

NCIA/ACQ/2021/115588
12 November 2021

Market Survey-Request for

Enterprise Architecture (EA) Tool-Set

NCI Agency Reference: MS-115588-EA Tool-Set

The NCI Agency is seeking information from Nations and their Industry in order to assess the feasibility of the delivery of a Commercial-Off-The-Shelf (COTS) Enterprise Architecture tool-set.

NCI Agency Point of Contact
Senior Principal Assistant Wilfried KRUSE

E-mail: Wilfried.Kruse@ncia.nato.int

To: See Distribution List

Subject: NCI Agency Market Survey
Request for information MS-XXX-EA Tool-Set

1. NCI Agency requests the assistance of the Nations and their Industry to identify available Commercial-Off-The-Shelf (COTS) solutions to meet the requirements for an Enterprise Architecture Tool-Set.
2. This Market Survey is being issued to identify potential solutions and possible suppliers.
3. The broadest possible dissemination by Nations of this Market Survey Request to their qualified and interested industrial base is requested.
4. 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.
5. The NCI Agency reference for this Market Survey Request is MS-115588 EA Tool-Set, and all correspondence and submissions concerning this matter should reference this number.

6. A summary of this emerging requirement is set forth in the ANNEX B attached hereto.
7. Other supporting information and documentation (technical data sheets, marketing brochures, catalogue price lists, descriptions of existing installations, etc.) are also desired.
8. The Market Survey will **ONLY** be assessed on the responses to questions in ANNEX C – Market Survey Questionnaire.
9. Responses are due back to NCI Agency no later than **17:00 hours Brussels time on 05 January 2022.**
10. Please send all responses, via email, using MS-115588-EA Tool-Set in the title of the email to: Wilfried.Kruse@ncia.nato.int
11. The Agency reserves the right to request a solution demonstration of the described solution. However, given the current global landscape, any solution demonstration will be delivered via video conferencing tool at the discretion of the Market Survey Respondent.
12. 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.
13. 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.
14. Your assistance in this Market Survey request is greatly appreciated.

For the Director of Acquisition

Gael Craver
Principal Contracting Officer

Enclosures:

1. ANNEX A - Distribution List
2. ANNEX B - Market Survey Requirements
3. ANNEX C - Market Survey Questionnaire
4. ANNEX D - Enterprise Architecture Platform Requirements

ANNEX A.**Distribution List for Market Survey****NATO Delegations (Attn: Military Budget Committee or Infrastructure Adviser):**

Albania	1
Belgium	1
Bulgaria	1
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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
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Slovakia	1
Slovenia	1
Spain	1
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United States	1
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Italy	1
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Lithuania	1
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The Netherlands	1
North Macedonia	1
Norway	1
Poland	1
Portugal	1
Romania	1
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United States (electronic copy to brussels.office.box@mail.doc.gov)	1

Distribution for information

NATO HQ

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NATO HQ C3 Staff Attn: Executive Co-ordinator	1

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ACQ Director of Acquisition	1
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EBA Program Manager	1

ANNEX B.

MARKET SURVEY REQUIREMENTS FOR ENTERPRISE ARCHITECTURE TOOL-SET

1. Scope

- 1.1. NCI Agency is seeking market survey regarding current cost effective solutions for an Enterprise Architecture (EA) toolset. This is to support NCI Agency's internal staff in their respective roles as Enterprise Architects, Business Process Analysts, Segment Architects, Solution Architects, Military CIS Planners and Decision Makers as they conduct planning, analysis, design and execution along the C3 life cycle.
- 1.2. The EA toolset used by the Agency are to support decision making by capturing and connecting context and information across business, information, solution and technology domains.

2. Current Solution

- 3.1. The Agency is currently using **SoftwareAG's ARIS 10.0.9** as its main EA platform.
- 3.2. The software is hosted on a central server supported by a database server (MS SQL Server 2016). Users access the service using thick clients installed on laptops running Windows 10 Enterprise. User and tenant management is via a web interface to the server. Administration can be also carried out directly via remote desktop connection to the server.
- 3.3. The scope of the user community currently constitutes Enterprise Architects, Business Process Analysts and Segment Architects (specialising in specific technical parts of the Enterprise Architecture). The Agency is contemplating establishing an internal Architecture as a service and anticipates expanding the user community with Decision Makers and Military CIS Planners and to either directly manage or interface with the technical architectures of Solution Architectures, dependent on the capabilities of the toolset.
- 3.4. The current platform is deployed operational on 2 different and physically separated networks.

