

CMMI[®] for Development

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Maturity Levels 2 & 3 Goals and Practices

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Change history from v1	
v2	REQM GP2.7 - Changed "process control as planned" to "process as planned"

Level 2

REQUIREMENTS MANAGEMENT

The purpose of Requirements Management (REQM) is to manage the requirements of the project's products and product components and to identify inconsistencies between those requirements and the project's plans and work products.

SG 1	Requirements are managed and inconsistencies with project plans and work products are identified.	
	SP 1.1	Develop an understanding with the requirements providers on the meaning of the requirements.
	SP 1.2	Obtain commitment to the requirements from the project participants.
	SP 1.3	Manage changes to the requirements as they evolve during the project.
	SP 1.4	Maintain bidirectional traceability among the requirements and work products.
	SP 1.5	Identify inconsistencies between the project plans and work products and the requirements.
GG 2	The process is institutionalized as a managed process.	
	GP 2.1	Establish and maintain an organizational policy for planning and performing the requirements management process.
	GP 2.2	Establish and maintain the plan for performing the requirements management process.
	GP 2.3	Provide adequate resources for performing the requirements management process, developing the work products, and providing the services of the process.
	GP 2.4	Assign responsibility and authority for performing the process, developing the work products, and providing the services of the requirements management process.
	GP 2.5	Train the people performing or supporting the requirements management process as needed.
	GP 2.6	Place designated work products of the requirements management process under appropriate levels of control.
	GP 2.7	Identify and involve the relevant stakeholders of the requirements management process as planned.
	GP 2.8	Monitor and control the requirements management process against the plan for performing the process and take appropriate corrective action.
	GP 2.9	Objectively evaluate adherence of the requirements management process against its process description, standards, and procedures, and address noncompliance.
	GP 2.10	Review the activities, status, and results of the requirements management process with higher level management and resolve issues.
GG 3	The process is institutionalized as a defined process.	
	GP 3.1	Establish and maintain the description of a defined requirements management process.
	GP 3.2	Collect work products, measures, measurement results, and improvement information derived from planning and performing the requirements management process to support the future use and improvement of the organization's processes and process assets.

PROJECT PLANNING

The purpose of Project Planning (PP) is to establish and maintain plans that define project activities.

SG 1	Estimates of project planning parameters are established and maintained.	
	SP 1.1	Establish a top-level work breakdown structure (WBS) to estimate the scope of the project.
	SP 1.2	Establish and maintain estimates of the attributes of the work products and tasks.
	SP 1.3	Define the project life-cycle phases upon which to scope the planning effort.
	SP 1.4	Estimate the project effort and cost for the work products and tasks based on estimation rationale.
SG 2	A project plan is established and maintained as the basis for managing the project.	
	SP 2.1	Establish and maintain the project's budget and schedule.
	SP 2.2	Identify and analyze project risks.
	SP 2.3	Plan for the management of project data.
	SP 2.4	Plan for necessary resources to perform the project.
	SP 2.5	Plan for knowledge and skills needed to perform the project.
	SP 2.6	Plan the involvement of identified stakeholders.
	SP 2.7	Establish and maintain the overall project plan content.
SG 3	Commitments to the project plan are established and maintained.	
	SP 3.1	Review all plans that affect the project to understand project commitments.
	SP 3.2	Reconcile the project plan to reflect available and estimated resources.
	SP 3.3	Obtain commitment from relevant stakeholders responsible for performing and supporting plan execution.
GG 2	The process is institutionalized as a managed process.	
	GP 2.1	Establish and maintain an organizational policy for planning and performing the project planning process.
	GP 2.2	Establish and maintain the plan for performing the project planning process.
	GP 2.3	Provide adequate resources for performing the project planning process, developing the work products, and providing the services of the process.
	GP 2.4	Assign responsibility and authority for performing the process, developing the work products, and providing the services of the project planning process.
	GP 2.5	Train the people performing or supporting the project planning process as needed.
	GP 2.6	Place designated work products of the project planning process under appropriate levels of control.
	GP 2.7	Identify and involve the relevant stakeholders of the project planning process as planned.
	GP 2.8	Monitor and control the project planning process against the plan for performing the process and take appropriate corrective action.
	GP 2.9	Objectively evaluate adherence of the project planning process against its process description, standards, and procedures, and address noncompliance.
	GP 2.10	Review the activities, status, and results of the project planning process with higher level management and resolve issues.
GG 3	The process is institutionalized as a defined process.	
	GP 3.1	Establish and maintain the description of a defined project planning process.
	GP 3.2	Collect work products, measures, measurement results, and improvement information derived from planning and performing the project planning process to support the future use and improvement of the organization's processes and process assets.

PROJECT MONITORING AND CONTROL

The purpose of Project Monitoring and Control (PMC) is to provide an understanding of the project's progress so that appropriate corrective actions can be taken when the project's performance deviates significantly from the plan.

