# Effective Use of Non-Directive Tools and Templates – Integrating the "How's" with the "What's

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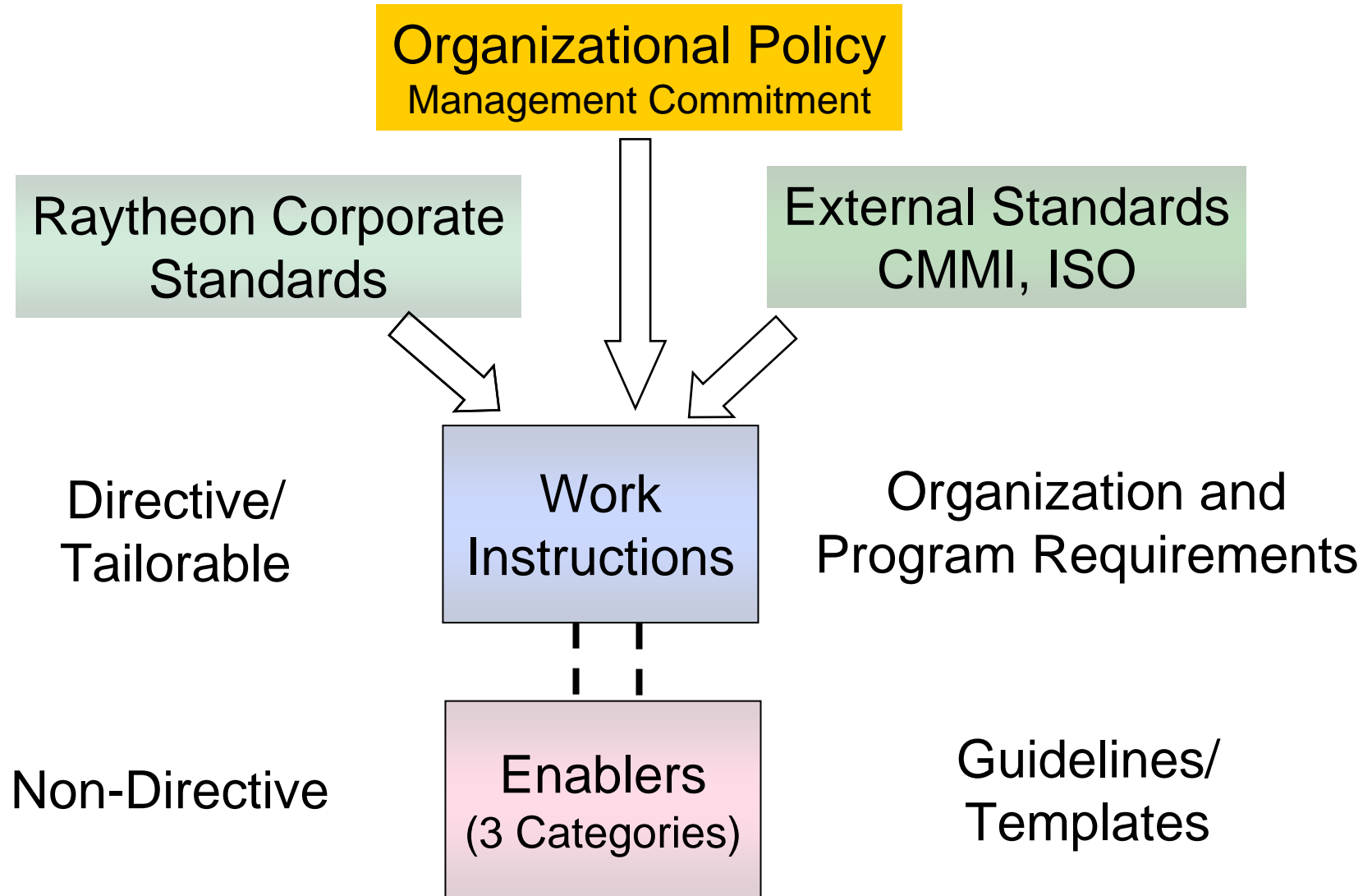El Segundo, CA
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SWEC

