

Panel Discussion: DCMA Data Driven Pilot

**Using the UN/CEFACT XML
Schemas, DoD Data Exchange
Instructions to Capture Data**

NDIA IPMD Meeting April 13, 2016
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Background - UN/CEFACT XML Schemas

- **UN/CEFACT XML – International standards organization to facilitate establishing open source, vendor neutral XML schemas**
- **Defined schema for exchanging project management related cost and schedule data**
- ***Single* base schema: “CostSchedule”**
 - Select the applicable data element building blocks to convey desired information
 - Designed to capture source data at desired level of detail – not designed to match paper based report formats (DID formats)

Background – DoD Data Exchange Instructions (DEIs)

- **In addition to the base schema, need to explain how to use the schema to support a given need**
- **Result: set of three DoD DEIs designed to support the requirements identified in the IPMR DID (and older CPR, IMS DIDs) and to submit data to the EVM CR**
 - IPMR Cost Guideline (CPR or IPMR Formats 1-4, can support 5)
 - IPMR Schedule Guideline (IMS or IPMR Format 6)
 - IPMR Historical and Timephased Cost Guideline (IPMR Format 7)
- **DEIs baselined September 2013, no further changes, only clarifications and notes posted on the DCARC EVM CR web site**
 - Commercial off the shelf vendors support these DEIs, selected contractors have also implemented for in-house toolsets

NOTE: The IPMR DID governs the content of the DEIs

Scope of Schema/DEIs

- **Header info about the XML instance file, who produced it**
- **Reporting structure details (repeat as needed to include WBS, OBS, IMP, others)**
 - Generally assumes lowest level of WBS is Control Account (CA) level, can include work package details for a control account
- **Contract header details with contained sequence for project header details – includes calendar details**
- **Task details (with or without resource assignment detail)**
- **List of resources (related to task resource assignments)**
- **Task relationship details**
- **Cost details (associated with structure element)**
 - Includes cost value, hour quantity, and equivalent heads quantity data elements
 - Optional to include element of cost details (map to one of four standard categories)
- **About the COTS/internal software tool used for the source data**
- **Notes about the content (can be used at different levels – contract/project, element, or task)**

Note: The base schema includes cost and schedule data (could be one XML instance file) - the DEIs separated the content

Background – DCMA Data Call, Analysis Tool Approach

- **Initial pilot pulled schedule and cost data from contractor's source applications – used Excel spreadsheets, Access database, one-off data extract/import design for a specific set of tools**
 - Problem: quickly discovered contractor pilot #2 did not use the same toolsets (neither will any other contractor)
 - Difficult to scale, share, or maintain a piece meal, one-off approach
- **April 2015: Industry recommended DCMA consider the use of the XML schema and DEIs already in place for the IPMR DID, EVM CR**
 - Need a standard set of vendor neutral data elements – DCMA only needs to develop code once to capture/read the source data from contractors (like the EVM CR)
 - Contractor toolsets (COTS or in-house) that support the EVM CR can support DCMA needs

What Happened Next

- **July 7 2015 PARCA meeting with DCMA to review potential strategy**
 - DCMA proposed implementing a broader use of the base schema (enable more data elements) using one DEI instead of the current three DEIs (merge schedule and cost data into one XML instance file)
 - Intent was for DCMA to start with the existing Format 6 DEI (*data at lowest level already*) and the Format 7 DEI (time phased cost data at WBS or CA level as specified for Format 1)
 - At the time, stated no desire to disturb the existing set of DEIs for the EVM CR
- **DCMA categorized their list of data analysis tests/metrics:**
 1. What could be automated using the existing DEIs
 2. What could be automated if the DEIs had the right information (i.e., open up use of existing schema data elements to get detail data or expand the use case for other related data)
 3. Which ones are not relevant anymore given the design of the DEIs (example: if getting detail data, don't need to compare summary data to detail data, so those checklist items would go away)
 4. Which ones cannot be automated

- **PARCA EVM (and DCMA) – Proposed Format 7 “Future State”**
 - Merging use case scenarios for the EVM CR and DCMA compliance/surveillance reviews (and attempting to incorporate data elements for the CSDR “flex files”)
 - One set of common DEIs to support business needs
 - Eliminate Formats 1 to 4, replace with monthly time phased cost data (Format 7) at the work package level (with structure data)
 - Assumption is the receiving party can generate desired data views/reports from the time phased cost data
 - Format 6 – schedule data (with or without structure data)
 - Format 5 – standardize data elements captured (details TBD)
 - Note: The current cost DEI can associate narrative (text or image) with a WBS element to support Format 5 content
 - Intend to expand use to capture additional content – example: baseline change details included in Format 3

