Headquarters Supreme Allied Command Transformation Norfolk, Virginia

REQUEST FOR INFORMATION NATO's ENABLEMENT SUPPORT SERVICES (ESS), INCREMENT 2

RFI-ACT-SACT-25-30

This document contains a Request for Information (RFI) call to industry, academia and nations for their input to NATO's Enablement Support Services Capability Programme, Increment 2.

Industry, academia and nations wishing to respond to this RFI should read this document carefully and follow the guidance for responding.

HQ Supreme Allied Commander Transformation
RFI-ACT-SACT-25-30

General Information	
Request For Information No.	25-30
Project Title	NATO's Enablement Support Services (ESS), Increment 2
Due date for questions concerning related information	**9:00 am EST 23 May 2025**
Due date for submission of requested information	**9:00 am EST 20 June 2025**
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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References	n/a
All request for clarifications, questions and responses to this RFI must be sent via email to all Points of Contact reported above. Individual emails will not be accepted and should not be sent. Contracting and Technical POCs must be included in any correspondence.	

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1. INTRODUCTION

1.1. Headquarters Supreme Allied Commander Transformation (HQ SACT) is issuing this Request for Information (RFI) in order to engage with Industry, Academia, and Nations to facilitate the Enablement Support Services (ESS) programme. ESS will provide a coherent suite of functional tools for the NATO Logistics, Military Engineering and Medical Support communities. The intention is to evaluate what could be immediately available, the art-of-the-possible and state-of-the-art with respect to systems, products, services, technologies, and methodologies relating to command and control capabilities to effectively carry out multinational logistics, medical and military engineering efforts through all phases of NATO operations. Findings from this RFI will go to support NATO Governance decision making on the second increment of this Common Funded Capability Delivery programme.

1.2. This Request for Information (RFI) does not constitute a commitment to issue a future request for proposal (RFP). The purpose of this request is only to engage with Industry, Academia, and Nations to gather information in support of the Enablement Support Services programme.

1.3. 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. All information shared with ACT might be shared with contracted third parties in order to support the capability development process as needed. Provision of data, or lack of, will not prejudice any respondent in the event that there is a competitive bidding process later as part of NATO Common-Funded Capability Development.

2. BACKGROUND

2.1. The Military Committee approved the ESS Operational Requirements Statement in 2020, establishing the need to develop a coherent suite of interoperable functional services to enable logistics (LOG), military engineering (MILENG) and medical (MED) support across the full spectrum of NATO-led operations and missions. In an effort to mitigate integration risk and to maximize programmatic efficacy, the ESS programme is being implemented incrementally – focusing on phased development and the deployment of prioritized functionalities to address identified gaps in NATO's logistics, medical, and military engineering capabilities. The intent of this RFI is to collect the information required to build upon previous programmatic work and inform the development of the second increment of the ESS CPP.

2.2. ACT published an RFI in 2022 which informed the first increment of the ESS capability program plan (currently undergoing approval process). The scope of this initial increment focused upon the establishment of an initial logistics capability and improvements upon existing systems in preparation for ESS. Given the elapsed time, ACT is publishing this second RFI to inform the follow-on increment of the CPP

(Increment 2). Previous respondents are encouraged to review the current programme scope and functional descriptions in the Appendices and respond again accordingly.

This is not a formal request for submissions as part of a procurement; but rather a general request intended to determine whether any possible solutions exist that should be included in one or many alternatives during the development.

3. ESS PROGRAMME DESCRIPTION

3.1. Vision

3.1.1. The programme vision is that ESS will be NATO's premier Command and Control capability to facilitate the alliance's logistics, military engineering, and medical support, and will be employed in all aspects of NATO operations including defence, crisis management, and cooperative security, and through all phases of NATO operations, peacetime activities to crises.

3.1.2. ESS will provide NATO's logistics, military engineering, and medical communities with capabilities that will integrate data from NATO systems, member nations, commercial and open sources; provide analytical functions and ultimately support decision-making processes. ESS will operate in both fixed and mobile environments, at different security levels; ESS will be used by staff at all NATO locations and across all three level of commands (strategic, operational and tactical). ESS will enable the exchange of information within NATO and across multinational forces.

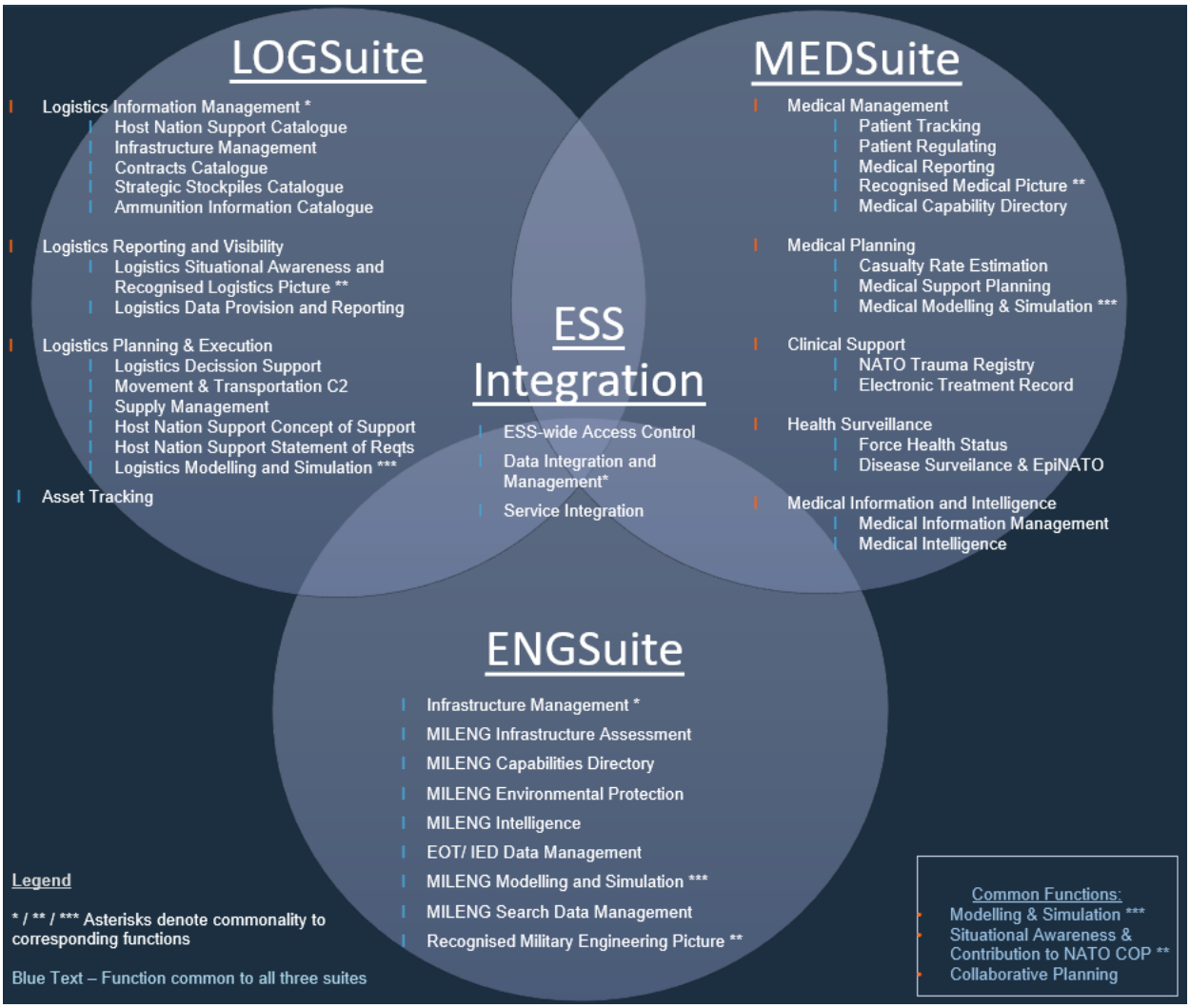
3.1.3. It is envisioned that the ESS requirements will be fulfilled by a set of functional tools to be procured incrementally and potentially adapted. ESS intends to follow a modular, iterative and incremental design and will operate as a flexible, interoperable, adaptable and scalable suite of functional tools which conform to secure systems design that utilize zero trust and Data Centric Security. The programme aims to minimize integration risks by maximizing requirement fulfilment with as few solutions as possible, as well as to promote collaboration, avoid overlap and minimise the training and support needs. To the extent feasible, there is also an aspiration to fulfil requirements that are common to all functional areas, such as 'Modelling and Simulation', with a single platform or solution. Acknowledging these ambitions, the programme also fully recognises the possibility of an ESS solution comprised of tools and services from numerous vendors and Nations.

