

## GENERIC GOALS AND GENERIC PRACTICES

Deleted:

### Overview

This section describes, in detail, all [CMMI](#) generic goals and generic practices—model components that directly address process institutionalization.

Deleted: the

Deleted: of CMMI

The text of the generic goals and generic practices is not repeated in the process areas. As you address each process area, refer [back](#) to this section for details of all generic practices.

Deleted: In the process areas, generic goals and generic practices appear at the end of each process area. Generic practice elaborations appear after generic practices to show how these practices should uniquely be applied to the process area.¶

### Process Institutionalization

*Institutionalization* is an important concept in process improvement. When mentioned in the generic goal and generic practice descriptions, institutionalization implies that the process is ingrained in the way the work is performed and there is commitment and consistency to performing the process.

Deleted: entire

Deleted: (i.e., subpractices, notes, examples, and references are omitted). Instead, only the generic goal and generic practice titles and statements appear

An institutionalized process is more likely to be retained during times of stress. When the requirements and objectives for the process change, however, the implementation of the process may also need to change to ensure that it remains effective. The generic practices describe activities that address these aspects of institutionalization.

Deleted: the

The degree of institutionalization is embodied in the generic goals and in the names of the processes [that correspond to](#) each goal as indicated in Table 6.1.

Deleted: expressed

Deleted: associated with

Table 6.1: Generic Goals and Process Names

Deleted: ¶  
-----Page Break-----

<i>Generic Goal</i>	<i>Progression of Processes</i>
GG 1	Performed process
GG 2	Managed process
GG 3	Defined process
GG 4	Quantitatively managed process
GG 5	Optimizing process

The progression of process institutionalization is characterized in the following descriptions of each process.

Deleted: ¶

#### **Performed Process**

A performed process is a process that accomplishes the work necessary to produce work products. The specific goals of the process area are satisfied.

## Managed Process

A managed process is a performed process that is planned and executed in accordance with policy; employs skilled people who have adequate resources to produce controlled outputs; involves relevant stakeholders; is monitored, controlled, and reviewed; and is evaluated for adherence to its process description. The process may be used by a project, group, or organizational function. Management of the process focuses on achieving the objectives established for the process, such as cost, schedule, and quality. The control provided by a managed process ensures that the established process is retained during times of stress.

Deleted: instantiated

Deleted: is concerned with institutionalization and

Deleted: achievement of other specific

Deleted: objectives

Deleted: helps to ensure

Deleted: are established by the organization

The organization establishes requirements and objectives for the process. The status of the work products and delivery of the services are visible to management at defined points (e.g., at major milestones and completion of major tasks). Commitments are established among those performing the work and the relevant stakeholders and these commitments are revised as necessary. Work products are reviewed with relevant stakeholders and are controlled. The work products and services satisfy their specified requirements.

A critical distinction between a performed process and a managed process is the extent to which the process is managed. A managed process is planned (the plan may be part of a more encompassing plan) and the performance of the process is managed against the plan. Corrective actions are taken when the actual results deviate significantly from the plan. A managed process achieves the objectives of the plan and is institutionalized for consistent performance.

Deleted: and performance

## Defined Process

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.

The organizational process assets are artifacts that relate to describing, implementing, and improving processes. These artifacts are assets because they are developed or acquired to meet the business objectives of the organization, and they represent investments by the organization that are expected to provide current and future business value.

The organization's set of standard processes, which are the basis of the defined process, are established and improved over time. Standard processes describe fundamental process elements that are expected in defined processes. Standard processes also describe relationships (e.g., the ordering and the interfaces) among these process elements. The organization-level infrastructure to support current and future use of the organization's set of standard processes is established and

Deleted: the

Deleted: the

Deleted: the

## Generic Goals and Generic Practices

improved over time. (See the definition of “standard process” in the glossary.)

A project’s defined process provides a basis for planning, performing, and improving the project’s tasks and activities. A project may have more than one defined process (e.g., one for developing the product and another for testing the product).

A defined process clearly states the following:

- Purpose
- Inputs
- Entry criteria
- Activities
- Roles
- Measures
- Verification steps
- Outputs
- Exit criteria

A critical distinction between a managed process and a defined process is the scope of application of the process descriptions, standards, and procedures. For a managed process, the process descriptions, standards, and procedures are applicable to a particular project, group, or organizational function. As a result, the managed processes of two projects in one organization may be different.

Another critical distinction is that a defined process is described in more detail and is performed more rigorously than a managed process. This means that improvement information is easier to understand, analyze, and use. Finally, management of the defined process is based on the additional insight provided by an understanding of the interrelationships of the process activities and detailed measures of the process, its work products, and its services.

### **Quantitatively Managed Process**

---

A quantitatively managed process is a defined process that is controlled using statistical and other quantitative techniques. The product quality, service quality, and process-performance attributes are measurable and controlled throughout the project.

Quantitative objectives are established based on the capability of the organization’s set of standard processes; the organization’s business objectives; and the needs of the customer, end users, organization, and process implementers, subject to the availability of resources. The people performing the process are directly involved in quantitatively managing the process.

Quantitative management is performed on the overall set of processes that produces a product. The subprocesses that significantly contribute to overall process performance are statistically managed. For these

Deleted: are significant contributors

selected subprocesses, detailed measures of process performance are collected and statistically analyzed. Special causes of process variation are identified and, as appropriate, the source of the special cause is addressed to prevent its recurrence.

Deleted: where

Quality and process-performance measures are incorporated into the organization's measurement repository to support future fact-based decision making.

