



Acquisition Directorate

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NCIA/ACQ/2018/1140

16 May 2018

Market Survey - Request for Additional Information

Project "Provide SATCOM Ground Segment Baseband Systems"
Project Serial Number 2016/OCM03119
Capability Package (CP) 9A0130 "Provide Satellite Communications (SATCOM)
Transmission Services"

NCI Agency Reference: MS-CO-14774-SATCOM-GSBS

NCI Agency is seeking information from Nations and their Industry regarding the availability of Commercial-Off-The-Shelf (COTS) and Government-Off-The-Shelf (GOTS) modems.

NCI Agency Points of Contact
Principal Contracting Officer (PCO) Mrs. Tiziana Pezzi
Action Officer: Mr. Werner Goos

E-mail: werner.goos@ncia.nato.int

To: Distribution List (Annex A)

Subject: **NCI Agency Market Survey**
Request for Information MS-CO-14774-SATCOM-GSBS

1. NCI Agency requests the assistance of the Nations and their Industry to identify COTS/GOTS SATCOM modems that can meet or exceed NATO's future requirements as identified under Capability Package CP 9A0130 project OCM03119 "Provide SATCOM Ground Segment Baseband Systems".



NATO Communications
and Information Agency
Agence OTAN d'information
et de communication
Avenue du Bourget 140
1140 Brussels, Belgium
www.ncia.nato.int

2. These modems are intended for integration in the shelters of the next generation of TSGTs, as well as in transportable enclosures to be used with the next generation DSGTs.
3. A summary of the requirements is set forth in the Annex B attached hereto. Respondents are requested to reply via the questionnaire at Annex C. Other supporting information and documentation (technical data sheets, marketing brochures, catalogue price lists, descriptions of existing installations, manuals, etc.) are also desired.
4. The NCI Agency reference for this Market Survey Request is **MS-CO-14774-SATCOM-GBBS**, and all correspondence and submissions concerning this matter should reference this number.
5. In addition to the firms noted in Annex D of this letter (who are current holders of Basic Ordering Agreements (BOA) with the NCI Agency), the NCI Agency requests the broadest possible dissemination by Nations of this Market Survey Request to their qualified and interested industrial base.
6. Responses may be issued to the NCI Agency directly from Nations or from their Industry (to the Point of Contact indicated at Paragraph 9 of this Market Survey Request). Respondents are invited to carefully review the requirements in Annex B.
7. Responses shall in all cases include the name of the firm, telephone number, e-mail address, designated Point of Contact, and a NATO UNCLASSIFIED description of the capability available and its functionalities. This shall include any restrictions (e.g. export controls) for direct procurement of the various capabilities by the NCI Agency. Non-binding product pricing information is also requested as called out in Annex C.
8. Responses are due back to the NCI Agency no later than **17:00 Brussels time 15 June 2018**.
9. Please send all responses either via post or email to the following NCI Agency Action Officer:

To Attention of: Mr Werner GOOS

Postal address: NCI Agency
Acquisition Directorate
Boulevard Leopold III
B-1110 Brussels
Belgium

E-mail: werner.goos@ncia.nato.int



10. Product demonstrations or face-to-face briefings/meetings with industry are not foreseen during this initial stage. Respondents are requested to await further instructions after their submissions and are requested not to contact directly any NCI Agency staff other than the POC identified above in Paragraph 9.

11. Any response to this request shall be provided on a voluntary basis. Negative responses shall not prejudice or cause the exclusion of companies from any future procurement that may arise from this Market Survey. Responses to this request, and any information provided within the context of this survey, including but not limited to pricing, quantities, capabilities, functionalities and requirements will be considered as information only and will not be construed as binding on NATO for any future acquisition.

12. The NCI Agency is not liable for any expenses incurred by firms in conjunction with their responses to this Market Survey and this Survey shall not be regarded as a commitment of any kind concerning future procurement of the items described.