3.1.4. The architectural vision of the ESS solution is composed of three military functional areas and an integration function that unifies and standardizes the programme. These functional areas are to be organized as suites of capabilities: LOGSuite for the Logistics functional area, ENGSuite for the Military Engineering functional area, and MEDSuite for the Medical functional area. Aspects relating to the requirements and functions to integrate these suites of

functional areas is the ESS Integration function. These naming conventions will be used for remainder of this document as well as in the appendices.

3.2. Scope

3.2.1. The scope of the ESS programme is based upon the Vision described in the previous section. The diagram below illustrates this scope of the ESS programme, depicting the three suites of capabilities: LOGSuite, ENGSuite, and MEDSuite, along with the ESS Integration function. The suites are comprised of individual functions, of which some are organized by modules – a framework intended to group related functions. The functions have been componentized as much as reasonably possible to promote simplicity and maximize the number of responses to this RFI. Each function is also assigned a named to promote clarity and consistency throughout the document.



ESS Increment 2 Scope Diagram

The information contained in the scope diagram is intended to provide respondents with a holistic view of the ESS capability and this increment's scope, and aid readers in visualising and organising the many requirements. The diagram is further supplemented by an overview of the ESS functional requirements in the following sections of this document. If respondents assess that they can propose solutions to any of the capabilities described, they are asked to fill in the questionnaire (Appendix E) while carefully reviewing the detailed descriptions of required capabilities contained in Appendices A, B, C, and D which detail the ESS Integration, LOGSuite, ENGSuite, and MEDSuite functional areas, respectively. Additionally, paragraph 3.3.1 below summarises the compliance requirements that are applicable to all ESS components. Altogether, the items in this paragraph represent the ensemble of requirements to be referenced by the RFI respondents when answering the questionnaire.

3.3. Required Capabilities

3.3.1. Compliance with NATO Standards.

3.3.1.1. At delivery, all aspects of the ESS programme will have to comply with prescribed NATO standards and be interoperable with NATO-sanctioned systems and services. Specifically, ESS functions must 1) Comply with NATO C3 Policy principles, 2) Adhere to NATO standards (promote utilization of open standards and a service-oriented architecture), and 3) Integrate with NATO Core Services. (See Glossary in Appendix E: Questionnaire for additional information on these policies). For additional awareness, the eventual ESS platform will operate on both the classified and protected business network – limiting aspects of data exchange and necessitating careful implementation of interoperability standards.

3.3.1.2. It is understood that proposed solutions from the market may not currently be compliant with the NATO standards above and would require some level of adaptation or modification to meet the scrutiny of such standards. Because our aim is to determine the existence of potential solutions, we ask that vendors respond to this RFI even if their proposed solution(s) does not currently comply with NATO standards. For the respondent's awareness and contextual understanding, the standards are

listed below, the questionnaire references the information contained in this section for context.

3.3.2. ESS Integration.

3.3.2.1. As indicated in the scope diagram and paragraph, ESS Integration is a function unto itself and encompasses all of the integration requirements of the ESS programme. It addresses three key aspects:

- ESS-wide Access Control. Provides security mechanisms for ESS-wide access control and single sign-on integration with NATO Core Services
- Data Integration and Management. Provides support for data integration and management for the benefit of all ESS components.
- Service Integration. Provides service integration within ESS and with external services.

Each of these aspects are described in greater detail in Appendix A.

3.3.3. LOGSuite.

3.3.3.1. LOGSuite will enable NATO stakeholders at strategic, operational, and tactical levels to plan and execute logistics support for NATO operations. It will provide them with the required logistics situational awareness, assist their decision making, and enable the logistics information management process which heavily relies on Nations for the provisioning of data that includes (but not limited to) capabilities available to NATO, force structures, deployment and sustainment plans, and status during execution.

3.3.3.2. LOGSuite will enable NATO logistics experts to estimate, plan, and fulfil logistics requirements in order to contribute to NATO operational planning. LOGSuite must also support the planning of a multi-national deployment and its sustainment, as well as enable the coordination, prioritisation and de-confliction. During the execution phase, LOGSuite will provide visibility of the sustainment. See Appendix B for detailed descriptions.

3.3.4. ENGSuite.

3.3.4.1. ENGSuite will support NATO's Military Engineering (MILENG) Command function by providing tools for assessment, analysis, and prediction. ENGSuite functions will help manage infrastructure data, assess the impact of combat operations, plan and simulate MILENG capabilities, track environmental incidents, analyse adversary MILENG forces, and visualize georeferenced data.

3.3.4.2. By integrating accurate, up-to-date, and validated shared data, ENGSuite ensures comprehensive support and situational awareness for

NATO's military engineering operations. See Appendix C for detailed descriptions.

3.3.5. MEDSuite.

3.3.5.1. MED Suite will provide a comprehensive set of functions to support medical management, planning, intelligence, clinical support, patient flow, and force health protection for NATO and its deployed forces. It ensures real-time support across various domains and functions, usable throughout the continuum of care from injury to treatment completion.

3.3.5.2. MEDSuite synchronizes real-time and periodic data to align patient care events, connects with national civilian medical systems for seamless data interchange, and includes initial functions like Medical Management, Medical Support Planning, Medical Information and Intelligence, and Force Health Status. This suite enhances NATO's ability to manage and support medical operations effectively. See Appendix D for detailed descriptions.

3.4. Expected Benefits to Respondents. Industry and Academia participants will have the chance to reveal state-of-the-art systems, products, services and technology related to Logistics, Military Engineering, and Medical services.

