

Simplifying Process Tailoring To Enhance Project Execution

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RFC Projects

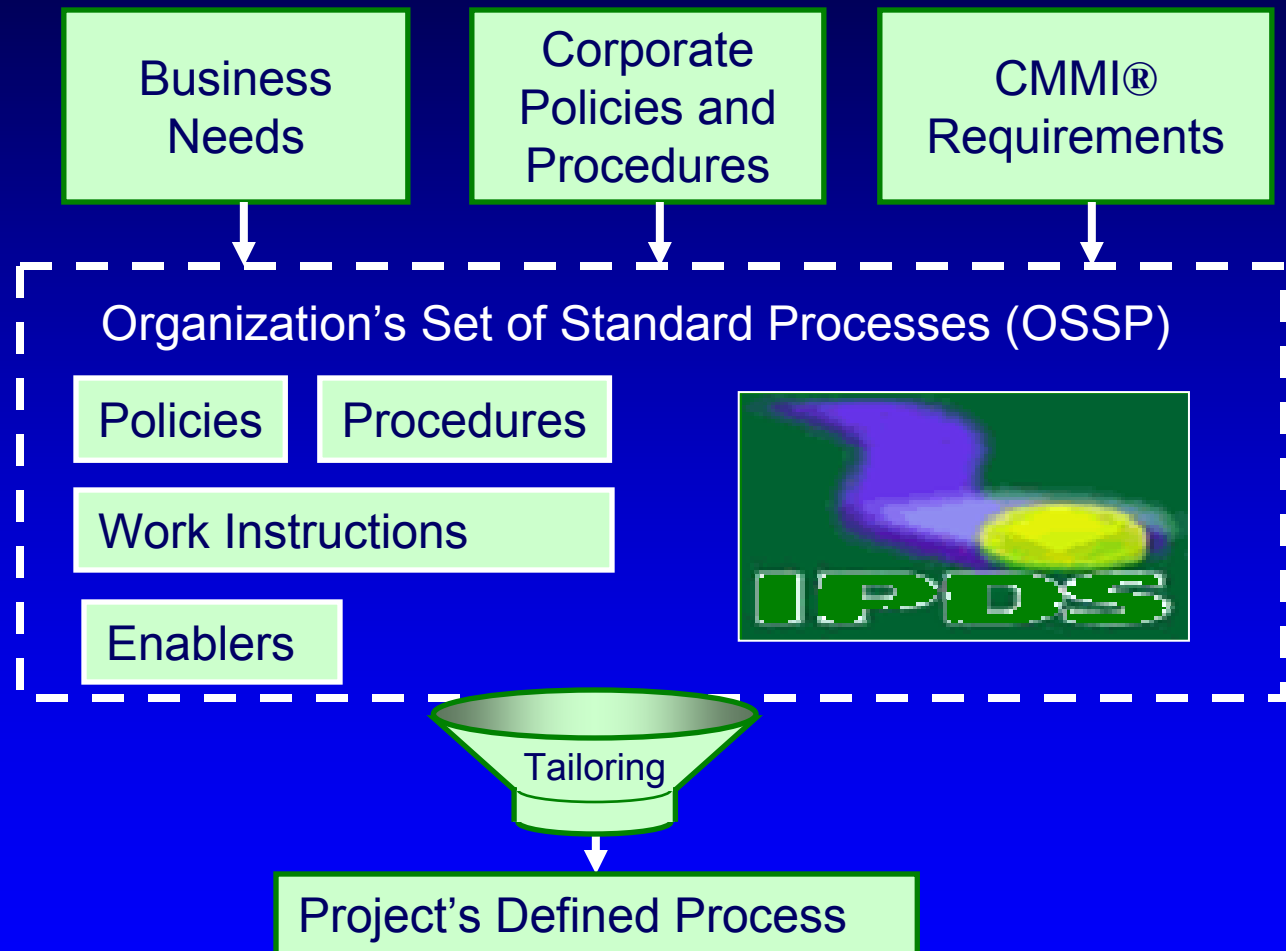
- Support multiple product lines and multiple customers
- Range from very small to very large
- IR&D, full product development, partial life cycles, expert services,...

