History

Rev	Date	Author	ECO #	Comments
0.1	1/27/02	W. Gunkel		Created

References

Ref	P/N	Title	Alias
1	SQA00002	Document Numbering Standard	SQA00002
2	SQA00003	Test Case Suite Creation Standard	SQA00003
3	SQA00004	Project Issue Reporting Standard	SQA00004
4	SQA00005	Test Case Suite Execution & Test Traceability	SQA00005
5	SQA00006	Test Release Certification Standard	SQA00006
6	NA	Doc Review Cover Sheet Template	Review Cover Sheet
7	NA	Doc Review Request Cover Sheet Template	Review Request Sheet
8	NA	Project Test Matrix Form	Project Test Matrix
9	NA	Ad-Hoc Test Case Form	Ad-Hoc Tests
10	NA	Pre-Alpha Issue Form	Pre-Alpha Issue
11		Project Beta Candidate Certificate Form	Candidate Cert Form
12	NA	Final Regression Test Report Form	Final Regression
13	NA	Final Report Form	Final Report
14	NA	SQA Web Site: http://	SQA Web Site
15	NA	http://	Status Report Form
16	NA	SQA CD Label Form	SQA CD Label
17	NA	SQA CD Label Engineer Test Form	SQA CD Eng Tst Label
18	SQA00007	SQA Glossary	SQA00007
19	NA	SQA Process Verification Form	Process Verification
20	NA	SQA Post-Mortem Form	Post-Mortem
21	NA	SQA Surplus Equipment Form	Surplus Equipment
22	NA	SQA Defective Equipment Form	Defective Equipment
22	NA	SQA Testing in Progress Form	Test In Progress
23	NA	http://	Project Request Form
24	NA	SQA Special Test Report Form	Special Test Report
25	NA	SQA Investigational Report Form	Investigational Report
26	NA	SQA Release From Eng Audit Report Form	Release Audit Form
27	NA	SQA Doc Approval Form	Doc Approval Form
28	NA	SQA Code Review Report Form	Code Review Form
29	NA	SQA CD Label Internal Backup	SQA CD Label Backup
30	NA	Engineering EIT Test Plan Form	EIT Test Plan
31	NA	Engineering EIT Test Report Form	EIT Test Report
32	NA	Engineering EIT Test Case Suites Form	EIT Test Case Suite
33	SQA00008	Procedure, Defects and New Features	Bug Tracking
34	NA	SQA Awaiting Service Form	Awaiting Service Form

Ref	P/N	Title	Alias
35	NA	Form SQA CD Label Mfg Master.	CD Label Mfg Master
36	NA	SQA Procedure Golden Master Disk Drive	Golden Master Disk
37	NA	SQA Procedure Golden Master CD	Golden Master CD
38	NA	Form SQA Hold for New Equipment Processing	Hold Processing

Table of Contents

1. Purpose

This document serves to establish a Software Quality Assurance Master Procedure and Methods SQA Policy.

2. Responsibility

Software Quality Assurance is responsible for implementing and maintaining the information and/or process described in this document.

3. Scope

This document sets the master standards for procedures and methods.

4. Definitions

See Document SQA00010 SQA Glossary.

5. Safety

N/A

6. Document Creation

All SQA documents are created from templates that can be found on the SQA Team Web site

SQA Policy # 1

Master document templates are available from the SQA Team Web site. Each time a new document is created, it is based on an existing template, which **MUST** be acquired from the SQA Team Web site.

6.1. Standard Forms / Templates

EIT Test Plan	For the creation of project EIT Test Plan.
EIT Test Case Suites	For composing EIT Test Case Suites.
EIT Test Report	Report results of EIT Tests.
Test Plan:	For the creation of project test plans.
Test Case	For composing Test Case Suites.
Project Test Matrix:	Top level project Matrix.
Project Beta Candidate Certificate	Project is ready for final verification phase
Final Regression Test Report:	Report results of Final Regression tests.
Final Test Report:	Close out overall project test results.
Investigational Test Report	For document issue investigations.
Ad-Hoc Test Case:	For documenting free-form (Ad-Hoc) test cases.
Excel Workbook:	For documenting any data capture.
Document Review:	Cover sheet for document review.
Review Request:	Cover sheet for Report review request.
Eng. Release Audit	For the audit of Engineering releases to SQA.
Process Verification Report	SQA Process Verification Report.
Process Post-Mortem	SQA Process Post-Mortem Report.
Code Review Report	SQA test software code review.
Document Approval	General Document approval form.
CD Label SQA	Label for CD received by SQA from Eng.
CD Label Eng Test	Label for CD issued by SQA
CD Label Backup	Label for monthly SQA Backup CD.
Testing In progress	Testing In progress sign
Film Envelope Label	Template for SQA Test film envelopes.

Any SQA Team member may create a new document template; Title Sheet templates are to be used as the starting point for any new template. The history section of the template will be used to track changes to the template.

SQA Policy # 2

Any new document template must be submitted for approval by SQA Team management prior to its use.

7. Document Numbering

The SQA Procedure 'Document Numbering' (SQA00002) details the standard for document numbering and file location for pre-release documents. The document also denotes documents maintained by SQA for internal SQA use.

SQA Policy # 3

The Document Numbering Procedure establishes the SQA standard for document numbering, and must be adhered to for all SQA pre-release documents, and internal to SQA documents.

8. Document Version Control

SQA uses Merant's PVCS Professional Version Management software for version control of all pre-release or draft documents and documents internal to SQA.