Deleted: The quality

Activities for quantitatively managing the performance of a process include the following:

- Identifying subprocesses to be brought under statistical management
- Identifying and measuring product and process attributes important to quality and process performance
- Identifying and addressing special causes of subprocess variation, (based on the selected product and process attributes and subprocesses selected for statistical management)

Deleted: the

Deleted: that are

Deleted: that are

Deleted: contributors

Deleted: s

Managing each selected subprocess to bring its performance within natural bounds (i.e., making the subprocess performance statistically stable and predictable based on the selected product and process attributes)

Deleted: -----Page Break-----

Deleted: of the

Deleted: subprocesses, with the objective of bringing their

- Predicting the ability of the process to satisfy established quantitative quality and process-performance objectives
- Taking appropriate corrective actions when the established quantitative quality and process-performance objectives will not be satisfied

Deleted: it is determined that

Corrective actions include updating the objectives or ensuring that relevant stakeholders have a quantitative understanding of, and have agreed to, the performance shortfall.

Deleted: These corrective

Deleted: changing

A critical distinction between a defined process and a quantitatively managed process is the predictability of process performance. The term *quantitatively managed* implies using appropriate statistical and other quantitative techniques to manage the performance of one or more critical subprocesses so the performance of the process can be predicted. A defined process provides only qualitative predictability.

Deleted: that

### **Optimizing Process**

An optimizing process is a quantitatively managed process that is adapted to meet current and projected business objectives. An optimizing process focuses on continually improving process performance through both incremental and innovative technological improvements. Process improvements that address common causes of process variation, root causes of defects, and other problems; and those that would measurably improve the organization's processes are identified, evaluated, and deployed, as appropriate. Improvements are selected based on a quantitative understanding of their expected

Deleted: changed and

Deleted: relevant

Deleted: These improvements

contribution to achieving the organization's process improvement objectives versus the cost and impact to the organization.

Selected incremental and innovative technological process improvements are systematically managed and deployed into the organization. The effects of the deployed process improvements are measured and compared to quantitative process improvement objectives.

Deleted: evaluated against the

In an optimizing process, common causes of process variation are investigated to determine how to shift the mean or decrease variation in quality and process performance. Changes that support the achievement of the organization's process improvement objectives are candidates for deployment.

Deleted: a

Deleted: that is optimized

Deleted: addressed by changing the process in a way that will

Deleted: when the process is restabilized. These changes are intended to improve

Deleted: and to achieve

Deleted: established

A critical distinction between a quantitatively managed process and an optimizing process is that the optimizing process is continuously improved by addressing common causes of process variation. A quantitatively managed process is concerned with addressing special causes of process variation and providing statistical predictability of results. Although the process may produce predictable results, the results may be insufficient to achieve the organization's process improvement objectives.

Deleted: the

### Relationships Among Processes

Deleted: among

Generic goals evolve so that each goal provides a foundation for the next. Therefore, the following conclusions can be made:

Deleted: The generic

- A managed process is a performed process.
- A defined process is a managed process.
- A quantitatively managed process is a defined process.
- An optimizing process is a quantitatively managed process.

Thus, applied sequentially and in order, the generic goals describe a process that is increasingly institutionalized from a performed process to an optimizing process.

Achieving GG 1 for a process area is equivalent to satisfying the specific goals of the process area.

Deleted: saying you achieve

Achieving GG 2 for a process area is equivalent to managing the performance of processes associated with the process area. There is a policy that indicates you will perform it. There is a plan for performing it. There are resources provided, responsibilities assigned, training on how to perform it, selected work products from performing the process are controlled, and so on. In other words, the process is planned and monitored just like any project or support activity.

Deleted: saying you manage

Achieving GG 3 for a process area assumes that an organizational standard process exists that can be tailored to create the process you will use. Tailoring might result in making no changes to the standard process. In other words, the process used and the standard process

Deleted: result in

may be identical. Using the standard process “as is” is tailoring because the choice is made that no modification is required.

Each process area describes multiple activities, some of which are repeatedly performed. You may need to tailor the way one of these activities is performed to account for new capabilities or circumstances. For example, you may have a standard for developing or obtaining organizational training that does not consider Web-based training. When preparing to develop or obtain a Web-based course, you may need to tailor the standard process to account for the challenges and benefits of Web-based training.

Deleted: particular

Achieving GG 4 or GG 5 for a process area is conceptually feasible but may not be economical except, perhaps, in situations in which the product domain is stable for an extended period or in situations in which the process area or domain is a critical business driver.

Deleted: where

Deleted: has become

## Generic Goals and Generic Practices

This section describes all of the generic goals and generic practices as well as their subpractices, notes, examples, and references. The generic goals are organized in numerical order, GG 1 through GG 5. The generic practices are also organized in numerical order under the generic goal they support.

Deleted: ,

Deleted: associated

As mentioned earlier in this chapter, the text of the generic practices is not repeated in the process areas; the text for each generic goal and generic practice is found only here.

Deleted: subpractices, notes, examples, and references are

Deleted: details of

Deleted: are

Deleted:

### GG 1 Achieve Specific Goals

***The process supports and enables achievement of the specific goals of the process area by transforming identifiable input work products to produce identifiable output work products.***

#### GP 1.1 Perform Specific Practices

***Perform the specific practices of the process area to develop work products and provide services to achieve the specific goals of the process area.***

The purpose of this generic practice is to produce the work products and deliver the services that are expected by performing the process. These practices may be done informally, without following a documented process description or plan. The rigor with which these practices are performed depends on the individuals managing and performing the work and may vary considerably.

**GG 2 Institutionalize a Managed Process**

***The process is institutionalized as a managed process.***

**GP 2.1 Establish an Organizational Policy**

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

The purpose of this generic practice is to define the organizational expectations for the process and make these expectations visible to those in the organization who are affected. In general, senior management is responsible for establishing and communicating guiding principles, direction, and expectations for the organization.

Not all direction from senior management will bear the label *policy*. The existence of appropriate organizational direction is the expectation of this generic practice, regardless of what it is called or how it is imparted.