3. Requirements/Functionalities

- 3.1. The NCI Agency's goal is to try and find a COTS EA platform which will enable it to continue to support the current EA community with an EA toolset and grow the practice of EA and its use in support of decision making.
- 3.2. Please refer to ANNEX D and focus on "Must Haves" requirements.

4. Life Cycle information

- 4.1. The system design should minimise total system life cycle costs, especially its future Operations and Maintenance (O&M).

5. Environment

5.1. The software and hardware environment in NATO are in the process of being upgraded by the IT Modernisation project based on a modern data centre approach. However, as a minimum, the EA platform considered must be able to be installed and run on-premise in the following environment:

- NCI Agency Server Environment
 - Windows Server 2016
 - MS SQL 2016
 - MS SQL Studio 2017
 - Virtualization technology varies based on network but is based on VMWARE vCenter and vSphere 6.5 (current) or 7 and Virtual Cloud Foundation (near future for all networks).
- Support multi - identity provider environment (multiple active directory forests) and support ADFS for single-signon.
- NCI Agency Client Environment (typical)
 - Intel Core i5-10310U CPU @ 2.21 GHz
 - Resolution 1920x1080
 - 8GB RAM
 - Windows 10 Enterprise 1909

6. Users

6.1. The Agency is looking to use the EA toolset to support the following maximum number and type of users:

- Non-technical users/viewers: approx. 200 max simultaneously for different databases across an organisation of 15,000
- Enterprise Architects : approx. 10
- Business Process Analysts : approx. 10
- Segment Architects (specialising in specific technical parts of the enterprise Architecture): approx. 10
- Solution Architects: approx. 50
- CIS Planners (implementing solution service architectures for a specific task/event): approx. 20
- Programme Management staff : approx. 30

ANNEX C.

1. Questionnaire

Organisation Name:

Contact Name & Details:

Notes:

1. 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.
2. Please feel free to make assumptions, **HOWEVER** you must list your assumptions in the spaces provided.
3. 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 a continuation sheet and clearly refer to the question being answered
4. Please **DO** try and answer the relevant questions as comprehensively as possible.
5. All questions within this document should be answered in conjunction with the summary of requirements in ANNEX B and ANNEX D.
6. All questions apply to Commercial or Government responders as appropriate to their Commercial off the Shelf (COTS) or Government off the Shelf (GOTS) products.
7. Cost details required in the questions refer to Rough Order of Magnitude (ROM) including all assumptions the estimate is based upon.

2. General Questions

1. Do you have an Enterprise Architecture Tool-Set that currently meets:
 - 1.1. The general requirements as detailed in ANNEX B?
 - 1.2. The detailed platform and toolset requirements of ANNEX D?
2. Provide details of where it is used and the number of users.

3. Is there a current in-service support package?
4. Does the support package address the following areas:
 - 4.1. Does the support package have the capability to offer support in all NATO countries, but in particular in Belgium and The Netherlands where the main NCI Agency sites are based?
 - 4.2. Does the support package provide active user groups and forums for enterprise architects?
 - 4.3. Does the support package provide responsive and dedicated resources to support EA users?
 - 4.4. Does the support package host or is it involved in EA-specific events that a user can attend?
 - 4.5. Is there an offering of toolset related consultancy, either directly or through OEM agreements or partnerships?
5. Is there training available?
 - 5.1. Is administrator training offered?
 - 5.2. Is user training offered?
 - 5.3. With respect to user training, is this linked to user certification in the ArchiMate® 3.0.1 /3.1 modelling language of the Open Group?

3. Detailed Questions

1. **COTS Solution**
 - 1.1. Please indicate the areas in ANNEX D where your solution would not meet either entirely or partially.
 - 1.2. Please describe a typical platform architecture and the typical technical requirements of your platform, including high availability and load balanced configuration
 - 1.3. Please describe the database support that your platform can utilise (e.g. Microsoft SQL Server, Oracle, Postgress etc).
 - 1.4. Do you currently offer an on premise solution? Do you intend to continue to support said on premise solution for at least the mid-term future (3-5 years)?
 - 1.5. Please describe the packaging and deployment process for the on premise solution and how the software is provided.