8.1. Backup of SQA Departments Folders

< company name > IT group regularly backs up all network systems, including the SQA Department's folder. Additionally, SQA burns a CD copy of the SQA Team Web site and selected folders under the SQA Department folder once a month. The CDs are labeled using the SQA CD Label Internal Backup Form and stored in SQA's CD archive media file cabinet. The following selected folders are included in the monthly CD burn:

Completed Test Case Suites
Documents
SQA Logs
TimeLines
TimeLinesPublic
Training

8.2. Draft Version number Format

Numbers less than one denote a draft document. Version number formatting is as follows: 0.1 to 0.9, then 0.9A to 0.9Z, then 0.1A to 0.1Z.

8.3. Internal Released Version number Format

Once the documents have been through the internal SQA review process and approved by the team, the version number is incremented to the next whole number. The draft history is then removed.

8.4. Non-Internal to SQA Documents

The following documents are maintained only in their draft form by SQA. After the documents have passed through the internal SQA review process, they are submitted to document control for release per the < company name > document release process.

EIT Test Plan	EIT Test Case Suites	EIT Test Report
Test Plans	Test Case Suites	Procedures
Beta Test Report	Project Test Matrix	

8.5. Internal to SQA Documents

Final Test Reports
Special Test Reports
Project Timelines
Ad-Hoc Test Suites
Investigational Test Reports

Process Post-Mortem
Process Verification
Engineering Release Audit

SQA Policy # 4

As they are initially created (in first draft), new documents of the types noted above are added to SQA's PVCS project by the SQA PVCS administrator.

SQA Policy # 5

Any changes made to the document types noted above must be made through the PVCS system. The SQA engineer making the changes must enter a detailed description of the changes when the document is checked-into the PVCS system. Once the changed document is checked in, notice must be sent to the SQA Team Web master(s) to add or update any Web-based versions of the document.

Diagram 1 shows examples of PVCS folders used by SQA. A mix of project-specific folders and folders that are not project-specific are used. Most of the folders tie directly to a predefined document type (see section: 6.1).

Test Cases Suites

Special	=	Test Cases Suites that are not project- or product-specific.
General	=	Test Cases Suites that are not product-specific.

Diagram 1

< place source control folder diagram here >

9. Team Document Review

Once the author has completed the draft version of a document, other SQA Team members review all SQA project documents. The review process may be a group effort, especially when reviewing Test Case Suites. The review process is an important step in the overall SQA project documentation process.

Edits may be done on paper or online, as follows:

SQA Policy # 6

Edits on paper must be done following < company name > good documentation standards. Each page with an edit should be marked to assure none of the suggested changes are missed when the document is updated.

SQA Policy # 7

Online edits must be done with MS Word's 'Track Changes' turned on, in order to clearly show what was changed or added.

SQA Policy # 8

Once the edits are completed, the reviewer(s) must complete a Review Cover Sheet and include it with the edited document when submitting the changes to SQA Team leadership. The review package may be submitted as a hard copy, or via email, with attachments.

Hard copies of all the reviewed, edited documents are filed with, and become part of, the permanent project file. Soft copy review documents are stored in the history folder for that document type. The file name of the soft copy reviewed is the same as the master document, but the version number is added to the end of the file. In the case of an email review package, a copy of the Email is also stored in the SQA documents 'Electronic Draft Review' folder.

The 'Electronic Draft Review' folder is stored on '< location of folder (must be shared folder with option to set access privileges) >

10. External Document Review

After the internal review process is completed, the document may be submitted for review outside the SQA Team, on an as-needed or as-required basis.

SQA Policy # 9

The last draft version of the document is archived in the history folder, or other archiving system, as a Pre-External Review Version. The document is then submitted to < company name > document control for preparation for formal release.

SQA Policy # 10

Once < company name > Document Control has been assigned a number, SQA prepares the Review Request Sheet. Included with the Review Request Sheet is the Document Review Sheet. The document review package is delivered to the pre-selected reviewers. The review process can be performed electronically or by hard copy. The completed review packages are kept on file by SQA as part of the review package.

This additional review step is optional at the discretion of the SQA Team Leadership. The additional review step does not replace < company name > standard process for document approval.

If the optional additional review process described in SQA Policy #10 is used, the following applies:

Hard copies of all the reviewed, edited documents are filed with, and become part of, the permanent project file. Soft copy review documents are stored in the history folder for that document type. The file name of the soft copy reviewed document is the same as the master document, but the version number is added to the end of the file. In the case of an email review package, a copy of the Email is also stored in the SQA documents 'Electronic Draft Review' folder.

11. Project Documents

SQA creates a standard set of documents for each new project submitted to SQA for verification. The following documents are part of the formal project and must be released and approved per < company name > Policy for formal project documents:

Test Plan
Test Cases Suites (both Black & White Box)
Project Test Matrix
Project Final Regression Candidate Certificate
Final Regression Test Report

11.1. Test Plan

The Test Plan is the first document created by SQA for each project. SQA Test Plans detail how SQA plans to verify that Product Requirements have been met. Within the Test Plan will be an estimation of resource requirements for the project, as well as any perceived risks and assumptions that may affect SQA's ability to verify the project to our normal high standards.

11.1.1. Test Plan Approvals

Ideally, the Test Plan will be approved before SQA Alpha testing starts; at the outside, it is approved before Alpha testing is completed.

SQA Policy # 11

The following SQA team members must review and approve each Test Plan: Manager of SQA Test Plan Author SQA Technical Lead SQA Architect NOTE: The preceding list is internal to SQA. Additional approvals may be required for formal release

The required internal SQA approvals are capture on the SQA Document Approval Form

After internal review, SQA will submit the Test Plan for formal approval following standard < company name > SQA Policy for required project documents.

11.2. Test Case Suites

Test Case Suites are created by SQA as test procedures to verify that the SUT (software under test) meets requirements. The Test Case Suites are based on the Marketing Requirements and Engineering Design documents; they started during the Engineering Integration Tests (EIT), also known as Pre-Alpha Testing. During EIT phase of testing, preliminary versions of the Marketing Requirements and Engineering Design documents are acceptable.

