



SAFETY MANAGEMENT SYSTEM (SMS) IMPLEMENTATION GUIDE

For:

**Safety Management System (SMS) Pilot Project
Participants and Voluntary Implementation of Service
provider SMS Programs**

**Federal Aviation Administration
Flight Standards Service - SMS Program Office**

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GUIDANCE FOR SMS PILOT PROJECT (SMS PP) AND VOLUNTARY SMS IMPLEMENTATION ACTIVITIES

1. PURPOSE.

a. This SMS Implementation Guide:

(1) Contains guidance, expectations and procedures necessary to implement a Safety Management System (SMS) by aviation service providers (air operators, aviation maintenance organizations, flight training organizations, etc.).

(2) Provides a three-level recognition system to acknowledge service provider participation in the SMS PP and associated development of their SMS in relation to FAA expectations and international standards.

b. This implementation guide is not mandatory and does not constitute a regulation.

Development and implementation of an SMS is, therefore, voluntary. While the Federal Aviation Administration (FAA) encourages each service provider to develop and implement an SMS, these systems in no way substitute for regulatory compliance or with other certificate requirements, where applicable.

2. OBJECTIVE. The overall objective of this implementation guide is to assist a service provider in developing and implementing an integrated, comprehensive Safety Management System for their entire organization. Specifically, it will help ensure that a service provider's SMS will be capable of:

a. Receiving safety input from internal and external sources and integrating that information into their operational processes;

b. Establishing and improving organizational safety policy to the highest level;

c. Identifying, analyzing, assessing, controlling and mitigating safety hazards;

d. Measuring, assuring and improving safety management at the highest level;

e. Promoting an improved safety culture throughout their entire organization; and

f. Realizing a return on SMS investment through improved efficiency and reduced operational risk.

The implementation guide will also assist FAA Certificate Management Teams (CMTs) in evaluating organizations' SMS programs and participating in further development of implementation and oversight strategies.

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Note: Within the context of this document, the term “FAA Certificate Management Team” or just plain CMT, refers to any FAA oversight organization, such as an Air Transportation Oversight System Certificate Management Team (ATOS CMT), Certificate Management Office (CMO), Certificate Holding District Office (CHDO), Flight Standards District Office (FSDO) and any other designation that includes FAA Principal Inspectors.

3. APPLICABILITY. This implementation guide is designed for application by both certificated and non-certificated aviation service providers that desire to develop and implement an SMS. An SMS is not currently required for U.S. certificate holders; however, the FAA views the expectations in the FAA *SMS Framework* to be the minimum characteristics (expectations) for a robust and therefore recognizable SMS, as developed by service providers. This implementation guide is based on the *SMS Framework*.

Note: Within the context of this document, the term aviation service provider refers to any organization providing aviation services. The term includes certificated and non-certificated aviation organizations, aviation service providers, air carriers, airlines, maintenance repair organizations, air taxi operators, single pilot operators, corporate flight departments, repair stations, pilot schools, approved training organizations that are exposed to safety risks during the provision of their services and organizations responsible for type design and/or manufacture of aircraft. The term *aviation service provider* is interchangeable with the term *organization* and *service provider* within this document.

4. REFERENCES. The following references are recommended reading material for users of this implementation guide in development and implementation of an SMS.

- a. Annex 6 to the Convention on International Civil Aviation, *Operation of Aircraft*
- b. International Civil Aviation Organization (ICAO) Document 9859, *ICAO Safety Management Manual (SMM)*
- c. ICAO Document 9734, *Safety Oversight Manual*
- d. FAA Order 8000.369, *Safety Management System Guidance*
- e. FAA Order VS 8000.367, *Aviation Safety (AVS) Safety Management System Requirements*
- f. FAA Order 8000.368, *Flight Standards Service Oversight*
- g. *SMS Framework*, FAA, AFS SMS Program Office *Safety Management System Framework*
- h. *SMS Assurance Guide*, FAA, AFS SMS Program Office *Safety Management System Assurance Guide*
- i. *SMS Guidebook for Developing a Safety Management System for Air Operators* (Currently in development)

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5. GUIDANCE DOCUMENTS AND TOOLS.

