



**RETURN BIDS TO:**

**RETOURNER LES SOUMISSIONS À:**

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**LETTER OF INTEREST  
LETTRE D'INTÉRÊT**

Comments - Commentaires

Vendor/Firm Name and Address  
Raison sociale et adresse du  
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution  
Weapons Systems Division/Division des systèmes d'arme  
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<b>Title - Sujet</b> Mounted Counter UAS RFI Mounted Counter UAS Request for Information	
<b>Solicitation No. - N° de l'invitation</b> W8476-236719/A	<b>Date</b> 2023-03-23
<b>Client Reference No. - N° de référence du client</b> W8476-236719	<b>GETS Ref. No. - N° de réf. de SEAG</b> PW-\$\$BM-036-29017
<b>File No. - N° de dossier</b> 036bm.W8476-236719	<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 2023-04-14</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 type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Langdon (bm div), Darren	<b>Buyer Id - Id de l'acheteur</b> 036bm
<b>Telephone No. - N° de téléphone</b> (819) 639-3772 ( )	<b>FAX No. - N° de FAX</b> ( ) -
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b>  Specified Herein Précisé dans les présentes	

Instructions: See Herein

Instructions: Voir aux présentes

<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/</b> <b>de l'entrepreneur ( taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

## MOUNTED COUNTER-UNCREWED AIRCRAFT SYSTEM (CUAS)

### 1. Background and Purpose of this Request for Information (RFI).

1.1. Canada's intent for this Request for Information (RFI) is to understand the choice of equipment, support capacity, and feedback on the best and readily available CUAS equipment for the Canadian Armed Forces (CAF).

1.2. On behalf of Canada, Public Works and Government Services Canada (PWGSC) wishes to engage Industry in a consultative process and seek Industry's input via responses to the questions identified herein.

### 2. Requirement.

2.1. The mounted CUAS UOR intends to deliver an Integrated Vehicle Mounted System including a C<sup>2</sup> system, Radar, Electro-Optical/Infra-Red (EO/IR) camera, RF jammer and GNSS jammer.

2.2. The CAF has an urgent operational requirement (UOR) for an integrated and mobile Counter Uncrewed Aircraft System (CUAS) system to defeat Class 1 Uncrewed Aircraft System (UAS) threats and to ensure freedom of action for operations in the land domain for forces deployed on operations.

2.3. The CUAS capability will be deployed primarily to Canadian Army (CA) elements. These elements, based on a battalion of mechanized infantry, will tactically deploy CUAS systems throughout their Area of Operation (AO) to mitigate Class 1 UAS. A CUAS will defend these elements first by detecting, identifying, and tracking the UAS through a mixture of sensors (e.g. Electronic Warfare (EW), radars, and optics). Once their target is identified, the CUAS capability will degrade or defeat the enemy UAS with a soft-kill (EW) capability.

### 3. Potential Scope and Constraints.

3.1. This RFI is not subject to the requirements of the Controlled Goods Program; however, any potential future procurement process that is related to this RFI may be subject to such requirements. For information pertaining to the Controlled Goods Program, please refer to the Public Services and Procurement Canada website (<https://www.tpsgc-pwgsc.gc.ca/pmc-cgp/index-eng.html>).

3.2. This RFI is not subject to security requirements; however, any potential future procurement process that is related to this RFI may be subject to security requirements. As applicable, information on security requirements would be communicated on <https://buyandsell.gc.ca/> as part of any such procurement process.

3.3. Any additional information on scope and constraints will be communicated on <https://buyandsell.gc.ca/> as part of an RFI or procurement process.

### 4. Legislation, Trade Agreements, and Government Policies.

4.1. The following is a list of some legislations and government policies that would govern any potential future procurement process that is related to this RFI:

- a) Defence Production Act (DPA);
- b) Controlled Goods Program (CGP);
- c) Federal Contractors Program for Employment Equity (FCP-EE);
- d) Government Contract Regulations (GCR);
- e) Policy on Green Procurement;
- f) Accessible Canada Act; and
- g) Canadian Free Trade Agreement.

4.2. Any additional information pertaining to legislation and government policies will be communicated on <https://BuyandSell.gc.ca/> as they become available throughout the period of this RFP or as part of any potential resulting competitive procurement process.

## 5. Schedule.

5.1. The tentative schedule of this RFI, as well as a potential future procurement process that is related to this RFI, is as follows:

- a) Release of RFI: 24 March 2023.
- b) Close of RFI: 14 April 2023.
- c) Potential Procurement Process initiated: Summer 2023.

## 6. PWGSC Contracting Authority.

### **Important Note to Respondents**

**All information, communication or correspondence must be directed to the Contracting Authority ONLY. No other member or representative of the Government of Canada may be informed, challenged or otherwise communicated with – including via carbon copy or blind carbon copy on an email or any other written correspondence – regarding this RFI.**

6.1. Any correspondence must be directed, in writing electronically, in either official language of Canada, to the PWGSC Contract Authority:

Darren Langdon  
Supply Team Leader  
Acquisitions Branch / Munitions and Weapons Systems Division - BK/BM  
Land and Aerospace Equipment Procurement and Support Sector (LAEPSS)  
Public Services and Procurement Canada  
Government of Canada

[darren.langdon@tpsgc-pwgsc.gc.ca](mailto:darren.langdon@tpsgc-pwgsc.gc.ca)

## 7. Notes to Interested Industry Participants.

7.1. Changes to this RFI may occur and, if so, will be published on the Government Electronic Tendering System, <https://buyandsell.gc.ca/>.

