1. **Headquarters Supreme Allied Commander Transformation Norfolk Virginia**

REQUEST FOR INFORMATION RFI-ACT-SACT-20-115
Amendment 2

This document contains a Request for Information (RFI) Call for Industry input to NATO's fictional operational scenario requiring a commercial satellite communications solution.

Suppliers wishing to respond to this RFI should read this document carefully and follow the guidance for responding.

HQ Supreme Allied Commander Transformation RFI 20-115 General Information	
Request For Information No.	20-115
Project Title	Request for industry input to NATO's Fictional Operational Scenario Requiring a Commercial Satellite Communications Solution.
Due date for submission of requested information	31 January 2021
Contracting Office Address	NATO, HQ Supreme Allied Commander Transformation (SACT) Purchasing & Contracting Suite 100 7857 Blandy Rd, Norfolk, VA, 23511-2490
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Technical Points of Contact	1. SQN LDR Thomas Gallagher, e-mail : Thomas.gallagher@act.nato.int Tel : +1 757 747 3577 2. Luc Barbeau, e-mail : luc.barbeau@act.nato.int Tel : +1 757 747 3143
References	N/A

1. INTRODUCTION

Headquarters Supreme Allied Commander Transformation (HQ SACT) is issuing this Request for Information (RFI) in order to engage with industry. The intention is to inform future requirements development efforts, a gap analysis study and potentially a NATO SATCOM Capability/Target Architecture, all supporting the future implementation of a Commercial SATCOM Services Framework Agreement. This initial step is to help NATO evaluate the potential conceptual solutions and business models that industry currently has to offer in support of a NATO deployable mission.

This Request for Information (RFI) does not constitute a commitment to issue a future request for proposal (RFP). The purpose of this request is to involve industry through collaboration, in an examination of future capabilities related to commercial SATCOM services. The focus is on how they could be incorporated into the Future NATO SATCOM Capability / Portfolio via its current or future capability programme.

HQ SACT has not made a commitment to procure any of the items described herein, and release of this RFI shall not be construed as such a commitment, nor as authorization to incur cost for which reimbursement will be required or sought. Further, respondents are advised that HQ SACT will not pay for any information or administrative costs incurred in responding to this RFI. The costs for responding to this RFI shall be borne solely by the responding party. Not responding to this RFI does not preclude participation in any subsequent RFP if issued in the future.

2. GENERAL BACKGROUND: ACT Framework for Collaborative Interaction (FFCI)

ACT has implemented a Framework for Collaborative Interaction (FFCI) to increase opportunities for industry and academia to contribute to ACT capability development efforts through collaborative work. Such collaboration enables HQ SACT, and NATO as a whole, to benefit from industry/academia models, advice, capabilities and experience in the course of this work. In addition to the benefits HQ SACT gains from such projects, this collaborative effort will provide industry / academia with an improved understanding of NATO's capability requirements and the associated issues and development challenges to be addressed by HQ SACT. Potential collaborative projects are on specific topics that are of mutual interest to both parties but shall be restricted to collaborations in non-procurement areas. Several mechanisms have been already developed to support the initiation of collaborative projects between industry/academia and ACT ranging from informal information exchanges, workshops, studies or more extensive collaboration on research and experimentation.

Depending on the level and type of interaction needed for a collaborative project, a specific agreement may be needed between parties. The FFCI agreement for any specific project, if required by either party for the project to proceed, will range from "Non-disclosure Agreements" (NDA) for projects involving exchange of specific information to more extensive "Declaration of Mutual Collaboration" (DOMC) to address intellectual property and other issues.

More extensive information on the ACT FFCI initiative can be found on the ACT web site being developed to support FFCI projects at http://www.act.nato.int/ffci.

No FFCI agreement is required to respond to this RFI.

3. DESCRIPTION

3.1. Background

NATO is currently capturing the operational and functional/non-functional requirements for an augmentation capability using commercial satellite communication services.

The next step in NATO's assessment of commercial SATCOM services is to use a fictional operational scenario based approach to evaluate the potential solution concepts and business models currently available and offered by industry.

This is not a formal request for submissions as part of a procurement effort; it is intended to conduct an additional in-depth assessment to determine the potential utility for commercial SATCOM services to provide an augmentation capability to NATO's current MILSATCOM capability.

