

HQ Supreme Allied Commander Transformation

RFI-ACT-SACT-22-66

Headquarters Supreme Allied Commander Transformation

Norfolk, Virginia

REQUEST FOR INFORMATION

RFI-ACT-SACT-22-66



This document contains a Request for Information (RFI) Call for Nations, Industry, and Academia input to provide elements of NATO's

Next Generation Modelling and Simulation (NexGen M&S) Capability

Those wishing to respond to this RFI should read this document carefully and in its entirety, and follow the guidance provided.

This RFI is open to NATO Nations, Industry and Academia that originate or are chartered/incorporated within NATO Nations.

HQ Supreme Allied Commander Transformation

RFI-ACT-SACT-22-66

HQ Supreme Allied Commander Transformation RFI 22-66 General Information	
Request For Information No.	22-66
Project Title	Request for Nations, Industry and Academia input to provide elements of NATO Next Generation Modelling and Simulation (NexGen M&S) capability
Due date for questions concerning requested information	15 MAY 2022
Due date for submission of requested information	17 JUNE 2022
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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1. INTRODUCTION

1.1. **Summary** Headquarters Supreme Allied Commander Transformation (HQ SACT) is issuing this Request for Information (RFI) in order to engage with Nations, Industry, and Academia. The intention is to discover that which is immediately available, the art-of-the-possible and state-of-the-art with respect to systems, products, services, technology, and methodologies in the area of M&S, to support NATO Governance decision-making on Common Funded Capability Development.

1.2. This is an RFI **ONLY**. This RFI **DOES NOT** constitute a current Request for Proposal (RFP) nor a commitment to issue a future RFP. HQ SACT is not seeking proposals at this time; therefore, HQ SACT will not accept unsolicited proposals in respect to this RFI.

RFI-ACT-SACT-22-66

1.3. The purpose of this RFI is to involve Nations, Industry, and Academia, through collaboration, in an examination of current and future capabilities related to M&S with a focus on systems, products, services, technology, and methodologies. The future capabilities will be either Nation-owned or commercially available (procured by a Nation as Host Nation, or by a NATO Agency). HQ SACT has not made a commitment to procure any of the systems, products, services, or technology 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. 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.

2. GENERAL BACKGROUND

2.1. HQ SACT Framework for Collaborative Interaction (FFCI)

2.1.1. HQ SACT has implemented an FFCI to increase opportunities for Nations, Industry and Academia to contribute to HQ SACT capability development efforts through collaborative work. Such collaboration enables HQ SACT, and NATO as a whole, to benefit from Nations/Industry/Academia models, advice, capabilities and experience in the course of this work. In addition to the benefits HQ SACT gains from such projects, this collaborative effort will provide Nations/Industry/Academia with an improved understanding of NATO's capability requirements and the associated issues and development challenges that need to be addressed by HQ SACT. Potential collaborative projects are on specific topics that are of mutual interest to all parties but shall be restricted to collaborations in non-procurement areas. Several mechanisms have been developed to support the initiation of collaborative projects between Nations/Industry/Academia and HQ SACT, ranging from informal information exchanges, workshops, studies or more extensive collaboration on research and experimentation.

2.1.2. Depending on the level and type of interaction needed for a collaborative project, a specific agreement may be needed between parties. The FFCI agreement for any specific project, if required by either party for the project to proceed, will range from "Non-disclosure Agreements" (NDA) for projects involving exchange of specific information to more extensive "Declaration of Mutual Collaboration" (DOMC) to address intellectual property and other issues.

2.1.3. More extensive information on the HQ SACT FFCI initiative, can be found on the ACT website being developed to support FFCI projects at <http://www.act.nato.int/ffci>.

2.1.4. Note that respondents of this RFI are not required to initiate an FFCI agreement in order to respond to this RFI.

2.2. The Common Funded Capability Delivery Governance Model (CFCDGM)

2.2.1. The common funded capability delivery governance model aims to speed the delivery of capabilities required by NATO commanders and the NATO Enterprise. It consists of six life

RFI-ACT-SACT-22-66

cycle stages, four NATO Governance level decision points, or Gates, and two optional decision Gates.

2.2.2. At the first decision Gate, the Military Committee (MC) approves the Operational Requirement Statement (ORS) and determines whether or not the submission of a Capability Requirements Brief (CRB) is required at the first optional decision Gate. Factors that may lead the MC to require governance approval of this product include anticipated capability type, the expected level of complexity and/or likely existence of more than one viable alternative for filling the OR.

