**Mall-E**

CMMI1.3 Maturity Level 2 Definition

Version 1.0

**By Runtime Error**

**Table of Contents**

[**1. Executive summary**](#_heading=h.7ru27klk75zi) **3**

[**2. Description**](#_heading=h.7ezkep6e2h63) **3**

[**3. Level 2 KPAs**](#_heading=h.1fob9te) **3**

[**3.1. Requirement Management (REQM)**](#_heading=h.p0qsdks8lccc) **3**

[**3.2 Project Planning (PP)**](#_heading=h.d28g4mu6mw87) **4**

[**3.3 Project Monitoring and Control (PMC)**](#_heading=h.ue6l7fimhd2n) **5**

[**3.4 Process and Product Quality Assurance (PPQA)**](#_heading=h.xlxlbcepd1dl) **7**

[**3.5 Configuration Management (CM)**](#_heading=h.a082keyvowms) **8**

[**3.6 Measurement and Analysis (MA)**](#_heading=h.bjzaxsp6ypdt) **9**

[**3.7 Supplier Agreement Management (SAM)**](#_heading=h.4cwae368b33h) **10**

[**4. Generic Goals and Practices**](#_heading=h.6byfs8u7j8t3) **11**

[**4.1 Commitment to perform**](#_heading=h.djp399qdrdxg) **11**

[**4.1.1 Generic Practices**](#_heading=h.1ksv4uv) **11**

[**4.1.1.1 Establish organisational-wide policy**](#_heading=h.uruiwp4r0di5) **11**

[**4.2 Ability to perform**](#_heading=h.44sinio) **11**

[**4.2.1 Generic Practices**](#_heading=h.n5wfawa11rgf) **11**

[**4.2.1.1 Plan the Process**](#_heading=h.ms4vzbd26r2v) **11**

[**4.3 Provide Resources**](#_heading=h.gzti217ywitt) **13**

[**4.3.1 Assign Responsibility**](#_heading=h.4j1cc5t7ymnp) **13**

[**4.3.2 Train People**](#_heading=h.tkvv6r48dgc2) **14**

[**4.3.3 Establish a Defined Process**](#_heading=h.9sqxu1ia3qcg) **14**

[**4.4 Activities to perform**](#_heading=h.m77yn1uta8n8) **15**

[**4.4.1 Manage Configurations**](#_heading=h.c92li0xd07z6) **15**

[**4.4.2 Identify and Involve Relevant Stakeholders**](#_heading=h.bqsfg3lhk8q) **15**

[**4.4.3 Monitor and Control the Process**](#_heading=h.3f26rp9jcxli) **16**

[**4.4.4 Collect Improvement Information**](#_heading=h.vuyb9b89t5u4) **17**

[**4.5 Measurements**](#_heading=h.15vx2cyeizai) **18**

[**4.6 Verify**](#_heading=h.jarg3rsyw6op) **18**

[**4.6.1 Generic Practices:**](#_heading=h.9747ztvcktko) **18**

[**4.6.1.1 Objectively Evaluate Adherence**](#_heading=h.zacftm3tt9p0) **18**

[**4.6.1.2 Review Status with Higher Level Management**](#_heading=h.hhu1i8invs5p) **18**