3.2. Aim

To assess and evaluate potential solution concepts and business models used to inform a gap analysis study and capability/target architecture for the future integration of commercial SATCOM services for NATO via its SATCOM Capability Package (CP9A0130 – Project 0CM3107 (Augmentation).

3.3. Scenario

Please refer to Enclosure 1 for the details of the operational scenario and instructions on how to respond.

3.4. Expected benefits to respondents

Industry participants will have the opportunity to provide their solutions and business models to help inform the requirements capture, gap analysis and capability/target architecture that will shape NATO's future Augmentation SATCOM capability using commercial SATCOM.

3.5. Expected input from Industry.

Expected input to this RFI is industry's solution concept and business model to the provided fictional operational scenario of a NATO deployment mission.

4. REQUESTED INFORMATION

4.1. Responses to the RFI.

See Enclosure 1.

4.2. Follow-on.

The results from the RFI (data and results collected) will be used to inform a gap analysis, requirements capture and a Capability/Target Architecture for the NATO SATCOM Capability Programme and its Augmentation Project.

Contributing to the RFI, or lack thereof, will not prejudice any respondent in the event that there is a competitive bidding process later as part of NATO Common-Funded Capability Development.

4.3. Handling of Proprietary information.

Proprietary information, if any, should be minimized and clearly marked as such. HQ SACT will treat proprietary information with the same due care as the command treats its own proprietary information, and will exercise due caution to prevent its unauthorized disclosure. Please be advised, all submissions become HQ SACT property and will not be returned**.**

4.4. Questions.

Questions of a technical nature about this RFI announcement shall be submitted by e-mail solely to the above-mentioned POCs. Accordingly, questions in an e-mail shall not contain proprietary and/or classified information. Answers will be posted on the HQ SACT P&C website at: www.act.nato.int/contracting and if warranted, an on-line question and answer session (via WebEx or GTM) will be hosted by ACT and the NATO Communications and Information Agency (NCI Agency).

4.5. Response Date

All responses are due by 07 December, 2020 – 17:00 hours (5:00 p.m. Eastern Standard Time).

4.6. Summary

This is a RFI only and the purpose of this RFI is to involve industry, through collaboration, in an examination of commercial SATCOM services as a potential solution to deliver Augmentation SATCOM services**.** HQ SACT has not made a commitment to procure any of the items described herein, and release of this RFI shall not be construed as such a commitment, nor as authorization to incur cost for which reimbursement will be required or sought. It is emphasised that this is a RFI, and not a RFP of any kind.

//Signed//

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Enclosure 1 to
RFI-ACT-SACT-20-115

NATO OTAN

Request for Information
Commercial Satellite Services

October 2020

ALLIED COMMAND TRANSFORMATION

NCI AGENCY

Enclosure 1 to
RFI-ACT-SACT-20-115

1. Scenario

1.1. Situation

The NATO Rapid Response Force (NRF) will deploy to the North East of Europe to support the National Defence Plans of several NATO nations. This is following a devastating natural disaster that has crippled the national infrastructure of these NATO nations, exposing themselves to an attack from possible aggressors.

Figure 1: Shows effected regions and distance from Brussels to edge of impacted area

1.2. Deployment

During the initial deployment phase, the NRF will deploy to the region. The initial deployment will consist of a number of key military operational elements, which are required to be interconnected via a secure, robust and resilient commercial satellite solution. It is foreseen that the proposed satellite architecture will initially interconnect eight [8] Deployable Points-of-Presence (DPoPs) and one [1] Deployable Reconnaissance Team (DRT).

The initial deployment phase (first 30 days) will be conducted primarily with the data repositories replicated to the Main Operational Deployed Headquarters (MOD HQ) located in Poland using a reach-back link to the static strategic headquarters in Brussels (until a complete working repository is established or a cloud-based solution is implemented). In theatre, the MOD HQ will communicate primarily with the DRT for the first 30 days. DRT reach-back connectivity to Brussels is optional at this stage of the operation.

As the mission evolves (30+ days), it is expected that the MOD HQ will establish a complete working version of required data repositories (unless a cloud-based solution is implemented) and communication will primarily be with and between the other deployed operational elements (see list below). Therefore, a prioritized meshed[1] topology/connectivity (versus a STAR topology) will be required within the theatre of operations while keeping a reach-back link with the NATO HQ in Brussels.