3.5. Expected Benefits to NATO Exposure to, and understanding of, current, emerging and future capabilities in the Logistics, Military Engineering, and Medical services.

4. REQUESTED INFORMATION

4.1. The response(s) to this RFI shall be submitted by e-mail.

Submissions must include both the Contracting and Technical POCs listed on page 2. The responses shall not contain proprietary and/or classified information. HQ SACT reserves the right to seek clarification on submissions.

4.2. Eligibility to Respond:

Only NATO Nations, Industry and Academia that originate or are chartered/incorporated within NATO Nations are eligible to respond to this RFI. Companies from Partner Nations who want to participate should collaborate with a primary company headquartered within a NATO Nation.

4.3. Response Guidelines:

4.3.1. Provide name, mailing address, overnight delivery address (if different from mailing address), designated point of contact (phone number, e-mail).

4.3.2. Respondents can collaborate with other providers, but all companies/ organizations must be clearly identified and their role/services clearly stated.

4.3.3. Respondents are asked to use the questionnaire (Appendix E of this document) to provide the requested information on potential solutions for the ESS programme.

4.3.4. Available product brochures, specification sheets, photographs, illustration and technical descriptions that describe your company's current services are welcome. 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 sheets for products) are welcome.

4.3.5. Submissions should be named according to the following convention: <Respondent company name; maximum of 12 characters>_ESS2_RFI_<date in YYYYMMDD format>.

4.3.6. Responses shall not be classified above NATO UNCLASSIFIED.

4.3.7. The information may be considered in developing any future potential Statement of Work requirements. HQ SACT will consider selected information for developmental contracts and experimentation candidates.

4.4. Cost Estimates

HQ SACT seeks non-binding Rough Order Magnitude (ROM) price estimates for the sole purpose of estimating programmatic costs and planning funding for future programme proposals/bids. Provision of data, or lack of, will not prejudice any respondent in the event that there is a competitive bidding process later as part of NATO Common Funded Capability Development. Questions regarding ROM cost are located in Appendix E, Questionnaire.

4.5. Response Due Date

Responses to this RFI must be received by **9:00 am EST 20 June 25.** The responses shall not contain any classified information. HQ SACT reserves the right to seek clarification on submissions.

5. CLARIFICATIONS AND QUESTIONS

Inquiries of a technical nature about this RFI shall be submitted by e-mail solely to the aforementioned POCs by 9:00 am EST 23 May 2025. Accordingly, questions in an e-mail shall not contain proprietary and/or classified information. Answers will be posted as soon as possible on the HQ SACT P&C website at: https://act.nato.int/contracting.

All questions should be submitted by 9:00 am EST 23 May 2025 to allow for appropriate response time prior to the 9:00 am EST 20 June 2025 response due date.

6. ADDITIONAL INFORMATION

6.1. Non-disclosure Principles and/or Non-disclosure Agreement (NDA) with Third Party Company.

6.1.1. Please be informed that HQ SACT may contract a company to conduct the

Analysis of Alternatives investigation in support of this project. HQ SACT will follow nondisclosure principles and possibly conclude an NDA with that company to protect submitted information from further disclosure. As the third party beneficiary of this nondisclosure, this RFI serves to inform you how HQ SACT plans to proceed and HQ SACT's intent to protect information from unauthorized disclosure. This requires the third party company to protect the disclosed information using the highest degree of care that the company utilizes to protect its own Proprietary Information of a similar nature, and no less than reasonable care.

6.1.2. The third party company receiving the information shall not, without explicit, written consent of HQ SACT:

a) Discuss, disclose, publish or disseminate any Proprietary Information received or accessed under nondisclosure principles and subject to an NDA, if an NDA is concluded;

b) Use disclosed Proprietary Information in any way except for the purpose for which it was disclosed in furtherance of the goals of the instant project, collaboration, activity or contract; or

c) Mention the other Party or disclose the relationship including, without limitation, in marketing materials, presentations, press releases or interview.

6.2. Organizational Conflicts of Interest.

As Procurement/Contracting involves the expenditure of funds allocated by the member nations, we must always strive to maintain trust in and preserve the integrity of the procurement procedures. It is essential that our procedures facilitate transparent and robust competition from industry.

Contractor and subcontractor personnel performing work under an HQ SACT contract may receive, have access to, or participate in the development of sensitive information relating to source selection methodology, cost or pricing information, budget information, and future specifications, requirements or Statements of Work or perform evaluation services that may create a current or subsequent Organizational Conflict of Interests (OCI). Similarly, companies responding to an HQ SACT RFI may create a subsequent OCI determination when pursuing future NATO contracts generated from that RFI.

Each individual contracting situation will of course be examined on the basis of its particular facts and the nature of any proposed contract. The exercise of common sense, good judgment, and sound discretion is required in both the decision on whether a significant potential conflict exists and, if it does, the development of an appropriate means for resolving it.

In anticipation of a future OCI determination, any company either awarded an HQ SACT contract or responding to an HQ SACT RFI while also anticipating bidding on future NATO contracts relating to this work, should consider having a mitigation plan in place to

address or mitigate any OCI concerns now or in the future.

6.3. 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. HQ SACT will exercise due care to prevent its unauthorized disclosure. Please be advised that all submissions become HQ SACT property and will not be returned.

6.4. Exceptions to Obligations. The third party company receiving the information may disclose, publish, disseminate, and use Proprietary Information:

a) To its employees, officers, directors, contractors, and affiliates of the recipient who have a need to know and who have an organizational code of conduct or written agreement with the recipient requiring them to treat the disclosed Proprietary Information in accordance with nondisclosure principles and the NDA (if executed);

b) To the extent required by law; however, the company receiving the information will give HQ SACT prompt notice to allow HQ SACT a reasonable opportunity to obtain a protective order or otherwise protect the disclosed information through legal process that is:

- demonstrated in written record to have been developed independently, or
- already in the possession of the company receiving the information without obligation of confidentiality, prior to the date of receipt from HQ SACT, or
- disclosed or used with prior written approval from HQ SACT, or
- obtained from a source other than HQ SACT without obligation of confidentiality; or publicly available when received.

6.5. Any response to this RFI is considered to establish consent to this process. A copy of the NDA, if or when concluded, can be provided on request.

7. SUMMARY

This is a RFI only. The purpose of this RFI is to involve industry, academia and nations through collaboration, for their input to NATO's requirement for the **Enablement Support Services (ESS) 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. **It is emphasised that this is a RFI, and not a RFP of any kind.**

Appendices:

A. Description of ESS Integration
B. Description of LOGSuite
C. Description of ENGSuite
D. Description of MEDSuite
E. Questionnaire

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Appendix A – Description of ESS Integration

Respondents should reference information in this appendix if they are proposing an integration solution and responding to the "ESS Integration" tab of the questionnaire.

ESS requires a core integration solution that addresses three key aspects:

A1. ESS-wide Access Control

- Provides Security mechanisms for ESS-wide access control and single sign-on integration with NATO Core Services; this will control the availability of various ESS functions/applications to the user, based on their role.
- The ESS functions/applications are expected to have their own access control mechanism, based on more granular role-based rules.
- The two levels (ESS-wide and application specific) must be integrated, and furthermore they need to integrate with NATO Core Services to provide single sign-on for user authentication.

