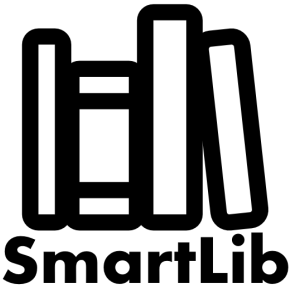

CMMI1.3 MATURITY LEVEL 2 DEFINITION

Version *1.0*
1/4/2021

Team Xeon

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REVISION HISTORY

Version	Date	Author	Description of Changes	Approved by
1.0	**01/04/2021**	**Zhou Zeyu**	**Baseline Version**	**Kenny Voo Tze Rung**

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1. Executive summary

Purpose

The purpose of Capability Maturity Model Integration (CMMI) is helping the organization make process improvement and develop activities that decrease risks in product and software development.

Summary of definition

CMMI framework has five levels. They are Initial, Managed, Defined, Quantitatively Managed, and Optimizing. The maturity levels are measured by specific and generic goals that apply to each set of process areas. The organization has achieved all the specific and generic goals of the maturity level 2 process areas.

2. Description

At CMMI maturity level 2, requirements, processes, work products, and services are managed. The status of the work products and the delivery of services are visible to management at defined points. Commitments are established among relevant stakeholders and are revised as needed. Work products are reviewed and controlled. The work products and services satisfy the specified requirements, standards, and objectives.

3. Level 2 KPAs

Requirement Management (REQM)
The goal of requirement management is to define a requirement documentation based on a common understanding between the customer and software engineering requirement. This requirement documentation is the basis of the software project.

Project Planning (PP)
Project planning aims to develop a reasonable plan based on developing realistic estimates for the work and establishing necessary commitments to perform the work.

Project Monitoring and Control (PMC)
PMC is to let the management clearly oversee the project development process so that management can take actions timely when the software project's performance deviates from the software plans.

Process and Product Quality Assurance (PPQA)
PPQA is that management reviews and audits the software products and activities to verify if they comply with the applicable standards and procedures.

Configuration Management (CM)
CM is to establish and maintain the integrity of the products of the software project throughout the project' s software life cycle using configuration identification, configuration control and configuration audits.

Measurement and Analysis (MA)
analyzes defects, identifies causes, and takes action to prevent them from recurring measure status and effectiveness of certain activities to ensure the activities meet the expectations.

Supplier Agreement Management (SAM)
SAM is to select qualified software subcontractors and manage them effectively. Subcontractor selected on ability to perform the work, strategic business alliances, process capability and technical considerations.

4. Generic goals and practices

Along the five common features, define and explain your possible generic practices for each of the common features. [You may select two or three common features to illustrate your practices.

Commitment to perform

Generic practices

Establish organizational-wide policy: establish and maintain an organizational policy for planning and performing the process.
Provide resources

Ability to perform

Generic practices

Train people: train the people performing or supporting the process as needed.
To ensure that people have the necessary knowledge and expertise to perform the process.

Activities to perform

Generic practices

monitor and control the process: Monitor and control the process against the plan for performing the process and take appropriate corrective action.

Measurements

Generic practices

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.

Verify

Generic practices

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

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.]

Requirement Management

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

Specific practices
“To obtain an understanding of requirements, hold a conference with customers to ensure that the requirements are understood correctly.”
“To obtain commitment to requirement, negotiate with other project participations before committing any change to requirement.”
“To manage requirements changes, keep a traceable record of all changes history.”
“To maintain bidirectional traceability of requirements, all sources of requirements should be documented completely so that the requirements can have bidirectional traceability.”
“To ensure alignment between project work and requirements, review the project work and requirements in time to ensure there is no inconsistency. If there are, check the source to find the rationale.”

Project Planning

Specific goal
“Establish estimates.”

Specific practices
“Estimate the scope of the project using work breakdown structure.”
“Establish estimates of work product and task attributes, the estimates should depend on the requirements using validate models or historical data.”
“Define project lifecycle phases, the lifecycle phases should be defined depending on the requirement of the project and available resources.”
“Estimate effort and cost, using historical data to estimate the expected effort and cost”

Specific goal
“To create a suitable schedule to carry out the project.”

Specific practices
“Establish the Budget and Schedule, the project’s budget and schedule are made based on the major milestones, schedule assumptions, constraints and task dependencies.”
“Identify Project Risks, potential risks are identified and study to make sure of their impact and occurring possibilities.”
“Risks are documented in the risk management plan and revise the risk if necessary.”

“Plan for Data Management, maintain the security of data and ensure only authorised personnel can access the data.”
“Plan the Project’s Resources, make use of the project resources based on the plan.”
“Plan Needed Knowledge and Skills, identify the knowledge needed for development and check the understanding of developers on the knowledge and deploy the developers accordingly.”
“Establish the Project Plan, a plan of project lifecycle; technical tasks; budgets and schedules; milestones; risk identification, resource and skill requirements should be developed.”

Specific goal
“Obtain commitments to the plan.”

Specific practices
“Review Plans that Affect the Project, Record and review all plans that affect the project to understand project commitments.”
“Reconcile Work and Resource Levels, reconcile the difference between estimated and available resources.”
“Obtain Plan Commitment, all commitments must be documented to ensure a consistent mutual understanding and for tracking.”

Project Monitoring and Control

Specific goal
“To oversee the processes of the product development so that we can take action when the project deviates from expectation”.
“Monitor the Project Against the Plan”
“Manage Corrective Action to Closure”

Specific practices
“Check the development progress every week by online meeting.”
“Build a prototype to make all requirements to be tangible to the customer.”

Process and Product Quality Assurance

Specific goal
“to provide project leader and QA manager with objectively insight into the process and product.”
“Objectively evaluate processes and products.”