SG 1	Actual performance and progress of the project are monitored against the project plan.	
	SP 1.1	Monitor the actual values of the project planning parameters against the project plan.
	SP 1.2	Monitor commitments against those identified in the project plan.
	SP 1.3	Monitor risks against those identified in the project plan.
	SP 1.4	Monitor the management of project data against the project plan.
	SP 1.5	Monitor stakeholder involvement against the project plan.
	SP 1.6	Periodically review the project's progress, performance, and issues.
	SP 1.7	Review the accomplishments and results of the project at selected project milestones.
SG 2	Corrective actions are managed to closure when the project's performance or results deviate significantly from the plan.	
	SP 2.1	Collect and analyze the issues and determine the corrective actions necessary to address the issues.
	SP 2.2	Take corrective action on identified issues.
	SP 2.3	Manage corrective actions to closure.
GG 2	The process is institutionalized as a managed process.	
	GP 2.1	Establish and maintain an organizational policy for planning and performing the project monitoring and control process.
	GP 2.2	Establish and maintain the plan for performing the project monitoring and control process.
	GP 2.3	Provide adequate resources for performing the project monitoring and control process, developing the work products, and providing the services of the process.
	GP 2.4	Assign responsibility and authority for performing the process, developing the work products, and providing the services of the project monitoring and control process.
	GP 2.5	Train the people performing or supporting the project monitoring and control process as needed.
	GP 2.6	Place designated work products of the project monitoring and control process under appropriate levels of control.
	GP 2.7	Identify and involve the relevant stakeholders of the project monitoring and control process as planned.
	GP 2.8	Monitor and control the project monitoring and control process against the plan for performing the process and take appropriate corrective action.
	GP 2.9	Objectively evaluate adherence of the project monitoring and control process against its process description, standards, and procedures, and address noncompliance.
	GP 2.10	Review the activities, status, and results of the project monitoring and control process with higher level management and resolve issues.
GG 3	The process is institutionalized as a defined process.	
	GP 3.1	Establish and maintain the description of a defined project monitoring and control process.
	GP 3.2	Collect work products, measures, measurement results, and improvement information derived from planning and performing the project monitoring and control process to support the future use and improvement of the organization's processes and process assets.

CONFIGURATION MANAGEMENT

The purpose of Configuration Management (CM) is to establish and maintain the integrity of work products using configuration identification, configuration control, configuration status accounting, and configuration audits.

SG 1	Baselines of identified work products are established.	
	SP 1.1	Identify the configuration items, components, and related work products that will be placed under configuration management.
	SP 1.2	Establish and maintain a configuration management and change management system for controlling work products.
	SP 1.3	Create or release baselines for internal use and for delivery to the customer.
SG 2	Changes to the work products under configuration management are tracked and controlled.	
	SP 2.1	Track change requests for the configuration items.
	SP 2.2	Control changes to the configuration items.
SG 3	Integrity of baselines is established and maintained.	
	SP 3.1	Establish and maintain records describing configuration items.
	SP 3.2	Perform configuration audits to maintain integrity of the configuration baselines.
GG 2	The process is institutionalized as a managed process.	
	GP 2.1	Establish and maintain an organizational policy for planning and performing the configuration management process.
	GP 2.2	Establish and maintain the plan for performing the configuration management process.
	GP 2.3	Provide adequate resources for performing the configuration management process, developing the work products, and providing the services of the process.
	GP 2.4	Assign responsibility and authority for performing the process, developing the work products, and providing the services of the configuration management process.
	GP 2.5	Train the people performing or supporting the configuration management process as needed.
	GP 2.6	Place designated work products of the configuration management process under appropriate levels of control.
	GP 2.7	Identify and involve the relevant stakeholders of the configuration management process as planned.
	GP 2.8	Monitor and control the configuration management process against the plan for performing the process and take appropriate corrective action.
	GP 2.9	Objectively evaluate adherence of the configuration management process against its process description, standards, and procedures, and address noncompliance.
	GP 2.10	Review the activities, status, and results of the configuration management process with higher level management and resolve issues.
GG 3	The process is institutionalized as a defined process.	
	GP 3.1	Establish and maintain the description of a defined configuration management process.
	GP 3.2	Collect work products, measures, measurement results, and improvement information derived from planning and performing the configuration management process to support the future use and improvement of the organization's processes and process assets.

MEASUREMENT AND ANALYSIS

The purpose of Measurement and Analysis (MA) is to develop and sustain a measurement capability that is used to support management information needs.

SG 1	Measurement objectives and activities are aligned with identified information needs and objectives.	
	SP 1.1	Establish and maintain measurement objectives that are derived from identified information needs and objectives.
	SP 1.2	Specify measures to address the measurement objectives.
	SP 1.3	Specify how measurement data will be obtained and stored.
	SP 1.4	Specify how measurement data will be analyzed and reported.
SG 2	Measurement results, which address identified information needs and objectives, are provided.	
	SP 2.1	Obtain specified measurement data.
	SP 2.2	Analyze and interpret measurement data.
	SP 2.3	Manage and store measurement data, measurement specifications, and analysis results.
	SP 2.4	Report results of measurement and analysis activities to all relevant stakeholders.
GG 2	The process is institutionalized as a managed process.	
	GP 2.1	Establish and maintain an organizational policy for planning and performing the measurement and analysis process.
	GP 2.2	Establish and maintain the plan for performing the measurement and analysis process.
	GP 2.3	Provide adequate resources for performing the measurement and analysis process, developing the work products, and providing the services of the process.
	GP 2.4	Assign responsibility and authority for performing the process, developing the work products, and providing the services of the measurement and analysis process.
	GP 2.5	Train the people performing or supporting the measurement and analysis process as needed.
	GP 2.6	Place designated work products of the measurement and analysis process under appropriate levels of control.
	GP 2.7	Identify and involve the relevant stakeholders of the measurement and analysis process as planned.
	GP 2.8	Monitor and control the measurement and analysis process against the plan for performing the process and take appropriate corrective action.
	GP 2.9	Objectively evaluate adherence of the measurement and analysis process against its process description, standards, and procedures, and address noncompliance.
	GP 2.10	Review the activities, status, and results of the measurement and analysis process with higher level management and resolve issues.
GG 3	The process is institutionalized as a defined process.	
	GP 3.1	Establish and maintain the description of a defined measurement and analysis process.
	GP 3.2	Collect work products, measures, measurement results, and improvement information derived from planning and performing the measurement and analysis process to support the future use and improvement of the organization's processes and process assets.