2.2.3. A CRB is developed to identify the specific Capability Requirements (CRs), to identify potential courses of action (COAs) and to examine and confirm the COAs that are best suited to deliver the Capability within scope, cost and schedule. It should be noted that the potential COAs identified may be a combination of materiel and non-materiel solutions from multiple Nations, Industry and/or Academic sources.

2.2.4. With respect to potential COAs, the CRB is intended to determine their viability to address the approved ORs, including consideration of the possibility of “Adopt”-ing (an existing solution already in-service by Nations, Industry and Academia), “Buy”-ing (acquiring a solution from industry), or “Create”-ing (developing a solution bespoke to NATO). In the case of Buy or Create, solutions could be delivered through either a NATO agency or a Nation being the Host Nation. The viability of a COA is assessed according to its operational effectiveness, affordability, and risk(s) (including technical maturity).

2.2.5. To apply due diligence in discovering COAs in support of the CRB, an RFI is necessary to ‘test the market’ and determine relevant materiel and non-materiel solutions that may exist or could be created within Nations, Industry or Academia (as part of the consideration of “Adopt, “Buy or Create”). This request intends to identify prospective solutions for which the team may need to conduct additional in-depth discussions. 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 considered as a potential COA during the development of the CRB.

3. PROGRAMME DESCRIPTION

3.1. Aim

3.1.1. NexGen M&S aims to provide a persistent, flexible, and efficient M&S capability that leverages the entirety of the Alliance. NexGen M&S will support several application areas including assisted decision-making, defence planning, strategic and operational planning, mission rehearsal, education and training, wargaming, strategic studies, procurement, capability development, concept develop & experimentation, doctrine, lessons learned, and innovation.

3.2. Effects and Benefits

3.2.1. NexGen M&S desired effects and expected benefits are identified as:

- **Desired Effects:**

RFI-ACT-SACT-22-66

- NexGen M&S will support geographically separated commands/Nations and the complexity of NATO operations in M&S application areas.
- NexGen M&S will provide easier to set-up, reusable simulations, enabling more efficient use of NATO resources.
- NexGen M&S will provide access to a persistent, flexible, and collaborative capability to support simulation efforts from initial planning, through execution, to lessons learned analyses.
- NexGen M&S will provide a superior understanding of a scenario's interdependencies.
- **Expected Benefits**
 - **Effectiveness.** NexGen M&S will provide a broader range of functions to a wider range of users; executed faster; producing higher quality simulation results that have greater veracity than current systems. NexGen M&S' increased speed will allow use during operations to examine potential scenarios, and improve the speed and quality of decision-making.
 - **Efficiency.** NexGen M&S will reduce the time, personnel, and costs associated with developing and employing M&S. It will also improve interoperability and reduce the time needed to resource, and federate M&S for use. It will expedite the planning lifecycle of a distributed simulation event or exercise and deliver training and exercise with increased fidelity.
 - **Availability.** NexGen M&S will be persistent, easily configurable, and readily available. This will increase user access to M&S and NATO's overall capacity to satisfy rising M&S demand.
 - **Flexibility.** NexGen M&S will increase users' ability to customise the environment using shared M&S capabilities across the Alliance. This flexible environment increases NATO's ability to adapt M&S solutions to a dynamic operational environment and advances in technology.
 - **Risk.** NexGen M&S will reduce risk for commanders by supporting more accurate scenario representations, which provide a better understanding of courses of action with improved visualization of the interdependencies that drive the critical desired effects.

3.3. Current State

3.3.1. There are currently shortfalls and inefficiencies with how NATO utilizes M&S. NATO and Nations lack interoperability between M&S systems in a distributed, federated environment, which is necessary to fully exploit these capabilities for NATO's benefit.

3.3.2. NATO's current stove-piped approach to M&S cannot be extended and/or connected to other systems without great effort and cost. M&S systems take significant time, cost, and effort to configure.

RFI-ACT-SACT-22-66

4. REQUESTED INFORMATION

4.1. This RFI is interested in both materiel and non-materiel solutions, and combinations thereof, across the DOTMLPFI spectrum that contribute to NexGen programme requirements. These can include but aren't limited to:

- Systems, products, services, applications (and their functionality), facilities, infrastructure, or data (i.e. means).
- Methodologies, engineering practices, doctrine, procedures, organisational framework, or operations support (i.e. ways).
- Technologies and technical standards (open, proprietary).

