CMM Level 3 – Application

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# Organization Process Focus

## 1 The Software process is assessed periodically, and action plans are developed to address the assessment findings

The owner of the organization will assess the software development process on a quarterly basis and return to the software engineering team leads with the findings. The team leads will then hold meetings/trainings on new process development and action plans.

## 2 The organization develops and maintains a plan for its software process development and improvement activities

The team leads will oversee the documentation management and distribution. The owner will examine several different document/change management systems and select the one that will best fit the organization. The team leads will use this DMS to keep track of all their documents.

## 3 The organization’s and projects’ activities for developing and improving their software processes are coordinated at the organization level

The owner will oversee this. There will be an online form that any employee of the company can fill out to required improvement in the processes. The owner will review each of these and go over them at a monthly company meeting. Any that the owner deems workable will be reviewed in these meetings, and the team will discuss how to implement them.

## 4 The use of the organization’s software process database is coordinated at the organization level

A software engineer will be assigned as the database administrator and given control of the software process database. This individual will manage changes across the organization.

## 5 New processes, methods, and tools in limited use in the organization are monitored, evaluated, and where appropriate, transferred to other parts of the organization

One of the software engineers will be converted to an IT specialist position. This person will then be in charge of all software/hardware needs across the company. This person will track licensing, usage, and do a quarterly report to the company (primarily the owner, but all will be invited) of all the software that is being used, how it is being used and what has changed since the last meeting.

## 6 Training for the organization’s and project’s software processes is coordinated across the organization

A software engineer and a UX Designer will be designated as head trainers. These head trainers will get together quarterly with the software team leads and owner to coordinate what trainings are needed each quarter. They will also determine if there is a qualified individual within the team to conduct the trainings, a conference that would suffice, or if an external train/training service is needed.

The team will then implement these trainings with no more then 1 a week, to prevent a training overload. Training should be followed up on with everyone during one on ones with their direct supervisor.

## 7 The groups involved in implementing the software processes are informed of the organization’s and project’s activities for software process development and improvement

During sprint meetings any new changes will be told to all the software engineers via the team leads. The team leads will get this information in the team lead brain trust meeting from the owner.

# Organization Process Definition

## 1 The organization’s standard software process is developed and maintained according to a documented procedure

Refer to “Organizational Process focus”, heading 2.

## 2 The organization’s standard software process is documented according to established organization standards

Refer to “Organizational Process focus”, heading 2.

## 3 Descriptions of software life cycles that are approved for use by the projects are documented and maintained

There will be a section of the document management system that is setup to contain descriptions of every software life cycle, and the terms associated with software development in general. The technical writer will assume control of this.

## 4 Guidelines and criteria for the projects’ tailoring of the organization’s standard software process are developed and maintained

The development department will get together and come up with several mantras that they will stand by. These will be the guidelines that each piece of software is developed against. They will also establish a set of criteria by which things will be decided, such as language choice, web app vs. mobile app vs. desktop app, or all of the above.

## 5 The Organization’s software process database is established and maintained

This will be handled through a software suite that is purpose built to do exactly that. This will be the document management system (DMS) mentioned in previous headings.

## 6 A library of software process-related documentation is established and maintained

Please refer to the previous heading.

# Training Program

## 1 Each software project develops and maintains a training plan that specifies its training needs

At the end of each project, each team member will self-assess their training needs. This will include anywhere they felt they could have used a little training in the pervious project, and what they feel they are lacking in for the incoming project.

This will be reviewed by their direct supervisor. The supervisor then has the chance to add any additional notes/trainings needed to this document. This will then be passed to the head trainers established in the company. They will take the needs into account when planning trainings.

The supervisor also can pair up the individual with another team member that is knowledgeable on the lacking subject. This will be done on an as needed basis, and requires that the knowledge needed is already within the company.

## 2 The organization’s training plan is developed and revised according to a documented procedure

The head trainers will create a change/approval process for any trainings with the owner of the company.

## 3 The training for the organization is performed in accordance with the organization’s training plan

Since the plan will include a schedule, this will be as simple as following the schedule.

## 4 Training courses prepared at the organization level are developed and maintained according to organization standards

If a particular training is extremely helpful/critical to the company, the trainer will be asked to create and share training materials on a network location in the company. The head trainers will be tasked with reviewing the initial material, and at least once yearly to verify that it is current and is still needed. Any needed but not current trainings will be updated. Any not needed trainings will be removed to help clarify which trainings are important.

