



An OSSP Architecture Based on IEEE/EIA 12207 and CMMI-SE/SW/IPPD/SS

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My Background

- ◆ Consultant on process improvement and appraisal for Abelia Corporation (my family business).
- ◆ Teacher (process, software life cycle standards)
- ◆ *Guidebook to IEEE/EIA 12207* (Abelia: 2000)
- ◆ Member of author/leadership teams for IEEE/EIA 12207 and MIL-STD-498.
- ◆ Formerly, Manager of Engineering Process Improvement at Logicon (LISS), and senior software specialist at TRW and GTE.

Objectives

- ◆ **Clarify and contrast two models -- IEEE/EIA 12207 and CMMI-SE/SW/IPPD/SS.**
- ◆ **Show how the two models can be combined to achieve a useful OSSP architecture.**
- ◆ **Explain dual compliance (concurrent compliance with both models).**

What an OSSP Is

- ◆ **In CMMI® models, an organization’s set of standard processes (OSSP),**
 - “Describes the fundamental process elements that will be part of the project’s defined processes.
 - “It also describes the relationships (for example, ordering and interfaces) between these process elements.”

- ◆ **In the CMM® V1.1, an organization’s standard software process (OSSP),**
 - “Describes the fundamental software process elements that each software project is expected to incorporate into its defined software process.
 - “It also describes the relationships (e.g., ordering and interfaces) between these software process elements.”

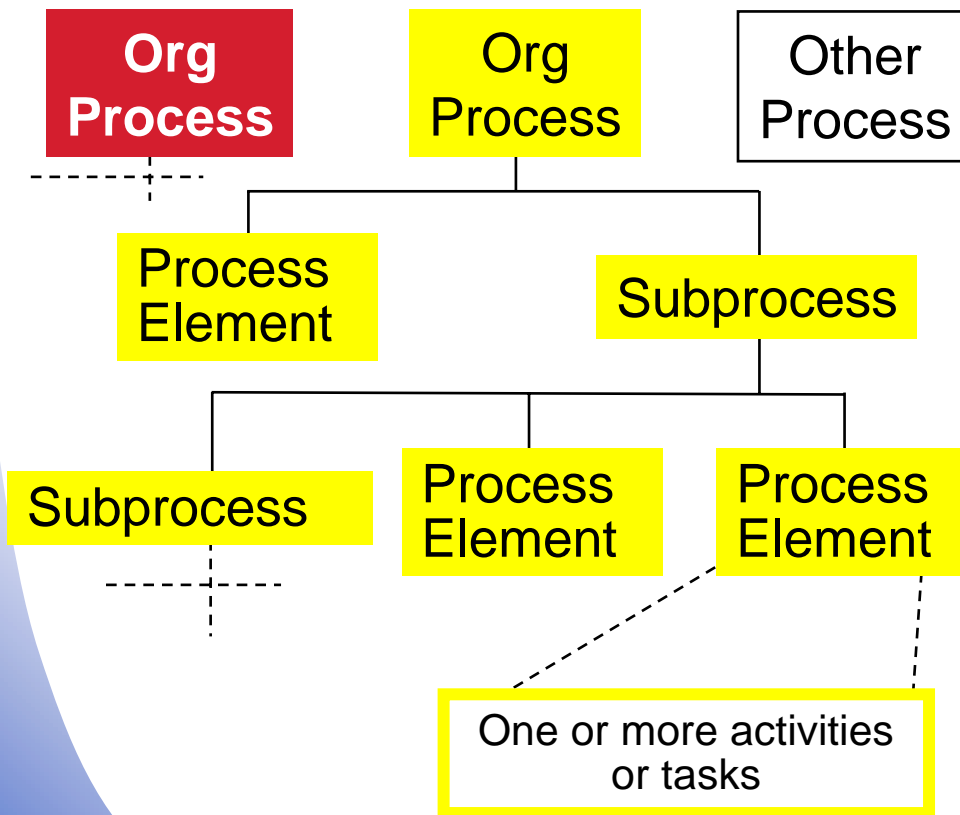
What a Process Architecture Is

- ◆ **In CMMI models,**
 - “‘Process architecture’ describes the ordering, interfaces, interdependencies, and other relationships among the process elements in a standard process.
 - Process architecture also describes the interfaces, interdependencies, and other relationships between process elements and external processes (for example, contract management).”

What a Process Element Is

- ◆ **In CMMI models,**
 - A process element is, “The fundamental unit of a process. A process may be defined in terms of subprocesses or process elements. A subprocess can be further decomposed; a process element cannot.
 - “Each process element covers a closely related set of activities (for example, estimating element, peer review element)...A process element can be an activity or task.”

Related Terms



- ◆ **An organization's OSSP**
 - collects all process elements that will enter into any of its projects' defined processes
 - describes ordering between, interfaces between, and possibly other relationships between the collected process elements.
- ◆ **A process architecture describes a single one of the organization's standard processes (e.g., the yellow one), and also its relationships to external processes.**

What an OSSP Architecture Is

- ◆ **An OSSP architecture describes the ordering, interfaces, interdependencies, and other relationships among the process elements in all of the organization's standard processes.**
- ◆ **An OSSP architecture also describes the interfaces, interdependencies, and other relationships between the process elements and external processes (that are not a part of the OSSP architecture).**