4.2. This RFI will herein refer to one or many potential combinations of these as "your capabilities". Most questions and statements are directed at both Nations and Industry/Academia. Some questions and statements may be directed at either Nations or Industry/Academia. Level of capability is expected to vary across Nations and Industry/Academia.

4.3. NexGen M&S may involve a combination of new, reused, and modified components. RFI responders may be interested in one or several requirement areas and potential components. RFI responders may scope their answers to the following questions based on their interest in one or several requirement areas.

For Nations and Industry/Academia

Capability Information:

- What capabilities do your Nation or Company currently employ that you feel would fulfil part of the Key Performance Parameters (KPPs) in Annex A and support the Requirement Areas described later in this section? Please provide an overview of your capabilities and any technical documentation, such as architecture, diagrams, or system specifications.
- Please describe the operational context of how your capability is used (e.g. employment scenarios, use cases, vignettes, or procedures).
- Please describe the types of users, personnel, and organisational framework required to operate the capability. Please also describe any required skills and training.
- Please describe your capabilities' major relationships, dependencies, and interfaces with other relevant systems and data.

Integration with NATO:

- Describe how your capabilities are adaptable to NATO business processes.
- Please describe how your capabilities have been or could be used in NATO and/or multi-national environments that involve modelling and simulation systems and data.

HQ Supreme Allied Commander Transformation

RFI-ACT-SACT-22-66

- Have your capabilities been previously integrated with a NATO environment, exercise, or event? Please also describe any relevant standards or sharing agreements.

Support to Requirement Areas:

- Please describe how your capabilities enable collaboration between M&S and operational communities. How do your capabilities support collaborative exercise planning?
- Please describe how your capabilities realistically represent operational environments. Please describe how your capabilities represent the effects of kinetic and non-kinetic actions.
- Please describe how your capabilities represent the operational environment across Political, Military, Economic, Social, Information, Infrastructure (PMESII) categories.
- Please describe how your capabilities support a full range of visualizations of the operational environment and M&S effects.
- Please describe how your capabilities' data are obtained and organized for simulation use. Please describe how your capabilities enable the ability to import, select, retain, and classify data.
- Please describe how your capabilities develop and prepare data for simulation use. Please describe how your capabilities enable the ability to build, modify, share, and save for reuse, scenario parameters.
- Please describe how your capabilities can collect and provide analysis of simulation results.
- Please describe how your capabilities can enable interoperability between national and NATO systems.
- Please describe how your capabilities can expedite the time, cost, and effort to plan, design, develop, integrate, test, and execution simulations.
- Please describe how your capabilities accommodate modularity and rapid composability of simulations to streamline M&S development activities.
- Please describe how your capabilities accommodate extensibility, modification, and rapid integration with other systems and data sources.
- Please describe the degree to which your capabilities are available "on-demand". Please describe how your capabilities accommodate 24/7 availability to local and distributed users.

HQ Supreme Allied Commander Transformation

RFI-ACT-SACT-22-66

For Nations only

Programming and Cost:

- Would your Nation be able and willing to take the responsibility of a Host Nation on behalf of NATO and provide your capabilities as a turnkey solution for NATO, delivered, managed and maintained by yourselves? If yes, please briefly explain your process and organisational framework, as well as any special procedures, licenses, support arrangements, etc. that would be required.
- What would you estimate the timeframe (in terms of months or years) for implementation and sustainment of your capabilities for NATO (assuming full implementation)? Please take into account technology refresh cycles for the expected lifespan of this capability. Range estimates are acceptable.
- If possible, please provide a Rough Order of Magnitude (ROM) for the cost associated with the implementation and sustainment, to include licensing costs, of your capabilities (assuming full implementation). Please take into account technology refresh cycles for the expected lifespan of this capability. Range estimates are acceptable.

