

Software Engineering Policy

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Software Engineering Policies

1.1 Requirements management policy

It is the policy of organization that requirements management activities will be carried out in all the projects. The requirements, whether supplied by the customer or developed by organization, will be documented, reviewed and approved before they are incorporated in the projects. All managers and concerned personnel (for example: testing staff, technical team members, SQA etc.) shall review the requirements before they are approved. The project plans, schedules and the activities shall be updated whenever there is a change in the requirements.

1.2 Project planning policy

It is the policy of organization that the requirements shall form the basis for planning the software project and these requirements shall be used to plan a software project.

The commitments for the software project shall be reviewed and agreed upon by the project manager, SEPG manager, IT representative etc. The interfaces to and involvement of other groups shall be negotiated and their agreement to their respective commitments shall be recorded. The groups affected by the software project plan shall review the project plan for software size, efforts and cost estimates, schedules and other commitments.

Senior management shall review all software project related commitments made, internally as well as external to the organization. The project plan shall be put under version control and the changes to the project plan shall be controlled. All projects executed in organization shall use the complexity based or function point estimation technique as basis for estimation.

1.3 Project monitoring and control policy

It is the policy of organization that the software project shall be tracked on the basis of the project's software project plan. The project manager and the general manager – it shall be constantly informed about the status of the activities and the issues related to the project. In case of a deviation from the schedule as described in the project plan, the corrective actions shall be taken to bring the project on track. This shall be done either by adjusting the productivity / performance or by updating the project plan with re-planning. In case of changes to the commitments due to updating of the project plan, the commitments shall be negotiated and agreed upon with the affected personnel. The senior management shall review all commitment changes and new software project commitments made to individuals and groups external to the organization.

1.4 Product and process quality assurance policy

It is the policy of organization that in all the projects, SQA activities shall be carried out by the SQA group. Every project shall plan for the SQA activities to be carried out in their projects. The SQA group shall be independent of the project's reporting hierarchy and shall directly report to the senior management. The senior management shall also review the SQA activities undertaken in a project and their results.

1.5 Configuration management policy

It is the policy of organization that all projects shall implement software configuration management (CM) practices. A person shall be assigned in each project to carry out the configuration management activities, either independent to the project or from the project itself. The configuration management activities shall span the entire life cycle of the project. The CM shall be implemented for deliverables to the customer, designated internally produced software work products and the tools used within the project. There shall be a central repository where all the configuration items shall be stored and the project's staff shall have the access to this repository. This repository shall also store the CM related records. The CM activities and the baselines shall be periodically audited to verify adherence to standards and organizational policies.

1.6 Measurement and analysis policy

Following are three policies under Measurement and Analysis process

1.6.1 Measurement and quantitative control of the processes

It is the policy of organization to plan the measurements based on the project objectives, collect and analyze the measurement data at the project level. To establish project process performance objectives, all the projects shall refer to the organizational process performance baseline and goals applicable to different verticals of projects. Projects executed in organization shall analyze the identified metrics data to control the performance of the project parameters within project and organizational objectives.

1.6.2 Data sensitivity

It is the policy of organization to bring projects processes under quantitative control. Data relating to individuals' performance shall be protected, and access to these data shall be appropriately controlled. Under no circumstances the individual data collected will be used for appraisal.

1.6.3 Analysis of process capability

It is the policy of organization to baseline the organizational process capability after the initial analysis of the processes. Organizational process capability baseline defines the upper control limit and lower control limit for each process. The organizational process capability baseline will serve as an input to all projects in establishing the project's process performance goals

1.7 Organizational process focus policy

It is the policy of organization that the software engineering process group is established and is responsible for the organization-level software process activities and coordinating these activities with the projects. Sepg shall plan and execute the organization-level process development and improvement activities. The software processes used by the projects shall be assessed periodically to determine their strengths and weaknesses. The software processes used by the projects shall be derived from the standard software processes. Information on each project's software processes, tools and methods shall be made available to other projects.