Sequence of Topics

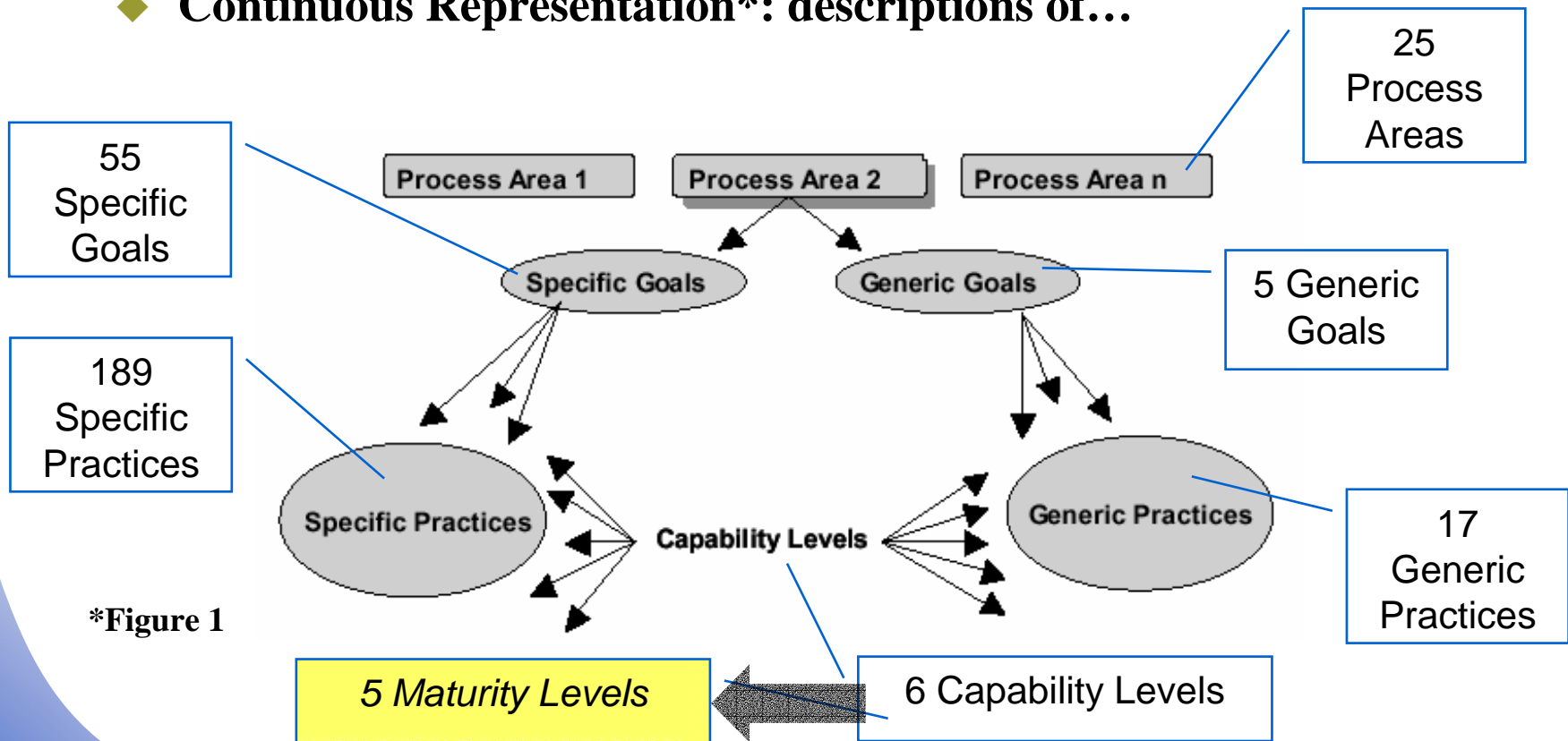


CMMI-SE/SW/IPPD/SS

- ◆ **IEEE/EIA 12207**
- ◆ **An OSSP Architecture**
- ◆ **Dual Compliance.**

What CMMI-SE/SW/IPPD/SS Is

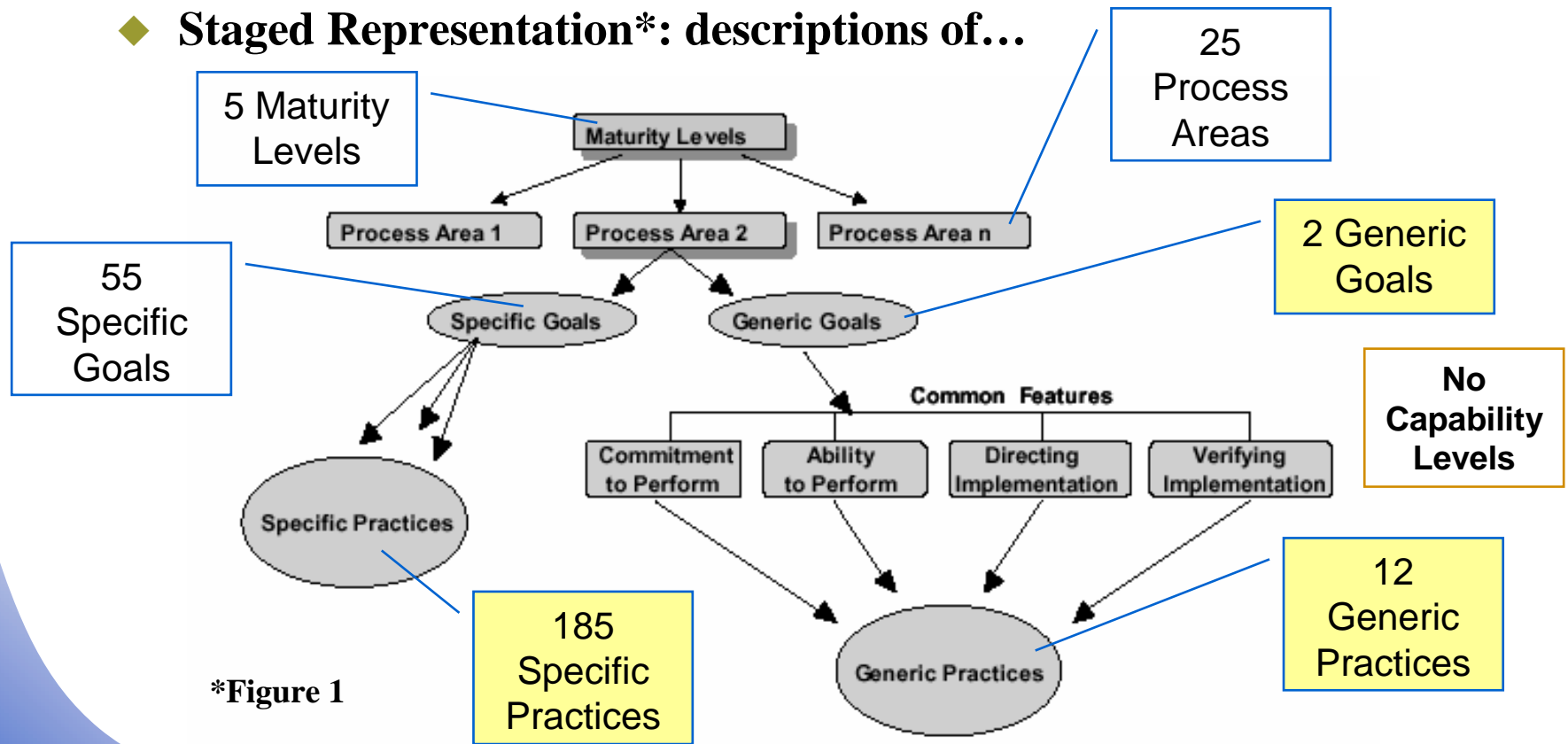
◆ **Continuous Representation*:** descriptions of...