For Industry/Academia only

Programming and Cost:

- If your company/institution does not currently offer a capability that you feel would fulfil all or part of the identified (KPPs in Annex A, could your company/institution develop capabilities that would fulfil one or several of the KPPs?
- Would your company/institution be able and willing to provide your capabilities (current or developed) as a turnkey solution for NATO, delivered, managed and maintained by yourselves? If yes, please briefly explain your process and organisational framework, as well as any special procedures, licenses, support arrangements, etc. that would be required.
- What would you estimate for the timeframe (in terms of months or years) for implementation and sustainment of your capabilities for NATO (assuming full implementation)? Please take into account technology refresh cycles for the expected lifespan of this capability. Range estimates are acceptable.
- If possible, please provide a Rough Order of Magnitude (ROM) for the cost associated with the implementation and sustainment, to include licensing costs, of your capabilities (assuming full implementation). Please take into account technology refresh cycles for the expected lifespan of this capability. Range estimates are acceptable.

For Nations and Industry/Academia

- Please use the table provided in Annex A to describe the level of support your capabilities could provide (e.g., Full, Partial or None).

HQ Supreme Allied Commander Transformation

RFI-ACT-SACT-22-66

- Please provide any additional or amplifying information you feel is relevant or will contribute to our analysis (e.g., explanation of any partial fulfilment, additional plug-ins that may be available to fulfil the KPPs, clarification as to whether or not your capabilities can fulfil the KPPs now or could be modified to do so, etc.).
- Please confirm that you are open to further engagement about your capabilities, and please provide a nominated point of contact.

4.4. **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 partner with a primary company headquartered within a NATO Nation.

4.5. **Responses to the RFI.** The response(s) to this RFI may be submitted by e-mail. Submission to include both the Technical and Contracting Points of Contact listed above.

4.6. **Response Date.** Responses to this RFI must be received by 7:00 a.m. EST on 17 JUN 2022.

NOTE TO RESPONDENTS

In the interest of time and in order to maximise the number of responses to this RFI, the information to be provided should not be extremely complicated, overly detailed, or require significant effort to complete. Additionally, responses are not required for the Annex if it is not applicable to your capabilities. A statement that the Annex is not applicable will be sufficient. Finally, in addition to your responses, we encourage you to include any existing materials you may have pertaining to your capabilities (e.g., marketing brochures, pamphlets, flyers, etc.).

4.7. Clarifications and Questions

4.7.1. Inquiries of a technical nature about this RFI shall be submitted by e-mail solely to the aforementioned POCs by 2359 hours EST on 15 MAY 2022. 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>.

4.7.2. HQ SACT reserves the right to seek clarification on any submission.

4.8. **Intent/Objectives.** To support the transformational change of how NexGen M&S will be facilitated in the future, a CRB needs a robust assessment of potential COAs across Adopt, Buy, and Create. This RFI is intended to provide Nations, Industry and Academia an opportunity to provide data that would allow NATO to determine potential benefits they might receive from a capability.

4.9. **Expected Benefits to Respondents.** Nations, Industry and Academia participants will have the chance to reveal state-of-the-art systems, products, services, and technology in the area of M&S to NATO.

RFI-ACT-SACT-22-66

4.10. **Expected Benefits to NATO.** Exposure to, and understanding of, current, emerging and future capabilities in the area of M&S.

4.11. **Expected Input from Nations, Industry and Academia.** Expected input to this RFI is Nations, Industry and Academia perspective on relevant current, emerging and future capabilities in the area of M&S.

4.12. **Classified Information.** NATO information that is CLASSIFIED is not included herein but can be passed to authorized industry recipients with appropriate clearances and control measures.

4.13. **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, and will exercise due caution to prevent its unauthorized disclosure. Please be advised that all submissions become HQ SACT property and will not be returned.

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

4.14.1. 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 of how HQ SACT plans to proceed and of HQ SACT's intent to protect information from unauthorized disclosure, requiring 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. This includes the following responsibilities and obligations:

- The third party company receiving the information shall not, without explicit, written consent of HQ SACT:
 - Discuss, disclose, publish or disseminate any Proprietary Information received or accessed under nondisclosure principles and subject to an NDA, if an NDA is concluded;
 - 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
 - Mention the other Party or disclose the relationship including, without limitation, in marketing materials, presentations, press releases or interviews
- Exceptions to Obligations. The third party company receiving the information may disclose, publish, disseminate, and use Proprietary Information:
 - 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);

HQ Supreme Allied Commander Transformation

RFI-ACT-SACT-22-66

- 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; or

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; that is disclosed or used with prior written approval from HQ SACT; obtained from a source other than HQ SACT without obligation of confidentiality; or publicly available when received.

4.15. 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.

