

Global Command and Control System – Joint (GCCS-J)

Executive Summary

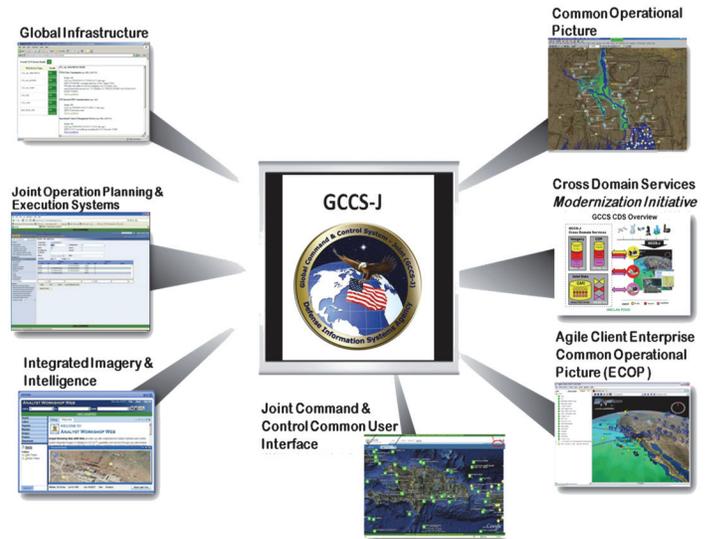
In FY14, Defense Information Systems Agency (DISA) development of Global Command and Control System – Joint (GCCS-J) focused on implementing high-priority capability enhancements, infrastructure improvements, and software defect corrections to both the GCCS-J Global (referred to as Global) and Joint Operation Planning and Execution System (JOPES).

Global

- DISA developed Global v4.3 to move the baseline towards a more flexible and service-oriented architecture and provide high-priority updates to the Integrated Command, Control, Communications, Computers, and Intelligence System Framework; Joint Targeting Toolbox (JTT); and Modernized Integrated Database (MIDB).
 - Operational testing of Global v4.3, conducted by the Joint Interoperability Test Command (JITC) in June and August 2013, identified several critical defects relating to the MIDB and to the T-Sync server, both of which are used to synchronize targeting data between different versions of the MIDB database.
- DISA developed Global v4.3 Update 1 to implement additional high-priority updates and improvements to JTT and incorporate fixes to critical MIDB defects. JITC conducted an operational test on Global v4.3 Update 1 in August 2014.
 - GCCS-J v4.3 Update 1 is effective for use in higher echelons where the primary interfaces are those defined as joint critical.
 - GCCS-J v4.3 is operationally suitable.
 - The National Security Agency (NSA) discovered nine major cybersecurity vulnerabilities after conducting a cooperative Blue Team assessment of the GCCS-J v4.3 baseline in April 2014. GCCS-J v4.3 Update 1 is not survivable until DISA corrects major cybersecurity vulnerabilities identified by the NSA.
- DISA approved Global v4.3 Update 1 fielding in September 2014.

JOPES

- DISA developed JOPES v4.2.0.3 to implement the required framework for interoperability and synchronization between JOPES and Defense Readiness Reporting System – Strategic (DRRS-S). DRRS-S will replace Status of Resources and Training (SORTS) as the readiness reporting system of record following successful operational testing of DRRS-S.
 - During the November 2013 operational test when JOPES v4.2.0.3 was interfaced to a test DRRS-S system, users identified nine critical defects. A JOPES regression test with DRRS-S in May 2014 supported the validation and closure of all nine critical defects.



- During operational testing, JOPES v4.2.0.3 performed correctly with the legacy Global Status of Resources and Training (GSORTS). JOPES v4.2.0.3 was approved for fielding in June 2014, with the interface to remain with GSORTS.

System

- GCCS-J consists of hardware, software (commercial off-the-shelf and government off-the-shelf), procedures, standards, and interfaces that provide an integrated near real-time picture of the battlespace necessary to conduct joint and multi-national operations. GCCS-J consists of a client/server architecture using open-systems standards, government-developed military planning software, and an increasing use of World Wide Web technology.
- GCCS-J consists of two components:
 - Global (Force Protection, Situational Awareness, Intelligence applications)
 - JOPES (Force Employment, Projection, Planning, and Deployment/Redeployment applications).

Mission

Joint Commanders utilize the GCCS-J to accomplish command and control.

Global

- Commanders use Global:
 - To link the National Command Authority to the Joint Task Force, Component Commanders, and Service-unique systems at lower levels of command
 - To process, correlate, and display geographic track information integrated with available intelligence and

environmental information to provide the user a fused battlespace picture

- To provide Integrated Imagery and Intelligence capabilities, which integrate imagery and other relevant intelligence into the common operational picture and allow commanders to manage and produce target data using the JTT
- To provide a missile warning and tracking capability
- Air Operations Centers use Global:
 - To build the air picture portion of the common operational picture and maintain its accuracy
 - To correlate or merge raw track data from multiple sources
 - To associate raw Electronics Intelligence data with track data
 - To perform targeting operations

JOPES

- Commanders use JOPES:
 - To translate policy decisions into operations plans to meet U.S. requirements for the employment of military forces
 - To support force deployment, redeployment, retrograde, and re-posturing
 - To conduct contingency and crisis action planning

Major Contractors

- Government Integrator: DISA
- Software Developers:
 - Northrop Grumman – Arlington, Virginia
 - Leidos – Arlington, Virginia
 - Pragmatics – Arlington, Virginia