7.2. Canada suggests that interested parties visit <https://BuyandSell.gc.ca> regularly to check for potential changes.

7.3. This RFI is neither a call for tender nor a Request for Proposal (RFP). No agreement or contract for the procurement of the requirement described herein will be entered into solely as a result of this RFI. The issuance of this RFI is not to be considered in any way as a commitment by Canada or as authority to potential Respondents to undertake any work that could be charged to Canada.

7.4. Any discussions with respect to the requirements that are the subject of this RFI, with staff representing the Department of National Defence (DND), PWGSC, any other Government of Canada entity or personnel otherwise involved in project, procurement or contracting activities, must not be construed as an offer to purchase or as a commitment by Canada.

7.5. Respondents may provide documents, information and collected-data as commercial-in-confidence. Documents, information and collected-data that are identified as such, will be treated accordingly by Canada. However, Canada reserves the right to use any such information in the drafting of performance specifications and for the purposes of budgetary consultations with both national and international third-party stakeholders.

7.6. Requirements are subject to change, which may be as a result of information that will have been provided via this RFI process. Respondents are advised that any information submitted to Canada in response to this RFI may or may not be used by Canada in the development of any potential future Request for Proposals.

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

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

**8. Attached Documents.**

Annex A – CUAS Information and Questions  
Appendix 1 – Integrated Vehicle Mounted System  
Appendix 2 – Project Information Sheet  
Annex B - Industrial and Technological Benefits Policy/ Value Proposition

**9. Closing date for the Request for Information.**

**9.1.** The current planned closing date of this RFI is 14 April 2023.

**9.2.** Respondents are asked to submit their responses to the questions in Annex A, via email, by 2:00 pm Eastern Standard Time (EST) on 14 April 2023. An email will be returned to the respondent acknowledging receipt of the RFI response.

## **ANNEX A – Counter Uncrewed Aircraft Systems Information and Questions**

### 1. General.

1.1. This annex includes information and questions pertaining to the Integrated Vehicle Mounted System capability of the project.

### 2. Definitions.

2.1. Jamming. Defined as the deliberate interference caused by emissions or reflections that renders unintelligible or falsifies the whole or part of a specific signal. (DTB Record 25967).

2.2. Global Navigation Satellite System (GNSS) spoofing. The RF transmission of altered GNSS signals to override the normal satellite signals received by a GNSS sensor. The goal is to cause the GNSS sensor to have altered position, navigation or timing information, and to make the target GNSS sensor believe it is in a different place than it actually is. In a counter-UAS context, the end result is altered UAS behaviour based on this faulty navigation information.

2.3. Protocol manipulation (in the context of counter-UAS). An attack on the radiofrequency communications link between a drone and its controller, detecting and inserting digital RF signals with the goal of changing the drone’s behaviour and disconnecting control from the drone’s operator. It is a non-jamming approach that typically uses low transmit power and precise knowledge of the drone’s communications protocol to insert commands to the drone. Other names for this approach are “drone high-jacking”, “drone spoofing”, or “drone takeover”.

### 3. Questions.

3.1. For Questions pertaining to the Integrated Vehicle Mounted System see Appendix 1.

4. Project Information Sheet. Appendix 2

**Appendix 1 - Integrated Vehicle Mounted System**

No.	Questions	Answer	Additional Comments
<b>Respondent Information:</b>			
1.	What is the name of your company and/or the company that you represent		
2.	What is the name of the Original Equipment Manufacturer (OEM) of your system proposed?		
3.	What is an estimated unit cost of the system proposed both with and without shipping?		
4.	Does estimated cost include the armoured vehicle or just the CUAS system?		
<b>Based on DND's procurement requirements:</b>			
5.	Is there a minimum order quantity for your system proposed?		
6.	What is the typical lead time for approximately 6 – 15 systems proposed?		
7.	Is your proposed completed vehicle integrated system able to be at a minimum TRL of 8?		
8.	Is the CUAS payload (Radar, RF Detector, RF Jammer, EO/IR Camera) able to meet a minimum if a TRL of 8?		
9.	Is the vehicle separately able to be at a minimum TRL of 8?		
<b>Technical: Command and Control</b>			
10.	Is your proposed system able to transmit and receive Tactical Data Link J-Series message format to/from a Canadian Army C2 system.		
11.	Is your proposed system able to transmit ASTERIX data to any other Canadian Army C2 system?		
12.	Is your proposed system able to use the SAPIENT interfacing standard?		
<b>Technical: Radar</b>			
13.	What is the distance that your proposed system will be able to detect class 1 UAS using radar?		
14.	Is your proposed system able to detect targets with a spatial coverage of 360 degrees in azimuth? If not, what is the spatial coverage of your system?		
15.	Is your proposed system able to detect targets with a minimum scan rate of 2 Hz?		
16.	Is your proposed system able to track a minimum of 5 class 1 UAS simultaneously for operator situational awareness and possible future engagement?		
<b>Technical: Radio Frequency Detector</b>			
17.	What is the distance that your proposed system will be able to detect class 1 UAS using the RF band?		
18.	Is your proposed system able to detect the UAS operator's location? If capable, how is this achievable and at what range?		