A2. Data Integration and Management

- Enable merging data from ESS functional tools and external sources (i.e. NATO systems, national systems and open sources) into a coherent set of information that can be used for analysis and decision-making processes. Regardless of the source or format, data shall be accurate, automatically regularised (synchronised between various applications), unique and accessible to users and modules across the three Functional Areas.
- Provide a master data-store, which acts as a Single Source of Truth for integrated data of ESS-wide interest and for ESS Information Products produced by the various ESS functional tools and made available for use to the rest of ESS or externally.
- Support the exposure and consumption of the data through an Application Programming Interface (API).
- Ensure data synchronisation of data between ESS instances to share data and to provide reliability and resilience.
- Address requirements regarding data protection, semantics and labelling (meta-data), data quality, trust, etc.
- Provide for data collection, validation, integration, provision and archiving, reference data management, analytics, reporting and visualization (including map-based).
- Support data validation and assessment by cross-functional data stewards while integrating data from multiple sources.

It can be assumed that data integration will be operated on the Operational Network with no access to the Internet or public cloud

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A3. Service Integration

The ESS functional tools must form a loosely coupled, scalable system that is delivered incrementally, independently changeable, and deployable. Furthermore, ESS must integrate with external NATO Services. A Service integration solution is therefore required which shall be based on best practices and latest technology to support these integration needs driven by evolving ESS information flows.

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Appendix B – Description of LOGSuite

Respondents should reference information in this appendix if they are proposing a solution(s) to aspects relating to the LOGSuite functions and responding to the "LOGSuite" tab of the questionnaire. Before responding to the questionnaire, respondents are asked to carefully read the introduction section below to gain important contextual understanding of NATO's logistics requirements and how each capability/function will enable mission accomplishment. Questions should be answered with an understanding of this context.

Introduction.

The **ESS Logistics Suite of functions (LOGSuite)** is intended to provide capabilities that enable NATO Stakeholders at strategic, operational and tactical levels to effectively plan and execute logistics support for NATO operations and maintain logistics situational awareness/understanding. The ESS LOGSuite must support:

- the Planning and Execution of the deployment and sustainment of the forces which will move over that infrastructure.
- the Readiness of the infrastructure and support services that the force will deploy over.

As a continuum during peacetime, crises, and conflicts, NATO Headquarters manage Core Logistics Information that includes:

- The physical infrastructure network across Europe and the North Atlantic including seaports, airports, railways & railheads, roads, storage installations, mobility corridors, pipelines and other facilities. It is required to maintain infrastructure data throughout its lifecycle, starting with descriptions and availability provided by the owning countries. This data is updated with periodic surveys and daily status reports during operations, supplemented by open-source information. This is part of the ESS Information Management process.
- Support Contracts, national stockpiles for fuel and ammunition etc.

The flow of logistics information for operations planning and execution is guided by NATO's planning and force generation processes, which determine the requirements in terms of structure of the forces, where they need to go, when they need to be there and how they should be sustained. LOGSuite must be able to estimate the associated Logistics requirements and to evaluate options for their fulfilment (i.e. provided as Host Nations' support, though Contract Support and/ or by nations through force generation). In response to these requirements, countries then provide detailed information about their contributed forces to NATO, including their composition. From this point, the planning and execution processes that LOGSuite must support can be described as follows:

- Submission of National plans for Movement & Transportation (M&T) and Sustainment: Each country submits detailed information about their military forces and the plan for their deployment from the home base to the final destination together with information on how they will move and sustain it. This constitutes the 'National Detailed Deployment Plan' (NDDP).
- Deployment Coordination and Conflict Resolution: A headquarter coordinates these plans with the nations and integrates them, resolves conflicts and optimises the use

of the physical network to create a unified 'Multinational Detailed Deployment Plan' (MNDDP).

- Movement Execution and Monitoring: Countries share their progress with NATO when the deployment plan is executed.
- Supply Management: During operations planning and execution, countries and NATO headquarters share information about their supply needs and resources to optimize support. Nations must report logistics status data for the forces at their deployed location; NATO headquarters will focus on managing the sustainment flow (in the context of the physical infrastructure network) and monitoring the build-up of stocks of troop contributing nations.
- Oversight and Prioritization: This process relies on logistics visibility and situational awareness and ensures smooth, conflict-free, and prioritized movement and support activities.

LOGSuite functions are organized by modules and are described below:

B.1. Logistics Information Management (IM). This module enables and facilitates the organized and carefully controlled flow of information between authorized entities within NATO, member countries, and organizations. It is composed of information for numerous logistics functions such as workforce, stockpiles, equipment, agreements, contractor support, and Host Nation Support (HNS) capabilities – all of which support the identification of multinational logistic solutions to meet operational requirements in the early stages of planning. It also supports specific data management functionalities.

B.1.1. Host Nation Support (HNS) Catalogue. This function allows each host nation to provide and update their listings for infrastructure (ex. ports, storage facilities) and capabilities (ex. maintenance, transportation, medical support, supply, communications, force protection, accommodation facilities); this includes the capacity available to NATO so NATO logistics planners can track the status of these capabilities.

Inputs:
Infrastructure and Capability Data: Host countries provide and update listings for infrastructure and capabilities.
Outputs:
Status Reports: Track the overall status of infrastructure and capabilities available to NATO.
How It Works:
Data Management: Host countries update their respective listings, allowing NATO logistics planners to have an integrated view, monitor and manage the information.

B.1.2. Infrastructure Management: this function allows for the management of infrastructure that is either owned by NATO or available to NATO from member countries. (*This is the same function found in ENGSuite; respondents should refer to Appendix C/ section 1 if they would like to see the Military Engineering requirements related to this function. It is included in Logistics IM module because of interrelated requirements and to so that Logistics solutions providers don't overlook this function.)*

B.1.3. Contracts Catalogue: this function offers a list of contracts related to logistics

and military engineering such as those for fuel, transportation, and storage. These contracts are managed in NATO's systems, but important contract details need to be shared with relevant communities to help with planning, decision-making, and keeping track of the situation. This information supports comparisons, evaluations and identification of new contract needs.

Inputs:
Contract Data: Information on logistics and military engineering contracts including those for fuel, transportation, and storage.
Outputs:
Contract Details: Shared with relevant communities to aid in planning, decision-making and situational awareness.
How It Works:
Data Management and Sharing: Manage contracts in NATO's systems and share important details to support comparisons, evaluations and identification of new contract needs.

B.1.4. Strategic Stockpiles Catalogue: This function supports the gathering of information during peacetime about strategic stockpiles of supplies held by NATO and member countries, with an emphasis upon fuels and critical munitions. This information will enable planners to compare these stockpiles with NATO's operational requirements as determined through the NATO Defence Planning Process (NDPP), and ensure they meet the defined minimum capability requirements and national capability targets along with other planning guidelines.

Inputs:
Stockpile Data: Gather information about strategic stockpiles of fuel and critical munitions held by NATO and member countries.
Outputs:
Visibility Reports: Provide planners visibility and enable them to compare stockpiles with NATO's operational requirements.
How It Works:
Data Collection and Comparison: Collect stockpile data during peacetime and compare it with NATO's operational requirements to ensure they meet minimum capability requirements and national targets.

