

# **Industrial Committee on Test and Evaluation (ICOTE) – Report to the NDIA 30<sup>th</sup> Annual National Test and Evaluation Conference**

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**3 March 2015**

The purpose of the ICOTE is to provide a forum for the senior test and evaluation representatives from the Defense Department and senior executives of NDIA corporate and non-government individual representatives of the U.S. defense industry, to periodically meet and review issues of common interest and concern. Topics for discussion will include test and evaluation policies and procedures, which impact military systems development, procurement and use.

The objectives of the ICOTE are to:

- Provide a forum for discussion and exchange of views.
- Gain feedback from senior industry representative.
- Discuss OSD and service policies, which affect relationships with suppliers.
- Discuss emerging issues in government and industry, which affect the readiness and capabilities of U.S. defense system producers.
- Cooperate on various projects of mutual benefit to the ICOTE participants.

# Membership

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Participation in ICOTE is by invitation and shall be open to NDIA corporate members consisting of executives from industry defense producers, non-government individual members, the Director, Operational Test & Evaluation (DOTE), DDRE/DTE and selected ODOTE and DTE senior staff, Service OTE component commanders and their senior staff, a representative from Defense Acquisition University, the Vice President, Operations, NDIA, Director, Operations, NDIA, and the Chairman, Test & Evaluation Division, NDIA. Nominations for membership are to be submitted to the Operations Director, who will review and forward to the ICOTE Chair and Co-Chair for consideration.

The current Chairman is Pat Neary ([Pat.Neary@ngc.com](mailto:Pat.Neary@ngc.com))

The Co-Chairman is the honorable Dr. J Michael Gilmore

# Activity

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- **Established in October 1998**
- **Primary emphasis was frank and open dialogue**
- **Recent focus has been on producing a deliverable in the form of specific recommendations (white paper) signed out by the President and CEO of NDIA**

# 2012 White Paper to AT&L

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## Recommendations

Specific recommendations for moving T&E earlier in the lifecycle are provided below:

- RFPs need to request the delivery schedule in Table 2.0 with the corresponding funding profiles.
- RFPs should establish an expectation of the role of Chief Test Architect in the Industry Program Leadership team on Major Defense Acquisition Programs.
- RFPs should include support to the Integrated Testing (OT&E & DT&E involvement) life cycle, as well as clear expectations for certification and accreditation deliverables.
- Training classes for the Defense Acquisition University should be developed to educate Program Managers on the expectations and importance of early T&E.
- Exit criteria for key reviews in TD and EMD should include clear traceability between war fighting capability, program system engineering, and DT and OT objectives, as well as Test Architectures demonstrating that traceability .
- Sharing OT data early and often as program maturity allows.

# 2012 White Paper Summary

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This paper shows moving T&E early in the life cycle and focusing on early detection and defect containment has the following benefits:

- 1) Potential of reducing life-cycle labor hours by 27 percent
- 2) Reducing the time to deliver a product
- 3) Delivering fewer defects into operations.

To achieve these benefits there needs to be a healthy collaboration between the DT&E, OT&E and contractor communities, along with modification to the acquisition process so that RFPs request T&E deliverables earlier.

The following are possible next steps that could be taken:

- 4) Fully develop an Early T&E process and incorporate it into the Acquisition Process
- 5) Develop new deliverable definitions (i.e. CDRL and DIDs)
- 6) Develop training material for the Defense Acquisition University
- 7) Develop a template for the deliverables.

# **Summary of Chief Developmental Tester – Industry Test Lead Project**

**For NDIA T&E Division Conf  
March 2015**

**Joe Manas – Project Lead  
Raytheon Company  
jamanas@raytheon.com**

# Chief Developmental Tester Project



Project Name	Activities 2014	Project Output
<b>Chief Developmental Tester</b>	Review service policies for new role and industry implementations	<ul style="list-style-type: none"> <li>Propose model for industry interaction White paper</li> <li>T&amp;E/SE conference presentations</li> </ul>

December 1, 2011

Ordered to be printed as passed

*In the Senate*

Resolved, That the titles (H.R. 1540) entities for fiscal year 2011 activities of the Department of Defense, for personnel strengths for purposes,” do pass with the