[**5 Specific Goals and Practices**](#_heading=h.42p274khxdsh) **20**

[**5.1 Requirement Management**](#_heading=h.4i7ojhp) **20**

[**5.1.1 Specific Goal**](#_heading=h.2xcytpi) **20**

[**5.1.2 Specific Practices**](#_heading=h.8d0xkkihdbe1) **20**

[**5.2 Process and Product Quality Assurance**](#_heading=h.e0fm48nna9kc) **20**

[**5.2.1 Specific Goal**](#_heading=h.kwe17yuylz85) **20**

[**5.2.2 Specific Practices**](#_heading=h.pbdiokptkmol) **20**

[**5.3 Configuration Management**](#_heading=h.bw0r8kgxg07o) **20**

[**5.3.1 Specific Goal**](#_heading=h.xdew3ak38ozv) **20**

[**5.3.2 Specific Practices**](#_heading=h.k34zeqedqd89) **20**

[**6 CMMI Audit Checklist**](#_heading=h.hkj9zsw5froh) **21**

[**7 CMMI Interview Affirmation Questions**](#_heading=h.ubsgewtdtlio) **22**

# 1. Executive summary

Capability Maturity Model Integration (CMMI) is a framework of best practices. The Capability Maturity Model Integration (CMMI) is a process and behavioral model that helps organizations streamline process improvement and encourage productive, efficient behaviors that decrease risks in software, product and service development., consisting of five maturity levels: Initial, Managed, Defined, Quantitatively Managed, Optimising. Each of the maturity levels consist of a predefined set of process areas. This document will focus on CMMI level 2 and provides description on the key activities of each process area as it satisfies the expectations of the process descriptions, standards, and procedures.

# 2. Description

Mall- E will be focusing on CMMI1.3 Level 2 (Managed), which possibly reduces the post-release defects by 10% - 94%. This will help the team increase production of work by 100% - 200% and ensure the quality of key processes in Mall- E and in turn, quality of the final product.

# 3. Level 2 KPAs

## 3.1. Requirement Management (REQM)

**Requirements Management *(*REQM*)*** is used to manage requirements of products and product components of the project and to ensure the management of requirements is in line with the project plans. It alsohelps in better understanding of the requirements, obtaining commitment to requirements, managing requirements changes and ensuring alignment between project work and requirements.

Steps for implementing **Requirements Management (REQM)**in projects:

1. **Requirements understanding.** First step for Requirements Management (REQM) is to develop an understanding of requirements using different techniques like surveys, study of existing systems, interviews, prototyping, modelling, etc. Then, requirements are documented in the form of Requirements Document. Requirements are analysed to ensure that they meet the customer needs.
2. **Commitment to Requirements.** Next step is to commit requirements for the relevant stakeholders. Generally commitment for requirements is taken in the form of approval email or signup.
3. **Requirements Change Management.** Once the requirements are approved and baselined, changes to the requirements are managed so that they do not impact the project negatively. All the change requests are logged, analysed, reviewed, approved and implemented. We can use Change Log, Requirements Impact Analysis, and updated Requirements documents to manage Changes in the Project.
4. **Update Requirements Traceability Matrix Document.** After each baselining of the requirements document (and other engineering document) with RTM (Requirements Traceability Matrix) document shall be updated with the relevant section in each engineering document. Traceability is maintained in 2 directions from first phase to the last phase and vice versa.
5. **Maintain alignment between Requirements and Project Work.** Project Manager shall ensure that the project work follows the approved requirements of the project. Changes to the requirement are also updated to the project tasks and assigned to the team.

## 3.2 Project Planning (PP)

Project Planning is an important process area that helps set the foundation of the whole project. Project Planning includes different activities such as tasks identification, estimation, taking commitments, resources selection, resource allocation, scheduling, measurement management, issues and risks management.

Steps for implementing **Project Planning (PP)**in projects:

1. **Prepare Estimation.** Firstly, we have to estimate the different activities in the project. These activities include identification of the scope of the project in terms of different tasks, sub-tasks to be performed in the project, as well as selecting the project life cycle model like waterfall, agile, spiral etc., then estimating the effort and cost for these tasks and sub-tasks.
2. **Prepare Plan document.** The next step is to develop a project plan document. This may be a single document or multiple plan documents. Project Plan document includes the documented tasks, estimated budget, schedule,  resources, risk management technique, data management procedure, training plan for the project resources, identification of different stakeholders and their involvement in the project, training plan for team members, status updates including different kind of meetings and status reporting.
3. **Baselining project plan.** Next, the commitment for these planned items are obtained from relevant stakeholders. Then, peers and management will review the planning document. Commitment from management is then taken in the form of approval. With these steps, the project planning document gets baselined.
4. **Maintain records.** Different records are prepared and maintained. These include – Project Plan, Tasks details, Estimation, Schedule, Resource details, Data Management Plan, Risk Management Plan, Training Plan, Communication Plan etc.

