

Distributed Common Ground System – Army (DCGS-A) Capability Drop 2 (CD2)



The Army intended to operationally test Distributed Common Ground System – Army (DCGS-A) Capability Drop 2 (CD2) in October 2022, but DOT&E did not approve the operational test plan because of inadequacies in the Army's data collection, reduction, and analysis capabilities. The Army subsequently conducted the test as a customer test, which was not adequate to evaluate quantitative performance. The Army has made DCGS-A CD2 available to Army users but has not yet formally fielded it. To support evaluation of DCGS-A CD2 operational effectiveness, suitability, and survivability, the Army should improve its data collection, reduction, and analysis capabilities, and plan for operational testing of DCGS-A CD2 as soon as possible.

SYSTEM DESCRIPTION

The DCGS-A CD2 replaces the current DCGS-A Brain data warehouse capability and is intended to be interoperable with legacy DCGS-A systems. CD2 is designed to provide a cloud-based Army intelligence data architecture that will bring in intelligence data from hundreds of Services and Intelligence Community data sources. CD2 will organize and process the data to allow users to search and find relevant information and provide advanced intelligence analysis tools. CD2 operates on Secret and Top Secret/Sensitive Compartmented Information enclaves.

MISSION

Army intelligence analysts in Military Intelligence Brigades – Theater, tactical units from corps down to battalions, and Special Operational Forces will use DCGS-A CD2 to access intelligence data. DCGS-A CD2 provides users at corps-level and above a set of additional advanced analytical tools. They will use DCGS-A to store, process, exploit, and disseminate intelligence data, including threat, weather, and terrain data.

PROGRAM

Project Manager, Intelligence Systems and Analytics (PM IS&A) is managing DCGS-A as an inactive Major Defense Acquisition

Program and intends to transition capabilities currently covered by DCGS-A to other future Army programs. The Army does not plan for further capability drops for DCGS-A.

In FY19 through FY20, PM IS&A conducted a market survey and selected two vendors for CD2. After a series of developmental tests and a field test, the Army selected Palantir Technologies as the contractor for CD2. After the contract award, PM IS&A conducted more developmental tests but did not satisfactorily demonstrate CD2's ability to ingest, normalize, and correlate intelligence data. In FY22, the Army decided to host the CD2 capability on the Army Commercial Cloud Service Platform (AC2SP) but did not complete an operational test of the CD2 on the AC2SP in FY22 or FY23.

The Army did not submit the Army-approved Test and Evaluation Master Plan (TEMP) to DOT&E for approval despite that DOT&E advised the Army that the TEMP needs to add more details about the operational test and evaluation plan.

DOT&E did not approve the DCGS-A CD2 Operational Utility Assessment Plan, because it did not describe an adequate plan for data collection, reduction, and analysis. While the operational test plan included plans for collecting test officer observations, surveys, interviews, and user's computer screenshots, these data are not adequate to determine the accuracy or completeness of the CD2's battlefield picture

because the test did not describe the process and methodology to evaluate the system's ability to import the data from each required data source accurately. The test plan also lacked methods to evaluate whether the CD2's analytical products accurately reflect the imported data.

DOT&E approved the cyber survivability cooperative vulnerability and penetration assessment (CVPA) and adversarial assessment (AA) plan for the CD2 AC2SP cloud node in August 2022.

» MAJOR CONTRACTOR

- Palantir Technologies, Inc. – Denver, Colorado

TEST ADEQUACY

The Army has not conducted an operational test of DCGS-A CD2, other than cyber survivability testing for the cloud node. U.S. Army Test and Evaluation Command conducted the CVPA and AA in September 2022. The Deployed Edge Node (DEN) was not ready for cyber testing. The CVPA and AA of the cloud node were conducted in accordance with the DOT&E-approved test plan and DOT&E observed the tests.

Army Test and Evaluation Command conducted the planned Operational Utility Assessment as a customer test in October 2022 with users at multiple sites. The DEN and cross-domain solution (CDS) were not part of this test. DOT&E observed this event. The

event revealed a lack of tools and methodologies needed to quantitatively evaluate an advanced analytic system such as CD2. The CD2 customer test did not produce data to analyze quantitative characterization, including how much of the data from each required data source was brought into CD2 accurately. Since 2014, DOT&E has recommended that the Army acquire automated data collection, reduction, and analysis capabilities for data-centric systems such as DCGS-A, but the Army still does not have such capabilities.

PERFORMANCE

» EFFECTIVENESS

The customer test conducted in October 2022 was not adequate to evaluate DCGS-A CD2 operational effectiveness quantitatively but showed indications that its advanced analytic tools may work effectively if the intelligence database is adequate. However, the customer test showed limited ability to ingest data from the required sources, and CD2 users will not be able to perform intelligence missions without an adequate ability to bring in the necessary data from those sources.

» SUITABILITY

The customer test conducted in October 2022 was not adequate to evaluate operational suitability, but the results indicated a need to improve the enterprise management to support adequate

import of intelligence data from the required sources.

» SURVIVABILITY

The CVPA and AA discovered cyber vulnerabilities. The Army has stated it has implemented mitigations for those vulnerabilities but has not conducted verification of the fixes. This was previously reported in the FY22 Annual Report. Cyber survivability against attacks via CDS has not been tested.

RECOMMENDATIONS

The Army should:

1. Sustain efforts to acquire automated data collection, reduction and analysis capabilities and implement a methodology to collect and analyze quantitative performance of advanced, data-centric capabilities as soon as possible to enable adequate operational testing of these systems, including those that utilize machine learning and artificial intelligence algorithm intelligence capabilities.
2. Update and submit a TEMP for DOT&E approval.
3. When the CDS is ready, conduct cyber survivability testing to evaluate the user's ability to defend against attack vectors through the CDS.