Once the EIT or Pre-Alpha phase of testing is completed, the Test Case Suites are released, and approved for use for the Alpha phase of testing

The SQA Test Case Suite Execution & Test Traceability Procedure (SQA00005) defines how Test Case Suite forms are completed, and how test traceability is maintained.

The SQA Test Case Suite Creation Standard Procedure (SQA00003) details how to use the Test Case Suite template, as well as the formatting standard for the Test Case Suites.

Test Case Suites are created as a controlled document for each project. The master copy can only be accessed from the SQA project Web site, or through the < company name > document control system.

SQA Policy # 12

Only Test Suites copied from the SQA project Web site are approved for use. SQA staff will not use downloaded copies of Test Case Suites. Rather, a 'current' copy will be downloaded from the SQA project Web site each time tests are to be executed. The Test Case Suites form is designed for online completion, thereby allowing easy capture of test results.

SQA Policy # 13

Each SQA Engineer is responsible for the accurate completion of the Test Environment section of each Test Case Suite. Start and end dates and test times are all very important for tracking testing progress, and for future planning.

SQA Policy # 14

SQA Engineers may wish to complete Test Case Suites off-line, but the information must be transferred to an online form and saved. If the form is completed off-line, the 'offline' document must be submitted with the electronic version for review.

11.3. Project Test Matrix

The Project Test Matrix document is the Master Project document, and is created for each project once work has started on the Test Case Suites.

The Project Test Matrix Document is created from the Project Test Matrix form, and includes the following:

Document Reference section

- Document number and title of all SQA project documents (including, but not limited to):
  - Test Plan
  - Test Case Suites
  - Project Final Regression Candidate Certificate
  - Final Regression Test Report

- Document number and title of all Reference documents (including, but not limited to):
  - Marketing Product Requirements.
  - Engineering System Requirements Specification.
  - QA Risk Analysis.
  - EIT Test Report.

Hazards Resolution Test Matrix section:

- Matrix of Test Cases Suites required as Hazard resolution. Only items that Risk Analysis Resolution requires SQA validation or verification are included in this section (it is possible that a project may have no hazard resolution tests).

Requirements Test Matrix section

- Matrix of Test Cases Suites required to validate and verify product requirements.

Regulatory Requirements Test Matrix section

- Matrix of Test Cases Suites required to validate and verify regulatory requirements. Including, but not limited to: < any 'special requirements' >

11.4. Test Reports

SQA creates a formal report for the final verification phase of testing. The report created is described in the section Beta Testing.

11.5. Project Schedule

In conjunction with the creation of the Test Plan, SQA will create a detailed Microsoft Project schedule to track the project. This project schedule will be rolled into the SQA Master Project for overall resource tracking.

SQA Policy # 15

The Project baseline will be saved. Progress will be tracked during the full life of the project. Any unexpected activities or delays will be added to the timeline as a 'new task' without a baseline value, clearly denoting that the task was not planned.

SQA Policy # 16

The project schedule will be posted on the SQA project Web site as a PDF file, and updated at least weekly during the life of the project.

The project schedule will be one of the early project deliverables from SQA. Included in the timeline will be the expected time to create any software test tools and test procedures (test suites, etc.).

11.6. Ad-Hoc Test(s) Cases

SQA engineering team members may conduct additional tests beyond the direct scope of the verification of the requirements. In such an event, the SQA Ad-Hoc Tests must be used to record the purpose of the test case, as well as the results of the tests (pass or fail).

12. Verification & Validation Process

Software Quality Assurance Mission Statement:

Complete the verification tasks in the shortest time possible…
With the highest possible level of confidence…
Utilizing a well-documented and repeatable process.