Deleted: "  
Deleted: "

[This policy establishes organizational expectations for planning and performing the process, including not only the elements of the process addressed directly by the acquirer but also the interactions of the acquirer with suppliers.](#)

**GP 2.2 Plan the Process**

***Establish and maintain the plan for performing the process.***

The purpose of this generic practice is to determine what is needed to perform the process and achieve the established objectives, to prepare a plan for performing the process, to prepare a process description, and to get agreement on the plan from relevant stakeholders.

Deleted: to

The practical implications of applying a generic practice vary for each process area.

Deleted:

For example, the planning described by this generic practice as applied to the Project Monitoring and Control process area may be carried out in full by the processes associated with the Project Planning process area. However, this generic practice, when applied to the Project Planning process area, sets an expectation that the project planning process itself be planned.

Deleted:

Therefore, this generic practice may either reinforce expectations set elsewhere in CMMI or set new expectations that should be addressed.

Refer to the Project Planning process area for more information [about](#) establishing and maintaining a project plan.

Deleted: on

Establishing a plan includes documenting [both](#) the plan and [the](#) process. Maintaining the plan includes updating it to reflect corrective actions or changes in requirements or objectives.

Deleted: a

Deleted: description

The plan for performing the process typically includes the following:

- Process description
- Standards and requirements for the work products and services of the process
- [Objectives](#) for the performance of the process (e.g., quality, time scale, cycle time, and resource usage)
- Dependencies among activities, work products, and services of the process
- Resources (including funding, people, and tools) needed to perform the process
- Assignment of responsibility and authority
- Training needed for performing and supporting the process
- Work products to be controlled and the level of control to be applied
- Measurement requirements to provide insight into the performance of the process, its work products, and its services
- Involvement of identified stakeholders
- Activities for monitoring and controlling the process
- Objective evaluation activities of the process
- Management review activities for the process and the work products

Deleted: Specific objectives

Deleted: the

### Subpractices

#### 1. Define and document the plan for performing the process.

This plan may be a stand-alone document, [a plan](#) embedded in a more comprehensive document, or [a plan](#) distributed across multiple documents. In the case of [a plan](#) being distributed across multiple documents, ensure that a coherent picture of who does what is preserved. Documents may be hardcopy or softcopy.

Deleted: the

#### 2. Define and document the process description.

The process description, which includes relevant standards and procedures, may be included as part of the plan for performing the process or may be [referenced](#) in the plan.

Deleted: included

Deleted: by reference

#### 3. Review the plan with relevant stakeholders and get their agreement.

This [review](#) includes [ensuring](#) that the [planned process](#) satisfies the applicable policies, plans, requirements, and standards to provide assurance to relevant stakeholders.

Deleted: reviewing

#### 4. Revise the plan as necessary.

### GP 2.3 Provide Resources

***Provide adequate resources for performing the process, developing the work products, and providing the services of the process.***

The purpose of this generic practice is to ensure that [resources](#) necessary to perform the process as defined by the plan are available

Deleted: the

when they are needed. Resources include adequate funding, appropriate physical facilities, skilled people, and appropriate tools.

The interpretation of the term *adequate* depends on many factors and can change over time. Inadequate resources may be addressed by increasing resources or by removing requirements, constraints, and commitments.

Deleted: “

Deleted: ”

#### GP 2.4 Assign Responsibility

***Assign responsibility and authority for performing the process, developing the work products, and providing the services of the process.***

The purpose of this generic practice is to ensure there is accountability for performing the process and achieving the specified results throughout the life of the process. The people assigned must have the appropriate authority to perform their assigned responsibilities.

Deleted: that

Deleted: the

Responsibility can be assigned using detailed job descriptions or in living documents, such as the plan for performing the process. Dynamic assignment of responsibility is another legitimate way to perform this generic practice, as long as the assignment and acceptance of responsibility are ensured throughout the life of the process.

##### Subpractices

1. Assign overall responsibility and authority for performing the process.
2. Assign responsibility and authority for performing the tasks of the process.
3. Confirm that the people assigned to the responsibilities and authorities understand and accept them.

Deleted: specific

#### GP 2.5 Train People

***Train the people performing or supporting the process as needed.***

The purpose of this generic practice is to ensure that the people have the necessary skills and expertise to perform or support the process.

Appropriate training is provided to the people who will be performing the work. Overview training is provided to orient people who interact with those performing the work.

Examples of methods for providing training include self-study; self-directed training; self-paced, programmed instruction; formalized on-the-job training; mentoring; and formal and classroom training.

Training supports the successful performance of the process by establishing a common understanding of the process and by imparting the skills and knowledge needed to perform the process.

Experience (e.g., participation in a project with responsibility for managing some acquisition processes) may be substituted for training.

The acquisition organization should conduct a training needs analysis to understand its process training needs at both the organization and project levels. Then, appropriate training vehicles can be identified and provided to minimize process performance-related risks.

*Refer to the Organizational Training process area for more information about training the people performing or supporting the process.*

## GP 2.6 Manage Configurations

### **Place designated work products of the process under appropriate levels of control.**

The purpose of this generic practice is to establish and maintain the integrity of designated work products of the process (or their descriptions) throughout their useful life.

Deleted: the

Designated work products are identified in the plan for performing the process, along with a specification of the appropriate level of control.

Deleted: The designated

Deleted: specifically

Different levels of control are appropriate for different work products and for different points in time. For some work products, it may be sufficient to maintain version control (i.e., the version of the work product in use at a given time, past or present, is known and changes are incorporated in a controlled manner). Version control is usually under the sole control of the work product owner (which may be an individual, a group, or a team).

Deleted: ,

Sometimes, it may be critical that work products be placed under formal or baseline configuration management. This type of control includes defining and establishing baselines at predetermined points. These baselines are formally reviewed and agreed on and serve as the basis for further development of designated work products.