B.1.5. Ammunition Information Catalogue: This function offers a centralized resource to identify which types of ammunition can be used interchangeably among NATO and Partner nations. This helps with NATO's operational planning and finding alternative ammunition in case of shortages. It also provides access to all standardized forms, operational standards, and related documents for handling, transporting, and storing ammunition, including a search feature.

Inputs:
Ammunition Data: Information on types of ammunition and their interchangeability among NATO and partner nations.
Outputs:
Operational Planning Support: Identify alternative ammunition options and provide access to standardized forms and documents.

How It Works:
Centralized Resource: Collect and manage ammunition data (characteristics, standards), supporting operational planning and providing a search feature for relevant documents.

B.2. Logistics Reporting and Visibility: This module enables visibility of logistic resources and activities, and informs situational awareness and decision-making during planning, preparation and execution of military activities. It consists of several functions:

B.2.1. Logistics Situational Awareness and Recognised Logistics Picture: This function helps NATO organization at all levels to see and manage logistics operations effectively. It allows them to coordinate the movement and support of resources from different countries. The Recognised Logistics Picture (RLP) feature lets users access, compile, and share logistics information tailored to their needs during normal times, crises, and conflicts. It relies on the ESS Integration function (see Appendix A) gathering data from various sources including user inputs and assessments and provides a visual map interface for decision-making.

Inputs: The Recognised Logistics Picture compiles validated data from various sources, including direct user input and assessments.
Outputs: It provides the Logistics contribution to the NATO Common Operational Picture (COP) and supports logistics decision-making.
How it works: The RLP functionality enables NATO Command Structure at all levels to access, compile, generate, and share tailored logistics information, using a geospatial map interface for georeferenced logistics data during peacetime, crisis, and conflict.

B.2.2. Logistics Data Provision and Reporting. This function enables and simplifies the flow and reporting of logistics data. It is crucial for monitoring personnel, equipment, and supplies needed for planning, executing, and sustaining operations. The logistics reporting functions support coordination among various command levels, headquarters, deployed units, and other facilities both in peacetime and during operations. It also facilitates information exchange with different countries, helps identify shortages and surpluses, and triggers decision-making processes to address them.

Input: The system gathers full and partial updates of logistics data, including information on personnel, equipment, and supplies, in connection to the force structure and composition.
Output: It provides essential logistics reports that support coordination and decision-making.
How it works: The system aggregates logistics data, supports coordination among various command levels and units, facilitates information exchange with different countries, and helps identify and address shortages and surpluses.

B.3. Logistics Planning and Execution: These Command & Control (C2) module provides key support to the Logistics Information Flow as described in the introduction paragraphs of this Appendix. This module is highly dependent on the 'Data Integration and Management' (Appendix A) and ESS Logistics Reporting and Visibility functions. Its improved effectiveness and efficiency is expected to be achieved through the integration of a variety

of decision-support functionalities such as analytical tools, business intelligence, and modelling and simulation.

- The Logistics Planning aspect aims to support and facilitate sustainability requirements calculations, the full spectrum of force movement related activities, reinforcement and sustainment flow planning, among others.
- The Logistics Execution aspects aim to support:
  - The Operational level in monitoring the execution of plans and facilitating the coordination of deployment and sustainment of forces from multiple nations, where each Nation is primarily responsible for its Logistics support.
  - The Tactical level with the management and tasking of any assigned resources, including intra-theatre movement and transportation assets.

It consists of the six functions below:

B.3.1. Logistics Decision Support: This function provides decision support for logistics operations at various levels by coordinating and prioritizing movement and sustainment processes. As an example, it should coordinate national and contracted resources that support the reinforcement and sustainment flow from contributing nations. It should also enable the management of theatre logistic operations. The system should identify and forecast events that impact logistics plans, assess their impact, evaluate mitigation options, and provide notifications and alerts as needed.

Input: The information on national and contracted resources, as gathered by the other functions.
Output: It provides notifications and alerts, along with assessments of impacts and feasibility of mitigation options.
How it works: The system supports logistics operations by monitoring, coordinating and prioritizing movement and sustainment processes, identifying and forecasting impactful events, and facilitating decision-making through notifications, alerts, identification of options and assessing their feasibility. Requires modelling and simulation capabilities.

B.3.2. Movement and Transport C2: This function supports the planning, analysis, and execution of force movement and transportation activities. It enables the timely exchange of information, facilitating coordination among deploying forces, especially when transportation resources are limited. The system provides services for deployment planning and execution, and transport feasibility calculations. It helps estimate and optimize timelines and transport needs for force movements, identify and address bottlenecks, and consider various planning factors (e.g. networks, mobility corridors, etc.) and infrastructure constraints. Throughout these processes, it maintains the identity of force structures for monitoring purposes.

Input: The National Detailed Deployment Plans (NDDPs), force structure and composition, planning factors, networks and infrastructure data. Countries share their progress with NATO when the deployment plan is executed.
Output: It provides services for deployment planning NDDP and Multinational Detailed Deployment Plan (MNDDP), deployment execution and transport feasibility.
How it works: Each country submits detailed information about their military forces and the plan for their deployment from the home base to the final destination, together with information on how they will move and sustain it (i.e. the NDDP).The

system supports the collection and development of NDDPs, the integration and de-confliction of multiple NDDPs into a MNDDP, the analysis of these plans and their feasibility, and the execution of movement and transportation activities, facilitating coordination among deploying forces and optimizing timelines and transport needs while identifying and addressing bottlenecks.

B.3.3. Supply Management: This function helps users determine the supply needs for various operations, access and process necessary information, and analyse the sustainability of deployed forces. It also identifies the best mix of supplies to deploy, considering constraints like transportation, cost, and storage and provides this as an input to Movement and Transport C2/ Deployment planning. The function uses a methodology based on standard supply metrics and planning factors and supports alternative supply options.

Input: The system processes information (generic and actual) on forces, their supply requirements and the sustainment status of national forces.
Output: - Analyses and recommendations for the optimal mix of supplies for initial deployment of forces, considering constraints like transportation, cost, and storage.
-Supply requirements calculations per class of supplies and commodities.
-Force sustainability analysis per class of supplies and commodities.
How it works: During operations planning and execution, countries and NATO headquarters share information about supply needs and resources to optimize support. Nations must report logistics data for the forces at their deployed location; NATO headquarters will focus on managing the sustainment flow (in the context of the physical infrastructure network) and monitoring the build-up of the stocks of troop contributing nation. The system helps users determine supply needs, analyse sustainability, and identify the best mix of supplies using standard supply metrics and supporting alternative supply options.

B.3.4. Host Nation Support (HNS) Concept of Requirements (COR) this function should estimate the needs and capacity for host nation support (e.g. messing/food, fuel, shelter, training facilities and medical services) during the planning stages of operations. It assists NATO planners gather and prioritize requirements from all participating nations for local support to be provided by a Host Nation during the deployment of forces. The estimates are based on the “requesting” nation’s force and deployment plans (provided at various levels of granularity). The HNS COR is part of the Supply Management planning process.