- ✓ **Stage One / Stage Two: Assemble Team / Training / SSP Waiver**
 - Teamed With DCMA To Develop & Pilot System Health Assessment
 - Evaluated Industry Standards Such As EIA-748, NDIA Intent Guide, Bowman Guide
 - Identified and Developed Objective Evidence To Evaluate Key EVMS Attributes
 - Efforts Incorporated In Recently Published EVMSIG
 - Evaluated Required Data Deliveries & Refined Requirements
 - Developed and Implemented Test Methodology And Required Tools
 - DCMA And Lockheed Martin Aeronautics Calculated Metrics Independently and Validated Results
 - Conducted Team Training

- ✓ **Stage Three: Deploy On-site**
 - Developed SSP
 - Determined Battle Rhythm
 - Deployed Process To Measure Protocols, Thresholds

- ✓ **Stage Four: Transition To Remote Monitoring – continuing to work with DCMA CCB**
 - Working To Approved SSP
 - Corrective Action Process In Place
 - Metric Validation Completed For First Pass
 - Validating measures – some deleted, some added, some modified
 - Entering data collection across expanded pilot base (metric results)

- ❑ **Stage Five: Close Out Pilot**

Recognized Lockheed Martin Best Practice

DCMA EVMS System Health Assessment Pilot Raytheon Missile Systems

- **New mentality**
 - 1 pilot at 5 sites versus 5 individual pilots
- **Configuration Control Boards**
 - 5 Completed (Organization, Planning/Scheduling, Budget/Authorization, Accounting/Indirect Management, Analysis & Management Reports)
 - Final Scheduled 19-20 April (Revisions & Data Management)
- **Manual Testing - DCMA**
 - Completed (December 2015, March 2016)
 - Scheduled (May 2015, June 2016, September 2016)
- **Automated Testing Schedule – Performed by RMS**
 - First set April 2016, every 4 weeks thereafter
 - RMS will supply DCMA results and feedback
 - Completed by August
- **Challenges**
 - Data Elements not sufficient to perform test
 - Data alone may not be enough to completely satisfy compliance (CAM Interviews)
- **Success**
 - Focused and Objective

Since August of last year...

- **Content team finished its review of all 32 guidelines and assessed each test metric –**
 - Is it meaningful?
 - Is it executable?
 - Does it reflect the intent of the test step/attribute?
- **Prepared a set of EVMS Test Metric Specification sheets customized for GDEB and provided to DCMA integration team**
 - Data elements required
 - Assumptions
- **Attended CCB meetings with DCMA and other pilot sites to review consolidated Specification sheets**
- **As each group of Specification sheets is dispositioned by the CCB and finalized, testing is initiated at GDEB and performed alongside the Supervisor**

- **Testing though guideline 15 (Organization & PSB) is complete**
 - Focus on accurately performing the test and not on the result
 - Identify potential issues/gaps in the metrics found during the testing process
 - GDEB has demonstrated that, in a majority of cases, the tests can be performed
 - Challenges:
 - Significant time required
 - Derivation of the metrics is an extremely manual process
 - Data is required at a detailed level from a variety of sources
 - Time spent on analyzing/discussing the final calculations and thresholds is inevitable

NDIA IPM Division Meeting: DCMA Data Driven Pilot Panel

Kaci Garrett

M&LS EV Pilot Program

- Initial Pilot Coordination Meeting Conducted Jun 1-3, 2015
- EVM Pilot Status Meeting Conducted Aug 18-20, 2015
- Data Call/Metric Review

Data Call Date	Guideline	Test Type	Metric Review (Contractor & DCMA)
Oct 19, 2015	Various	Manual	Virtual Meeting (Video & Audio Conference)
Jan 19, 2016	GL 1 - 5	Manual	On-site visit @ M&LS: Jan 19th - 21st
Feb 12, 2016	GL 6 -7	Manual	On-site visit @ DCMA: Feb 16th - 18th
Apr 15, 2016 *	GL 8 -15	Manual/Automated	On-site visit @ M&LS: May 3rd - 5th

* Current M&LS EV Pilot Program Data Call

M&LS EV Pilot Program

Participating Program(s)

- **SSC (Ship to Shore Connector)**
 - Contract Value – \$ 529 M
 - Contract Completion – Oct 2021

Key Resources

Human Resource	Software Resource
Cost Control Analyst (2)	ACE Tool by Aztec
Schedule Analyst (1)	Primavera P6 & Primavera Cost Manager
EVMS SMEs (3)	Premier

Benefits

- Open communication between contractor and DCMA counterpart
- Minimize costs and time through the streamlined compliance reviews and system surveillance
- Evaluate/Improve effectiveness of current business processes
- Exchange of knowledge and experience

Concerns

- Availability of internal resources/experience
- Format of data call delivery items
- Development and Maintenance of tool to process automated EV metric template results