*Figure 1

CMMI-SE/SW/IPPD/SS (cont'd)

◆ **Staged Representation*:** descriptions of...



*Figure 1



CMMI-SE/SW/IPPD/SS Has, And IEEE/EIA 12207 Doesn't...

- ◆ **A minimum set of requirements.**
- ◆ **Two broad-based indicators of process excellence that provide recommended paths for process improvement**
 - For organization: Maturity Level
 - For process area: Capability Level.
- ◆ **(CMMI products include appraisal requirements (ARC) and an appraisal method (SCAMPISM) based on the indicators.)**
- ◆ **CMMI IPPD models describe the useful concept of an integrated team.**

Maturity Levels

◆ In CMMI models,

- a maturity level is, “A degree of process improvement across a predefined set of process areas in which all goals within the set are attained.
- “Maturity levels represent a process-improvement path illustrating improvement evolution for the entire organization pursuing process improvement.
- “A maturity level is a defined evolutionary plateau of process improvement.
- “The maturity level of an organization provides a way to predict the future performance of an organization within a given discipline or set of disciplines.”

Capability Levels

- ◆ **In CMMI models, a capability level,**
 - represents, “Achievement of process improvement within an individual process area.
 - “A capability level is defined by the appropriate specific and generic practices for a process area.
 - “Capability levels provide a recommended order for approaching process improvement within each process area.
 - “Capability levels enable you to track, evaluate, and demonstrate your organization’s progress as you improve processes associated with a process area.”

What an Integrated Team Is

◆ In CMMI, an integrated team is,

- “A group of people with complementary skills and expertise who are committed to delivering specified work products in a timely collaboration.
- “Integrated team members provide skills and advocacy appropriate to all phases of the work product’s life and are collectively responsible for delivering the work products as specified.
- “An integrated team should include empowered representatives from organizations, disciplines, and functions that have a stake in the success of the work products.”
- Sometimes, an integrated team is called an “Integrated Product Team” or IPT. It may include customers, suppliers, and other stakeholders from different outside organizations.

CMMI Categories of Process Areas

- ◆ **Process Management**
 - OPF, OPD, OT, OPP, OID
- ◆ **Project Management**
 - PP, PMC, SAM,
 - IPM (for IPPD),
 - RSKM, IT, ISM, QPM
- ◆ **Engineering**
 - REQM, RD, TS, PI,
 - VER, VAL
- ◆ **Support**
 - MA, PPQA, CM, DAR,
 - OEI, CAR

topical/training categories

- ◆ **I prefer to classify Process Areas by**
 - Organization
 - Project
 - Integrated Team
 - Support (common)
- ◆ **These classifications are better for allocating responsibilities within an enterprise.**

Responsibility for Performing Process Area Specific Practices

CMMI-SE/SW/IPP/SS Process Areas

Organization	Project	Integrated Team	Where Performed
<ul style="list-style-type: none"> • OPF (ML3) • OPD (ML3) • OT (ML3) • OEI (ML3) • OPP (ML4) • OID (ML5) 	<ul style="list-style-type: none"> • REQM (ML2) • PP (ML2) • PMC (ML2) • SAM (ML2) • RD (ML3) • TS (ML3) • PI (ML3) • VER (ML3) • VAL (ML3) • IPM (ML3) • RSKM (ML3) • QPM (ML4) 	<ul style="list-style-type: none"> • IT (ML3) 	<ul style="list-style-type: none"> • MA (ML2) • PPQA (ML2) • CM (ML2) • ISM (ML3) • DAR (ML3) • CAR (ML5)



Responsibility for Performing Generic Practices

Capability Levels

	Organization	Project	Integrated Team	Where Performed
CL 1				<ul style="list-style-type: none">• GP 1.1
CL 2	<ul style="list-style-type: none">• GP 2.1			<ul style="list-style-type: none">• Other 9 Generic Practices for this Capability Level
CL 3				<ul style="list-style-type: none">• GP 3.1• GP 3.2
CL 4				<ul style="list-style-type: none">• GP 4.1• GP 4.2
CL 5				<ul style="list-style-type: none">• GP 5.1• GP 5.2

Examples of Generic Practices

◆ GP 2.1 Establish an Organizational Policy

“Establish and maintain an organizational policy for planning and performing the process.”

- Consider the three process areas Requirements Management (REQM), Organizational Process Definition (OPD) and Integrated Teaming (IT),
- For all three process areas, it would be the organization’s (not a project’s, or a team’s) responsibility to establish policy.

