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OPERATIONAL TEST
AND EVALUATION

JUL 20 2016

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION, TECHNOLOGY AND LOGISTICS
COMMANDER, UNITED STATES AIR FORCE AIR COMBAT COMMAND

SUBJECT: Air Force Distributed Common Ground System (AF DCGS) System Release 3.0 (SR 3.0) Operational Utility Evaluation (OUE)

The AF DCGS SR 3.0 is not operationally effective, not operationally suitable, and not secure against cyber-attacks. I reached this conclusion based on the data from the OUE and the Cooperative Vulnerability and Penetration Assessment (CVPA) conducted for SR 3.0. The Air Force Operational Test and Evaluation Center (AFOTEC) conducted the OUE September 10 – 28, 2015, at Distributed Ground System–Kansas and Distributed Mission Site–Maryland. The 92nd Information Operations Squadron conducted the CVPA at Distributed Ground System–Experimental (DGS-X) in May 2015.

The OUE results revealed serious problems with the Air Force's ability to collect, reduce, and report signal intelligence (SIGINT).

- Overall SIGINT effectiveness was poor as indicated by the low percentage of collectable electronic intelligence and communications intelligence emissions that were accurately reported.
- The sensors collected only a small subset of collectable emissions. The DOT&E report on the MQ-4 Global Hawk Block 30 in 2012 reported similar results for sensor performance. Accurate evaluation of end-to-end SIGINT capability will require a rigorous integrated test of the SIGINT sensor platforms with AF DCGS.
- SR 3.0 processing and exploitation did not add significant operational value to the onboard processing provided by the Airborne Signal Intelligence Payload (ASIP) on the Global Hawk.
- Poor reliability, availability and maintainability negatively affected the performance; SR 3.0 was available for 33 percent of the time compared to the 98 percent requirement.
- The system's cybersecurity vulnerabilities must be mitigated to secure the system against cyber-attacks.

The report provides the details of my evaluation of AF DCGS SR 3.0 operational effectiveness, operational suitability, and survivability in relation to overall Air Force intelligence, surveillance, and reconnaissance (ISR) operation.

The Air Force has not conducted a comprehensive test of the entire system since I assessed the AF DCGS Block 10.2 baseline to be not effective and not suitable after the Initial Operational Test and Evaluation (IOT&E) in March 2010. Following the Air Force's declaration of AF DCGS full operational capability, the Air Force reorganized the program into multiple Acquisition Category III (ACAT III) sustainment programs. Currently, AF DCGS is composed of eight ACAT III programs, and test events are focused on each ACAT program rather than the effectiveness and suitability of the Air Force ISR enterprise. Such a balkanized test program does not permit an accurate assessment of the overall AF DCGS operational capability.

(U) Recommendations

1. The Air Force should:
    - Formalize the processes to effectively integrate all elements of intelligence.
    - Evaluate the effectiveness of overall AF ISR enterprise, including airborne sensor performance and ground station fusing of multiple intelligence sources, to baseline the end-to-end system capabilities and validate system requirements.
2. The Program Office should:
    - (U) Mitigate the performance shortfalls and cyber security vulnerabilities identified in the OUE and include the overall Air Force ISR enterprise in the SR 3.0 IOT&E.

My point of contact for AF DCGS is Mr. Patrick Sul. He can be reached at (571) 372-3809 or by email at h.p.sul.civ@mail.mil. The DOT&E report on AF DCGS SR 3.0 OUE is classified TS//SI/TK/NF and is available upon request via JWICS.

J. Michael Gilmore
Director

cc:
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