



**RETURN BIDS TO:**  
**RETOURNER LES SOUMISSIONS À:**  
Bid Receiving - PWGSC / Réception des  
soumissions - TPSGC  
See Herein for Bid Submission  
Instructions  
Voir la présent pour les  
instructions sur la presentation  
d'une soumission

**REQUEST FOR PROPOSAL**  
**DEMANDE DE PROPOSITION**

**Proposal To: Public Works and Government  
Services Canada**

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

**Proposition aux: Travaux Publics et Services  
Gouvernementaux Canada**

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

**Comments - Commentaires**

<b>Title - Sujet</b> Internal Communication System Internal Communication System - Samuel Risley	
<b>Solicitation No. - N° de l'invitation</b> F7049-210290/A	<b>Date</b> 2022-04-05
<b>Client Reference No. - N° de référence du client</b> F7049-210290	
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$\$MD-046-28630	
<b>File No. - N° de dossier</b> 046md.F7049-210290	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> Eastern Daylight Saving Time EDT <b>on - le 2022-05-17</b> Heure Avancée de l'Est HAE	
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Tinkess (046md), Dianne	<b>Buyer Id - Id de l'acheteur</b> 046md
<b>Telephone No. - N° de téléphone</b> (819) 271-7829 ( )	<b>FAX No. - N° de FAX</b> ( ) -
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> See Herein	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

**Vendor/Firm Name and Address**

**Raison sociale et adresse du  
fournisseur/de l'entrepreneur**

**Issuing Office - Bureau de distribution**

Ship Refits and Conversions / Radoubss et modifications de  
navires and / et  
11 Laurier St. / 11, rue Laurier  
6C2, Place du Portage  
Gatineau, Québec K1A 0S5

<b>Delivery Required - Livraison exigée</b> See Herein – Voir ci-inclus	<b>Delivery Offered - Livraison proposée</b>
<b>Vendor/Firm Name and Address</b> <b>Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<b>Telephone No. - N° de téléphone</b> <b>Facsimile No. - N° de télécopieur</b>	
<b>Name and title of person authorized to sign on behalf of Vendor/Firm</b> <b>(type or print)</b> <b>Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

## TABLE OF CONTENTS

<b>PART 1 - GENERAL INFORMATION .....</b>	<b>2</b>
1.1 SECURITY REQUIREMENTS .....	2
1.2 STATEMENT OF REQUIREMENTS .....	2
1.3 DEBRIEFINGS .....	2
1.4 CANADA POST CORPORATION'S (CPC) CONNECT SERVICE .....	2
1.5 COVID-19 VACCINATION REQUIREMENT .....	2
<b>PART 2 - BIDDER INSTRUCTIONS .....</b>	<b>2</b>
2.1 STANDARD INSTRUCTIONS, CLAUSES AND CONDITIONS .....	2
2.2 SUBMISSION OF BIDS.....	2
2.3 ENQUIRIES - BID SOLICITATION.....	3
2.4 APPLICABLE LAWS.....	3
2.5 BID CHALLENGE AND RECOURSE MECHANISMS.....	3
<b>PART 3 - BID PREPARATION INSTRUCTIONS.....</b>	<b>4</b>
3.1 BID PREPARATION INSTRUCTIONS .....	4
<b>PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION .....</b>	<b>5</b>
4.1 EVALUATION PROCEDURES.....	5
4.2 BASIS OF SELECTION - HIGHEST COMBINED RATING OF TECHNICAL MERIT AND PRICE .....	12
4.3 POINT RATED TECHNICAL CRITERIA .....	14
<b>PART 5 - CERTIFICATIONS AND ADDITIONAL INFORMATION .....</b>	<b>15</b>
5.1 CERTIFICATIONS REQUIRED WITH THE BID .....	16
5.2 CERTIFICATIONS PRECEDENT TO CONTRACT AWARD AND ADDITIONAL INFORMATION .....	17
<b>PART 6 - RESULTING CONTRACT CLAUSES .....</b>	<b>18</b>
6.1 SECURITY REQUIREMENTS .....	18
6.2 STATEMENT OF REQUIREMENT .....	18
6.3 STANDARD CLAUSES AND CONDITIONS.....	18
6.4 TERM OF CONTRACT .....	18
6.5 AUTHORITIES .....	18
6.6 PAYMENT .....	19
6.7 INVOICING INSTRUCTIONS .....	20
6.8 CERTIFICATIONS AND ADDITIONAL INFORMATION.....	20
6.9 APPLICABLE LAWS.....	20
6.10 PRIORITY OF DOCUMENTS .....	20
6.11 DISPUTE RESOLUTION.....	21
6.12 SHIPPING INSTRUCTIONS - DELIVERY AT DESTINATION .....	21
<b>ANNEX "A".....</b>	<b>22</b>
STATEMENT OF REQUIREMENT .....	22
<b>ANNEX "B".....</b>	<b>23</b>
BASIS OF PAYMENT .....	23
<b>ANNEX "C" TO PART 3 OF THE BID SOLICITATION .....</b>	<b>25</b>
ELECTRONIC PAYMENT INSTRUMENTS.....	25

## **PART 1 - GENERAL INFORMATION**

### **1.1 Security Requirements**

There is no security requirement applicable to this Contract.

### **1.2 Statement of Requirements**

The Canadian Coast Guard (CCG) has a requirement for a Ship Internal Communications System for the CCGS Samuel Risley to meet its operational requirements and to provide efficient communications throughout the vessel in both normal and emergency conditions in accordance with Annex "A" Statement of Requirements.

### **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 Canada Post Corporation's (CPC) Connect service**

This bid solicitation allows bidders to use the CPC Connect service provided by Canada Post Corporation to transmit their bid electronically. Bidders must refer to Part 2 entitled Bidder Instructions, and Part 3 entitled Bid Preparation Instructions, of the bid solicitation, for further information.

### **1.5 COVID-19 vaccination requirement**

This requirement is subject to the COVID-19 Vaccination Policy for Supplier Personnel. Failure to complete and provide the COVID-19 Vaccination Requirement Certification as part of the bid will render the bid non-responsive.

## **PART 2 - BIDDER INSTRUCTIONS**

### **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) (<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](#) (2020-05-28) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

#### **2.1.1 SACC Manual Clauses**

[B1000T](#) (2014-06-26) Condition of Material - Bid

### **2.2 Submission of Bids**

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated in the bid solicitation.

Only bids submitted using Canada Post Corporation's Connect service will be accepted. The Supplier must send an email requesting to open a CPC Connect conversation to the following address:

[tpsgc.pareceptiondessaoumissions-apbidReceiving.pwgsc@tpsgc-pwgsc.gc.ca](mailto:tpsgc.pareceptiondessaoumissions-apbidReceiving.pwgsc@tpsgc-pwgsc.gc.ca)

Note: Bids will not be accepted if emailed directly to this email address. This email address is to be used to open an CPC Connect conversation, as detailed in Standard Instructions [2003](#), or to send bids through a CPC Connect message if the bidder is using its own licensing agreement for CPC Connect.

It is the Supplier's responsibility to ensure the request for opening a CPC Connect conversation is sent to the email address above at least six days before the solicitation closing date.

Bids transmitted by facsimile or hardcopy to PWGSC will not be accepted.

### 2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than Five (5) 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.

### 2.5 Bid Challenge and Recourse Mechanisms

- (a) Several mechanisms are available to potential suppliers to challenge aspects of the procurement process up to and including contract award.
- (b) Canada encourages suppliers to first bring their concerns to the attention of the Contracting Authority. Canada's [Buy and Sell](#) website, under the heading "[Bid Challenge and Recourse Mechanisms](#)" contains information on potential complaint bodies such as:
  - Office of the Procurement Ombudsman (OPO)
  - Canadian International Trade Tribunal (CITT)
- (c) Suppliers should note that there are **strict deadlines** for filing complaints, and the time periods vary depending on the complaint body in question. Suppliers should therefore act quickly when they want to challenge any aspect of the procurement process.

## **PART 3 - BID PREPARATION INSTRUCTIONS**

### **3.1 Bid Preparation Instructions**

Bidders must submit its bids electronically in accordance with section 08 - 2 of the 2003 standard instructions. The CPC Connect system has a limit of 1GB per single message posted and a limit of 20GB per conversation.

The bid must be gathered per section and separated as follows:

Section I: Technical Bid  
Section II: Financial Bid  
Section III: Certifications

Bids transmitted by facsimile or hardcopy will not be accepted

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

#### **Section I: Technical Bid**

In their technical bid, bidders should demonstrate their understanding of the requirements contained in the bid solicitation and explain how they will meet these requirements. Bidders should demonstrate their capability and describe their approach in a thorough, concise and clear manner for carrying out the work.

The technical bid should address clearly and in sufficient depth the points that are subject to the evaluation criteria against which the bid will be evaluated. Simply repeating the statement contained in the bid solicitation is not sufficient. In order to facilitate the evaluation of the bid, Canada requests that bidders address and present topics in the order of the evaluation criteria under the same headings.

Bids shall follow all instructions, general terms, conditions and clauses identified herein by title, number and date. All references to descriptive material, technical manuals and brochures included as part of this Bid should be referenced accordingly.

Bidders must explain and demonstrate how they meet the technical requirements and how they will carry out the work and include all information and documentation as requested in Part 4.1.1.

#### **Section II: Financial Bid**

Bidders must submit their financial bid in accordance with the Basis of Payment Annex "B".