No.	Questions	Answer	Additional Comments
19.	Is your proposed system able to have access to a library of COTS UAV profiles to facilitate identification?		
20.	Do you include a library of COTS UAV profiles to include, but not limited to DJI, OcuSync and Parrot?		
21.	Is your proposed system able to have access to a library of MOTS UAV profiles to facilitate identification?		
22.	Do you include a library of MOTS UAV profiles to include, but not limited to Zala KUB (aka KYB), Lancet 3, Orlan-10 and Orlan-30?		
23.	Is your proposed system able to have a CUAS library capable of being updated and edited by the user and/or the OEM using OEM and/or 3rd party data?		
24.	How frequently are the libraries of your system updated?		
25.	Explain how you would update CUAS libraries, and can it be done remotely?		
26.	How would a CAF member be able to update the CUAS libraries in a deployed environment?		
27.	Does your system have function to erase MOTS/COTs libraries that can be done by the operator in a timeline manner?		
<b>Technical: EO/IR Camera</b>			
28.	Is your proposed system able to have a full colour optical and IR cameras with both digital and optical zoom and autofocus in order to identify and track class 1 UAS?		
29.	If your system has a camera, does the EO/IR Camera positioner system have 360 degrees of freedom for movement?		
30.	If your system has a camera, can it automatically slew to a target that has been detected by the CUAS system to facilitate rapid target acquisition by the operator?		
31.	If your system has a camera, can it slew the camera to a designated target through an operator's control using the user control station?		
<b>Technical: RF Jammer and GNSS Jammer</b>			
32.	Is your proposed system able to jam class 1 UAS using the RF band?		
33.	What is the distance that your proposed system able to jam class 1 UAS using the RF band?		
34.	Is your proposed system able to directional and/or Omni-directional means for jamming UAS?		
35.	If your proposed system has the ability for directional jamming, what is the horizontal and vertical coverage angle?		
36.	Is your proposed system capable of effectively mitigating through the deployment of protocol manipulation techniques class 1 UAS using the RF band?		

No.	Questions	Answer	Additional Comments
37.	Is your proposed system able to jam GNSS frequencies (GPS L1 and L2, Galileo, BeiDou and GLONASS)		
<b>Technical: General – CUAS Payload System</b>			
38.	Is your proposed CUAS payload system able to operate stationary and/or on the move at a minimum velocity of 30 km/h?		
39.	What is the maximum vehicle speed that your proposed CUAS payload system is functional at?		
40.	Is your proposed system able to be powered by the vehicle or separate energy source which minimizes down time of the system on the order of tens of seconds?		
41.	Is your system integrated with an existing armoured vehicle that is compliant with STANAG 4569 (Protection levels for occupants of armoured vehicles) KE protection level 2 and blast mine level 1?		
42.	Do you have the capability to do the integration of the CUAS system onto your proposed armoured vehicle?		
43.	Do you have the capability to do the integration of your CUAS system on an existing armoured vehicle that is compliant with STANAG 4569 (Protection levels for occupants of armoured vehicles) KE protection level 2 and blast mine level 1 if an armoured vehicle is provided to you?		
44.	Is the CUAS system that is already integrated onto an armoured vehicle capable of carrying 4 people wearing CAF issued helmet, fragmentation vest and tactical vest?  If not designed for a crew of four, what is your recommendation on crew size to operate the capability 24/7?		
45.	Does the proposed armoured vehicle have silent watch capability to operate the CUAS system, if yes, what is the recommended power source (i.e. batteries, Alternate Power Unit) and amps/wattage required?		
46.	What options exist to power the CUAS system while the vehicle is static, and when the engine is not running?		
47.	What is the total weight of the external devices mounted on top of the vehicle?		
48.	What is the dimension of the external devices mounted on top of the vehicle?		
49.	What is the total weight of the internal devices mounted inside the vehicle?		
50.	What is the dimension of the internal devices mounted inside the vehicle?		
51.	What is the total power consumption the system uses when all the systems are on?		
52.	What is the lower and higher temperature you can operate all functionalities of your CUAS system proposed?		
53.	What is the lower and higher temperature you can store your CUAS system proposed?		