◆ GP 4.2 Stabilize Subprocess Performance

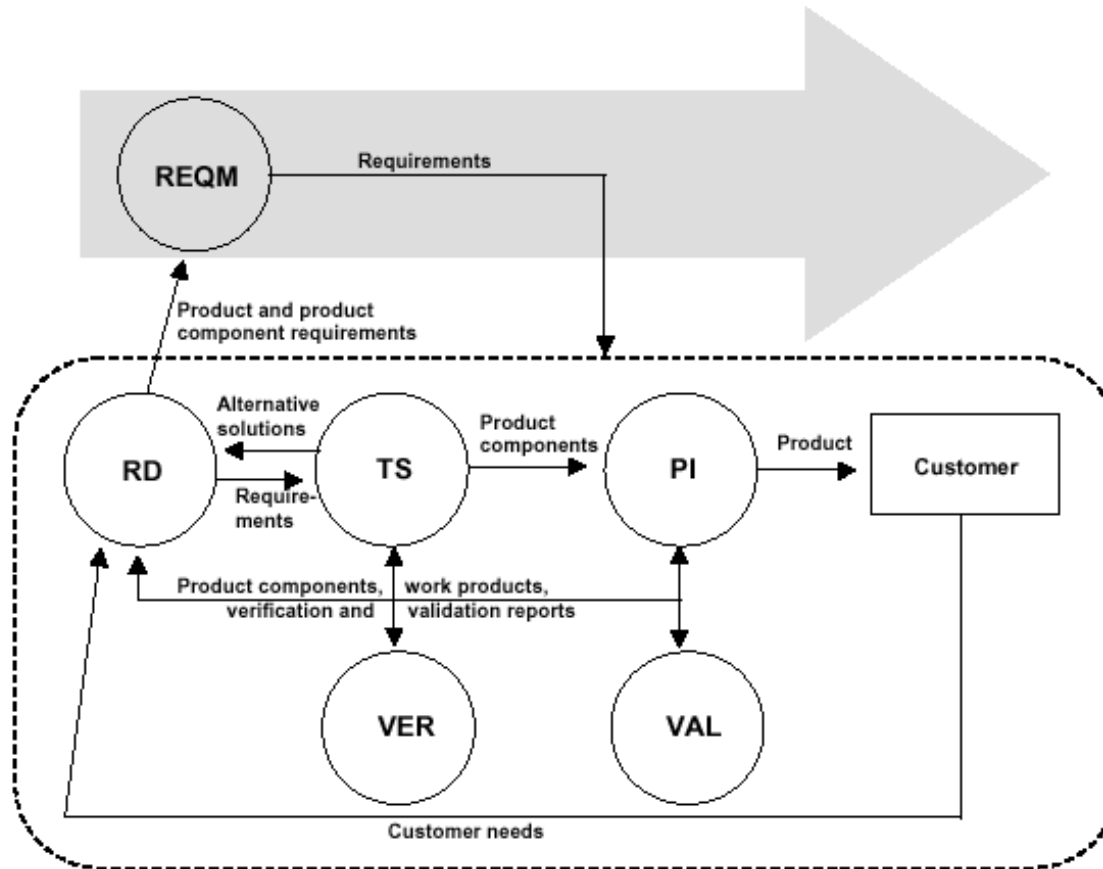
“Stabilize the performance of one or more subprocesses to determine the ability of the process to achieve the established quantitative quality and process-performance objectives.”

- For Requirements Management (REQM), it would be the project’s responsibility to stabilize performance of its defined process for REQM.
- It would be the organization’s responsibility to stabilize performance of its defined process for OPD.
- It would be the team’s responsibility to stabilize performance of its defined process for IT.

Basic Relationships

- ◆ **Work products and other data from one process area are inputs to another (OPD provides a standard process to OT).**
- ◆ **One process area provides resources to a second process area (OPF provides resources and coordination to OPD).**
- ◆ **One or more process areas jointly provide a capability to another process area (OPF, OPD, and OT jointly provide OI the ability to develop and deploy process and supporting assets).**

Example: Relationships Between Engineering Process Areas



***Staged Rep
Figure 6**

Tailoring CMMI Models

- ◆ **CMMI model tailoring is significantly constrained whenever process appraisal results are intended to be comparable by maturity level across an industry**
 - Process areas may be excluded only if they are outside the scope of an appraisal, or “not applicable” because they are outside of the organization’s scope of work
 - A maturity level rating must note any “not applicable” process area that was excluded from the appraisal.
- ◆ **Model tailoring for small projects should be accomplished, typically, by adopting organizational methods and practices less formal than those suggested by the model, but not by excluding required components of the model.**
- ◆ **See Chapter 6 of the model for guidance.**

