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25 October 2022

Market Survey - Request for Information

Automated Joint Interface Control Officer (JICO) Tactical Data Link (TDL) Tools

NCI Agency Reference: MS-CO-115810-JICO

The NATO Communications and Information Agency (NCI Agency) is seeking inputs from Nations and their Industry regarding the Development of an **Automated Joint Interface Control Officer (JICO) Tactical Data Link (TDL) Tool.**

Market Survey Point of Contact (POC):
Mr. Martin Steenwege
E-mail: CO-115810-JICO@ncia.nato.int

To : See Distribution List

Subject : Request for Vendors for NCI Agency Market Survey Request Automated Joint Interface Control Officer (JICO) Tactical Data Link (TDL) Tool

1. The NATO Communications and Information Agency (NCI Agency) is seeking inputs from Nations and their Industry regarding the fabrication of an Automated Joint Interface Control Officer (JICO) Tactical Data Link (TDL) Tool that can provide a source for deconflicted planning and tasking processes, supporting the NATO requirement.

2. The aim of this Market Survey is to determine the feasibility to procure a Commercial Off-The-Shelf (COTS) or Government Off-The-Shelf (GOTS) software meeting the JICO Planning/Tasking TDL Tool requirements within the internal market of the Alliance members.

3. Respondents are requested to reply via the Questionnaires at Annexes B and C. Other supporting information and documentation (technical data sheets, non-binding product pricing, marketing brochures, descriptions of existing installations, etc.) are welcome.

4. The NCI Agency reference for this Market Survey Request is **MS-CO-115810-JICO**, and all correspondence and submissions concerning this matter **must** reference this number within the documentation and email or postal subject line.

NATO Communications and Information Agency
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1110 Brussels
Belgium
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5. The broadest possible dissemination by Nation of this Market Survey to their qualified and interested industrial base is requested.

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

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 NCI Agency.

8. Responses are due to NCI Agency no later than **24 November 2022**.

9. Please send all responses via email to the following NCI Agency POC:
For Attention of: Mr. Martin Steenwege, Senior Contracting Officer
Email: CO-115810-JICO@ncia.nato.int

10. Product demonstrations or face-to-face briefings/meetings with Industry may be called 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.

11. Any response to this request shall be provided on a voluntary basis. 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.

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/participation in this Market Survey request is appreciated.

FOR THE CHIEF OF ACQUISITION:

Martin Steenwege
Senior Contracting Officer

Annexes:

A. Technical Overview
B. Questionnaire
C. Safety Questionnaire
D. Distribution List

ANNEX A

TECHNICAL OVERVIEW - AUTOMATED JOINT INTERFACE CONTROL OFFICER (JICO) TACTICAL DATA LINK (TDL) TOOLS

INTRODUCTION

1. Today's TDL environment has vastly evolved from a decade ago and continues to increase in complexity rendering NATOs current ways of doing business ineffective. Key factors driving the increased complexity include security and data exchange improvements, new technologies, and an increasing number of national platforms becoming link capable but with varying capabilities.

2. Security and data exchange improvements include the new Minimum Military Requirement (MMR) maximizing the use of Joint Range Extension Advanced Protocol –C (JREAP-C) for securely sharing the Recognised Air Picture (RAP), the Link-16 Crypto Modernisation effort that multiplies the number of available crypto keys, and need for machine-to-machine exchanges.

3. Together, the increasing complexity of the TDL environment and the need for dynamic planning has yielded the old way of doing business ineffective. NATO has identified the need for automated JICO tools to enable TDL planning and tasking to keep pace with the Air C2 and Air Tasking Order (ATO) cycle, reduce errors, increase efficiency and effectiveness, and enable NATO to utilize Link-16 Concurrent Multi Receive (CMR) and Network Enabled Weapon (NEW) capabilities

BACKGROUND

4. NATO's new MMR for secure RAP exchange focuses on transitioning ground Command and Control (C2) sites away from Link-1 and towards JREAP-C. Adding these sites to the already existing C2 nodes creates a very large and complex network with an even larger number of data exchanges.

5. Additionally, Nations continue to upgrade their platforms to be both JREAP-C capable and serve as data forwarders.

6. Automated tools are needed to assist with network configuration then simulate and analyse the TDL architecture to greatly lower the probability of issues (prevention). Additionally, tools can significantly lower troubleshooting time.

7. New Link-16 enhancements like Crypto Modernisation, CMR and NEW add to the complexity by making deconfliction and architecture designs significantly more challenging.

8. Automated tools exist and are a perfect mechanism for dynamically deconflicting and optimizing the use of interface units, track blocks, network ports, and load files then producing Optask Link (OTL) messages in pace with the cycle. Additionally, such tools are also able to export XML enabling machine-to-machine exchange eliminating human-induced errors.