No.	Questions	Answer	Additional Comments
54.	What is the ingress protection (IP) for solids and liquids of all components of your CUAS system proposed?		
55.	Does the system have a Built-in-Test (BIT) to verify working condition?		
56.	Does your system have function to erase MOTS/COTs libraries that can be done by the operator in a timeline manner? Please describe how this can be done.		
57.	Does your proposed system have any potential parts that can be removed or separated from the equipment to remove any SECRET level items (such as where the libraries are stored) to be able to transport or store without security requirements. For example, interface card/memory/or any other parts?		
58.	What type, if any, official or certified documentation that could demonstrate the specifications could you provide for the systems you would propose?		
59.	What is the configuration/clearance required to operate the systems?		
60.	Can we operate the CUAS system in an electromagnetic interference environment IAW MIL-STD-461G?		
61.	Is the proposed CUAS system in compliance IAW STAGNAG 4370?		
62.	Is the proposed CUAS system in compliance IAW MIL-STD-810H?		
63.	Is the proposed CUAS solution in compliance with the Safety Code 6 Health Canada's radiofrequency exposure guidelines		
64.	Describe the requirements for storage of the CUAS system.		
<b>Technical: User Control Station</b>			
65.	Does the proposed CUAS payload system include a user control station that can be operated by a single user? If not, how many personnel does it require to operate the system?		
66.	Does the user control station have the ability to control the functionality of the RF detector, RF jammer, and EO/IR camera from inside the vehicle?		
67.	What do you use as a user control station?		
68.	Does your user control station use a graphical user interface?		
69.	If a graphical user interface is used, is it capable of importing TIF, GEO PDF, PDF and JPEG file formats for maps?		
70.	Does the user control station have the option to see the geocoordinates in Military Grid Reference System (MGRS) and Latitude and Longitude grid reference?		
<b>Technical: Vehicle</b>			
71.	Is the proposed armoured vehicle compliant with level M1 in accordance with STANAG 4569 and AEP 55 Volume II?		
	Is this achieved through add-on armour kits, if so can armour kits be installed and		

No.	Questions	Answer	Additional Comments
	removed by CAF? How many hours of work does this procedure require? What is the weight of the add-on armour kits?		
<b>72.</b>	Is the proposed armoured vehicle compliant with protection level K2 in accordance with STANAG 4569 and AEP 55 Volume I.		
	Is this achieved through add-on armour kits, if so can armour kits be installed and removed by CAF? How many hours of work does this procedure require? What is the weight of the add-on armour kits?		
<b>73.</b>	What is the total weight of the vehicle with and without add-armour kits (if add-armours kits are required)? (not including personnel inside the vehicle)		
<b>74.</b>	What is total weight of the vehicle with and without add-armour kits (if add-armours kits are required) including the CUAS payload? (not including personnel inside the vehicle)		
<b>75.</b>	Is the proposed vehicle compliant with MIL-STD-1472H? (DEPARTMENT OF DEFENSE DESIGN CRITERIA STANDARD: HUMAN ENGINEERING)		
<b>76.</b>	Does your proposed vehicle have a minimum payload capability of 800kg for crew, kit and equipment?		
<b>77.</b>	What is the maximum payload capability for crew, kit and equipment?		
<b>78.</b>	Does your proposed vehicle have the space to install weapons bracket that are easily accessible to the crew to safely store in-service C-7 and/or C-8 rifles per occupant?		
<b>79.</b>	Does your proposed vehicle have room for a fire extinguisher and first aid kit?  (2.3 kg dry chemical fire extinguisher NSN 4212-21-856-9084, and mounting bracket NSN 4200-00-245-1117, and first aid kit NSN 6545-21-111-8439.)		
<b>80.</b>	Does your vehicle have any storage bins or an option to install storage bins? If so, what size is the storage bin?		
<b>81.</b>	Does your vehicle have the power for the CUAS payload and for two addition radios (24 VDC – 34 VDC, 5-10 amp)		
<b>82.</b>	Does your proposed vehicle have the space to install 2 radios that are easily accessible to operate by the crew?		
<b>83.</b>	Does your proposed vehicle have the space to install a command & control computer and display that are easily accessible to operate by the crew?		
<b>84.</b>	Does your proposed vehicle have an internal communication system between the driver and the crew commander?		
<b>85.</b>	Does your proposed vehicle have a hard top or a soft top?		
<b>86.</b>	Does your proposed vehicle have a driver's seat that is adjustable, headrests for all seating and three-point harness seat belts?		
<b>87.</b>	Does your proposed vehicle include sun visors for the driver and front passenger side?		
<b>88.</b>	Does your system have a forced air ventilation system for heating and defrosting?		

