CMMI Model,
Continuous Representation and Generic Goals and Practices
Comparing Model Representations

Staged

ML5
ML4
ML3
ML2
ML1

...for an established set of process areas across an organization

Continuous

0 1 2 3 4 5

PA
PA
PA

...for a single process area or a set of process areas
CMMI Model Structure

Staged

- Maturity Levels
  - Process Area 1
  - Process Area 2
  - Process Area n

- Specific Goals
  - Specific Practices
  - Ability to Perform
  - Commitment to Perform

- Generic Goals
  - Directing Implementation
  - Verifying Implementation
  - Common Features

Continuous

- Capability Levels
  - Process Area 1
  - Process Area 2
  - Process Area n

- Specific Goals
  - Specific Practices

- Generic Goals
  - Generic Practices
CMMI-SE/SW/IPPD/SS Continuous

CMMI

- Process Management
  - L2
  - Project Planning
  - Project Monitoring and Control
  - Supplier Agreement Mgmt.

  - L3
  - Organizational Process Focus
  - Organizational Process Definition
  - Organizational Training

  - L4
  - Organizational Process Performance

- Project Management
  - L3
  - Integrated Project Mgmt.
  - Risk Management
  - Integrated Supplier Mgmt.
  - Integrated Teaming
  - Integrated Project Mgmt. for IPPD

- Engineering
  - L2
  - Requirements Management
  - L3
  - Requirements Development
  - Technical Solution
  - Product Integration
  - Verification
  - Validation

- Support
  - L2
  - Configuration Mgmt.
  - Process and Product Quality Assurance
  - Measurement & Analysis

  - L3
  - Decision Analysis and Resolution
  - Organizational Environment For Integration

  - L5
  - Causal Analysis and Resolution

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The Capability Levels

5  Optimizing
4  Quantitatively Managed
3  Defined
2  Managed
1  Performed
0  Incomplete
Capability Levels are Cumulative

Because capability levels build upon one another, there can be no gaps.
Specific and Generic Goals and Practices
# Generic Goals and Practices

## Capability Level

<table>
<thead>
<tr>
<th>Capability Level</th>
<th>Generic Goals</th>
<th>Generic Practices</th>
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<tbody>
<tr>
<td>1</td>
<td><strong>Achieve Specific Goals</strong></td>
<td>GP 1.1 Perform Base Practices</td>
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<tr>
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<td><strong>Institutionalize a Managed Process</strong></td>
<td>GP 2.1 Establish an Organizational Policy</td>
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<td>GP 2.3 Provide Resources</td>
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<td></td>
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<tr>
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<td></td>
<td>GP 2.5 Train People</td>
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<td>GP 2.9 Objectively Evaluate Adherence</td>
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<td>GP 3.2 Collect Improvement Information</td>
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Model Terminology -1

Institutionalization

involves implementing practices that

- Ensure the process areas are effective, repeatable and long lasting
- Provide needed infrastructure support
- Ensure processes are defined, documented, understood
- Enable organizational learning to improve the processes
Establish and Maintain

This phrase connotes a meaning beyond the component terms; it includes documentation and usage.

Work product

The term “work product” is used throughout the CMMI Product Suite to mean any artifact produced by a process. These artifacts can include files, documents, parts of the product, services, processes, specifications, and invoices.

Planned Process

A process that is documented both by a description and a plan. The description and plan should be coordinated, and the plan should include standards, requirements, objectives, resources, assignments, etc.
**Model Terminology -3**

- **Performed Process (Capability Level 1)**
  - A process that accomplishes the needed work to **produce identified output** work products using identified input work products. The specific **goals of the process area** are satisfied.

- **Managed Process (Capability Level 2)**
  - A “managed process” is a **performed process** that is planned and executed in accordance with **policy**; employs skilled people having adequate resources to produce controlled outputs; involves relevant stakeholders; is monitored, controlled, and reviewed; and is **evaluated for adherence** to its process description.

- **Defined Process (Capability Level 3)**
  - A “defined process” is a managed process that is **tailored** from the organization’s set of standard processes according to the organization’s tailoring guidelines; has a **maintained process description**; and contributes work products, measures, and other **process-improvement** information to the organizational process assets.
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Generic Practices Summary

The Generic Practices support institutionalization of critical practices for an organization to have a successful process improvement initiative:

- Processes will be **executed and managed consistently**
- Processes will **survive staff changes**
- Process **improvement** will be **related to business goals**
- The organization will **not** find itself continuously “**reinventing the wheel**”
- There will be the commitment to provide **resources** or infrastructure to support or improve the processes
- There will be historical basis for cost **estimation**