

1. **Title of Proposed Study:** Counter Autonomous and Swarm UAS/UGV (Unmanned Air System/Unmanned Ground Vehicle) Systems
2. **Brief Description of Proposed Study:** Counter Autonomous and Swarm systems is needed in order to prevent enemy UAS/UGVs which have the capacity to engage in autonomous and swarm missions including reconnaissance, surveillance, attack etc. To this end, the development of a defense system which has the capability to detect, identify, prevent and neutralize enemy UAS/UGVs by employing both soft and hard kill solutions is needed.
3. **Background:** Counter UAS Detection and Neutralization systems has been developed by researchers since 2018.

In 2019, A NIAG SG titled “GBAD Operations against the 21st Century Peer Nation Cruise Missile and Unmanned Aerial Systems (UAS) (SG-238)” has started and the final report is not published yet. The study evaluates the capability of NATO Ground Based Air Defence (GBAD) units to defend against subsonic to hypersonic, high and low flying, manoeuvring cruise missiles and other UAS.

Also, several NIAG studies addressing the capability to defend against the evolving low, slow and small UAS threat has been conducted in the past (SG-170: Ground Based Air Defence - Countering low altitude, low speed airborne targets, SG-188: GBAD Sensor Mix Optimization Study for Emerging Threats, SG-200: Low, Slow and Small (LSS) Threat Effector Study).

Peer nations are developing and deploying 5th generation fixed wing aircraft, advanced stealth technologies, advanced UAS and a full range of state-of-the-art offensive systems, to include cyber and electronic warfare capabilities. This 21st century Peer Nation threat was addressed by the NIAG SG-220 study titled “GBAD Operations in the 21st Century”.
4. **Objectives of the Study:** Determination of pre-feasibility/feasibility of developing a defense system which has the capability to detect, identify, prevent and neutralize enemy UAS/UGVs by employing both soft and hard kill solutions.
5. **Please indicate whether you would like to be presented with alternative solution options, taking into consideration that exploring various options may reduce the depth of the study scope:** Yes
6. **NATO Priority:** -
7. **Intended Follow on to the Study:** Pre-feasibility/Feasibility of developing a similar system on different platforms like armoured vehicles can be examined.
8. **Other NATO Bodies Involved in the Related Area of Work:** -
9. **Current Industrial Involvement with the Sponsor Group:** -
10. **Proposed Start Date:** 2021
11. **Desired Completion Date:** 2022
12. **Study Classification:** NATO Restricted
13. **Study Open to Partner Industries:** NATO member country industries only.
14. **Final report releasable to:** NATO members only.
15. **Sponsoring Group Point and IS Point of Contact:**

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