No.	Questions	Answer	Additional Comments
89.	Is the crew compartment heating system able to sufficiently raise the cab temperature to 15°C during operation in cold climatic conditions with the engine at normal operating temperature?		
90.	Does your proposed system have air conditioning?		
91.	Does your proposed vehicle have windshield wipers?		
92.	Can you adjust the speed of the windshield wipers? How many settings do you have?		
93.	Does your proposed vehicle not exceed MIL-STD 1474B for an eight-hour equivalent noise level measured at the driver's ears?		
94.	Is the proposed electrical system for the vehicle in accordance with STANAG 2601?		
95.	Does your proposed vehicle have a battery capacity of 100 ampere-hours and conform to STANAG 4015 Starter Battery Spaces for Tactical Land Vehicles. If not, what is the capacity in ampere-hours for the battery?		
96.	Does your proposed vehicle have minimal electromagnetic emissions and susceptibility which complies with MIL-STD 461 and MIL-STD 462?		
97.	Does your proposed vehicle have an electrical system that is 24 volts DC with negative ground? If not, what does it have?		
98.	Does your proposed vehicle have a slave receptacle with cover in accordance with STAGNAG 4074?		
99.	Will your proposed vehicle comply with MIL-STD 461 and 464 in conjunction with the integrated CUAS payload?		
100.	Can your proposed vehicle operate on NATO Code no F-34 (or JP-8) fuel in accordance with STANAG 4362 (Edition 2)?		
101.	Can your proposed vehicle operate on commercial diesel fuel, Ultra Low Sulfur Diesel (ULSD) containing a maximum 15 parts-per-million (ppm) sulfur; and fuel with very high sulfur content with the following characteristics: sulfur content as high as 5000 ppm; densities (810-870 kg/m3); viscosity (1.5 –5 c at 40°C); and lower cetane numbers (min. 45)? If not, what type of commercial fuel can the vehicle operate on?		
102.	Does your proposed vehicle have a cold start capability that allows the vehicle to start at temperatures down to -35°C with or without an external assist?		
103.	If you proposed vehicle has a cold start system, is it effective after the vehicle has sat for 24 hours in -35°C temperature?		
104.	If you proposed vehicle has a cold start system, is it effective after the vehicle has sat for 72 hours in -30°C temperature with external assist?		
105.	Is the proposed vehicle certified EURO 3 or higher, or EPA 2004 or higher when operating on commercial ultra-low sulfur diesel fuel?		
106.	Does your proposed vehicle use automatic transmissions?		
107.	Does your proposed vehicle have four-wheel drive capability?		

No.	Questions	Answer	Additional Comments
108.	Does your proposed vehicle have six-wheel drive capability?		
109.	Please describe the drive train of the vehicle and how the driver would select the desired drive capability if not already described.		
110.	Does your proposed vehicle have the option to lock the front and rear differential?		
111.	Is your proposed vehicle suspension have sufficient capacity to absorb the high impact loading experienced when travelling cross-country?		
112.	Does your vehicle have gauges and indicators to include the following: speedometer (in km/hr), odometer, fuel gauge, transfer case engagement indicator, parking brake warning light, engine oil pressure gauge with warning light, self-cancelling turn signal indicator and engine coolant temperature gauge?		
113.	What is the ground clearance for your proposed vehicle?		
114.	Please describe the vehicle ignition system. Is the vehicle started using a keyless switch, affixed key in the ignition, separate key or other?		
115.	Does your proposed vehicle have a multi-position Standard Military Pattern light switch without lockout to prevent white light activation when in blackout conditions inside and outside the vehicle?		
116.	Does your proposed vehicle have high and low beam headlights?		
117.	Does your proposed vehicle have the option for blackout lightning systems that comply with STAGNAG 4381?		
118.	Does your proposed vehicle have two external side view mirrors, with replaceable, interchangeable heads? Are these mirrors located on each side of the vehicle such that an unrestricted view to the rear of the vehicle?		
119.	Can your proposed vehicle fit and be transportable inside a CC-180J Super Hercules aircraft? If so, is that with the CUAS payload attached or removed?  C-130J Super Hercules cargo hold: <ul style="list-style-type: none"> <li>• length, 55 ft (16.76 m);</li> <li>• width, 119 in (3.02 m);</li> <li>• height, 9 ft (2.74 m).</li> <li>• Rear ramp: length, 123 inches (3.12 m); width, 119 in (3.02 m)</li> </ul>		
120.	Is your proposed vehicle transportable by rail in accordance with STANAG 2832?		
121.	Is your proposed vehicle transportable by commercial low bed vehicles of sufficient load bearing capability in accordance with MTL-STD 1366?		
122.	Can your proposed vehicle maintain a cruising speed of at least 90 km/h on a hard surfaced paved roads? Please specify if that is with add-on armour or not.		
123.	Can your proposed vehicle attain a speed of 100 km/h on level, hard surfaced paved roads? Please specify if that is with add-on armour or not.		

