



Federal Aviation
Administration

NATIONAL SIMULATOR PROGRAM

Simulator Quality Management System (SQMS)

Basic Program Guide

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Revision History

Rev	REVISION HISTORY Description of Change	Effective Date
1	Original Issuance	04/09/2007
2	Modification	08/09/2007
3	Modification/Clarification	02/12/2008
4	Modification/Clarification and Additions concerning: Discrepancy Prioritization System; Internal/On-Site Assessment; “Discrepancies with Non-Qualified Tasks”; SQMS Final Approval/Acceptance Date; Appendix C: “Assessment Scope”	12/18/2008
5	Notes; Minor formatting; Check Box re-work; Removal of FSTD Designee reference;	02/24/2009
6	Section A and “Final/EEl” Program Application	07/13/2009
7	Section A 2.a. Terminology/Definitions	10/08/2009
8	Section A and Appendix A and B Application document modification/clarification	02/9/2010
9	Modified to reflect updated program guidelines	09/9/2011
10	Modified to reflect updated program guidelines	10/20/2019

Glossary of Terms

Management Representative (MR) - The person assigned by the Sponsor to fulfill duties prescribed in §60.9.

Process - An orderly system of activities that specifies how resources are used to implement policies by transforming required input(s) into desired/required output(s), structured with enough detail to allow users to effectively complete the function in a manner that consistently ensures accomplishment of the desired/required output (repeatability).

Procedure – A work instruction or specific way to complete an activity, structured with enough detail to allow users to effectively complete tasks in a manner that consistently ensures the desired output in a repeatable way.

Process Map – A planning tool that visually describes the flow of work and provides insight into a process. It is a series of events that produce an end result.

Policy - A statement of purpose or course of action.

Simulation Quality Management System (SQMS) - A collection of policies, processes, and work instructions employed by the Sponsor with the purpose of improving FSTD consistency with respect to meeting qualification requirements for credible flight crewmember training, evaluation, and experience. SQMS and QMS convey the same meaning throughout this document and other associated FAA-originated SQMS/QMS-related documents, including Part 60. SQMS Manual and QMS Manual (see Appendix E to Part 60 Table E.1: E.1.1) also convey the same meaning throughout this document and other National Simulator Program (NSP)-originated SQMS/QMS documents, including Part 60.

SQMS Purpose

A Simulation Quality Management System is a set of coordinated activities to direct and control a sponsor's organization with respect to providing a satisfactory FSTD for use on a regular basis as described in QPS appendix E of 14 CFR Part 60. The primary focus of an SQMS is in defining and documenting the processes, procedures, and responsibilities, which will result in the consistent production of quality products and services. In this case, Flight Simulation Training Devices (FSTDs) that meet qualification requirements for credible flight crewmember training, evaluation, and flight experience.

SQMS Program Development

The Simulation Quality Management program defines the objectives to which the organization strives. Appendix E to 14 CFR Part 60 outlines the Qualification Performance Standards (QPS) for the QMS for FSTDs that must be met for program approval. When developing a program that meets the QPS requirements, a process map may be helpful in defining how the processes are used and sequenced to fulfill the QPS requirements. The process map could also identify who is responsible for what activities and actions. It generates process improvement actions, and most importantly, documents the process to be followed within the QMS Manual.

SQMS Manual Development

The SQMS Manual should be a complete, concise, and practical working guidebook that compliments and enhances the overall operation. The manual is a dynamic document, which has a revisable format with adequate document control and revision history. It should be easy for employees to understand and follow, and adequately define the Sponsor's method of executing day-to-day SQMS policies, processes, and procedures.

The policies, processes, and procedures describe the actions taken by the sponsor to meet the requirements of 14 CFR Part 60. In developing a Quality Program Manual, it is not satisfactory to merely state that the sponsor will meet or implement a requirement, but the process steps should outline the actions involved to measure and monitor performance, the action steps involved in improving the process, and the steps to achieve the desired outcome.