**AM**

Strike out all

1 SECTION 1. SHORT TITLE  
2 This Act may  
3 authorization Act for F

3 SEC. 806. MANAGEMENT OF DEVELOPMENTAL TEST AND EVALUATION PROGRAMS.  
4 EVALUATION FOR MAJOR ACQUISITION PROGRAMS.  
5 TION PROGRAMS.  
6 (a) CHIEF DEVELOPMENTAL TESTER.—Section 139b of title 10, United States Code, as amended by section 805(c) of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 110-181; 123 Stat. 2403), is further amended—  
7 of the John Warner National Defense Authorization Act for Fiscal Year 2007 (Public Law 109-364; 120 Stat. 2550),  
8 Fiscal Year 2007 (Public Law 109-364; 120 Stat. 2550),  
9 as amended by section 805(c) of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 110-181;  
10 thorization Act for Fiscal Year 2010 (Public Law 110-181;  
11 123 Stat. 2403), is further amended—  
12 (1) by redesignating paragraph (6) as paragraph (7); and  
13 graph (7); and  
14 (2) by inserting after paragraph (5) the following new paragraph (6):  
15 following new paragraph (6):  
16 “(6) Chief developmental tester.”  
17 (b) RESPONSIBILITIES OF CHIEF DEVELOPMENTAL TESTER AND LEAD DEVELOPMENTAL TEST AND EVALUATION ORGANIZATION.—Section 139b of title 10, United States Code, is amended—  
18 TESTER AND LEAD DEVELOPMENTAL TEST AND EVALUATION ORGANIZATION.—Section 139b of title 10, United  
19 TION ORGANIZATION.—Section 139b of title 10, United  
20 States Code, is amended—

The Secretary of Defense shall require that each major defense acquisition program be supported by—

- “(A) a **Chief Developmental Tester**; and
- “(B) a governmental test agency, serving as **Lead Developmental Test and Evaluation organization** for the program.

- Coordinating DT&E activities
- Insight into Contractor activities
- Oversee T&E activities
- Inform government PM about contractor DT&E results

**Project Lead:  
Joe Manas**

# CDT- ITL Project Summary

- **DT&E Committee Project team:**

Joe Manas (Lead) – Raytheon  
Sandi Gianotas – Boeing (BTE)  
Tom Simms – DASD(DT&E)  
Joe Wascavage – NAVAIR

Brendan Rhatigan – Lockheed Martin  
Steve Scukanec – Northrop Grumman  
Paul Alfieri – DAU  
Bram Lillard – DOT&E

- **Power Point paper version completed in July 2014**

Paper presented at the following conferences:

NDIA 29th Annual National Test & Evaluation Conference ✓

07/21/2014 — 07/23/2014

The Westin Washington, DC City Center  
Washington, DC

ITEA 31st Annual International Test and Evaluation Symposium ✓

10/6/2014 — 10/9/2014

Crystal Gateway Marriott  
Arlington, Virginia

NDIA ICOTE Meeting ✓

7/21/2014

The Westin Washington, DC City Center  
Washington, DC

NDIA 17th Annual Systems Engineering Conference ✓

10/27/2014 — 10/30/2014

Waterford at Springfield  
Springfield, VA

- **White paper completed – November 14 ✓**

- Incorporated feedback received from ICOTE and T&E Division presentations
- Paper focuses on specific recommendations to shape future RFPs
  - Key Personnel Clauses around the Industry Test Lead
  - Key interaction between CDT & ITL and the output products
    - Developmental Evaluation Framework (DEF) – Recommend Workshop w/ key stakeholders
    - Continue to update and review the DEF / TEMP as needed during development

- **Final Review of with DT&E Committee & ICOTE December 2014 ✓**

# CDT White Paper Overview

## Seven (7) Sections – total 17 pages

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1. Executive Summary
  - BLUF, Six (6) main recommendations
2. Introduction Background
  - Background on new CDT role, ITL role, shift left, tie into BBP 3.0
3. Opportunity for DT&E Improvement on Programs
  - Previous findings, summary of annual DT&E report to congress
4. Critical T&E Interactions during the Development Program
  - The importance of CDT & ITL leadership, technical role,
  - Continuous interaction around T&E Strategy and DEF/TEMP collaboration
5. Examples of ITL Implementation & Success in partnering with DOD
  - Examples (prior to the CDT role established) of successful partnering of Industry & Gov
  - Industry organizational models
6. Recommendations for RFP Language
  - Specific wording for sections L & M in the RFP regarding CDT & ITL
7. Summary & Recommendations (repeat of Exec Summary)

# Six (6) High Level Recommendations

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1. Add additional language in Request For Proposals (RFPs) to specifically identify an ITL with responsibilities outlined later in the paper in the Contractor Key Personnel Clause.
2. Amplify the deliverables required by the RFP to include a contractor test & evaluation strategy and a contractor integration strategy that is updated throughout the program lifecycle.
3. Continue advertising the importance of the CDT role. We recommend that industry provide an equivalent qualified ITL that is equal to the Industry Chief Engineer with sufficient organizational independence to ensure test is well thought-out and executed through the program lifecycle.

