

1st /2023 SCM

Subject No 6



INTEGRATED AIR & MISSILE DEFENCE

CENTRE OF EXCELLENCE

Souda Air Base, 73100, Chania

<https://www.iamd-coe.org>



1st/2023 Steering Committee Meeting POINT PAPER

Our Ref:	NU. 569	Tel.:	+302821440781
		NCN:	302-615-4081
Date:	28 Jul 2023	Email:	info@iamd-coe.org

TO: See Distribution

SUBJECT: **Research Task Group (RTG) “Common synthetic environment for validation (or operation) of offensive and defensive architectures for Hypersonic Operational Threats (HOT)”**

No: 6

PURPOSE: To approve the participation in the activities of the aforementioned Research Task Group.

BACKGROUND: NATO Science & Technology Organization (STO) must gain the momentum to respond to Hypersonic Operational Threats (HOT) by informing NATO's and nations' leadership, by supporting an increased number of (cross-domain) technical activities as well as by striving for Collaborative Demonstrations of Technology (CDT), allowing better informed decisions by its member and partner nations strengthening hypersonic related capabilities across NATO. The capability development approach must include all aspects of Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, and Facilities (DOTMLPFI) as well as the validation of the overall systems and of the individual building elements of offensive or defensive architectures for HOT.

NATO STO conducted a cross-panel workshop (AVT-359 HOT Workshop, Dec 2022) to recommend the way forward. The delegates agreed that Modelling & Simulation (M&S) is a key technology to investigate HOT and develop and assess concepts to address this challenge. The recommendation of the assembled experts was to create a common synthetic environment that offers great potential for different nations and multiple expertise domains to efficiently work together on this topic.

NATO UNCLASSIFIED
RELEASABLE FOR INTERNET TRANSMISSION

1st /2023 SCM

Subject No 6

ANALYSIS &
STATUS:

This RTG contributes to elaborating the critically important HOT. The potential impact and approaches need to be investigated and better understood across all DOTMLPFI aspects. Informed guidelines are needed for required improvements in systems and procedures to enhance operational effectiveness.

The defense community uses simulation for purposes like training, mission rehearsal, or decision support in acquisition processes. NATO and its Partners must leverage the asymmetrical advantage that our collaborative simulation expertise and capabilities provide to address HOT.

The objective of the RTG is to develop and provide a common synthetic environment (SE) to government/military/industry leaders and technical staff as a tool, enabling them to investigate and understand the HOT domain, its challenges and time-critical demands, its maturity and its implications. The SE will also allow NATO STO to investigate potential technologies and architectures to meet the identified requirements for hypersonic capabilities and countermeasures [e.g. new sensor types, new effectors, improved datalinks, shorter and (partly) automated decision making].

This common synthetic environment should be well defined, flexible and secure. It should allow for interoperability with current or future operationally used hardware and software (e.g. C2 systems). The envisioned solution should leverage existing and ongoing efforts and best practices on Distributed Synthetic Training (DST) and Concept Development & Experimentation (CD&E). Existing simulation environments for Integrated Air and Missile Defence (IAMD) need to be upgraded to include HOT aspects to avoid duplication of effort and reuse resources.

FINANCIAL
CONSIDERATIONS
& FUNDING:

Any financial impacts of the aforementioned activities will be covered from the existing budget of the current year (and by transferring of appropriations within the authorization granted to the Director in accordance with Financial Administrative Procedures, if required) without the need for a supplementary budget.

Any financial obligations for the next years will be foreseen in the shared budget of the respective Fiscal Years.

RECOMMENDATIONS
& DECISION:

SC members are requested to approve the participation of SMEs in the RTG for “Common synthetic environment for validation (or operation) of offensive and defensive architectures for Hypersonic Operational Threats (HOT)”.

NATO UNCLASSIFIED
RELEASABLE FOR INTERNET TRANSMISSION

1st /2023 SCM
FOR THE IAMD COE:

Subject No 6



B. Gen (OF-6) Nikolaos KOKKONIS GRC (AF)
IAMD COE Director

Disclaimer: This is a document of the Integrated Air & Missile Defence Centre of Excellence (IAMD COE). It is produced for specific motives with regard to the IAMD COE Program of Work and does not necessarily reflect the notions of NATO or the Participating States of IAMD COE.

DISTRIBUTION (via e-mail if not otherwise stated)

External

Action: IAMD COE SC - Members

Information: -

Internal

Action: CD&E BRANCH

Information: DIRECTOR