Sequence of Topics

◆ CMMI-SE/SW/IPPD/SS



IEEE/EIA 12207

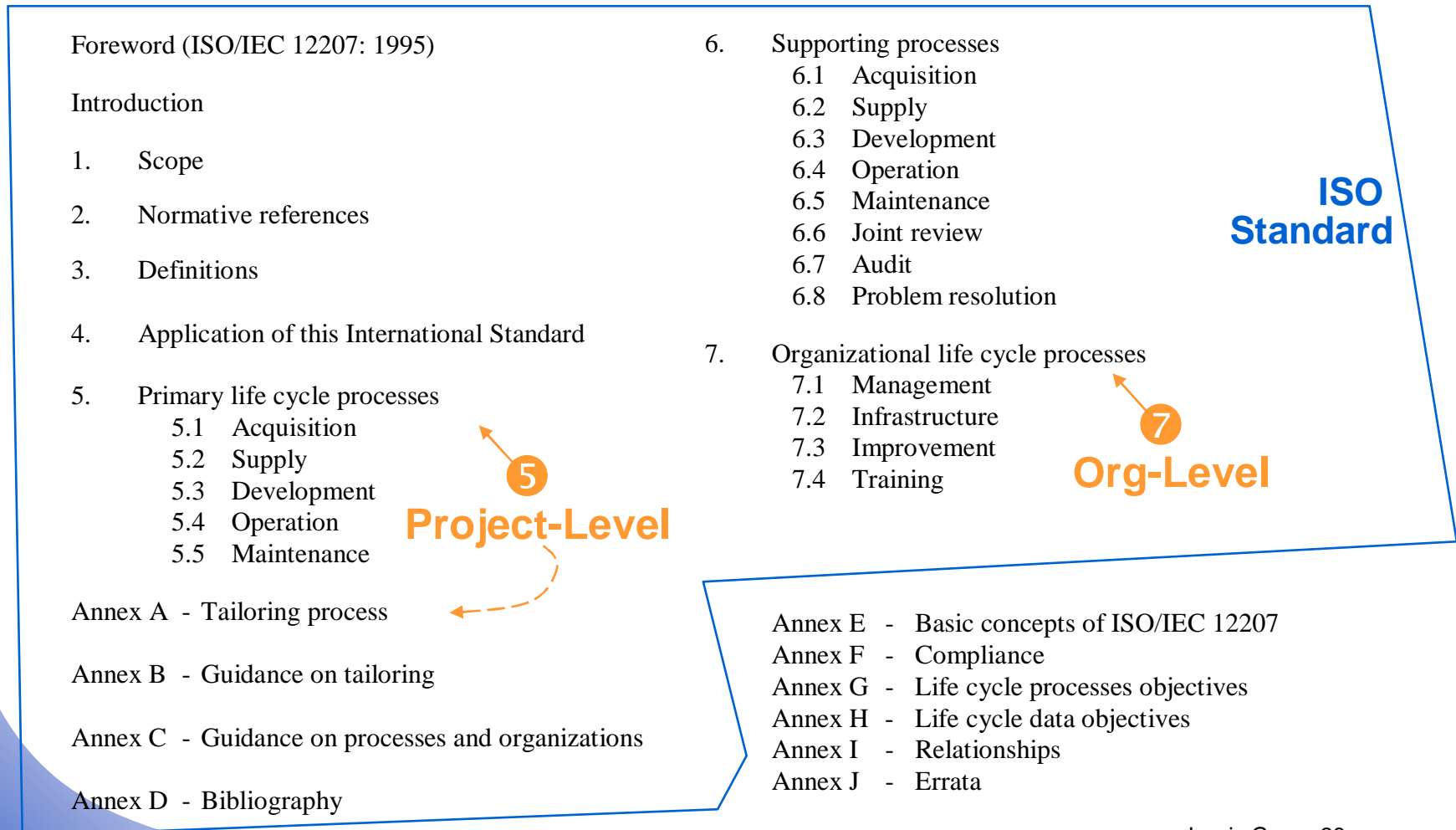
- ◆ **An OSSP Architecture**
- ◆ **Dual Compliance.**

What IEEE/EIA 12207 Is

- ◆ **IEEE/EIA 12207 consists of**
 - well-defined terminology for facilitating international trade in software
 - a comprehensive (although very succinct) description of the entire software life cycle from conception to retirement as 17 interacting life cycle processes
 - a process for tailoring the life cycle processes
 - a guide that clarifies the information items that are recommended or required for each life cycle process
 - a guide that presents implementation recommendations for most of the processes.
- ◆ **Life cycle processes, and the tailoring process, in IEEE/EIA 12207 are defined in ISO/IEC 12207:1995 which is embedded in IEEE/EIA 12207.0.**

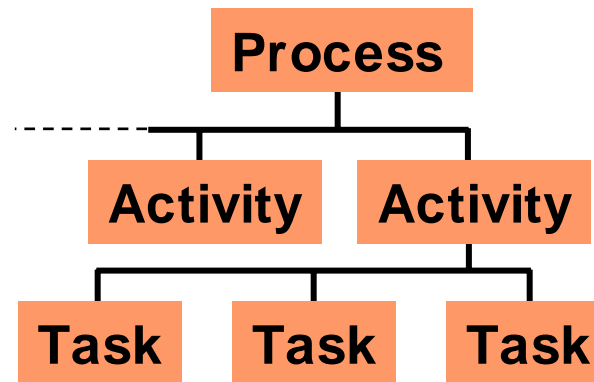
IEEE/EIA 12207 “Base Standard”

Foreword to IEEE/EIA 12207.0-1996



IEEE/EIA 12207 Processes

- ◆ In IEEE/EIA 12207, processes are divided into activities, and activities are divided into tasks.



IEEE/EIA 12207 Has, And CMMI-SE/SW/IPPD/SS Doesn't...

- ◆ **Useful process design principles.**
- ◆ **Exceptionally insightful packaging of software life cycle activities at the project level.**
- ◆ **Clear explanations of**
 - what supporting (common) processes are
 - how supporting processes are related to other life cycle processes.
- ◆ **37 descriptions of work products (information items) from the software life cycle, plus 50 references to other documents that offer guidance about developing or documenting information items (in IEEE/EIA 12207.1-1997 *Life Cycle Data*).**

Process Design Principles*

◆ **Modularity:**

- “One process should perform one and only one function within the life cycle, and the interfaces between any two processes should be minimal.
- “Each process is invoked in the architecture.
- “If process A is invoked by a process B and only process B, then A belongs to B.
- “If a function is invoked by more than one process, then the function becomes a process in itself.

◆ **Responsibility:**

- “A process is placed under the responsibility of an organization or a party in the software life cycle.
- “A function whose parts are under different responsibilities shall not be a process.”

*see ISO/IEC TR 15271 *Guide for ISO/IEC 12207*, and also Dr. Raghu Singh’s tutorial slides, “An Introduction to International Standard ISO/IEC 12207 Software Life Cycle Processes.”

Project-Level Processes

- ◆ **IEEE/EIA 12207.0 (and ISO/IEC 12207:1995) assemble six processes**
 - in accordance with the process design principles
 - to describe how organizations interact in two-party binding agreements (which the standard calls ‘contracts’)
 - that catalog every major role that projects play in the software life cycle.

- ◆ **The Acquisition, Supply, Development, Operation, Maintenance and Tailoring processes are each a brilliant combination of simplicity and descriptive power.**

Supporting Processes

- ◆ **In IEEE/EIA 12207 (and ISO/IEC 12207:1995),**
 - “A supporting process supports another process as an integral part with a distinct purpose and contributes to the success and quality of the software project.
 - “A supporting process is employed and executed, as needed, by another process.
 - “The activities and tasks in a supporting process are the responsibility of the organization performing that process.”

