

Headquarters Supreme Allied Commander Transformation

STATEMENT OF WORK for Deliverables in Support of Analyses of Alternatives for NATO Integrated METOC Briefing and User Services

9 July 2021

RB-ACT-SACT-21-92

1. INTRODUCTION

The purpose of this Statement of Work (SoW) is to describe the scope of the contracted services required in support of North Atlantic Treaty Organization (NATO) Integrated Meteorological and Oceanographic (METOC) Briefing and User Services (NIMBUS) Capability Programme Plan (CPP).

The NATO recently adopted a new Common Funded Capability Delivery (CFCD) model intended to enhance the speed of capability delivery for NATO's common funded capabilities. The model includes six stages focused on through lifecycle capability delivery and includes persistent collaboration between Allied Command Transformation (ACT) and Allied Command Operations (ACO), NATO's two strategic commands. The model is focused on satisfying operational requirements with capability solutions across the spectrum of Doctrine, Organisation, Training, Materiel, Leadership, Personnel, Facilities, and Interoperability (DOTMLPFI).

The NATO Integrated METOC Briefing and User Services programme has approved the Capability Requirement Brief (CRB), and is currently developing a consolidated, comprehensive programme plan that will deliver a required capability to be detailed in the Capability Programme Plan (CPP). This plan will direct the necessary actions across the NATO-recognised lines of development including doctrine, organisation, training, materiel (including software), leadership, personnel, facilities and interoperability. The NATO CFCD Governance Model includes decision points on the:

- Requirement (via the Operational Requirements Statement) – the programme mandate;
- Viability of a capability-based programme to satisfy the requirement (via the Capability Requirements Brief) – the programme brief and vision; and
- Establishment of a programme to deliver capabilities and to drive the transformational change (via the Capability Programme Plan) – the programme creation.

The CFCD model considers a range of potential courses of action to address a requirement, including the possibility of "Adopt"-ing a solution (from Nations), "Buy"-ing (acquiring a solution from Industry), or "Create"-ing (developing a solution bespoke to NATO). The varied options are analysed across DOTMLPFI lines of development. To support both the CPP, Analysis of Alternatives (AoA) are conducted to provide a

comparative analysis of the Operational Effectiveness, Rough Order of Magnitude (ROM) Life Cycle Costs (LCC), and Risk and Opportunities of identified alternatives (considering all DOTMLPFI aspects). The AoA in NATO's Capability Delivery Lifecycle Standard Operating Procedure [Ref A] provides guidance to conducting AoA in support of NATO CFCD programmes.

2. BACKGROUND

The goal of NIMBUS is to provide NATO's Command Structure, Allied Joint Force and Component Commanders a flexible, interoperable and scalable capability that provides Meteorological and Oceanographic (METOC) support across the full range of NATO operations from baseline activities and current operations (BACO), through crisis to maximum level of effort (MLE). METOC support is required as a critical force enabler to optimise safe and effective decision making during the planning, delivery and post analysis of NATO led activities at the tactical, operational and strategic levels.

NATO's Integrated METOC Briefing and User Services capability will mainly support the NATO Command and Force Structures. The following identified effects and benefits are considered fundamental to the capability:

- Receipt, ingestion, visualisation of METOC data, products and services using data provided from national and NATO sources;
- Direct, co-ordinate, monitor and assess the exchange and information management of NATO METOC data, products and services to achieve desired effects;
- Provision of visualisation, analysis and product generation tools for NATO forecasters and subject matter experts to generate value added forecast products and services for dissemination across NATO Command, Force and Mission networks and to dependent functional area systems;
- Compatibility with NATO's federated mission network concept (FMN);
- Contribution to NATO's Recognised Environmental Picture to support environmental situational awareness and decision making.

