NCIA/ACQ/2018/1595

09 October 2018

Market Survey Request for Industry List

IP/Metro-Ethernet Encryptors

NCI Agency Ref: MS-CO-14890-IPMEE

The NATO Communications and Information Agency (NCI Agency) is seeking inputs from Nations and their Industry regarding the replacement of NATO Internet Protocol (IP) based Cryptographic Equipment (NICE) equipment with modern equipment in line with the NATO Cryptographic Vision and Strategy.

Market Survey Point of Contact: Ms. Gloria Paridi

E-mail: Gloria.Paridi@ncia.nato.int

To: See Distribution List

Subject: **Request for Vendors for NCI Agency Market Survey Request**

IP/Metro-Ethernet Encryptors

1. The NATO Communications and Information Agency (NCI Agency) is seeking inputs from Nations and their Industry regarding the replacement of NICE equipment with modern equipment that meets its projected bandwidth demands and furthermore supports the goals of the NATO Cryptographic Vision and Strategy. The purpose of this Market Survey is to understand the features, availability and overall pricing for both Network and Information Infrastructure (NII) IP Network Encryption (NINE) encryptors and Metro-Ethernet encryptors.

2. A list of potential firms, already identified, is included as Annex B. In addition to the firms noted, the broadest possible dissemination by Nation of this Market Survey to their qualified and interested industrial base is requested.

3. Respondents are requested to reply via the questionnaire in Annex A. Other supporting information and documentation (technical data sheets, non-binding product pricing, marketing brochures, descriptions of existing installations, etc.) is desired.

4. The NCI Agency reference for this Market Survey Request is **MS-CO-14890-IPMEE**, and all correspondence and submissions concerning this matter **must** reference this number within the documentation and email or postal subject line.

5. Responses may be issued to NCI Agency directly from Nations or from their Industry. Respondents are invited to carefully review the Introduction within Annex A to determine interest.

6. 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 NCI Agency.

7. Responses are due back to NCIA no later than **close of business 18 November 2018**.

8. Please send all responses via email to the following NCI Agency contact:

   For Attention of:

   Ms Gloria Paridi
   Senior Contracting Assistant
   Email: Gloria.Paridi@ncia.nato.int

9. 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 any NCI Agency staff directly other than the POC identified above in Para 8.

10. 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 indicative and informational only and will not be construed as binding on NATO for any future acquisition.

11. 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.

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

NCIA/ACQ/2018/1595

FOR THE DIRECTOR OF ACQUISITION:

Rebecca Benson
Digitally signed by Rebecca Benson
Date: 2018.10.10 11:09:05 +02'00'

Rebecca Benson
Principal Contracting Officer

Attachment(s):

- Annex A – Questionnaire
- Annex B – Market Survey Industrial Recipients

NCIA/ACQ/2018/1595

Distribution List

Market Survey Industrial Recipients

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NATO HQ C3 Staff Information Assurance and Cyber Defence Branch – Attn: Daniele Boddi

SACTREPEUR - Attn.: Infrastructure Assistant

Strategic Commands

HQ SACT Attn: R&D Contracting Office

SHAPE J2X CIS Security Section Head

Major General Walter Huhn, ACO/DCOS CIS & Cyber Defence

Lieutenant General Jeffery Lofgren, ACT/DCOS Capability Development

Mr Stefano Piermarocchi, SHAPE J6 Cyber Defence Plans and Policy

Dr Alberto Domingo, ACT Cyber Capabilities

Mr Roberto Secco, ACT Cyber Capabilities

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ACQ Senior Contracting Assistant (Ms. Gloria Paridi)

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Cyber Security – Capability Development Branch Head (Mr. Fred Jordan)

Cyber Security - Project Manager (Mr Palmerino Colamarino)

Cyber Security – Subject Matter Expert (Dr Robbert de Haan)

NLO Head- Emanuel Santos

ILS (Mr Carlo Oroni)

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NCI Agency NATEX

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Germany
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Italy
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Spain
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United States

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ANNEX A
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) product.
- 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.