Process Maturity History

- Software CMM Level 3, December 2001
- Systems Engineering EIA-731 Level 3, April 2002
- SW and SE CMMI Level 3, October 2004
- *And now we're looking at CMMI IPPD/SS & Levels 4/5*

RFC Process Architecture (2004)

Work Instructions and Enablers provide “how-to” guidance



IPDS = Raytheon's Integrated Product Development System

Observations

What Worked Well

- Large development projects typically used Work Instructions and Enablers with little tailoring needed

What Didn't

- Smaller projects sometimes committed to "too much process" (doing more work than necessary), or,
- Spent much time "tailoring down" from the full OSSP

Core Process Directives - 1

Pilot Version

Objectives

- Address “tailoring down from a single size-Large OSSP”
- Build on existing OSSP Work Instructions and Enablers
- Articulate process requirements for projects
- Relate process requirements to a project’s characteristics
- Relate process implementation detail to a project’s characteristics
- Simplify tailoring to enhance execution, particularly for small projects

Core Process Directives - 2

Goals and Critical Outputs

- Goals and supporting practices for site process requirements – CMMI, Integrated Product Development System (IPDS), Earned Value Management System (EVMS), etc.
- “Critical outputs” needed to satisfy process goals:
 - Minimum required content for each critical output
 - Pointers to templates and other Enablers
 - Process description embedded for some
- Site-standard roles

For Each Process Goal

- Practices supporting the goal and the role(s) responsible for each
- Critical outputs
- Relevant Work Instructions

Core Process Directives - 3

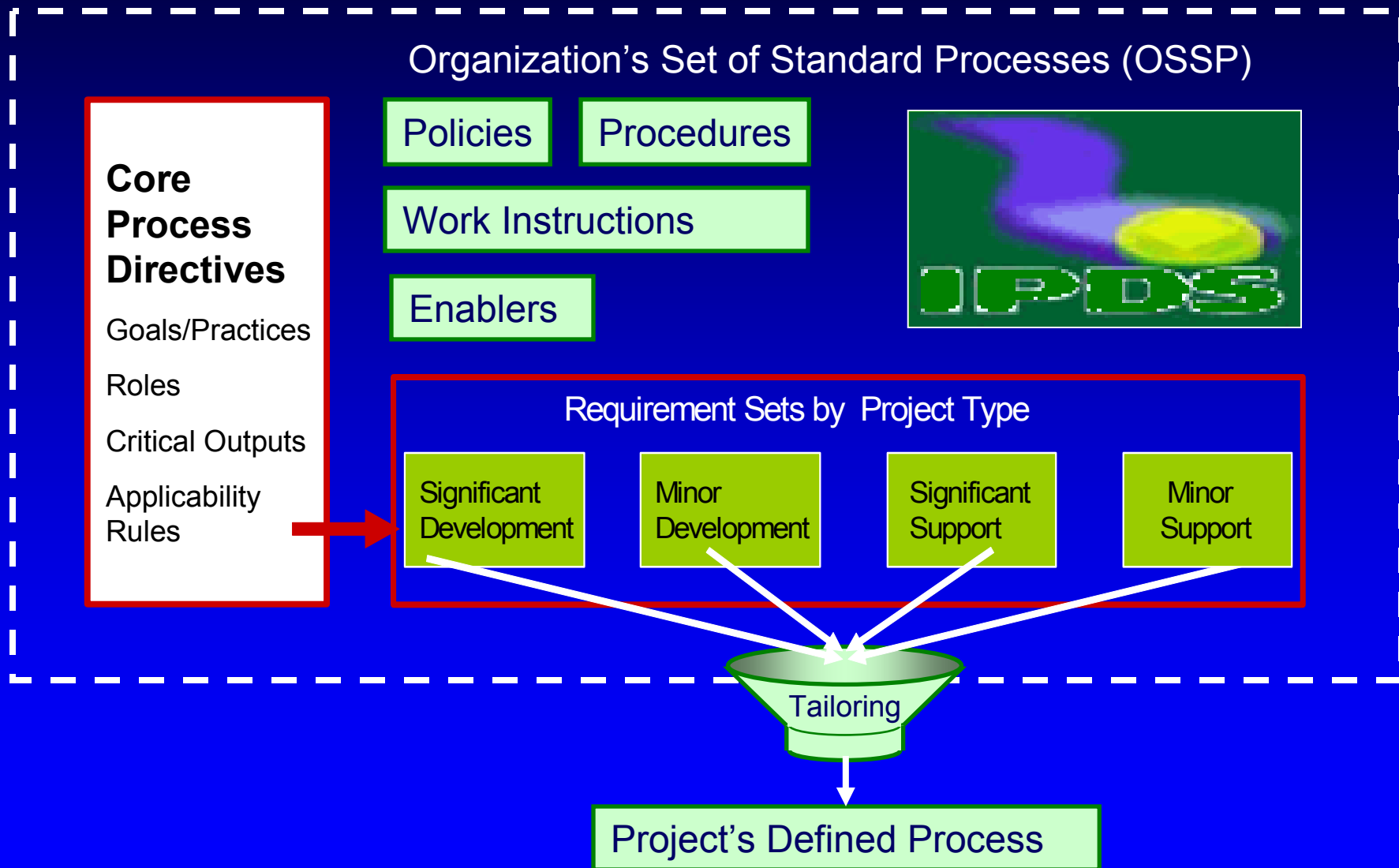
Project Types Based on Project Characteristics