13. Your assistance in this Market Survey request is greatly appreciated.

FOR THE DIRECTOR ACQUISITION:


Tiziana Pezzi
Principal Contracting Officer

Enclosures:

Annex A (Distribution List)

Annex B (Market Survey Request - Summary of Requirements)

Annex C (Market Survey Request - Questionnaire)

Annex D (Potential Industrial Suppliers, NCI Agency Basic Ordering Agreement (BOA) Holders on Distribution)

ANNEX A
Distribution List for Market Survey Request for Information
MS-CO-14774-SATCOM-GSBS

Potential Industrial Suppliers (NCI Agency BOA Holders) 1

NATO Delegations (Attn: Investment Adviser):

Albania	1
Belgium	1
Bulgaria	1
Canada	1
Croatia	1
Czech Republic	1
Denmark	1
Estonia	1
France	1
Germany	1
Greece	1
Hungary	1
Iceland	1
Italy	1
Latvia	1
Lithuania	1
Luxembourg	1
Montenegro	1
Netherlands	1
Norway	1
Poland	1
Portugal	1
Romania	1
Slovakia	1
Slovenia	1
Spain	1
Turkey	1
The United Kingdom	1
The United States of America	1

Belgian Ministry of Economic Affairs 1

Embassies in Brussels (Attn: Commercial Attaché):

Albania	1
Belgium	1

Bulgaria	1
Canada	1
Croatia	1
Czech Republic	1
Denmark	1
Estonia	1
France	1
Germany	1
Greece	1
Hungary	1
Iceland	1
Italy	1
Latvia	1
Lithuania	1
Luxembourg	1
Montenegro	1
Netherlands	1
Norway	1
Poland	1
Portugal	1
Romania	1
Slovakia	1
Slovenia	1
Spain	1
Turkey	1
The United Kingdom	1
The United States of America	1

Distribution for information (Blind to Potential Industrial Suppliers):

NATO International Staff

NATO Office of Resources		
Management and Implementation Branch		
Attn: Deputy Branch Chief		1
Director, NATO HQ C3 Staff		
Attn: Executive Co-ordinator		1
SACTREPEUR		
Attn: Infrastructure Assistant		1

Strategic Commands *(as applicable to funding source)*

SACT	Attn: ACOS C4ISR	1
ACO	Attn: SPT CIS Director	1

NCI Agency:

DACQ (Mr. P. Scaruppe through Ms. D. Cani)		1
CAB Secretary (Ms. M.L. Le Bourlot)		1
ACQ Chief of Contracts (Mr A. Courtois)		1
Legal Adviser (Ms. S. Rocchi)		1
COO NLO (Mr. X. Desfougeres)		1
COO SS (Mr. K. Dixon)		1
DOP ILS (Mr. C. Lucas)		1
NSII SL Chief (Mr. A. Calderon)		1
NSII SL EMS Project Manager (Mr. S. Justinen)		1
NSII SL SAO (Mr. G. Battista Durando)		1
ACQ PCO (Ms. T. Pezzi)		1
ACQ POC (Mr W Goos)		1
Registry (for distribution)		1

NATEXs

All NATEXs		1
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ANNEX B
Summary of Requirements
Project ID 2016/0CM03119, CP9A0130

Under CP9A0130 project 0CM03119, NATO is procuring SATCOM modems. These new modems will be installed across the fleet of NATO static, transportable and deployable ground terminals.

Modem installation in TSGTs or in transit cases for DSGTs (DBAC) will be the responsibility of the Purchaser.

The new modems will be used for the following purposes and in support of the associated SATCOM network architectures:

- Trunk-based reach-back links, high capacity, fixed or adaptive rate, point to point (Single-channel per Carrier, SCPC);
- Trunk-based intra-theatre backbone links, high capacity, fixed or adaptive rate, point to multipoint (Multi-channel per Carrier, MCPC), enabling partial or full mesh connectivity.