Specific practices
“establish and maintain a record of the quality assurance activities and document these activities.”
“Communicate and resolve each noncompliance with the team members.”

Configuration Management

Specific goal
“to establish and maintain the integrity of the product throughout the development processes and track and control changes.”

“establish baselines”
“track and control changes”
“establish integrity”

Specific practices
“Establish configuration management record.”
“Track change records and control configuration items.”

Measurement and Analysis

Specific goal
“To align measurement and analysis activities and provide measurement results.”

Specific practices
“Specify data collection and storage procedures.”
“Collect, analyze and communicate over the results.”

6. Approvals

Provide information of approval of this definition

Revision	Description of Change	Approved by	Date
1.0	**Baseline Version**	**Kenny Voo**	**01/04/2021**

7. CMMI audit checklist

Provide a checklist for internal and/or external auditors

CMMI[sm] (SE/SW/IPPD/SS) Process Evaluation Checklist

Level	Process Area	Specific Goal	Specific Practice	Concept	Detailed	Modular	Formatted	Usable	Evidence	Total
1 - Initial										
2 - Managed	Requirements Management	Manage Requirements	Obtain an Understanding of Requirements	1	2	4	8	16	32	100%
			Obtain Commitment to Requirements	1	2	4	8	16	32	100%
			Manage Requirements Changes	1	2	4	8	16	32	100%
			Maintain Bidirectional Traceability of Requirements	1	2	4	8	16	32	100%
			Identify Inconsistencies Between Project Work and Requirements	1	2	4	8	16	32	100%
	Project Planning	Establish Estimates	Estimate the Scope of the Project	1	2	4	8	16	32	100%
			Establish Estimates of Work Product and Task Attributes	1	2	4	8	16	32	100%
			Define Project Life Cycle	1	2	4	8	16	32	100%
			Determine Estimates of Effort and Cost	1	2	4	8	16	32	100%
		Develop a Project Plan	Establish the Budget and Schedule	1	2	4	8	16	32	100%
			Identify Project Risks	1	2	4	8	16	32	100%
			Plan for Data Management	1	2	4	8	16	32	100%
			Plan for Project Resources	1	2	4	8	16	32	100%
			Plan for Needed Knowledge and Skills	1	2	4	8	16	32	100%
			Plan Stakeholder Involvement	1	2	4	8	16	32	100%
			Establish the Project Plan	1	2	4	8	16	32	100%
		Obtain Commitment to the Plan	Review Plans that Affect the Project	1	2	4	8	16	32	100%
			Reconcile Work and Resource Levels	1	2	4	8	16	32	100%
			Obtain Plan Commitment	1	2	4	8	16	32	100%
	Project Monitoring and Control	Monitor Project Against Plan	Monitor Project Planning Parameters	1	2	4	8	16	32	100%
			Monitor Commitments	1	2	4	8	16	32	100%
			Monitor Project Risks	1	2	4	8	16	32	100%
			Monitor Data Management	1	2	4	8	16	32	100%
			Monitor Stakeholder Involvement	1	2	4	8	16	32	100%
			Conduct Progress Reviews	1	2	4	8	16	32	100%
			Conduct Milestone Reviews	1	2	4	8	16	32	100%
		Manage Corrective Action to Closure	Analyze Issues	1	2	4	8	16	32	100%
			Take Correction Action	1	2	4	8	16	32	100%
			Manage Corrective Action	1	2	4	8	16	32	100%
	Supplier Agreement Management	Establish Supplier Agreements	Determine Acquisition Type	1	2	4	8	16	32	100%
			Select Suppliers	1	2	4	8	16	32	100%
			Establish Supplier Agreements	1	2	4	8	16	32	100%
		Satisfy Supplier Agreements	Review COTS Products	1	2	4	8	16	32	100%
			Execute the Supplier Agreement	1	2	4	8	16	32	100%
			Accept the Acquired Product	1	2	4	8	16	32	100%
			Transition Products	1	2	4	8	16	32	100%
	Measurement and Analysis	Align Measurement and Analysis Activities	Establish Measurement Objectives	1	2	4	8	16	32	100%
			Specify Measures	1	2	4	8	16	32	100%
			Specify Data Collection and Storage Procedures	1	2	4	8	16	32	100%
			Specify Analysis Procedures	1	2	4	8	16	32	100%
		Provide Measurement Results	Collect Measurement Data	1	2	4	8	16	32	100%
			Analyze Measurement Data	1	2	4	8	16	32	100%
			Store Data and Results	1	2	4	8	16	32	100%
			Communicate Results	1	2	4	8	16	32	100%
	Process and Product Quality Assurance	Objectively Evaluate Processes	Objectively Evaluate Processes	1	2	4	8	16	32	100%
			Objectively Evaluate Work Products and Services	1	2	4	8	16	32	100%
		Provide Objective Insight	Communicate and Ensure Resolution of Noncompliance Issues	1	2	4	8	16	32	100%
			Establish Records	1	2	4	8	16	32	100%
	Configuration Management	Establish Baselines	Identify Configuration Items	1	2	4	8	16	32	100%
			Establish a Configuration Management System	1	2	4	8	16	32	100%
			Create or Release Baselines	1	2	4	8	16	32	100%
		Track and Control Changes	Track Change Requests	1	2	4	8	16	32	100%
			Control Configuration Items	1	2	4	8	16	32	100%
		Establish Integrity	Establish Configuration Management Records	1	2	4	8	16	32	100%
			Perform Configuration Audits	1	2	4	8	16	32	100%
			CMMI Level 2 Score	100%	100%	100%	100%	100%	100%	100%

8. CMMI interview affirmation questions

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

1. How well the organization's processes compare to CMMI best practices, and to identify areas where improvement can be made?
2. What is our specific goal corresponding to each KPA and what is our specific practice?