##### **3.1.1 Electronic Payment of Invoices – Bid**

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

If Annex "C" 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

**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.

**4.1.1 Technical Evaluation**

A mandatory requirement is described using the words "shall", "must", "will", "is required" or "is mandatory".

**4.1.1.1 Mandatory Technical Criteria**

Eval #	SOR Ref	Description	Mandatory Information, Documentation and Certificates to be provided with the bid	Page number of bid where information can be found
1.	MR 11	The Shipboard Integrated Communications System (SICS) must be Type Approved by a Classification Society that is recognized by Transport Canada	Documentation of Type Approval	
2.	MR 15	The Ship Internal Communication System must be able to use the existing 16 AWG – 2 conductor multi-pair cabling on the ship. These currently are fed from the central equipment to each: a. Telephone b. PA Speaker Loop c. Signalling Beacon d. Talkback Speaker e. Call-in Button	Technical data sheet	
3.	MR 16	All master control heads may operate off new cabling and do not have to use the existing multi-pair cables. a. All cable will be marine type approved b. All Cat 6A cabling must use shielded cable and connectors. c. If a specialty cable is required, it will be provided with the system.	Written description of cable type	
4.	MR 19	The equipment must fit in one (1) rack measuring not more than 6 feet high, 24	Rack drawing	

		inches wide by 32 inches deep OR (2) racks not more than 48 inches high, 24 inches wide by 32 inches deep.		
5.	MR 20	The cabinet must have an internal 19 inches fixed frame.	Rack drawing	
6.	MR 22	The cabinet must come prepared with proper ventilation to allow sufficient air flow for the cooling of equipment.	Rack drawing	
7.	MR 23	The cabinet must come prepared with a chassis grounding point.	Rack drawing	
8.	MR 24	The cabinet must have an option for a cable access through the top of the cabinet.	Rack drawing	
9.	MR 25	All equipment must be accessible from the front of the cabinet.	Rack drawing	
10.	MR 26	It must have a front door on hinges.	Rack drawing	
11.	MR 27	Any network switches that are used must include a patch panel that is, at a minimum, the same number of ports as the switch. a. The patch panel must include the RJ45 Jack connector to terminate field Cat.6A cables.	Rack drawing	
12.	MR 29	The system controllers, amplifiers, network switches must allow, at a minimum, a power input of 110-230Vac, 60Hz.	Technical data sheet	
13.	MR 30	The integrated systems must have automatic switch-over facilities from the main and emergency power sources.	Electrical drawing of switchover circuitry with any supporting technical data sheet	
14.	MR 31	The integrated systems must have an Uninterruptible Power Supply (UPS) to provide clean and conditioned power to the integrated systems during blackout conditions and during the switch over from main and emergency power sources. a. The UPS must be able to provide, at a minimum, 30 minutes of run time. b. The UPS must be shipboard approved by a classification society recognized by Transport Canada.	Technical data sheet, Classification society approval documentation	
15.	MR 32	All fault conditions shall provide a visible indication in both the equipment cabinet, as well as on the master control heads.	Equipment diagram	
16.	MR 33	The integrated system must provide the following discrete alarm outputs: a. Main/Emergency failure system A; b. Main/Emergency failure system B; c. UPS failure system A; d. UPS failure system B; e. PA system fault system A; f. PA system fault system B; and g. Telephone System fault.	Written list of all alarms	
17.	MR 34	If the talkback feature is not present on the telephones, it is required to be present as part of the PA system.	Written operational description of talkback system	

			including how it is integrated into the overall system	
18.	MR 40	<p>The ICS system must include an exterior type talkback loudspeaker:</p> <ul style="list-style-type: none"> <li>a. Intended use is for outdoor decks and high noise areas;</li> <li>b. It must be rugged;</li> <li>c. Must have, at a minimum, an Ingress Protection rating of IP66 or better;</li> <li>d. Must have, at a minimum, 10W speaker;</li> <li>e. It must include, at a minimum, one (1) call button; and</li> <li>f. Must allow for hands free operation.</li> </ul>	Technical data sheet	
19.	MR 41	<p>The ICS system must include a talkback station designed for explosion proof areas:</p> <ul style="list-style-type: none"> <li>a. It must have, at a minimum, an Ingress Protection rating of IP66.</li> <li>b. It must be a rugged type station;</li> <li>c. It must have a built-in interface for a headset;</li> <li>d. Must have, at a minimum, 10W speaker;</li> <li>e. It must have hands-free communication capability;</li> <li>f. It must include, at a minimum, one (1) call button; and</li> <li>g. It must be IEC Ex or ATEX certified.</li> </ul>	Technical data sheet	
20.	MR 42	<p>The ICS system must include a visual indicator:</p> <ul style="list-style-type: none"> <li>a. It must have, at a minimum, an Ingress Protection rating of IP66;</li> <li>b. It must be powered by 120VAC;</li> <li>c. It must include be an LED light that is green; and</li> <li>d. It must be a strobe light type (not rotating light type).</li> </ul>	Technical data sheet	
21.	MR 46	The telephone system must be approved as part of the Shipboard Integrated Communications System (SICS).	Interconnection Details Provided	
22.	MR 47	The telephone system must be a digital system.	Technical data sheet	
23.	MR 50	Telephones need to operate over the existing 16AWG – 2 conductor multi-pair cabling throughout the ship.	Documentation	
24.	MR 51	<p>The telephone system must have the following features:</p> <ul style="list-style-type: none"> <li>a. Caller ID;</li> <li>b. Call forwarding;</li> <li>c. Forward on busy;</li> <li>d. Call Pick-Up;</li> <li>e. Call park;</li> <li>f. 3-way conferencing;</li> <li>g. Wake up system;</li> <li>h. Programmable from Web Interface or</li> </ul>	Documentation	



		software running on a PC; and i. Auto attendant/External calls		
25.	MR 52	The telephone system must have a call routing feature allowing the system to route external incoming calls to a specific telephone station or to an auto attendant.	Documentation	
26.	MR 53	The telephone system must have an auto attendant function. a. The auto attendant function must allow the user to record a voice message. b. The auto attendant function must allow the user to change the recorded voice message from a specifically programmed phone. c. The auto attendant function must provide the incoming caller with the ability to select specific stations throughout the vessel.	Documentation	
27.	MR 54	The telephone system must have a "night bells" feature. a. The night bells feature allows for the ability to have calls that would normally ring in the wheelhouse, for example, to ring in one or multiple different locations. b. This feature must be able to be activated and deactivated from an authorized telephone station.	Written feature description with any supporting documentation	
28.	MR 55	The night bells feature must have at minimum, two (2) configurable ring groups.	Written feature description with any supporting documentation	
29.	MR 56	The telephone system must interface with the PA system and be approved as part of the PA system.	Written interconnection details with any supporting documentation	
30.	MR 57	All telephone stations must be able to activate the PA system with live (non-recorded) messages, if so programmed.	Written feature description with any supporting documentation	
31.	MR 58	The specifically programmed telephone station must be able to select which broadcast zones will broadcast the live PA announcement.	Written feature description with any supporting documentation	
32.	MR 59	The telephone system must include a minimum of 4 analog external lines.	Technical data sheet	
33.	MR 60	The Telephone System must be configurable to limit external communication lines' access to specifically programmed telephone stations.	PBX feature list	
34.	MR 61	The Telephone system must be able to interface with cellular and satellite phones.	PBX feature list	
35.	MR 62	All external lines must be able to be programmed to a telephone extension.	PBX feature list	
36.	MR 63	The telephone system must include a master station:	Technical data sheet	

		<ul style="list-style-type: none"> <li>a. It must be flush mountable (console);</li> <li>b. It must have physical buttons and not use a touchscreen for operation;</li> <li>c. It must include a full-dial pad;</li> <li>d. It must include a handset;</li> <li>e. It must include a marine handset retainer;</li> <li>f. It must have hands-free communication capability; and</li> <li>g. It must include, at a minimum, thirty (30) speed dial selections.</li> </ul>		
37.	MR 64	<p>The telephone system must include a telephone designed for cabins and common areas:</p> <ul style="list-style-type: none"> <li>a. It must be wall and desk mountable;</li> <li>b. It must include a full-dial pad;</li> <li>c. It must include a handset;</li> <li>d. It must include a marine handset retainer;</li> <li>e. It must have hands-free communication capability; and</li> <li>f. It must include, at a minimum, ten (10) speed dial selections.</li> </ul>	Technical data sheet	
38.	MR 65	<p>The telephone system must include a telephone station designed for high noise areas:</p> <ul style="list-style-type: none"> <li>a. It must have, at a minimum, an Ingress Protection rating of IP66.</li> <li>b. It must be a rugged type station;</li> <li>c. It must have a built-in interface for a headset;</li> <li>d. It must support external visual indicator activation;</li> <li>e. It must include, at a minimum, one (1) speed dial selection.</li> </ul>	Technical data sheet	
39.	MR 66	<p>The telephone system must include a telephone station designed for an outdoor deck within an enclosure:</p> <ul style="list-style-type: none"> <li>a. It must have, at a minimum, an Ingress Protection rating of IP66.</li> <li>b. It must be a rugged type station;</li> <li>c. The entire station must be enclosed with a door for access;</li> <li>d. It must have a built-in interface for a headset;</li> <li>e. It must include, at a minimum, one (1) speed dial selection.</li> </ul>	Technical data sheet	
40.	MR 67	<p>The system must include a wired headset for a high noise area station:</p> <ul style="list-style-type: none"> <li>a. It must have a Push-To-Talk (PTT) microphone;</li> <li>b. It must be able to interface with the outdoor and high noise area station;</li> <li>c. It must provide ear protection; and</li> <li>d. It must include a cable with a minimum length of 10 meters.</li> </ul>	Technical data sheet	