Input: Force and deployment plans, support requirements from participating nations.
Output: Consolidated and prioritized requirements for host nation support (organised by host nation and requesting nations) in the context of a plan, capacity and gaps estimates.
How it works: The COR collects data on the needs and capacities for host nation support, consolidates the requirements from all “requesting” nations, and prioritizes them based on the force and deployment plans. The result is coordinated with each of the host nations involved. This helps NATO planners ensure that the necessary support is available and efficiently allocated during operations.

B.3.5. HNS Statement of Requirements (SOR). This function allows NATO planners and host nation logistics planners to collaboratively develop operation-specific support requirements during the planning process. This function helps agree on the delivery of specific supplies and services (e.g. messing/food, fuel, shelter, training facilities and medical services) between each "requesting" nation and each of the host nation(s) involved, building on the estimates from the HNS COR. The HNS SOR is part of the Supply Management planning process.

Input: Estimates from the HNS COR and revised host nation support requirements from "requesting" nations. Updates on service delivery by Host Nation.
Output: Agreed-upon delivery plans for supplies and services between the host nation and the requesting nation in the context of an operation.
How it works: The HNS SOR tool facilitates the agreements on the delivery of supplies and services, ensuring that all parties are aligned; it enables monitoring to ensure that the necessary support is provided efficiently.

B.3.6. The Logistics Modelling and Simulation. This function supports operational level commands during both the planning and execution phases of operations to:

- simulate, test, and validate supply and force movement and transportation plans.
- identify the best course of action (in response to existing or forecasted logistics shortages and bottlenecks) by quickly generating various "what-if" scenarios using scripted events.

Input: Supply plans, movement and transportation plans, current logistics picture, scenarios, events.
Output: Feasibility and robustness assessments, optimized plans.
How it works: The function models deployment, movement, storage, and distribution assets and networks. It includes national supply chains, stock levels, resource requirements and events. Planners can explore the impact of transportation and infrastructure limitations and adjust improve throughput capability. This helps analyse the effects on the deployment, sustainment, and redeployment of forces.

B.4. Asset Tracking. This function provides a near real-time ability to track and trace the movement of personnel and assets across a network of tracking nodes. These nodes are part of the distribution and transportation networks of NATO, NATO nations, and Partners. The system uses identifiers and automatic identification and data capture technologies. It facilitates the routing of tracking information between Nations and with NATO.

Input: Identifiers, transport tracking data from tracking nodes managed by NATO or nations.
Output: Near real-time tracking and tracing information.
How it works: The system collects data from tracking nodes throughout the network, using identifiers and automatic identification technologies, routes them to interested parties according to business rules, and processes tracking information of NATO interest to enable the monitoring the location of personnel and assets while in-transit. Both the message formats and business rules must comply with the corresponding NATO standards.

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Appendix C – Description of ENGSuite

Respondents should reference information in this appendix if they are proposing a solution(s) to aspects relating to the ENGSuite functions and responding to the "ENGSuite" tab of the questionnaire. Before responding to the questionnaire, respondents are asked to carefully read the introduction section below to gain important contextual understanding of NATO's military engineering requirements and how each capability/function will enable mission accomplishment. Questions should be answered with an understanding of this context.

Introduction.
ENGSuite supports NATO's Military Engineering (MILENG) Command function. Each MILENG Cell in one of the Allied Command Operations (ACO) headquarters uses ENGSuite's tools for assessment, analysis, and prediction to provide advice and respond to requests for information (RFIs) and planning guidance.
To do this, MILENG Cells need accurate, up-to-date, and validated shared data that is common to all MILENG Cells and ESS users. They use this data to create assessments, reports, and analysis documents, which are shared with other user groups inside and outside ESS. Whenever possible, these products include geospatial information and become part of the Recognized MILENG Picture; new and updated products trigger alerts and notifications across ENGSuite based on user roles and filter criteria.

ENGSuite functions include:

C.1. Infrastructure Management It allows for the management of infrastructure that is either owned by NATO or available to NATO from member countries (this is seen as integral part of Appendix A.2 Data Integration and Management). It enables the military engineers to manage the infrastructure data and activities, including inspections, maintenance, development plans, monitoring, and surveys. It also identifies gaps in available infrastructure and supports defining infrastructure requirements for NATO.

Input: (Geo-referenced) Infrastructure data (from NATO, National and open sources), inspection and maintenance plans, development plans, monitoring and survey data.
Output: Managed infrastructure activities, gap analysis, defined infrastructure requirements.
How it works: The tool collects, organizes, enables the validation of infrastructure data, comparisons visualisation in various formats (including map-based). It supports planning and management activities like inspections and maintenance, and monitors infrastructure status. It enables identification of infrastructure requirements (based on standard criteria and parameters for each scenario/ operation) and performs gap analysis to identify what infrastructure is available and what is needed, helping NATO plan and manage its infrastructure effectively.

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C.2. MILENG Infrastructure Assessment:

MILENG staff assess and advise on the effects of combat operations on critical national, mission-essential, and key infrastructure. The MILENG Infrastructure Assessment tool helps evaluate infrastructure and networks according to NATO directives. It relies on Infrastructure Management for infrastructure and operational planning data. It also enables the production of enemy infrastructure target proposals, infrastructure assessment reports, and critical infrastructure lists.

Input: Infrastructure data, operational planning data, assessment criteria.
Output: infrastructure assessment report, critical infrastructure list; enemy infrastructure target proposal list.
How it works: The tool analyses data on infrastructure and networks, assessing their condition and importance. It interfaces with external data sources to provide comprehensive evaluations, and it relies on modelling and simulation functionality to perform network analysis on established infrastructure network. The results include proposals for targeting enemy infrastructure, detailed infrastructure assessment reports, and lists of critical infrastructure, helping NATO plan and manage infrastructure effectively during operations.

C.3. MILENG Capabilities Directory:

The MILENG Capabilities Directory helps identify, assess, plan, and simulate the deployment and execution of NATO Military Engineering (MILENG) capabilities, based on NATO Bi-SC Capability Codes (CC) and Capability Statements (CS).

Input: NATO Bi-SC Capability Codes (CC), Capability Statements (CS), military engineering capability data, infrastructure data.
Output: Identified and assessed capabilities, deployment and execution plans, simulation results.
How it works: The directory collects and organizes data on MILENG capabilities. It helps planners identify and assess these capabilities, plan their deployment and execution, and run simulations to test and validate plans. This ensures that NATO can effectively utilize its MILENG capabilities in various operations.

C.4. MILENG Environmental Protection[1]**:**

MILENG Environmental Protection allows for recording, tracking, and analysing environmental protection incidents and activities. It can interface with external sources for terrain and map data, infrastructure data, and meteorological and oceanographic (METOC) information, environment protection data and incidents. It enables the production of environmental assessments and environmental impact assessments.

[1] Environmental considerations must be integrated into operational plans to prevent or mitigate potential environmental impacts. Factors that NATO considers in its planning include Host Nation and applicable international law for Environmental Protection (EP), environmental compliance, pollution prevention, waste management, conservation, heritage protection (natural and man-made), and protection of flora and fauna.