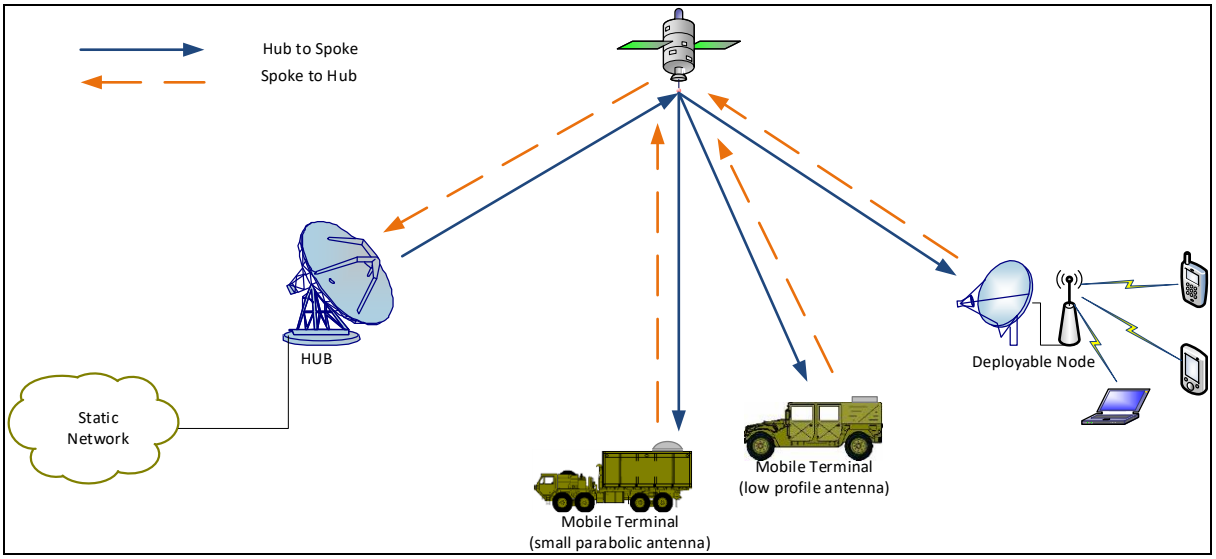

Figure 2: STAR Topology

[1] In a mesh topology, the terminals can talk to each other directly without going through a central station. In this topology one of the terminals is assigned to act as the network controller, but the data communications are always directly from terminal to terminal.