- ◆ **Supporting processes in IEEE/EIA 12207 are like library modules in software.**

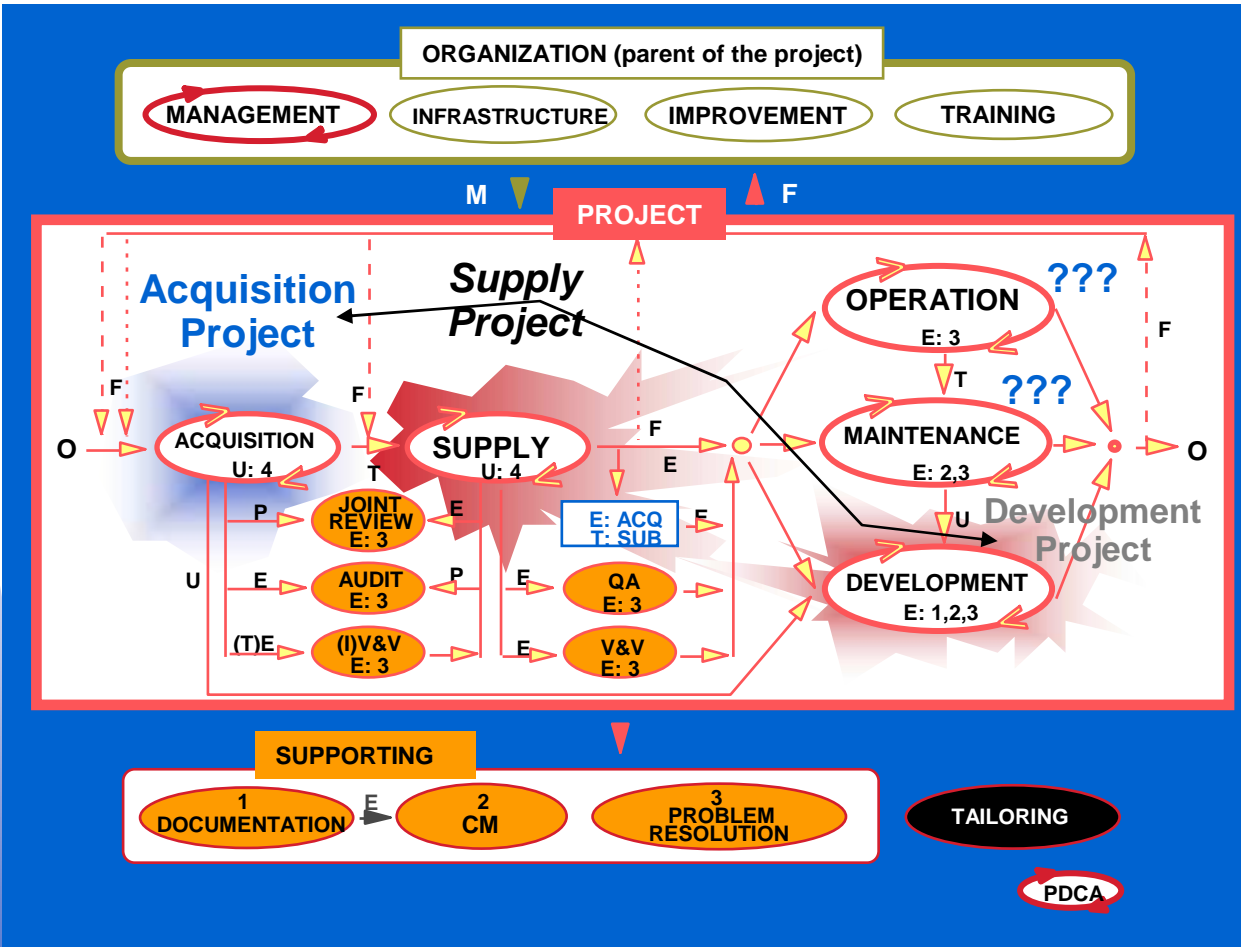
Responsibility for Performing Life Cycle Process Activities

IEEE/EIA 12207 Life Cycle Processes

Organization	Project	Where Performed
<ul style="list-style-type: none"> • 7.1 Management • 7.2 Infrastructure • 7.3 Improvement • 7.4 Training 	<ul style="list-style-type: none"> • 5.1 Acquisition • 5.2 Supply • 5.3 Development • 5.4 Operation • 5.5 Maintenance 	<ul style="list-style-type: none"> • 6.1 Documentation • 6.2 Configuration Management • 6.3 Quality Assurance • 6.4 Verification • 6.5 Validation • 6.6 Joint Review • 6.7 Audit • 6.8 Problem Resolution • (A. Tailoring)

Relationships Between Life Cycle Processes

Key



- ??? - a possible separate project
- 0 - the same points
- CM - Configuration Management process
- E - execute
- E:n - execute supporting process n
- E:ACQ - execute the Acquisition process
- F - feed back (*verb*)
- (I)V&V - (independent) Verification & Validation processes
- M - manage
- P - participate in
- QA - Quality Assurance process
- T - task (*verb*)
- T:SUB - task a subcontractor
- (T)E - task the processes if they are independent, or execute them otherwise
- U - use
- U:n - use supporting process n

- PDCA - Plan, Do, Check, Act

Basic Relationships

- ◆ **Two-party binding agreement between a buyer organization and a seller organization (who may be different parts of the same enterprise).**
- ◆ **Incorporation of one process into another (a supporting process into a primary process).**
- ◆ **Use of one process by another process (Maintenance uses Development).**

Tailoring IEEE/EIA 12207

◆ IEEE/EIA 12207.0 Annex A: An acquirer

- defines the meaning of the provisions of the standard that refer generically to “the contract”
- identifies and documents which life cycle processes, activities, and tasks in the standard will be performed, and which documentation will be developed, and who will be responsible for them
- identifies and documents additional life cycle processes, activities and tasks to be performed, if any, and documentation to be developed, if any, that are not in the standard, and who will be responsible for them
- documents the rationale for the tailoring decisions.

