

Subject:

RFP-ACT-SACT-24-35 Digital Twin Proof of Concept

Reference:

Q&A #2

Date of Issue:

05 April 2024

The following questions were raised with respect to subject **RFP-ACT-SACT-24-35 Digital Twin Proof of Concept**. Responses are to provide clarification.

Questions	Responses
1. Could you please provide further details about the specific type of Digital Twin you are envisioning for this project? Are we considering a physical replica (3D model), a simulation-based model, or a hybrid approach?	1. “Digital Twin is a virtual representation of a connected physical asset. The key word ‘connected’ indicates a synchronous and asynchronous exchange of data and a feedback loop between the model and physical asset”. Therefore DT is a composition of both physical asset and virtual/model asset. So it is expected to have available both a real asset and a virtual one that are synchronized based on your reached DT level of maturity. Moreover, there is a requirement to replace selected module/functionality in a simulation system by DT, therefore, 3D model is not sufficient, it is about behaviour.
2. What specific use cases or scenarios should the Digital Twin address? Is it primarily for monitoring, predictive maintenance, simulation, or training?	2. No specific scenario given. Refer to the Grading Matrix; #6 Level of Maturity it may help you to formulate the scenario.
3. Could you provide more details about the existing simulation system(s) to which the Digital Twin is to be integrated? What type of simulations does it currently support?	3. It is up to contractor to bring a simulation system; we do not make any recommendation. Refer to Grading Matrix; #5 what is expected from a simulation system.
4. Could you provide more details about the platforms and hardware requirements?	4. There are no specific requirements on platform/s that is used as a real asset in DT. There is no HW requirement.
5. Are there any functional requirements for the Digital Twin (e.g., real-time feedback, historical data analysis, or visualization)?	5. Yes, it is related to the current DT Level of Maturity. Higher level you have, higher score you get. E.g. “16 - 20 points – both ways asynchronous and synchronous data exchange”.
6. How will the Digital Twin interact with the simulation system? Is it a one-way interaction (e.g., simulation influencing the Digital Twin) or bidirectional?	6. It depends on the current DT Level of Maturity.

7. Are there any preferred standards or protocols for Digital Twin communication and data exchange? (e.g., OPC UA, DDS, or Rest APIs)	7. There are no current NATO STANAGS or STANRECS on DTs and their interoperability. Selection/design of architecture/protocols/standards is a part of the contract.
8. What are the acceptable latency levels for data exchange between the Digital Twin and the simulation system?	8. Not defined.
9. Are there specific access controls or authentication mechanisms in place?	9. Not defined.
10. Are there specific access controls or authentication mechanisms in place?	10. Not defined.
11. If there is a particular platform or use case that NATO is interested in pursuing in the development of this Proof of Concept, please advice.	11. There is not.
12. To clarify, is NATO looking for the intended past performance signatory as being the CO, COR, or other point of contact?	12. The past performance signatory shall be whomever your company authorises to sign for past performance.
13. The RFP references a "simulation system". Does NATO have a particular simulation system in mind or is this a general term to describe ANY simulation system (i.e., AFSIM)?	13. It is any simulation system; therefore, AFSIM included.
14. How does NATO expect to interact with the Digital Twin; via a 2D/3D interface or some other text-based interface?	14. It is part of your design.
15. What are the expected capabilities of the DT modules?	15. A selected functionality of a simulation system is called module. That's going to be replaced by DT. We don't speak about DT modules.
16. On page 13 of the RFP, Task 2 refers to "Demonstrating added value of having Digital Twin fully integrated within a simulation system" – could The Authority please clarify whether there any pre-defined or priority areas of value they are seeking to be demonstrated?	16. It is part of your design.
17. Could we please clarify that, in the Value Grading Criteria on pages 17 and 18 of the RFP, Criteria 1-6 relate to the Contractor's prior experience and delivery credentials whilst Criteria 7-8 relate to the Contractor's approach to this task and proposed POC?	17. 1-4 about prior experience; 5 and 6 about what you have available as of now for the project; 7-8 about your design/approach.

18. On page 18 of the RFP, Criteria 5 refers to a simulation system which “covers operations in all military domains (Land, Air, Maritime, Cyber, Space)” - please can The Authority define what differentiates between a low and high score in terms of covering a given domain?	18. It is driven by the level of resolution/details that you can model in a given domain.
19. In order to support development of a full costing, could The Authority please confirm how many in-person update meetings are expected to be held at HQ SACT, 7857 Blandy Road, Norfolk and what the anticipated location for the One Day F2F Workshop will be?	19. There is no need for F2F meeting. However, if COTR deems necessary he can travel to the contractor place. As for travel expenditure for One Day Workshop, travel (and related expenses) will not be covered under this contract, but reimbursed separately in accordance with the ACT Financial Manual. afm24.pdf (nato.int)
20. We note that costs in the table on Page 10 of the RFP and requested per Deliverable, are these Deliverables likely to be changed or removed during the project or is the scope anticipated to stay fixed?	20. It is possible to be modified during the project if both sides agree.
21. Is there a maximum word or page count for the Technical Proposal?	21. The Technical Proposal page limit is no more than 5 pages. Font size is 12 Times New Roman. This page limit does not include mandatory items a, b, c, & e above or CVs of key personnel.
22. Is there a defined budget for this opportunity or an overall funding envelope?	22. No
23. Is there an incumbent contractor in place?	23. No, this is a new effort.
24. Can you be more descriptive of what you mean by 'simulation system'?	24. Please see #13.
25. Are there domains / systems that are more valuable to model as the brief is generic in its description of the simulation / modelling topic: "Contractor's simulation system covers operations in all military domains (Land, Air, Maritime, Cyber, Space)"	25. No there are preferences in domains.
26. Are contractors expected to procure or synthesise their own datasets or will these be provided as part of the assessment?	26. All data needed to set up a simulation system needs to be provided by the contractor as per your design.

27. Is there a target audience/ user community for this capability?	27. As specified in RFP, the overall audience are NexGen of M&S stakeholders plus the ACT working group on Digital Transformation Implementation Strategy.
28. Could you provide more information about what you mean by 'being able to replace a selected functionality (module) of the simulation system'.	28. It is expended in WP#1.2, WP#2.1, WP#2.4 a), b), d) and Task 2 Summary a) and b).