a. FAA Guidance. The FAA continues to consider and review a formal SMS rulemaking effort corresponding to changes made in ICAO Annex 6 as well as the FAA’s own internal *System Safety* objectives. The FAA Associate Administrator for Safety issued Order VS 8000.1, *Safety Management System Doctrine*, in 2006 (Recently replaced by Order 8000.369, *Safety Management System Guidance*). These documents provide a high-level description for SMS implementation across the National Airspace System.

b. AVS Guidance. FAA Order VS 8000.367, *Aviation Safety (AVS) Safety Management System Requirements* was issued in 2008. At Appendix B, *Product/Service Provider SMS Requirements* outlines the minimum set of requirements that must be established for constituent service providers to implement a Safety Management System. At present, however, SMS implementation by service providers remains voluntary in the United States.

c. SMS Program Office Guidance. Advisory Circular (AC) 120-92 has been the “standard” for voluntary SMS implementation since 2006. The SMS Program Office (SMS PO) has revised AC 120-92 (AC 120-92A), to bring it in alignment with the current ICAO *SMS Framework*, to conform to FAA Order VS 8000.367, and to incorporate improvements based on feedback from users.

NOTE: In the interim, the SMS PO has issued a *SMS Framework* document, *SMS Assurance Guide* and this *SMS Implementation Guide*, to serve as guidance until AC 120-92A, is released.

(1) SMS Framework. The SMS PO has developed an *SMS Framework* document; it is the current “standard” for voluntary implementation of SMS by service providers. It is similar in scope and format to the international ISO standards and is modeled after the safety, quality, and environmental management standards developed by a variety of organizations such as ISO, the British Standards Institute, Transport Canada, Standards Australia, and the International Air Transportation Association (IATA). The *SMS Framework* also incorporates the current requirements of Annex 6, of the conventions of the International Civil Aviation Organization (ICAO), the current requirements of FAA Order VS 8000.367, Appendix B, and is closely aligned with the current ICAO *SMS Framework*. There are only minor functional differences between the *SMS Framework* and Appendix 1 of AC 120-92; however layout, numbering and formatting have been significantly improved for ease of use.

(2) SMS Assurance Guide. The SMS Program Office has developed an *SMS Assurance Guide* as an assessment tool for service providers and CMTs. The *SMS Assurance Guide* represents each functional expectation found in the *SMS Framework* in the form of a question and is intended to be used during the development and implementation of an SMS by an organization or by the FAA CMT for oversight guidance. The *SMS Assurance Guide* is based entirely on the *SMS Framework*. Compliance with the *SMS Assurance Guide* will insure compliance with the *SMS Framework*. If differences in interpretation occur, the *SMS Framework* will prevail.

(3) SMS Implementation Guide. In 2007, the SMS PO published SMS implementation guidelines in Draft AC XX-X, *Voluntary Implementation of Safety Management Systems (SMS)*, and later issued a separate *Interim Guidance for Voluntary SMS*

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Implementation Level One Activities document. Feedback and communication from early SMS implementer's indicated a need for additional clarity in SMS implementation expectations. In 2009, the SMS PO issued this *SMS Implementation Guide*, which **supersedes both previous documents**. This *SMS Implementation Guide* contains guidance, expectations and procedures necessary to implement an SMS.

NOTE: Until AC 120-92A is released (expected Jul/Aug, 2010), the *SMS Framework*, *SMS Assurance Guide* and this *SMS Implementation Guide* should serve as guidance for SMS objectives, expectations and implementation procedures for SMS PP participants and others desiring voluntary implementation of SMS.

(4) Gap Analysis Processes and Tools. An initial step in developing an SMS is for the service provider to analyze and assess its existing programs, systems, processes, and activities with respect to the SMS functional expectations found in the *SMS Framework*. This process is called a “gap analysis”; the “gaps” being those elements in the *SMS Framework* that are not already being performed by the service provider. Two types of gap analysis processes are preformed:

(a.) The “Preliminary Gap Analysis” process, performed onsite with the assistance of the Implementation Support Team (IST, described below), the service provider's management and the FAA CMT (consisting of principal inspectors and other inspectors involved with certificate oversight). The preliminary gap analysis represents an “executive overview”, a high level subjective analysis of where the service provider stands with respect to the *SMS Framework*.