Deleted: ,

Deleted: the

*Refer to the Configuration Management process area for more information about placing work products under configuration management.*

Additional levels of control between version control and formal configuration management are possible. An identified work product may be under different levels of control at different points in time.

Deleted: various

The acquirer is responsible for establishing and maintaining baselines and ensuring designated acquirer work products and supplier deliverables are placed under appropriate levels of control.

Examples of acquirer work products and supplier deliverables placed under control include the following:

- [Project plans](#)
- [Solicitation packages](#)
- [Measures](#)
- [Product documentation](#)

### GP 2.7 Identify and Involve Relevant Stakeholders

***Identify and involve the relevant stakeholders of the process as planned.***

The purpose of this generic practice is to establish and maintain the expected involvement of stakeholders during the execution of the process.

Involve relevant stakeholders as described in an appropriate plan for stakeholder involvement. Involve stakeholders appropriately in activities such as the following:

- Planning
- Decisions
- Commitments
- Communication
- Coordination
- Reviews
- Appraisals
- Requirements definitions
- Resolution of problems/issues

Deleted: s

Refer to the Project Planning process area for [more information about planning for stakeholder involvement](#).

Deleted: on the project

[To plan stakeholder involvement](#), ensure that [sufficient stakeholder interaction](#) necessary to [accomplish](#) the process [occurs](#), while [avoiding](#) excessive numbers of [stakeholders that could](#) impede process execution.

Deleted: The objective of planning

Deleted: is to

Deleted: interactions

Deleted: are accomplished

Deleted: not allowing

Deleted: affected groups and individuals to

[Examples of stakeholders that might serve as relevant stakeholders for acquisition tasks, depending on context, include the acquirer, customers, suppliers, end users, support personnel, other projects, and government regulators.](#)

#### Subpractices

1. Identify stakeholders [that are](#) relevant to [the](#) process and [plan](#) their appropriate involvement.

Deleted: this

Deleted: the

Deleted: the

Deleted: the

Deleted: the

Deleted: the

Relevant stakeholders are identified among [suppliers of inputs to](#), [users of outputs](#) from, and [performers of activities](#) within the process. Once relevant stakeholders

are identified, the appropriate level of their involvement in process activities is planned.

2. Share these identifications with project planners or other planners, as appropriate.
3. Involve relevant stakeholders as planned.

#### GP 2.8 Monitor and Control the Process

##### ***Monitor and control the process against the plan for performing the process and take appropriate corrective action.***

The purpose of this generic practice is to perform the direct day-to-day monitoring and controlling of the process. Appropriate visibility into the process is maintained so that appropriate corrective action can be taken when necessary. Monitoring and controlling the process involves measuring appropriate attributes of the process or work products produced by the process.

*Refer to the Project Monitoring and Control process area for more information about monitoring and controlling the project and taking corrective action.*

*Refer to the Measurement and Analysis process area for more information about measurement.*

[The project collects and analyzes measurements from the acquirer and from the supplier to effectively monitor and control the project.](#)

##### **Subpractices**

1. Measure actual performance against the plan for performing the process.

[Measurements](#) are [collected from](#) the process, its work products, and its services.

Deleted: The measures

Deleted: of

2. Review accomplishments and results of the process against the plan for performing the process.

3. Review activities, status, and results of the process with the immediate level of management responsible for the process and identify issues. [Reviews](#) are intended to provide the immediate level of management with appropriate visibility into the process. The reviews can be both periodic and event driven.

Deleted: The reviews

4. Identify and evaluate effects of significant deviations from the plan for performing the process.

Deleted: the

5. Identify problems in the plan for performing the process and in the execution of the process.

6. Take corrective action when requirements and objectives are not being satisfied, when issues are identified, or when progress differs significantly from the plan for performing the process.

There are inherent risks that should be considered before corrective action is taken.

Deleted: any

Corrective action may include the following:

- Taking remedial action to repair defective work products or services
- Changing the plan for performing the process
- Adjusting resources, including people, tools, and other resources
- Negotiating changes to established commitments
- Securing change to requirements and objectives that **must** be satisfied
- Terminating the effort

Deleted: the

Deleted: the

Deleted: have to

7. Track corrective action to closure.

#### GP 2.9 Objectively Evaluate Adherence

**Objectively evaluate adherence of the process against its process description, standards, and procedures, and address noncompliance.**

The purpose of this generic practice is to provide credible assurance that the process is implemented as planned and adheres to its process description, standards, and procedures. This generic practice is implemented, in part, by evaluating selected work products of the process. (See the definition of “objectively evaluate” in the glossary.)

*Refer to the Process and Product Quality Assurance process area for more information about objectively evaluating adherence.*

People not directly responsible for managing or performing the activities of the process typically evaluate adherence. In many cases, adherence is evaluated by people in the organization but external to the process or project or by people external to the organization. As a result, credible assurance of adherence can be provided even in times when the process is under stress (e.g., when the effort is behind schedule or over budget).

Deleted: with

Deleted: ,

Deleted: ,

Deleted: during

#### GP 2.10 Review Status with Higher Level Management

**Review the activities, status, and results of the process with higher level management and resolve issues.**

The purpose of this generic practice is to provide higher level management with appropriate visibility into the process.

Deleted: the

Higher level management includes those levels of management in the organization above the immediate level of management responsible for the process. In particular, higher level management includes senior management. These reviews are for managers who provide the policy and overall guidance for the process, and not for those who perform the direct day-to-day monitoring and controlling of the process.

Deleted: ,

Different managers have different needs for information about the process. These reviews help ensure that informed decisions on the planning and performing of the process can be made. Therefore, these reviews are both periodic and event driven.