41.	MR 69	<p>Any DECT equipment must be approved for use in Canada by Industry Canada.</p> <ol style="list-style-type: none"> <li>It must include a base unit.</li> <li>It must include portable phones with individual chargers.</li> <li>Each portable phone must have their unique telephone extension number.</li> <li>Portable phones must NOT broadcast PA announcements or any alarms.</li> </ol>	Technical data sheet	
42.	MR 71	<p>The PA system must include an amplifier:</p> <ol style="list-style-type: none"> <li>The PA Amplifier must have redundant interfaces;</li> <li>The PA Amplifier must have, at a minimum, two (2) independent output channels;</li> <li>The PA Amplifier must be available in, at minimum, 100 Watts (W) per channel;</li> <li>The PA Amplifier must be continuously rated for the maximum power they are required to deliver into the system for audio and for alarm tone signals; and</li> <li>The PA amplifier must support 70 V or 100 V line output.</li> </ol>	Technical data sheet	
43.	MR 72	<p>The PA system must include a system controller:</p> <ol style="list-style-type: none"> <li>The PA controller must have redundant interfaces;</li> <li>The PA controller must include the system controls and monitoring functions; and</li> <li>With respect to Loop A and Loop B PA runs, each PA controller must be able to automatically take control of each other systems if either PA controller fails.</li> </ol>	Technical data sheet	
44.	MR 75	<p>The PA system must allow programming at a minimum, six (6) zones and three (3) groups of zones.</p>	Technical data sheet	
45.	MR 76	<p>The PA must mute the General Alarm and Fire Alarm during a PA announcement and unmute the alarm when the PA announcement has concluded.</p>	Functional description	
46.	MR 77	<p>Any GA or PA visual indicator must not be affected by the muting of an audible alarm during a PA announcement.</p>	Functional description	
47.	MR 82	<p>The PA system must include a PA Master Control head:</p> <ol style="list-style-type: none"> <li>Control Heads must include a microphone and speaker;</li> <li>It must have physical buttons and not use a touchscreen for operation;</li> <li>Control heads must include a dedicated selection for each of the PA system broadcast zones and groups of broadcast zones;</li> <li>The PA system must broadcast PA</li> </ol>	Technical data sheet	

		<p>messages to the broadcast zones corresponding to the selected button;</p> <p>e. The PA system must have an emergency override function that is accessible from the PA control head that gives immediate access to the PA speakers, while restoring all speakers to their native sound levels.</p>		
48.	MR 83	<p>The PA system must include a horn type loudspeaker:</p> <p>a. Intended use is for machinery spaces and outdoor decks;</p> <p>b. Must have, at a minimum, an Ingress Protection rating of IP66 or better;</p> <p>c. Must have adjustable power taps that cannot be altered by the operator, the maximum power being 15 W; and</p> <p>d. It must support a 70 V or 100 V line audio input and it must be compatible with the PA Amplifier supplied with the system.</p>	Technical data sheet	
49.	MR 84	<p>The PA system must include a ceiling flush-mount loudspeaker:</p> <p>a. Intended use is cabins and common indoor areas;</p> <p>b. Must include a back box;</p> <p>c. Must have adjustable power taps that cannot be altered by the operator, with a range between 1W and a maximum power being between 5 W and 10 W; and</p> <p>d. It must support a 70 V or 100 V line audio input and it must be compatible with the PA Amplifier supplied with the system.</p> <p>e. The maximum depth of the unit and back box shall not exceed 115mm (4.5 inches).</p>	Technical data sheet listing dimensions	
50.	MR 85	<p>The PA system must include a wall mount loudspeaker:</p> <p>a. Intended use is cabins and common indoor areas;</p> <p>b. Must include a back box;</p> <p>c. Must have adjustable power taps that cannot be altered by the operator, with a range between 1W and a maximum power being between 5 W and 10 W; and</p> <p>d. It must support a 70 V or 100 V line audio input and it must be compatible with the PA Amplifier supplied with the system.</p> <p>e. The maximum depth of the unit and back box shall not exceed 115mm (4.5 inches).</p>	Technical data sheet	
51.	MR 86	<p>The PA system must include an explosion proof loudspeaker:</p> <p>a. Intended use is for Helicopter Hangar or fueling stations;</p> <p>b. It must be IEC Ex or ATEX certified;</p> <p>c. Must have, at a minimum, an Ingress</p>	Technical data sheet	

		<p>Protection rating of IP66 or better;</p> <p>d. Must have adjustable power taps that cannot be altered by the operator with the maximum power being 15 W; and</p> <p>e. It must support a 70 V or 100 V line audio input and it must be compatible with the PA Amplifier supplied with the system.</p>		
52.	MR 87	<p>The PA system must include a loudhailer:</p> <p>a. Intended use is on top of the wheelhouse;</p> <p>b. Must have, at a minimum, an Ingress Protection rating of IP66 or better;</p> <p>c. Must have adjustable power taps that cannot be altered by the operator with the maximum power being 30 W; and</p> <p>d. It must support a 70 V or 100 V line audio input;</p>	Technical data sheet	
53.	MR 88	<p>The PA system must include speaker line monitoring:</p> <p>a. If a device is meant to be installed at the end of a speaker line, it must have, at a minimum, an Ingress Protection rating of IP66 or better;</p> <p>b. It must be able to detect if there is a fault on the line; and</p> <p>c. The system controller must report this fault.</p>	Technical data sheet	

#### 4.1.2 Financial Evaluation

SACC Manual Clause [A0222T](#) (2014-06-26), Evaluation of Price-Canadian/Foreign Bidders)

#### 4.2 Basis of Selection - Highest Combined Rating of Technical Merit and Price

1. To be declared responsive, a bid must:
  - a. comply with all the mandatory requirements of the bid solicitation; and
  - b. meet all mandatory criteria as per section 4.1.1.1; and
  - c. obtain the required minimum of 0 points overall for the technical evaluation criteria of Desirable Requirements as per section 4.3 which are subject to point rating.

The rating is performed on a scale of 200 points.

2. Bids not meeting (a), (b) and (c) will be declared non-responsive.
3. The selection will be based on the highest responsive combined rating of technical merit and price. The ratio will be 40 % for the technical merit and 60 % for the price.

4. To establish the technical merit score, the overall technical score for each responsive bid will be determined as follows: total number of points obtained / maximum number of points available multiplied by the ratio of 40%.
5. To establish the pricing score, each responsive bid will be prorated against the lowest evaluated price and the ratio of 60%.
6. For each responsive bid, the technical merit score and the pricing score will be added to determine its combined rating.
7. Neither the responsive bid obtaining the highest technical score nor the one with the lowest evaluated price will necessarily be accepted. The responsive bid with the highest combined rating of technical merit and price will be recommended for award of a contract.

The table below illustrates an example where all three bids are responsive and the selection of the contractor is determined by a 40/60 ratio of technical merit and price, respectively. The total available points equals 200 and the lowest evaluated price is \$100,000 (100).

**Basis of Selection - Highest Combined Rating Technical Merit (40%) and Price (60%)**

		Bidder 1	Bidder 2	Bidder 3
<b>Overall Technical Score</b>		115/200	150/200	160/200
<b>Bid Evaluated Price</b>		\$100,000.00	\$120,000.00	\$200,000.00
<b>Calculations</b>	<b>Technical Merit Score</b>	$115/200 \times 40 = 23$	$150/200 \times 40 = 30$	$160/200 \times 40 = 32$
	<b>Pricing Score</b>	$100/100 \times 60 = 60$	$100/120 \times 60 = 50$	$100/200 \times 60 = 30$
<b>Combined Rating</b>		83	80	62
<b>Overall Rating</b>		1st	2nd	3rd

