Department of the Army PPSS Budget Process and the Challenges ahead for Estimating Software Support

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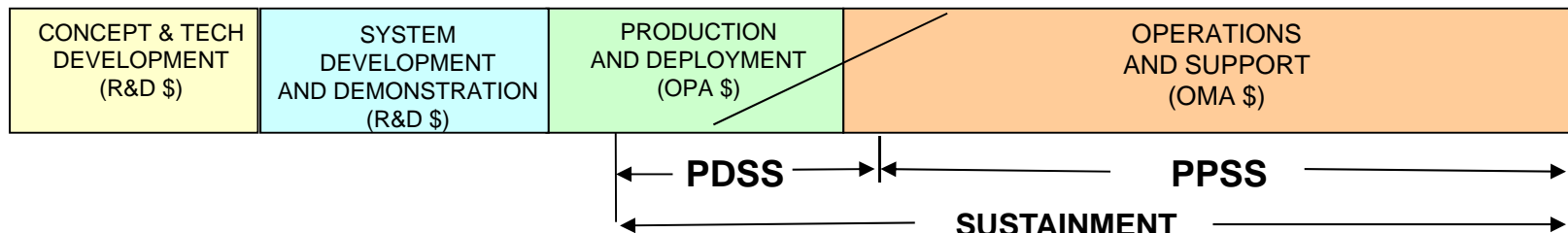File: CECOM SEC presentation on ppss to software working group

Agenda

1. What is Depot Maintenance Post Production Software Support (PPSS)?

2. DA G4 Structure for Building PPSS financial requirements (POM).

3. Challenges for PPSS estimating.

4. Potential options to meet challenges for PPSS estimating.

What is
Post Production Software Support?

- **Post Production Software Support (PPSS) – ensures *operational sustainment of a system's capability* to meet warfighter needs**

- **PPSS includes all process and actions associated with sustaining software to include:**

    1. **Infrastructure – Organizational "Open Door", Labs (and associated maintenance of hardware, software, etc).**
    2. **"Operational fixed costs" and tech support needed to maintain a system: Purchasing/maintaining Licenses, Accounting Information Assurance Vulnerability Assessments (IAVAs), Certification & Accreditation (C&A).**
    3. **Code Maintenance (to include Capability Sets) – maintaining interoperability, ensuring network operations, incorporating new system requirements, responding to new threats, trouble shooting/correcting issues, ensuring compatibility with COTS updates and associated interfaces, etc.**
    4. **Technical support required to maintain systems (includes Field Software Engineers)**

CONCEPT & TECH DEVELOPMENT (R&D $)	SYSTEM DEVELOPMENT AND DEMONSTRATION (R&D $)	PRODUCTION AND DEPLOYMENT (OPA $)	OPERATIONS AND SUPPORT (OMA $)

PDSS ←→ PPSS

SUSTAINMENT

Challenges with PPSS

When a system enters PPSS – many requirements are "locked" - use of COTS vs an organic capability basically decided at Milestone B – the software architecture identified.

Use of COTS products drives many PPSS requirements to include license costs, IAVAs, C&As, etc.

- PPSS requirements generally not "unit driven" - a software update applies to all those systems in the field – so are funded or not funded.

- In the POM – systems are entering PPSS with sustainment costs….but few "leaving".

- Increased Complexity of software (and interfaces) has resulted in requirement for "Field level" depot maintenance support.

- For Military systems – the software is NOT "static" – but CONSTANTLY being changed!!!

Must Fund – Infrastructure:

1. Core Payroll – Non system specific organizational workforce.
2. Core Contractual – Non system specific "open door" requirements – Security, facilities maintenance, hardware/software maintenance, business systems, Info Assurance, IT refresh, etc.
3. Organic System Labor – System specific govt workforce
4. Systems Infrastructure - Maintenance of Labs necessary to perform PPSS functions

Without Must Fund Infrastructure – Organizational "Open Door" requirements eliminated – No system can be supported!

Must Fund – Operational:

1. Licenses – Purchasing of software licenses required to operate a system.

2. IAVAs – Maintains security integrity of systems. Reduces risk of enemy intrusion to network/data.

3. C&A - Validation and verification of Information Assurance requirements (DITSCAP/DIACAP) met.

Without Must Fund Operational - systems are INOPERABLE!

Capability Sets (Software Blocking):

1. Updating software from a "systems of systems" perspective .

2. Balanced and disciplined policy/process for harmonizing requirements and development that leads to fielding and support of interoperable software intensive systems.

3. Ensures delivery of integrated and operationally suitable warfighter capability to the field.

Without Cap Sets – Army will not have data integrity!