PROCESS AND PRODUCT QUALITY ASSURANCE

The purpose of Process and Product Quality Assurance (PPQA) is to provide staff and management with objective insight into processes and associated work products.

SG 1	Adherence of the performed process and associated work products and services to applicable process descriptions, standards, and procedures is objectively evaluated.	
	SP 1.1	Objectively evaluate the designated performed processes against the applicable process descriptions, standards, and procedures.
	SP 1.2	Objectively evaluate the designated work products and services against the applicable process descriptions, standards, and procedures.
SG 2	Noncompliance issues are objectively tracked and communicated, and resolution is ensured.	
	SP 2.1	Communicate quality issues and ensure resolution of noncompliance issues with the staff and managers.
	SP 2.2	Establish and maintain records of the quality assurance activities.
GG 2	The process is institutionalized as a managed process.	
	GP 2.1	Establish and maintain an organizational policy for planning and performing the process and product quality assurance process.
	GP 2.2	Establish and maintain the plan for performing the process and product quality assurance process.
	GP 2.3	Provide adequate resources for performing the process and product quality assurance process, developing the work products, and providing the services of the process.
	GP 2.4	Assign responsibility and authority for performing the process, developing the work products, and providing the services of the process and product quality assurance process.
	GP 2.5	Train the people performing or supporting the process and product quality assurance process as needed.
	GP 2.6	Place designated work products of the process and product quality assurance process under appropriate levels of control.
	GP 2.7	Identify and involve the relevant stakeholders of the process and product quality assurance process as planned.
	GP 2.8	Monitor and control the process and product quality assurance process against the plan for performing the process and take appropriate corrective action.
	GP 2.9	Objectively evaluate adherence of the process and product quality assurance process against its process description, standards, and procedures, and address noncompliance.
	GP 2.10	Review the activities, status, and results of the process and product quality assurance process with higher level management and resolve issues.
GG 3	The process is institutionalized as a defined process.	
	GP 3.1	Establish and maintain the description of a defined process and product quality assurance process.
	GP 3.2	Collect work products, measures, measurement results, and improvement information derived from planning and performing the process and product quality assurance process to support the future use and improvement of the organization's processes and process assets.

SUPPLIER AGREEMENT MANAGEMENT

The purpose of Supplier Agreement Management (SAM) is to manage the acquisition of products from suppliers.

SG 1	Agreements with the suppliers are established and maintained.	
	SP 1.1	Determine the type of acquisition for each product or product component to be acquired.
	SP 1.2	Select suppliers based on an evaluation of their ability to meet the specified requirements and established criteria.
	SP 1.3	Establish and maintain formal agreements with the supplier.
SG 2	Agreements with the suppliers are satisfied by both the project and the supplier.	
	SP 2.1	Perform activities with the supplier as specified in the supplier agreement.
	SP 2.2	Select, monitor, and analyze processes used by the supplier.
	SP 2.3	Select and evaluate work products from the supplier of custom-made products.
	SP 2.4	Ensure that the supplier agreement is satisfied before accepting the acquired product.
	SP 2.5	Transition the acquired products from the supplier to the project.
GG 2	The process is institutionalized as a managed process.	
	GP 2.1	Establish and maintain an organizational policy for planning and performing the supplier agreement management process.
	GP 2.2	Establish and maintain the plan for performing the supplier agreement management process.
	GP 2.3	Provide adequate resources for performing the supplier agreement management process, developing the work products, and providing the services of the process.
	GP 2.4	Assign responsibility and authority for performing the process, developing the work products, and providing the services of the supplier agreement management process.
	GP 2.5	Train the people performing or supporting the supplier agreement management process as needed.
	GP 2.6	Place designated work products of the supplier agreement management process under appropriate levels of control.
	GP 2.7	Identify and involve the relevant stakeholders of the supplier agreement management process as planned.
	GP 2.8	Monitor and control the supplier agreement management process against the plan for performing the process and take appropriate corrective action.
	GP 2.9	Objectively evaluate adherence of the supplier agreement management process against its process description, standards, and procedures, and address noncompliance.
	GP 2.10	Review the activities, status, and results of the supplier agreement management process with higher level management and resolve issues.
GG 3	The process is institutionalized as a defined process.	
	GP 3.1	Establish and maintain the description of a defined supplier agreement management process.
	GP 3.2	Collect work products, measures, measurement results, and improvement information derived from planning and performing the supplier agreement management process to support the future use and improvement of the organization's processes and process assets.