Activity

Global

- JITC and the Air Force conducted Global v4.3 testing at multiple echelons. JITC led testing at the higher Combatant Command echelon, conducting operational testing in June and August 2013, to support the DISA Global v4.3 fielding decision in September 2013.
- DISA developed Global v4.3 Update 1 to address deficiencies identified during Global v4.3 operational testing. Global v4.3 Update 1 provides high-priority intelligence mission updates to the Theater Ballistic Missile correlation systems, JTT, and MIDB. The update also resolves 49 defects affecting other parts of the system and implements security lockdown scripts and Information Assurance Vulnerability Alert updates.
- The NSA conducted a cooperative Blue Team assessment of GCCS-J v4.3 baseline in April 2014.
- JITC led Combatant Command-level testing, conducting operational testing of Global v4.3 Update 1 from August 13 – 21, 2014, in accordance with the DOT&E-approved operational test plan.
- DISA approved Global v4.3 Update 1 fielding in September 2014.
- DOT&E submitted an OT&E report on GCCS-J Global v4.3 Update 1 in December 2014.

JOPES

- JITC, in conjunction with DISA, conducted a system acceptance test/operational test of the DRRS-S interface to JOPES from November 12 – 22, 2013.
- JITC, in conjunction with DISA, conducted a regression test of the DRRS-S v4.6.1 interface to JOPES from May 12 – 23, 2014.
- DISA approved JOPES v4.2.0.3 fielding in June 2014.
- JITC and DISA conducted all testing in accordance with the DOT&E-approved Test and Evaluation Master Plan.
- DOT&E did not issue a report on the JOPES v4.2.0.3 system acceptance test/operational test, in accordance with

DOT&E Guidelines for Operational Test and Evaluation of Information and Business Systems, September 14, 2010.

Assessment

Global

- GCCS-J v4.3 Update 1 is effective for use in higher echelons where the primary interfaces are those defined as joint critical.
 - Further operational testing is required to determine the effectiveness for lower echelons, such as Air Operations Centers, where significantly more mission-critical interfaces are required. Some of these interfacing systems will need to be updated to properly interface with the MIDB 2.2, using interfacing services provided by GCCS-J.
 - The 46th Test Squadron will test lower echelon interfaces in September through November 2014. Operational testing for lower echelons is planned for FY17.
- The Blue Team assessment of GCCS-J v4.3 baseline found nine major cybersecurity vulnerabilities.
 - Although DISA made some corrective actions to the tested baseline, they still need to address most of the vulnerabilities. In general, these vulnerabilities continue in a Plan of Action and Milestones status for Global v4.3 Update 1.
 - GCCS-J v4.3 Update 1 is not survivable until DISA corrects major cybersecurity vulnerabilities identified by NSA.
- Independent, threat-representative adversarial testing for GCCS-J v5.0 is scheduled in January 2015.
- MIDB version 2.2 corrects critical problems that existed in the MIDB 2.1 Patch 13 version that was used with GCCS-J 4.3.
 - GCCS- 4.3 Update 1 was effective for operational use in mixed GCCS-J v4.2.0.9/GCCS-J v4.3 Update 1

environments where users at multiple sites need to collaborate on targeting tasks.

- Sharing of targeting information in mixed GCCS-J v4.2.0.9/GCCS-J v4.3 Update 1 environments occurs through the T-Sync system, which is needed to achieve MIDB data synchronization across the different MIDB versions. Synchronization between different versions of the MIDB occasionally displayed slowness, and in one case, a target list did not fully replicate.
- Close collaboration between operators working on different versions of the MIDB to build a combined target list will be needed until legacy versions of GCCS-J Global are phased out in the FY17 timeframe.
- GCCS-J v4.3 Update 1 is operationally suitable.
 - Priority 3 defect workaround instructions were accurately updated and available to the operational community.
 - GCCS-J v4.3 Update 1 servers and clients demonstrated an operational availability of 0.99.
 - Users rated the system data as usable and useful, providing recent, relevant, data.
 - Users felt the system supported task accomplishment, agreed it was better than the legacy system, and agreed it was sufficient to conduct their mission.
 - The help desk was responsive and worked all resolvable GCCS-J problems to closure. Users rated online help favorably.

JOPES

- During the November 2013 operational test when JOPES v4.2.0.3 was interfaced to DRRS-S, users identified nine critical defects. Users found the JOPES/DRRS-S interface to be unreliable and overly complex to maintain. Users

also noted there was no validated process to determine if the databases were out-of-sync, and the process to re-sync the databases was not clear. The planning community was unable to use the DRRS-S Planning and Execution Dashboards to support plan analysis. Users also reported data discrepancies between the plan data in JOPES and the data in DRRS-S. Database comparisons confirmed data accuracy with DRRS-S failed to meet the Key Performance Parameter threshold.

- The May 2014 JOPES regression test with DRRS-S supported the validation and closure of all nine critical defects. The JOPES-DRRS-S interface showed significant improvement in its ability to support the upcoming DRRS-S operational testing, which is planned for May 2015.
- During operational testing, JOPES v4.2.0.3 performed correctly with the legacy GSORTS. DISA approved JOPES v4.2.0.3 for fielding in June 2014, with the interface to remain with GSORTS. DRRS-S will replace SORTS as the readiness reporting system of record following successful operational testing of DRRS-S.

Recommendations

- Status of Previous Recommendations. DISA and the Defense Intelligence Agency successfully addressed all previous recommendations.
- FY14 Recommendations. DISA should:
 1. Correct the nine major cybersecurity vulnerabilities identified by the NSA during the cooperative Blue Team assessment of the GCCS-J v4.3 baseline.
 2. Conduct NSA Red Team testing at a Combatant Command site to assess detect, react, and restore capabilities of GCCS-J and its net defenders.

FY14 DOD PROGRAMS