirements.		
7	RELIABILITY METRICS		
7.1.	Mean Time between Failures		
7.1.1	Mean Time between Failures (MTBF) of the loudspeaker must not be less than 30,000 hours.		
8	PRODUCT MAINTENANCE AND REPAIR		
8.1.	Preventive Maintenance		
8.1.1	The loudspeaker must require no preventive maintenance.		
8.2.	Corrective Maintenance and Repair		
8.2.1	The loudspeaker must require no corrective maintenance in a field environment.		

APPENDIX 3 TO ANNEX "A"**LIST OF DELIVERABLES**

Item #	Item Description	Quantity, each	QAC Code	Initial Delivery Date	Destination Address/	Note
1	Loudspeaker assembly including mounting metalwork (bracket, wing nut and other hardware) as per Figure 1 of MIL-DTL-12632.	1600	C	NLT 31 Mar 2025	Department of National Defence 25 CFSD Montreal 6363 Rue Notre Dame St E., Montreal, QC H1N 2E9, Canada	
2	Product Description Manual as per Annex A para 3.2	1 hard copy and 1 soft copy	N/A	with each delivery	Electronic delivery to DND Technical Authority	Contractor Format
3	Operator Manual as per Annex A para 3.2	1 hard copy and 1 soft copy	N/A	with each delivery	Hard copy and electronic copy delivery to DND Technical Authority	Contractor Format
4	Drawing of Product Identification and Marking of Loudspeaker as per Annex A para 3.3	1 soft copy	N/A	7 days after contract award	Electronic delivery to DND Technical Authority	
5	Certificates of Compliance as per Annex A para 4.1 and Appendix 2	1 soft copy	N/A	Included with the Proposal	Electronic delivery to DND Technical Authority	Contractor Format
6	Qualification Test Report as per Annex A para 4.1.5	1 soft copy	N/A	If requested by the TA following receipt of Proposal	Electronic delivery to DND Technical Authority	Contractor Format
7	First Article Inspection Report as per Annex A para 4.2	1 soft copy	NA	7 days after first article inspection	Electronic delivery to Technical Authority	Contractor Format
8	First article inspection samples (2) as per A	2	N/A	If requested by the TA following first article inspection	Delivered directly to the Technical Authority - Address TBD	
9	Loudspeaker – Certificate of Conformance as per Annex A para 4.3.	1 soft copy	N/A	with each delivery	Electronic delivery to DND Technical Authority	Contractor Format

ATTACHMENT 1 to PART 3 OF THE BID SOLICITATION

PRICING SCHEDULE

Item #	Description	Quantity	Firm Unit Price	Total Firm Price
1	Loudspeaker Assembly	1600	\$	\$
Option 1 (To be exercised within 1 year after Contract award)	Loudspeaker Assembly	Up to 1000	\$	\$
Option 2 (to be exercised within 2 years after Contract award)	Loudspeaker Assembly	Up to 900	\$	\$
			Subtotal	\$
			Applicable Tax	\$
			Total Evaluated Price	\$

ANNEX "B"

ELECTRONIC PAYMENT INSTRUMENTS

The Bidder accepts any of the following Electronic Payment Instrument(s):

- Direct Deposit (Domestic and International);
- Electronic Data Interchange (EDI);
- Wire Transfer (International Only).

ANNEX "C" to PART 5 - BID SOLICITATION

FEDERAL CONTRACTORS PROGRAM FOR EMPLOYMENT EQUITY - CERTIFICATION

I, the Bidder, by submitting the present information to the Contracting Authority, certify that the information provided is true as of the date indicated below. The certifications provided to Canada are subject to verification at all times. I understand that Canada will declare a bid non-responsive, or will declare a contractor in default, if a certification is found to be untrue, whether during the bid evaluation period or during the contract period. Canada will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply with any request or requirement imposed by Canada may render the bid non-responsive or constitute a default under the Contract.

For further information on the Federal Contractors Program for Employment Equity visit [Employment and Social Development Canada \(ESDC\)-Labour's](#) website.

Date: _____ (YYYY/MM/DD) (If left blank, the date will be deemed to be the bid solicitation closing date.)

Complete both A and B.

A. Check only one of the following:

- A1. The Bidder certifies having no work force in Canada.
- A2. The Bidder certifies being a public sector employer.
- A3. The Bidder certifies being a federally regulated employer being subject to the Employment Equity Act.
- A4. The Bidder certifies having a combined work force in Canada of less than 100 employees (combined work force includes: permanent full-time, permanent part-time and temporary employees [temporary employees only includes those who have worked 12 weeks or more during a calendar year and who are not full-time students]).
- A5. The Bidder has a combined workforce in Canada of 100 or more employees; and
 - A5.1. The Bidder certifies already having a valid and current Agreement to Implement Employment Equity (AIEE) in place with ESDC-Labour.

OR

- A5.2. The Bidder certifies having submitted the Agreement to Implement Employment Equity (LAB1215) to ESDC-Labour. As this is a condition to contract award, proceed to completing the form Agreement to Implement Employment Equity (LAB1215), duly signing it, and transmit it to ESDC-Labour.

B. Check only one of the following:

- B1. The Bidder is not a Joint Venture.

OR

- B2. The Bidder is a Joint Venture and each member of the Joint Venture must provide the Contracting Authority with a completed annex Federal Contractors Program for Employment Equity - Certification. (Refer to the Joint Venture section of the Standard Instructions)