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

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

...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
- Generic Practices
  - Ability to Perform
  - Directing Implementation
  - Commitment to Perform
  - Verifying Implementation

Continuous

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

- Specific Goals
- Generic Practices
- Specific Practices
- 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

- L5
  - Organizational Innovation and Deployment

Project Management

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

- L4
  - Quantitative Project Mgmt.

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
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

Capability Levels

Process Areas (PA)

Generic Goals & Generic Practices

Specific Goals & Practices

Specific Goals & Practices

Generic Goals & Generic Practices
## Generic Goals and Practices

<table>
<thead>
<tr>
<th>Capability Level</th>
<th>Generic Goals</th>
<th>Generic Practices</th>
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<tbody>
<tr>
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<td>- Achieve Specific Goals</td>
<td>- GP 1.1 Perform Base Practices</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
Model Terminology -2

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.
### Generic Practices

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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**