- Significant Development
- Minor Development
- Significant Support/Services
- Minor Support/Services

Applicability Rules for Each Project Type

- Process goals that must be satisfied
- Process implementation requirements
- Requirements packaged as a “Requirements Set” for each project type

RFC Process Architecture (2005 Pilot)



Requirement Set - Excerpt

Process Requirements for Significant Development

The following defines RFC's process goals and the requirements necessary to meet these goals. Associated with each goal are the practices that must be performed and the Critical Outputs from that must be created.

17. RFC Requirements for Risk Management (RSKM)

RSKM SG 1 Goal: Preparation for risk management is conducted.

The following requirements support this goal:

The Program Manager and Program's Risk Coordinator determine risk sources and categories. (Ref: RSKM SP 1.1)

The Program Manager and Program's Risk Coordinator define the parameters used to analyze and categorize risks, and the parameters used to control the risk management effort. (Ref: RSKM SP 1.2)

The Program Manager and Program's Risk Coordinator establish and maintain the strategy to be used for risk management. (Ref: RSKM SP 1.3)

The following outputs shall be produced:

Risk List or Register

Risk Management Plan

The following work instructions shall be followed:

PM-108 - Risk Management (RISK)

Critical Output Descriptions - Excerpt

Critical Output Descriptions

Risk List or Register

Risk List or Register is a prioritized list of program risks and assessed likelihood and impact severity with a summary of mitigation plans. Risk List or Register is included in or referenced by the Integrated Program Management Plan (IPMP) and is maintained according to the Risk Management Plan (see Risk Management Plan) as part of the program's Risk Repository (see Risk Repository).