ISO/IEC 12207:1995/ Amd. 1:2002 Additions

ISO/IEC 12207 Life Cycle Processes

Organization	Project	Where Performed
<ul style="list-style-type: none"> • 7.1.6 Measurement • 7.4 Training • 7.4 Human Resource • 7.5 Asset Management • 7.6 Reuse Program Management • 7.7 Domain Engineering 	<ul style="list-style-type: none"> • none 	<ul style="list-style-type: none"> • 6.9 Usability

- ◆ **These additional life cycle processes don't affect IEEE/EIA 12207, yet. But, they will when it is revised.**

Sequence of Topics

- ◆ CMMI-SE/SW/IPPD/SS
- ◆ IEEE/EIA 12207



An OSSP Architecture

- ◆ **Dual Compliance.**

Achieving a Useful OSSP Architecture

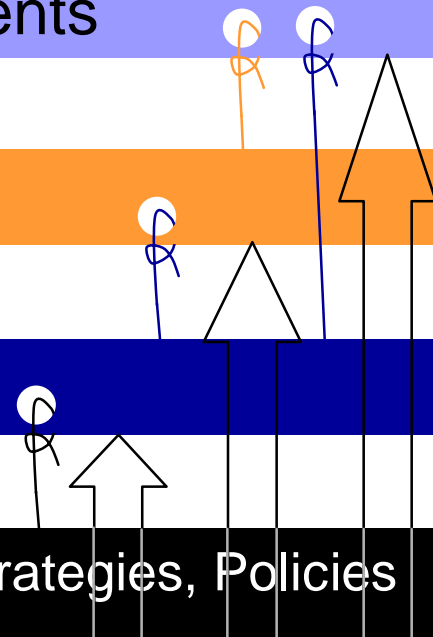
Team-level process elements

Project-level process elements

Organization-level process elements

Enterprise/Organization's Business Objectives, Strategies, Policies

Supporting (common) process elements



Framework for an OSSP Architecture

- ◆ **Objective: Create a framework based on IEEE/EIA 12207 and CMMI-SE/SW/IPPD/SS that provides a recommended structure for an organization's OSSP architecture.**
- ◆ **The framework will be expressed as a collection of “processes.” However, processes in the framework are intended to be implemented by the organization's own standard process elements.**

Design Principles Used

- ◆ **The principles that guided the design of ISO/IEC 12207:1995.**
- ◆ **Modularity: sample principles...**
 - “One process should perform one and only one function within the life cycle, and the interfaces between any two processes should be minimal.
 - “Each process is invoked in the architecture.
 - “If process A is invoked by a process B and only process B, then A belongs to B.
 - “If a function is invoked by more than one process, then the function becomes a process in itself.
- ◆ **Responsibility: sample principles...**
 - “A process is placed under the responsibility of an organization or a party in the software life cycle.
 - “A function whose parts are under different responsibilities shall not be a process.”



Framework for an OSSP Architecture Based on IEEE/EIA 12207 and CMMI-SE/SW/IPPD/SS

Organization-level Processes

IEEE/EIA 12207	ISO/IEC 12207 Amd 1	CMMI-SE/SW/IPPD/SS
7.1 Management	7.4 Human Resource	Organizational Environment for Integration (OEI)
7.2 Infrastructure	Reuse	Organizational Process Performance (OPP)
7.3 Improvement		



Framework for an OSSP Architecture Based on IEEE/EIA 12207 and CMMI-SE/SW/IPPD/SS (cont'd)

Project-level Processes

IEEE/EIA 12207	ISO/IEC 12207 Amd 1	CMMI-SE/SW/IPPD/SS
5.1 Acquisition		
5.2 Supply		
5.3 Development		
5.4 Operation		
5.5 Maintenance		
A. Tailoring		



Framework for an OSSP Architecture Based on IEEE/EIA 12207 and CMMI-SE/SW/IPPD/SS (cont'd)

Team-level Processes

IEEE/EIA 12207	ISO/IEC 12207 Amd 1	CMMI-SE/SW/IPPD/SS
		Integrated Teaming (IT)



Framework for an OSSP Architecture Based on IEEE/EIA 12207 and CMMI-SE/SW/IPPD/SS (cont'd)

Supporting (common) Processes

IEEE/EIA 12207	ISO/IEC 12207 Amd 1	CMMI-SE/SW/IPPD/SS
6.1 Documentation		Measurement and Analysis (MA)
6.2 Configuration Management		Product Integration (PI)
6.3 Quality Assurance		Risk Management (RSKM)
6.4 Verification		Decision Analysis and Resolution (DAR)
6.5 Validation		Causal Analysis and Resolution (CAR)
6.6 Joint Review		
6.7 Audit		
6.8 Problem Resolution		

Basic Relationships

- ◆ **Basic Relationships in the CMMI model, between CMMI Process Areas, still hold.**
- ◆ **Basic Relationships in IEEE/EIA 12207, between IEEE/EIA 12207 processes, still hold.**
- ◆ **The framework includes additional relationships also, between Process Areas in the CMMI model and processes in IEEE/EIA 12207 (and ISO/IEC 12207:1995/Amd. 1:2002)**

Incorporation Relationships

◆ 7.1 Management

- PP (CMMI)
- PMC (CMMI)
- IPM (CMMI)
- QPM (CMMI)
- GP 2.1 ‘Policy’ (CMMI)
- GP 2.2 ‘Plan’ (CMMI)
- GP 2.3 ‘Resources’ (CMMI)
- GP 2.4 ‘Responsibility’ (CMMI)
- GP 2.7 ‘Stakeholders’ (CMMI)
- GP 2.8 ‘Monitor’ (CMMI)
- GP 2.10 ‘Review Status’ (CMMI)
- GP 3.2 ‘Collect’ (CMMI)
- GP 4.1 ‘Objectives’ (CMMI)

◆ 7.3 Improvement

- OPF (CMMI)
- OPD (CMMI)
- OID (CMMI)
- GP 5.1 ‘Continuous’ (CMMI)

◆ 7.4 Human Resource

- 7.4 Training (IEEE 12207)
- GP 2.5 ‘Train’ (CMMI)

◆ Reuse

- 7.6 Reuse Program Management (ISO 12207 A1)
- 7.5 Asset Management (ISO 12207 A1)
- 7.7 Domain Engineering (ISO 12207 A1)

Incorporation Relationships (cont'd)

◆ Organizational Process Performance (OPP)

- QPM (CMMI)
- GP 4.2 'Stabilize' (CMMI)