4.16. Organizational Conflicts of Interest. Companies responding to this RFI and companies conducting Analysis of Alternatives are hereby placed on notice responding to this RFI could conceivably create an organizational conflict of interest (OCI) on a future procurement, if a future procurement were to occur within the capability development process. Companies are cautioned to consider OCI when responding to this RFI, and to consider internal mitigation measures that would prevent OCI's from adversely affecting a company's future procurement prospects. OCI's can often be mitigated or prevented with simple, early acquisition analysis and planning and the use of barriers, teaming arrangements, internal corporate nondisclosure policies and firewalls, and similar prophylactic measures. HQ SACT is not in a position to advise responding companies on the existence of OCI or remedial measures, and encourages responding companies to consult internal or external procurement and legal consultants and in-house counsel.

4.17. **Follow-on:**

4.17.1. Any and all information provided as part of the submission in response to this RFI may be considered in developing any future HQ SACT requirements.

4.17.2. The data collected in response to this RFI will be used to develop a report to inform the NexGen M&S Capability Requirements Brief. The report will provide an assessment to support a decision as to whether NATO should pursue an Adopt, Buy or Create approach to meet NexGen M&S requirements.

4.17.3. In the event that there is a competitive bidding process later as part of NATO Common Funded Capability Development, the provision of data, or lack of, will not prejudice any respondent.

4.18. **Summary. This is an RFI only.** The purpose of this RFI is to engage Nations, Industry and Academia, through collaboration, in an examination of future capabilities related to NexGen M&S with a focus on related systems, products, services, technology, methodologies, and engineering practices. HQ SACT has not made a commitment to procure any capabilities 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 an RFI, and not an RFP of any kind.** Thank you in advance for your time and submission to this RFI.

HQ Supreme Allied Commander Transformation

RFI-ACT-SACT-22-66

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HQ Supreme Allied Commander Transformation

RFI-ACT-SACT-22-66

Annex A to
RFI-ACT-SACT-22-66

A.1. Please use the table to describe the level of support your capabilities could provide (e.g., Full, Partial or None). Please provide any additional or amplifying information you feel is relevant or will contribute to our analysis (e.g., explanation of any partial fulfilment, additional plug-ins that may be available to fulfil the Key Performance Parameters (KPPs), and provide clarification as to whether or not your capabilities can fulfil the KPPs now or could be modified to do so, etc.).

KPP	Level of Fulfilment <i>1 = None</i> <i>2 = Partial</i> <i>3 = Full</i>	Comments
A.1.1. Provide interoperability with directed NATO and / or national systems at the data level		
A.1.2. Permit importation and filtering of data from other systems with reduced time and cost compared to current systems		
A.1.3. Support, search, compose, and execute simulation workflow with reduced time, cost, and user expertise		

HQ Supreme Allied Commander Transformation

RFI-ACT-SACT-22-66

KPP	Level of Fulfilment 1 = None 2 = Partial 3 = Full	Comments
A.1.4. Enable retention and reuse of scenario parameterization data		
A.1.5. Facilitate scenario configuration with reduced time, cost, and user expertise		
A.1.6. Verify proper parameterization of all variables of the simulation scenario		
A.1.7. Provide the tools to deliver effective analysis of simulation results		
A.1.8. Allow the selection and categorization of desired data elements to be used by the model		

HQ Supreme Allied Commander Transformation

RFI-ACT-SACT-22-66

KPP	Level of Fulfilment <i>1 = None</i> <i>2 = Partial</i> <i>3 = Full</i>	Comments
A.1.9. Configure and share displays for collaboration with visual and audio capabilities for distributed users		
A.1.10. Support synchronous and asynchronous collaboration		
A.1.11. Resilient and redundant to enable availability 24/7		
A.1.12. Calculate and represent the results of kinetic and non-kinetic actions in terms of effects achieved across all PMESII categories		
A.1.13. Determine data relevant to NATO interests on the current situation and detect changes over time to build trends to identify the existence of conflict, its type, its level of intensity and potential future impacts on NATO interests		

HQ Supreme Allied Commander Transformation

RFI-ACT-SACT-22-66

KPP	Level of Fulfilment 1 = None 2 = Partial 3 = Full	Comments
A.1.14. Support a full range of visualization to include 2D, 3D, holograms and other advanced visualization techniques		
A.1.15. Increase coordination between operational and M&S communities and enablement of efforts to increase awareness, knowledge, access and use of M&S resources to operational users		