Deleted: expected to be

[Proposed changes to commitments to be made external to the organization \(e.g., changes to supplier agreements\) are typically reviewed with higher level management to obtain their concurrence with the proposed changes.](#)

**GG 3 Institutionalize a Defined Process**

***The process is institutionalized as a defined process.***

**GP 3.1 Establish a Defined Process**

***Establish and maintain the description of a defined process.***

The purpose of this generic practice is to establish and maintain a description of the process that is tailored from the organization's set of standard processes to address the needs of a specific [situation](#). The organization should have standard processes that cover the process area [and](#) have guidelines for tailoring these standard processes to meet the needs of a project or organizational function. With a defined process, variability in how the processes are performed across the organization is reduced and process assets, data, and learning can be effectively shared.

Deleted: instantiation

Deleted: , as well as

*Refer to the Organizational Process Definition process area for more information about the organization's set of standard processes and tailoring guidelines.*

*Refer to the Integrated Project Management process area for more information [about](#) establishing and maintaining the project's defined process.*

Deleted: on

The descriptions of [defined processes](#) provide the basis for planning, performing, and managing activities, work products, and services associated with the process.

Deleted: the

Deleted: the

**Subpractices**

1. Select from the organization's set of standard processes those processes that [best](#) meet the needs of the project or organizational function.
2. Establish the defined process by tailoring the selected processes according to the organization's tailoring guidelines.
3. Ensure that the organization's process objectives are appropriately addressed in the defined process.
4. Document the defined process and [records of tailoring](#).
5. Revise the description of the defined process as necessary.

Deleted: cover the process area and

Deleted: the

Deleted: the

**GP 3.2 Collect Improvement Information**

**Collect work products, measures, measurement results, and improvement information derived from planning and performing the process to support the future use and improvement of the organization's processes and process assets.**

The purpose of this generic practice is to collect information and artifacts derived from planning and performing the process. This generic practice is performed so that information and artifacts can be included in organizational process assets and made available to those who are (or who will be) planning and performing the same or similar processes. The information and artifacts are stored in the organization's measurement repository and the organization's process asset library.

Deleted: the

Deleted: the

Examples of relevant information include the effort expended for various activities, defects injected or removed in a particular activity, and lessons learned.

Deleted: the

Refer to the *Organizational Process Definition* process area for more information about incorporating the work products, measures, measurement results, and improvement information into the organization's measurement repository and process asset library.

Deleted: the organization's measurement repository and process asset library and for more information about

Refer to the *Integrated Project Management* process area for more information about contributing work products, measures, measurement results, and documented experiences to organizational process assets.

Deleted: that are incorporated

Deleted: organizational process assets

Deleted: on

Deleted: the

**Subpractices**

1. Store process and product measures and measurement results in the organization's measurement repository.

The process and product measures are primarily those defined in the common set of measures for the organization's set of standard processes.

Deleted: that are

2. Submit documentation for inclusion in the organization's process asset library.
3. Document lessons learned from the process for inclusion in the organization's process asset library.
4. Propose improvements to organizational process assets.

Deleted: the

**GG 4 Institutionalize a Quantitatively Managed Process**

***The process is institutionalized as a quantitatively managed process.***

**GP 4.1 Establish Quantitative Objectives for the Process**

**Establish and maintain quantitative objectives for the process, which address quality and process performance, based on customer needs and business objectives.**

The purpose of this generic practice is to determine and obtain agreement from relevant stakeholders about quantitative objectives for

Deleted: specific

the process. These quantitative objectives can be expressed in terms of product quality, service quality, and process performance.

Refer to the Quantitative Project Management process area for [more information about establishing quantitative objectives for subprocesses of the project's defined process.](#)

Deleted: on how

Deleted: are set

Deleted: The

[These](#) quantitative objectives may be specific to the process or they may be defined for a broader scope (e.g., for a set of processes). In the latter case, these quantitative objectives may be allocated to some of the included processes.

These quantitative objectives are criteria used to judge whether the products, services, and process performance will satisfy the customers, end users, organization management, and process implementers. These quantitative objectives go beyond the traditional end-product objectives. They also cover intermediate objectives used to manage the achievement of the objectives over time. They reflect, in part, the demonstrated performance of the organization's set of standard processes. These quantitative objectives should be set to values that are likely to be achieved when the processes [or subprocesses](#) involved are stable and within their natural bounds.

Deleted: that are

#### Subpractices

1. Establish [quantitative objectives that pertain to the process.](#)
2. Allocate [quantitative objectives to the process or its subprocesses.](#)

Deleted: the

Deleted: the

### 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.**

The purpose of this generic practice is to stabilize the performance of one or more subprocesses of the defined process, which are critical contributors to overall performance, using appropriate statistical and other quantitative techniques. Stabilizing selected subprocesses supports predicting the ability of the process to achieve the established quantitative quality and process-performance objectives.

Refer to the Quantitative Project Management process area for [more information about selecting subprocesses for statistical management, monitoring the performance of subprocesses, and other aspects of stabilizing subprocess performance.](#)

Deleted: on

A stable subprocess shows no significant indication of special causes of process variation. Stable subprocesses are predictable within the limits established by [natural bounds of the subprocess.](#) Variations in the stable subprocess are [changes](#) due to a [common cause](#) system.

Deleted: the

Deleted: constant

Predicting the ability of the process to achieve the established quantitative objectives requires a quantitative understanding of the contributions of the subprocesses that are critical to achieving these

Deleted: of chance causes, and the magnitude of the variations can be small or large

objectives and establishing and managing against interim quantitative objectives over time.

Selected process and product measures [and measurement results](#) are incorporated into the organization's measurement repository to support process-performance analysis and future fact-based decision making.

**Subpractices**

1. Statistically manage the performance of one or more subprocesses that are critical contributors to the overall performance of the process.
2. Predict the ability of the process to achieve its established quantitative objectives considering the performance of the statistically managed subprocesses.
3. Incorporate selected process-performance [measurement results](#) into the organization's process-performance baselines.