# Six (6) High Level Recommendations (cont)

4. Recognize test & evaluation as an industry profession through specific career tracks and training and adopt qualification and certification initiatives similar to the DOD. Provide sponsorship to Industry for access to CDT related DAU training.
5. Require in the RFP and subsequent contract SOW that the ITL is to work in conjunction with the CDT on the Developmental Evaluation Framework (DEF) and Test & Evaluation Master Plan (TEMP). Adopt the DEF workshop DASD(DT&E) strategy for MDAP & MAIS programs.
6. Develop case studies on selected programs to further refine doctrine and guidance specific for CDT and ITL work products, interactions and best practices around the use of STAT techniques, and development of the DEF and CDT/ITL integration into early program reviews (SFR, SRR).

# BACKUP

# Specific RFP Language Section L

The contractor shall provide an Industry Test Lead (ITL) with relevant T&E experience. In the program organizational structure, the ITL shall be at a senior level reporting directly to the Program Manager. The ITL in the proposed T&E organizational structure shall be organizationally independent of the development and design team but shall interact with those organizations throughout the entire life cycle of the program. As the main contractor point of contact for test, the ITL shall chair all test reviews in conjunction with the Government Chief Developmental Tester. The ITL shall ensure the performance requirements are testable, quantifiable, measurable, and reasonable. to ensure test ability and scope of test efforts is defined early in the program. The ITL and CDT shall define and deliver a Test & Evaluation Strategy document that is refined with each major program milestone review.

The ITL shall be considered an expert in the T&E discipline with demonstrated capability in statistical test techniques, integration, system test, and range capabilities as appropriate for the program. The ITL shall also have a broad background in the entire program life cycle from proposals to final product delivery. Proposed interactions between the ITL and the CDT throughout the program shall be delineated. The Integrated Government/Industry Test Team makeup and leadership roles shall also be proposed.

The following required CDRLs shall be authored and approved by the ITL and Program Manager:

- **Program Test & Evaluation Strategy**
  - Test & Evaluation Strategy shall include test asset custody, intended test sites, scope of the test program, T&E metrics proposed, operational tempo and test team staffing levels
  - Include a Concept of Operations for the Integrated Test Team (ITT) and Roles and Responsibilities on the Industry and Government
  - Deficiency Reporting and T&Es Interaction with Development Teams for timely resolution
  - Delineate T&Es responsibilities in each program milestone review
- **Integration Strategy and Plan**
  - Strategy shall be tied to the System Build Plan
  - IMS shall be tied to the Integration Strategy and Plan
- **Verification Plan**
- **Lab, Prototype, and System/Flight Test Plans and Procedures**
  - Include test plan responsibilities by organization

The following CDRLs shall require ITL approval in conjunction with the Chief Engineer:

- **Product Build Plan**
- **System Requirements**

The ITL shall co-chair Test Readiness Reviews with the CDT.

# Specific RFP Language Section M

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**Recommend that language be added under “Evaluation Factors and Importance” to address the following:**

- **Proposals will be evaluated based on the following factors:**
  - Integration Approach
  - An Integrated Strategy for Test across all test venues
  - Experience level of Key Test Personnel in T&E Best Practices, Integrated Testing, Statistical Test, and Analysis Techniques
  - Use of scientifically relative techniques to characterize the system in a robust manner within reasonable scope
  - A well thought out Developmental Evaluation Framework
  - ITL integration into early program reviews (SFR, SRR, PDR) to inform test scope, testable requirements, and overall test and evaluation strategy

# Defense Industry Forum (DIF)

## Objective

Establish a forum to identify persistent Developmental Test and Evaluation (DT&E) concerns and improve government and industry cooperation. Conduct follow-on analysis to identify potential cost savings and generate actionable items for DT&E process and infrastructure improvement.

## DIF Highlights

- One-year study effort
- Two of three Collaborative Analysis Events (CAE) have been successfully completed
- CAE 1, conducted at JHU/APL September 17-18, 2014, focused building consensus among DIF participants and understanding the relevance and priority of issues of greatest concern for the DT&E enterprise
- CAE 2, conducted at JHU/APL January 21-22, 2015, reviewed a drill down of the top ten (10) issues identified by participants during CAE 1
- A final capstone event is scheduled for April 9, 25, 2015
- During CAE 3, the JHU/APL analytics team will present its findings from nearly a year of independent research into areas of greatest concern for the DT&E community and solicit your feedback on a proposed set of actionable recommendations for TRMC's leadership and the Undersecretary for Acquisition Logistics and Technology
- As recommended during CAE 2, the JHU/APL analytics team will also present a proposed framework for a persistent government/industry forum as well as a roadmap for continued process improvement following the completion of the DIF
- Actionable recommendations developed from JHU/APL's analytics team will be captured in a final report and delivered to TRMC this spring



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