# Overview

- Directive and Enabler System Overview
- Types of Enablers
- Example of enabler template
- Example of enabler tool
- Enablers which are guidelines
- Connection between directives and non-directive enablers
- Lessons Learned
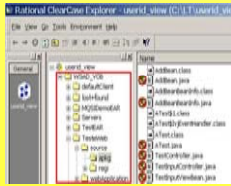
# Directive and Enabler System Overview

Organizational Policy
Management Commitment

Raytheon Corporate Standards

External Standards
CMMI, ISO

Directive/
Tailorable

Work Instructions

Organization and
Program Requirements

Non-Directive

Enablers
(3 Categories)

Guidelines/
Templates

# Enabler Types



**Endorsed**

**Functional**

**Practitioner**

**Formal CM Tool**

**Corporate PAL**

**Document Sharing DocuShare**

**Local PAL**

Stakeholder Involvement

**Document Sharing DocuShare**

**Virtual Teaming eRoom®**

**Local PAL**

Limited Control

Engineering    Operations    Quality    Supply Chain

Change Control Board

# Endorsed Enablers

- Implement:
  - One or more directive requirement(s) and/or
  - One or more Corporate Process Element(s)
- Available in the Raytheon Corporate process repository

# Functional Enablers

- Contain data, attributes, codes, and cost elements that are frequently changed or updated

- Often very specific to task activities used by functional organization or Business Units

# **Practitioner Enablers**

- Aids used by a particular project or team

- Products Developed by an individual who wishes to share it

- Do not fit in either of the other categories

- Generally stored in the Local Process Assets Library (PAL)

# Enabler Categories

| Type | Endorsed Enablers | Functional Enablers | Practitioner Enablers |
|---|---|---|---|
| **Definition** | Implements a process in a Work Instruction or corporate standard | Functional Org. desires to promote consistent behavior | Individual has tool or process to share |
| **Examples** | Metrics Tool<br><br>Program Review Minutes<br><br>Bid Template | Tailoring guidelines for small projects<br><br>Risk and Opp. Mgt toolkit | Template for capturing action items |
| **Control** | Formal CCB | Identified by Discipline or PAL Administrator | User Control or PAL Administrator |
| **Repository** | ClearCase<br><br>Corporate PAL | DocuShare<br><br>Local PAL<br><br>Discipline Repository | DocuShare<br><br>Local PAL<br><br>Desktop |
| **Delivery** | Process Website<br><br>Hyperlink<br><br>Web Search | Process Website<br><br>Web Search<br><br>Program, Dept Web Page | N/A |
| **Relationship to Directives** | Yes, required | Could be if related to TD | None |

# Endorsed Enabler Template Example

**Program Name:**
**IPT(s):**
**Chair:**

| Core Members: | | | | | |
|---|---|---|---|---|---|
| IPTL(s) | | ☐ | Date: | | |
| FM(s) | | ☐ | | | |
| PE(s) | | ☐ | Scribe: | | |
| Support Members: | | | | | |
| Quality Representative | | ☐ | | | |
| CM Representative | | ☐ | | | |
| DM Representative | | ☐ | | | |
| Specialty Engineering Representative | | ☐ | | | |
| SCM Representative | | ☐ | | | |

# Endorsed Enabler Template Example - continued

| Agenda: | | Meeting Notes / Decisions: |
|---|---|---|
| 1. Restate meeting objectives. Capture any specific objectives from the IPTL(s). | ☐ | |
| 2. Review action items. Include any unresolved AIs from Reviews, as needed. | ☐ | |
| 3. Review IPT highlights/ issues/concerns/risks and opportunities. | ☐ | |
| 4. Review resource needs | ☐ | |
| 5. Review product/process metrics, evaluate, analyze and provide support as necessary.<br>▪(Part A) Metrics discussion – Focus on trends, out of bound metrics, issues/concerns<br>▪(Part B) SPC discussion | ☐ | Metrics discussion:<br>Document analysis results within the metrics package. Compare program performance in CPI, SPI, Defect Containment and Requirements Volatility against the expected ranges of values (norms) and the desired ranges of values (goals)<br>Were any trends or any points outside the limits?<br>If so, what corrective action was taken?<br>Is the program's data within the limits predicted by the Predictive Model(s)?<br>If not, what corrective action was taken? |