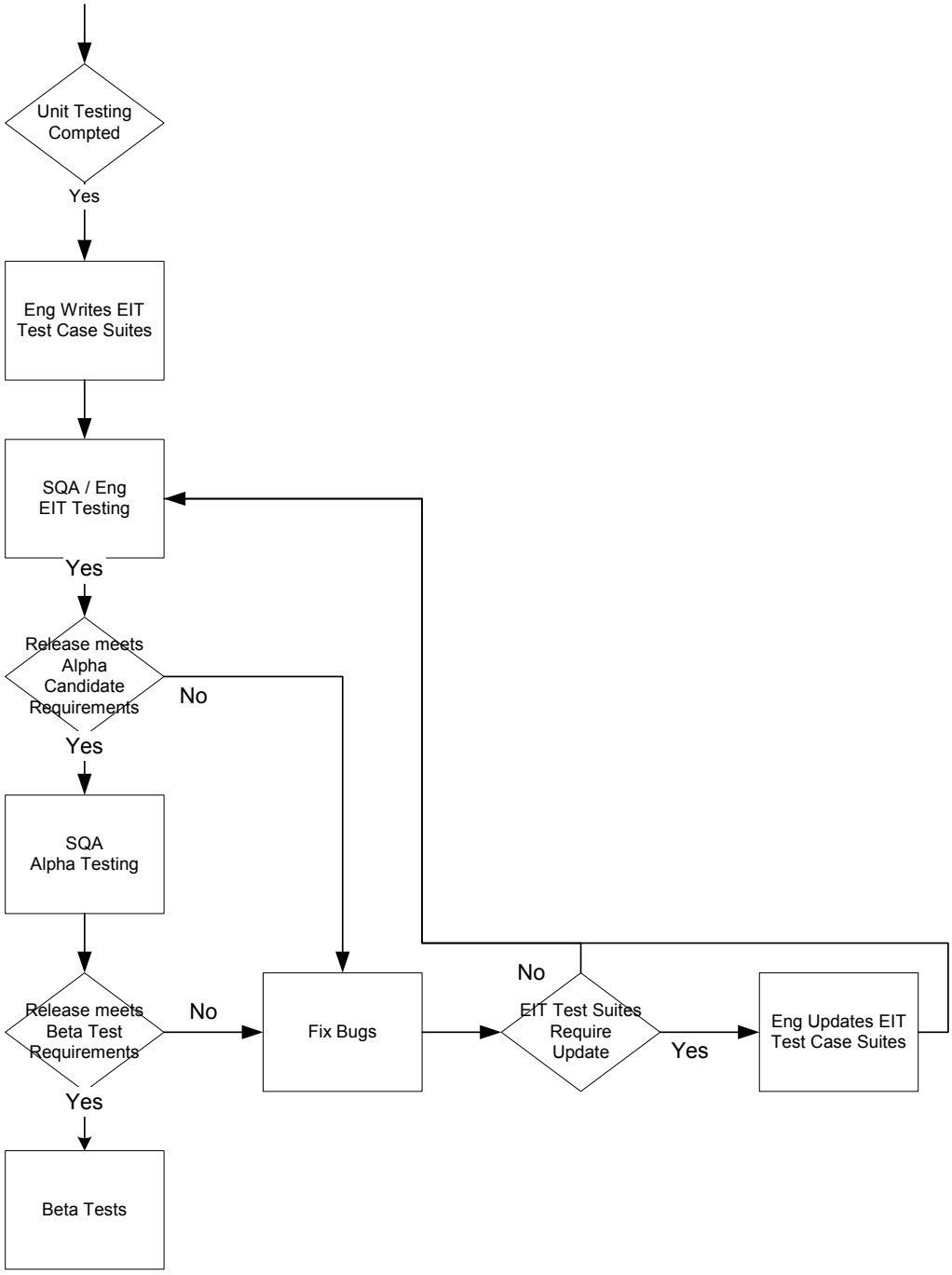
SQA's primary job is **V**erification and **V**alidation (V&V) of < company name >. software products. This is accomplished by conducting an EIT test phase, followed by Alpha test phase and a Final Regression test phase. The actual Verification and Validation process is accomplished by utilizing a mix of Black Box, White Box, and automated testing. Test phases are illustrated in the Test Flow Diagram on the following page.

12.1. SQA Lab

The SQA Lab is maintained as a controlled workspace.

- Access is restricted to authorize personnel only.
- The Lab is strictly maintained as neat uncluttered workspace. All computer systems and test systems are strictly controlled.
- Unauthorized unofficial media of any type is not allowed in the SQA Lab.
- All Work-In-Progress (WIP) test documents must be under the direct control of the tester or stored in the WIP file cabinet. As noted, no redlined test documents are allowed in the Lab, except under the direct control of a tester.
- All test equipment in the Lab must have a Log book associated with it. The equipment also must be clearly labeled with IP address (if required) and device Alias name.
- SQA personnel who have workspace (cubes) opening into the Lab are not allowed personal visitors in the workspace (cubes).

Test Flow Diagram



12.2. EIT Testing

Engineering Integration Testing can begin as soon as Unit testing has been completed for the features to be tested. For this phase of testing, the build does not have to be feature-complete. To assure functional independence the EIT, the Test Master reports to the Vice President of Technology, and is responsible for the EIT Test Plan and EIT Test Case Suites independently from SQA. EIT tests are performed in an Engineering Lab; SQA personnel may assist in the execution of the tests. When the EIT tests are completed, an EIT Test Report is completed and supplied to SQA.

EIT test documentation must follow the same process for version control, document review, and approval as all other SQA documents. All EIT test documentation is posted to the SQA Web site, by project, under an “EIT Documents” heading.

12.3. Pre-Alpha Testing

In parallel with EIT testing, SQA may conduct Pre-Alpha tests. Pre-Alpha testing is an optional, informal test phase.

SQA Policy # 17

During Pre-Alpha testing, issues are noted, and informally communicated to Engineering via a method agreed to between Engineering and SQA. This step is taken to minimize reporting of duplicate issues. For this phase of testing, recording issues in the issue tracking system is at the discretion of the SQA Team leadership. During Pre-Alpha testing, the Test Master will maintain and update, at least daily, the ‘Pre-Alpha Issues project-based spreadsheet (See: Pre-Alpha Issue). The file is to be accessed via the Project Status page on the SQA Team Web site.

12.4. Alpha Testing

Alpha testing starts when a build has passed EIT tests, and has been officially released from Engineering to SQA. For this phase, project specifications should be complete, released, and approved. The SQA Test Plan for the project must also be released and approved.

During the Alpha testing phase, the Test Case Suites are considered to be living documents, and many be changed as needed, following SQA process documentation review and version control. See sections: Document Version Control and Team Document Review.

12.4.1. Alpha Testing – Engineering Release Audit Report

During the full Alpha test cycle, SQA issues an Engineering Release Audit Report for each new release.

Normally, the ERA report is issued within five working days of receipt of the release in SQA. For SQA to issue the ERA report, all components of the release must be installed and configured. Once the components are installed and configured, SQA runs its suite of acceptance tests on all components of the release. The Test Team – in conjunction with members of the leadership team – may, at their discretion, require additional testing to issue the final ERA report. In that event, a preliminary report will be issued.

SQA Policy # 18

Alpha test is a formal – but preliminary to final verification – phase of the overall V&V process. All issues found by SQA in this phase of testing are to be recorded in the issue tracking system.

SQA Policy # 19

All test-generated documents are kept in the 'WIP' file cabinet until the given testing cycle is completed. The WIP file is reviewed at the end of each test cycle. Pending the test phase, a sample of the WIP file is kept as part of the project files.