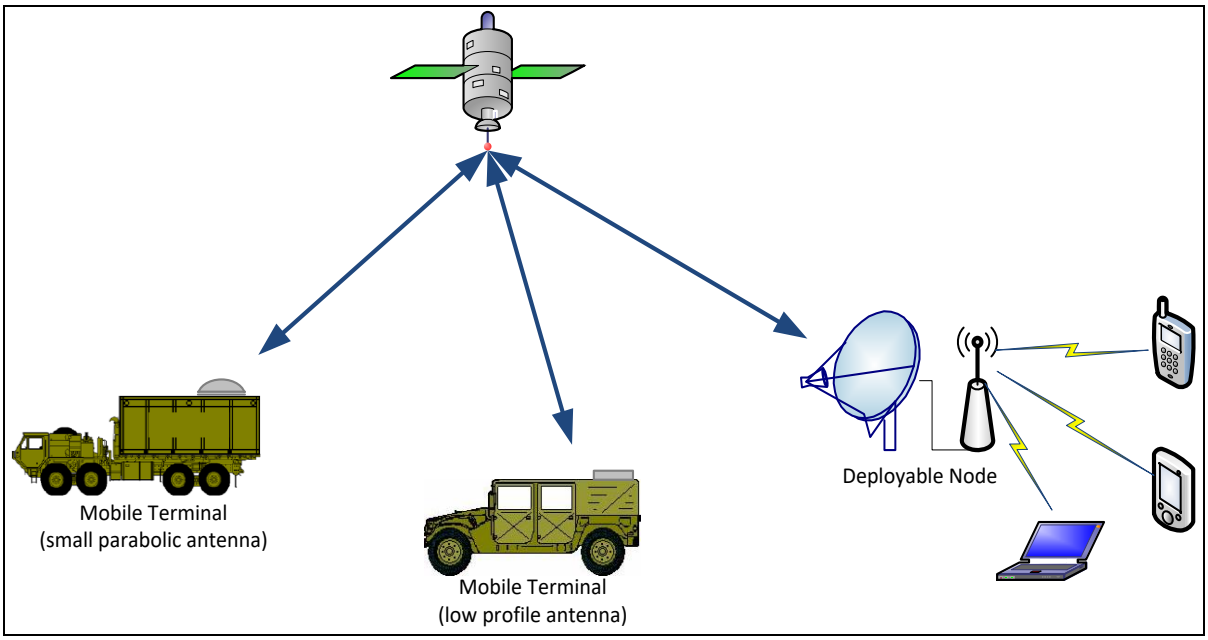

Figure 3: Mesh Topology

1.3. NATO Deployable Operational Elements:

- 4 Large Headquarters (250-500 users):
  - Main Operational Deployed HQ (MOD HQ) – Warsaw, Poland
  - Land Force Command (LFC) - Lithuania
  - Logistics Support Group (LSG) - Latvia
  - Air Component Element (ACE) - Estonia
- 3 Small Headquarters (Search and Rescue (SAR), Medical, Intelligence and Surveillance (ISR), 10-50 users).
- Maritime Command (MC) deployed to the north west of Latvia to provide the sea access port (10-50 users).
- 1 DRT (10-person team) with requirement for SOTM.

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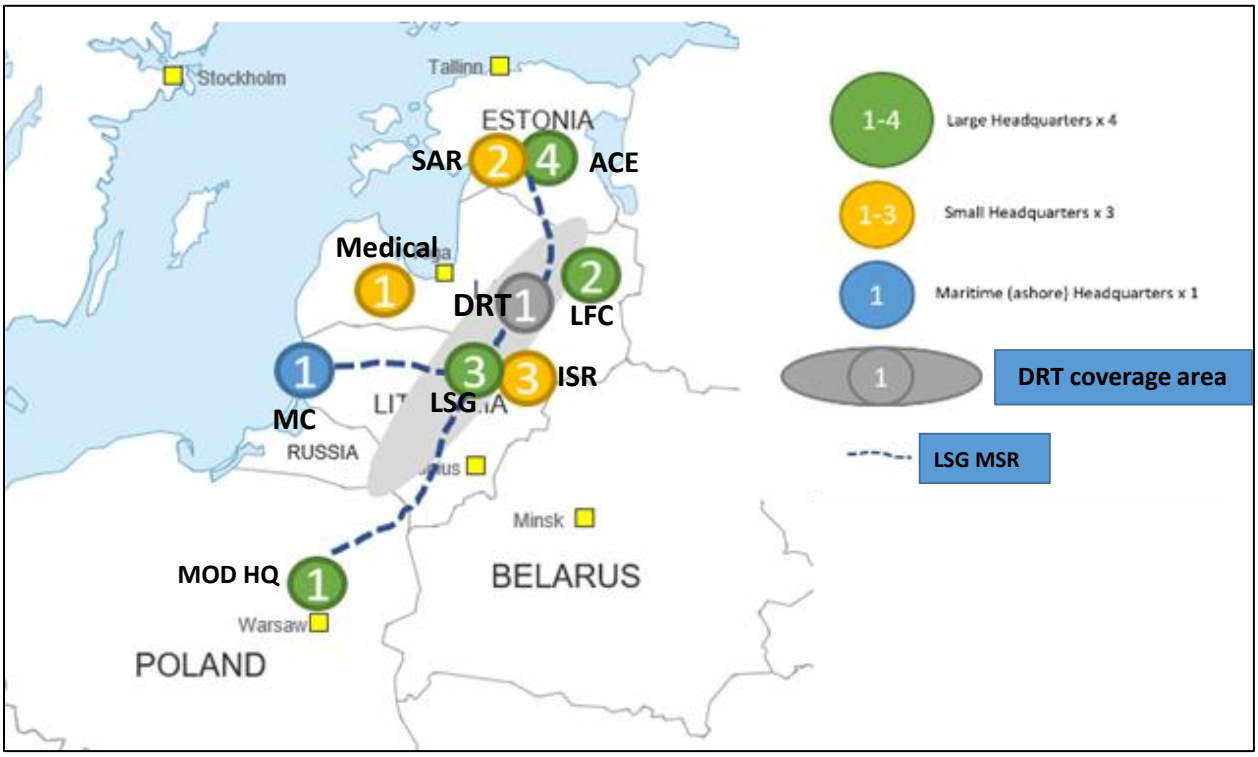