Input: Environmental incident data, activity records, terrain and map data, infrastructure data, METOC information.
Output: Recorded and analysed environmental incidents and activities, environmental assessments, environmental impact assessments.
How it works: The tool collects data on environmental protection incidents and activities, tracks and analyses this information, and interfaces with external sources for additional data. It relies on simulation functionality for assessing the effect and impact of environmental incidents in a map environment. It helps produce detailed environmental assessments and impact assessments, ensuring that environmental protection measures are effectively managed and documented.

C.5. MILENG Intelligence:

MILENG Intelligence helps identify, assess, and simulate the capabilities of adversary military engineering (MILENG) forces. It can interface with external sources for infrastructure data and enemy MILENG capabilities data. It also enables the production of an enemy MILENG capability picture.

Input: Infrastructure data, enemy MILENG capabilities data.
Output: Enemy MILENG capability picture, enemy CMOB assessment.
How it works: The tool collects and analyses data on enemy MILENG capabilities and infrastructure. It simulates potential scenarios for enemy MILENG Capability Missions to assess these capabilities. The results include a comprehensive picture of enemy MILENG capabilities and assessments of their critical mobility, helping NATO plan and counter adversary actions effectively.

C.6. EOT/IED Data Management[2]:

MILENG EOT/IED Data Management allows for recording, tracking, and analyzing Explosive Ordnance Threat (EOT) and Improvised Explosive Device (IED) incidents and activities. It can interface with external sources for EOT/IED data and incidents. It enables the production of EOT/IED assessment reports.

Input: EOT/IED data, incident records from external sources.
Output: EOT/IED assessment reports.
How it works: The tool collects data on EOT and IED incidents and activities, tracks and analyses this information, and interfaces with external sources for additional data. It helps produce detailed assessment reports, relying on modelling and simulation to simulate the effect and impact of explosions in a map environment according to adjustable parameters, ensuring that EOT and IED threats are effectively managed and documented.

[2] Comprises actions taken by specially qualified personnel for countering explosive ordnance (EO) threats (EOT). NATO defines EOD “as the detection, accessing, uncovering, identification, mitigation, rendering safe, recovery, exploitation and final disposal of EO, regardless of condition”. EOD extends to explosive remnants of war (ERW) and stockpiles, or other EO that has become hazardous by damage or deterioration. IED refers to Improvised Explosive Device.

C.7. MILENG Modelling and Simulation: This function is multi-faceted and serves as an enabler to five of the other ENGSuite functions. The capability will model and simulate the occurrence of various events and assess impacts to operations. Listed below are the particular ENGSuite functions and a description of the required modelling and simulation capability:

a. **MILENG Infrastructure Assessment**. Provides the ability to perform network analysis on established infrastructure networks. This includes analysing the centre of gravity, identifying weak points (vulnerabilities), assessing downstream effects, and evaluating load distribution.

b. **MILENG Capabilities Directory.** Provides the ability to simulate the execution of military engineering missions with adjustable parameters for location, time, and deployment order. It considers the availability of personnel, materials, and equipment, as well as expected reinforcements and resupply. This helps create courses of action for using MILENG capabilities, optimizing resource and capability assignment, allocation, and positioning, and supporting the commander's decision-making process.

c. Environmental Protection. Provides the ability to:
i. Simulate the effects and impacts of environmental incidents on a map.
ii. Configure parameters such as the type of incident, material involved, method of distribution, weather conditions, and location. This helps simulate the impact on various force sets, including personnel in the open, in unarmoured vehicles, in armoured vehicles, in infrastructure, as well as on unarmoured vehicles, armoured vehicles, and buildings.

d. **MILENG Intelligence.** Provides the ability to simulate the execution of enemy military engineering (MILENG) missions with adjustable parameters for location, time, and deployment order. This helps assess possible enemy courses of action for using their MILENG capabilities.

e. **EOT/IED Data Management**. Provides the ability to simulate the effects and impacts of explosions on a map, using adjustable parameters such as the type and amount of explosive, method of deployment, container type, and location of the explosive ordnance (EO) or improvised explosive device (IED). This helps simulate the blast radius and the impact on various force sets, including personnel in the open, in unarmoured vehicles, in armoured vehicles, in infrastructure, and on unarmoured vehicles.

C.8. MILENG Search Data Management[3]:

MILENG Search Data Management allows for creating, recording, tracking, and analysing information from military search activities. It can interface with external

[3] NATO defines military search as “the management and application of systematic procedures and appropriate equipment to locate specified targets in support of military operations”. Specified targets may include people, information and material resources employed by an adversary

sources for EOT/IED data and incidents. It also enables the production of Military Search reports.

Input: Terrain and map data, data from military search activities, EOT/IED and METOC data from external sources.
Output: Recorded and analysed search activity data, Military Search reports.
How it works: The tool collects and organizes data from military search activities, tracks and analyses this information, and interfaces with external sources for additional data. It helps produce detailed assessment reports, ensuring that search activities are effectively managed and documented.

C.9. Recognised Military Engineering Picture (REngP):

The Recognised Military Engineering Picture (REngP) displays all georeferenced MILENG data and products processed across ENGSuite on a map. It provides basic geospatial functions like filtering, layer functions, and overlays to enhance MILENG situational awareness and support decision-making. It ensures MILENG contributions are included in the NATO Common Operational Picture (COP) and can interface with NATO's geographical information system CoreGIS.

Input: Georeferenced MILENG data.
Output: Displayed georeferenced data on a map, filtered and layered views.
How it works: The tool collects and displays georeferenced MILENG data on a map, allowing users to apply filters and overlays to visualize the data effectively. This supports situational awareness and decision-making by providing clear, visual representations of the data. It ensures that MILENG contributions are integrated into the NATO COP, enhancing overall operational awareness.

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Appendix D – Description of MEDSuite

Respondents should reference information in this appendix if they are proposing a solution(s) to aspects relating to the MEDSuite functions and responding to the "MEDSuite" tab of the questionnaire. Before responding to the questionnaire, respondents are asked to carefully read the introduction section below to gain important contextual understanding of NATO's medical requirements and how each capability/function will enable mission accomplishment. Questions should be answered with an understanding of this context.

Introduction.
The medical suite of ESS (ESS MEDSuite) is intended to provide real/near-real time support to NATO operations. This will be done through a set of highly interrelated cross-domain and cross-functional applications capable of augmenting and optimizing medical management (including patient tracking and regulating), planning, intelligence, clinical support, and force health protection for NATO, national health care systems and its deployed forces.
ESS MEDSuite should be usable throughout the entire continuum of care, from point of injury until completion of treatment. Users throughout and beyond the medical support system must have appropriate access to the required application for maximum utility.
To cover the increasing complexity of the future battlefield and the likelihood of limited or inconsistent communications, MEDSuite must be able to synchronize the information from both real-time input and periodic (burst) data packages. This means that it must be able to align the timing of events in a patient's movement/care. MEDSuite should be pre-set, automated and intuitive as much as possible to minimize error and increase applicability.

Note: Based on lessons learned from the last RFI, it is important for respondents to note that ACT does not seek an Hospital information System (HIS) but rather a set of applications/functions to manage the NATO-level Command and Control and Communication and Information functions for the medical support provided by Nations.

