PLM, The Digital Thread and ASD Standards

Ian Boulton
Fellow, Business Transformation, FA&D
PTC
E-mail: iboulton@ptc.com
AGENDA

• Introduction
• Evolution of ILS Practices and Software
• The desired end game/goal – why is the digital thread so critical?
• Integrating PLM, S3000L and S1000D into this thread
• Where could we evolve to?
• Q&A
Who we are, what we do...

PTC IS A GLOBAL SOFTWARE TECHNOLOGY COMPANY

GEOGRAPHIC COVERAGE

Europe 37%
Americas 42%
Asia Pacific 21%

NEW HQ: BOSTON SEAPORT

REVENUE BY VERTICAL

Retail & Consumer 7%
Other 9%
Life Sciences 5%

Automotive 14%
Electronics & High Tech 18%
Industrial Products 31%

Federal, Aerospace & Defense 16%

FAST FACTS

$1.17B FY17 total revenue
$989M FY17 software revenue
$856M FY17 recurring software revenue
68% FY17 new software bookings subscription
30,000 active customers
750 partners
6,000 employees
1,800 universities
Who we do it for

ARMY

NAVY

NASA

US DoE

A&D

FED

US Army Corps of Engineers

Langley Research Center

Los Alamos National Laboratory

Raytheon

Boeing

Honeywell

Lockheed Martin

ARL

NASAR

Sandia National Laboratories

Grumman

Northrop Grumman

US Navy

Naval Air Systems Command

Langley Research Center

Lawrence Livermore National Laboratory

Boeing

Honeywell

Lockheed Martin

NAVSEA

X-34

Langley Research Center

Los Alamos National Laboratory

Raytheon

Boeing

NAVSEA

X-34

Langley Research Center

Lawrence Livermore National Laboratory

Raytheon

Boeing

Honeywell

Lockheed Martin

US Army Corps of Engineers

Langley Research Center

Los Alamos National Laboratory

Raytheon

Boeing

Honeywell

Lockheed Martin

US Army Corps of Engineers
How the ILS standards have evolved...

Mil Std 1388-1  Mil Std 13882A  Mil Std 13882B  DS-0060  GEIA-0007  TLCSM/PLCS  ASD Suite


As technology and computing power have evolved so have ILS standards...
Why is the digital thread so critical to product support?

**ORDER FROM CHAOS**

*Is the Pentagon headed for a military readiness crisis?*

Michael E. O’Hanlon - Thursday, October 12, 2017

---

**Navy Cutting Maintenance, Cannibalizing Planes Amid Readiness Crisis**

---

**Your Air Force**

*Growing readiness woes: Only 7 in 10 Air Force planes are ready to fly*

By: Stephen Losey - April 2, 2017
DoD SCOR and the ASD Suite address the full lifecycle

CONCEPT/CRADLE | OPERATE/SUSTAIN | DEMIL/GRAVE

Supplier processes
- Source
- Make
- Deliver
- Return
- Enable

Customer processes
- Plan

Design of Systems and Support Equipment
- Logistics Support Analysis
- Provisioning

Operational & Maintenance Data Feedback – Functional Coverage by S5000F
- LSA data
- Provisioning Data
- Order Admin
- LSA tasks/data

IN SERVICE
- Logs Material and Data

USE
- Design Data
- S3000L
- S4000M
- S2000M
- S1000D
- Tech docs, IETM, other media

This document and its content are the property of the ILS Specification Council, © 2018. It shall not be communicated to any third party without the owner's written consent. © All rights reserved.
Observations from the trenches...

• It's not a technology problem
• It’s a mindset, process and policy problem
• People are risk averse - “it’s easier to do what we did on the last program....”
• But that isn’t going to crack this nut...

"Insanity is doing the same thing over and over again and expecting different results"

Albert Einstein
Traditional system of support

Field
- Report
- View
- Trouble shooting
- Organize

Design
- Special Tools
- Infra
- RAM-T
- LORA
- Provision-ning
- Training
- IPC
- Conf.

Logistics
- Spare Purchase
- Spare Management
- Spare pricing
Introducing model based LSA initiative (S3000L)
Integrating PLM, S3000L and S1000D into this thread

Open

Unified data

Connected

LSA-BOM
S3000L

Breakdown

Breakdown
Element Structure

Part

LSA - BOM

S3000L

S3000L

S1000D

S-BOM

Breakdown

Breakdown
Element Structure

Part As Design

Store LSA and Service Part information
Link to upstream Engineering Part
LSA analysis – candidate items
LSA to S1000D – Data Module Generation
LSA to Training – PPT Generation
• We have to unlock every technological advantage we can for our customers...
• We have to unlock the value of breakthrough technology such as IOT and Augmented Reality to train and equip the next generation of maintainers
• This is only possible at scale, if we institute a robust digital thread for sustainment and lifecycle support.
• We need to re think the way we do logistics to allow this.
Thank you
for your attention!

Questions?