- 1.6. Please describe the method of provision and frequency by which security and other patches are made available.
- 1.7. Please briefly describe how Architectures are built using your platform and describe the flexibility and complexity supported (e.g. user management at the project and object level, database/project management, architecture artefact management, architecture methods supported, filters etc).
- 1.8. Please balance that by describing any limitations on flexibility and complexity.
- 1.9. What standards and frameworks does your solution support (notational, architectural and industry)?
- 1.10. Please describe the data import and export mechanisms and any API supported
- 1.11. Please describe the reporting and scripting mechanisms available.
- 1.12. Please describe how user security is implemented.
- 1.13. Please describe the typical regimes and methods used for backup, business continuity and archiving.
- 1.14. Please describe any out-of-the-box administrative features provided by your tool.
- 1.15. Please provide us with any additional capabilities of your COTS solution that go above and beyond those included in ANNEX B and ANNEX D.
- 1.16. Advantages & disadvantages of your product/solution/organization.
- 1.17. Any other supporting information you may deem necessary including any assumptions relied upon.

2. Rough Order of Magnitude (ROM) price data

- 1.1. Please provide a ROM pricing data for your EA Toolset. You can assume pricing based on the indicated approx. maximum number of users and user types in ANNEX B.
- 1.2. Please provide details and pricing for the Annual O&M support package of the tool based on the same number and types of users.

ANNEX D.

Enterprise Architecture Platform Requirements

1. As a minimum, the Enterprise Architecture tools and platforms considered must include the following core capabilities:
 - 1.1. Be Repository-based
 - 1.2. Include integrated modelling capabilities across all architecture viewpoints.
 - 1.3. Support a range of presentation views for different types of stakeholders
 - 1.4. Provide a range of architectural, business design and decision analysis capabilities
 - 1.5. Include features to administer user access rights, security and tool features
 - 1.6. Be configurable for different types of users and environments
 - 1.7. Support standards and frameworks (notational, architectural and industry), while enabling customization according to user needs
 - 1.8. Deliver all features and functions in a readily usable, intuitive manner

Core Capabilities

1.1. Core Capability: Be Repository-based

Requirements ID	Description	MoSCoW Priority
EA_CORE_1.1.1	Provide options for central cloud hosting and/or on traditional server/client infrastructure	Should
EA_CORE_1.1.2	Provide the ability to import and export whole or part of a repository, to enable transfer between disconnected networks	Must
EA_CORE_1.1.3	Provide the ability to export and host part of repository locally on a client and reimport to central repository	Must
EA_CORE_1.1.4	Enable the check-out and check-in of models/diagrams or Model/diagram locking to authorised users within a project database within a repository	Must
EA_CORE_1.1.5	Enable the authorised user the ability to edit the checked-out/locked model	Must
EA_CORE_1.1.6	Enable repository to inform non-editing users that a model/diagram is checkout/locked	Should
EA_CORE_1.1.7	Enable simultaneous read-only access to all authorised users of models/diagrams within a project database within a repository. This should apply whether checked-out/locked or not	Must

1.2. Core Capability: Include integrated modelling capabilities across all architecture viewpoints

The meta-model of the toolset must cover and also enable relationships between architecture viewpoints covering the Business, Information, Solution and Technical Architectures.

Requirements ID	Description	MoSCoW Priority
EA_CORE_1.2.1	The meta-model of the toolset must cover Business architecture, which guides people, process and organizational change	Must
EA_CORE_1.2.2	The meta-model of the toolset must cover Information architecture, which focuses on the consistent sharing of information across the enterprise	Must
EA_CORE_1.2.3	The meta-model of the toolset must cover Solution architecture, which develops a direction for managing the portfolios of to-be solutions	Must
EA_CORE_1.2.4	The meta-model of the toolset must cover Technical architecture, which focuses on evolving the technical infrastructure	Must
EA_CORE_1.2.5	The meta-model of the toolset must enable relationships between objects and models in the Technical architecture, Solution architecture, Information architecture and Business architecture	Must

1.3. Core Capability: Support a range of presentation views for different types of stakeholders

Enable tailorable output for decision makers and those staff involved in programme management:

Requirements ID	Description	MoSCoW Priority
EA_CORE_1.3.1	Provide high-quality graphics that communicate the desired message to Nontechnical stakeholders.	Must
EA_CORE_1.3.2	Provide presentation views within the client or on-line publisher that draw directly from data in the repository.	Must
EA_CORE_1.3.3	Provide the ability to perform report scripting using the data held in the repository to produce MS Office products.	Must
EA_CORE_1.3.4	Provide an export of navigable html output for deployment onto other platforms.	Must
EA_CORE_1.3.5	Provide the ability to embed hyperlinks to internal and external information sources and references.	Must
EA_CORE_1.3.6	Provide the ability to tailor the symbols of selected architectural viewpoints for non-technical audiences.	Must
EA_CORE_1.3.7	Provide the ability to embed external graphics into models/diagrams	Must
EA_CORE_1.3.8	.Provide the user with the ability to selectively publish models/diagrams and data (objects and their attributes) to internal business portals (i.e. MS SharePoint). For selected data, also enable updates to be made from portals back to the attributes of existing objects held in the repository.	Must
EA_CORE_1.3.9	Provide the ability for non-technical users to make comments and suggestions to the Architects via a published output that can then be processed and implemented in the original EA tool. Provide a system within EA tool to centrally manage and track the status of such comments and actions.	Must

Provide modelling environment for Enterprise Architects who needs to:

Requirements ID	Description	MoSCoW Priority
EA_CORE_1.3.10	Manage the models/diagrams of the architecture viewpoints that describe the enterprise.	Must
EA_CORE_1.3.11	Oversee the management of architecture catalogues held within a master EA repository.	Must
EA_CORE_1.3.12	Define the scope of a project within a programme.	Must
EA_CORE_1.3.13	Create repositories for each project populated with an existing start-point of relevant models/diagrams of viewpoints and the associated objects from architecture catalogues held within a master EA repository.	Must
EA_CORE_1.3.14	Integrate models/diagrams of architecture viewpoints arising from a project, with the associated objects, back into a master EA repository and repository for a programme.	Must

Provide modelling environment for Business Process Analysts who need to:

Requirements ID	Description	MoSCoW Priority
EA_CORE_1.3.15	Define/analyse roles, organisations, skill requirements, business processes, business interfaces, information creation/management/exchange and interfaces/interaction with technical services.	Must
EA_CORE_1.3.16	Prepare, refine and present products for consumption by nontechnical senior decision makers.	Must
EA_CORE_1.3.17	Document the business and information architecture viewpoints within the context of the given scope of a project.	Must
EA_CORE_1.3.18	Manage business and information architecture catalogues held within a master EA repository.	Must

Provide modelling environment for Segment Architects who need to:

Requirements ID	Description	MoSCoW Priority
EA_CORE_1.3.19	Define technical interfaces and standards	Must
EA_CORE_1.3.20	Manage the roadmaps of technical capabilities and standard configurations for the enterprise.	Must
EA_CORE_1.3.21	Oversee and approve the architectures produced by Solution Architects and CIS Planners.	Must
EA_CORE_1.3.22	Manage technical architecture catalogues held within a master EA repository.	Must

Provide Modelling environment for Solution Architects who need to:

Requirements ID	Description	MoSCoW Priority
EA_CORE_1.3.23	Define, plan and implement solutions for specific services within the scope provided by enterprise architects using architecture catalogues	Must
EA_CORE_1.3.24	Manage the roadmaps of specific portfolios of capabilities and configurations for a specific service.	Must

Requirements ID	Description	MoSCoW Priority
EA_CORE_1.3.25	Provide information on the implemented solution of a specific service to the operating authorities (provision of basis for configuration items).	Should

Provide Modelling environment for CIS Planners who need to:

Requirements ID	Description	MoSCoW Priority
EA_CORE_1.3.26	Bring together solution architectures for a selected set of services to support a specific event or task within the enterprise.	Should
EA_CORE_1.3.27	Federate the NATO provided services with the services of externally provided enterprises for a specific Mission.	Should
EA_CORE_1.3.28	Manage the roadmaps and architectural viewpoints of the federated services of a specific Mission.	Should

1.4. Provide a range of architectural, business design and decision analysis capabilities

Requirements ID	Description	MoSCoW Priority
EA_CORE_1.4.1	Enable search of model/diagram, object and attributes across the repository.	Must
EA_CORE_1.4.2	Enable user defined queries of the relationships between models/diagrams, objects and attributes.	Must
EA_CORE_1.4.3	Enable the auto production of derived models/diagrams based upon these queries.	Must
EA_CORE_1.4.4	Enable the generation of graphical output (tables, graphs and decision-type diagrams) based upon these queries.	Must
EA_CORE_1.4.5	Enable the saving of these queries, model scripts and graphical output mechanisms for reuse by the user (private) and for the user community (public).	Must
EA_CORE_1.4.6	Enable the auto production of derived models/diagrams using one or more objects as the starting point, based upon the permitted object types within a viewpoint and based on the relationships held in the repository	Must