SQA Policy # 20

Test Case Suite execution continues, as planned, until all Test Case Suites are executed at least once. At the discretion of the SQA test team and team leadership, tests may be executed across iterative releases that correct known issues. The issue (or issues) corrected by the iterative release must be verified by SQA.

SQA Policy # 21

For the product under test to be verified by SQA as being a candidate for the final verification phase of testing (Beta Test), it must meet these criteria:

No Severity High or Showstopper issues.
No Severity Medium issues, unless deferred by the <Group Name> committee.
All issues found, and not deferred, have been verified as fixed.
The application is feature complete.
The pre-planned SQA Test Case Suites were executed on a stable Alpha Build.
Test Case Suites have been submitted for approval and release.

SQA Policy # 22

Near the end the Alpha test phase, SQA will call <bug group Name> committee review of all unclosed issues for the project (see Bug Tracking). After the <Group Name> committee review confirms that there are no outstanding issues that preclude the start of Final Regression Testing, SQA will issue its Project Final Regression Candidate Certificate using the SQA Beta Test Candidate form.

12.5. Beta Testing

SQA beta testing starts after the product has passed Alpha-testing phase.

SQA Policy # 23

For the software, release to be considered a Final Regression Test candidate by SQA, All SQA Test Case Suites and related test documents must be released and approved. The software under test must have also passed Alpha testing.

SQA Policy # 24

During Beta testing, no changes to the software or the Test Case Suites are allowed. In addition, a full Beta test cycle must be completed without any new issues being discovered. The only exception to this are Low Severity issues, on approval of the <bug group Name> committee. (See SQA00006.)

SQA Policy # 25

When the Beta Test phase is completed, SQA generates the Beta Test Report using the Beta Test report template. The test report is a formal part of the Verification and Validation process and must be approved by the project team, according to the < company name>, document review and approval process.

12.6. Golden Master Verification

After a project has passed SQA Final Regression tests and has completed Field Beta tests, SQA verifies the Golden Master media. The media for the Gold Master may take the form of removable hard disk drive, a CD, or both. See the SQA Procedure for Golden Master Disk verification, or the SQA Procedure for Golden Master CD verification.

In the case of a Golden Master CD, SQA will create a Master CD for Manufacturing, using the SQA CD Label form for Manufacturing Master.

12.7. SQA Process Post-Mortem

The Process Post-Mortem report is generated each time there is a deficiency in an SQA process. The report is created using the Post-Mortem form.

The SQA Process Post-Mortem Report is a document internal to SQA; the document is only published to the SQA project Web site. The Process Post-Mortem Report documents the process deficiency, the SQA team meeting to review and recommend corrections to the process deficiency, and corrective actions taken to correct the deficiency.

The team meeting to review the make recommendations on the corrective action, if any, is conducted by the SQA Manger or the Technical Lead. The process deficiency is reviewed, not the persons that may have been responsible for, or involved with, the deficiency.

12.8. SQA Final Report

The Final Test Report is generated after Final Regression testing is completed. The report is created using the Final Test Report form.

The Final Test Report is a document internal to SQA; the document is only published to the SQA project Web site. The Final Test Report is a review of all phases of the project, and includes a post-mortem of the process written by SQA test team members. The report is reviewed by the full SQA Team; if the team deems it necessary, changes are made to the testing process to correct any deficiencies documented in the final report.

12.9. SQA Process Verification Report

The Process Verification Report is generated each time a new or revised SQA process requires formal Verification. The report is created using the Process Verification form.

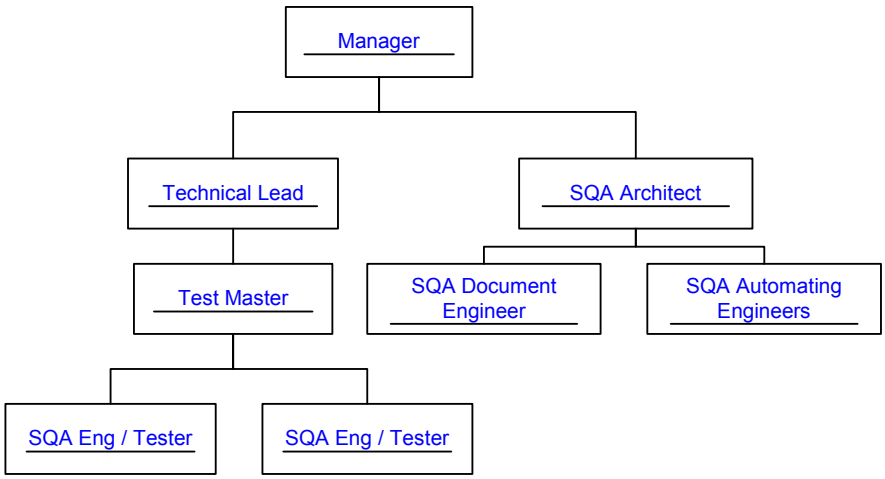
12.10. SQA Test Code Review

As part of the software validation & verification process, SQA will create custom software tools. Under the direction of the SQA Architect, each software tool created by SQA must go through a Code Review which is conducted by automation engineers. The outcome of the code review is recorded in the Code Review Report.

13. SQA Team

The SQA Team consists of mix of Testers and test developers. The SQA team's high-level organization is shown in the following diagram.

SQA High Level Organization Diagram



13.1. SQA Team Meetings

The full SQA Team meeting is generally held each week on Fridays. Normally, after the full team, the SQA Team Leads meet.

