

CMMI1.3 Maturity Level 2 Definition

For

Cafe Bunny

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Prepared by Team CodeNation

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Submitted to:

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VERSION HISTORY

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1.1	Ong Yi Shen	06/04/2021	Chew Zhi Kang	07/04/2021	1st Draft of CMMI L2 Definition Document
1.2	Bachhas Nikita	08/04/2021	Ong Yi Shen	09/04/2021	1st Draft of CMMI L2 Definition Document

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2 Executive Summary

2.1 Purpose

The purpose of this document is to document the practices and processes that are used throughout the software development lifecycle by our organisation. Employees will be expected to understand and follow these processes throughout the software development lifecycle.

2.2 Summary of Definition

The Capability maturity model integration is a framework used to develop an organisation's software development process. Through 5 different stages of increasing mature processes, an organisation will refine these processes, increasing the organisation and efficiency of the software development process. This document will contain the processes and practices of our organisation in maintaining a CMMI level of two, which is in the managed stage of maturity level.

3 Description

The processes that are taken to develop the work products from this organisation must adhere to the practices set by the CMMI. These practices are defined in Section 6 Specific Goals and Practices. Work products are to be broken up into milestones and be made visible to management for tracking of progress. Relevant stakeholders will be notified when certain milestones have been completed and regular meetings will be held to inform them if the project is proceeding as scheduled.

4 Level 2 Key Process Areas

4.1 Requirement Management (REQM)

Requirement Management is the process of documenting, analysing, prioritising and agreeing on requirements which are given by stakeholders. Stakeholder requirements are first documented, then analysed to determine the functional and non functional requirements. Through communication with stakeholders, a priority of the requirements will then be determined before finally the organisation and stakeholders come to an agreement. Throughout the process of the software development process, communication with the stakeholders is key in order to manage any changes in requirements.

4.2 Project Planning (PP)

Project Planning is the process of creating a series of formal documents that define the project and the steps that will be taken to complete the project. Project time and cost estimates will be done. A schedule will be created for the project. The project will be broken into multiple work packages which are further split into different tasks. Risk management will be done to determine risks to the project and the responses to them.

4.3 Project Monitoring and Control (PMC)

Project Monitoring and Control is the process of tracking and reviewing the progress made to the project. Tasks are broken into defined points and progress is tracked. Regular reviews will be held to assess the progress of the project. Any costs exceeding that of estimates or tasks that take longer than scheduled will be identified and notified to management. Risks that were identified during risk management will be monitored for during the duration of the project and if it occurs, the corresponding response will be triggered as planned out in the Risk Management Plan.

4.4 Process and Product Quality Assurance (PPQA)

Process and Product Quality Assurance is the process of delivering high quality products by providing staff with the appropriate insight into work products and processes. Work products and processes are evaluated to determine if they follow planned processes that have been defined by the organisation. Any non-compliance issues will be identified and tracked until they comply with organisation process and work product standards.

4.5 Configuration Management (CM)

Configuration Management is the process of ensuring the integrity of work products and their consistency with its requirements and design. Practices such as configuration control, configuration identification and configuration audits are used. Baselines of work products are set up and any changes to work products must be traceable. Testing will be done to ensure that it meets its requirement specification.

4.6 Measurement and Analysis (MA)

Measurement and Analysis is the process of developing a measurement capability to support management information needs. Specifications of measurement and analysis needs be clearly defined so that staff can align them project objectives. Measures and mechanisms need to be specified for data collection, data storage, reporting and feedback and implemented. With this information, management can make informed decisions on the project.

4.7 Supplier Agreement Management (SAM)

Supplier Agreement Management is the process of managing the acquisition of services and products from suppliers. These services and products could be for client use or internal use in a product or service system. The type of acquisition will be determined, followed by the supplier. An agreement will be made with the supplier which will then be executed and delivered. The received services and products will have to also meet the standards defined by the organisation

5 Generic Goals and Practices

5.1 Commitment to Perform

The team is committed to ensuring the process is set up and will work towards achieving the Key Process Areas.