MEDSuite functions are organized by modules and are described in the tables below:

D.1. Medical Management	
The Medical Management Module, with its integrated data architecture, ensures a consistent and interconnected set of applications that will reflect direct support to NATO's decision-making process by monitoring real/near-real time situational awareness. It ensures a holistic system for patient evacuation and patient flow as well as managing efficient usage of scarce medical capabilities, in order to increase survivability and maintain force strength.	
D.1.1. Patient Tracking (PT) D.1.2. Patient Regulating (PR) D.1.3. Medical Reporting & Medical Recognized Picture (RMedP) D.1.4. Medical Capability Directory (MCD)	**Input:** Data collection and transfer civ-mil and NATO/non-NATO, capability overview provided by Nations. **Output:** Real/near-real time situational awareness and data analysis/aggregation regarding PT and PR, including management of patient flow and medical evacuation; map based/visualized/automated user interface; map-based subsets, task and track/alert function, displayed availability of treatment and evacuation recourses. **How it works:** The tool collects and displays medical/patient data, allowing users to apply filters and

	layers, effectively visualizes analysed and aggregated data, enables data exchange with civil and military/NATO and non-NATO interfaces, respects medical confidentiality and data security, provides capability overview (MCD), creates the RMedP (as the hub-and-spoke application for results out of the ESS MEDSuite modules D.2., D.4. and D.5.) and contributes to NATO's Common Operational Picture (NCOP).
D.2. Medical Planning	
The Medical Planning module contributes to NATO's operational planning process (OPP). It encompasses identifying and analysing threats and environments (interrelated with ESS MEDSuite functions). It will define, design, and implement the tailored medical support solution based on casualty rate estimation and the operational requirements. Modelling & Simulation will considerably help predict and optimize the best possible employment of medical capabilities, capable to adapt and adjust in response to operational necessity and patient's needs.	
D.2.1. Casualty Rate Estimation (CRE) D.2.2. Medical Support Planning (MSP) D.2.3. Medical Modelling & Simulation (MM&S)	**Input:** Historical casualty data (civ and mil), morbidity and mortality data of non-battle injuries/diseases, desired timelines, turnaround times, capability availability, population at risk (PAR) profile, operational design and force structure, threat assessment, environmental profile. **Output:** Reliable CRE, including civ-mil injury profiles, (map based) medical support concept/plan, including required capabilities, synchronization with ESS LOGSuite / ENGSuite modules and existing NATO planning tools/information systems. **How it works:** CRE, as an interdisciplinary task, is a key planning consideration. Based on data collection and historical data, operational design and employed force elements, as well as threat assumptions categorized by domains and differentiated by phases of an operation. Analysed data will be interpreted by medical personnel and other joint functions in order to give sound advice to the OPP and supports decision-making.
D.3. Clinical Support	
The Clinical support module will function as a quality assurance system and improves medical best practice, especially regarding trauma management. It enables the secure transfer of patients electronically stored health information and data as well between treatment facilities (civ and mil).	
D.3.1. Electronic Treatment Record (ETR) D.3.2. NATO Trauma Registry (NTR)	**Input:** Patient and treatment data, including e.g. demographics, patient history, immunization status, laboratory test results, radiology images, trauma incident information, patient's condition at the point of injury and outcome through the continuum of care, treatment circumstances. **Output:** Analysis of data to support continuous detailed

	clinical audit, sharing of lessons learned (LL) and ensuring best practice with regard to trauma management. Patient and treatment information exchange between Nations/civ health care systems, interface to ESS MEDSuite Medical Management module. **How it works:** NTR provides information that is used to improve the efficiency and quality of trauma care by sampling, analysing and presenting anonymous trauma data collected from nations and/or their systems. It must be compatible with common codes for diseases, provide detailed information about treatment. ETR will include a range of specific health/treatment/patient data supporting dynamic expansion, increasing responsiveness to operational and patient needs. The module will holistically support research, LL/lessons identified (LI) and best possible patient outcome.
D.4. Health Surveillance	
The Health Surveillance module is intended to serve as a continuous and near real-time sentinel warning system by tracking disease outbreaks and syndromes in order to trigger further investigation, implement preventive countermeasures, predict extrapolations or other command actions needed to reduce the adverse impacts of health threats (including bio-surveillance). Required force's health status in combination with reliable preventive medicine measures is a pivotal mitigation strategy of the widespread degradation of mission readiness, workforce and force strength. It allows the chain of command to establish a database of health surveillance information that assists medical support planning for both current and future operations and therefore contributes to the RMedP and COP.	
D.4.1. Force Health Status (FHS) D.4.2. Disease and Syndromic Surveillance (DSS) & EpiNATO	**Input:** Data collection (national/NATO MEDINTEL, open source e.g. national dashboards), documented cases and symptoms, notifiable diseases, research results, (inter)national scientifically recognized recommendations on vaccination, outbreak investigation information, monitored health outcomes. **Output:** Displays the Population at Risk, real/near-real time monitoring, analysis and alert function; interface to database of civ or/and mil subject matter experts/dashboards, interface to national systems/databases; periodic statistical forecast as LI aspect; outbreak prevention concepts and tailored FHS protocols (including immunization and prophylaxis, good maintenance of personal health/hygiene). Map-based information e.g. movement restrictions. **How it works:** The function as a central registry and information source for Nations and NATO, enables the continuous tracking of natural or intentional disease outbreaks and syndromes as well as the identification of

	health-related risks. The function will be based on the identification of population at risk. With its forecast and warning functions it helps optimizing the planning and management of capabilities, material and counter measures needed. It serves as a repository for information on force's health condition, which is directly related to mission readiness and risks to the operational plan. This includes all medical efforts to promote or conserve physical and mental well-being, reduce or eliminate the incidence and impact of disease, injury, increase survivability and enhances forces effectiveness.
D.5. Medical Information & Intelligence	
The Medical intelligence (MEDINTEL) function complements the intelligence cycle (Intel Cycle) aligned and alongside the joint intelligence staff (J2) by gathering medical information through a variety of sources and ensures data/information exchange amongst Nations and civ-mil Partners. As a fundamental planning consideration, it may leverage the power of artificial intelligence and machine learning to identify threats. The envisioned information and intelligence applications will contribute to health risk estimates, articulation and management. It establishes the foundation of managing medical information and intelligence products in order to supports decision-making.	
D.5.1. Medical Information Management D.5.2. Medical Intelligence	**Input:** Collection of national/NATO data, assessment of medically significant events or information e.g. bio-scientific, epidemiological, environmental. **Output:** Timely, updated, easily accessible, comprehensive, reliable MEDINTEL products, proceeding medical contributions to the Intel Cycle, automated contribution to no-strike lists, respecting confidentiality, ethical standards and relevant laws, interface to contribute to ESS MEDSuite modules, displays health risk estimates, articulation and management. **How it works:** The module pushes and pulls data/information from/to compatible National/NATO information systems, respecting classification levels. It collaboratively develops MEDINTEL products interrelated with J2 staff (following the Intel Cycle) as a central registry and information source for Nations. It enables the intelligence preparation of the operational environment and contributes as a part of the RMedP to the COP.