13.2. SQA Team Leadership

The SQA Leadership Team is made up of the following team members:

- SQA Manager
- SQA Technical Lead
- SQA Architect

13.3. SQA Team Leads

The SQA Leads Team is made up of the following team members:

- SQA Manager
- SQA Technical Lead
- SQA Architect
- SQA Test Masters

13.4. SQA Architect

The SQA Architect is responsible for the overall design, creation, and implementation of Test Automation tools and Test Case Suites

The responsibilities for the SQA Architect include (but are not limited to):

- Creation and validation of automated test tools, as needed, for each project.
- Creation of (but not limited to): Test Plan, Test Case Suites and Project Test Matrix documentation for each project.
- Primary technical liaison with development and engineering groups.
- Working with Technical Lead, assuring project documentation meets SQA quality standards.
- Assuring that the functional requirements of each project are met.
- Working with SQA Technical Lead to maintain Issue tracking system.
- Advising the SQA Manager on technical and process issues.
- Submitting a weekly status report via the SQA Team Status Report Form.

13.5. SQA Technical Lead

The overall testing process is coordinated by the Technical Lead.

The responsibilities for the Technical Lead include (but are not limited to):

- Prioritization of work assignments for test teams.
- Auditing Test Masters for adherence to SQA quality SQA Policy.
- Primary test process liaison with development and engineering groups.
- Assures all SQA logs and records are up-to-date (see 16.4).
- Maintaining SQA equipment inventory (where used, and status).
    - Assures defective equipment process is followed (see 15.1).
- Reviews and approves new SQA team issues recorded in the issue tracking system.
- The moderator (see Bug Tracking) and default SQA representative at <bug group Name> committee meetings.
- Working with SQA Architect to maintain Issue tracking system.
- Assists the SQA Manager on technical and process issues.
- Assists with the maintenance of the SQA Team Web site.
    - Assures active project status is updated daily (see 16.11)
    - Assures team and < bug group name > meeting notes are posted regularly to the SQA Web site.
- Submitting a weekly status report via the SQA Team Status Report Form.

13.6. SQA Documentation Engineer

The SQA Documentation Engineer is responsible for the overall project documentation process.

The responsibilities for the SQA Documentation Engineer include (but are not limited to):

- Owner of Project Test Matrix document for each project.
- Administrator of the Issue tracking system.
- Normally author of project Test Plans.
- Submitting a weekly status report via the SQA Team Status Report Form.

13.7. SQA Automation Engineer

The SQA Automation Engineer is responsible for the creation of test automation tools used by SQA.

The responsibilities for the SQA Automation Engineer include (but are not limited to):

- Creation of test tools, as needed, under the direction of the SQA Architect.
- Submitting a weekly status report via the SQA Team Status Report Form.

13.8. Test Master

Each project in SQA is assigned a Test Master. If more than one shift is required, there will be a Test Master assigned for each shift assigned to the project.

The responsibilities for the Test Master include (but are not limited to):

- Assignment of Test Case Suites for execution by the team.
- **W**ork **I**n **P**rocess (WIP) project documents.
- Auditing completed Test Case Suites for adherence to SQA quality SQA Policy.
- Daily Status Reports (at a minimum) to the SQA Team leadership, via email.
- Auditing issue reports submitted by Team members for adherence to SQA quality SQA Policy.
- Assuring that Test Team members follow formal SQA processes.
- Monitoring visitor access to SQA, assuring that each visitor has authorization.
- Assuring equipment logs are kept updated.
- Optional SQA Test Team representative at <bug group Name> committee meetings (see Bug Tracking).
- Submitting a weekly status report via the SQA Team Status Report Form.

13.9. SQA Engineer / Tester

Normally, each project in SQA is assigned two SQA Engineers / Testers.

The responsibilities for each SQA Engineer / Tester include (but are not limited to):

- Work assignments as set by team Test Master.
- Adherence to formal SQA processes and procedures.
- Active participation in the continuous quality improvement process.
- Actively supporting their fellow team members to reduce retesting by following good testing practices which include:
    - Reserving their machines for any long-term testing, or when the machine is unsupervised, with the Testing In-Progress Sign (the form should be completed online, printed out, and attached to test system whenever test system is unmanned). See: Test In-Progress Form.
    - Timely reporting possible issues with test hardware to the Test Master.
- Submit weekly status report via the SQA Team Status Report Form.

14. Non-project Special Testing

In some cases, the software provided to SQA for validation and verification is not part of a specific project, or may be a mini-project unto itself. As a service-based organization, the SQA team will endeavor to meet its customer's needs, even for unscheduled "Special Projects."

14.1. Special Project Request Form

All Special Project requests come to SQA via a Microsoft FrontPage form, Project Request. SQA Team leadership reviews the request, and the requesting party is notified with the timeframe as to when SQA will be able to perform the special tests. In order for the Special Project to be completed with a short turnaround, the project must be based on a project already completed – or in process of completion – by SQA. A project request never before seen by SQA will require the creation of new test documentation and will, therefore, require additional time.

Once the Special Project is completed, a Special Test Report is completed by SQA and supplied to the requesting party. A copy of the report is kept for SQA records, and the report is made available from the SQA Team Web site.

14.2. Investigational Report

During the normal course of software validation & verification, issues discovered by the test team may require additional investigation. SQA – whenever possible – will attempt to identify the root cause of the issue, and possibly suggest ways to correct the issue. Based on the type and severity of the issue, SQA will – at its discretion – issue an Investigational Report using the Investigational Report form.

15. Test Hardware

During testing, SQA shall endeavor to maintain the computer systems on which tests are conducted in a state of sameness throughout the full testing cycle. SQA software validation and verification depends on a given hardware platform, although the platform is not considered to be part of what is tested.

SQA Policy # 26

All network-based software test platforms used within SQA are assigned an Alias. A logbook is kept with each system while it is in use by SQA. **SQA STAFF MUST DOCUMENT ANY CHANGES** to the system in the logbook. Log entries will include the name and functional title of person or persons who made the change, and why the change(s) were made.

SQA Policy # 27

Logbooks are kept as part of the 'Lab Record.' When equipment is retired, or the logbook is full, the logbooks will be saved.