#### 4.3 Point Rated Technical Criteria

SOR Ref	Description	Information to be provided	Max Points	Min Points	Max Score Possible	Page number of bid where information can be found
DR 1.	One (1) rack is desired over two (2).	Rack drawing	20 points For One equipment rack	0 points For Two equipment racks	20	
DR 2.	Priority shall be given to the reduction of cabinet depth of less than 32 inches, as space is limited. The UPS may be provided outside of the cabinet, if this results in the physical dimension of the cabinet depth being reduced.	Rack drawing	10 points per inch less than 32 inches	0 points if 32 inch rack	30	
DR 3.	The cabinet must allow inspection of the system controller's status without opening a door.	Rack door drawing, Rack equipment drawing, System controller interface drawing	5 points If status can be seen	0 points If status cannot be seen	5	
DR 4.	The telephone system is desired to be a digital IP-based system.	Technical data sheet	45 points If IP digital system	0 points If non-IP system	45	
DR 5.	All telephone stations are desired to have a built-in speaker that is type approved as part of the PA system.	Type approval documentation	20 points If proof of compliance is provided for bid evaluation	0 points If proof of compliance is not provided for bid evaluation	20	
DR 6.	All telephone stations are desired to be able to be part of the PA zones/groups and broadcast PA announcement.	Type approval documentation	30 points If proof of compliance is provided for bid evaluation	0 points If proof of compliance is not provided for bid evaluation	30	
DR 7.	The telephone system is desired to include a VoIP	Technical data sheet	10 points	0 points	10	

	to Analogue Gateway with a minimum of four (4) FXO interfaces.		If proof of compliance is provided for bid evaluation	If a reference is not provided for bid evaluation		
DR 8.	<p>During PA announcements from a master control station, the local PA speaker, shall be muted to not create feedback.</p> <p>a. This is intended to mute the Bridge or the Engine Control Room PA speaker, when an announcement is made from that location.</p>	Documentation describing operation and any related technical data sheets	<p>25 points</p> <p>If proof of compliance is provided for bid evaluation</p>	<p>0 points</p> <p>If a reference is not provided for bid evaluation</p>	25	
DR 9.	<p>The PA system is desired to include the ability to dynamically raise or lower the sound level of a speaker horn based upon ambient noise level.</p> <p>a. This is desired in the Engine Room to prevent the horns from being too loud when the mechanical systems are turned off.</p> <p>b. This noise level must still meet the regulations of 7.2.2.1 and 7.2.2.2 of the International Life-Saving Appliances (LSA) code.</p>	Documentation describing operation and any related technical data sheet	<p>15 points</p> <p>If proof of compliance is provided for bid evaluation</p>	<p>0 points</p> <p>If a reference is not provided for bid evaluation</p>	15	

**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 specified otherwise, 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 COVID-19 vaccination requirement certification

In accordance with the COVID-19 Vaccination Policy for Supplier Personnel, all Bidders must provide with their bid, the COVID-19 Vaccination Requirement Certification attached to this bid solicitation, to be given further consideration in this procurement process. This Certification incorporated into the bid solicitation on its closing date is incorporated into, and forms a binding part of any resulting Contract.

#### COVID-19 Vaccination Requirement Certification

I, \_\_\_\_\_ (*first and last name*), as the representative of \_\_\_\_\_ (*name of business*) pursuant to \_\_\_\_\_ (*insert solicitation number*), warrant and certify that all personnel that \_\_\_\_\_ (*name of business*) will provide on the resulting Contract who access federal government workplaces where they may come into contact with public servants will be:

- a. fully vaccinated against COVID-19;
- b. for personnel that are unable to be vaccinated due to a certified medical contraindication, religion or other prohibited grounds of discrimination under the *Canadian Human Rights Act*, subject to accommodation and mitigation measures that have been presented to and approved by Canada; or
- c. partially vaccinated against COVID-19 for a period of up to 10 weeks from the date of their first dose and subject to temporary measures that have been presented to and approved by Canada, immediately after which period the personnel will meet the conditions of (a) or (b) or will no longer access federal government workplaces where they may come into contact with public servants under this Contract;

until such time that Canada indicates that the vaccination requirements of the COVID-19 Vaccination Policy for Supplier Personnel are no longer in effect.

I certify that all personnel provided by \_\_\_\_\_ (*name of business*) have been notified of the vaccination requirements of the Government of Canada's COVID-19 Vaccination Policy for Supplier Personnel, and that the \_\_\_\_\_ (*name of business*) has certified to their compliance with this requirement.

Solicitation No. - N° de l'invitation  
F7049-210290/A  
Client Ref. No. - N° de réf. du client  
F7049-210290

Amd. No. - N° de la modif.  
File No. - N° du dossier  
046md. F7049-210290

Buyer ID - Id de l'acheteur  
046MD  
CCC No./N° CCC - FMS No./N° VME

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I certify that the information provided is true as of the date indicated below and will continue to be true for the duration of the Contract. I understand that the certifications provided to Canada are subject to verification at all times. I also understand that Canada will declare a contractor in default, if a certification is found to be untrue, whether made knowingly or unknowingly, during the bid or contract period. Canada reserves the right to ask for additional information to verify the certifications. Failure to comply with any request or requirement imposed by Canada will constitute a default under the Contract.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **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 section titled Information to be provided when bidding, contracting or entering into a real property agreement of 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 Rate or Price Certification**

SACC Manual clause [C0002T](#) (2010-01-11)

### **5.2.3 Price Support**

SACC Manual clause [C0008T](#) (2007-05-25)

## **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 the Contract.

### **6.2 Statement of Requirement**

The Contractor must provide The Ship Internal Communications System for the CCGS Samuel Risley to meet its operational requirements and to provide efficient communications throughout the vessel in both normal and emergency conditions in accordance with the Statement of Requirements 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) (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](#) (2021-12-02), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

### **6.4 Term of Contract**

#### **6.4.1 Delivery Date**

All the deliverables must be received on or before 8 July 2022.

#### **6.4.2 Delivery Points**

Delivery of the requirement will be made to delivery point(s) specified at section 3.2 of Annex "A" of the Contract.

### **6.5 Authorities**

#### **6.5.1 Contracting Authority**

The Contracting Authority for the Contract is:

Name: Dianne Tinkess  
Title: Supply Team Leader  
Organization: PWGSC  
Address: 11 Laurier Street, Gatineau Quebec, K1A 0S5  
Telephone: (819) 271-7829  
E-mail: [Dianne.Tinkess@tpsgc-pwgsc.gc.ca](mailto:Dianne.Tinkess@tpsgc-pwgsc.gc.ca)

Solicitation No. - N° de l'invitation  
F7049-210290/A  
Client Ref. No. - N° de réf. du client  
F7049-210290

Amd. No. - N° de la modif.  
File No. - N° du dossier  
046md. F7049-210290

Buyer ID - Id de l'acheteur  
046MD  
CCC No./N° CCC - FMS No./N° VME

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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:

Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Organization: \_\_\_\_\_  
Address: \_\_\_\_\_

Telephone: \_\_\_\_ - \_\_\_\_ - \_\_\_\_  
E-mail address: \_\_\_\_\_

The Technical Authority named above 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

Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Organization: \_\_\_\_\_  
Address: \_\_\_\_\_

Telephone: \_\_\_\_ - \_\_\_\_ - \_\_\_\_  
E-mail: \_\_\_\_\_

## 6.6 Payment

### 6.6.1 Basis of Payment

In consideration of the Contractor completing all of its obligations under the Contract, the Contractor will be paid a firm price, as specified in Annex "B" Basis of Payment. 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 Discretionary Audit - Commercial Goods and/or Services

SACC Manual clause [C0100C](#) (2010-01-11)

### 6.6.3 Electronic Payment of Invoices – Contract

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

- 
- a. Visa Acquisition Card;
  - b. MasterCard Acquisition Card;
  - c. Direct Deposit (Domestic and International);
  - d. Electronic Data Interchange (EDI);
  - e. Wire Transfer (International Only);
  - f. Large Value Transfer System (LVTS) (Over \$25M)

## 6.7 Invoicing Instructions

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

### Invoices

1. Invoices are to be made out to:

Attention of: Diane Beaudry-Boucher  
[dfo.invoicing-facturation.mpo@canada.ca](mailto:dfo.invoicing-facturation.mpo@canada.ca)

### The original invoice to be forwarded for verification to:

Public Works and Government Services Canada  
Marine Systems Directorate  
Ship Refit Division  
Attention: Dianne Tinkess  
Email: [Dianne.Tinkess@tpsgc-pwgsc.gc.ca](mailto:Dianne.Tinkess@tpsgc-pwgsc.gc.ca)

2. Canada will only make payment upon receipt of a satisfactory invoice duly supported by specified release documents and any other documents called for under the Contract.
3. The Contractor shall not submit an invoice prior to the completion and acceptance of the Work or shipment of the items to which it relates.

## 6.8 Certifications and Additional Information

### 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.

## 6.9 Applicable Laws

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

## 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](#) (2021-12-02), General Conditions - Goods (Medium Complexity);
- (c) Annex A, Statement of Requirement;
- (d) Annex "B", Basis of Payment; and
- (e) the Contractor's bid dated \_\_\_\_\_.

#### **6.11 Dispute Resolution**

- (a) The parties agree to maintain open and honest communication about the Work throughout and after the performance of the contract.
- (b) The parties agree to consult and co-operate with each other in the furtherance of the contract and promptly notify the other party or parties and attempt to resolve problems or differences that may arise.
- (c) If the parties cannot resolve a dispute through consultation and cooperation, the parties agree to consult a neutral third party offering alternative dispute resolution services to attempt to address the dispute.
- (d) Options of alternative dispute resolution services can be found on Canada's Buy and Sell website under the heading "[Dispute Resolution](#)".

#### **6.12 Shipping Instructions - Delivery at Destination**

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

Free on Board (Destination) common carrier to CCG Electronics and Informatics Workshop, in Sarnia, Ontario Address: Unit #8, 1355 Confederation St, Sarnia, ON N7S 4T2 for shipments from the United States government; or

Delivered Duty Paid (DDP) to CCG Electronics and Informatics Workshop, in Sarnia, Ontario Address: Unit #8, 1355 Confederation St, Sarnia, ON N7S 4T2 Incoterms 2000 for shipments from a commercial contractor.

Solicitation No. - N° de l'invitation  
F7049-210290/A  
Client Ref. No. - N° de réf. du client  
F7049-210290

Amd. No. - N° de la modif.  
File No. - N° du dossier  
046md. F7049-210290

Buyer ID - Id de l'acheteur  
046MD  
CCC No./N° CCC - FMS No./N° VME

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## **ANNEX "A"**

### **STATEMENT OF REQUIREMENT**

See attached Statement of Requirements.