Deleted: measurements

**GG 5 Institutionalize an Optimizing Process**

***The process is institutionalized as an optimizing process.***

**GP 5.1 Ensure Continuous Process Improvement**

***Ensure continuous improvement of the process in fulfilling the relevant business objectives of the organization.***

The purpose of this generic practice is to select and systematically deploy process and technology improvements that contribute to meeting established quality and process-performance objectives.

Refer to the *Organizational Innovation and Deployment process area* for [more](#) information about selecting and deploying incremental and innovative improvements that measurably improve the [organization's](#) processes and technologies.

Deleted: organization's

Optimizing processes [to be](#) agile and innovative depends on the participation of an empowered workforce aligned with the [organization's](#) business values and objectives. The organization's ability to rapidly respond to changes and opportunities is enhanced by finding ways to accelerate and share learning. Improvement of the processes is inherently part of [everyone's](#) role, resulting in a cycle of continual improvement.

Deleted: the

Deleted: that are

Deleted: of the organization

Deleted: everybody's

**Subpractices**

1. Establish and maintain quantitative process improvement objectives that support the organization's business objectives.

The quantitative process improvement objectives may be specific to [an](#) individual process or they may be defined for a broader scope (i.e., for a set of processes), with [individual](#) processes contributing to achieving these objectives. Objectives that are specific to [an](#) individual process are typically allocated from quantitative objectives established for a broader scope.

Deleted: the

Deleted: the

Deleted: the

These process improvement objectives are primarily derived from the organization's business objectives and from a detailed understanding of process capability. These objectives are the criteria used to judge whether process performance is quantitatively improving the organization's ability to meet its business objectives. These process improvement objectives are often set to values beyond current process performance, and both incremental and innovative technological improvements may be needed to achieve these objectives. These objectives may also be revised frequently to continue to drive the improvement of the process (i.e., when an objective is achieved, it may be set to a new value that is again beyond the new process performance).

Deleted: the

Deleted: the

These process improvement objectives may be the same as, or a refinement of, objectives established in the Establish Quantitative Objectives for the Process generic practice, as long as they can serve as both drivers and criteria for successful process improvement.

Deleted: the

Deleted: \*

Deleted: \*

2. Identify process improvements that will likely result in measurable improvements to process performance.

Deleted: would

Process improvements include both incremental changes and innovative technological improvements. Innovative technological improvements are typically pursued as efforts that are separately planned, performed, and managed. Piloting is often performed. These efforts often target process factors that a process- performance analysis has determined to be key to significant measurable improvement.

Deleted: The innovative

Deleted: address specific areas of the processes that are determined by analyzing

Deleted: and identifying specific opportunities for

3. Define strategies and manage the deployment of selected process improvements based on quantified expected benefits, estimated costs and impacts, and measured change to process performance.

Deleted: the

Deleted: the

Deleted: the

Deleted: the

The costs and benefits of these improvements are estimated quantitatively, and actual costs and benefits are measured. Benefits are primarily considered relative to the organization's quantitative process improvement objectives. Improvements are made to both the organization's set of standard processes and defined processes.

Deleted: the

Managing the deployment of process improvements includes piloting changes and implementing adjustments as appropriate, addressing potential and real barriers to deployment, minimizing disruption to ongoing efforts, and managing risks.

Deleted: the

Deleted: where

## GP 5.2 Correct Root Causes of Problems

***Identify and correct the root causes of defects and other problems in the process.***

The purpose of this generic practice is to analyze defects and other problems encountered in a quantitatively managed process, to correct the root causes of these types of defects and problems, and to prevent these defects and problems from occurring in the future.

Deleted: that were

Refer to the Causal Analysis and Resolution process area for more information about identifying and correcting root causes of selected defects. Even though the Causal Analysis and Resolution process area has a project context, it can be applied to processes in other contexts as well.

Root cause analysis can be applied beneficially to processes that are not quantitatively managed. However, the focus of this generic practice is to act on a quantitatively managed process, though the final root causes may be found outside of that process.

## Applying Generic Practices

This section helps you to better understand the generic practices and provides information to help you interpret and apply generic practices in your organization.

Generic practices are model components applicable to all process areas. Think of generic practices as reminders. They remind you to do things right, and they are expected model components.

For example, when you are achieving the specific goals of the Project Planning process area, you are establishing and maintaining a plan that defines project activities. One of the generic practices that applies to the Project Planning process area is “Establish and maintain the plan for performing the process” (GP 2.2). When applied to this process area, this generic practice reminds you to plan the activities involved in creating the plan for the project.

When you are satisfying the specific goals of the Organizational Training process area, you are developing the skills and knowledge of people in your project and organization so that they can perform their roles effectively and efficiently. When applying the same generic practice (GP 2.2) to the Organizational Training process area, this generic practice reminds you to plan the activities involved in developing the skills and knowledge of people in the organization.

Deleted: develop a

Deleted: ing of

Deleted: for interpreting

Deleted: ing the

Deleted: that are common

Deleted: serve the purpose of reminding

Deleted: project planning

## Process Areas that Support Generic Practices

While generic goals and generic practices are the model components that directly address the institutionalization of a process across the organization, many process areas likewise address institutionalization by supporting the implementation of generic practices. Knowing these relationships will help you effectively implement generic practices.

Such process areas contain one or more specific practices that when implemented may also fully implement a generic practice or generate a work product that is used in the implementation of a generic practice.

An example is the Configuration Management process area and GP 2.6, “Place designated work products of the process under appropriate

Deleted: That

Deleted: the

Deleted: the

Deleted: .

levels of control.” To implement the generic practice for one or more process areas, you might choose to implement the Configuration Management process area, all or in part, to implement the generic practice.