◆ 5.1 Acquisition

- SAM (CMMI)
- ISM (CMMI)

◆ A. Tailoring

- IPM (CMMI)
- GP 3.1 'Establish' (CMMI)

◆ 5.3 Development

- 6.9 Usability (ISO 12207 A1)
- REQM (CMMI)
- RD (CMMI)
- TS (CMMI)
- **Hardware Development (TBD)**

◆ 5.5 Maintenance

- **Hardware Maintenance (TBD)**

Incorporation Relationships (cont'd)

◆ 6.2 Configuration Management

- CM (CMMI)
- GP 2.6 'Manage' (CMMI)

◆ 6.3 Quality Assurance

- PPQA (CMMI)
- GP 2.9 'Objectively' (CMMI)

◆ 6.4 Verification

- VER (CMMI)

◆ 6.5 Validation

- VAL (CMMI)

◆ Causal Analysis and Resolution (CAR)

- GP 5.2 'Correct' (CMMI)

A Sample of Other Relationships

- ◆ **The Reuse Process will exchange information with the IPM (CMMI) activities in the Tailoring Process and the Management Process.**
- ◆ **The Reuse process will exchange information with the OPD (CMMI) activities in the Improvement Process.**

Using the Framework

- ◆ **The framework is a classification scheme.**
- ◆ **It's relatively simple, yet it's comprehensive.**
- ◆ **It can be used to catalog process assets in the organization's process asset library.**
- ◆ **It can be implemented (populated with process elements from all of an organization's standard processes), to create an OSSP architecture.**

Sequence of Topics

- ◆ CMMI-SE/SW/IPPD/SS
- ◆ IEEE/EIA 12207
- ◆ An OSSP Architecture



Dual Compliance

Achieving Dual Compliance

- ◆ **To achieve organizational compliance with both CMMI-SE/SW/IPPD/SS and IEEE/EIA 12207:**
 - Set target Maturity Level and Capability Level goals for the organization
 - Tailor CMMI-SE/SW/IPPD/SS accordingly
 - Tailor IEEE/EIA 12207 as described in 12207.0 Annex A, but remain consistent with the tailoring of the CMMI model
 - Implement both sets of tailoring decisions (in other words, perform the activities that were chosen and develop the appropriate documentation).



Compliance with CMMI-SE/SW/IPPD/SS

- ◆ **Compliance with CMMI-SE/SW/IPPD/SS would be determined by an appraisal.**

Compliance with IEEE/EIA 12207

- ◆ **Claimed compliance with IEEE/EIA 12207.0 would be evaluated in three ways (see 12207.0 Annex F):**
 - An **organization, project, multi-supplier program, or regulated project** must document its tailoring of the standard and to whom it has assigned responsibility for performing applicable processes, activities, and tasks.
 - There is **absolute** compliance if all requirements (tasks that contain “shall” or “will”) of all clauses of the standard are performed. Otherwise, if tasks are performed as decided during the Tailoring process, then compliance is said to be **tailored**.
 - Applicable clauses must be performed **as specified** by the standard. Otherwise, they must be performed by an **alternative method** that accomplishes the process and data objectives in the standard and satisfies other criteria.

- ◆ **Claimed compliance with IEEE/EIA 12207.1 would be verified:**
 - A single **document** must comply with 12207.1 clause 4.4.1, or
 - An **organizational process** must comply with 12207.1 clause 4.4.2.

Q & A

◆ Your Questions



Acronyms

- ◆ **ARC – Appraisal Requirements for CMMI**
- ◆ **CAR – Causal Analysis and Resolution**
- ◆ **CM – Configuration Management**
- ◆ **CMMI – Capability Maturity Model IntegrationSM**
- ◆ **CMMI-SE/SW/IPPD/SS – Capability Maturity Model Integration for Systems Engineering, Software Engineering, Integrated Product and Process Development, and Supplier Sourcing**
- ◆ **DAR – Decision Analysis and Resolution**
- ◆ **EIA – Electronic Industries Alliance**
- ◆ **IEC – International Electrotechnical Commission**
- ◆ **IEEE – Institute of Electrical and Electronics Engineers**
- ◆ **IPM (for IPPD) – Integrated Project Management (for IPPD)**
- ◆ **IPPD – Integrated Product and Process Development**
- ◆ **ISM – Integrated Supplier Management**

Acronyms (cont'd)

- ◆ **ISO – International Organization for Standardization**
- ◆ **IT – Integrated Teaming**
- ◆ **MA – Measurement and Analysis**
- ◆ **OEI – Organizational Environment for Integration**
- ◆ **OID – Organizational Innovation and Deployment**
- ◆ **OPD – Organizational Process Definition**
- ◆ **OPF – Organizational Process Focus**
- ◆ **OPP – Organizational Process Performance**
- ◆ **OSSP – 1. Organization's Set of Standard Processes (CMMI) 2. Organization's Standard Software Process (CMM V1.1)**
- ◆ **OT – Organizational Training**
- ◆ **PI – Product Integration**
- ◆ **PMC – Project Monitoring and Control**

Acronyms (cont'd)

- ◆ **PP – Project Planning**
- ◆ **PPQA – Process and Product Quality Assurance**
- ◆ **QPM – Quantitative Project Management**
- ◆ **RD – Requirements Development**
- ◆ **REQM – Requirements Management**
- ◆ **RSKM – Risk Management**
- ◆ **SAM – Supplier Agreement Management**
- ◆ **SCAMPI – Standard CMMI Appraisal Method for Process Improvement**
- ◆ **TS – Technical Solution**
- ◆ **VAL - Validation**
- ◆ **VER - Verification**

What I Mean By...

- ◆ **Method - A collection of guidelines that describe how to accomplish an activity or a task.**
- ◆ **Process - A sequence of activities that accomplish a purpose.**
- ◆ **Practice – An habitual activity or task.**
- ◆ **Stakeholder – In CMMI, “A ‘stakeholder’ is a group or individual that is affected by or in some way accountable for the outcome of an undertaking. Stakeholders may include project members, suppliers, customers, end users, and others.**



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