3. SCOPE OF WORK

The programme will identify up to 10 alternatives for the NIMBUS capability. Under supervision of AoA Branch personnel, the supplier will be responsible for delivering the following core analysis activities:

- **Effectiveness (Benefit) Analysis:** an analysis of the military worth and value it provides to the warfighter/user. The operational effectiveness assessment analyses the alternatives' ability to meet capability requirements/user need within context of NATO policy: How well is the capability gap met? This type of assessment relies on metrics (e.g. measures of effectiveness, measures of performance), policy context (e.g. scenarios/vignettes adopted from threats and scenarios), and appropriate analysis method(s) (e.g. multi-criteria decision analysis).

- **ROM LCC Analysis:** Consolidation and interpretation of already-generated cost data and estimates, the application of analogous or parametric cost estimates, or the development of cost estimates.
- **Risk Analysis:** Analysis of risks and opportunities. Risks are defined by (1) the probability of an undesired event or condition and (2) the consequences, impact or severity of the undesired event were it to occur. Risks can be described as technical, programmatic (internal) or operational (external). Risk Analysis assesses the severity and probability of occurrence of each risk.
- **Trade-off Analysis.** The combined comparative analysis takes into account costs, risks, and benefits.
- **Recommend Preferred Alternative(s).** The preferred alternative(s) are summarized in a concise formatted as an annex to the CPP. This analytical report provides all supporting evidence for the recommendation of these alternatives.

4. DATA AVAILABLE

Data available for the NIMBUS capability consists of NATO Communications and Information Agency (NCIA) products, services and surveys, old Capability Package (CP) project data sheets (PDS), and also new quotations from Industry and Nations for the provision of such or similar services. The supplier will further require to liaise with programme staff and stakeholders to solicit additional information and data as needed. The majority of data will be passed to the supplier by 1 September 2021:

- Identification of potential alternatives and options for the delivery of services.
- Identification and collection of all operational effectiveness measures, their associated risks, and overall lifecycles costs for the capability and individual services.
- Risks and issues for all DOTMLPFI lines of development for each of the alternatives.
- Data collected from the Service Provider, list of services, associated costs, and overall lifecycle plan for the services.
- Industry and Nations quotations on aforementioned services.
- Collection of existing PDSs, information from previous programmes and projects.
- Compilation of all collected data related to lifecycle costs, schedules and risks.
- Approved Capability Requirements Brief [Ref B] document and other related documentation as needed.

5. REQUIREMENT DESCRIPTION

The supplier shall provide deliverables to identified NATO ACT Technical Authorities for the following analysis tasks:

- a) Continuously consult as appropriate with technical authority, project/programme managers, operational users, etc., within NATO commands and agencies to obtain the information necessary for analysis;
- b) Collect the relevant documents and information from programme subject matter experts and stakeholders;
- c) Facilitate workshops as necessary to solicit or consolidate information required for analyses;
- d) **Effectiveness (benefit) analysis** of alternatives as per Ref A: a comparative analysis of the military worth and value each alternative provides. The operational effectiveness assessment analyses the alternatives' ability to meet capability requirements/user need within context of NATO policy: How well is the capability gap met? This type of assessment relies on metrics (e.g. measures of effectiveness, measures of performance), policy context (e.g. scenarios/vignettes adopted from threats and scenarios), and appropriate analysis method(s) (e.g. multi-criteria decision analysis);
- e) **Risk analysis** of alternatives as per Ref A: a comparative analysis of risks and opportunities. Risks are defined by (1) the probability of an undesired event or condition and (2) the consequences, impact or severity of the undesired event were it to occur. Risks can be described as technical, programmatic (internal) or operational (external). Risk Analysis assesses the severity and probability of occurrence of each risk;
- f) **Comparative Rough Order of Magnitude Life Cycle Cost (ROM LCC) estimates** of alternatives as per Ref A:
 - i. Liaise with NCIA and NATO SACT CAP DEV action officers to understand the requirement, be presented with the cost data or initial estimates and define other data required to undertake assessment of cost estimates.
 - ii. Analyze the collection of project data sheets, previous cost estimates and available data provided by NCIA. Upon consultation with NCIA and SACT CAP REQS AOA develop a cost breakdown structure (CBS) suitable for comparative analysis. Map the available data (including supplier data sources) to the identified alternatives across the CBS indicating (a) direct applicability (e.g. parametric), (b) indirect applicability (e.g. analogy), (c) no applicability / data missing.
 - iii. Develop a ROM LCC model and analysis roadmap (proposal) for the programme detailing the types of analyses (methods, models, etc.), required data gathering, presentation of results, etc.
 - iv. Develop the ROM LCC model and perform analysis: develop estimates with risk/uncertainty for each of the alternatives. The required form for presentation of total estimated costs includes synthesis as a three point estimate reflecting Baseline Estimate (Most Likely), Optimistic Estimate, and Pessimistic Estimate with example risk scenarios mapped to each and the degree of confidence in estimation.

