

**Quality Assurance Process**

**Version History**

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# 1.0 Purpose:

The purpose of the QA process is to ensure that the products and processes conform to specialized requirements, established plans, standards and procedures.

# 2.0 Entry Criteria/Inputs:

* Documented project plans and processes (including organizational standards, processes, and specifications) are available
* Commitment to QA as per ISO 9001:2008 and CMMI standards.
* Defined quality Policy and Objectives.
* Adequate resources are committed to QA
* QA Manager has been trained or obtains training in the QA Process

# 3.0 Roles and Responsibilities:

* Senior Management: Reviews QA activities and resolves nonconformance issues when necessary.
* QA Group / QA practitioners who implement this function.
* Configuration Management (CM): Project Manager is responsible for the maintenance of QA records placed under configuration control.
* Stakeholder: a group or individual internal or external to the project who is affected by or accountable for a task or undertaking.
* Software Engineering Process Group: the engineering and process specialists who facilitate the definition, maintenance and improvement of the engineering and project management processes used by NST

# 4.0 Tasks:

## 4.1 Establish Quality Assurance organization or function

The Senior Management appoints an individual or group responsible for QA. QA must have organizational freedom, authority, and independence to objectively evaluate and report on project activities. The QA Group maintains a reporting channel to senior management that is independent of the project.

## 4.2 Select Quality Assurance tasks and assign responsibilities

The QA Group defines and assigns the tasks, work products and processes that will be performed, such as those listed below:

* 1. Review products, tools, services, and facilities against requirements, standards and guidelines.
	2. Audit project processes for compliance with standards, and established best practices.
	3. Participate in peer reviews and project reviews (technical and management reviews) by providing status on compliance, problem areas, and risks. Guidance on reviews is contained in references (c), (d) and (e).
	4. Suggest methods, standards, guidelines, and tools to be defined for the project and verify they are documented in the project management plan or separate QA plan.
	5. Report results of product and/or service evaluations and process audits to the PM, senior management, relevant stakeholders, and the project’s engineering process group (e.g. SEPG) as appropriate.
	6. Collect and report metrics on the status of cost and schedule, product evaluations, project quality, and audits.
	7. Collect improvement information on the QA processes and establish and maintain a description of the defined process.

## 4.3 Establish and maintain the plan for the Quality Assurance Process

The QA Group develops and documents QA plans in the project plan or equivalently in a QA Plan. Depending on the size and type of QA activities required, planning topics can include those listed below:

|  |  |
| --- | --- |
| * Quality objectives, in measurable terms
* Review of the Project Test Plan for V&V activities
* Entry and exit criteria for project lifecycle phases
* Responsibilities of the QA group
* Resource and training requirements for the QA group or function
* QA participation in development of project plans, standards, and procedures
 | * Process evaluations and audits to be performed by QA
* Product audits and reviews to be conducted by QA
* Standards and procedures used for QA
* Documenting and tracking noncompliance issues, and the escalation procedure
* Method, audience, and frequency of providing feedback on QA activities
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## 4.4 Create and maintain Quality Assurance procedures and checklists

The QA Group establishes and maintains the procedures, checklists, and work aids that describe how QA is to be performed.

## 4.5 Resource and perform Quality Assurance as described in the Plan

The QA Group ensures that resources (tools, databases, work stations, etc.,) for performing the QA Process, developing the work products and providing QA services are adequate.

The QA Group performs the tasks as defined in the project or QA Plan. Problems or non-conformances with requirements and standards are documented and reported to the PM. The QA Group communicates the results of QA activities to relevant stakeholders for resolution. Senior management addresses non-compliance issues that cannot be resolved within the project.

## 4.6 Identify and select Quality Assurance training

The QA Group identifies training required to perform the tasks identified in the QA Plan. Training includes training of the QA Group and QA orientation for the project team members.

## 4.7 Conduct Audits

Quality Assurance Group shall be responsible for conduction of various audits within the organization. The different types of audits shall be:

* *Product Audits*

These audits shall be conducted after the UAT or the phase end.

* *Process Audits*

The process audits shall be conducted once in every three month .However, if needed the audits can be conducted as and when needed. The audits shall be conducted for checking the compliance of the processes being followed against the baselined processes of the NST.

* *Configuration Audit*

Configuration audits shall be conducted during the time of the process audits.

* *ISMS Audit*

Information Security Management System (ISMS) auditor shall be assigned by CISO and responsible for conducting the ISMS Audit once in every two month. Audit schedule will be prepared with process audit schedule.

## 4.8 Monitor and control the Quality Assurance Process

The QA Group monitors and controls the QA activities against the QA Plan, schedule and budget. Identify and evaluate the effects of risks on, and significant deviations from, the QA plan, schedule and budget. Take corrective action when requirements and objectives are not being satisfied or when progress differs significantly from the plan and reports in the form of organizational metrics.

## 4.9 Place Quality Assurance work products under CM

The QA Group reviews completed QA work products under configuration management (CM) in accordance with the Process Asset Library.

## 4.10 Objectively evaluate the Quality Assurance Process

The senior Management evaluates the QA Group to provide credible assurance that the QA Process is implemented as planned, and adheres to its process description, standards and procedures.

## 4.11 Review Quality Assurance activities and results with senior management and stakeholders

QA activities, status and results are reviewed with the stakeholders, PM and senior management on a periodic and event-driven basis as designated in SEPG Meetings. The QA Group escalates unresolved or non-compliance issues and resolves them as necessary.

## 4.12 Collect improvement information

The QA Group initially reviews project QA processes and identifies improvements and efficiencies for future use. Suggestions for improvement of project QA processes are submitted to the SEPG group.

QA collects work products, measures, measurement results and improvement information derived from planning and performing the project.

QA establishes, collects and analyzes qualitative and quantitative measures of process variability to determine whether the processes are adequate for the intended function, satisfy project and organizational goals, and whether learning has been effectively shared. This information is shared with the SEPG in the meetings.

## 4.13 Create and maintain a defined Quality Assurance Process description

The SEPG group further refines QA best practice nominations into defined organizational QA standard process descriptions (Quality Management System), templates and checklists for reuse as organizational process assets.

The QA Group then selects and tailors the QA Process assets according to the tailoring/scalability guidelines and the projects needs.

# 5.0 Output:

* Results of reviews, product evaluations, and process audits have been collected and reported.
* Audit NC reports
* Process Improvement (PI)Log

# 6.0 Validation:

* Approved Audit Plan.
* Regular SEPG meetings and MoM
* NC Report.

# 7.0 Exit Criteria:

* Plans and procedures have been documented.
* QA practitioners have been trained.
* Results of reviews, product evaluations, and process audits have been collected and reported.
* Reports of problems or non-conformances on both products and processes have been documented.
* Metrics of project and process status have been collected and reported.
* Documented and implemented QA Schedule.

# 8.0 Reference Documents:

* Quality Assurance Plan\Audit Plan.
* PMP(Project Management Plan)
* Configuration management Plan.