1.8 Organizational process definition policy

It is the policy of organization that a standard software process shall be defined for the organization. The projects shall suitably tailor the standard software processes, within the tailoring guidelines defined, to be used as the project's software processes. Organization shall also maintain software process assets. Organization shall analyze the information collected from the projects and shall use these analysis results to improve the standard software processes.

1.9 Organizational training policy

It is the policy of organization that the needed skills and knowledge for each software management and technical roles shall be identified. The training methods and techniques for imparting skills and knowledge shall be identified. Training shall be provided to build the skill base of organization, fulfill the specific needs of the projects and to develop the skills of the individuals to contribute to the organizations growth. The training shall be developed within organization or obtained from outside organization as necessary.

1.10 Integrated project management policy

It is the policy of organization that software projects shall be planned and managed using its standard software process to tailor the project's software process. The project's deviations from the organizational standard software process shall be documented and approved. Appropriate project measurement data and project assets shall be collected and stored in organization's central repository for future reference.

The project requirements and its objectives be defined and reviewed by affected groups that are involved in the development and its support activities. Project manager and team leads shall be responsible for planning, establishing and maintaining an environment to facilitate interaction, coordination, support, and teamwork between the project's team members, support groups and customer as applicable.

1.11 Risk management policy

It is the policy of organization that the potential risk areas to be identified in the projects before they occur, and the plan for mitigation activities to be prepared to reduce the impact of the risks. This area includes activities such as: risk identification, risk analysis, risk mitigation, and risk contingency planning.

1.12 Requirements development policy

It is the policy of organization that requirements development should address the elicitation and analysis of customer requirements, product and product-component requirements. Requirements development is tightly coupled to the technical solution process area, and it includes a strong focus on interface requirements.

1.13 Product integration policy

It is the policy of organization that product integration should deal with the integration of product components together. It presents an iterative approach of product integration, verification, and validation until the product is ready for delivery. The project teams should make sure the defect free application is delivered to the customer. The effective management of all interfaces should be stressed to ensure the compatibility of interfaces.

1.14 Technical solution policy

It is the policy of organization that the technical solutions should deal with the practices of designing, developing, and implementing solutions to requirements in the form of product components and lifecycle processes. Also there is an emphasis on developing alternative solutions and selecting from them, as well as designing quality into the components. Specific practices in the verification process area shall be used to perform the design verification

1.15 Verification policy

It is the policy of organization that a standard set of software work products shall undergo verification as identified in project plan. Trained leaders shall lead the team on verification of defined artifact. Verification shall focus on the software work product being reviewed and not on the producer. The verification results shall not be used by the management to evaluate the performance of the individuals.

1.16 Validation policy

It is the policy of organization that validation process shall be used to demonstrate that the right product was built, that is, validation shall fulfill its intended use when placed in its intended operational environment. The project teams should make sure the right validated product is released

1.17 Decision analysis and resolution policy

It is the policy of organization that to analyze possible decisions using a defined evaluation process. The analysis shall include deciding which decisions should be examined using a formal analysis, which is based on different criteria, such as the importance of the decision (e.g., does it affect changing work products, and is it related to medium or high risk activities).

1.18 Quantitative project management policy

It is the policy of organization to select the measures to be used to analyze sub processes, which are defined components of a larger defined process. Sub processes can also be decomposed into other sub processes. Testing and peer review are examples of sub processes. This area consists of two goals, quantitatively managing the project, and statistically managing the sub process performance.

1.19 Organizational process focus policy

It is the policy of organization to establish and maintain a quantitative understanding of the performance of the processes in the organization. It is important to be able to measure the performance of processes so that improvements can be made if necessary. The measures used are for both the process (e.g., effort, defect removal effectiveness) and product measures (e.g., reliability, defect density). With these measures, the process can be analyzed to determine whether the process is predictable, or sporadic, whether aspects of the process can be improved.

The process performance data collected from the projects shall be analyzed on a quarterly basis and base-lined to arrive at the organizational capability baseline. At the organizational level process performance models shall be established based on the process capability baseline.