Each team member will also have the ability to report an out of date/unnecessary training through an online form to help the head trainers in their responsibility with keeping the trainings maintained.

## 5 A waiver procedure for required training is established and used to determine whether individuals already possess the knowledge and skills required to perform in their designated roles

We will contract with an attorney to write up an official waiver that the employee can sign, as well as the employees manager that says the training is not needed, if that individual would like to skip the trainings. IF the manager is unable to to verify the individual does not need trainings the individual will need to demonstrate the ability in question to their supervisor, the engineering team leads, and the owner of the company.

## 6 Records of training are maintained

One of the secretaries will be assigned into more of an H.R. based roll, and will be given access to employee files. These files will include all trainings. Each individual will be required to report completion of trainings to the secretary. This will also need to be verified by their manager.

# Integrated Software Management

## 1 The project’s defined software process is developed by tailoring the organization’s standard software process according to a documented procedure

Refer to “Organizational Process focus”, heading 2.

## 2 Each Project’s defined software process is revised according to a documented procedure

Refer to “Organizational Process focus”, heading 2.

## 3 The project’s software development plan, which describes the use of the project’s defined software process, is developed, and revised according to a documented procedure

A document will be established outlining the necessary steps to develop software on any given project. These will be a guide on how to setup a project, not necessarily a step by step “this is how we do a project”. Any time a new project is taken on, this will be reviewed and a software development plan will be created.

## 4 The software project is managed in accordance with the project’s defined software process

Each project will be assigned a project manager. This project manager will be assigned to make sure that the software project is built to spec, and the plan that was originally created is followed as closely as possible. If there is a necessary change, it will have to go through a change control process.

## 5 The organization’s software process database is used for software planning and estimating

We will use a system similar (or maybe just use) Jira. This will track all time spent on each project, what types of projects they were and any other metadata needed for project planning and estimating. Documentation and requirements will be established for things like planning meetings and time tracking, as well as time estimations.

## 6 The size of the software work products (or size of changes to the software work products) is managed according to a documented procedure

A change control process will be established by the software team leads

## 7 The project’s software effort and costs are managed according to a documented procedure

The owner will create a documented procedure to manage costs and effort. This will likely also use the Jira-like system to display project costs and efforts. A burndown chart will also show how much cost and effort is remaining (based of the estimations) in a project.

## 8 The Project’s critical computer resources are managed according to a documented procedure

This will be handled by the assigned IT person. All hardware will be serialized, and assigned to individuals. Server hardware that is critical to a project will be managed, and permissions restricted. There will be a document establishing what qualifies as a need to be allowed to have rights to a critical computer resource, such as a server.

There will be an established work station setup, and any deviation to this must be approved through an approval process.

## 9 The critical dependencies and critical paths of the project’s software schedule are managed according to a documented procedure

Each project will be documented, and critical paths and dependencies flagged. After they are flagged the project manager will monitor these, as needed.

## 10 The project’s software risks are identified, assessed, documented, and managed according to a documented procedure

Risk assessment will be undertaken before bidding on a project, and again upon selection. If we are selected for the bid, we will do a more in depth risk analysis and document what risks there are with the project, as well as their risk level.

## 11 Reviews of the software project are periodically performed to determine the actions needed to bring the software project’s performance and results in line with the current and projected needs of the business, customer, and end user, as appropriate

The project manager will conduct a review of the entire project at least every 4th sprint cycle. If we are found to be behind in any critical area, we will make adjustments to team assignments, timelines, and anything else that is necessary to get us back on track.

# Software Product Engineering

## 1 Appropriate software engineering methods are tools and integrated into the project’s defined software process

Refer to ORGANIZATION PROCESS FOCUS, Heading 5.

## 2 The software requirements are developed, maintained, documented, and verified by systematically analyzing the allocated requirements according to the project’s defined software process

Refer to INTEGRATED SOFTWARE MANAGEMENT, heading 11.

## 3 The software design is developed, maintained documented, and verified, according to the project’s defined software process, to accommodate the software requirements and to form the framework for coding

Refer to the INTEGRATED SOFTWARE MANGEMENT section.

## 4 The software code is developed, maintained, documented, and verified, according to the project’s defined software process, to implement the software requirements and software design

The code will be developed using company best practices established in the DMS system. These will be established via the software team leads and the owner, and any change to them must be approved by the owner, or head of development. The software code will be kept in a git based remote repository and will be tracked via git.