No.	Questions	Answer	Additional Comments
124.	What is the maximum cross-country speed for your proposed vehicle?		
125.	For your proposed vehicle what is the maximum endurance (in KM) for travelling over paved roads without stopping for re-fueling? This is when the vehicle is fully laden.  If add-on armour is used, please indicate the range (in KM) with and without add-on amour.		
126.	Does your proposed vehicle have a braking system that meets the applicable Canadian Motor Vehicle Safety Standards or equivalent? For example, Motor Vehicle Safety Regulations (C.R.C., c. 1038), Standard #105 or Standard #121.		
127.	Does your proposed vehicle have a power assisted braking system with an anti-lock braking system (ABS)?		
128.	Is your proposed vehicle capable of making a NATO lane change in accordance with AVTP 03-160W at speeds up to 65 km/h? Angle of departure at least 30 degrees, angle of approach at least 35 degrees and break over angle a maximum of 30 degrees.  If not, can you provide details on its capabilities for lane change.		
129.	What does your proposed vehicle have for power assisted steering? Is it left or right hand drive?		
130.	Does your proposed vehicle come with one full size spare tire and wheel assembly?		
131.	Does the proposed vehicle accommodate tires with a run flat system?		
132.	Are your wheels and tires interchangeable from one side to the other and front to rear?		
133.	Does your proposed vehicle come with a towing pintle conforming to QSTAG 264 and STANAG 4101 at the rear of the vehicle?		
134.	If equipped with a towing pintle, what type is it? For example is it a swivel type?		
135.	Does your proposed vehicle have a SMP trailer electrical connector in accordance with STANAG 4007?		
136.	Does your proposed vehicle comply with STANAG 4478 on Emergency Towing and Recovery Facilities on Tactical Land Vehicles?		
137.	Does your proposed vehicle have two towing points at the front and two at the rear in accordance WITH QSTAG 264? Are the towing points sufficiently strong to withstand the stress of recovering another fully loaded vehicle or the fully loaded vehicle itself being recovered?		
138.	Does your proposed vehicle have suitable tie-down points so that the vehicle, with full payload, may be lifted or tied down for transport by rail, air, or sea? This is in accordance with strength requirements in QSTAG 328.		
139.	Does your vehicle have space to install brackets for an antenna installation for up to two radios and a global positioning system?		

No.	Questions	Answer	Additional Comments
140.	Is your proposed vehicle colour in olive drab or another colour that is tactical in nature?		
141.	Is the instruments, decals and data plates in/on the vehicle marked in metric units and/or international symbols conforming to STANAG 4050 – Symbols Designated Function of Controls in Military Vehicles?		
142.	What does your proposed vehicle have for ingress and egress points? For example, doors, hatches, etc.		
143.	Can all the passengers in the vehicle board and exit the vehicle in 15 seconds or less while wearing a helmet, fragmentation vest, tactical vest and rifle?		
144.	Does your proposed vehicle have doors that are lockable from the inside only, with exception that the driver's door be able to be lockable from the inside and outside of the vehicle?		
145.	Does your proposed vehicle have a Fitted For-Not With (FFNW) static strap installed to the under carriage?		
146.	Does the proposed vehicle have protection against long periods of exposure sand and dust?		
<b>Qualification:</b>			
147.	Has some or all qualification testing been done for your system?		
148.	To what extent / standard has the testing been done for the system?		
<b>Training:</b>			
149.	Is your proposed system able to have OEM led training and support to the system including on-site training and train the trainer courses? Explain options how you could provide operator and maintainer training to the CAF, including if training can be conducted virtually.		
150.	Does industry have training packages to include train-the-trainer?		
151.	How long are training package and the associated cost?		
152.	Does your proposed system have any simulation capabilities whether software and/or hardware to train operators and/or maintainers?		
153.	Can manuals and instructions be provided in English and French?		
154.	How long does it take to train operators and maintainers on the system?		
155.	How many students can you train during one session? Is that number the same for operators and maintainers/technicians?		
<b>Usage:</b>			
156.	Is your current system currently in use by any NATO countries?		
<b>Production Capacity / Strength of Design:</b>			
157.	For how long has your current system design been in production?		



No.	Questions	Answer	Additional Comments
158.	What vehicle platforms has your CUAS system been implemented into to date and for how long have they been in production?		
159.	How many systems (Rough Order Magnitude) have you produced thus far?		
160.	Is your current system currently in production?		
161.	Do you have multiple variants of the vehicle integrated system?		
162.	If current production is not underway, how long would a start-up be to produce the system?		
163.	How many more years do you plan on producing your current system?		
<b>Intellectual Property:</b>			
164.	Do you own complete Intellectual Property (IP) rights for the system?		
165.	Do you own patents or other rights to the system you would offer?		
<b>Sustainment:</b>			
166.	When it comes to the repair of the systems, do you have an authorized or a licensed repair facility for the systems?		
167.	Could local repairs for vehicle systems be conducted by local industry (in Canada and/or in Europe? (repair shop, car dealership maintenance facility?)		
168.	Are you able to provide advanced support from experienced service technicians or technical support teams for repairs that involve advanced diagnostic tools and evaluations, device interactions and troubleshooting, and on-site equipment repairs that takes more than 1h? This includes major repairs on the vehicle and on the CUAS payload.		
169.	Are you able to provide certain repair parts to DND so that DND technicians could perform common repairs to the systems?		
170.	Can the regular maintenance item on the proposed vehicle, such as air filters, oil, coolant, transmission fluid, belts, and spark plugs, be easily accessible while conducting regular maintenance on the vehicle? e.g. maintenance personnel does not have to remove the engine to access air filters.		
171.	Are you authorized or licensed to provide any other technical support to DND for the systems?		
172.	Is your proposed system capable of receiving in-service software and database updates which can be installed with minimum training?		
173.	Explain how you would provide technical support/troubleshooting remotely.		
174.	Would you be willing to provide technical support including repairs to the systems for 10-12 years?		
175.	What planned repair and overhaul is necessary to keep the CUAS system operational,		