DA Structure for Building Requirements -

Technical Support - Field Software Engineers (FSEs):

"On the ground" software experts providing warfighter:

- Problem identification/workaround of software issue (work with "sanctuary" locations to correct issue).

- Installing releases.

- Modify software to Accommodate data transfer between systems.

- Restore operational capability of systems from catastrophic software failures.

- Complete diagnostics and perform corrections to restore operational capability.

Driven by highly complex/interoperable software intense programs.

System Mission Capable:

- Troubleshoot/correct any issues
- Cyclic release of new/revised versions
- Respond to new threats or requirements
- Maintain interoperability with other changing systems
- Accommodate new weapons, systems or munitions
- Increase efficiency/effectiveness
- Support new doctrine/tactics
- Ensure compatibility with replacement COTS
- Satisfy policy mandates

Without Mission Capable Funding – Systems Operational Capabilities degrade – and eventually are eliminated!

Challenges for PPSS Estimating

1. Most POE's do not break WBS structure for software support by the DA G4 Structure Used for Estimating OPS29/POM PPSS.

2. Execution of financial data by system by DA Structure would require extensive increase in Budget Execution Organizations (…in a time of pressure to reduce govt workforce).

3. Efforts to "streamline" contractual actions has resulted in "basketing" requirements – with associated loss of detailed data.

4. No T&A system to track effort of Govt workforce by DA G4 Structure.

5. No Single DA data source for obtaining "actual" data.

6. Since POE does not follow a WBS along DA G4 structure, cannot compare what estimated was vs actual (except at "total" PPSS level).

7. No ability to cost account for "functional" costs to "system" costs.

Potential Options to meet Challenges for PPSS Estimating

1. Adjust POE's WBS structure for software support to DA G4 Structure Used for OPS29/POM.

2. ID "Independent variables" that *may* drive sustainment costs.

3. Develop T&A system to track effort of Govt workforce by DA G4 Structure (by system/effort) with "independent variable" information.

4. Develop contractual CDRL requiring contractors to report execution of contract by system by DA Structure and "independent variable" information.

5. Both point 3 and 4 should automatically feed DA database.

6. Adjust manpower PBGs to implement additional budgetary tracking requirements.

> Challenge: How would you cost account for "non system direct" costs – to include allocation of DoD/DA level funded efforts.

It's all about the Warfighter!

Code U - Software Maintenance. Used to report software maintenance that includes all activities following initial hardware operating capability (IOC) and/or the fielding of the system. Software maintenance must be reported regardless of location or funding source. Activities include all events to maintain operational capability, correct faults, improve performance, and adapt the software to environmental changes or new requirements. These activities include (1) change events made to operational software resident in military materiel (including weapon systems and their components and space control systems and their components) as well as the associated software technical data, automated test equipment (ATE), including interface test adapters (ITA) and test program sets (TPS), and laboratory support (simulation or stimulation software, data acquisition or reduction software); and (2) software infrastructure maintenance which includes the purchasing of license agreements, maintaining standards that ensure the software is certified and accredited to operate safely, conducting information assurance vulnerability assessments (IAVAs), etc. Change events include the corrective maintenance or fixes which successfully repair faults discovered in the software, preventive maintenance or fixes which detect and correct latent faults in the software, adaptive modifications or upgrades which incorporate enhancements made necessary by modifications in the software or hardware (operational) environment of the program, or perfective modifications or upgrades which incorporate enhancements demanded by the users. Unless otherwise specified, software maintenance and software sustainment are considered synonymous.

DA Structure for Building Requirements -

14.1: Infrastructure - Govt labor (core)

14.2: Infrastructure Contractor "open door" (core)

14.3: Infrastructure Govt labor (system specific)

14.4: Infrastructure lab (systems)

17.1: PPSS Operational - Licenses

17.2: PPSS Operational – IAVAs

17.3: PPSS Operational – C&A

24: FSE (Available – DEF/CEF)

25: Capability Set 13/14

26: System Mission Capable – Mission Critical systems

32: Capability Set 15/16

38: FSE (Train/Ready)

39: Capability Set 17/18

40: System Mission Capable – Mission Essential systems

50: FSE (RESET)

51: Capability Set 19+

52: System Mission Capable – Mission Enhancing systems

Challenges with PPSS in relation to Addressing disjoint between hardware/software with cost reductions driven by less items:

- **PPSS requirements generally not "unit driven" - a software update applies to all those systems in the field – you fix one – you fix them all. Thus – ARFORGEN does not apply**

- **For system mission capable – requirements – since ARFORGEN does not apply – requirements across prioritization based on aligning systems:**
  - Mission Critical systems
  - Mission Essential systems
  - Mission Enhancing systems

As Army draws down – PPSS requirements have minimal reductions!