Figure 4: Map of NATO deployment model and element locations

1.4. Information Exchange Requirements (IER)

The following are **examples** of the type of IERs that will be processed by each type of HQ:

- **Large HQ**: Office applications, VTC, CHAT (A/V), Real-time operational picture (in-theatre), Full-Motion Video (in-theatre), Non-Secure VoIP, high volume of rear-link voice/data traffic with Brussels (e-mail, VoIP, office applications, VTC, **database replication**);
- **Small HQ (includes MC)**: Office applications, VTC, CHAT (A/V), Real-time operational picture (in-theatre), Full-Motion Video (in-theatre), Non-Secure VoIP, low volume of rear-link voice/data traffic with Brussels (e-mail, VoIP, office applications, VTC).
- **DRT**: Office applications, VTC, CHAT (A/V), Real-time operational picture (in-theatre), Full-Motion Video (in-theatre), Non-Secure VoIP.

2. Planning Assumptions*

No	Assumption
1	Mission duration estimated at 6 – 12 months.
2	National terrestrial networks were significantly damaged during the disaster, with data centers wiped out. Restoration is not expected in the short to medium timeframe.
3	The national SATCOM assets from the effected nations are in extremely short supply, what is undamaged and available have been prioritized to support the humanitarian mission in the region.
4	Nearest available airport is located in Warsaw Poland where NATO deployable forces will land and prepare to deploy using their transportable communication modules – access via EDGE Device (e.g. Router). NATO has also negotiated access to an airport in Minsk, Belarus for the deployment of the NATO DRT (need portable SOTM) if required.
5	Provision model must make SATCOM services available within 72 hours of service request, including ground segment equipment. Other deployed elements will deploy within 10 days.
6	Interim security operational accreditation has been provided by NATO for the mission (network/IT).

*Respondents are encouraged to make their own planning assumptions, but they must be well articulated in the proposed solution.

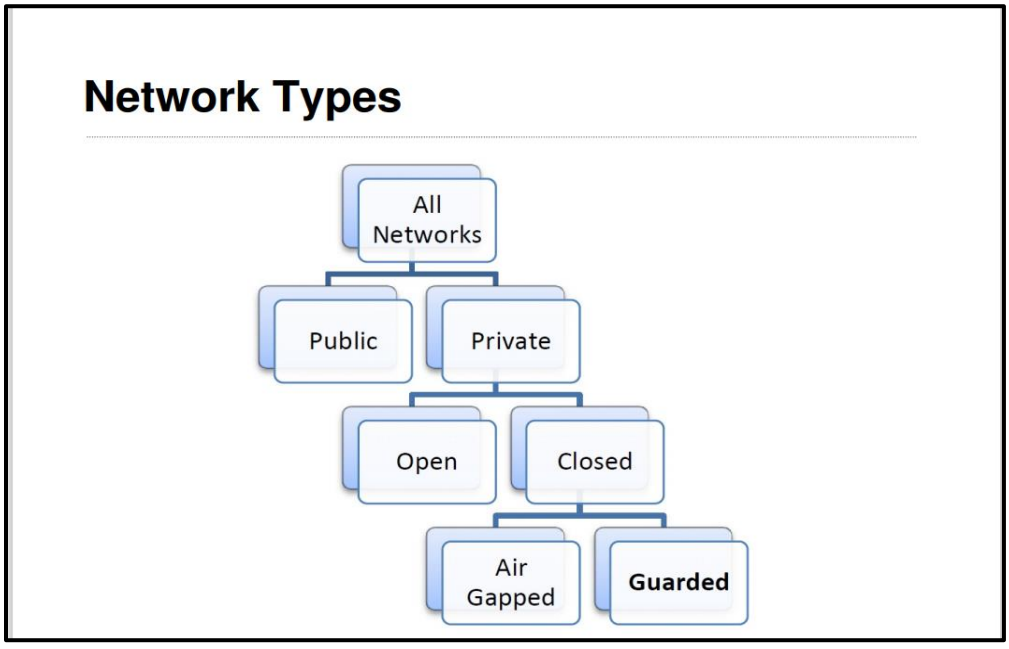
3. Technical / System Requirements

- The total Information Exchange Rate (IER) across all nodes can vary between 160-200 Mbps (this is an aggregate minimum range).
- IOC coverage area is considered to span from the centre of Poland to the most northern point of Estonia.
- FOC coverage is to include the reach-back from the mission region to Brussels.
- Connection to NATO DPoPs via NATO Network Transport Protocols (Example; Ethernet and MPLS) must be considered.
- Provide your solution’s security characteristics (keep at unclassified level) e.g. EMESC, TRANSEC, Supply-Chain, etc.
- Terminals will be used around the world and potentially in countries NATO has not previously performed operations. How would you obtain access to Satellites (frequency use) in other countries (e.g.” Obtain HNAs)?

