Embedded Diagnostics and Prognostics Synchronization (EDAPS) Support for the STRYKER Brigade Combat Team

DOD Maintenance Symposium

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Dr. Miranda Keeney
Logistics Integration Agency
miranda.keeney@hqda.army.mil
(717) 770-7600
Outline

- G4 Tasking to LIA
- What is EDAPS
- Synchronization for the SBCT
- Project Goals and Objectives
- SBCT Doctrinal Concepts
- SBCT Architecture
G4 Tasking

LTG Mahan, G4 Army, Tasked LIA Lead an Effort To:

- **Pull Together All the Key Players Across the Army** and Come up With an End State That Balances All the Current Pilots/Programs/Plans.

- **Integrate** Current Diagnostics and Prognostics Programs and Initiatives and Technical Approaches.

- Identify Policy and Programmatic **Gaps and Redundancies**.

- Define and Then Re-engineer the **Operational Architecture and Its Business Processes** From the Platform, Through Retail, and Into the Wholesale System.
What is EDAPS

- An Over-arching Process to Coordinate a Unified Army Strategy to Integrate Current Initiatives, Identify Gaps and Redundancies, and Identify the Necessary Business Processes From the Platform, Through Retail, and Into the Wholesale System.

- Transformation Enabler
  - Total Ownership Cost Reduction (TOCR)
  - Footprint Reduction
  - Enhance Materiel Readiness

- Method of Synchronizing Army Policy and Doctrine to System Requirements

- A Collaborative Management Process Drawn From All Army Stakeholder Organizations

- Transition Strategy for Institutionalizing Changes
Synchronization for the SBCT

- To Integrate separate independent development efforts in the areas of:
  - Embedded Diagnostics / Prognostics – ED / EP
  - Communication – Situational Awareness & Exception Reporting
  - Logistic Modernization – Anticipatory Logistics/GCSS-Army
  - Maintenance Management – TAMMS Automation

- And address these Requirements
  - Tactical Logistics Data Digitization (TLDD)
  - Two Level Maintenance & the Combat Maintainer
  - Mechanic’s Remote Logistics Network (MRLN)
  - Condition-Based/Predictive Maintenance
  - Anticipatory Logistics (Fuel, Ammo, Diagnostics)
  - ED / EP - IETMs & Health & Usage Monitoring Applications
    - Interfaces, Data Standards/Formats and Data Flows

- Using:
  - FBCB2 and MTS
  - Army Standard Data Interfaces
    - ETM-I & MIL-STD 3008
  - Removable Media for large scale on-board data exchange
## IPT Members

<table>
<thead>
<tr>
<th>Players</th>
<th>Roles &amp; Missions</th>
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<tbody>
<tr>
<td>PM-BCT</td>
<td>Requirements, System Integration, STRYKER Vehicle, FBCB2/EMS Interface, Embedded Diagnostic Design, AIT</td>
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<tr>
<td>TRADOC</td>
<td>TSM, BCT Maint Concept Design</td>
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<td>TACOM/TARDEC</td>
<td>IPT Integration, IETM, MRLN, AIT, Readiness, Sustainment</td>
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<td>PM-TMDE</td>
<td>ED/ EP Design/Integration, EDS, PMM, BCT HC</td>
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<td>DA-G4/LIA</td>
<td>G-4 Oversight, EDAPS, AIT, Collaboration &amp; Leadership</td>
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<tr>
<td>PM-MTS</td>
<td>MTS/EMS Software Interface, JVMF, MTS Support</td>
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<tr>
<td>PM-FBCB2</td>
<td>FBCB2/EMS Interface, JVMF, FBCB2 Support</td>
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<td>PM-JCALS</td>
<td>2361 Standardization, Phase 2 TLDD, ETM-I, DPMCS, Automated Logbook</td>
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<td>LOGSA/USAPA</td>
<td>2361/40051 STDS Update (PM-JCALS/AMCOM/CECOM/TACOM)</td>
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<td>CASCOM LIS</td>
<td>GCSS-A Connectivity (ULLS/SAMS/SARRS)</td>
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<td>DCD ORD</td>
<td>Implement BCT Maint Concept, Combat Maintainer</td>
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<td>PEO-AVIATION</td>
<td>Analysis &amp; Assimilation (Ground/Aviation Common Solution)</td>
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<td>FCS</td>
<td>Analysis &amp; Assimilation (Objective Force)</td>
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**Brigade Combat Team**

*Information Dominance*

**COMBAT POWER**

- **BATTLE COMMAND**
  - TELEMETRY
- **COMMANDER’S CRITICAL INFORMATION REQUIREMENTS**
- **EMBEDDED EMS**
- **EMBEDDED DIAGNOSTICS**
- **MTS**
- **BIOMETRICS**
- **POSITION VELOCITY VECTOR**
- **FUEL/AMMO OIL/WATER TEMPERATURE CURRENT OHMS VOLTAGE PRESSURE FUEL/AIR MIX FIRE CONTROL GUN TUBE TEMP**
- **HEALTH STATUS**
  - RED
  - YELLOW
  - GREEN
- **FUTURE**

*See NOTES*
**Project Goals & Objectives**

- Synchronize SBCT Doctrinal Concepts with Independent Development Efforts
- Influence STRYKER Block Improvement
- Integrate SBCT ED / EP Disciplines
- Validate SBCT CCS Doctrine
- Demonstrate Proof of Concept for Bi-Directional Real Time Battlefield Communication for Vehicle Health Management
Synchronize SBCT Doctrinal Concepts

- Address & Synchronize these Concepts & Requirements to Produce:
  SBCT Synchronized Support Concept

SBCT Demo Project Will Cut Across Many Army Activities & Disciplines

In the development of New Business Rules to Support the SBCT
SBCT Functional Areas & Capabilities
“Multiple Concepts Synchronized with SBCT Doctrine”

BSA

BSB TOC

SPO
SOC

*GSCC-Army

BN

FMC

MCO
MSC

*GSCC-Army

CTCP

S-1
Supply Sgt

*GSCC-Army

CO

At-System

S-4

*GSCC-Army

Platform

On-System

HEMTT

STRYKER

Combat Maintainer

Maintenance Central

BSA BN CO Platform

**GSCC-Army Interim Solution for SBCT**

ULLS/SAMS Interfaces

SAMS

PMM & ETM-I Supervisor Interface

ETM-I

PMM & ULLS Interfaces

ULLS

ED/EP System and Applications

ED/EP System

Logbook

IETM

DPMCS

SPORT/MSD

HUMS

IETM

Sustaining The Transforming Army

Dr. Miranda Keeney/USALIA/717-770-7600/miranda.keeney@hqda.army.mil

11/5/2002 2:53 PM
Design & Influence the Future Operational Architecture

The Bigger Picture

Building the Foundation of the Future Now

GCSS-Army

WIN-T

GCSS-A Enterprise Applications & National Level Data Repository

ERP

WLMP Enterprise Applications & National Level Knowledge bases & Data Repository

ERP

MRLN
Reach Back Capability

Bulk Data

National

Field

Platform ED/EP Level

Combat Maintainer

BN SPT OPS

CAIIS

CPT

MSE

BSB