SQMS Format and Structure

The SQMS requirements represent the basic essential elements that a quality system shall embody. 14 CFR Part 60 does not mandate a specific format for Simulator Quality Management programs however the program must contain a sponsor's policy, process or procedure employed to achieve compliance with each Appendix E requirement. The sponsor is allowed to determine, develop, build, and implement specific procedures tailored to their operations and device.

Senior management should oversee the development of the SQMS to ensure the regulatory requirements of Part 60 along with the needs of the organization, and the needs of its customers are the driving forces behind process development.

The SQMS procedures manual can have different formats and structures but should include the following elements when outlining the quality process: (A sample program is available at the NSP website).

1. Title of the process, policy, or procedure
2. Purpose – State the rationale behind the procedure, goals, objectives, regulatory requirements
3. Scope – Explain what aspects will be covered in the procedure.
4. Description of Activities – This is the main section of the procedure and describes what should be done.
 - Define the required inputs
 - Specify who is responsible for Primary Control / Process Ownership
 - What resources are required (people, equipment, etc)
 - What is to be done
 - When is it to be done
 - Where is it to be done (if applicable)
 - How is it to be done
 - Define the validation method and what action results if the output does satisfy the objective
 - Define any sequencing, interaction, or connection with other processes
5. Specify what records will be created and maintained to show evidence of achieving the objective/goal.
6. Document control – Used to identify changes, date of review, approval and version
7. Appendices – Include if needed

Feedback and Process Improvement

Measuring and monitoring performance is conducted through continuous feedback and regular internal program and process audits. The dynamic conditions of the FSTD industry requires the need for feedback regarding continuous performance improvement, organizational evolution, and process refinement. The SQMS process must include an internal audit process to measure its effectiveness. An objective, verifiable audit protocol and checklist should be developed to determine conformance with standards along with a continuous search for increased effectiveness, efficiency, and innovation. The results can assist in identifying trends, establishing new performance benchmarks, and streamline procedures.

Considerations for Multiple Site and Location

If the Sponsor operates multiple sites, either within the same geographic space or different locations (i.e. different cities, states, countries), multiple SQMS programs are allowable. However, it is highly recommended that a single Master SQMS program be created that covers all operations. Local differences may be documented and outlined if applicable. If multiple programs are created, or a master program with “differences”, the sponsor must document and make known to the NSP which FSTD(s) or specific centers are covered by each SQMS program.

Submission of the SQMS and NSP Approval Process

The general requirements guide and checklist for new sponsors is available on the NSP website and outlines the application process for approval of the SQMS and initial evaluation of the FSTD. The sponsor's Management Representative will be the focal point for interaction with the NSP.

SQMS Initial Desk Assessment

Upon receipt of the Sponsor's SQMS application and program material, NSP will initiate an Initial (Desk) Assessment to review the documents for completeness and conformity and ensure that it meets all requirements of Appendix E Table E.1.

At the completion of the desk assessment, the NSP will notify the Sponsor regarding acceptability of the SQMS program including any required adjustments and needed resubmittals as indicated on the desk assessment report, or by other written or verbal notification.

Once the SQMS program manual has received a satisfactory review and is deemed in compliance with 14 CFR Part 60, the NSP will issue an Initial Approval letter with instructions and timelines for the required on-site assessment.

SQMS On-Site Assessment

The SQMS on-site assessment is scheduled no later than 6 months following the Initial Approval Letter and conducted to determine the implementation and effectiveness of the sponsor's quality management system. Simulator time is not generally required for this review, but access to simulator records is essential.

Prior to the on-site visit, the NSP will send a Simulator Quality Management System On-Site Assessment Plan to the Sponsor. This plan will outline the on-site assessment process to be followed while on-site, required documents and records, and an agenda for the review.

An assessment report will be reviewed in detail with the Sponsor at the closing meeting along with the recommendation and any required sponsor actions regarding program adjustments. A Final Approval letter will be issued if the SQMS program is deemed compliant.