15.1. Test Hardware Tracking

All computer systems and hardware platforms within SQA are tracked via Excel spreadsheet maintained by SQA Team leadership on the SQA Web site.

All hardware platforms used by SQA must be labeled with their Alias and, where applicable, their IP address.

Any new hardware brought into the lab will be tagged with the Hold for New Equipment Processing form.

Any hardware platforms not in actively use are tagged with the Surplus Equipment form.

Any hardware determined to be defective must be tagged with Defective Hardware form, and SQA Team leadership must be notified.

Any hardware determined to be in need of service must be tagged with the Awaiting Service form.

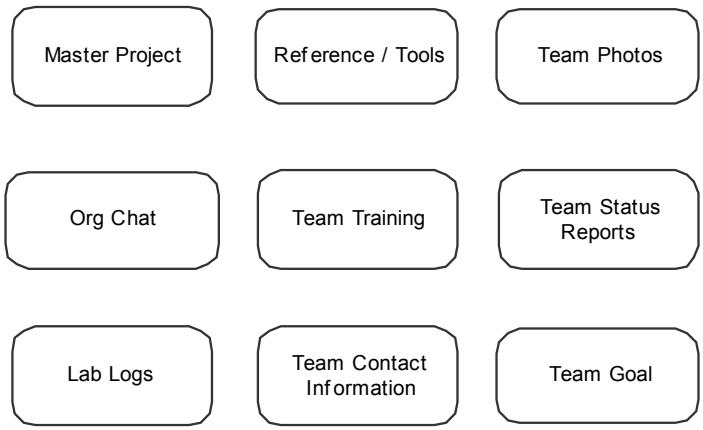
16. SQA Team Web Site

Software Quality Assurance maintains, on the corporate intranet, a Web site for the SQA Team. The Web site is accessible by all persons who have access to < company name > intranet; the URL is <http://>. The site's Webmasters are Bill Gunkel (the SQA Team Manager) and Cecilia Mateus (the SQA Technical Lead).

All SQA procedures and project documentation are linked and maintained from the Web site, with documents posted to the Web site assumed to be most current. Therefore, unless a document is copied from the Web site, it is not considered to be the current version.

Diagram 2 depicts the 'reference' links available on the SQA Web site. Each link is described in the following sections:

Diagram 2



16.1. Web Site Backup

< company name > IT group regularly back up all network systems, including the SQA Team Web Site. Additionally, SQA creates a copy of the Web site and saves it to CD monthly. The CDs are labeled using the SQA CD Label Internal Backup Form, and stored in the CD archive media file cabinet.

16.2. Master Project Link

The Master Project link gives visitors and SQA Team members access to the SQA Master Project Timeline. The Project source file is linked from the SQA Team Web site (accessing it requires MS Project 2000), and PDF versions of the Timeline and Gantt charts are linked to from the Web site. The project timeline is updated weekly, generally by 10:00 AM each Monday.

All SQA projects, tasks, and resources are tracked and scheduled via the Master Project.

16.3. Team Status Reports Link

Weekly Team Status reports are posted on the SQA Team Web site, generally by 10:00 AM each Tuesday. Each team member submits a Status Report via an online form (Status Report Form) by COB on Friday. The SQA Team Manager then copies each SQA Team member's status report into a Team Status Report template. The overall status is summarized, and links are supplied to the summary and to each individual's status report.

Team members are expected to submit their reports with a summary of completed tasks (What I did this week), tasks planned for the next week (What I plan to do next week) and Issues or problems (Issues I had This Week). The 'Issues I had This Week' section is where the team member documents problems that impacted his or her ability to complete assigned tasks. Each SQA Team member should expect to spend up to an hour completing the Status Report.

16.4. Lab Logs Link

The SQA Team uses the various logs to track multiple issues within SQA. Each team member has privileges to update the logs, as needed. The logs are stored in two folders in the SQA Department network folder: SQA Logs and SQA Logs\MasterFiles. Changes are made to the log file in the MasterFiles folder, then the files in the SQA Logs folder are updated. The log files in the SQA Logs folder are linked to the SQA Team Web site.

Release Log

SQA uses the Release Log to track software installed in the SQA Lab environment.

SQA Policy # 28

All releases received from Engineering are labeled with CD label, the release date version etc are also entered into the Release Log. Any software issued by SQA for non-SQA testing is labeled SQA CD Eng Tst Label, and also entered into the Release Log.

Unusual Event Log

SQA uses the Unusual Event Log to track 'unusual events' seen within SQA lab. One of the primary functions of the log is to record power outages or brown outs.

SQA Policy # 29

Any time an unusual event occurs in the SQA lab, that event is to be recorded in the Unusual Event Log.

Guest Log

The Guest Log is used to track any non-SQA staff visiting for more the 15 minutes or making use of SQA resources. Use of one of the SQA Lab scanners to run films would be recorded in the Guest Log. Guests must be authorized, and, when requesting SQA resources, must have entered a Special Project request that has been approved by the SQA Leadership team.

SQA Policy # 30

Non-SQA personnel are not allowed in the SQA Lab without a SQA Team member being present and monitoring the guest. SQA Team Leadership must pre-approve use of any SQA resources.

Media Library

All media used within SQA are recorded in the media log. The log file lists media for Releases, tools, images, and any other recorded media used by SQA.

16.5. SQA Equipment Log

The SQA equipment log is the Master List of all equipment in the SQA Lab. The log is used for inventory control and tracking of ALL equipment within the SQA lab. The log file is under version control and maintained by SQA Team leadership

SQA Team members are required to notify SQA Team leadership of ANY changes in status of equipment within the SQA lab. NO equipment may be removed from, or brought into, the lab with out approval of the SQA Team Leadership.