**ANNEX "B"**

**BASIS OF PAYMENT**

The Bidder must provide a price for a Ship Internal Communications System (SICS) in accordance with the mandatory requirements of Annex "A".

The Bidder must provide prices for the Desired Requirements as per section 4.3 - Point Rated Criteria.

Both the mandatory Ship Internal Communications System (SICS) price and the Point Rated Criteria price will be evaluated.

**Mandatory Ship Internal Communications System (SICS)**

Description	Price per Complete Unit	Number Required	Total
Ship Internal Communications System (SICS)	\$	1	\$
Total Estimated Price for SICS System (applicable taxes excluded)			\$

**Point Rated Desired Requirements**

SOR Reference	Description	Price
DR 1.	One (1) rack is desired over two (2).	\$
DR 2.	Priority shall be given to the reduction of cabinet depth, as space is limited. The UPS may be provided outside of the cabinet, if this results in the physical dimension of the cabinet depth being reduced.	\$
DR 3.	The cabinet must allow inspection of the system controller's status without opening a door.	\$
DR 4.	The telephone system is desired to be a digital IP-based system.	\$
DR 5.	All telephone stations are desired to have a built-in speaker that is type approved as part of the PA system.	\$
DR 6.	All telephone stations are desired to be able to be part of the PA zones/groups and broadcast PA announcement.	\$
DR 7.	The telephone system is desired to include a VoIP to Analogue Gateway with a minimum of four (4) FXO interfaces.	\$
DR 8.	During PA announcements from a master control station, the local PA speaker, shall be muted to not create feedback. a. This is intended to mute the Bridge or the Engine Control Room PA speaker, when an announcement is made from that location.	\$



Solicitation No. - N° de l'invitation  
F7049-210290/A  
Client Ref. No. - N° de réf. du client  
F7049-210290

Amd. No. - N° de la modif.  
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046md. F7049-210290

Buyer ID - Id de l'acheteur  
046MD  
CCC No./N° CCC - FMS No./N° VME

DR 9.	The PA system is desired to include the ability to dynamically raise or lower the sound level of a speaker horn based upon ambient noise level. a. This is desired in the Engine Room to prevent the horns from being too loud when the mechanical systems are turned off. b. This noise level must still meet the regulations of 7.2.2.1 and 7.2.2.2 of the International Life-Saving Appliances (LSA) code.	\$
Total Estimated Price for Point Rated DRs (applicable taxes excluded)		\$

Total Evaluated Bid	
Mandatory SICS System - Total Estimated Price (applicable taxes excluded)	\$
Point Rated DR - Total Estimated Price (applicable taxes excluded)	\$
Total Estimated Price (applicable taxes excluded)	\$

Solicitation No. - N° de l'invitation  
F7049-210290/A  
Client Ref. No. - N° de réf. du client  
F7049-210290

Amd. No. - N° de la modif.  
File No. - N° du dossier  
046md. F7049-210290

Buyer ID - Id de l'acheteur  
046MD  
CCC No./N° CCC - FMS No./N° VME

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## **ANNEX "C" to PART 3 OF THE BID SOLICITATION**

### **ELECTRONIC PAYMENT INSTRUMENTS**

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

- VISA Acquisition Card;
- MasterCard Acquisition Card;
- Direct Deposit (Domestic and International);
- Electronic Data Interchange (EDI);
- Wire Transfer (International Only);
- Large Value Transfer System (LVTS) (Over \$25M)



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

Canadian  
Coast Guard

Garde côtière  
canadienne

**ANNEX "A"**

## Integrated Technical Services



Safety First, Service Always



## Ship Internal Communications Systems

### Statement of Requirements

Published under the Authority of:  
Integrated Technical Services Directorate  
Fisheries and Oceans Canada  
Canadian Coast Guard  
Ottawa, Ontario, K1A 0E6  
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**Record of Amendments**

#	Edition Date	Revision Date	Description	Initials
1	November 3, 2021		Initial Version	A.P.
2	Nov 29, 2021		Modifications	B.C

# Table of Contents

**Section 1 DOCUMENT MANAGEMENT ..... iii**

1.1 Authority ..... iii

1.2 RESPONSIBILITY ..... iii

**Section 2 Background Information ..... 1**

2.1 Purpose ..... 1

2.2 Scope ..... 1

2.3 Objectives ..... 1

2.4 Applicable Documents ..... 1

2.5 Acronyms ..... 2

2.6 Terminology ..... 3

**Section 3 GENERAL REQUIREMENTS ..... 4**

3.1 Documentation ..... 4

3.1.1 General ..... 4

3.1.2 Maintenance ..... 4

3.1.3 Vessel Specific ..... 4

3.2 DELIVERY LOCATIONS ..... 4

**Section 4 General Technical Requirements ..... 6**

4.1 General ..... 6

4.2 Cabling And Connectors ..... 6

**Section 5 Shipboard Integrated Communications System (SICS) Requirements ..... 7**

5.1 General ..... 7

5.1.1 Equipment Cabinet ..... 7

5.1.2 Network Equipment ..... 7

5.1.3 Power Input ..... 8

5.1.4 Fault Alert ..... 8

5.1.5 Talkback System ..... 8

5.1.6 Strobe Beacon ..... 9

5.2 Telephone System ..... 9

5.2.1 Core Equipment ..... 9

5.2.2 Features ..... 10

5.2.3 External Interfaces ..... 11

5.2.4 End Devices ..... 11

5.3 Public Address (Pa) System ..... 13

---

5.3.1	Core Equipment .....	13
5.3.2	External Interfaces .....	13
5.3.3	Equipment and End Devices .....	14
5.4	Commissioning Support .....	16
<b>CCGS SAMUEL RISLEY DEVICES .....</b>		<b>17</b>

**List of Tables**

<b>Table 1: Applicable Documents.....</b>	<b>2</b>
<b>Table 2: Acronyms and Abbreviations.....</b>	<b>2</b>

## Section 1      **DOCUMENT MANAGEMENT**

### **1.1      Authority**

This document is issued by the Director General, Integrated Technical Services (ITS), CCG's National Technical Authority under delegation from the Deputy Minister, Fisheries and Oceans and the Commissioner of the Canadian Coast Guard.

### **1.2      RESPONSIBILITY**

Electronics and Informatics, Shipboard Electronics division, is responsible for:

- the creation and promulgation of the document; and
- the identification of an Office of Primary Interest (OPI) who is responsible for the coordination and the content of the document.

The OPI is responsible for:

- validity and accuracy of the content;
- availability of this information;
- update as needed;
- periodical revision; and
- follow-up of all requests, comments and/or suggestions received by the OPI.

## Section 2 Background Information

### 2.1 PURPOSE

The Canadian Coast Guard (CCG), a Special Operating Agency of the Department of Fisheries and Oceans (DFO), owns and operates the federal government's civilian vessel fleet. The Oceans Act gives the Minister of Fisheries and Oceans responsibility for providing:

- a. Aids to Navigation
- b. Marine communications and traffic management services
- c. Ice breaking and ice-management services
- d. Channel maintenance
- e. Marine search and rescue
- f. Marine pollution response
- g. Support to other government departments, boards and agencies by providing ships, aircraft and other services

CCG has a requirement for a Ship Internal Communications System for the CCGS Samuel Risley to meet its operational requirements and to provide efficient communications throughout the vessel in both normal and emergency conditions.

### 2.2 SCOPE

The purpose of this SOR is to detail the non-technical and technical requirements for a Commercial-off-the-Shelf (COTS) Ship Internal Communications System (SICS).

In this document, requirements are preceded by: (MR) for mandatory requirements and (DR) for desired requirements.

### 2.3 OBJECTIVES

The CCG has a requirement for the procurement of a SICS on the CCGS Samuel Risley. This system will upgrade the existing legacy telephone (PBX) and public address (PA) system on the vessel.

### 2.4 APPLICABLE DOCUMENTS

The following table contains a list of standards or regulations to which this document makes reference.

International Regulations and Publications, the Government of Canada Acts and Publications are not supplied by Canada.



**Table 1: Applicable Documents**

Date	Revision	Document Name
All	All	Institute of Electrical and Electronics Engineers (IEEE) 802.3 Standard
August 2002	4 <sup>th</sup> edition	International Electrotechnical Commission (IEC) 60945: Maritime Navigation and Radiocommunication Equipment and systems – General Requirements – Methods of Testing and Required Test Results
18 January 2010	N/A	International Maritime Organization (IMO) Resolution A.1021(26), Code on Alerts and Indicators
2017	N/A	International Maritime Organization (IMO) International Life-Saving Appliance (LSA) Code, 2017 Edition
30 June 1997	N/A	International Maritime Organization (IMO) MSC/Circular.808, Recommendation on Performance Standards for Public Address Systems on Passengers Ships, Including Cabling – Adopted on 30 June 1997.
		TP 127E Ships Electrical Standards, Section 21

## 2.5 ACRONYMS

The following table contains a list of acronyms and abbreviations to which this document makes reference.