(b.) The “Detailed Gap Analysis” process is a much more in-depth process and is performed by the service provider (with the involvement of the company's FAA CMT). It is a comprehensive and thorough assessment of each program, process and control of the organization as compared to the objectives and expectations of the *SMS Framework*. Depending upon the size and complexity of the organization, the detailed gap analysis may take 4 to 6 months to complete. The detailed gap analysis is a “living” process and will be continuously updated as SMS implementation progresses.

NOTE: Both the preliminary and detailed gap analysis processes cover all areas of company operations and all elements of the *SMS Framework*.

d. Assessment Tools. During early 2009, industry user feedback indicated considerable difficulty in completing the gap analysis with the original Safety Attribute Inspection (SAI) design assessment tools. For this reason, a new set of Preliminary and Detailed Gap Analysis Tools has been completed to serve in the interim while the SAI design assessment tools are revised. The purpose of these interim tools is to convey the expectations of the *SMS Framework* in a user-friendly format; as such they are spreadsheets that contain the same questions found in the *SMS Assurance Guide*. The *SMS Assurance Guide* is based on the *SMS Framework* and the 6 system attributes developed for the Air Transportation Oversight System (ATOS) and are now part of ICAO recommended practices. Additional room for the inclusion of source document references and progress/status by company divisions is provided in these tools. The titles of company divisions at the top of the gap analysis tools may be customized to fit the individual structural of the service provider.

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If conflicts between the language in the gap analysis tools and the *SMS Framework* are found, the language in the *SMS Framework* should prevail. The key objective of the gap analysis is to determine whether or not existing programs or processes in the company meet the expectations delineated in the *SMS Framework*, so this objective should be kept in mind throughout the gap analysis and planning process.

6. SMS PILOT PROJECT (SMS PP). In 2007, the FAA initiated the SMSPP for service providers desiring to voluntarily develop SMS programs. SMS PP studies are conducted to track and evaluate multiple data-point results, as well as to provide service providers with a means of developing and implementing their SMS under FAA mentorship.

a. Specific objectives of the SMS PP include developing realistic solutions for:

- (1) What is a realistic timeline for a phased implementation of an SMS?
- (2) What are the easiest SMS expectations to implement?
- (3) What are the most challenging SMS expectations to implement?
- (4) What guidance is critical as opposed to just being helpful?
- (5) What are the pros & cons of implementing an SMS in a particular operational department first, vs. implementing across an entire company's operational sphere simultaneously?

b. Not Rule Making. It is important to note that the SMS PP effort focuses on three areas; 1) implementation strategies; 2) oversight interfaces; and 3) to gain experience for both the FAA and service providers, but **NOT to develop Federal Aviation Regulations (FARs) or rules**. There is an on-going rule-making project, separate from the Pilot Project, which is considering SMS regulatory requirements. While Pilot Project objectives do not include the **development** of regulations, they certainly solicit and encourage feedback, input, best practices and lessons learned from both an Industry perspective, as well as from a regulator perspective, which will be considered and possibly incorporated into future guidance material.

c. SMS Focus Group. Originally formed by the FAA in 2003, the Safety Management System Focus Group (SMSFG) was developed after Joint Project Development Organization (JPDO) development of an "SMS Template" for SMS Standards. The SMSFG was reconstituted in 2007, as a consortium of aviation industry and FAA representatives, who meet periodically to provide two-way communication between the SMS PO and participants in SMS PP, and others involved in voluntary SMS implementation. The SMSFG also provides a unique forum for knowledge sharing among participants. The SMSFG meets twice a year and is hosted by the SMS PO.

d. SMS PP Participants. Service providers of varying types, size and complexity are working with the FAA in voluntary SMS Implementation Pilot Projects. As of May 2010, more than 90, FAR Part 121, FAR Part 135 Operators, Part 141/142 organizations and Part 145 Repair Stations are participating at various levels and phases of voluntary SMS implementation. The service provider organizations, SMS Implementation Support Team (IST) and the respective certificate oversight organizations (CHDO, FSDO, CMT, CMO, etc), are involved throughout the entire SMS implementation process.