SUMMARY OF THE TECHNICAL REQUIREMENTS

TARGET CHARACTERISTICS

Automated JICO tools should:

9. Provide automated OTL production processes ensuring resource allocations are accurate and deconflicted down to the unit level (Interface Unit, Joint Unit, Track Blocks, Network Load Files, Crypto assignments, and IP/port assignments).

    a. Assign and manage fully deconflicted, Interface Unit assignments automatically or manually. Be able to auto-assign ranges by service and/or platform.
    b. Assign and manage fully deconflicted, Track Block assignments automatically or manually. Be able to auto-assign ranges by service and/or platform.

c. Assign and manage fully deconflicted, Unit Reference Numbers automatically or manually.
d. Create, modify, and save Crypto Short Title List.

10. Produce a valid, fully deconflicted, and properly formatted/compliant OTL message.

    a. Fully compliant with the latest standards:
        i. APP-11(D)(1) version 5.2
        ii. MIL-STD-6040B USMTF
    b. Create and publish multiple, fully deconflicted, OTL messages in human-readable text.
    c. Ability to import and export XML to support machine-to-machine loading into other NATO or national applications.
    d. Create and save draft OTL messages for later publication.
    e. Create, modify, save, and export a Data Link Network "cutsheet" that can be accessed by MS Excel.

11. Fully support the following TDL types, heading segments, and subordinate message sets: Link-1, Link-11, Link-11B, ATDL-1, Link-16, Link-22, SADL, Satellite Link-16, JRE (JEAP-A/B/C), Combat Net Radio (CNR), and VMF. Note: there is no current standard for VMF but relevant data as prescribed in APP-11 must be included in the OTL.

12. Fully support all "mandatory, conditional, or operationally determined" segments and sets identified in latest versions of the APP-11 and MIL-STD-6040B.

13. Fully support new and legacy Link-16 capabilities.

14. Support creation of multiple databases for exercises and additional operating areas.

15. Create, manage, and display Network Filters on geographic maps.

16. Create and store Unit Data for later retrieval.

17. Support TDL Analysis to support identification of potential data looping when planning JREAP networks, should include forwarding and filtering considerations.

<u>COLLABORATION, AND OPERATING SITE REQUIREMENTS</u>

18. Accessibility and Collaboration

    a. Operating locations will need to access their JICO tools locally.
    b. Operating locations will need the ability to share plans or messages created using the JICO tools between sites.
    c. Software is intended to operate independently or standalone from other C2 applications.

19. Operating Locations, Site Requirements, and Personnel

    a. Software would be operated in up to 6 different locations.
    b. It should be accessible by up to 16 personnel within 8 simultaneous lessons.

<u>HUMAN MACHINE INTERFACE</u>

20. The JICO automated tools User Interface should be designed in accordance with common look and feel standards.

21. The JICO automated tools end-user's interactions should be designed and improved by User Experience.

22. The JICO automated tools and related documentation should be provided in English.

SECURITY

23. The JICO automated tools would be operated in NATO unclassified and NS networks and as such should be compliant with the NATO security directives such as:
    - AC/322-D/0048-REV3 (INV) Technical and Implementation Directive on CIS Security
    - AC/322-D(2019)0041 (INV) Technical and Implementation Directive on Introducing Secure Systems and Solutions Using Commercial Off the Shelf (COTS) Products into NATO
    - AC/35-D/2003-REV5 Directive on Classified Project and Industrial Security

and must pass the NATO security accreditation process.

SAFETY

24. The Safety assessment of the candidate JICO automated tool (and, therefore, their suitability to safely support the NCIA Technical Requirements listed in this section) will be performed through analysis of the SW Supplier's responses to the Safety Questionnaire at Annex C.

CONFIGURATION MANAGEMENT

25. The JICO automated tools and its technical documentation should be compliant with international configuration management standards, preferably with NATO STANAG 4427 or EIA-649.

QUALITY ASSURANCE

26. The supplier shall demonstrate that the design and development of the COTS products to be delivered are performed in adherence with the organizational quality management system - preferably ISO 9001:2015 and / or Allied Quality Assurance Publications (AQAP) certified. The supplier shall provide a Certificate of Conformity (CoC) for the COTS delivered, confirming their compliance with the requirements established contractually.

TRAINING

27. Training on the use and maintenance of the JICO automated tools should be provided. It is foreseen that this will be a single event at one of the designated sites. The training and its associated documentation should allow the trainees to re-conduct the training at other sites.

ANNEX B

QUESTIONNAIRE

Organisation Name:

_____

Contact Name & Details:

_____

Guidance Notes

- Please **DO NOT** alter the questions as included herein. Should you believe additional or differing data be of interest to NATO, please add such information on a continuation sheet.
- Please **DO NOT** enter any company marketing or sales material as part of your answers within this market survey. Please submit such material as enclosures with the appropriate references within your replies. If you need additional space, please use a continuation sheet.
- Please **DO** try and answer the relevant questions as comprehensively as possible.
- All questions apply to Commercial or Government respondents as appropriate.
- 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. **Is this JICO TDL planning automated tool already nationally approved and or certified for use at the national equivalent level?**

2. **Is this JICO TDL planning automated tool already in use in a NATO country?**

3. **Could you provide a short description of your company's experience in the past in TDL Planning specifically?**

4. **Could you provide a ROM procurement and maintenance cost (yearly basis)?**

5. **Does your equipment support the requirements described in bullets 9 to 27 above? (Please fill-in the table below for this purpose)**

MS ref	Compliancy	Justification/comments
9.a	Yes/No/Partial	
9.b		
etc		

6. **Does your company provide in service technical support? If so, develop service provided.**

7. **Does your company provide training for the usage of the tool? If so, develop training provided (e.g. Computer Based Training, Instructor training, etc.).**

8. **Safety Questionnaire can be found in Annex C.**

ANNEX C

SAFETY QUESTIONNAIRE

(1) The questionnaire below is intended to elicit information from COTS Suppliers that may be of benefit to the safety analysis.