## 3.3 Project Monitoring and Control (PMC)

The purpose of **Project Monitoring and Control (PMC)** is to ensure that the project progresses as planned. Project Monitoring and Control (PMC) helps in developing the understanding on the project progress that helps in taking the appropriate actions in order to ensure that there is no deviation from the plan.

Steps for implementing ***Project Monitoring and Control (PMC)*** in projects are as follows:

1. **Monitor Project Planning Parameters.** Project Monitoring and Control involves the monitoring of the project parameters like schedule, timeline, effort, costing, defects etc. These Matrices are monitored by the Project Manager.
2. **Monitor Commitments.** Project Manager also tracks commitments of different stakeholders in the projects. These stakeholders include team members, management, peers, third party vendors and clients. Commitment may involve completing a coding unit, testing, providing data, information, and reviews etc.
3. **Monitor Project Risks.** Project Manager also keeps track of the risks involved with the project and how to manage them. There are many different kinds of risks in a project including process, people,tools, technology. The project Manager should have a Risk Management plan to mitigate or avoid these risks if it were to happen during the project.
4. **Monitor Data Management.** Project Manager or the assigned Configuration Controller in the project keeps track of all configuration items including software, hardware and documentation of the project. Generally SVN or VSS is used for managing the configuration management of software and documentation. In our project, we make use of GitHub and Google Drive to keep track our Documents and Source Code.
5. **Monitor Stakeholder Involvement.** Project Manager keeps track of involvement of different stakeholders in the project including team members, peers, management, clients and third party vendors. This is done using different types of meetings, status reporting and reviews etc.
6. **Conduct Progress Reviews.** Project Manager conducts project progress reviews using different techniques including work progress from team members, client meeting, meeting with management, third party vendor’s involvement, milestones reviews. Based on these activities, different status reports are prepared and shared with stakeholders.
7. **Manage Corrective Action to Closure.** Based on the project progress, it may require to take corrective actions to control the project progress according to the project plans. Project Managers then track these corrective actions until the progress is under control or closed.

## 3.4 Process and Product Quality Assurance (PPQA)

**Process and Product Quality Assurance (PPQA)** helps to conduct quality assurance activities for the processes and products in the organisation.

PPQA involves the objective evaluation of processes and work products against the defined processes in the organisation. PPQA is conducted to find out the non-compliance issues related to these processes and work products and then to track these non-compliance issues to closure.

Steps for implementing **Process and Product Quality Assurance (PPQA)** in projects:

1. **Processes Audit.** Audits are conducted by an Auditor who could be an Independent person, Quality Assurance team or quality assurance person. After process evaluation (audit/assessment), all non-compliance issues found shall be logged and analysed. Project teams and process-implementers play a role as well in getting these process audits conducted.
2. **Work Products Audit.** Once all the processes are audited and issues are closed. Auditor should conduct the project audits in order to find the non-compliances issues. work-products (project artefacts) by project teams should be provided for assessment.
3. **Close Non-compliance Issues.**  Auditor should log and provide all non-compliance issues to the concerned team (person) like Project Manager, to identify the Author (person/team) of the artefact. The auditor and the project team (auditee) can work together in deciding the corrective action. The project teams then work on the non-compliance issues in order to close them. Once they are done, they will provide the non-compliance closure data to the auditor for review. Auditor then performs the review of the evidence provided by the author and updates the status of the non-compliance issues as closed or re-opens them. During this complete cycle, the auditor tracks all non-compliances till closure.
4. **Maintain Records.** All records for the audits, which includes non-compliance log, closure evidence, etc.,  shall be maintained and stored in a central repository. Such records should only be modifiable by the Auditor.

## 3.5 Configuration Management (CM)

**Configuration Management CM** is used to establish and maintain the integrity of work products using configuration identification, configuration control, configuration status accounting, and configuration audits.