The NATO Enterprise currently aims to replace its NICE equipment with modern equipment that meets its projected demand for bandwidth and furthermore aligns with the NATO Cryptographic Vision and Strategy [6200/TSC FCR 0200/TT-160128/Ser: NU0178, dated 23 February 2015]. As NATO's core network links will have transitioned to a primarily Layer-2 based design by the time that the new equipment is expected to be delivered, the replacement will consist of a number of Metro-Ethernet encryptors to protect the backbone of the NATO Enterprise network, together with a number of NINE-compliant devices at the external-facing interface locations.

Information is therefore requested on the features, availability and overall pricing for both NINE encryptors and Metro-Ethernet encryptors.

1. **NINE-compliant IP Encryptors**
    a. **What type of NINE-compliant equipment does your company expect to have available around the time of Invitation for Bid (IFB) (currently estimated to be sent out mid 2020) supporting throughput speeds of**
        (1) **100 Gbps and above,**
        (2) **40 Gbps and above,**
        (3) **10 Gbps and above, and**
        (4) **1 Gbps and above and easily portable (i.e. for deployed/man-pack use)?**
    b. **Is the device interfaces configurable to different speeds up to the maximum speed supported? If so, with which granularity?**
    c. **What kind of physical interfaces does the equipment support?**
    d. **Does the equipment support jumbo packets / frames (at least 9000 byte size)?**
    e. **Can the equipment meet a 1-2 millisecond timeframe for the internal processing of a security association establishment handshake (excluding transmission delays)?**
    f. **Can the equipment support at least 4000 security associations per destination? If not, how many can it support per destination?**
        (1) **If not, how many can it support per destination?**
        (2) **Can the equipment support the use of a different key for each VLAN?**
    g. **How much of the requirement of the Protected Core Networking (PCN) requirements for the Colored Cloud P function (PCN-2) is the equipment able to meet?**
    h. **Could you provide a rough approximation of the unit selling price of the listed types of equipment, assuming NATO acquisition of**
        (1) **50 devices,**

(2) 100 devices, or

(3) 500 devices?

i. Could you provide a rough approximation of the cost of the management center that comes with this equipment?

(1) Is your company able to provide the full specification for the management interface interactions between the devices and the management center to NATO as part of the equipment procurement?

(2) Are the management center interactions based on publicly or commercially available standards? If so, which?

j. What types of warranty and non-warranty maintenance support does your company provide on these products? For non-warranty support, would it be possible to provide a rough cost estimation?

k. Which of these equipment types is expected to have completed SECAN evaluation around the time of IFB for handling classified information up to the classification level of

(1) NATO Secret (NS), or

(2) Cosmic Top Secret (CTS)?

l. Are any of the equipment types already nationally approved for use up to NATO Restricted or above or the national equivalent?

m. Does your equipment support any of the requirements in the NINE specification that are currently marked as "Objective"? If so, could you specify which?

n. Provided that the NATO Key Management Interoperability Specification (ISpec) is completed by the end of 2018, do you expect your listed equipment types to be ready to meet the requirements stated in the specification at the time of IFB? Please specify per listed device type.

Should the NINE specification be updated before issuance of the IFB, or should it be determined that suitable equipment implementing NINE and the NATO Key Management ISpec will not be available on the market before issuance of the IFB, the NCI Agency is considering offering a development contract for the required equipment. Given such a contract, the selected vendor would be granted a given amount of time in order to modify its existing equipment in order to have it meet the full set of requirements as specified in the IFB, followed by (an updated) SECAN evaluation for the modified product.

o. In the case that the products indicated earlier are expected to not yet implement the full NINE and NATO Key Management ISpecs at the time of IFB:

(1) What would be the projected development time needed in order to implement the missing functionalities?

(2) What would be the estimated cost increase per product given such a development effort (for the procurement of 50, 100, or 500 devices)?

p. NATO will in the near future start requiring all new equipment to implement NATO-approved quantum resilient algorithms, in particular for key establishment and the creation of digital signatures.

(1) Is the equipment indicated earlier expected to implement (possibly non-NATO approved) quantum resilient algorithms at the time of IFB?

(a) If so, which?