Level 3

REQUIREMENTS DEVELOPMENT

The purpose of Requirements Development (RD) is to produce and analyze customer, product, and product-component requirements

SG 1	Stakeholder needs, expectations, constraints, and interfaces are collected and translated into customer requirements.	
	SP 1.1	Elicit stakeholder needs, expectations, constraints, and interfaces for all phases of the product lifecycle.
	SP 1.2	Transform stakeholder needs, expectations, constraints, and interfaces into customer requirements.
SG 2	Customer requirements are refined and elaborated to develop product and product component requirements.	
	SP 2.1	Establish and maintain product and product-component requirements, which are based on the customer requirements.
	SP 2.2	Allocate the requirements for each product component.
	SP 2.3	Identify interface requirements.
SG 3	The requirements are analyzed and validated, and a definition of required functionality is developed.	
	SP 3.1	Establish and maintain operational concepts and associated scenarios.
	SP 3.2	Establish and maintain a definition of required functionality.
	SP 3.3	Analyze requirements to ensure that they are necessary and sufficient.
	SP 3.4	Analyze requirements to balance stakeholder needs and constraints.
	SP 3.5	Validate requirements to ensure the resulting product will perform as intended in the user's environment.
GG 2	The process is institutionalized as a managed process.	
	GP 2.1	Establish and maintain an organizational policy for planning and performing the requirements development process.
	GP 2.2	Establish and maintain the plan for performing the requirements development process.
	GP 2.3	Provide adequate resources for performing the requirements development process, developing the work products, and providing the services of the process.
	GP 2.4	Assign responsibility and authority for performing the process, developing the work products, and providing the services of the requirements development process.
	GP 2.5	Train the people performing or supporting the requirements development process as needed.
	GP 2.6	Place designated work products of the requirements development process under appropriate levels of control.
	GP 2.7	Identify and involve the relevant stakeholders of the requirements development process as planned.
	GP 2.8	Monitor and control the requirements development process against the plan for performing the process and take appropriate corrective action.
	GP 2.9	Objectively evaluate adherence of the requirements development process against its process description, standards, and procedures, and address noncompliance.
	GP 2.10	Review the activities, status, and results of the requirements development process with higher level management and resolve issues.
GG 3	The process is institutionalized as a defined process.	
	GP 3.1	Establish and maintain the description of a defined requirements development process.
	GP 3.2	Collect work products, measures, measurement results, and improvement information derived from planning and performing the requirements development process to support the future use and improvement of the organization's processes and process assets.

TECHNICAL SOLUTION

The purpose of Technical Solution (TS) is to design, develop, and implement solutions to requirements. Solutions, designs, and implementations encompass products, product components, and product-related lifecycle processes either singly or in combinations as appropriate.

SG 1	Product or product component solutions are selected from alternative solutions.	
	SP 1.1	Develop alternative solutions and selection criteria.
	SP 1.2	Select the product component solutions that best satisfy the criteria established.
SG 2	Product or product component designs are developed.	
	SP 2.1	Develop a design for the product or product component.
	SP 2.2	Establish and maintain a technical data package.
	SP 2.3	Design product component interfaces using established criteria.
	SP 2.4	Evaluate whether the product components should be developed, purchased, or reused based on established criteria.
SG 3	Product components, and associated support documentation, are implemented from their designs.	
	SP 3.1	Implement the designs of the product components.
	SP 3.2	Develop and maintain the end-use documentation.
GG 2	The process is institutionalized as a managed process.	
	GP 2.1	Establish and maintain an organizational policy for planning and performing the technical solution process.
	GP 2.2	Establish and maintain the plan for performing the technical solution process.
	GP 2.3	Provide adequate resources for performing the technical solution process, developing the work products, and providing the services of the process.
	GP 2.4	Assign responsibility and authority for performing the process, developing the work products, and providing the services of the technical solution process.
	GP 2.5	Train the people performing or supporting the technical solution process as needed.
	GP 2.6	Place designated work products of the technical solution process under appropriate levels of control.
	GP 2.7	Identify and involve the relevant stakeholders of the technical solution process as planned.
	GP 2.8	Monitor and control the technical solution process against the plan for performing the process and take appropriate corrective action.
	GP 2.9	Objectively evaluate adherence of the technical solution process against its process description, standards, and procedures, and address noncompliance.
	GP 2.10	Review the activities, status, and results of the technical solution process with higher level management and resolve issues.
GG 3	The process is institutionalized as a defined process.	
	GP 3.1	Establish and maintain the description of a defined technical solution process.
	GP 3.2	Collect work products, measures, measurement results, and improvement information derived from planning and performing the technical solution process to support the future use and improvement of the organization's processes and process assets.

PRODUCT INTEGRATION

The purpose of Product Integration (PI) is to assemble the product from the product components, ensure that the product, as integrated, functions properly, and deliver the product.