Another example is the Organizational Process Definition process area and GP 3.1, “Establish and maintain the description of a defined process.” To implement this generic practice for one or more process areas, you should first implement the Organizational Process Definition process area, all or in part, to establish the organizational process assets that are needed to implement the generic practice.

Table 6.2 describes (1) the process areas that support the implementation of generic practices and (2) the recursive relationships between generic practices and their closely related process areas. Both types of relationships are important to remember during process improvement to take advantage of the natural synergies that exist between the generic practices and their related process areas.

Deleted: ,

Table 6.2: Generic Practice and Process Area Relationships

Deleted: ¶

<i>Generic Practice</i>	<i>Roles of Process Areas in Implementation of the Generic Practice</i>	<i>How the Generic Practice Recursively Applies to its Related Process Area(s)<sup>1</sup></i>
GP 2.2 Plan the Process	<b>Project Planning:</b> The project planning process can implement GP 2.2 in full for all project-related process areas (except for Project Planning itself).	GP 2.2 applied to the project planning process can be characterized as “plan the plan” and covers planning project planning activities.
GP 2.3 Provide Resources	<b>Project Planning:</b> The part of the project planning process that implements Project Planning SP 2.4, “Plan the <u>Project’s Resources</u> ,” supports the implementation of GP 2.3 and GP 2.4 for all project-related process areas (except perhaps initially for Project Planning itself) by identifying needed <u>project resources to</u> ensure the proper staffing, facilities, equipment, and other assets needed by the project are secured.	
GP 2.4 Assign Responsibility		

Deleted: for necessary resources to perform

Deleted: project

Deleted: processes, roles, and responsibilities to

<sup>1</sup> When the relationship between a generic practice and a process area is less direct, the risk of confusion is reduced; therefore, we do not describe all recursive relationships in the table (e.g., for generic practices 2.3, 2.4, and 2.10).

Deleted:

**Generic Goals and Generic Practices**

Generic Practice	Roles of Process Areas in Implementation of the Generic Practice	How the Generic Practice Recursively Applies to its Related Process Area(s) <sup>2</sup>
GP 2.5 Train People	<p><b>Organizational Training:</b> The organizational training process supports the implementation of GP 2.5 as applied to all process areas by making the training that addresses strategic or organization-wide training needs available to those who will perform or support the process.</p> <p><b>Project Planning:</b> The part of the project planning process that implements Project Planning SP 2.5, “Plan <u>Needed Knowledge</u> and <u>Skills</u>,” together with the organizational training process, support the implementation of GP 2.5 in full for all project-related process areas.</p>	<p>GP 2.5 applied to the organizational training process covers training for performing organizational training activities, which addresses the skills required to manage, create, and accomplish the training.</p>
		<p>Deleted: area</p> <p>Deleted: the</p>
		<p>Deleted: for knowledge</p> <p>Deleted: skills needed to perform the project</p> <p>Deleted: s</p>
GP 2.6 Manage Configurations	<p><b>Configuration Management:</b> The configuration management process can implement GP 2.6 in full for all project-related process areas as well as some of the organizational process areas.</p>	<p>GP 2.6 applied to the configuration management process covers change and version control for work products produced by configuration management activities.</p>
		<p>Deleted: the</p> <p>Deleted:</p>
GP 2.7 Identify and Involve Relevant Stakeholders	<p><b>Project Planning:</b> The part of the project planning process that implements Project Planning SP 2.6, “Plan Stakeholder Involvement,” can implement the stakeholder identification part (first two subpractices) of GP 2.7 in full for all project-related process areas.</p> <p><b>Project Monitoring and Control:</b> The part of the project monitoring and control process that implements Project Monitoring and Control SP 1.5, “Monitor Stakeholder Involvement,” can <u>support</u> implementing the third subpractice of GP 2.7 for all project-related process areas.</p> <p><b>Integrated Project Management:</b> The part of the integrated project management process that implements Integrated Project Management SP 2.1, “Manage Stakeholder Involvement,” can <u>support</u> implementing the third subpractice of GP 2.7 for all project-related process areas.</p>	<p>GP 2.7 applied to the project planning process covers the involvement of relevant stakeholders in project planning activities.</p> <p>GP 2.7 applied to the project monitoring and control process covers the involvement of relevant stakeholders in project monitoring and control activities.</p> <p>GP 2.7 applied to the integrated project management process covers the involvement of relevant stakeholders in integrated project management activities.</p>
		<p>Deleted: aid in</p>
		<p>Deleted: aid in</p>

<i>Generic Practice</i>	<i>Roles of Process Areas in Implementation of the Generic Practice</i>	<i>How the Generic Practice Recursively Applies to its Related Process Area(s)<sup>1</sup></i>
GP 2.8 Monitor and Control the Process	<p><b>Project Monitoring and Control:</b> The project monitoring and control process can implement GP 2.8 in full for all project-related process areas.</p> <p><b>Measurement and Analysis:</b> For all processes, not just project-related processes, the Measurement and Analysis process area provides general guidance about measuring, analyzing, and recording information that can be used in establishing measures for monitoring actual performance of the process.</p>	GP 2.8 applied to the project monitoring and control process covers the monitoring and controlling of the project's monitor and control activities.
GP 2.9 Objectively Evaluate Adherence	<p><b>Process and Product Quality Assurance:</b> The process and product quality assurance process can implement GP 2.9 in full for all process areas (except perhaps for Process and Product Quality Assurance itself).</p>	GP 2.9 applied to the process and product quality assurance process covers the objective evaluation of quality assurance activities.
GP 2.10 Review Status with Higher Level Management	<p><b>Project Monitoring and Control:</b> The part of the project monitoring and control process that implements Project Monitoring and Control SP 1.6, "Conduct Progress Reviews," and SP 1.7, "Conduct Milestone Reviews," supports the implementation of GP 2.10 for all project-related process areas, perhaps in full, depending on higher level management involvement in these reviews.</p>	
GP 3.1 Establish a Defined Process	<p><b>Integrated Project Management:</b> The part of the integrated project management process that implements Integrated Project Management SP 1.1, "Establish the <a href="#">Project's Defined Process</a>," can implement GP 3.1 in full for all project-related process areas.</p> <p><b>Organizational Process Definition:</b> For all processes, not just project-related processes, the organizational process definition process establishes the organizational process assets needed to implement GP 3.1.</p>	GP 3.1 applied to the integrated project management process covers establishing defined processes for integrated project management activities.

