

# OT of Software-Intensive Systems – Example

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## **Example TEMP entries for Global Combat Support System - Joint:**

The example shown below refers to Global Combat Support System – Joint (GCSS-J) which is an information system using Agile Software Development methodology and for which the DOT&E Guidelines apply. GCSS-J is a query-only web-based system accessing multiple databases. This program also utilizes a beta test site approach with significant emphasis on integrated testing. Examples have been shortened to convey only the most important information relating to the risk-based software testing approach and how it works with Agile Software Development processes, with TEMP paragraphs 3.1, 3.3, and 3.6 being most affected. The examples shown do not represent all the information suggested for these paragraphs.

### **Paragraph 3.1. T&E Strategy**

As DISA becomes more agile in its development process, the intent of the Capability Test & Evaluation framework is to speed the delivery of capability to the warfighter. Adoption of a Capability Test & Evaluation framework will:

- Reduce risk and cost
- Eliminate duplication and improve data sharing between organizations
- Improve the quality of test results

The Capability Test & Evaluation model supports a "one team, one time, testing once under one set of conditions" process. Capability T&E concentrates test and certification activities into one test period, as early in the acquisition process as it is practical. The results, of which, then inform/satisfy the decision maker and all other testing stakeholders. Capability Test & Evaluation test designs are risk-based, mission-focused and do not limit the independence of the OTA or its ability to provide independent, objective evaluation of a capability's effectiveness and suitability. The OTA will conduct OT&E for releases based on the determined level of test based on an OTA-conducted risk analysis using the DOT&E Memorandum, "Guidelines for Operational Test and Evaluation of Information and Business Systems", 14 Sep 2010.

### **Paragraph 3.2. Developmental Evaluation Approach**

The GCSS-J Developmental Test & Evaluation (DT&E) is designed to mitigate design risk and ensure compliance with system requirements. The DT&E risk analysis and risk mitigation efforts are an integral part of the overall Program Risk Management effort. Risks specific to testing will be included in the GCSS-J Program Risk Report. The status of risks and the progress of risk mitigation efforts are closely monitored by the PMO. DT&E will be conducted by employing a risk-based approach to identify test objectives, events, and personnel. The DT&E will also evaluate compliance with operational requirements to minimize risk and support certifying systems ready for dedicated OT.

DT&E will focus on risk assessment of functionality and the data gathered during DT will determine the appropriate scope and balance required to adequately test each increment.

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The testing strategy will utilize an integrated DT&E/OT&E approach to maximize the use of DT events and DT documentation that addresses specific functionality, issues, and criteria to reduce the scope of the OT&E events required. The intent is to reduce the scope of the OT&E events required by focusing only on those issues and criteria that need to be addressed in a purely operational environment. The DT strategy will include data gathering for independent certifications for required items (e.g., interoperability, security, etc.) and will assess compliance with the CDD/CPD specified functional and technical requirements and the CTP identified in this document.

### **Paragraph 3.4 Operational Evaluation Approach**

The JITC serves as the Operational Test Agency (OTA) for GCSS-J. As the OTA, the JITC provides test directors and test personnel to support operational test events. The primary purpose of OT&E is to determine whether systems are operationally effective, suitable, and survivable for the intended use by representative users in a realistic environment before production or deployment. The JITC will conduct an OT&E for each of the planned releases (SIPRNet and NIPRNet) based on the determined level of test based on an OTA-conducted risk analysis using the [Guidelines for Operational Test and Evaluation of Business and Information Systems](#). Each OT will be system-level and address the combined requirements and capabilities implemented during the version releases, to include regression testing of the existing system as appropriate.