- Would your service enable NATO to use its own Gateways? If yes, describe how you would provide links/capacity from your SATCOM teleports to a NATO MILSATCOM Gateway if required?
- ***Consult Enclosure 2 for NATO's minimum operational requirements to be considered in your submission.***

4. Considerations

- Due to other ongoing NRF missions, a private turnkey closed architecture[2] of both Ground Deployable terminals and Commercial Satellite Services are required. Space segment should be considered as an open architecture.



- The technical solution should consider and demonstrate the change in the architecture when the centre of mass of the mission (in data processing/storage terms) moves, or changes the way it is geographically distributed.
- Solution considers that DPoPs may move or become silent.

[2] A closed network is a private network which cannot access any other network or devices which are not managed by the designated authority. All nodes on the closed network operate under policy dictated by the designated authority. The closed network implements access restrictions which will 12 prevent attempted communication with other networks.

- The solution should consider the scalability of the mission; from initial entrance (first 30 days) with a limited number of DPoPs (MOD HQ + DRT), to an Interim Operational Capability (IOC) with eight DPoPs deployed with an in-region data repository (after 30 days), to the Final Operational Capability (FOC) which may include extended number of DPoPs and a reach-back capability to Brussels in a meshed theatre network. A cloud-based solution can be proposed, but must be implemented as a private NATO mission cloud.
- No 3rd party contractors will be allowed in theatre of operations.
- Delivery of training to the NATO operators (who may not be SATCOM specialists) in the operational use and maintenance of the provided ground terminals.
- The solution should consider the terminals will be used in a tactical/field environment/situations and a deployed Integrated Logistics Support (ILS) Concept implemented for the repair and replacement of equipment in theatre.
- Provide a virtual 24/7 Help Desk service to the deployed operators;
- The solution should consider the Satellite Service Framework, for example; Satellite Access process, Change Management, Incident Management and Resolution Management.
- Describe the logistical challenges you anticipate in the delivery of terminals, equipment and services globally (to include providing to tactical locations)?
- What monthly/yearly pricing models would you propose for this service (usage based; cost/user; cost/terminal, fixed cost, combination, warranties, other)?

5. Structure of Response

- Provide name, mailing address, overnight delivery address (if different from mailing address), designated point of contact (phone number, e-mail).
- Respondents can partner with other providers, but all companies must be clearly identified and their role/services clearly stated.
- Provide available contracting vehicles/structures as requested in Section 2.
- Identify current SAAS services your company offers which most closely match the capabilities specified in this RFI (or portions of).

- Available product brochures, specification sheets, photographs, illustration and technical descriptions that describe your company's current services that most closely match the SAAS. Companies are encouraged not to include marketing informational materials that do not relate to the services described in this RFI as it will be discarded; however, responses may include URL links to technical documentation materials (i.e., technical data sheet) are welcome.
- Response limited to a single main document and enclosures for a total note-to-exceed 10 pages (material in para 6 above not included). The document should be single-spaced, have one-inch margins, assume US letter-size (8 1/2 by 11 inches) page, use 12-point font, and be formatted for compatibility with Microsoft Word 2003 (or later) or Adobe Acrobat Reader version 7.0 (or later).
- Submissions should be named according to the following convention: <Respondent company name; maximum of 12 characters>_COMSATCOM RFI_<date in YYYYMMDD format>.<filename extension of 3 or 4 characters>. Submissions should not exceed a 10 MB e-mail limit for all items associated with the response.
- Provide list of your company's past and current customers to which you have provided or are providing similar services, including a customer/company name and point of contact, phone number, and address/e-mail where they can be contacted.
- Responses shall not be above the level of NATO UNCLASSIFIED.
- Submissions must be received no later than 5:00 PM Eastern Time, December 07, 2020.