SG 1	Preparation for product integration is conducted.	
	SP 1.1	Determine the product component integration sequence.
	SP 1.2	Establish and maintain the environment needed to support the integration of the product components.
	SP 1.3	Establish and maintain procedures and criteria for integration of the product components.
SG 2	The product component interfaces, both internal and external, are compatible.	
	SP 2.1	Review interface descriptions for coverage and completeness.
	SP 2.2	Manage internal and external interface definitions, designs, and changes for products and product components.
SG 3	Verified product components are assembled and the integrated, verified, and validated product is delivered.	
	SP 3.1	Confirm, prior to assembly, that each product component required to assemble the product has been properly identified, functions according to its description, and that the product-component interfaces comply with the interface descriptions.
	SP 3.2	Assemble product components according to the product integration sequence and available procedures.
	SP 3.3	Evaluate assembled product components for interface compatibility.
	SP 3.4	Package the assembled product or product component and deliver it to the appropriate customer.
GG 2	The process is institutionalized as a managed process.	
	GP 2.1	Establish and maintain an organizational policy for planning and performing the product integration process.
	GP 2.2	Establish and maintain the plan for performing the product integration process.
	GP 2.3	Provide adequate resources for performing the product integration process, developing the work products, and providing the services of the process.
	GP 2.4	Assign responsibility and authority for performing the process, developing the work products, and providing the services of the product integration process.
	GP 2.5	Train the people performing or supporting the product integration process as needed.
	GP 2.6	Place designated work products of the product integration process under appropriate levels of control.
	GP 2.7	Identify and involve the relevant stakeholders of the product integration process as planned.
	GP 2.8	Monitor and control the product integration process against the plan for performing the process and take appropriate corrective action.
	GP 2.9	Objectively evaluate adherence of the product integration process against its process description, standards, and procedures, and address noncompliance.
	GP 2.10	Review the activities, status, and results of the product integration process with higher level management and resolve issues.
GG 3	The process is institutionalized as a defined process.	
	GP 3.1	Establish and maintain the description of a defined product integration process.
	GP 3.2	Collect work products, measures, measurement results, and improvement information derived from planning and performing the product integration process to support the future use and improvement of the organization's processes and process assets.

VERIFICATION

The purpose of Verification (VER) is to ensure that selected work products meet their specified requirements.

SG 1	Preparation for verification is conducted.	
	SP 1.1	Select the work products to be verified and the verification methods that will be used for each.
	SP 1.2	Establish and maintain the environment needed to support verification.
	SP 1.3	Establish and maintain verification procedures and criteria for the selected work products.
SG 2	Peer reviews are performed on selected work products.	
	SP 2.1	Prepare for peer reviews of selected work products.
	SP 2.2	Conduct peer reviews on selected work products and identify issues resulting from the peer review.
	SP 2.3	Analyze data about preparation, conduct, and results of the peer reviews.
SG 3	Selected work products are verified against their specified requirements.	
	SP 3.1	Perform verification on the selected work products.
	SP 3.2	Analyze the results of all verification activities.
GG 2	The process is institutionalized as a managed process.	
	GP 2.1	Establish and maintain an organizational policy for planning and performing the verification process.
	GP 2.2	Establish and maintain the plan for performing the verification process.
	GP 2.3	Provide adequate resources for performing the verification process, developing the work products, and providing the services of the process.
	GP 2.4	Assign responsibility and authority for performing the process, developing the work products, and providing the services of the verification process.
	GP 2.5	Train the people performing or supporting the verification process as needed.
	GP 2.6	Place designated work products of the verification process under appropriate levels of control.
	GP 2.7	Identify and involve the relevant stakeholders of the verification process as planned.
	GP 2.8	Monitor and control the verification process against the plan for performing the process and take appropriate corrective action.
	GP 2.9	Objectively evaluate adherence of the verification process against its process description, standards, and procedures, and address noncompliance.
	GP 2.10	Review the activities, status, and results of the verification process with higher level management and resolve issues.
GG 3	The process is institutionalized as a defined process.	
	GP 3.1	Establish and maintain the description of a defined verification process.
	GP 3.2	Collect work products, measures, measurement results, and improvement information derived from planning and performing the verification process to support the future use and improvement of the organization's processes and process assets.

VALIDATION

The purpose of Validation (VAL) is to demonstrate that a product or product component fulfills its intended use when placed in its intended environment.

SG 1	Preparation for validation is conducted.	
	SP 1.1	Select products and product components to be validated and the validation methods that will be used for each.
	SP 1.2	Establish and maintain the environment needed to support validation.
	SP 1.3	Establish and maintain procedures and criteria for validation.
SG 2	The product or product components are validated to ensure that they are suitable for use in their intended operating environment.	
	SP 2.1	Perform validation on the selected products and product components.
	SP 2.2	Analyze the results of the validation activities.
GG 2	The process is institutionalized as a managed process.	
	GP 2.1	Establish and maintain an organizational policy for planning and performing the validation process.
	GP 2.2	Establish and maintain the plan for performing the validation process.
	GP 2.3	Provide adequate resources for performing the validation process, developing the work products, and providing the services of the process.
	GP 2.4	Assign responsibility and authority for performing the process, developing the work products, and providing the services of the validation process.
	GP 2.5	Train the people performing or supporting the validation process as needed.
	GP 2.6	Place designated work products of the validation process under appropriate levels of control.
	GP 2.7	Identify and involve the relevant stakeholders of the validation process as planned.
	GP 2.8	Monitor and control the validation process against the plan for performing the process and take appropriate corrective action.
	GP 2.9	Objectively evaluate adherence of the validation process against its process description, standards, and procedures, and address noncompliance.
	GP 2.10	Review the activities, status, and results of the validation process with higher level management and resolve issues.
GG 3	The process is institutionalized as a defined process.	
	GP 3.1	Establish and maintain the description of a defined validation process.
	GP 3.2	Collect work products, measures, measurement results, and improvement information derived from planning and performing the validation process to support the future use and improvement of the organization's processes and process assets.

