Request for Information Number: **RFI ACT SACT 21-53**

Date of Issue: **11 May 2021**

The following questions were raised with respect to subject RFI. Responses are to provideclarification.

| Question | Response |
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| 1. With reference to requirement to achieve a common look and feel for Phase 2 visualisation, is it NATO's preference to seek a single prime for Phase 2? | We are in the RFI phase of the Capability Programme Planning stage, therefore it is too early to discuss the sourcing strategy at this time. |
| 2. Will Triton Phase 2 expand beyond mine warfare for the op planning and execution element of the programme? | Yes, the plan for TRITON is to add more capabilities in the future (through Phase 3 or Phase 2 Addendum), such as amphibious warfare, antisubmarine. |
| 3. Is any ROM expected for RFI Response? | A ROM cost on your solution will be very critical in helping us to extrapolate a ROM for various potential alternatives for our NATO enterprise computing environment(s). The ROM you provide will have no impact on the RFP process, it is in no way binding, it will solely be used during this research phase of exploring the solution space. It is a critical supplement to your solution architecture. |
| 4. What are the main lessons learned from Triton Increment 1 development contract to be taken into account for contracting Triton Increment 2? | TRITON Increment 1 is still in development phase therefore lessons learned from an Operational point of view will be collected after its deployment. TRITON Increment 1 acquisition has been following the NSIP procurement procedures, specifically AC/4-D/2261-ADD1-REV1. TRITON Increment 1 Contract is currently in place and executing. |
| 5. Do you envisage any industry demonstrators? | We do expect to conduct a demonstration of the proposed solution from your company in case you have an existing product. |
| 6. Will TRITON look at Single Synthetic Environment (SSE) as an operational decision support tool as part of the wider programme? | SSE is designed to be a single training tool in training environment, not going in Mission Environment. TRITON is an operational function that will be installed in NATO NS-NU domain. |

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| 7. Will TRITON have a training element, also provided by industry? | Yes, TRITON INC 1 includes training from the company (train the trainers). It is expected that INC2 will have the same |
| 8. Which company is in charge for Increment 1? | A Canadian company named MDA Systems Ltd, was awarded to implement TRITON Increment 1 at 21 Dec 2017. |
| 9. What is the opinion of ACT staff regarding possible risks of integrating enhancements to ongoing developments? Is there any foreseen method to synchronize Canadian company with the awarded company for phase 2? | TRITON Phase 2 will enhance some functionalities already in Increment 1 and introduce some new features, so the requirement is to avoid any integration issues. Any solution that will fulfil this requirement is more than welcome. After TRITON Increment 1 becomes fully operational and enters the Maintenance and Support Stage, the required operational support and software maintenance can be provided by the Support Authority (NCI Agency) through its organic resources together with a maintenance contract with the Supplier (MDA Systems Ltd, Canada).<br><br>TRITON Phase 2 acquisition model will be determined through a detailed analysis. Depending on the selected model, the integration of Phase 2 capabilities into Increment 1 can be included in the Phase 2 procurement package as well as adding the required activities into the Increment 1 maintenance package. |
| 10. With reference to the estimated capital cost to implementation of 14,2M Euros. Is this the estimated programme budget that will be available for suppliers to take into account for their proposed solution, or does it also include the estimated funding required to sustain NATO's project effort up to implementation? | The estimation regards only Capital Cost to Implement. No contingencies or Project Service costs are included. |
| 11. Requirement ISR-01, the Integrated Solution Requirements, could you please elaborate on requirements applicable to an integral solution - fully integrated with TRITON Increment 1? | In an integral solution, any new capability must implement new micro-services at the back-end and new user applications at the front end.<br>The existing system management, user management and interface management capabilities, the existing data models, data flows and data stores, the existing user-facing capabilities and the display framework must be used. |

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| 12. What is the software architecture of Triton Increment 1? | TRITON Increment 1 runs on virtualized platform (VMware) requiring 16 - 32 virtual machines having RedHat operating system. Entire software is deployed using Docker containers (having Alpine Linux) and Kubernetes to achieve load balancing and scalability. Back-end services consist of 80+ micro-services that communicate using Kafka messages. MongoDB provides the data storage for all manageable objects. User applications run in a browser (MS Edge) in a desktop fashion (Application View). Another browser runs Geospatial View (GeoView) communicating with AppView using HTML5. |
| 13. Could you please describe its components, infrastructure and communication capabilities to share data? | Internal data is stored in MongoDB while the communication between micro-services is provided by Kafka. Due to complexity of the system infrastructure and data models, detailed information can only be provided after a contract award. |
| 14. What are the data models used in TRITON Increment 1? How should we reuse the data already stored? | System internal communication mechanisms and data models are still under development. The detailed information can be provided after contract award. |
| 15. Could you describe the Geospatial View provided by TRITON Increment 1 for displaying all geospatial information and digital maps? | TRITON Application View (AppView) enables the user to launch applications and display the data in tabular form. The Geospatial View (GeoView) communicates with Application View using an application programming interface over html5. It receives object definitions with geospatial information and display them on a map according to a selected projection system. The GeoView can display any type of map provided by a GIS Server (e.g. NATO Core GIS) by consuming common Web Map Services. A Symbology Server provides symbols (e.g. APP-6, NTDS) to the GeoView. Both AppView and GeoView works in harmony to perform a user-selected function. |