It is to ensure that correct products are delivered, products satisfy the requirements, and software and supporting materials are consistent.

Configuration Management involves the following steps:

1. **Identify Configuration Items**. First step is to identify the items that are going to be maintained for their configurations. Some examples are documentation (process and project related), source code, tools (like SVN, VSS, CVS etc.) and equipment.
2. **Establish a System for Configuration Management**. This aims to establish a system that will be used for controlling work products. This includes the process for storage media, access rights, change requests, tools etc.
3. **Create or Release Baselines**. In this step, the team will create baselines for internal use or for delivery to the customers. This involves versioning of the Items into major or minor versions. Before releasing, every baseline version is peer reviewed and if issues are found, the version gets updated.
4. **Track Change Requests**. Once items are baselined, they cannot be changed directly and are required to follow a change management procedure. This involves submitting a formal change request, change logging, change impact analysis, categorising and prioritising the change, implementing changes, review of changes and lastly, tracking changes until they are closed.
5. **Main inventory of Configuration Items**. This step involves preparing inventory of the Configuration Items with details of changes done in each version.
6. **Maintain Records of Configuration Management activities**. Organisation shall maintain all records related to the configuration management including changer request forms, change log, change impact analysis, change review records, inventory of baselines etc.
7. **Conduct Configuration Audits**. Configuration audits are conducted to maintain the integrity of configuration baselines. Quality Engineer or the dedicated Configuration Controller performs configuration audits for the baselines created in a period in order to review their structure, completeness, accuracy, correctness. Issues found in the audit are closed.

## 3.6 Measurement and Analysis (MA)

**Measurement and Analysis** is used to develop and sustain a measurement capability that is used to support the management of informational needs.

Following activities are being conducted for Measurement and Analysis:

1. **Establish Metric Goals**. In accordance with the business goals , metric goals are derived and established at the organisation level. These metrics are then referenced by individual projects to set the project level metric goals.
2. **Specify Measures**. Next, we define measures to address measurement goals/objectives. Some of the examples of the measures categories could include: schedule and progress, Service requests, effort and cost, size and stability, quality etc. Examples of measures could include Defects Density, Number of service requests, Effort variance, Schedule Variance, Customer Satisfaction Rating etc.
3. **Metrics Data Collection Method**. This defines how the data shall be collected. Data collection procedure needs to be established.
4. **Metrics Data Analysis Method**. This defines the data analysis procedure. It also includes reports that will be prepared and who will be the stakeholders for different kinds of metrics reports.
5. **Metric Data Collection**. This aims to collect metrics data at project level and org level (from different functions). Project Manager shall collect the project data as per defined procedure then this data is collectively compiled at org level.
6. **Metrics Data Analysis**. Project Manager will analyse the data for the selected metrics by comparing it with the defined goals. If there is a deviation, techniques such as Bar or Line Charts, Root Cause Analysis, Fish Bonn Diagram, Pareto Analysis etc., could be used to analyse the causes of variance. PM shall also plan corrective and preventive activities to control deviations.
7. **Metrics Report**. The metrics collected and insights gained shall be collected into a Metrics Analysis report to be shared with relevant stakeholders.

## 3.7 Supplier Agreement Management (SAM)

**Supplier Agreement Management** is used to manage the acquisition of products from suppliers for which there exists a formal agreement.

The steps to implement SAM are as follows:

1. **Identify acquisition**. Identify the type of acquisition required from an external vendor/supplier.
2. **Select suppliers**. This is to select suppliers. Once ready with the type of services or product required from vendors, organisations can move on to select vendors. For this use the formal alternate evaluation method for selection of vendors. Select vendors based on different criteria like cost, quality of services, references, prior experience etc.
3. **Establish agreements**. Establish a formal agreement before starting work with the supplier. Agreement in general include items like product or services definition, deadlines, deliverable, costs, reporting mechanism etc.
4. **Execute agreement**. While work is going on with the vendor, the organisation should review that the terms and conditions are satisfied and the vendor is providing timely updates, reports etc.
5. **Accept the product**. Once work is completed as per requirements and terms and conditions, the organisation shall accept the service/product from the vendor formally. Reviews and Testing shall be conducted for the accepted service/product. Defects shall be closed by the vendor.
6. **Perform Transitioning of the Product into the target environment**. For this, the organisation can prepare a transition plan, which shall include activities like training for end users, maintenance services, reporting requirements etc.