ORGANIZATIONAL PROCESS DEFINITION + IPPD

The purpose of Organizational Process Definition (OPD) is to establish and maintain a usable set of organizational process assets and work environment standards.

IPPD Addition

For IPPD, Organizational Process Definition +IPPD also covers the establishment of organizational rules and guidelines that enable conducting work using integrated teams.

SG 1	A set of organizational process assets is established and maintained.	
	SP 1.1	Establish and maintain the organization's set of standard processes.
	SP 1.2	Establish and maintain descriptions of the lifecycle models approved for use in the organization.
	SP 1.3	Establish and maintain the tailoring criteria and guidelines for the organization's set of standard processes.
	SP 1.4	Establish and maintain the organization's measurement repository.
	SP 1.5	Establish and maintain the organization's process asset library.
	SP 1.6	Establish and maintain work environment standards.
<i>The next goal (SG 2) is an optional IPPD extension. It is performed only when the IPPD model is selected.</i>		
SG 2	Organizational rules and guidelines, which govern the operation of integrated teams, are provided.	
	SP 2.1	Establish and maintain empowerment mechanisms to enable timely decision making.
	SP 2.2	Establish and maintain organizational rules and guidelines for structuring and forming integrated teams.
	SP 2.3	Establish and maintain organizational guidelines to help team members balance their team and home organization responsibilities.
GG 2	The process is institutionalized as a managed process.	
	GP 2.1	Establish and maintain an organizational policy for planning and performing the organizational process definition process.
	GP 2.2	Establish and maintain the plan for performing the organizational process definition process.
	GP 2.3	Provide adequate resources for performing the organizational process definition process, developing the work products, and providing the services of the process.
	GP 2.4	Assign responsibility and authority for performing the process, developing the work products, and providing the services of the organizational process definition process.
	GP 2.5	Train the people performing or supporting the organizational process definition process as needed.
	GP 2.6	Place designated work products of the organizational process definition process under appropriate levels of control.
	GP 2.7	Identify and involve the relevant stakeholders of the organizational process definition process as planned.
	GP 2.8	Monitor and control the organizational process definition process against the plan for performing the process and take appropriate corrective action.
	GP 2.9	Objectively evaluate adherence of the organizational process definition process against its process description, standards, and procedures, and address noncompliance.
	GP 2.10	Review the activities, status, and results of the organizational process definition process with higher level management and resolve issues.
GG 3	The process is institutionalized as a defined process.	
	GP 3.1	Establish and maintain the description of a defined organizational process definition process.
	GP 3.2	Collect work products, measures, measurement results, and improvement information derived from planning and performing the organizational process definition process to support the future use and improvement of the organization's processes and process assets.

RISK MANAGEMENT

The purpose of Risk Management (RSKM) is to identify potential problems before they occur, so that risk-handling activities may be planned and invoked as needed across the life of the product or project to mitigate adverse impacts on achieving objectives.

SG 1	Preparation for risk management is conducted.	
	SP 1.1	Determine risk sources and categories.
	SP 1.2	Define the parameters used to analyze and categorize risks, and the parameters used to control the risk management effort.
	SP 1.3	Establish and maintain the strategy to be used for risk management.
SG 2	Risks are identified and analyzed to determine their relative importance.	
	SP 2.1	Identify and document the risks.
	SP 2.2	Evaluate and categorize each identified risk using the defined risk categories and parameters, and determine its relative priority.
SG 3	Risks are handled and mitigated, where appropriate, to reduce adverse impacts on achieving objectives.	
	SP 3.1	Develop a risk mitigation plan for the most important risks to the project, as defined by the risk management strategy.
	SP 3.2	Monitor the status of each risk periodically and implement the risk mitigation plan as appropriate.
GG 2	The process is institutionalized as a managed process.	
	GP 2.1	Establish and maintain an organizational policy for planning and performing the risk management process.
	GP 2.2	Establish and maintain the plan for performing the risk management process.
	GP 2.3	Provide adequate resources for performing the risk management process, developing the work products, and providing the services of the process.
	GP 2.4	Assign responsibility and authority for performing the process, developing the work products, and providing the services of the risk management process.
	GP 2.5	Train the people performing or supporting the risk management process as needed.
	GP 2.6	Place designated work products of the risk management process under appropriate levels of control.
	GP 2.7	Identify and involve the relevant stakeholders of the risk management process as planned.
	GP 2.8	Monitor and control the risk management process against the plan for performing the process and take appropriate corrective action.
	GP 2.9	Objectively evaluate adherence of the risk management process against its process description, standards, and procedures, and address noncompliance.
	GP 2.10	Review the activities, status, and results of the risk management process with higher level management and resolve issues.
GG 3	The process is institutionalized as a defined process.	
	GP 3.1	Establish and maintain the description of a defined risk management process.
	GP 3.2	Collect work products, measures, measurement results, and improvement information derived from planning and performing the risk management process to support the future use and improvement of the organization's processes and process assets.