(b) Will the equipment be able and come with sufficiently scaled hardware to update the included algorithms to NATO-selected quantum resilient algorithms in the future through a software/firmware update without loss of functionality (e.g. throughput speed, number of associations, etc)? Please clarify the current/expected situation as needed.

(c) Assuming that NATO will select public algorithms for key exchange and signature for Type B use and classified algorithms for key exchange and signature for Type A use, could you provide a rough cost indication for the provision of the required (software-based) equipment update?

(d) Is possible to replace any embedded authentication signatures within the equipment at a future date, possibly through a limited hardware module replacement? If so, please clarify.

q. Could you provide a short description of your company's involvement in the past in NINE-based interoperability testing with other industry, in particular within the context of the NISWG?

2. Metro-Ethernet Encryptors

a. What type of Metro-Ethernet encryptors does your company expect to have available around the time of IFB supporting throughput speeds of

(1) 1 TBps and above,

(2) 100 Gbps and above,

(3) 40 Gbps and above,

(4) 10 Gbps and above, and

(5) 1 Gbps and above?

b. Is the device interface configurable to different speeds up to the maximum speed supported? If so, with which granularity?

c. What kind of physical interfaces does the equipment support?

d. Does the equipment support both point-to-point and point-to-multipoint connections? If so, does it support the use of both on the same physical interface?

e. What kind of Metro service are support by the equipment?

f. Does the equipment communicate at the etherframe level at both the BLACK and the RED interface?

g. Is the equipment able to support transparent QinQ?

h. Does the equipment support Ether Pause?

i. Does the equipment support MEF Operations, Administration and Maintenance (OAM) and at what level does it interwork?

j. Does the equipment support jumbo packets / frames (at least 9000 byte size)?

k. Does the equipment support Traffic Flow Security on the BLACK interface (e.g. constant rate, constant frame size transmissions)? Full or scalable?

l. Can the equipment meet a 1-2 millisecond timeframe for the internal processing of a security association establishment handshake (excluding transmission delays)?

m. Can your equipment support at least 4000 security associations per destination?

(1) If not, how many can it support per destination?

(2) Can the equipment support the use of a different key for each VLAN?

n. Could you provide a rough approximation of the unit selling price of the listed types of equipment, assuming NATO acquisition of

(1) 50 devices,

(2) 100 devices, or

(3) 500 devices?

o. Are the cryptographic algorithms and communication protocols used by these devices for establishing its security associations based on publicly available standards (e.g. MEF 6.2, 802.1AE MACSec)? If so, which?

p. Could you provide a description, and a rough approximation of the cost, of the management center (if any) that comes with this equipment?

(1) Can you provide the full specification for the management interface interactions between the devices and the management center to NATO as part of the equipment procurement?

(2) Are the management center interactions based on publicly or commercially available standards? If so, which?

q. What types of warranty and non-warranty maintenance support does your company provide on these products? For non-warranty support, would it be possible to provide a rough cost estimation?

r. Which of these equipment types is expected to have completed SECAN evaluation around the time of IFB for handling classified information up to the classification level of

(1) NATO Secret (NS), or

(2) Cosmic Top Secret (CTS)?

s. Are any of the equipment types already nationally approved for use up to NATO Restricted or above or the national equivalent?

t. Provided that the NATO Key Management Interoperability Specification (ISpec) is completed by the end of 2018, do you expect the management interface of the listed equipment types to be ready to meet the requirements stated in the specification at the time of IFB? Please specify per listed device type.

Should devices implementing the NATO Key Management ISpec not be available on the market before issuance of the IFB, the NCI Agency is considering offering a development contract for the required equipment. Given such a contract, the selected vendor would be granted a given amount of time in order to modify its existing equipment in order to have it meet the full set of requirements as specified in the IFB, followed by (an updated) SECAN evaluation for the modified product.

u. In the case that the products indicated earlier are expected to not yet implement the full NATO Key Management ISpec at the time of IFB:

(1) What would be the projected development time needed in order to implement the missing functionalities?