# 4. Generic Goals and Practices

## 4.1 Commitment to perform

Commitment to Perform describes actions the organisation must take so that the process is established and will last for the long term. Commitment to Perform usually are done through establishing organisational policies and senior management sponsorship.

### 4.1.1 Generic Practices

#### *4.1.1.1 Establish organisational-wide policy*

Establish organisational-wide policy that aims to create and maintain the plans for performing the process. This plan is to define the organisational expectations for the process and make these expectations known to those in the organisation who are affected. In general, directions and expectations for the organisation are done by the senior management.

## 4.2 Ability to perform

Ability to Perform describes the preconditions that must exist in the project or organisation to implement the software process competently. Ability to Perform typically involves resources, organisational structures, and training.

### 4.2.1 Generic Practices

#### *4.2.1.1 Plan the Process*

This practice aims to establish the plan for performing the process to determine what is needed to achieve the defined goals and prepare a plan that includes various processes to be carried out. Relevant stakeholders’ agreement would be required for execution of the plan.

Requirements for the process's specified work products and for performing the work may be derived from other requirements. For a project’s processes, they may come from the project's requirements management process; while for an organizational process, they may come from organisational sources.

The objectives for the process may be derived from other plans (e.g., the project plans). Objectives for the specific situation, including quality, cost, and schedule objectives. For example, an objective might be to reduce the cost of performing a process for this implementation over the previous implementation.

Establishing a plan includes documenting the plan and providing a process description. Maintaining the plan includes changing it as necessary, in response to either corrective actions or to changes in requirements and objectives for the process.

Plan for performing the process

The plan could include:

* Resources (including funding, people, and tools) needed to perform the process
* Standards for the work products and services of the process
* Requirements for the work products and services of the process
* Specific objectives for the performance of the process (e.g., quality, time scale, cycle time, and resource usage)
* Dependencies among the activities, work products, and services of the process
* Activities for monitoring and controlling the process
* Training needed for performing and supporting the process
* Assignment of responsibility and authority
* Measurement requirements to provide insight into the performance of the process, its work products, and its services
* Work products to be placed under configuration management and the level of configuration management for each item
* Involvement of identified stakeholders
* Management review activities for the process and the work products
* Objective evaluation activities for the process and the work products

Performing the process

The steps for performing the process are:

1. Obtain support from management for performing the process.
2. Define and document the process description - which includes relevant standards and procedures, may be included as part of the plan for performing the process or may be included in the plan by reference.
3. Define and document the plan for performing the process - This plan may be a stand-alone document, embedded in a more comprehensive document, or distributed across multiple documents. In the case of the plan being distributed across multiple documents, ensure that a coherent picture is preserved of who does what. Documents can be hardcopy or softcopy.
4. Review the plan with relevant stakeholders and get their agreement - This includes reviewing that the planned process satisfies the applicable policies, plans, requirements, and standards to provide assurance to relevant stakeholders.
5. Revise the plan as necessary.

## 4.3 Provide Resources

Provide enough resources to perform the process, developing the work products, and providing the services of the process.

This ensures that the resources necessary to perform the process as defined by the plan are available when they are needed. Resources include adequate funding, appropriate physical facilities, skilled people, and appropriate tools etc.

### 4.3.1 Assign Responsibility

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

This ensures that accountability is maintained throughout the process for performing the process and producing the specified outcome. The people assigned must have the appropriate authority to perform the assigned responsibilities.

