Common Range Integrated Instrumentation System (CRIIS)

National Defense Industrial Association
49th Annual Targets, UAVs & Range Operations Symposium & Exhibition

CRIIS Program Overview
October 2011

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This briefing is: UNCLASSIFIED
Outline

- Background
- Strategy
- Accomplishments
- Summary
CRIIS

- Development Funded by OSD via Central Test & Eval Investment Program
  - CTEIP Highest Priority Program
- Production and Sustainment Funded by Each Service
- Advanced Tri-Service Range Instrumentation System
  - Supports 5th Generation Fighters
  - Provides Sub-meter High Dynamic Tracking Accuracy with Secure Datalink
    • Top Secret & Multiple Independent Levels of Security Capable
- 50-Person Project Office
- $500M Development and Production Value
- Prime Contractor: Rockwell Collins, Cedar Rapids, IA
Background

- **Primary Function: Test Data Collection**
  - Land, Sea, and Airborne Platforms (Including F-22A and F-35)
  - Requires Equipment More Accurate than System Under Test (SUT)

- **CRIIS Provides:**
  - High Accuracy Time, Space, Position Information (TSPI) of SUT
  - Secure Datalink(s) Transmit Real Time TSPI and Aircraft Data
    - Avionics
    - Weapons Targeting and Status Data
    - Aircraft Status

- **CRIIS Maximizes Interoperability Among T&E Ranges**

- Potential Use on Training Ranges

- **CRIIS Development Funded by Central Test & Evaluation Investment Program**
  - CRIIS Production and Sustainment Funded by Individual Services

*CRIIS is A Test Range Replacement of the Existing GPS Based ARDS With Advanced Datalink, TSPI, Security Features*
Functional Configurations

**INCREMENT 1**

Configurations 1, 2, 3

- Level IA TSPI
  - Short Range DL
- Config. 1
  - Dismounted Soldier
- Level IB TSPI
  - Mid Range DL Encryption
  - Config. 2
  - Low Dynamic Vehicles
- Level IB TSPI
  - Extended Range DL
  - Config. 3
  - Ship-to-Shore

**INCREMENT 2**

Configurations 4, 5, 6

- Level II TSPI
  - High Throughput DL Encryption
  - Config. 4 Pod
- Config. 5
  - Moderate Accuracy
    - Multi-Package Internal Mount
- Config. 6
  - Moderate Accuracy
    - Single Package Internal Mount

**INCREMENT 3**

Configurations 7, 8

- Level III TSPI
  - High Throughput DL Encryption
  - Config. 7
    - High Accuracy
      - Multiple-Package Internal Mount
  - Config. 8
    - High Accuracy
      - Single Package Internal Mount

Ground Subsystem (GS)
Accomplishments/Status

- Phase I Completed May 2010 – On Time and Within Budget
  - Matured and Demonstrated TSPI Technology
  - Reduced Risk, Demonstrated High Throughput Datalink
  - Developed System Architecture and Preliminary Design, PDR
  - Conducted Phase II Source Selection
    - Fixed Price Production Options in Hand
    - Sustainment Strategy in Place

- Phase II EMD Activities Accomplished/Planned
  - Completed Delta PDR 15-17 Feb 11
  - Developed Prototype Boards
    - Complete Detailed Design and Demonstration
    - Perform Qualification Testing, Verification, and Validation
    - Conduct Technical Reviews: CDR, TRR, PCA, FCA
    - Develop Proof of Design/Manufacturing Units
    - Transition to Production & Sustainment
CRIIS Program Schedule

Phase I
Risk Reduction
Tech Maturation

Phase II
EMD, Production & Sustainment

Increment 2
Option

Increment 1
Option

Increment 3
Option

Key Events & Drivers
# Sustainment Approach

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<tr>
<th>Sustainment Activities</th>
<th>ICS</th>
<th>CLS</th>
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<tbody>
<tr>
<td>Depot Repair Facility (for All Assets that Cannot be Repaired at O-level)</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>On-Call Tech Support 24/7 Via Phone</td>
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<tr>
<td>On-Site Tech Support Visit (Once per Year per Range)</td>
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<td>RAMPOD Data Maintenance for Depot Assets</td>
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<td>Central Stocking Location</td>
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<td>Spares Management</td>
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<td>Ship Repaired Assets to Ranges</td>
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<td>Demil and Disposal</td>
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<tr>
<td>Performance-Based Logistics (Material Availability and Material Reliability)</td>
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Summary

- CRIIS is Funded and Executing Phase II

- CRIIS Technologies are Leading Edge
  - TSPI Pushing GPS Boundaries
  - Secure High Throughput, High Spectrally Efficient Datalink

- CRIIS is a Future Enabler
  - Conducive to Live, Virtual, Constructive Applications
  - Potential Operational Use