(2) What would be the estimated cost increase per product given such a development effort (for the procurement of 50, 100, or 500 devices)?

v. NATO will in the near future start requiring all new equipment to implement NATO-approved quantum resilient algorithms, in particular for key establishment and the creation of digital signatures.

(1) Is the equipment indicated earlier expected to implement (possibly non-NATO approved) quantum resilient algorithms at the time of IFB?

(2) If so, which?

(3) Will the equipment be able and come with sufficiently scaled hardware to update the included algorithms to NATO-selected quantum resilient algorithms in the future through a software/firmware update without loss of functionality (e.g. throughput speed, number of associations, etc)? Please clarify the current/expected situation as needed.

(4) Assuming that NATO will select public algorithms for key exchange and signature for Type B use and classified algorithms for key exchange and signature for Type A use, could you provide a rough

cost indication for the provision of the required (software-based) equipment update?

(5) Is it possible to replace any embedded authentication signatures within the equipment at a future date, possibly through a limited hardware module replacement? If so, please clarify.

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Annex B - Industry Recipients

October 8, 2018 4:41 PM

Country	Vendor
BELGIUM	ATOS
	BE NETWORKS
	Brevco Services S.C.S.
	Computer Sciences Corporation
	ComputerLand S.L.M. S.A.
	Cybertrust Belgium NV
	Damovo Belgium NV/SA
	Dimension Data Belgium
	Ericsson sa/nv
	European Datacomm NV
	Getronics Belgium SA/NV
	Gillam-FEI
	NextiraOne
	Nijkerk Computer Solutions BeNeLux
	RHEA System S.A.
	SAIT
	Telenet C-Cure
	Telindus NV
	Thales Alenia Space Etca s.a.
	Thales Belgium S.A.
	Thales S.A.
	U2U Consult
	Uniskill NV
	Unisys Belgium S.A.
BULGARIA	KRISTANEA LTD.
	Lirex BG Ltd
	Telelink EAD
CANADA	ADGA Group Consultants, Inc.
	CloudMask
	General Dynamics Canada Ltd.
	Resul Control Systems Ltd.
CROATIA	CROZ d.o.o. za informaticku djelatnost
	INsig2 d.o.o.
CZECH REPUBLIC	Damovo Ceska republika s.r.o.
	Skill s.r.o.
DENMARK	Danoffice ApS
	Dencrypt A/S
	SAAB Danmark A/S
	Terma A/S
ESTONIA	Viking Security AS

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Annex B - Industry Recipients

October 8, 2018 4:41 PM

Country	Vendor
FRANCE	ASTRIUM SAS
	Airbus Defence and Space SAS
	Altran technologies_ASD Paris
	Bull SAS
	CS Systèmes d'Informations
	MARLINK SAS
	Sagem Defense Securite
GERMANY	Airbus Defence and Space GmbH(ex EADS GmbH)
	Bell Computer-Netzwerke GmbH
	CGI (Germany) Gmbh &Co.KG
	CSC Deutschland Solutions GmbH
	Cordsen Engineering Gmbh
	FREQUENTIS Deutschland GmbH
	GTSI Corp.
	IABG mbH
	OHB-System AG
	Roda Computer GmbH
	Rohde & Schwarz GmbH & Co. KG
	Secusmart GmbH
	T-Systems International GmbH
	Thales Electronic Systems GmbH
	XORTEC GmbH
GREECE	European Dynamics SA
	Hellenic Aerospace Industry (SA)
	Intracom Defense Electronics S.A.
	Space Hellas
HUNGARY	Fercom Ltd.
	Honvédelmi Minisztérium Elektronikai,Logisztikai és Vagyonkezelo zrt.
	Hubel Hungarian & Belgian Ltd.
	Synergon Information Systems plc- Synergon Integrator Kft
ITALY	Finmeccanica SpA
	Fondazione FORMIT
	Italtel
	NA.EL. SRL
LATVIA	DATI Group, LLC
	Datakom LTD
	SIA Fima
LITHUANIA	Blue Bridge
	JSC FIMA (UAB)
NETHERLANDS	Avensus Nederland BV

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Annex B - Industry Recipients