Responsibility can be assigned using detailed job descriptions or in living documents, such as the plan for performing the process.

Sub Practices performing the process

1. Assign a person with overall responsibility and authority for performing and oversee the process
2. Assign a few people for performing the specific tasks of the process.
3. Make sure that the people assigned to the responsibilities and authorities understand and accept them.

### 4.3.2 Train People

Train the people performing or supporting the process as needed.This ensures 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.

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.

### 4.3.3 Establish a Defined Process

Establish and maintain the description of a defined process. This establishes and maintains a description of the process that is made from the organisation's set of standard processes to address the needs of a specific instantiation. The organisation should have standard processes that cover the process area, as well as have guidelines for making these standard processes to meet the needs of a project or organisational function. With a defined process, variability in how the processes are performed across the organisation is reduced and process assets, data, and learning can be effectively shared

Sub Practices performing the process

1. choose from the organisation’s set of standard processes those processes that cover the process area and best meet the needs of the project or organisational function.
2. Establish the defined process by tailoring the selected processes according to the organisation’s guidelines.
3. Make sure that the organisation’s process objectives are appropriately addressed in the defined process.
4. Document the defined process and the records of the tailoring.
5. Revise the description of the defined process as necessary.

## 4.4 Activities to perform

Activities to perform describes the roles and procedures necessary to implement a key process area. Activities Performed typically involve establishing plans and procedures, performing the work, tracking it, and taking corrective actions as necessary.

### 4.4.1 Manage Configurations

Place designated work products of the process under appropriate levels of configuration management. This establishes and maintains the integrity of the designated work products of the process (or their descriptions) throughout their useful life.

The designated work products are specifically identified in the plan for performing the process, along with a specification of the level of configuration management.

Different levels of configuration management 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).

Sometimes, it may be critical that work products be placed under formal or “baseline” configuration management. This type of configuration management 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 the designated work products.

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

### 4.4.2 Identify and Involve Relevant Stakeholders

Identify and involve the relevant stakeholders as planned. This establishes and maintains the expected involvement of stakeholders during the execution of the process. At the same time, it prevents excessive numbers of affected groups and individuals which may impede process execution.

Plan for stakeholder involvement

* Planning
* Decisions
* Communications
* Coordination
* Reviews
* Appraisals
* Requirements definitions
* Resolution of problems/issues

Sub Practices performing the process

1. Identify stakeholders relevant to this process and decide what type of involvement should be practiced.
2. Establish the defined process by tailoring the selected processes according to the organisation’s tailoring guidelines.
3. Share these identifications with project planners or other planners as appropriate.
4. Involve relevant stakeholders as planned.

### 4.4.3 Monitor and Control the Process

Monitor and control the process against the plan for performing the process and take appropriate corrective action. This performs 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

Sub Practices Take Corrective Action

1. Measure actual performance against the plan for performing the process. The measures are of the process, its work products, and its services.
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. The 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.
4. Identify and evaluate the effects of significant deviations from the plan for performing the process.
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.  
   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 the established commitments
   * Securing change to the requirements and objectives that have to be satisfied
   * Terminating the effort
7. Track corrective action to closure.

### 4.4.4 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 organisation’s processes and process assets. This collects information and artifacts derived from planning and performing the process. This generic practice is performed so that the information and artifacts can be included in the organisational 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 organisation’s measurement repository and the organisation’s process asset library.

Sub Practices Take Corrective Action

1. Store process and product measures in the organisation's measurement repository. The process and product measures are primarily those that are defined in the common set of measures for the organisation’s set of standard processes.
2. Submit documentation for inclusion in the organisation’s process asset library.
3. Document lessons learned from the process for inclusion in the organisation’s process asset library.
4. Propose improvements to the organisational process assets.

## 

## 4.5 Measurements

Measurement describes the need to measure the process and analyse the measurements. Measurement and Analysis typically includes examples of the measurements that could be taken to determine the status and effectiveness of the Activities Performed.