## 5 Software testing is performed according to the project’s defined software process

A testing suite will be obtained and utilized on each project. Each project will be allowed to develop their own tests within the testing suite

## 6 Integration testing of the software is planned and performed according to the project’s defined software process

Each project will be assigned a software engineer in charge of testing. All integration testing will be planning and taken place through this software engineer.

## 7 System and acceptance testing of the software are planned and performed to demonstrate that the software satisfies its requirements

Refer to previous heading

## 8 The documentation that will be used to operate and maintain the software is developed and maintained according to the project’s defined software process

User documentation will be created during the testing phase of the product life cycle. The technical writer will be in charge of establishing a document repository and working with the engineers to create the technical documentation for each project

## 9 Data on defects identified in peer reviews and testing are collected and analyzed according to the project’s defined software process

Refer to heading 6 in this section

## 10 Consistency is maintained across software work products, including the software plans, process descriptions, allocated requirements, software requirements, software design, code, test plans, and test procedures

Documentation will be established on how all the listed subjects and will be followed on each project as closely as possible. Each deviation will need to be approved by the project manager.

# Intergroup Coordination

## 1 The software engineering group and the other engineering groups participate with the customer and end users, as appropriate, to establish the system requirements

Requirements gathering will happen in parallel to risk assessments.

## 2 Representatives of the project’s software engineering group work with representatives of the other engineering groups to monitor and coordinate technical activities and resolve technical issues

N/A

## 3 A Documented plan is used to communicate intergroup commitments and to coordinate the track and work performed

Each phase of the software lifecycle will include communication standards, and follow each of the meetings defined in the documentatno.

## 4 Critical dependencies between engineering groups are identified, negotiated, and tracked according to a documented procedure

N/A

## 5 Work products produced as input to other engineering groups are reviewed by representatives of the receiving groups to ensure that the work products meet their needs

N/A

## 6 Intergroup issues not resolvable by the individual representatives of the project engineering groups are handled according to a documented procedure

A document will be established for intergroup issues. This will be headed up by the owner.

## 7 Representatives of the project engineering groups conduct periodic technical reviews and interchanges

Pair programming, and one on ones will happen at regularly scheduled intervals.

# Peer Reviews

## 1 Peer reviews are planned, and the plans are documented

Refer to the previous section, heading 7

## 2 Peer reviews are performed according to a documented procedure

Documentation will be added to the DMS on how, where, and how often to conduct peer reviews.

## 3 Data on the conduct and results of the peer reviews are recorded

All data will be reviewed by the supervisor, with the allowance for the supervisor to make additional notes, and then sent to the secretary over HR

# Rubric

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| --- | --- | --- | --- | --- | --- |
|  | Exceptional 100% | Good 90% | Acceptable 70% | Developing 50% | Missing 0% |
| Process Areas & Activities 30% | It is abundantly clear that every activity is understood | Every activity is related to the problem in some capacity | Every Activity in every process area is listed and something is said about it in the plan | Not all the activities are mentioned or one large misunderstanding exists | Large parts of the process areas are not described or inaccurately described |
| Plan 50% | It is obvious that real thought went into the application of the plan | All seven process areas are applied to the scenario in an uncontrived way | One aspect of the scenario is not addressed int eh process area or one aspect of the process area is not applied to the scenario | Large parts of the plan are overly vague, do not appear to be related to the scenario, or do not appear to be related to the process area. | No attempt was made to apply the process areas to the scenario |
| Professionalism 20% | The paper is easy to read and ideas are clearly communicated | Everything is properly cited, there are no grammar or spelling errors, the writing style is “professional.” | One instance of a spelling, error, grammar error, incomplete citation, overly verbose, poor formatting, or poor writing | A citation is missing where one is needed (plagiarism alert!) | Gross selling/grammar errors or other aspects of the writing that make the paper difficult to read |

# Citations

M. Paulk et al., "Key Practices of the Capability Mature ModelSM, Version 1.1," *Technical Report CMU/SEI-93-TR-025*, Feb. 1993.  
[Online] Available: [http://dx.doi.org.byui.idm.oclc.org/10.1109/52.219617](https://content.byui.edu/file/fb36352f-44a4-473d-bb81-1e5a2ce36646/1/08%20-%20Paulk%20-%20Key%20Practices%20of%20the%20CMM.pdf)