**Table 2: Acronyms and Abbreviations**

Abbreviation	Description
CCG	Canadian Coast Guard
DR	Desired Requirement
DECT	Digital Enhanced Cordless Telecommunications
ECR	Engine Control Room
FA	Fire Alarm
FXO	Foreign Exchange Office
GA	General Alarm
Hz	Hertz
IP	International (Ingress) Protection Marking
IP	Internet Protocol
IACS	International Association of Classification Societies
ICS	Integrated Communications System
IEC	International Electrotechnical Commission

IMO	International Maritime Organization
MR	Mandatory Requirement
MCR	Machinery Control Room
OPI	Office of Primary Interest
PA	Public Address
PC	Personal Computer
PDF	Portable Document Format
PTT	Push To Talk
RU	Rack Unit
SICS	Shipboard Integrated Communications System
SOLAS	Safety of Life at Sea
SOR	Statement of Requirements
TC	Transport Canada
TSOR	Technical Statement of Requirement
UPS	Uninterruptible Power Supply
VAC	Volts Alternating Current
VDC	Volts Direct Current
VOIP	Voice Over Internet Protocol

## 2.6 TERMINOLOGY

- a) Flush mount means a mounting configuration where an item is fit into a cavity in a surface but a portion protrudes slightly. This allows the surface and equipment to appear flush to one another.
- b) Desk mount means a mounting configuration where the entire item is mounted onto a horizontal flat surface in an upright position.
- c) Wall mount means a mounting configuration where the entire item is mounted onto a vertical flat surface.
- d) Cat.6A cable means a Category 6A Network cable.
- e) Patch cord means a length of network cable terminated with connectors on both ends.
- f) Loop A and Loop B configuration means a configuration where two (2) loops of speakers provide overlapping coverage. If one of the loops fails, the area is still covered by the PA system.
- g) Field cables refers to cables that are run externally to the central equipment.

## Section 3 GENERAL REQUIREMENTS

### 3.1 DOCUMENTATION

#### 3.1.1 General

- MR. 1.** All documentation developed or supplied under this contract shall be in reproducible hard copy and native electronic format (Microsoft Word, Excel, etc., or searchable PDF format).
- MR. 2.** All drawings developed or supplied under this contract shall be in reproducible hard copy and AutoCAD electronic format.
- MR. 3.** All documentation must be provided in English.
- MR. 4.** All installation instructions, service, maintenance and operator manuals shall be supplied in searchable PDF format.
- MR. 5.** Applicable operator manuals shall also be supplied in both hard copy and electronic formats with the purchase of the system.

#### 3.1.2 Maintenance

- MR. 6.** The commercial documentation supplied with the equipment shall identify all necessary corrective and preventative maintenance tasks or procedures.

#### 3.1.3 Vessel Specific

- MR. 7.** A complete drawing package must be available, which includes, at a minimum, the following :
- a. Complete internal cabinet wiring diagrams including identification of all components, terminal blocks, connectors, cable identification;
  - b. General Arrangement of the vessel with the Public Address equipment layout;
  - c. General Arrangement of the vessel with the Telephone System equipment layout;
  - d. Public address wiring diagram including speakers, junction boxes, cabinet terminal blocks, cable type and cable identification;
  - e. Telephone System wiring diagram including telephones, headsets, visual indicators, cabinet, terminal blocks, power feeds;
  - f. List of VLANs assigned to each of the network switch ports, if required, as part of the system; and
  - g. Document detailing the programming/configuration of the system.

- MR. 8.** A factory test report must be provided for the procured system.

### 3.2 DELIVERY LOCATIONS

- MR. 9.** The contractor must deliver equipment to the following address:  
CCG Electronics and Informatics Workshop, in Sarnia, Ontario  
Address: Unit #8, 1355 Confederation St, Sarnia, ON N7S 4T2

- MR. 10.** Each item must be packaged in accordance with standard commercial practice. Packaging used must provide a sufficient level of protection to ensure that the contents will arrive safe from damage and that items can be stored in the supplied packaging.

## Section 4 General Technical Requirements

### 4.1 GENERAL

- MR. 11.** The Shipboard Integrated Communications System (SICS) must be Type Approved by a Classification Society that is recognized by Transport Canada.
- MR. 12.** The Shipboard Integrated Communications System (SICS) equipment must be certified to the following standards:
- IEC 60945;
  - IMO MSC/Circ. 808;
  - IMO LSA Code VII 7.2; and
  - IMO A.1021(26) Code on alert and indicators (2009).
- MR. 13.** The Shipboard Integrated Communications System (SICS) must consist of:
- A telephone system;
  - A Public address system
  - A Talkback system – It is acceptable for this requirement to be provided by the telephone or PA system
- MR. 14.** In addition to specific equipment requirements, all ancillary equipment required to configure a complete functioning system must be provided.

### 4.2 CABLING AND CONNECTORS

- MR. 15.** The Ship Internal Communication System must be able to use the existing **16 AWG – 2 conductor** multi-pair cabling on the ship. These currently are fed from the central equipment to each:
- Telephone
  - PA Speaker Loop
  - Signalling Beacon
  - Talkback Speaker
  - Call-in Button
- MR. 16.** All master control heads may operate off new cabling and do not have to use the existing multi-pair cables.
- All cable will be marine type approved
  - All Cat 6A cabling must use shielded cable and connectors.
  - If a specialty cable is required, it will be provided with the system.
- MR. 17.** In addition to any cabling requirement in other sections of this document, the following cables must be supplied at a minimum:
- Except for equipment that has a terminal block designed to be used for power connections, each piece of equipment must be supplied with a matching power cable, if required.

## Section 5 Shipboard Integrated Communications System (SICS) Requirements

### 5.1 GENERAL

#### 5.1.1 Equipment Cabinet

##### General Equipment Cabinet Requirements

- MR. 18.** The cabinet must contain the SICS core equipment, and all equipment and materials for the end device connectivity and termination. This includes, but not limited to, speakers, telephones, talkback, visual indicator, audio inputs, etc.
- MR. 19.** The equipment must fit in one (1) rack measuring not more than 6 feet high, 24 inches wide by 32 inches deep **OR** (2) racks not more than 48 inches high, 24 inches wide by 32 inches deep.
- DR.1.** One (1) rack is desired over two (2).
- DR.2.** Priority shall be given to the reduction of cabinet depth, as space is limited. The UPS may be provided outside of the cabinet, if this results in the physical dimension of the cabinet depth being reduced.
- MR. 20.** The cabinet must have an internal 19 inches fixed frame.
- MR. 21.** The cabinet must be fully tested at the factory and delivered pre-assembled.
- MR. 22.** The cabinet must come prepared with proper ventilation to allow sufficient air flow for the cooling of equipment.
- MR. 23.** The cabinet must come prepared with a chassis grounding point.
- MR. 24.** The cabinet must have an option for a cable access through the top of the cabinet.
- DR.3.** The cabinet must allow inspection of the system controller's status without opening a door.
- MR. 25.** All equipment must be accessible from the front of the cabinet.
- MR. 26.** It must have a front door on hinges.

#### 5.1.2 Network Equipment

- MR. 27.** Any network switches that are used must include a patch panel that is, at a minimum, the same number of ports as the switch.
- a. The patch panel must include the RJ45 Jack connector to terminate field Cat.6A cables.
- MR. 28.** The SICS must include enough Cat.6A patch cords to connect the network switches to the patch panel.

### 5.1.3 Power Input

- MR. 29.** The system controllers, amplifiers, network switches must allow, at a minimum, a power input of 110-230Vac, 60Hz.
- MR. 30.** The integrated systems must have automatic switch-over facilities from the main and emergency power sources.
- MR. 31.** The integrated systems must have an Uninterruptible Power Supply (UPS) to provide clean and conditioned power to the integrated systems during blackout conditions and during the switch over from main and emergency power sources.
- The UPS must be able to provide, at a minimum, 30 minutes of run time.
  - The UPS must be shipboard approved by a classification society recognized by Transport Canada.

### 5.1.4 Fault Alert

- MR. 32.** All fault conditions shall provide a visible indication in both the equipment cabinet, as well as on the master control heads.
- MR. 33.** The integrated system must provide the following discrete alarm outputs:
- Main/Emergency failure system A;
  - Main/Emergency failure system B
  - UPS failure system A;
  - UPS failure system B;
  - PA system fault system A;
  - PA system fault system B; and
  - Telephone System fault.

### 5.1.5 Talkback System

- MR. 34.** If the talkback feature is not present on the telephones, it is required to be present as part of the PA system.
- MR. 35.** The talkback feature must allow a designated master station to ring individual talkback stations.
- MR. 36.** The talkback feature must allow one or more designated master stations to ring a group of talkback stations.
- MR. 37.** The talkback feature must allow a talkback station to ring a pre-configured master station by pressing a single button.
- MR. 38.** The communication must be full-duplex and it must be hands-free.
- MR. 39.** The talkback stations must also broadcast PA announcements and alarms in accordance with the zone they are part of.
- MR. 40.** The ICS system must include an exterior type talkback loudspeaker;
- Intended use is for outdoor decks and high noise areas;
  - It must be rugged;

- c. Must have, at a minimum, an Ingress Protection rating of IP66 or better;
- d. Must have, at a minimum, 10W speaker;
- e. It must include, at a minimum, one (1) call button; and
- f. Must allow for hands free operation;

- MR. 41.** The ICS system must include a talkback station designed for explosion proof areas;
- a. It must have, at a minimum, an Ingress Protection rating of IP66.
  - b. It must be a rugged type station;
  - c. It must have a built-in interface for a headset;
  - d. Must have, at a minimum, 10W speaker;
  - e. It must have hands-free communication capability;
  - f. It must include, at a minimum, one (1) call button; and
  - g. It must be IEC Ex or ATEX certified.