- g) **Trade-off analysis** as per Ref A: a combined comparative analysis of the alternatives that takes into account costs, risks, and benefits. Identify top alternatives;
- h) **Documentation** as per Ref A: detailed accompanying analytical report in specified format that provides all supporting evidence for the analysis and evidence for the recommendation of selected alternative(s);
- i) Absolute Rough Order of Magnitude Life Cycle Cost (ROM LCC) analysis of the chosen alternative.
- j) Schedule analysis of the chosen alternative.
- k) Undertake regular interactions to brief progress and process clarifications; provide progress reports to the technical authorities.

6. DELIVERABLES

The following deliverables shall be provided:

- i. Kick-off workshop
- ii. Provision of updates on the status of main activities every two weeks.
- iii. Presentations and additional documents as required by NIMBUS Programme Director or Task Authority.
- iv. For the NIMBUS capability:
 - a. Effectiveness Analysis of alternatives
 - b. Risk Analysis of alternatives
 - c. Cost Analysis of alternatives
 - d. Trade-off Analyses of alternatives
 - e. Interim documentation of analyses
- v. An AoA report as an annex to the CPP encompassing the elements of 6.iv (a-d) compiled from 6.iv.e and consistent with Ref A.
- vi. Cost and schedule estimation results for the recommended alternative(s) in the format consistent with CPP submission guidelines.

7. TIMELINES. Target timelines for outputs are:

- a. Deliverable item (i) by 3 SEP 2021;
- b. Deliverable items (ii) subsequent every two weeks;
- c. Deliverable item (iv) by 15 OCT 2021;
- d. Deliverable item (v) by 15 NOV 2021;
- e. Deliverable item (vi) by 15 NOV 2021.

These timelines are tentative and subject to contract award date and data availability.

8. TYPE OF CONTRACT AND PERIOD OF PERFORMANCE

- a. **Type of Contract.** This is a Firm Fixed Price Deliverables in accordance with the General Terms and Conditions. All employer responsibilities for the Contractor Personnel performing under this contract shall lie with the Supplier.
- b. **Period of Performance.** The Period of Performance is for one base period of 4 months: 1 SEP 2021 through 30 DEC 2021.

9. PLACE OF PERFORMANCE

Contractor Facility. The supplier will support staff based in HQ SACT, Norfolk VA for the performance of this contract, however will not be required to be co-located. Remote support is viable. No travel is expected.

10. CONTRACTOR SUPERVISION AND REPORTING

The Contracting Officer will assign a Contracting Officer's Technical Representative (COTR) to administer all technical contract details. The Contracting Officer has final authority (in consultation with the COTR) to determine if the contract/SOW should be amended, extended, modified or cancelled for evolving requirements, new tasking, and/or technical non-performance.

The technical authorities for this contract will be Dr. Arnau Pons, AOA Branch Operations Research Analyst, and CDR Nicholas Foster, NIMBUS Programme Coordinator, SACT CAPDEV CAP JISR Branch. For administrative purposes, COL Nicky Bell, SACT CAPDEV CAP JISR Branch, will be the COTR.