5.1.1 Generic Practices

1. Establish an organization-wide policy which specifies software managers documents and review requirements
2. Industry best practices from renowned international standards

5.2 Ability to Perform

The following are the preconditions that must exist in the project for the team to successfully implement the software process.

5.2.1 Generic Practices

1. The team distributes adequate resources and funding for managing requirements.
2. The team assigns individuals who have experience in the application domain to manage the requirements
3. Team members are required to undergo training to perform requirement management activities

5.3 Activities to Perform

The following describes the roles and procedures necessary to implement a Key Process Area by the team.

5.3.1 Generic Practices

1. Involves establishing plans and procedures to name the requirements

2. Tracking plans and procedures by analysing the documented requirements

5.4 Measurements

The following describes the need to measure the process and analyse the measurements by the team.

5.4.1 Generic Practices

1. Implement of tracking status of each requirement
2. Track change activity for the requirements

5.5 Verify

The team will ensure that the activities follow the process that has been set up.

5.5.1 Generic Practices

1. Software quality assurance should clearly express and ensure reviews and audits that are consistent with each other and testable

6 Specific Goals and Practices

6.1 Requirement Management

6.1.1 Specific goal

To set up and establish a mutual understanding between customer and project personnel on the customer's requirements.

6.1.2 Specific practices

1. Perform requirements elicitation by interviewing the customer.
2. Build a prototype to make all requirements tangible to the customer.

6.2 Project Planning

6.2.1 Specific goal

To set up and establish support plans that define project activities.

6.2.2 Specific practices

1. Establishing and supporting commitments of the project plan such as reviewing plans that affect the project, and thereafter reconcile the work and resource levels.
2. Establishing and supporting estimates of project planning such as the scope of the project, estimated efforts, and cost.

6.3 Project Monitoring and Control

6.3.1 Specific goal

To supply and provide an understanding of the project's process so that the team can take corrective actions when the project's performance deviates significantly from the plan and requirements.

To implement and enforce monitoring activities to keep track the project's progress.

6.3.2 Specific practices

1. Monitoring of the project's progress through team meetings.
2. Analyse issues and take corrective actions.
3. Monitor commitments, project risks, data management and stakeholders' involvements.

6.4 Supplier Agreement Management

6.4.1 Specific goal

To manage the acquisition of products from suppliers in fulfilling the project requirements.

6.4.2 Specific practices

1. Execute supplier agreement, accept the acquired product, and ensure the transition of products.
2. Determine acquisition type, select suppliers, and set up supplier agreements.

6.5 Measurement and Analysis

6.5.1 Specific goal

To develop and sustain a measurement capability used to support management information needs.

6.5.2 Specific practices

1. Obtain measurement data, analyse data, store data, and communicate results to team members for further actions.

6.6 Process and Product Quality Assurance

6.6.1 Specific goal

To provide staff and management with objective insight into processes and associated work products.

6.6.2 Specific practices

1. Communicate and resolve non-compliance issues.
2. Objectively evaluate processes and work products.

6.7 Configuration Management

6.7.1 Specific goal

To set up and support the integrity of work products.

6.7.2 Specific practices

1. Establishing baselines of software configuration items.
2. Establishing configuration management records to support integrity.
3. Tracking and controlling changes through the change request form.

7 Approvals

The following undersigned acknowledge that they have reviewed the CMMI Level 2 Plan for the team and agree with the approaches it presents.