(2) Sections 1, 2, 3 are intended to capture general information on the product

(3) Section 4 is intended to capture information on the product configuration, especially for use in safety related / high integrity applications.

(4) Section 5 is intended to capture information on the development processes and Company qualifications for this particular product.

(5) Sections 6 and 7 are intended to capture Product Installed User Base data and Field Fault Data & Metrics, which are especially important in supporting the assumptions made for the quantitative safety analysis.

#	Question	Response	Referenced Documents	Comments
1	**Product and Support Contract**			
1.1	What is the Product being evaluated?			
1.2	Who is Vendor?			
1.3	Who is Supplier if different?			
1.4	What support arrangements are in place for NCI Agency?			
1.5	User's release: What release is currently offered to NCI Agency?			
1.6	What is the latest supported release?			
1.7	Are there plans to upgrade to the latest supported release?			
1.8	Is User's release (see 1.5) still supported?			

#	Question	Response	Referenced Documents	Comments
1.9	How long will support of User's release be available?			
2	**Nature of Product**			
2.1	Does the Product include hardware? – If so, what are the key hardware components?			
2.2	Does the Product include significant amounts of firmware? – If so, what are the key firmware components?			
2.3	Does the Product include software? – If so, what are the key software components?			
2.4	How much software is included (KLOC)?			
2.5	How much firmware is included?			
3	**Product Documentation**			
3.1	What User Documentation exists? *(Put here the list of Manuals delivered with the Product package)*			
3.2	Does User documentation include fault diagnosis and recovery guidance?			
3.3	Does User documentation include installation and test guidance?			

#	Question	Response	Referenced Documents	Comments
4	**Product Installation Options**			
4.1	Is the Product User configurable?			
4.2	What configuration has to be performed for use in NCI Agency?			
4.3	Can configuration significantly change the functionality available?			
4.4	Are there any configuration options recommended by the Vendor for using his product in safety related / high integrity applications? *(Put here the details on the recommended options)*			
4.5	Are installed configuration choices reviewable and testable by User?			
5	**Product Development Processes**			
5.1	Is information available on the product development processes used for this particular software product? Can NCI Agency get a copy of the procedures used (under a Non Disclosure Agreement)?			

#	Question	Response	Referenced Documents	Comments
5.2	Is the developer accredited to ISO 9000, CMM level for this particular Product, or equivalent?			
5.3	Is it possible for NCI Agency to perform a safety review and audit of the processes used to develop this Product? *(NOTE: Safety review and audits are similar in nature to a Quality audit)*			
5.4	Has this Product been certified to any given Safety standards (such as IEC61508 Part 3, or DEF STAN 00-55 Requirements for safety related software in defence equipment)?			
5.5	Has this Product been certified to any given Security standards?			
6	**Product Installed User Base**			
6.1	How many installations of this specific Product release (see 1.5) are in place world-wide?			
6.2	How many hours of use does this imply typically per year (user's release see 1.5)?			
6.3	How many installations of the latest release (if different)?			

#	Question	Response	Referenced Documents	Comments
6.4	How many hours of use for latest release?			
6.5	How long has the User's release of the product (see 1.5) been in the field?			
6.6	How long has the latest release been in the field?			
6.7	Is this product used in safety related / high integrity systems (e.g. military or civilian ATC, finance, etc.) comparable to the NCI Agency's intended use? *(Put here the list of related companies / systems)*			
7	**Field Fault Data & Metrics**			
7.1	Are field fault metrics available?			
7.2	What is the average number of faults per installation per year?			
7.3	How does it compare with RAM predictions (if any)?			
7.4	How different in size/complexity is the User configuration from typical configurations?			
7.5	How many known faults are unfixed in the User's product release?			

#	Question	Response	Referenced Documents	Comments
7.6	How many faults are unfixed in latest release?			
7.7	Is the list of outstanding faults available to customers?			
7.8	Do failure rate / MTBF predictions for the Product include both hardware and software?			

ANNEX D

DISTRIBUTION LIST FOR MARKET SURVEY MS-CO-115810-JICO

NATO Delegations (Attn: Investment Committee 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
The Netherlands	1
North Macedonia	1
Norway	1
Poland	1
Portugal	1
Romania	1
Slovakia	1
Slovenia	1
Spain	1
Türkiye	1
United Kingdom	1
United States	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
The Netherlands	1
North Macedonia	1
Norway	1
Poland	1
Portugal	1
Romania	1
Slovakia	1
Slovenia	1
Spain	1
Türkiye	1
United Kingdom	1
United States	1