# Endorsed Enabler Tool Example
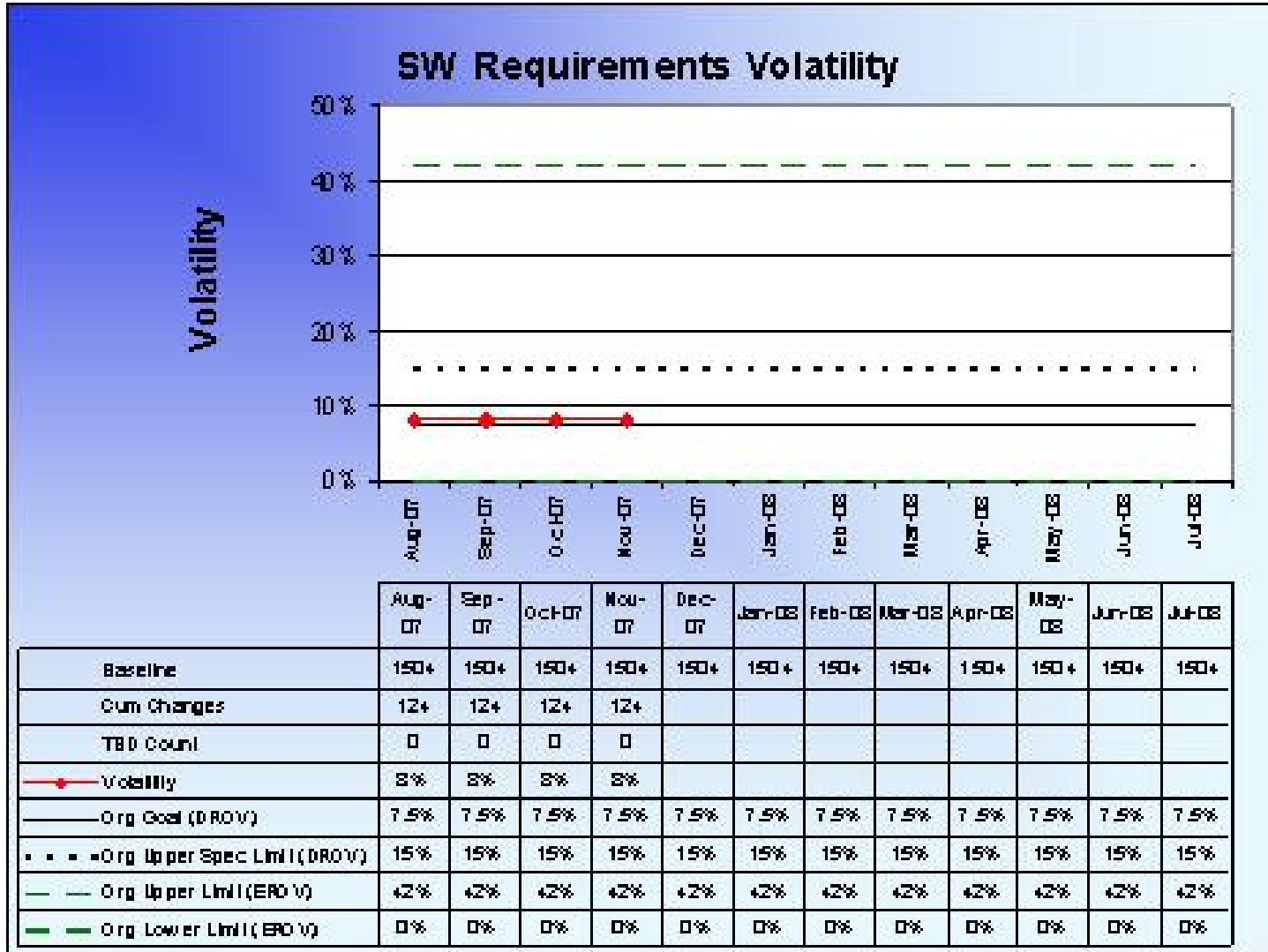
**Raytheon**
Space and Airborne Systems

## Requirements Volatility

| | Aug | Sep | Oct | Nov | Dec | Jan | Feb |
|---|---|---|---|---|---|---|---|
| Baseline (excludes TBDs) | 1504 | 1504 | 1504 | 1504 | 1504 | 1504 | 1504 |
| New | 0 | 0 | 0 | 0 | | | |
| Modified | 0 | 0 | 0 | 0 | | | |
| Deleted | 0 | 0 | 0 | 0 | | | |
| TBD Baseline | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Changes | 0 | 0 | 0 | 0 | #N/A | #N/A | #N/A |
| % Change | 0% | 0% | 0% | 0% | #N/A | #N/A | #N/A |