Enclosure 2 to
RFI-ACT-SACT-20-115

NATO Commercial Satellite Communication – Operational Requirements

Serial	Statement	Parent	Organizational Area	Priority
P7_01	A shall, must, should statement (per Key Words)	Relation with requirements for which this may be subordinate. Link to higher level in parent-child relationship	Categorization of the requirement in one or more types (e.g. operational, security, capability and technical), scope (e.g. enterprise, alliance and federation) or areas (e.g. in Main Capability Areas). These values will enable the selection, sorting and filtering of requirements.	The priority at which the requirement must be met.
P7_02	The Augmentation Capability will provide services for missions and tasks that can rely on Commercial SATCOM services and not covered under Core & Extended Core agreements.	Capacity	Operational	Essential
P7_03	Such provision would not be required to be permanently available, but must be available on demand via MOU, MOA, or contracting framework agreement.	Availability	Operational	Essential
P7_04	Must able to support the missions in the widest range of geographic operational areas up to 15,000 km from Brussels.	Coverage	Operational	Essential
P7_05	Must have the capability to support multiple, dispersed end users simultaneously within the deployed operational footprint (DPOP to DPOP, DPOP to Infrastructure).	Concurrency	Operational	Essential
P7_06	Must be able to dynamically manage the allocated capacity in support of delivering the prioritized operational IER.	Control	Operational	Essential
P7_07	Must be provided in an operational environment under low or negligible levels of assessed threat.	Resilience	Operational	Essential
P7_08	Should provide option for polar area coverage.	Coverage	Operational	Desireable
P7_09	Must be interoperable with the NATO Core and the NATO Deployable Communications Networks and communication nodes (DPOPs).	Interoperability	Operational	Essential
P7_010	Should strive to reduce SATCOM size, weight and power (SWaP) and increase throughput and capability where feasible.	Agility	Operational	Desireable
P7_011	All SATCOM procured services and products will meet NATO security accreditation standards before operational use.	Security	Operational	Essential
P7_012	Must provide required capacity to support NATO operational IERs, evaluated at a minimum range of 160-200 Mbps.	Capacity	Operational	Essential
P7_013	Agreement should provide an end-to-end (turnkey) scalable satellite based solution option.	Provision	Procurement	Essential

Enclosure 2 to
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Serial	Statement	Parent	Organizational Area	Priority
P7_01	A shall, must, should statement (per Key Words)	Relation with requirements for which this may be subordinate. Link to higher level in parent-child relationship	Categorization of the requirement in one or more types (e.g. operational, security, capability and technical), scope (e.g. enterprise, alliance and federation) or areas (e.g. in Main Capability Areas). These values will enable the selection, sorting and filtering of requirements.	The priority at which the requirement must be met.
P7_014	Must provide any requried training to NATO operators.	Training	Operational	Essential
P7_015	NATO SATCOM architecture should leverage the high performance/assured protection features and the “network of layers” provided by HTS/commercial networks to add performance, scale, and enhanced assured/resilience in contested operational environments.	Resilience	Operational	Essential
P7_016	NATO procurement models should include framework agreements including guaranteed access to procure commercial Network Managed Service in an agile and scalable manner.	Provision	Operational	Essential
P7_017	Services framework should not lead to NATO requiring infrastructre charges.	Provision	Operational	Essential
P7_018	Must provide cyber, link and operational security - The ability to provide cyber resiliency for warfighters, protecting their information and control systems in the face of a determined and sophisticated attacker.	Security	Operational	Essential
P7_019	Should enable roaming between technologies & operators, also between orbits/constellations and bands if needed, creating an interoperable, flexible, seamless communications capability as an integrated part of the larger communications landscape	Agility	Operational	Desireable
P7_020	Service must be robust i.e. provide redundancy through the number of available satellites in the provider's constellation.	Availability	Operational	Essential
P7_021	Terminals shall be able to deploy and operate in any allowable climatic conditions, which do not require environmental control equipment, in regions up to 15,000 km away from Brussels (NATO AECTPs / MILSTD 810G compliant)	Environmental	Operational	Essential
P7_022	Should support field changeable frequency band kits	Agility	Operational	Desireable
P7_023	Must meet meet lifting and carrying limits per MIL-STD-1472G.	Operation	Operational	Essential
P7_024	Two-person, non-specialist, team must be able to set-up provided equipment within 15 minutes.	Operation	Operational	Essential