INTEGRATED PROJECT MANAGEMENT + IPPD

The purpose of Integrated Project Management (IPM) is to establish and manage the project and the involvement of the relevant stakeholders according to an integrated and defined process that is tailored from the organization's set of standard processes.

IPP Addition

For IPPD, Integrated Project Management +IPPD also covers the establishment of a shared vision for the project and the establishment of integrated teams that will carry out objectives of the project.

SG 1	The project is conducted using a defined process that is tailored from the organization's set of standard processes.	
	SP 1.1	Establish and maintain the project's defined process from project startup through the life of the project.
	SP 1.2	Use the organizational process assets and measurement repository for estimating and planning the project's activities.
	SP 1.3	Establish and maintain the project's work environment based on the organization's work environment standards.
	SP 1.4	Integrate the project plan and the other plans that affect the project to describe the project's defined process.
	SP 1.5	Manage the project using the project plan, the other plans that affect the project, and the project's defined process.
	SP 1.6	Contribute work products, measures, and documented experiences to the organizational process assets.
SG 2	Coordination and collaboration of the project with relevant stakeholders is conducted.	
	SP 2.1	Manage the involvement of the relevant stakeholders in the project.
	SP 2.2	Participate with relevant stakeholders to identify, negotiate, and track critical dependencies.
	SP 2.3	Resolve issues with relevant stakeholders.
<i>The next goal (SG 3) is an optional IPPD extension. It is performed only when the IPPD model is selected.</i>		
SG 3	The project is managed using IPPD principles.	
	SP 3.1	Establish and maintain a shared vision for the project.
	SP 3.2	Establish and maintain the integrated team structure for the project.
	SP 3.3	Allocate requirements, responsibilities, tasks, and interfaces to teams in the integrated team structure.
	SP 3.4	Establish and maintain integrated teams in the structure.
	SP 3.5	Ensure collaboration among interfacing teams.
GG 2	The process is institutionalized as a managed process.	
	GP 2.1	Establish and maintain an organizational policy for planning and performing the integrated project management process.
	GP 2.2	Establish and maintain the plan for performing the integrated project management process.
	GP 2.3	Provide adequate resources for performing the integrated project management process, developing the work products, and providing the services of the process.
	GP 2.4	Assign responsibility and authority for performing the process, developing the work products, and providing the services of the integrated project management process.
	GP 2.5	Train the people performing or supporting the integrated project management process as needed.
	GP 2.6	Place designated work products of the integrated project management process under appropriate levels of control.
	GP 2.7	Identify and involve the relevant stakeholders of the integrated project management process as planned.
	GP 2.8	Monitor and control the integrated project management process against the plan for performing the process and take appropriate corrective action.

	GP 2.9	Objectively evaluate adherence of the integrated project management process against its process description, standards, and procedures, and address noncompliance.
	GP 2.10	Review the activities, status, and results of the integrated project management process with higher level management and resolve issues.
GG 3	The process is institutionalized as a defined process.	
	GP 3.1	Establish and maintain the description of a defined integrated project management process.
	GP 3.2	Collect work products, measures, measurement results, and improvement information derived from planning and performing the integrated project management process to support the future use and improvement of the organization's processes and process assets.

DECISION ANALYSIS AND RESOLUTION

The purpose of Decision Analysis and Resolution (DAR) is to analyze possible decisions using a formal evaluation process that evaluates identified alternatives against established criteria

SG 1	Decisions are based on an evaluation of alternatives using established criteria.	
	SP 1.1	Establish and maintain guidelines to determine which issues are subject to a formal evaluation process.
	SP 1.2	Establish and maintain the criteria for evaluating alternatives, and the relative ranking of these criteria.
	SP 1.3	Identify alternative solutions to address issues.
	SP 1.4	Select the evaluation methods.
	SP 1.5	Evaluate alternative solutions using the established criteria and methods.
	SP 1.6	Select solutions from the alternatives based on the evaluation criteria.
GG 2	The process is institutionalized as a managed process.	
	GP 2.1	Establish and maintain an organizational policy for planning and performing the decision analysis and resolution process.
	GP 2.2	Establish and maintain the plan for performing the decision analysis and resolution process.
	GP 2.3	Provide adequate resources for performing the decision analysis and resolution process, developing the work products, and providing the services of the process.
	GP 2.4	Assign responsibility and authority for performing the process, developing the work products, and providing the services of the decision analysis and resolution process.
	GP 2.5	Train the people performing or supporting the decision analysis and resolution process as needed.
	GP 2.6	Place designated work products of the decision analysis and resolution process under appropriate levels of control.
	GP 2.7	Identify and involve the relevant stakeholders of the decision analysis and resolution process as planned.
	GP 2.8	Monitor and control the decision analysis and resolution process against the plan for performing the process and take appropriate corrective action.
	GP 2.9	Objectively evaluate adherence of the decision analysis and resolution process against its process description, standards, and procedures, and address noncompliance.
	GP 2.10	Review the activities, status, and results of the decision analysis and resolution process with higher level management and resolve issues.
GG 3	The process is institutionalized as a defined process.	
	GP 3.1	Establish and maintain the description of a defined decision analysis and resolution process.
	GP 3.2	Collect work products, measures, measurement results, and improvement information derived from planning and performing the decision analysis and resolution process to support the future use and improvement of the organization's processes and process assets.