Reference: PM-108, PM-E-011

Risk Management Plan

The Risk Management Plan is included in or referenced by the Integrated Program Management Plan (IPMP) and defines the following items:

- (a) The overall strategy for managing risks and opportunities
- (b) How often the risk plans and status will be updated
- (c) Organization and responsibility of program personnel for risk identification, assessment, handling, and reporting
- (d) Tools and methods to be used in risk identification, assessment, handling and reporting

Reference: PM-E-029

Development/Support/Services

Development Project:

- Delivers a system, product, or component
- Develops concepts, requirements, or designs for a system, product, or component that RFC is likely to deliver in the future

Support Project:

- Integrates/verifies subsequent portions of a system or product developed by RFC and/or maintains a product
 - If significant enhancements required, project type is “development”

Services Project:

- Provides engineering expertise without likelihood of product delivery

Definition of Significant/Minor Project

Classification Based on:

- \$ value and effort
- Contract type
- Designation by senior management as:
 - Strategic opportunity
 - Major program
 - Top risk program
- *It's not just about large or small*

Applicability Rules

Significant Development Project:

- Goals for all Level 2 and 3 process areas
- Critical outputs for the applicable goals (formal tailoring)
- Work Instructions for the applicable goals (formal tailoring)

Minor Development Project:

- Goals for all Level 2 and 3 process areas
- Critical outputs for the applicable goals (formal tailoring)

Significant Support/Services Project:

- Goals for all Level 2 and 3 process areas except RD, TS, and PI
- Critical outputs for the applicable goals (formal tailoring)

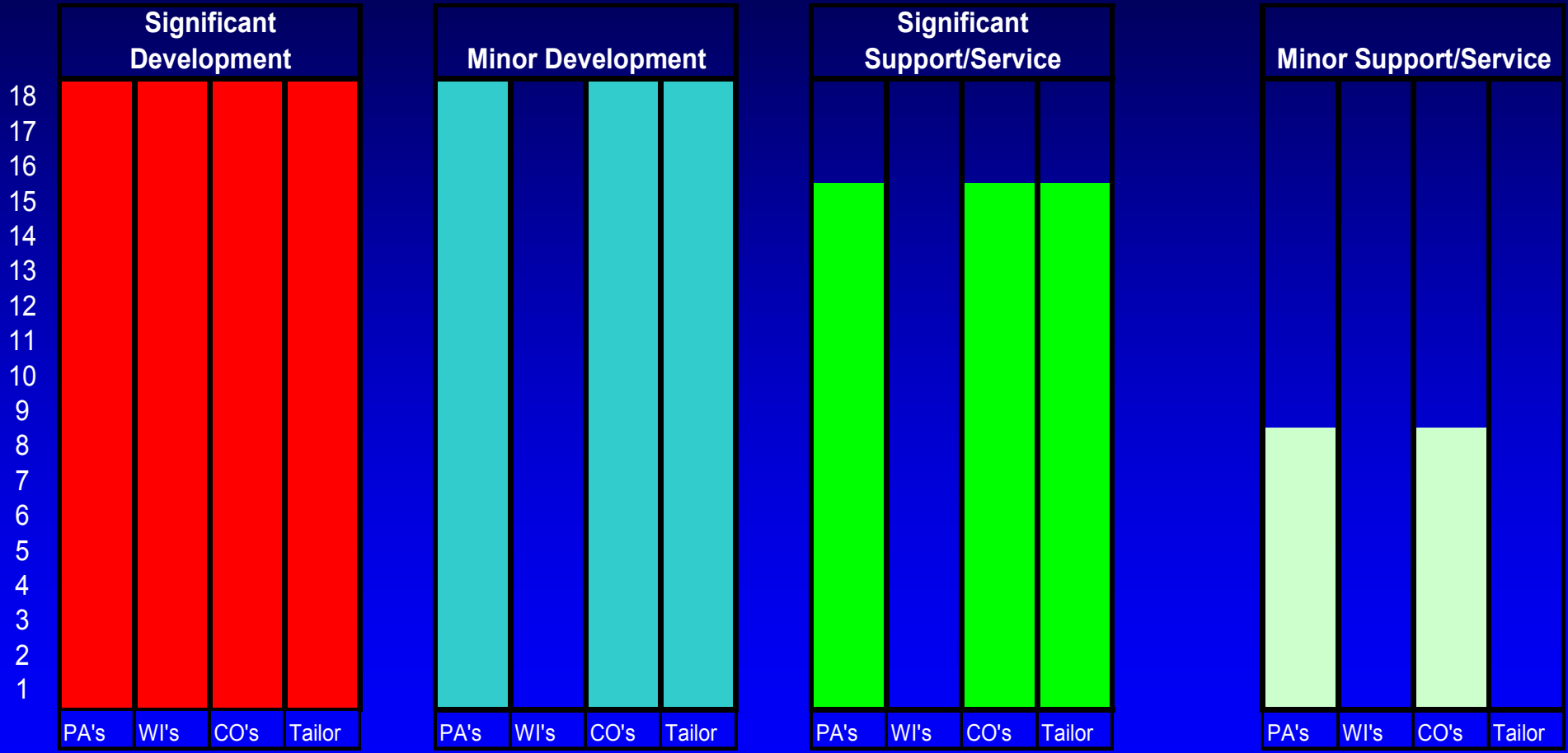
Minor Support/Services Project:

- Goals for all Level 2 process areas
- Critical outputs for the applicable goals (informal tailoring)

➤ ***All Requirement Sets identify the relevant Work Instructions***

➤ ***Projects may add other elements as appropriate***

Reducing the Amount of Detail



OSSP Tailoring

Produces the Project's Defined Process (PDP) to govern project execution

- Tailored life-cycle activities and other project characteristics
- Tailored Critical Outputs and Work Instructions (if required)
- Integrated Project Management Plan (IPMP) – Includes or contains references to the project's major planning elements

An important part of project planning

Facilitated by a deployment coach

When Tailoring is Performed

1 - During Proposal Preparation

- Establish high-level project characteristics and process requirements
- Perform preliminary tailoring and planning
 - Create initial IMP and IMS, e.g.
- *Early understanding of process requirements helps improve bid estimates (e.g., amount of CM and QA support needed)*

2 - Following Contract Award

- Refine preliminary tailoring/planning outputs based on actual award
- Perform detailed tailoring and planning
 - Create PDP and project plans

What Has Been Simplified/Improved

Projects tailor from an OSSP subset based on project characteristics

- Less time spent “tailoring down”
- Less chance projects commit to “too much process”

Degree of process implementation detail related to Project characteristics

- High level of detail required for planning Significant Development projects
- Reduced requirements for other types of projects

Project's Defined Process to guide execution is better fit to project characteristics

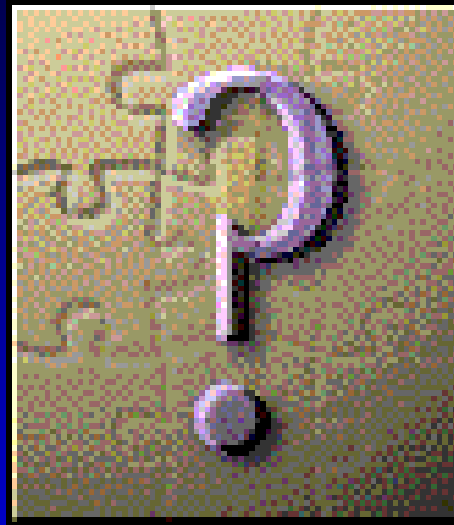
- Better alignment with “What” project needs to do and “How” to do it

Some Final Thoughts

“If you want to try this at home”

- A one-size-fits-all OSSP can be made to work for all projects — ***but it makes sense to have several sizes available to ensure a better fit***
- All projects need process requirements — ***but all projects do not necessarily need the same degree of process detail. This is likely to be true for small projects***
- Multiple levels of process requirements CAN work effectively — ***but there are more considerations than just large versus small. Use a scheme that satisfies business needs***
- ***There must be sufficient guidance so projects know what they need to do***

Questions?



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