In operational terms and in support of the above listed functions, NATO will pursue:

- Spectral efficiency improvement features, e.g. reduced roll-offs, advanced filtering, bandwidth cancellation, Ethernet header compression, etc.;
- Simplicity of installation, configuration and operation;
- Small form factor (1RU);
- Minimum physical footprint, through high density of hardware integration, ultimately enabling multiple modem functions to run on the same platform;
- Upgradability through re-programmability (i.e. ability to incorporate new or upgrade existing waveforms as they emerge or evolve);
- Low lifecycle support costs.

Modems provided under this project need to fulfil or exceed the following key capabilities:

- Shall be able to transparently transport Ethernet frames (L2 bridging) with frame sizes up to 9,000 bytes (jumbo frames);
- Shall support point-to-point connectivity with Single Channel per Carrier (SCPC);
- Shall support point-to-multipoint, partial or full meshed connectivity with Multi-channel per Carrier (MCPC).
- Shall support a minimum of four inbound carriers in the modem, through the corresponding number of integrated channel demodulators.

In this market survey information is also sought on any additional features of these modems that can help sustaining the above listed key capabilities under:

- Low and medium interference conditions (e.g. co-channel interference), through spreading, with or without automatic waveform adaptations to changes in signal to interference ratios,
- or-
- High-level interference conditions with partial or full band, partial or full time interferers, using direct sequence or frequency hopping spread spectrum (FHSS), the latter operated over both contiguous and non-contiguous bandwidth segments, with hopping bandwidths up to 500 MHz wide, while protecting the integrity of the bit stream with interleaving.

An upper limit of quantity 130 modems are currently foreseen to be procured under this project.

The expected contract award for this project is January 2019.

ANNEX C
Questionnaire

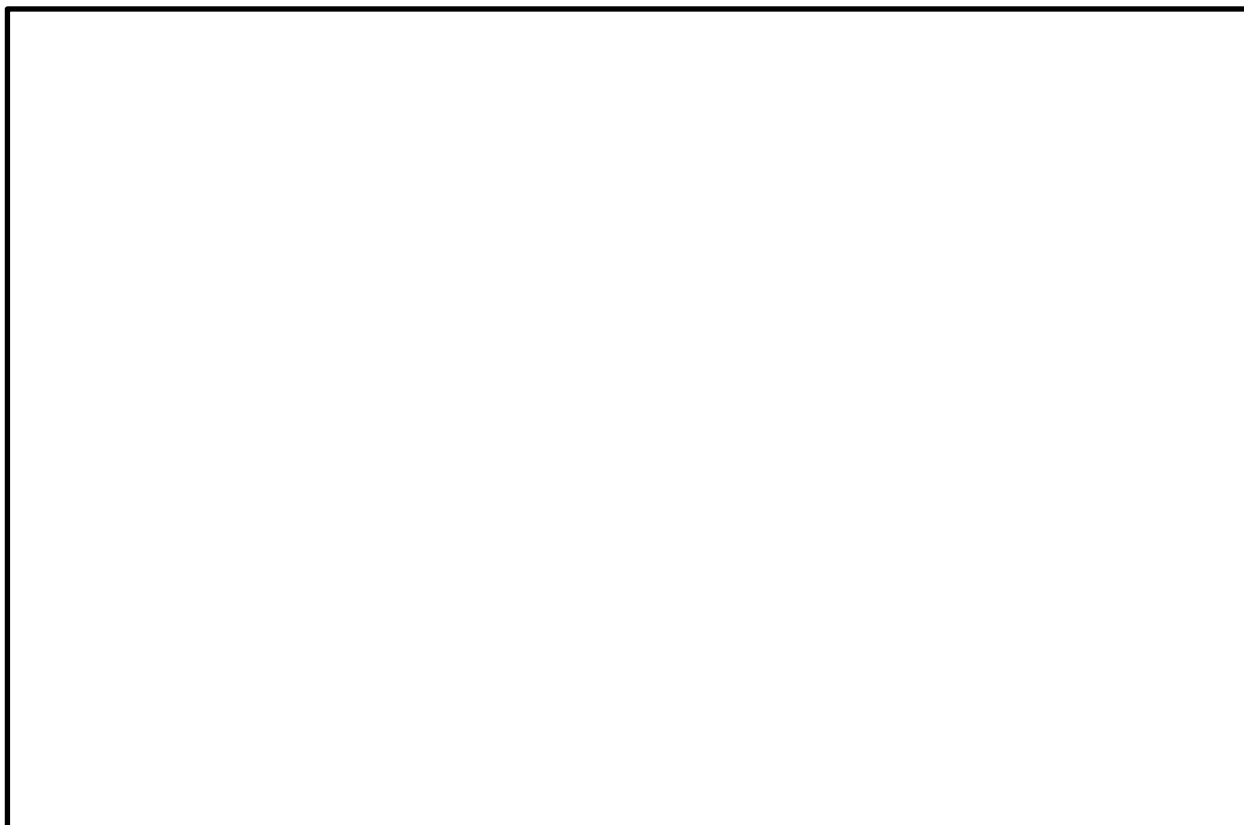
Organisation name:

Contact name & details within organisation:

Notes

- Please **DO NOT** alter the formatting. If you need additional space to complete your text then please use the 'Continuation Sheet' at the end of this Annex and reference the question to which the text relates to.
- Please feel free to make assumptions, *HOWEVER* you must list your assumptions in the spaces provided.
- Please **DO NOT** enter any company marketing or sales material as part of your answers within this market survey. But please submit such material as enclosures with the appropriate references within your replies. If you need additional space, please use the sheet at the end of this Annex.
- Please **DO** try and answer the relevant questions as comprehensively as possible.
- All questions within this document should be answered in conjunction with the summary of requirements in Annex B.
- All questions apply to Commercial or Government respondees as appropriate to their Commercial off the Shelf (COTS) or Government off the Shelf (GOTS) products.
- Cost details required in the questions refer to Rough Order of Magnitude (ROM) Procurement & Life Cycle cost, including all assumptions the estimate is based upon:
 - Advantages & disadvantages of your product/solution/organisation,
 - Any other supporting information you may deem necessary including any assumptions relied upon.

1. Please provide, as a minimum, the following information concerning the functionality of your Modem, where applicable:
 - a. Supported standards (e.g.: DVB-S2X, MIL-STD or STANAG);
 - b. Supported non-standard modulation and coding schemes;
 - c. Ability to dynamically adapt coding and modulation schemes and/or symbol rates to link conditions;
 - d. Ability to route traffic to specific remote destinations based on VLAN ID, with potentially multiple VLAN IDs per destination;
 - e. Support for VLAN ID based coding and modulation schemes, possibly in combination with adaptive coding and modulation as in 1c;
 - f. Ability to dynamically change or adjust power levels (automatic uplink power control);
 - g. Ability to demodulate multiple carriers (number of demodulators in the standard fit, and through options), through single or multiple IF ports;
 - h. Software re-configurability (new waveforms);
 - i. Integrated remote spectrum monitoring;
 - j. Additional features not listed specifically.



2. Describe the interfaces of your Modem (IF, Ethernet), and their characteristics (Connector Type, Speeds supported, Protocols, etc.)

3. Can your Modem be configured to operate in a STANAG 4486 Ed.3 mode?

4. Please provide details on the Transmission Security features, if any, your modem provides.

5. Please provide details on the Link Encryption features, if any, your modem provides.

6. Do you currently produce, or will you be ready to deliver by the end of 2020, a modem (waveform) that can operate in an environment comprised of one or more of the following:
- a. Fading;
 - b. Interference;
 - c. Scintillation.

7. If so, how does your Modem mitigate or counter each of the three above listed conditions?

8. If the proposed solution is under development, when will it be available for testing and evaluation¹?

9. Please provide, as a minimum, the following information concerning performance of your Modem (items f to j are only applicable for modems that are also able to counter interference):
- a. Range of modulation and coding settings, including those intended for operation with very low signal to noise ratios;
 - b. Minimum spectral roll-off factor;

¹ NATO cannot accept an extended timeline for the purpose of evaluation and acceptance testing. The acceptance timeline will be specified and delivered as part of the Invitation For Bid (IFB).