Name	Appointment	Signature	Date
Ong Yi Shen	Project Manager	Yi Shen	08/04/2021
Mohamad Asyraaf Bin Abdul Rahman	Lead Developer	Asyraaf	08/04/2021
Ng Chin Wei	QA Manager/Engineer	Chin Wei	08/04/2021

8 CMMI Audit Checklist

Goal	Practice	Work Product	Completed
Ensure alignment between project work and requirements	Review project plan, activities, and work products for consistency with requirements	Documentation of inconsistencies between requirements and project plans and work products	
Estimate Effort and Cost	Estimate using models and historical data	Project effort and cost estimates	
Estimate Effort and Cost	Estimate using models and historical data	Project effort and cost estimates	
Obtain Commitment to Requirements	Assess the impact of requirements and ability to fulfil these requirements	Requirement impact assessment	
Manage Requirement Changes	Document all requirement changes generated by the project	Requirements change requests	
Establish the scope of the project	<ol style="list-style-type: none"> Find product components to externally get Develop a Work Breakdown Structure 	<ol style="list-style-type: none"> Product and component list Work Breakdown Structure 	
Establish a Project Plan	Develop overall project plan	Overall Project Plan	
Select Suppliers	Find and evaluate potential suppliers and distribute materials and requirements to them	List of candidate suppliers, solicitation materials and requirements	

Monitor Project Planning Parameters	Monitor progress against schedule	Schedule performance reports	
Monitor commitments	Document results of commitment reviews	Records of commitment reviews	
Monitor Project Risks	Periodically review documentation of risks	Risk management documentation	
Specify Data Collection and Storage Procedures	Specify how to collect and store data for each required measure	Data collection and storage procedures	
Manage Corrective Action to Closure	Determine and document the actions needed to address identified issues	Corrective action plan	
Establish Supplier Agreements	Document what the project will provide to the supplier and supplier agreement	Statement of work, contracts, and licensing agreement	
Specify Measures	Find candidate measures based on measurement goals	List of candidate measures	
Track change requests	<ol style="list-style-type: none"> 1. Initiate and record change requests 2. Analyse the impact of changes and fixes proposed in change requests 	<ol style="list-style-type: none"> 1. Change requests 2. Effects of changes 	
Specify Analysis Procedures	Specify administrative procedures for analysing data	Analysis specifications and procedures	

Obtaining Measurement Data	<ol style="list-style-type: none"> 1. Generate data for derived measures 2. Perform data integrity checks as close to the source of data as possible 	<ol style="list-style-type: none"> 1. Derived measurement data sets 2. Analysis results 	
Objectively Evaluate Processes	<ol style="list-style-type: none"> 1. Establish criteria for evaluation 2. Use the stated criteria to evaluate selected performed processes 	<ol style="list-style-type: none"> 1. Criteria for evaluation 2. Evaluation reports 	
Objectively Evaluate Work Products	<ol style="list-style-type: none"> 1. Establish criteria for evaluation 2. Use the stated criteria to evaluate selected work products 	<ol style="list-style-type: none"> 1. Criteria for evaluation 2. Evaluation reports 	
Find Software Configuration Items	Select configuration items and work products that compose them based on documented criteria	Selected configuration items	
Establish a Configuration Management System	Establish a mechanism to manage multiple levels of control	Configuration management system with controlled work products	
Create baselines	Create baselines from configuration items	Description of baselines	
Control Configuration Items	Control changes to configuration items throughout the life of the product	Revision history of configuration items	

Accept the Acquired Product	1. Verify that the acquired products satisfy their requirements 2. Document the results of the acceptance test	1. Results of reviewing bought products 2. Acceptance reviews	
Perform Configuration Audits	Track action items from audit to closure	Action items	
Obtain Plan Commitment	Find needed support and negotiate commitments with relevant stakeholders	Documented commitments	

9 CMMI Interview Affirmation Questions

1. How is the effort and cost of the project estimated?
2. What are the requirements of the product?
3. What are the actions taken to reduce the impacts of risks?
4. What are actions to ensure consistency between project work and requirements?
5. Who should evaluate processes and work products?
6. What are the criteria for evaluating the impact of requirement changes?
7. What are the criteria when evaluating suppliers?
8. What are the internal and external plan commitments?
9. How regularly does the team conduct progress reviews?
10. What are actions when a supplier breaks an agreement?
11. How regularly does the team check the commitments?