1.5. Include features to administer user access rights, security and tool features

Requirements ID	Description	MoSCoW Priority
EA_CORE_1.5.1	Enable the definition of different classes of user based on assignment to groups (e.g. system administrator, enterprise architect, modeller etc).	Must
EA_CORE_1.5.2	Enable the assignment of selective administrative permissions to user groups (e.g. repository create/delete/export, generate scripts, report etc).	Must
EA_CORE_1.5.3	Enable the assignment by user group to access specific project repositories.	Must
EA_CORE_1.5.4	Enable the assignment by user group of read/write/delete permissions for repositories, models/diagrams, objects or by a group/folder structure within a repository.	Must
EA_CORE_1.5.5	Enable the ability to make use of ADFS for user authentication.	Must

EA_CORE_1.5.6	Offer options for the assignment of licences via groups or users.	Must
EA_CORE_1.5.7	Offer options for concurrent and per-user assignment of licences.	Must
EA_CORE_1.5.8	Enable logging of user activity.	Must
EA_CORE_1.5.9	Enable the labelling and marking of the security classification (by attribute) of repositories, models/diagrams, and objects.	Must
EA_CORE_1.5.10	Provide options for back-up and restore of repositories, scripts, and user-defined queries. Ranging from undo last action, through to scripts to make routine backups to server side and to other locations on the network.	Must
EA_CORE_1.5.11	Provide mechanisms to remotely (smtp) notify system administrators of faults.	Must

1.6. Be configurable for different types of users and environments

Requirements ID	Description	MoSCoW Priority
EA_CORE_1.6.1	Enable filtering of the meta-model for specific user groups in specific project repositories, thereby restricting the available diagrams/models, objects, attributes and relationships permitted.	Must
EA_CORE_1.6.2	Enable templating of required notation for specific user groups on specific project repositories, thereby enforcing a specific notation.	Must
EA_CORE_1.6.3	Apply/enforce filtering and templating upon user access to repository.	Must

1.7. Support standards and frameworks (notational, architectural and industry), while enabling customization according to user needs

Requirements ID	Description	MoSCoW Priority
EA_CORE_1.7.1	Enable enterprise architectures to be organised and managed in accordance with The Open Group Architecture Framework (TOGAF) v9.1 Architecture Development Method (ADM).	Must
EA_CORE_1.7.2	Enable enterprise architectures to be modelled in accordance with the ArchiMate® 3.0.1 /3.1 modelling language of the Open Group. ArchiMate Tool Certification is desired.	Must
EA_CORE_1.7.3	Enable enterprise architectures to be modelled in accordance with the Unified Architecture Framework® (UAF®) of the Object Management Group®, OMG®.	Should
EA_CORE_1.7.4	The meta-model and notation of the toolset must also enable the possibility to also model in the following additional notations: <ul style="list-style-type: none"> • Business Process Modelling Notation™ (BPMN™), Version 2.0 • Unified Modelling Language®: Infrastructure, Version 2.4.1 	Must
EA_CORE_1.7.5	Enable import and export of data from repositories via the Open Group ArchiMate® 3.0.1 / 3.1 Model Exchange File Format so that ArchiMate models can be exchanged with other “ArchiMate aware” toolsets owned by external parties (i.e. toolsets used by the Architects of National entities).	Must
EA_CORE_1.7.6	Provide Open interfaces and/or APIs for data import/export to facilitate re-use of the architecture data via bespoke formats	Must

1.8. Deliver all features and functions in a readily usable, intuitive manner

Requirements ID	Description	MoSCoW Priority
EA_CORE_1.8.1	Provide the user with menus that are responsive to the filters permitted and reflect the roles assigned to the user.	Must
EA_CORE_1.8.2	Provide familiar ribbon-like menu system for commonly used functions.	Must
EA_CORE_1.8.3	Provide the modeller with visual menus offering notation symbols (and attributes) that are tailored to the user role via the filters and templates permitted for the user.	Must
EA_CORE_1.8.4	Enable auto generation/creation of models/diagrams to be generated on the fly using drag and drop functionality between models/diagrams.	Must
EA_CORE_1.8.5	Provide an intuitive (preferably visual) query builder.	Must
EA_CORE_1.8.6	Enable flexible/user tailorable display of object attributes to be displayed on a model/diagram.	Must
EA_CORE_1.8.7	Enable graphics from external sources to be incorporated into models/diagrams.	Must
EA_CORE_1.8.8	Enable hyperlinks to external sources to be referenced into models/diagrams, objects and attributes.	Must