Deleted:

Deleted: and maintain

Deleted: project's defined process from project startup through the life of the project

Deleted:

**Generic Goals and Generic Practices**

Generic Practice	Roles of Process Areas in Implementation of the Generic Practice	How the Generic Practice Recursively Applies to its Related Process Area(s) <sup>1</sup>
------------------	--	--

GP 3.2  
Collect Improvement Information

**Integrated Project Management:** The part of the integrated project management process that implements Integrated Project Management SP 1.7, "Contribute to [Organizational Process Assets](#)," can implement GP 3.2 in part or full for all project-related process areas.

**Organizational Process Focus:** The part of the organizational process focus process that implements Organizational Process Focus SP 3.4, "Incorporate [Experiences](#) into [Organizational Process Assets](#)," can implement GP 3.2 in part or full for all process areas.

**Organizational Process Definition:** For all processes, the organizational process definition process establishes the organizational process assets needed to implement GP 3.2.

GP 3.2 applied to the integrated project management process covers collecting improvement information derived from planning and performing integrated project management activities.

- Deleted: 6
- Deleted: work products, measures, and documented experiences
- Deleted: the organizational process assets
- Deleted:
- Deleted:
- Deleted: process-related work products, measures, and improvement information derived from planning and performing the process
- Deleted: the organizational process assets
- Deleted:

GP 4.1  
Establish Quantitative Objectives for the Process

**Quantitative Project Management:** The part of the quantitative project management process that implements Quantitative Project Management SP 1.1, "Establish the [Project's Objectives](#)," supports the implementation of GP 4.1 for all project-related process areas by providing objectives from which the objectives for each particular process can be derived. If these objectives become established as part of implementing subpractices 5 and 8 of Quantitative Project Management SP 1.1, then the quantitative project management process implements GP 4.1 in full.

**Organizational Process Performance:** The part of the organizational process performance process that implements Organizational Process Performance SP 1.3, "Establish [Quality and Process-Performance Objectives](#)," supports the implementation of GP 4.1 for all process areas.

GP 4.1 applied to the quantitative project management process covers establishing quantitative objectives for quantitative project management activities.

GP 4.1 applied to the organizational process performance process covers establishing quantitative objectives for organizational process-performance activities.

- Deleted: and maintain
- Deleted: project's quality and process-performance objectives

- Deleted: and maintain quantitative objectives for quality and process performance for the organization

<i>Generic Practice</i>	<i>Roles of Process Areas in Implementation of the Generic Practice</i>	<i>How the Generic Practice Recursively Applies to its Related Process Area(s)<sup>1</sup></i>
-------------------------	---	--

GP 4.2  
Stabilize  
Subprocess  
Performance

**Quantitative Project Management:**  
The part of the quantitative project management process that implements Quantitative Project Management SG 2, “Statistically Manage Subprocess Performance,” can implement GP 4.2 in full for all project-related process areas to which a statistically managed subprocess can be mapped.

**Organizational Process Performance:**  
For all processes, not just project-related processes, the organizational process performance process establishes organizational process assets that may be needed to implement GP 4.2.

GP 4.2 applied to the quantitative project management process covers stabilizing selected subprocesses of quantitative project management activities.

Deleted: the stabilization of

Deleted: within

GP 5.1  
Ensure  
Continuous  
Process  
Improvement

**Organizational Innovation and Deployment:** The organizational innovation and deployment process can implement GP 5.1 in full for all process areas providing that quality and process-performance objectives for the organization have been defined. (The latter would be the case, say, if the Organizational Process Performance process area has been implemented.)

GP 5.1 applied to the organizational innovation and deployment process covers ensuring continuous process improvement of organizational innovation and deployment activities.

GP 5.2  
Correct Root  
Causes of  
Problems

**Causal Analysis and Resolution:** The causal analysis and resolution process can implement GP 5.2 in full for all project-related process areas.

GP 5.2 applied to the causal analysis and resolution process covers identifying root causes of defects and other problems in causal analysis and resolution activities.

Given the dependencies that generic practices have on these process areas, and given the more holistic view that many of these process areas provide, these process areas are often implemented early, in whole or in part, before or concurrent with implementing the associated generic practices.

Deleted: "  
Deleted: "

There are also a few situations in which the result of applying a generic practice to a particular process area would seem to make a whole process area redundant, but, in fact, it does not. It may be natural to think that applying GP 3.1, Establish a Defined Process, to the Project Planning and Project Monitoring and Control process areas yields the same effect as the first specific goal of Integrated Project Management, "Use the Project's Defined Process."

Deleted: where

Deleted: gives

Deleted: The project is conducted using a defined process that is tailored from

Deleted: organization's set of standard processes

Although it is true that there is some overlap, the application of the generic practice to these two process areas provides defined processes covering project planning and project monitoring and control activities. These defined processes do not necessarily cover support activities (such as configuration management), other project management processes (such as integrated project management), or the acquisition processes. In contrast, the project's defined process, provided by the Integrated Project Management process area, covers all appropriate processes.

Deleted: supplier agreement

Deleted: engineering

Deleted: project management, engineering, and support