## 

## 4.6 Verify

Verifying Implementation describes the steps to ensure that the activities are performed in compliance with the process that has been established. Verification typically encompasses reviews and audits by management and software quality assurance.

## 4.6.1 Generic Practices:

### *4.6.1.1 Objectively Evaluate Adherence*

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

This provides credible assurance that the process is implemented as planned and adheres to its process description, standards, and procedures. [Note]

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

#### *4.6.1.2 Review Status with Higher Level Management*

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

This provides higher level management with the appropriate visibility into the process.

Higher level management includes those levels of management in the organisation 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, not for those who perform the direct day-to-day monitoring and controlling of the process.

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, the Manager reviews are expected to be both periodic and event driven.

The practices in the common feature Activities Performed describe what must be implemented to establish a process capability. The other practices, taken as a whole, form the basis by which an organisation can institutionalise the practices described in the Activities Performed common feature.

# 5 Specific Goals and Practices

For each key process area identified and explained in the section of “Level 2 KPAs”, define your specific goals and your corresponding key practices. [You may choose a few KPAs to illustrate your goals and practices.]

## 5.1 Requirement Management

### 5.1.1 Specific Goal

“To establish common understanding between customer and project personnel on the customer’s requirements.”

### 5.1.2 Specific Practices

“Perform requirement elicitation by interviewing the customer”

“Build a prototype to make all requirements to be tangible to the customer.”

## 5.2 Process and Product Quality Assurance

### 5.2.1 Specific Goal

“To establish common understanding between project personnel on the processes to be used to produce the product and associated work products”

### 5.2.2 Specific Practices

“To come up with processes that needs to be followed by the entire team”

“Perform audits to ensure that the planned processes are followed”

“Maintain records on all audits performed”

## 5.3 Configuration Management

### 5.3.1 Specific Goal

“To establish common understanding between project personnel on the integrity of the product to be created”

### 5.3.2 Specific Practices

“Perform identification of configuration items and its baselines”  
“Track and maintain records of all changes”

# 6 CMMI Audit Checklist

The management and the SQA team will ensure that the processes of CMMI level 2 are met by going through the checklist individually.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Task | Implementation levels (X) | | | |
|  | Not | Partially | Largely | Fully |
| 1 | **Level 2 KPAs** |  |  |  |  |
| 1.1 | Requirement Management (REQM) |  |  |  |  |
| 1.2 | Project Planning (PP) |  |  |  |  |
| 1.3 | Project Monitoring and Control (PMC) |  |  |  |  |
| 1.4 | Process and Product Quality Assurance (PPQA) |  |  |  |  |
| 1.5 | Configuration Management (CM) |  |  |  |  |
| 1.6 | Measurement and Analysis (MA) |  |  |  |  |
| 1.7 | Supplier Agreement Management (SAM) |  |  |  |  |
| 2 | **Generic goals and practices** |  |  |  |  |
| 2.1 | Commitment to perform |  |  |  |  |
| 2.2 | Ability to perform |  |  |  |  |
| 2.3 | Activities to perform |  |  |  |  |
| 2.4 | Measurements |  |  |  |  |
| 2.5 | Verify |  |  |  |  |
| 3 | **Specific goals and practices** |  |  |  |  |
| 3.1 | Requirement Management |  |  |  |  |
| 3.2 | Specific goal |  |  |  |  |
| 3.3 | Specific practices |  |  |  |  |
| 4 | **Approvals** |  |  |  |  |

# 7 CMMI Interview Affirmation Questions

Provide the interview questions that you are using to help define your CMMI1.3 Level 2.

* How to create a common understanding between the customer project of the customer’ s requirements to be addressed by the project ?
* How to create reasonable plans for performing the software engineering and for managing the software project ?
* How to create adequate visibility of actual progress so that management can take effective actions when the software project’s performance deviates significantly from the software plans ?
* How to provide management with appropriate visibility into the process being used by the software project and of the products being built ?
* How to create and maintain the integrity of the products of the software project throughout the project’ s software life cycle ?