### 5.1.6 Strobe Beacon

- MR. 42.** The ICS system must include a visual indicator:
- a. It must have, at a minimum, an Ingress Protection rating of IP66;
  - b. It must be powered by 120VAC;
  - c. It must include be an LED light that is green; and
  - d. It must be a strobe light type (not rotating light type).
- MR. 43.** The beacon shall flash to indicate an incoming talkback call of the connected station.
- MR. 44.** The beacon shall flash to indicate an incoming phone call of the connected station.
- MR. 45.** A visual indicator for a user terminal must be turned on when a call is received on the user terminal and must be turned off when the call is answered or terminated.

## 5.2 TELEPHONE SYSTEM

### 5.2.1 Core Equipment

#### General

- MR. 46.** The telephone system must be approved as part of the Shipboard Integrated Communications System (SICS).
- MR. 47.** The telephone system must be a digital system.
- DR.4** The telephone system is desired to be a digital IP-based system.
- MR. 48.** The telephone system must provide operator free dialing and communication for incoming and outgoing calls between all internal telephone stations.
- MR. 49.** Each telephone must be able to dial all other telephones on board, access



analogue trunks and onboard communication systems such as a cellular terminal and satellite phones, if so programmed.

- MR. 50.** Telephones need to operate over the existing 16AWG – 2 conductor multi-pair cabling throughout the ship.

## 5.2.2 Features

### General

- MR. 51.** The telephone system must have the following features:

- a. Caller ID;
- b. Call forwarding;
- c. Forward on busy;
- d. Call Pick-Up;
- e. Call park;
- f. 3-way conferencing;
- g. Wake up system;
- h. Programmable from Web Interface or software running on a PC; and
- i. Auto attendant/External calls

- MR. 52.** The telephone system must have a call routing feature allowing the system to route external incoming calls to a specific telephone station or to an auto attendant.

- MR. 53.** The telephone system must have an auto attendant function.
- a. The auto attendant function must allow the user to record a voice message.
  - b. The auto attendant function must allow the user to change the recorded voice message from a specifically programmed phone.
  - c. The auto attendant function must provide the incoming caller with the ability to select specific stations throughout the vessel.

### Night Bells

- MR. 54.** The telephone system must have a “night bells” feature.

- a. The night bells feature allows for the ability to have calls that would normally ring in the wheelhouse, for example, to ring in one or multiple different locations.
- b. This feature must be able to be activated and deactivated from an authorized telephone station.

- MR. 55.** The night bells feature must have at minimum, two (2) configurable ring groups.

### 5.2.3 External Interfaces

#### Public Address

- MR. 56.** The telephone system must interface with the PA system and be approved as part of the PA system.
- MR. 57.** All telephone stations must be able to activate the PA system with live (non-recorded) messages, if so programmed.
- MR. 58.** The specifically programmed telephone station must be able to select which broadcast zones will broadcast the live PA announcement.
- DR. 5.** All telephone stations are desired to have a built-in speaker that is type approved as part of the PA system.
- DR. 6.** All telephone stations are desired to be able to be part of the PA zones/groups and broadcast PA announcement.

#### External Communications

- MR. 59.** The telephone system must include a minimum of 4 analog external lines.
- DR.7** The telephone system is desired to include a VoIP to Analogue Gateway with a minimum of four (4) FXO interfaces.
  
- MR. 60.** The Telephone System must be configurable to limit external communication lines' access to specifically programmed telephone stations.
- MR. 61.** The Telephone system must be able to interface with cellular and satellite phones.
- MR. 62.** All external lines must be able to be programmed to a telephone extension.

### 5.2.4 End Devices

- MR. 63.** The telephone system must include a master station:
  - a. It must be flush mountable (console);
  - b. It must have physical buttons and not use a touchscreen for operation;
  - c. It must include a full-dial pad;
  - d. It must include a handset;
  - e. It must include a marine handset retainer;
  - f. It must have hands-free communication capability; and
  - g. It must include, at a minimum, thirty (30) speed dial selections.
- MR. 64.** The telephone system must include a telephone designed for cabins and common areas:
  - a. It must be wall and desk mountable;
  - b. It must include a full-dial pad;
  - c. It must include a handset;

- d. It must include a marine handset retainer;
- e. It must have hands-free communication capability; and
- f. It must include, at a minimum, ten (10) speed dial selections .

**MR. 65.** The telephone system must include a telephone station designed for high noise areas:

- a. It must have, at a minimum, an Ingress Protection rating of IP66.
- b. It must be a rugged type station;
- c. It must have a built-in interface for a headset;
- d. It must support external visual indicator activation;
- e. It must include, at a minimum, one (1) speed dial selection.

**MR. 66.** The telephone system must include a telephone station designed for an outdoor deck within an enclosure:

- a. It must have, at a minimum, an Ingress Protection rating of IP66.
- b. It must be a rugged type station;
- c. The entire station must be enclosed with a door for access;
- d. It must have a built-in interface for a headset;
- e. It must include, at a minimum, one (1) speed dial selection.

**MR. 67.** The system must include a wired headset for a high noise area station:

- a. It must have a Push-To-Talk (PTT) microphone;
- b. It must be able to interface with the outdoor and high noise area station;
- c. It must provide ear protection; and
- d. It must include a cable with a minimum length of 10 meters.

**MR. 68.** If any equipment is required at the device end of cable, and that equipment is not internal to the field device, a mounting box must be provided to enclose the equipment.

- a. The box must be wall mountable;
- b. The box must include a minimum of (1) connector for the field device; and
- c. The box must include means of identifying/labelling the port.

### Digital Enhanced Cordless Telecommunications (DECT) requirements

**MR. 69.** Any DECT equipment must be approved for use in Canada by Industry Canada.

- a. It must include a base unit.
- b. It must include portable phones with individual chargers.
- c. Each portable phone must have their unique telephone extension number.
- d. Portable phones must NOT broadcast PA announcements or any alarms.

**MR. 70.** The DECT system must be part of the Telephone System.

## 5.3 PUBLIC ADDRESS (PA) SYSTEM

### 5.3.1 Core Equipment

- MR. 71.** The PA system must include an amplifier:
- The PA Amplifier must have redundant interfaces;
  - The PA Amplifier must have, at a minimum, two (2) independent output channels;
  - The PA Amplifier must be available in, at minimum, 100 Watts (W) per channel;
  - The PA Amplifier must be continuously rated for the maximum power they are required to deliver into the system for audio and for alarm tone signals; and
  - The PA amplifier must support 70 V or 100 V line output.
- MR. 72.** The PA system must include a system controller:
- The PA controller must have redundant interfaces;
  - The PA controller must include the system controls and monitoring functions; and
  - With respect to Loop A and Loop B PA runs, each PA controller must be able to automatically take control of each other systems if either PA controller fails.
- MR. 73.** The PA system must provide routine and emergency broadcast PA facilities.
- MR. 74.** The PA system must provide the option to broadcast to selected areas (broadcast zones) of the vessel.
- MR. 75.** The PA system must allow programming at a minimum, six (6) zones and three (3) groups of zones.
- MR. 76.** The PA must mute the General Alarm and Fire Alarm during a PA announcement and unmute the alarm when the PA announcement has concluded.
- MR. 77.** Any GA or PA visual indicator must not be affected by the muting of an audible alarm during a PA announcement.
- MR. 78.** The PA system must have a control and monitoring element that is accessible from a web browser or a software running on a PC.
- MR. 79.** The PA system must include any required security dongles to allow use of the control and monitoring element of the system.

### 5.3.2 External Interfaces

#### Telephone System

Refer to section 5.2.3 for details on the PA/Telephone System interface requirement.

- DR. 8.** During PA announcements from a master control station, the local PA speaker, shall be muted to not create feedback.
- This is intended to mute the Bridge or the Engine Control Room PA speaker, when an announcement is made from that location.

#### General Alarm (GA)

- MR. 80.** The PA system must include a discrete signal to mute an external GA/FA system during PA announcements.
- MR. 81.** The mute must be deactivated as soon as the PA announcement has concluded.

### 5.3.3 Equipment and End Devices

- MR. 82.** The PA system must include a PA Master Control head:
- Control Heads must include a microphone and speaker;
  - It must have physical buttons and not use a touchscreen for operation;
  - Control heads must include a dedicated selection for each of the PA system broadcast zones and groups of broadcast zones;
  - The PA system must broadcast PA messages to the broadcast zones corresponding to the selected button;
  - The PA system must have an emergency override function that is accessible from the PA control head that gives immediate access to the PA speakers, while restoring all speakers to their native sound levels.
- MR. 83.** The PA system must include a horn type loudspeaker:
- Intended use is for machinery spaces and outdoor decks;
  - Must have, at a minimum, an Ingress Protection rating of IP66 or better;
  - Must have adjustable power taps that cannot be altered by the operator, the maximum power being 15 W; and
  - It must support a 70 V or 100 V line audio input and it must be compatible with the PA Amplifier supplied with the system.
- MR. 84.** The PA system must include a ceiling flush-mount loudspeaker:
- Intended use is cabins and common indoor areas;
  - Must include a back box;
  - Must have adjustable power taps that cannot be altered by the operator, with a range between 1W and a maximum power being between 5 W and 10 W; and
  - It must support a 70 V or 100 V line audio input and it must be compatible with the PA Amplifier supplied with the system.
  - The maximum depth of the unit and back box shall not exceed 115mm (4.5 inches).
- MR. 85.** The PA system must include a wall mount loudspeaker:
- Intended use is cabins and common indoor areas;
  - Must include a back box;
  - Must have adjustable power taps that cannot be altered by the operator, with a range between 1W and a maximum power being between 5 W and 10 W; and

- d. It must support a 70 V or 100 V line audio input and it must be compatible with the PA Amplifier supplied with the system.
- e. The maximum depth of the unit and back box shall not exceed 115mm (4.5 inches).