No.	Questions	Answer	Additional Comments
	and what is the proposed cost breakdown per year?		
<b>176.</b>	How would you perform obsolescence management during the 10-year lifecycle (betterments/upgrades)?		
<b>177.</b>	What are the post-delivery warranty terms for the capability?		
<b>178.</b>	Is there any special tooling and test equipment (STTE) for the CUAS capability?		
<b>179.</b>	Are there any special storage specifications/requirements for spare parts and STTE?		
<b>180.</b>	Explain how you would provide initial scaling estimates and to propose spare parts levels.		
<b>181.</b>	What nature of technical data (maintenance manuals, maintenance task breakdown/work instructions, operating manuals) is typically provided with the capability?		
<b>182.</b>	Explain how you would perform spare parts management such as warehousing, maintaining, and distributing spare parts.		
<b>183.</b>	Explain how you would provide FSRs outside of Canada/theatre of operations to inspect, repair, test, maintain and train personnel.		



## Appendix 5 - Project Information Sheet

# COUNTER UAS UOR

## PROBABLE SCOPE

- **Approximately 30-40 x Soldier Carried Directional Effectors**
  - RF Jamming & GNSS Jamming capability
- **Approximately 35-45 x Soldier Carried Omni-Directional Sense and Effector Systems**
  - RF Detection with RF/GNSS Jamming
- **Approximately 5-10 x Fixed Site Systems / Airfield Systems**
  - RF Detection with Protocol Manipulation (hijacking) capability
- **Approximately 10 x Integrated Vehicle Mounted Systems**
  - Sensors - Radar, EO/IR Camera, RF Detection and/or Direction Finding
  - Effector - RF Jamming, GNSS Jamming
  - Sensor and Effector to be integrated into wheeled vehicle capable of carrying up to four personnel (K2/JMI Protection IAW STANAG 4569)
  - CAF is also considering integrating the mounted C-UAS system into the TAPV
- **Tools, Spare Parts**
- **In-Service Support**
- **Training (Operator and Maintenance)**

### Anticipated Timeline

RFI - January 2023  
RFP #1 (Dismounted and Fixed Site Systems) - March 2023  
RFP #2 (Integrated Vehicle Mounted System) - July 2023  
  
Contract Award #1 (Dismounted Directional) - October 2023  
Contract Award #2 (Dismounted Omni-Directional) - October 2023  
Contract Award #3 (Fixed Site System) - October 2023  
Contract Award #4 (Vehicle Mounted System) - April 2024

## PROBABLE HIGH LEVEL MANDATORY REQUIREMENTS

- Interoperability (C2 integration for vehicle mounted systems)
- Awareness (Detect, Identify and Track UAS)
- Lethality (Defeat & Degrade C-UAS through electronic warfare)
- Mobility (Vehicle to have same or better tactical mobility than CA in-service vehicles)
- Urgency, Availability and Sustainment (Delivered rapidly to achieve IOC as quickly as possible)
- Training (Capable of simulated training)

## PROBABLE CONSTRAINTS

- Must deliver the capability as rapidly as possible to the deployed force
- Systems must be Technological Readiness Level 8 or 9 (preferred).
- Capability should be in-service with an allied nation to minimize operational and technical risk



## **Annex B - Industrial and Technological Benefits Policy/ Value Proposition**

### Application of the Industrial and Technological Benefits (ITB) Policy

The Industrial and Technological Benefits (ITB) Policy may apply to the Counter Uncrewed Aerial System (CUAS) Mounted Vehicle System (MVS) acquisition and in-service support contracts. Engagement with industry through this Request for Information (RFI) will help determine the application of the ITB Policy and how Canada could leverage opportunities for economic benefits.

### The ITB Policy including Value Proposition

The ITB Policy is an investment attraction tool and companies awarded defence procurement contracts are required to undertake business activities in Canada equal to the value of the contract. The ITB Policy encourages companies to establish or grow their presence in Canada, strengthen Canada's supply chains, and develop Canadian industrial capabilities.

The goal of the ITB Policy is to support the long-term sustainability and growth of Canada's defence sector, including small and medium-sized enterprises in all regions of the country, to enhance innovation through Research and Development (R&D) in Canada, to support skills development and training, and to increase the export potential of Canadian-based firms. The ITB Policy includes the Value Proposition (VP), which requires bidders to compete on the basis of the economic benefits to Canada associated with its bid. Winning bidders are selected on the basis of price, technical merit and their VP. VP commitments made by the winning bidder become contractual obligations in the ensuing contract.

For more information about the ITB Policy, please visit [www.canada.ca/itb](http://www.canada.ca/itb).