October 8, 2018 4:41 PM

Country	Vendor
NETHERLANDS	Compumatica Secure Networks B.V.
	Crosscheck Networks Nederland b.v.
	FOX-IT BV
	Gannexion B.V.
	Global Crossing
	PQR bv
	PointGroup BV
	Quint Wellington Redwood
	ROHDE & SCHWARZ BENELUX BV
	Sectra Communications BV
	Stork Fokker AESP BV
	SurCom International BV
	UNI Business Centre BV
	WBC Innovations BV
NORWAY	3D perception AS
	Atea Norge AS
	Evry
	Kongsberg Defence & Aerospace AS
	Saab Technologies Norway AS
	Umoe IKT
POLAND	Atende S.A.(prior ATM S.A.)
	Consortia Sp. z o.o.
	Enamor Sp. z.o.o
	MAW Telecom Intl SA
	Military Communication Institute
	Newind sp. z o.o.
	QUMAK S.A. (joint-stock company)
	S&T Services Polska Sp. z o.o.
	Siltec Sp. z.o.o.
	Unizeto Technologies SA
	WASKO S.A.
	Zbar Phu Mariusz Popenda
ROMANIA	ATOS Convergence Creators SRL
	Romsys SRL
	UTI Grup S.A.
SLOVAKIA	Aliter Technologies a.s
	Quadriq, a.s.
SPAIN	Alma Technologies s.a.
	Epicom S.A.
	Indra Sistemas S.A.
	Safelayer Secure Communications, S.A.
	Tecnobit S.L

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Annex B - Industry Recipients

October 8, 2018 4:41 PM

Country	Vendor
SPAIN	
TURKEY	ASELSAN Elk. San ve Tic. A.S.
	C TECH Bilisim Tek. San ve Tic A.S.
	TUBITAK BILGEM
UNITED KINGDOM	Airbus DS Limited
	Audax
	Avanti Communications Group plc
	BAE Systems Applied Intelligence Ltd.
	Fujitsu
	GGR Communications Ltd UK
	General Dynamics United Kingdom Limited
	Info-Assure LTD.
	Rheatech Limited
	Secure Systems & Technologies Ltd. (SST)
	Software Box Ltd.
	Sopra Steria
	Spectra Group (UK) Ltd
	Thales UK Limited
	Ultra Electronics CIS Ltd.
	ViaSat UK
	Vocality International Ltd
	Voice Concepts Ltd.
UNITED STATES	AATD, LLC
	ADCI of Delaware, LLC
	ALTIMA GROUP INTERNATIONAL, INC. (AGI)
	AS GLOBAL
	AT&T Government Solutions, Inc.
	AVI Systems Inc.
	Advanced Programs Inc. (API)
	Affigent, LLC
	BAE Systems Information Solutions Inc.
	Comtech Mobile Datacom Corporation
	DRS Technical Services, Inc.
	EMW, Inc.
	Emerging Markets Communications (EMC)
	Equant
	Extreme Networks, Inc.
	Harris Corporation - RF CommunicationsDivision
	Honeywell Technology Solutions Inc.
	Hyperion, Inc.
	ISSTSPi
	Intelligent Waves LLC
	K3 Enterprises, Inc.
	L-3 National Security Solutions, Inc.
	LEIDOS Inc

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Annex B - Industry Recipients

October 8, 2018 4:41 PM

Country	Vendor
UNITED STATES	ManTech International Corporation
	Mutual Telecom Services Inc. d/b/a BlackBox Network Services Government Solution
	Pegasus Professional Services LLC
	PlanIT Group LLC
	Raytheon CompanyNetwork Centric Systems
	SAIC
	Spacenet Integrated Government Solutions
	Strategic Operational Solutions, Inc
	Systems Research and ApplicationsCorporation
	Technology and Management InternationalLLC (TAMI)
	TeleCommunication Systems, Inc.
	The Boeing Company
	URS Federal Services International Inc
	UXB Defense, Inc
	ViaSat, Inc.
	Vykin Corporation
	Wave Systems Corp.
	World Wide Technology Inc.
	XSAT USA
	XTec, Incorporated
Total :	**186**