How to manage the choices and implementation of new technology for S1000D delivery

Selection and Implementation of Technology and Suppliers for S1000D compliant data delivery in support of new Regional Airliner Program
Outline

• Overview
• The Need
• The Approach
• Specific examples from recent program
• Results
• Q&A
Overview

• In an effort to distribute costs and risk on integrated programs, OEM’s are pushing Customer and Product Support requirements down the supply chain onto partners and first and second tier suppliers.

• As a result of these increasingly complex Customer and Product Support expectations and requirements, first and second tier suppliers are finding themselves responsible for significant elements of what has traditionally been OEM activity, specifically the preparation and delivery of integrated Technical Documentation and Supply Chain data to standards such as S1000D.
The Need

• Managing the preparation and delivery of integrated Technical Documentation and Supply Chain data to standards such as S1000D.
  – Previously completed at OEM/Tier 1 level
  – Requires specific skills at technical AND management level
  – Requires substantial hardware/software infrastructure
  – Typically an overhead level activity
Integrated Approach Overview

Foundation
Set initial philosophy and approaches

- Technical Manual Publication Plan (TMPP)
- Reliability, Availability, Maintainability (RAM) Plan

Initial As-Designed Configuration Map

- Bill of Material (BOM)
- Level of Reparability Analysis (LORA)
- LRU List P/N, Name, MTBF

Safety Documentation and Analysis

- FTA
- FHA
- SSHA
- PRA

Reliability/Maintainability Analysis

- MSG-3 Analysis
- Maintenance Task Analysis (MTA)
- Recommended Spare Parts List (RSPL)

Technical Documentation/ S1000D Data

- AMM
- SRM
- WDM
- IPC

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The Approach

• Meeting these challenging requirements necessitates an objective, repeatable and defensible means for
  – Defining requirements
  – Identifying, qualifying, evaluating and selecting appropriate tools and technologies
  – Identifying, qualifying, evaluating and selecting partners/suppliers
  – All such that you are able to meet Customer expectations and requirements while also meeting internal Resource, Budget and Schedule constraints.
The Approach

• Defining Requirements
  – Recommend a matrixed approach
  – Work through SOW/Contract/PSA/CSP line items
  – Provide for internal tracking (line item number, etc)
  – Identify which are general guidance, and which are actionable
  – If possible, tie to industry/regulatory standards for traceability
The Approach

• Identifying, qualifying, evaluating and selecting appropriate tools and technologies
  – Once the matrixed requirements have been identified, begin searching for tools that fit the bill
  – Does end-user/customer have specific required/recommended tool?
  – Do tools ‘play well’ with existing IT and CM infrastructure?
  – Do tools ‘play well’ with existing skill sets/resources/staffing?
  – Create a scoring approach and include relevant stakeholders
  – Does it make sense to do internally/organically or outsource?
The Approach

• Identifying, qualifying, evaluating and selecting partners / suppliers
  – Similar approach to Tools (recommended from customer, etc.)
  – Create a ROM/SOW package and seek RFP’s
  – Get customer feedback for potential partners (schedule, cost, performance – seek both positive and negative)
  – Create a scoring approach and include relevant stakeholders
The Approach

• Meet Customer expectations and requirements while also meeting internal Resource, Budget and Schedule constraints
  – Determine internal limitations/concerns early
  – Best method is to ensure adequate estimates during business development phase
  – Engage early and often during RFP/RFQ/Contracting phase

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## Specific Examples

### Requirements and Deliverables Mapping

<table>
<thead>
<tr>
<th>Reg LIN</th>
<th>CSP Section and Description</th>
<th>Approach</th>
<th>Recommended Approach</th>
<th>Document or process</th>
<th>Owner/FOC</th>
<th>ECD</th>
<th>Notes – Discussion</th>
<th>Functional Organization – Skillset</th>
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<td>2 Airplane Flight Manual (AFM)</td>
<td>N/A</td>
<td>No direct AFM data re: Taskone Installation</td>
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<td>J. Knolla</td>
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### Specific Examples

#### DATA FOR AIRCRAFT MAINTENANCE (APPLICABLE)

- PS9-070: "Data is made to ensure, electronically, source data created to Solera's Products, including, without limitation, test or display, to be incorporated into the Aircraft maintenance manuals listed below that are to be published by Buyer. Such data shall include maintenance data including, without limitation, system description, maintenance procedures, service, removal, installation, adjustment, testing, inspection, check, cleaning, painting and repairs procedures. More specific details regarding the scope and extent of the data to be provided to Buyer will be established by Buyer after consultation with..."
Specific Examples

**Scoring Matrix**

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**S1000D**

*Selection and Implementation of Technology and Suppliers*

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Specific Examples

• **Software/Infrastructure Selection**
  – Customer had originally defined ATA iSpec2200, changed to S1000D with some ATA 200/300 parts data
  – Customer identified Arbortext XML as desired authoring tool
  – We needed an S1000D compliant CM/CSDB tool that integrated to Arbortext
  – Looked out across service providers for Professional Services effort to build-up a ‘from-scratch’ CSDB/CM application
  – Cost and schedule risk was unfavorable, so we wrapped Tool into Partner Selection effort
Specific Examples

• Partner Selection
  – Due to schedule and budget concerns, we elected early to find a ‘one-stop-shop’ approach for CM/CSDB assistance
  – Although I typically prefer to have at least 3 choices, we were unable to find 3 potential partners given the above intent (on past programs, this has been possible)
  – That said, typically best to have a weighted scoring approach featuring heavily on key factors (schedule, budget, risk, etc.)
Specific Examples

• Selling the program internally
Results

- Integrated Planning Tool
- Strong partnership with Corena USA
- Initial content development underway
- Developed/strengthened skill sets and have grown capacity
- This could have gone the other way - outsource
- Can now integrate management and content development with other Engineering Services offerings or as stand alone
Q&A

• Questions

• Thank you for your attention