### Key Industrial Capabilities:

To leverage the procurement, Canada will look to use the ITB Policy to motivate defence contractors to invest in Key Industrial Capabilities (KICs). KICs align with Canada's defence policy, Strong, Secure, Engaged, and the Innovation and Skills Plan by supporting the development of skills and fostering innovation in Canada's defence sector. The KICs represent areas of emerging technology with the potential for rapid growth and significant opportunities, established capabilities where Canada is globally competitive, and areas where domestic capacity is essential to national security.

Based on initial analysis of the CUAS mounted vehicle system project, this procurement encompasses the KICs of Armour, Electro-Optical/Infrared (EO/IR) Systems, Ground Vehicle Solutions, and In-Service-Support, where Canada has world leading capabilities, and Remotely-piloted Systems and Autonomous Technologies, where Canada sees potential for rapid growth and significant opportunities for the emerging technologies. Canada will be seeking to motivate high value economic opportunities and partnerships in these KICs to support the growth of Canada's defence sector, as well as enhance supply chain participation, research and development, and skills development and training for Canadian industry.

For definitions of the relevant KICs for this project, please visit Key Industrial Capabilities.

### CUAS MVS ITB/VP Industry Engagement Questions

#### Defence Sector:

The ITB Policy seeks to promote economic development and long-term sustainment of Canadian businesses engaged in the manufacturing and delivery of products and services used in government defence and security applications.

1. Based on the high-level requirements put forward by the Department of National Defence, describe what Direct Work activities your company would foresee undertaking in Canada for the production and sustainment of the CUAS MVS Project.
2. What opportunities and constraints are there to performing this work in Canada?
3. What are the high value areas or KICs in which Canadian capabilities could be used to support the CUAS MVS project?

#### Supplier Development:

The ITB Policy seeks to improve the competitiveness of Canadian industry by encouraging Canadian industrial participation and the scaling up of Canadian companies, including small and medium-sized businesses (SMB).

4. The ITB Policy requires that at least 15 percent of the contractor's ITB obligation (equal to the value of the contract) be represented by work with Canadian SMB with fewer than 250 employees. To what extent can you commit to an SMB requirement of over 15 percent in order to nurture the development of Canadian SMB within the defence sector (includes both direct work on this procurement and work in other business areas)?
5. As result of the CUAS MVS project, please indicate what new supply chain opportunities could be made available to Canadian suppliers. Please include in your response information on:
  - a) What activities should be perceived as providing the highest value to Canada.
  - b) Which opportunities could be specifically targeted at Canadian SMBs.
  - c) Supplier development opportunities that could be performed in the KICs identified above.

#### Skills Development and Training:

The ITB Policy fosters the development and sustainment of a diverse, talented, and innovative Canadian workforce through access to training, education, opportunities and programs.

6. What types of Skills Development and Training investments would produce the maximum benefit for Canadians (defence or commercial sector)?

#### Examples:

- a) Work integrated learning programs (e.g., co-operative education; work placements);
  - b) Apprenticeship programs;
  - c) A new or existing skills development program at or through a post-secondary institution;
  - d) Support for security certifications (e.g.: Top Secret, ITAR) or cybersecurity compliance certifications for Canadian companies, especially small and medium-sized businesses.
7. What Skills Development and Training opportunities are available in the KICs identified above?

#### Research and Development (R&D):

The ITB Policy promotes scientific investigation that explores the development of new goods and services, new inputs into production, new methods of producing goods and services, or new ways of operating and managing organizations.

8. Please describe your company's priority areas for R&D investment? As part of your answer, please identify to what extent these priority areas align with the KICs identified above?

9. Is there potential to develop research partnerships with Canadian post-secondary institutions, publicly-funded research institutions or Canadian companies (such as consortia or centres of excellence)? If so, what research areas

might your company pursue? If not, what other research or development partnerships could be formed to support technology development in the KICs identified above?

10. Is there potential to invest in research and development partnerships with Canadian SMBs and start-up companies, including funding for late-stage R&D and commercialization of innovative products or services?

11. Please identify to what extent R&D investments could be performed in the KICs identified above.

Exports:

12. Please describe any export opportunities from Canada directly related to this procurement.

13. Please describe any other high value export opportunities from Canada, whether commercial or defence sector, which could be leveraged as a result of this procurement.

14. What role could the CUAS MVS project play in positioning your company and its Canadian supply-chain for long-term growth?

Other Questions:

15. Are there ITB VP requirements that could impact the delivery schedule for this project?

16. Due to the delivery schedule required by Canada, would it be beneficial to combine the acquisition and ISS contracts into a single ITB obligation with a combined achievement schedule?

17. Are there other relevant KICs which align with the work to be conducted for the CUAS MVS project? If yes, please indicate which KICs should be considered and why. As part of your response, please describe how the proposed KICs would enhance the opportunities that could be leveraged through the Value Proposition for Canadian industry.

18. Comparatively to price and technical merit, Value Proposition typically has a weight of 10-20% of the overall bid evaluation. What is your view on the weighting of the Value Proposition for the CUAS MVS project?

19. Within the Value Proposition, what are your recommended minimum percentages of weighting for each of the Value Proposition pillars (i.e. Direct Work, Supplier Development, Skills and Training, R&D, and Exports)?