16.6. Ghosting

SQA uses Symantec's Norton Ghost to restore and copy software images.

SQA Policy # 31

Any time a ghosting operation is performed, it is entered in the equipment log book (See Rule SQA Policy # 26).

16.7. Reference / Tools Link

The Reference / Tools link gives the user access to a page of general reference information used by SQA. Included on this page are links to documents prepared by SQA Team members, as well as documents from outside SQA. Also included on the page are links to Tips & Tricks, and a list of passwords needed for testing (controlled access).

16.8. Verification Reports Link

The Verification Reports link gives the user access to all Verification Reports completed by SQA. Included on the page are links to the following types of reports:

Link	Description
Final Regression Candidate Certificate	Project Final Regression Candidate Certificate.
Final Regression Test	Final Regression test reports for all projects.
Final Tests	Final test reports for all projects.
Engineering Release Audit	New release to SQA Audit report
Special Reports	Special test reports for all projects.
Investigational Reports	Detailed reports on given issues written by senior SQA staff.
Process Verification Report	New SQA process validation reports
Process Post-Mortem Report	SQA Process deficiency report & Corrective actions
Ad-Hoc Reports	Ad-Hoc test reports for all projects. Includes completed reports, and Ad-Hoc Test Suites to perform.

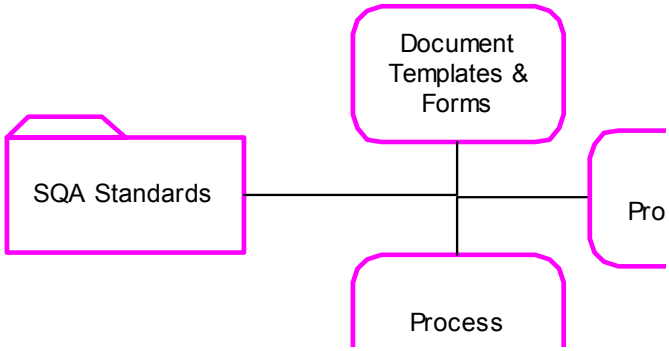
16.9. Team Training Link

The Team Training link provides access to lists of training sessions conducted for SQA Team members.

16.10. SQA Standards Link

The SQA Standards section of the SQA Team Web Site is where the user may access all SQA process and procedures standards, including this document and all other SQA process and procedures; it also includes document templates and forms. Diagram 3 provides a view of links on the SQA Standards page.

Diagram 3



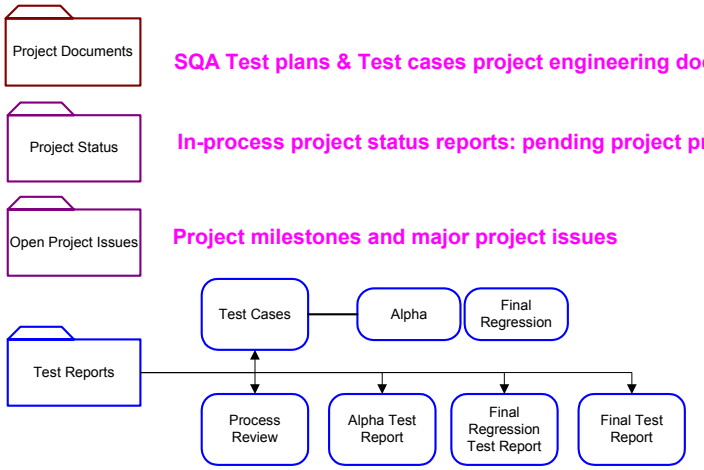
16.11. Projects Link

The Project section of the SQA Team Web site allows the user access to project-based SQA documents. Diagram 4 provides a reference view of links on the Project page.

SQA Policy # 32

Active projects are denoted by a rotating arrow. While the project is active, the In-Process status is updated daily, and is the primary area for publishing project status.

Diagram 4



17. Issue Reporting

Any member of the SQA Team may open a new record in the issue (bug) tracking system. The SQA Procedure Project Issue Reporting Standard (SQA00004), details the SQA standard for project issue reporting. .

SQA Policy # 33

SQA's primary job is to find, document, and report issues, providing as much detail as possible in the report. SQA Team members are expected to analyze each issue reported, or to include in the report why the team was unable to supply details as to how, what, and why the issue occurred.

SQA Policy # 34

SQA Team Members WILL NOT contact Engineering directly to discuss newly discovered issues without approval of the SQA team leadership. Any discussions with engineering about the issue can only be made after the engineering contact person has been notified and with the approval of the Test Master.

SQA Policy # 35

SQA Team members are required to report the issue in the issue tracking system – following the guidelines in the Project Issue Reporting Standard – during Alpha and Final Regression testing phases.

SQA Policy # 36

After the issue is recorded, e-mail notification **must** be sent to the SQA Tech Lead, and the SQA Architect (or their designated substitute). If the issue has a severity of Showstopper, a member of the SQA leadership team **must** be contacted directly. If no one on the leadership team can be reached directly, a voicemail is to be left for each member of the leadership team, as well as contact made via the secondary method listed on the SQA Team Web site.

The engineering contact person is to be notified of the issue by the SQA Test Master or the SQA Tech Lead. The notification must include an e-mail message in addition to any other methods of contact (e.g. voicemail, etc.)

18. Test Execution & Traceability

All SQA test documents are stored digitally, and are accessed via the SQA Team Web site, by project. The SQA Procedure Test Case Suite Execution & Test Traceability Procedure (SQA00005) defines how Test Case Suite forms are completed, and how test traceability is maintained.

19. Test Case Suite Creation

The Test Case Suites are created in MS Word form format. The SQA Test Case Suite Creation Standard details how to create a Test Case Suite (SQA00003).

20. Index

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