ORGANIZATIONAL PROCESS FOCUS

The purpose of Organizational Process Focus (OPF) is to plan, implement and deploy organizational process improvements based on a thorough understanding of the current strengths and weaknesses of the organization's processes and process assets.

SG 1	Strengths, weaknesses, and improvement opportunities for the organization's processes are identified periodically and as needed.	
	SP 1.1	Establish and maintain the description of the process needs and objectives for the organization.
	SP 1.2	Appraise the organization's processes periodically and as needed to maintain an understanding of their strengths and weaknesses.
	SP 1.3	Identify improvements to the organization's processes and process assets.
SG 2	Process actions that address improvements to the organization's processes and process assets are planned and implemented.	
	SP 2.1	Establish and maintain process action plans to address improvements to the organization's processes and process assets.
	SP 2.2	Implement process action plans.
SG 3	The organizational process assets are deployed across the organization and process-related experiences are incorporated into the organizational process assets.	
	SP 3.1	Deploy organizational process assets across the organization.
	SP 3.2	Deploy the organization's set of standard processes to projects at their startup and deploy changes to them as appropriate throughout the life of each project.
	SP 3.3	Monitor the implementation of the organization's set of standard processes and use of process assets on all projects.
	SP 3.4	Incorporate process-related work products, measures, and improvement information derived from planning and performing the process into the organizational process assets.
GG 2	The process is institutionalized as a managed process.	
	GP 2.1	Establish and maintain an organizational policy for planning and performing the organizational process focus process.
	GP 2.2	Establish and maintain the plan for performing the organizational process focus process.
	GP 2.3	Provide adequate resources for performing the organizational process focus process, developing the work products, and providing the services of the process.
	GP 2.4	Assign responsibility and authority for performing the process, developing the work products, and providing the services of the organizational process focus process.
	GP 2.5	Train the people performing or supporting the organizational process focus process as needed.
	GP 2.6	Place designated work products of the organizational process focus process under appropriate levels of control.
	GP 2.7	Identify and involve the relevant stakeholders of the organizational process focus process as planned.
	GP 2.8	Monitor and control the organizational process focus process against the plan for performing the process and take appropriate corrective action.
	GP 2.9	Objectively evaluate adherence of the organizational process focus process against its process description, standards, and procedures, and address noncompliance.
	GP 2.10	Review the activities, status, and results of the organizational process focus process with higher level management and resolve issues.
GG 3	The process is institutionalized as a defined process.	
	GP 3.1	Establish and maintain the description of a defined organizational process focus process.
	GP 3.2	Collect work products, measures, measurement results, and improvement information derived from planning and performing the organizational process focus process to support the future use and improvement of the organization's processes and process assets.

ORGANIZATIONAL TRAINING

The purpose of Organizational Training (OT) is to develop the skills and knowledge of people so they can perform their roles effectively and efficiently.

SG 1	A training capability, which supports the organization's management and technical roles, is established and maintained.	
	SP 1.1	Establish and maintain the strategic training needs of the organization.
	SP 1.2	Determine which training needs are the responsibility of the organization and which will be left to the individual project or support group.
	SP 1.3	Establish and maintain an organizational training tactical plan.
	SP 1.4	Establish and maintain training capability to address organizational training needs.
SG 2	Training necessary for individuals to perform their roles effectively is provided.	
	SP 2.1	Deliver the training following the organizational training tactical plan.
	SP 2.2	Establish and maintain records of the organizational training.
	SP 2.3	Assess the effectiveness of the organization's training program.
GG 2	The process is institutionalized as a managed process.	
	GP 2.1	Establish and maintain an organizational policy for planning and performing the organizational training process.
	GP 2.2	Establish and maintain the plan for performing the organizational training process.
	GP 2.3	Provide adequate resources for performing the organizational training process, developing the work products, and providing the services of the process.
	GP 2.4	Assign responsibility and authority for performing the process, developing the work products, and providing the services of the organizational training process.
	GP 2.5	Train the people performing or supporting the organizational training process as needed.
	GP 2.6	Place designated work products of the organizational training process under appropriate levels of control.
	GP 2.7	Identify and involve the relevant stakeholders of the organizational training process as planned.
	GP 2.8	Monitor and control the organizational training process against the plan for performing the process and take appropriate corrective action.
	GP 2.9	Objectively evaluate adherence of the organizational training process against its process description, standards, and procedures, and address noncompliance.
	GP 2.10	Review the activities, status, and results of the organizational training process with higher level management and resolve issues.
GG 3	The process is institutionalized as a defined process.	
	GP 3.1	Establish and maintain the description of a defined organizational training process.
	GP 3.2	Collect work products, measures, measurement results, and improvement information derived from planning and performing the organizational training process to support the future use and improvement of the organization's processes and process assets.