- c. Modem performance per modulation mode (E_b/N_0 for various BER values);
- d. Achievable spectral efficiency per modulation mode;
- e. Minimum and maximum symbol rates;
- f. Maximum frequency hopping rate, bandwidth;
- g. Maximum spreading factor;
- h. Maximum and minimum channel bandwidths;
- i. Maximum Interleaving depth;
- j. Minimum achievable latency (versus data rate).

10. Does your Modem require a traditional hub and spoke architecture in order to operate?

11. Does your Modem require the use of an additional (external) modem controller(s)?

12. Has your Modem product received any NATO nation-specific type-certification or commercial approval for operating over X-band or Ka-band payloads? If so, state the applicable certifications or approvals.

13. Has your Modem ability to operate across multiple transponders, ultimately with different HPA running modes (Linear or Saturated) and/or transponder operating points?

14. Please provide a Rough Order of Magnitude (ROM) pricing schedule for the Modem product(s), including any modem controller capability and network planning software.

15. Do you have a Service Level Support arrangement to perform level 3 maintenance task for the Modem product for at least 10 years after delivery? If so provide a ROM cost estimate of the yearly support cost for the required quantity of Modem.

16. If not already STANAG compliant, would your company consider opening up your waveform to become a ratified STANAG (pending ratification by the Nations), at the appropriate classification level?



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ANNEX D

Potential Industry Suppliers

Country	Vendor
ALBANIA	TCN shpk
BELGIUM	Astron N.V. Brevco Services S.C.S. Computer Sciences Corporation Damovo Belgium NV/SA Gillam-FEI NextiraOne Telindus NV Thales Alenia Space Etca s.a. Thales Belgium S.A. Thales S.A.
CANADA	General Dynamics Canada Ltd. Network Innovations Inc. Norsat International Inc.
CZECH REPUBLIC	Techniserv, s.r.o.
FRANCE	INEO Defense
GERMANY	IABG mbH KB Impuls Service GmbH T-Systems International GmbH Thales Electronic Systems GmbH XORTEC GmbH
ITALY	ITEL SRL NA.EL. SRL
NETHERLANDS	Carrier to Carrier Telecom B.V. Network Innovations B.V. SatExpander BV
NORWAY	3D perception AS Airbus Defence and Space ASpreviously Astrium Services Enterprises Thales Norway AS
POLAND	KenBIT Koenig i Wspolnicy Sp. j. Newind sp. z o.o. Zbar Phu Mariusz Popena
SLOVAKIA	Aliter Technologies a.s
SPAIN	IBETOR s.l. Indra Sistemas S.A. Thales Programas Electrónica y Comunicac

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Country	Vendor
TURKEY	C TECH Bilisim Tek. San ve Tic A.S. E+M Elektrik Sistem Hizmetleri Ltd. Sti. Kuanta Insaat Taahhut Elektronik Turizm Suta Insaat ve Muhendislik Sirketi
UNITED KINGDOM	Airbus DS Limited Audax General Dynamics United Kingdom Limited Rockwell Collins (UK) Ltd. Thales UK Limited
UNITED STATES	ALTIMA GROUP INTERNATIONAL, INC. (AGI) Accelera Solutions, Inc. Applied Coherent Technology Corp. BAE Systems Information Solutions Inc. DRS Technical Services, Inc. EMW, Inc. Forward Slope, Inc Honeywell Technology Solutions Inc. Intelligent Waves LLC LTI DataCom Inc. Level 3 Communications, LLC ManTech International Corporation Pegasus Professional Services LLC PlanIT Group LLC Raytheon CompanyNetwork Centric Systems Segovia Inc Sprint Communications Company, L.P. Teledyne Brown Engineering, Inc. The Experts, Inc. UXB Defense, Inc Vykin Corporation
Total :	65