- a. The COTR shall:
 - (1) Resolve outstanding disputes, problems, deficiencies, and/or questions on the technical aspects of the SOW;
 - (2) Review (and approve) all Contractor duties for completeness and accuracy;
 - (3) Review the Contractor's work at a minimum of monthly, or more often if needed.
- b. The COTR's written approval of work reported and products submitted is mandatory for contractor invoices to be successfully processed.
- c. The contractor shall submit a monthly report to the COTR and the Contracting Officer, detailing progress on the SOW for the reporting period. The report shall include, but not be limited to, the following information:
 - (1) Summary of work and status of tasks undertaken during the reporting period;
 - (2) Contract hours expended showing a comparison with budgeted hours;
 - (3) Current or anticipated problems/deficiencies and recommended solutions.

d. The COTR reserves the right to amend the reporting requirements to receive alternate/additional data and information on a more frequent or less frequent basis, and to request other reports that detail designated aspects of the work or methods to remedy problems and deficiencies.

11. QUALITY OF DELIVERABLE. It is expected that all deliverables are developed/delivered in high quality. Reporting deliverables should be produced at the graduate level, in English using the appropriate Microsoft Office Software program. Analyses (and their documentation) must meet the following:

c. **Replication:** The contractor must provide a sufficiently detailed audit trail, including documentation of data and assumptions list to enable a third party to independently replicate the analyses.

d. **Rationale:** The contractor must provide justifiable rationale for the selection of the inputs to the proposed methods and models.

12. SECURITY AND INSTALLATION ACCESS

Personnel details are to be supplied as requested to allow access to HQ SACT, if required. All contractor personnel shall abide by the security restrictions regarding carrying and using electronic devices (e.g. laptops, cell phones) in all NATO facilities. The Supplier(s) shall be responsible for satisfying the necessary clearance requirements before bringing any such device into a NATO facility.

13. CONTRACTOR ESSENTIAL TECHNICAL COMPETENCIES. Contractor companies shall submit papers of no more than 15 pages (single-spaced) text, describing in detail:

e. Their expertise and past experience in developing and delivering products outlined in this SOW. Contractor companies shall cite at least two past performances based on contracts held within the last ten years that are of similar scope, magnitude, and complexity to the tasks, activities, and deliverables detailed in this SOW, or succinctly state that they have no relevant, directly related or similar past performance experience. Contractor companies shall show this relevant past and present experience in a manner that is directly traceable to the requirements of the SOW. In particular, contractor companies must show relevant experience in effectiveness, risk, cost and schedule analysis for similarly sized/complexity programmes.

f. Contractor companies shall identify the individual or set of individuals that will deliver on the task and provide evidence to assure appropriate levels of experience and expertise.

14. BIDDER EVALUATION. HQ SACT intends to award a firm-fixed price deliverables contract to the lowest-cost-compliant bid. Technical clarification of essential competencies may be conducted.

15. APPLICABLE STANDARDS AND GUIDES

Analysis of Alternatives in NATO's Capability Delivery Lifecycle Standard Operating Procedure [Ref A] provides indicative guidance to conducting analysis in support of NATO CFCD programmes. NATO standardization recommendation (STANREC) 4755 lists recommended practices regarding LCC estimation. NATO STANREC 4755 recommends the following standard: NATO Guidance on Life Cycle Costs ALCCP-01 (Edition B). NATO STANREC 4739 lists recommended practices regarding risk management, to include schedule.

16. REFERENCES:

- a) Analysis of Alternatives in NATO's Capability Delivery Lifecycle Standard Operating Procedure. [Ref A]
- b) Capability Requirements Brief for NATO METOC Briefing and User Services (NIMBUS).
- c) NATO STANREC 4755, NATO Guidance on Life Cycle Costs, EDITION 2, 23 May 18, NSO/0639(2018)WG3/4755.
- d) NATO - ALCCP-1 NATO Guidance on Life Cycle Costs, EDITION B, Dec 17.
- e) NATO SANREC 4739 on Risk Management EDITION, 11 April 2013 NSA/0496(2013)STR-CDS/4739.
- f) NATO STANDARD ARAMP-1 NATO RISK MANAGEMENT GUIDE FOR ACQUISITION PROGRAMMES Edition 1 Version 1 FEBRUARY 2012.