## Org Limits

| QPM/OPP Values (Reqmts Vol) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Org Upper Limit (EROV) | 42% | 42% | 42% | 42% | 42% | 42% | 42% |
| Org Lower Limit (EROV) | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Project Goal (Optional) | 7% | 7% | 7% | 7% | 7% | 7% | 7% |
| Org Goal (DROV) | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% |
| Org Upper Spec Limit (DROV) | 15% | 15% | 15% | 15% | 15% | 15% | 15% |

# Endorsed Enabler Tool Example - continued

## SW Requirements Volatility



| | Aug-07 | Sep-07 | Oct-07 | Nov-07 | Dec-07 | Jan-08 | Feb-08 | Mar-08 | Apr-08 | May-08 | Jun-08 | Jul-08 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Baseline | 150+ | 150+ | 150+ | 150+ | 150+ | 150+ | 150+ | 150+ | 150+ | 150+ | 150+ | 150+ |
| Cum Changes | 12+ | 12+ | 12+ | 12+ | | | | | | | | |
| TBD Count | 0 | 0 | 0 | 0 | | | | | | | | |
| Volatility | 8% | 8% | 8% | 8% | | | | | | | | |
| Org Goal (DROV) | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% |
| Org Upper Spec Limit (DROV) | 15% | 15% | 15% | 15% | 15% | 15% | 15% | 15% | 15% | 15% | 15% | 15% |
| Org Upper Limit (EROV) | 42% | 42% | 42% | 42% | 42% | 42% | 42% | 42% | 42% | 42% | 42% | 42% |
| Org Lower Limit (EROV) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |

# Functional Enabler Example –
## SW Maintenance Tailoring Guidelines

Space and Airborne Systems

- **Guidelines for Common Work Instructions**
  - Gates – Developmental Gates are not applicable unless there is an enhancement that is over the Threshold
  - WPMP –Update or create per maintenance work products.
  - Structured Decision Making – Use when triggered.  Establish triggers.
  - Program Data Archive – Use structure from development, as applicable.
  - Objective Evaluation - SQE plans with program concurrence and performs and reports results.
  - Peer Review – Deliverable software products require some form of peer review, either desk check or formal peer review.
  - Process Review or equivalent stakeholder monthly program meeting
  - Metrics – Each month collect and report Accomplishments Summary, Problem Summary, SPI/CPI, Defect Containment (2 years), Lessons Learned, Risk and Opportunity Management, Problem Report Status (CRs and PRs), Schedule, Size Trend, Staffing.  The program/customer may require additional metrics.

# Connection between directives and enablers - Hyperlink

*Process Review* Work Instruction,
Paragraph 5.2.3:

Hyperlink
to Enabler
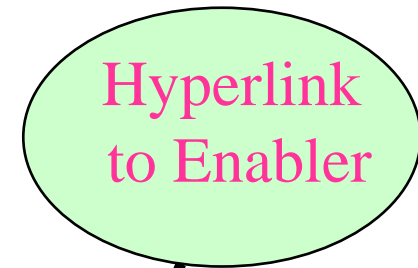
Document each meeting with minutes and track to
closure any action items.  Refer to EN-01-23-01
The *Process Review Meeting Minutes Template*
Enabler for an example format for minutes and
action items.

# Connection between directives and enablers - Webpage

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# Lessons Learned

Raytheon

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- Enablers provide excellent aid to programs
- Structure for maintaining and controlling enablers
  - Controls different types of enablers
  - Promotes their use
  - Separate from directives
- Non-Directive – Tailoring not required
- Distinctions between different types of Enablers
- Annual Review of Endorsed Enablers and Directives
- Reduction in Directive System Size

# Questions ? ? ?