NDIA

Enterprise Health Management Committee

EHM Technology Transition Roadmap Task

Introductory Briefing

July 2008

EHM Technology Transition Roadmap Task

- A proposed process has been developed to address the challenges, gaps, and issues associated with transitioning EHM/CBM+ capabilities to emerging and legacy weapon systems. The NDIA EHM committee has been requested to review and comment on this process.
- Overview of the products
  - Conduct an assessment of the process with recommendations and follow-on.
- Deliverables to sponsor
  - Task Final Report with recommendations and follow-on.
  - Briefing to sponsor
- Data from sponsor
  - Pillar process
  - Lessons learned
  - Suggested contacts

EHM Technology Transition Roadmap Task

Technology Framework Pillars – Overview

Business
- Models
- Operational Case
- Business Case
- Cost Benefit Analysis
- Risk Reduction
- Acquisition Strategy
- Trade-off Analysis
- Safety/Engr trades
- Transition Platforms
- Resources (Engineering, Dollars, Time, Schedules)
- Policies

Architecture
- On-Vehicle
- Off-system
- Transfer
- Software
- Distribution
- Utilization

- Existing Standards/Rqts

S&T Capability
- Sensors
- Techniques
- Health State Methods
- Prognostics
- Decision Reasoning

- Products
- Solutions
- Next Generation

Infrastructure
- Platform Interface
- Logistics System Interface
- Ground Station Environment
- Test & Integration Toolset
- Data Mgt and Support

Mfg/Repair

ATE

Implementation
- Transition Planning
- Process integration

-Maintenance

-OPS Planning

- Assessment
- Verification
- Certification
- Technology Maturation
- Tech Insertion
- Sustainment
- Repository Solution

System Engineering Process - Applied per Topic

Needs/Gaps/Topic Populated by Sponsors (EHM Example)

Business
- Operational Impact Model
- Cost Benefit Analysis Model
- Design Trade-off
- Design Coverage
- Analysis Model
- EHM Standards
- DoD Instruction
- Technology/Solution Reuse

Architecture
- Enhanced Throughput
- Enhanced Data Transfer
- Enhanced Distribution Methods
- Realtime Use
- Integrated Enterprise Arch
- Integration methods
- Open Arch
- Enhanced HM Data Recording Methods

S&T Capability
- AMC/Prognostics Algorithms
- Advanced Physics of Failure Mechanisms
- Environmental Corrosion Sensor
- Intermittency Analysis
- System False Alarm Mitigation

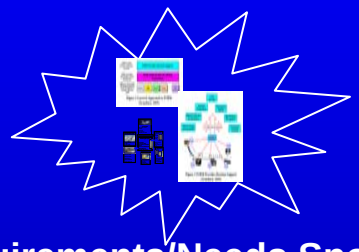
Infrastructure
- Enhanced Data Storage
- Enhanced Data Archiving
- Data Retrieving Methods
- Ground Station Environment
- Test & Integration Toolset
- ATE Interface
- SCM Next Generation Mode

Implementation
- Logistics System Interface
- User Interfaces
- Assessment
- Verification Methods
- Certification Methods
- AMC integration with Logistics planning

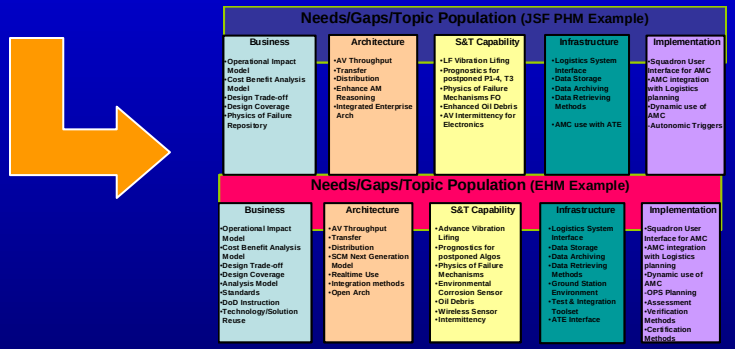
EHM Technology Transition Roadmap Task

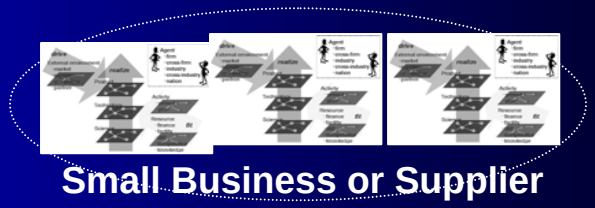
End to End Approach

Provides a Viable Transition Strategy with Roadmaps



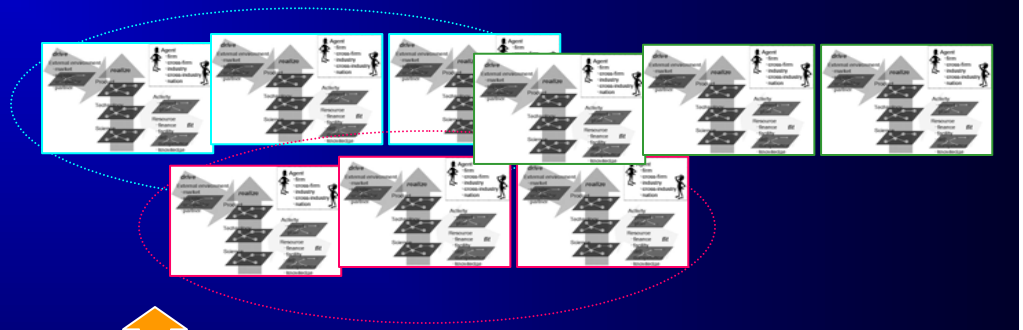
Requirements/Needs Sponsors





Small Business or Supplier

Leveraged Coalition Roadmaps



Resources:

- SBIR
- ONR
- AFoSR
- STTR
- MANTECH
- IRAD
- PEO Program
- BAA
- OSD
- International
- Research
- DARPA
- Other

NDIA Enterprise Health Management Committee

JSF - Prognostics and Health Management
An Enterprise Approach to CBM+
22nd May 2008
Tom Dabney & Luca De Micco
JSF PHM Team

EHM Technology Transition Roadmap Task

The NDIA EHM Committee Task:

- Suggest a system engineering process to enable the development, integration, and validation/verification of health management technologies into emerging and legacy Weapon Systems (Pillar concept)
- Analyze proposed framework and the Pillar content
  - Define essential performance measures to evaluate transition process (Pillar details)
  - Conduct initial application with JSF PO / technology
- Conduct workshop with technologists and PMs to apply "Pillar process" to a specific HM technology (Pillar Vetting)
- Provide a Task Final Report

EHM Technology Transition Roadmap Task

Strawman Group Formation Tasks and Milestones

- **Detailed Tasks**
  - Define Task group charter
    - Organize format of initial workshop (focus is transition tech to fill gap)
      - Objective is to formulate response to first task (broad evaluation of the pillars and content)
      - Multiple sessions (1 per pillar) – discuss/expand the pillar details
  - Core Group Staff selection and organization
  - Define workshop

- **Preliminary Milestones**
  - Most likely extend into '09
    - Form core - July
    - Socialize workshop - Aug
    - Conduct workshop - Jan
    - Nine to twelve months ARO for report