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Our reference QINETIQ/21/01143

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Request for Information - Air Traffic Low Level Communications

1 Request for Information

1.1 Background

1.1.1 This letter covers a Request for Information (RFI) for a study that is being conducted by QinetiQ Group Canada Inc. ('QinetiQ') for the Canadian Department of National Defence (DND) concerning considerations for air range modernization. Information is requested from suppliers of associated products or services.

1.1.2 QinetiQ, under contract to DND is currently exploring areas of improvement for Operational Training Infrastructure (OTI) around DND Training sites. In order to progress the program, industry is being invited to provide information of a general nature regarding capability, products and) costs for supply of OTI services or products where OTI modernization may be a need or priority.

1.2 Key Notes To Industry

1.2.1 This information request is not a commitment to any current or future contract for services or products on the behalf of Canada, DND or QinetiQ. Neither is it intended to imply any future procurement will take place. It is limited to providing product or service intelligence (whichever may be applicable) to understand if a procurement lifecycle could be readily achieved in the future. Any costs incurred by your organisation in reviewing this RFI request letter, preparing and providing a response shall be at your sole risk.

1.2.2 Any information provided by any supplier may be shared with Canada and QinetiQ's affiliates for the purposes of the Canadian Range Modernization Study, under DND Contract W6431-19LC01/002/TOR.

1.2.3 Any sharing with Canada of received information from interested parties or clarifications related thereto will be managed by QinetiQ and interested parties are explicitly requested not to contact Canada, including DND and PSPC, directly relative to this request.

1.2.4 QinetiQ may respond to information received with questions to clarify aspects of supplied information.

2 Request for Information - Instructions

- 2.1 Suppliers responding to this request (responders) are asked to provide the following information:
- Business Address;
 - Contact Details;
 - Short statement stating area of interest;
 - Short Statement of scope of potential supply of goods or services;
 - Indicative compliance statement against requirement herein.
- 2.2 Responses to this request should be supplied by email to: Madison.Aubry@qinetiq.ca by the 19th April 2021 in order to be considered in the formulation of the study response.
- 2.3 Responders are requested to provide ROM costs for any Low Level Communications Equipment including periodic maintenance of equipment.
- 2.4 Responders are requested to provide details on any systems additional capabilities not mentioned in Section 3 and 4 below.

3 Introduction to Low Level Communications (LLC)

- 3.1 There may be a need for an LLC System that provides the following key communications capabilities:
- VHF dedicated channels
 - UHF dedicated channels
 - Have Quick II
 - SATURN
- 3.2 The requirement is ideally for a single platform that can provide the multimode communication capability.
- 3.3 The overall objective would be to improve both Air Traffic unsecure and secure communications across DND training estate both in Radio Frequency (RF) coverage and to enable tactical training with Canada's partners at low levels.
- 3.4 Radio transmitters would be needed to cover a large geographical area and require installations in remote locations. These would need to create a network to provide adequate coverage across DND training areas back to central control working locations at main DND sites.
- 3.5 Due to the size of the area to be covered, responders are requested to consider multiple antenna sites.

- 3.6 Responders should consider more than one control site, i.e. multiple geographic locations requiring a communication capability.
- 3.7 It can be assumed that DND would provide an Internet Protocol (IP) backbone to allow Voice Over Internet Protocol (VOIP) over existing infrastructure from controller working locations to remote radio sites. The solution would be expected to multiplex radio channels over a VLAN.
- 3.8 Although the requirement is based around LLC, any solution must equally apply to aircraft altitudes.
- 3.9 Further consideration should be given, that the LLC has a future capability to remote monitor of radio performance for centralised control and to provide a Cyber Secure system.

4 LLC Requirements

- 4.1 QinetiQ in consultation with DND has identified a number of potential top level LLC requirements. These are provided for responders to consider in Table 4-1.

Requirement	Notes
Each antenna site requires at least 2 VHF channels.	8.33kHz Channel Spacing required.
Each antenna site requires at least 2 UHF channels.	
Each antenna site requires Have Quick II system compliant with STANAG 4246.	
Each antenna site requires SATURN STANAG 4372.	
Each control site will need to cater for upto 10 controllers.	At least one DND site will operate with 10 controllers.
Radio performance must extend from antenna site ground level to aircraft operating heights.	Radio coverage should extend to 50,000ft minimum.
SATURN and Have Quick II must work in secure modes including ECM where applicable.	
Control of the remote radios must be possible from a centralised location next to the controllers.	

Requirement	Notes
Remote monitoring of remote antenna installed equipment is essential.	Performance monitoring ideally would extend to entire system.
The solution antenna equipment must operate from -55°C to +40°C.	Radio equipment will be located in suitable DND cabin with environmental control but given the remote location the equipment will need to be able to withstand temperature extremes should the environmental system of the cabin fail.
The installed equipment must conform to ICAO RCP240 performance as a minimum or better. • Continuity -99.9% • Availability – 99.9% • Integrity 10^{-5}	Improvement on RCP240 to RCP120, RCP,60 or RCP10 specification is desirable.
Responders are requested to provide a safety assessment for each installed solution.	

Table 4-1: LLC Top Level Requirements

4.2 Responders are requested to specify their likely back bone bandwidth requirement over IP.

5 Support

5.1 Responses are requested to include any equipment supply and installation prices.

5.2 Responders are requested to describe details of any warranty, technical support and suitable lifecycle maintenance service.

6 Points of Contact

- 6.1 Responders wishing to brief on capability can do so on request to kirk.soroka@qinetiq.ca.
- 6.2 RFI responses should be sent to: Madison.Aubry@qinetiq.ca. We thank you in advance for your consideration of this request.

Madison Aubry
QinetiQ Target Systems
#3 – 1735 Brier Park Rd NW
Medicine Hat, AB T1C 1V5
Canada

7 References

1. Chief of Land Staff, *Range Construction and Maintenance*, NDHQ Chief of Land Staff, B-GK-381-002/TS-001, 01/05/2005
2. Canadian Centre for Occupational Health and Safety, Cold Weather Workers Safety Guide 3rd Edition.

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