**MR. 86.** The PA system must include an explosion proof loudspeaker:

- a. Intended use is for Helicopter Hangar or fueling stations;
- b. It must be IEC Ex or ATEX certified;
- c. Must have, at a minimum, an Ingress Protection rating of IP66 or better;
- d. Must have adjustable power taps that cannot be altered by the operator with the maximum power being 15 W; and
- e. It must support a 70 V or 100 V line audio input and it must be compatible with the PA Amplifier supplied with the system.

**MR. 87.** The PA system must include a loudhailer:

- a. Intended use is on top of the wheelhouse;
- b. Must have, at a minimum, an Ingress Protection rating of IP66 or better;
- c. Must have adjustable power taps that cannot be altered by the operator with the maximum power being 30 W; and
- d. It must support a 70 V or 100 V line audio input;

**MR. 88.** The PA system must include speaker line monitoring:

- a. If a device is meant to be installed at the end of a speaker line, it must have, at a minimum, an Ingress Protection rating of IP66 or better;
- b. It must be able to detect if there is a fault on the line; and
- c. The system controller must report this fault.

**DR. 9.** The PA system is desired to include the ability to dynamically raise or lower the sound level of a speaker horn based upon ambient noise level.

- a. This is desired in the Engine Room to prevent the horns from being too loud when the mechanical systems are turned off.
- b. This noise level must still meet the regulations of **7.2.2.1** and **7.2.2.2** of the **International Life-Saving Appliances (LSA) code**.

## 5.4 COMMISSIONING SUPPORT

- MR. 89.** The contractor must supply a specialized technician who will provide on-site commissioning support to an installation of equipment that was completed by CCG.
- MR. 90.** The commissioning support must include:
- a. Verification that the system was installed in accordance with each component's manufacturer's recommendations;
  - b. Troubleshooting in the case that a device or software is not functioning as expected. Troubleshooting must be provided until the issue is resolved or an agreed upon resolution plan is put in place;
  - c. A question period where CCG technicians may ask questions about the equipment to better understand its functions. For questions that cannot be answered during this period, the contractor's envoy must follow up with a response within 5 business days after the commissioning support is complete.
- MR. 91.** The specialized technician providing commissioning support must have at least three (3) years' experience servicing this type of equipment.

## **CCGS SAMUEL RISLEY DEVICES**

### **5.5 LOCATION OF SPEAKERS**

#### **5.5.1 BRIDGE DECK & WHEELHOUSE TOP:**

1 Flush Mount Ceiling Speaker

- 1 Navigating bridge

2 Loud Hailers

- 1 Starboard Searchlight
- 1 Port Searchlight

2 Exterior Horn Speakers

- 1 Wheelhouse Top FWD
- 1 Fire Monitor Platform Forward

2 Exterior Talkback Speakers with Call-In button

These talkback stations shall call the Bridge Master Station

- 1 Bridge Deck Forward (FR 42)
- 1 Fire Monitor Platform (FR 34)

#### **5.5.2 FOCSLE DECK:**

1 Exterior Talkback Speakers with Call-In button

These talkback stations shall call the Bridge Master Station

- 1 Focsle FWD (FR 44)

2 Flush Mount Ceiling Speaker

- 2 Focsle Deck Hallway

1 Bulkhead Mount Interior Speaker

- 1 Communication Room (FR 44)

#### **5.5.3 BOAT DECK**

5 Flush Mount Ceiling Speaker

- 1 Stairwell
- 4 Hallways

2 Exterior Talkback Speakers with Call-In button

These talkback stations shall call the Bridge Master Station



- 1 Port Lifeboat Stn Talkback (Fr 23)
- 1 Stbd Liferaft Talkback (Fr 34)

## 2 Interior Horn Speakers

- 2 Forward Stores

### 5.5.4 MAIN DECK

## 2 Exterior Talkback Speakers with call-in button

These talkback stations shall call the Bridge Master Station

- 1 Port Capstan (FR 4)
- 1 Stbd Capstan (FR 4)

## 8 Flush Mount Ceiling Speaker

- 1 Galley
- 1 Mess
- 1 Multi-purpose Room
- 1 Central Stores
- 4 Hallways

## 1 Horn Speaker

- 1 Winch Room

## 2 Talkback Stations with Headsets

These talkback stations shall call the Bridge Master Station.

These should trigger an attached green beacon.

- 1 Emergency Generator Room
- 1 Deck Workshop

## 2 Explosion-Proof Talkback Exterior Speakers

- 1 Fuel Stn Port
- 1 Fuel Stn Starboard

### 5.5.5 BELOW MAIN DECK

## 5 Talkback Stations with Headsets

These talkback stations shall all call the Engine Control Room Master Station.

These should trigger an attached green beacon.

- 1 Hatch Dry Stores
- 1 Engine Room

- 1 Aux Flats
- 1 Stern Thruster
- 1 Steering Compartment

#### 7 Horn Speakers

- 1 Cargo Hold
- 1 ER Workshop
- 1 Dry stores
- 1 Hatch Dry Stores
- 1 Engine Room
- 1 Aux Flats
- 1 Steering Compartment

#### 1 Flush Mount Ceiling Speaker

- 1 Engine Control Room

### **5.5.6 THRUSTER COMPARTMENT**

#### 1 Talkback Station with Headset

These talkback stations shall call the Engine Control Room Master Station  
These should trigger an attached green beacon.

- 1 Bow Thruster

#### 1 Horn Speaker

- 1 Bow Thruster

## 5.6 LOCATION OF TELEPHONES & CONTROL STATIONS

### 5.6.1 BRIDGE DECK & WHEELHOUSE TOP:

#### 2 Master PA Control Stations

- 1 Bridge Forward Console
- 1 Bridge Aft Winch Console

#### 2 Master Telephone Control Stations

- 1 Bridge Forward Console
- 1 Bridge Aft Winch Console

#### 1 DECT Wireless Base Station

- 3 handsets with 3 chargers

#### 1 Desk Phone

- 1 Bridge Rear

### 5.6.2 FOCSE DECK:

#### 4 Desk Phones

- 1 Chief Officers Cabin
- 1 Logistics Officer Cabin
- 1 Senior Engineer Cabin
- 1 Communication Room

#### 2 Bulkhead Mount Phones

- 1 Captains Night Bunk
- 1 Chief Engineers Night Bunk

#### 2 DECT Wireless Base Station

- Captains Cabin (1 handset and 1 charger)
- Chief Engineers Cabin (1 handset and 1 charger)

#### 1 Exterior Bulkhead Telephone with Handset in Enclosure

- Focse Deck FWD (FR 44)

### 5.6.3 BOAT DECK

#### 12 Desk Phones

- 1 E.R Tech cabin
- 1 Bosun cabin
- 1 Chief Cook cabin
- 1 in Oilers cabin
- 1 2 Quartermasters Cabin
- 1 Supernumeraries Cabin
- 1 2 Cadets Cabin
- 1 2nd Engineer Cabin
- 1 3rd Engineer Cabin
- 1 2nd Officer Cabin
- 1 3rd Officer Cabin
- 1 Engineering Office

#### 3 Rugged Bulkhead Phones

- 1 Forward Stores
- 1 Stack compartment
- 1 Crane Cab

#### 1 DECT Wireless Base Station

- Ships office (2 handsets and 2 chargers)

### 5.6.4 MAIN DECK

#### 5 Desk Phones

- 1 Seamen AFT cabin
- 1 Clerk cabin
- 1 Seaman FWD cabin
- 1 Steward cabin

Main area for incoming call answer, forwarding, voice mail etc.

- 1 Quartermasters Booth (Attendant Console)

#### 2 Bulkhead Phones

- 1 Galley
- 1 Central Stores

#### 1 Rugged Bulkhead Phone, 1 Green Illuminator, 1 Headset

- 1 Emergency generator, 1 Green Illuminator, 1 Headset

#### 1 Rugged Bulkhead Phone, 1 Green Illuminator, 1 Handset

- 1 Deck Workshop with Handset

### 3 DECT Wireless Base Stations

- Multipurpose room (1 handset and 1 charger)
- Winchman Cabin (1 handset and 1 charger)
- Mess (1 handset and 1 charger)

## 5.6.5 BELOW MAIN DECK

### 4 Rugged Bulkhead Phones, 4 Green Illuminators, 4 Headsets

- 1 Engine Room with Green indication beacon and headset
- 1 Aux Flats with Green indication beacon and headset
- 1 Stern Thruster with Green indication beacon and headset
- 1 Steering Gear with Green indication beacon and headset

### 1 Rugged Bulkhead Phone, 1 Green Illuminator

- 1 Dry Stores, 1 Illuminator in Freezer

### 1 Master Control station, 1 Green Illuminator, 1 External Ringer

- 1 Engine Control Room (FR 22)

## 5.6.6 BOW THRUSTER COMPARTMENT

### 1 Rugged Bulkhead Phone, 1 Green Illuminator, 1 Headset

- 1 Bow Thruster