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7. ROLES, RESPONSIBILITIES, AND RELATIONSHIPS. Participation in SMS development is completely voluntary and may be terminated at any time by the service provider or the FAA. SMS PP participants will benefit by being early adopters of an SMS should implementation of the international requirement be mandated through future Federal Aviation Regulations.

a. Flight Standards SMS Program Office (SMS PO). FAA Order FS 1100.1A (dated 9/28/08) Flight Standards Service Organizational Handbook identifies the responsibilities of the SMS PO.

(1) The SMS PO provides policy and guidance on Flight Standards internally and externally oriented SMS requirements and interfaces, provides support to the AFS Director, Deputy Director, and Executive Steering Committee in execution of the AFS SMS doctrine, provides direction, guidance, and coordination with headquarters and field divisions in development of SMS policies, procedures and work instructions, and is responsible for SMS standardization and development of training requirements.

(2) Specific functions and responsibilities of the SMS PO include:

- (a.) Focal point for AFS in future SMS-related rulemaking and policy development efforts;
- (b.) Oversight and evaluation of SMS collaborative projects;
- (c.) Standardization of concepts, functional requirements, and terminology across AFS managed and sponsored SMS programs, initiatives, and contracted activities;
- (d.) Development and maintenance of SMS policy and guidance documentation;
- (e.) Development of AFS SMS training requirements and mentorship of SMS related FAA Academy training;
- (f.) Development of measures of safety performance and effectiveness for both internal and external SMS;
- (g.) Development and maintenance of SMS data collection and auditing tools;
- (h.) Development and use of standardized outreach, familiarization, and orientation materials for SMS; and
- (i.) Coordination and management of an AFS SMS Implementation Support Team (IST) to assist field organizations and service providers in development and implementation of voluntary and mandatory external SMS programs.

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b. Aviation Service Provider Organizations. The *SMS Framework* provides guidance for an service provider to develop and document its SMS on a voluntary basis. A separate SMS manual is not required, however many service providers find a separate manual useful. The SMS may be documented in a form and manner that best serves the service providers need, however, any modifications of existing FAA approved/accepted programs and their associated documents must be coordinated with the appropriate FAA oversight organization. Safety policies developed by service providers' top management will be clearly communicated throughout the entire organization. Safety Risk Management (SRM) and Safety Assurance (SA) programs will be developed and maintained. Safety Promotion (SP) activities will take place to instill or reinforce a positive safety culture throughout the organization.

c. Implementation Support Team (IST). Formed and managed by the SMS PO, the SMS IST is comprised of selected SMS PO personnel, FAA Regional Representatives, AFS 900 Field Support Team Members, FAASTeam Members, FAA Headquarters and field personnel. The purpose of the IST is to provide assistance, as requested, to the service provider and its oversight organization throughout the SMS development period. This assistance will be limited to guidance related to the development and implementation of the SMS, and may include briefings, orientation sessions, meetings and/or seminars, as required. SMS IST members will **not** be involved in oversight of the service provider and will **not** perform inspections, audits or evaluations of the service provider.

(1) Specifically, the Implementation Support Team **will**:

- (a.) Provide assistance, as requested, to the service provider and its oversight organization throughout the Pilot Project period;
- (b.) Participate in meetings with the service provider and its oversight organization, if requested;
- (c.) Review the service provider's implementation plan and other documents and provide objective input;
- (d.) Discuss the requirements of exit criteria for all maturity phases of SMS implementation with the service provider and its oversight organization;
- (e.) Receive pilot project inputs from both the service provider and oversight organization; and
- (f.) Report on summarized data gathered from the pilot project.

d. Oversight Organization. The FAA office (CMO, CMT, CHDO, FSDO, etc.) that normally provides regulatory safety oversight of the service provider will be referred to as the "oversight organization" or the CMT and will continue all of its normal oversight and certificate management duties. As organizations develop their SMS, a natural interaction between the safety management efforts of the oversight organization and those of the service provider will develop. This relationship can leverage the efforts of both parties to provide a more effective, efficient, and proactive approach to meeting safety requirements while at the same time increasing the flexibility of the service provider to tailor their safety management efforts to their individual business models.

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(1) In order to fully understand the service provider’s approach to SMS, it is important for the oversight organization to be fully engaged during SMS development and implementation. Collaboration with the service provider’s SMS development will also provide the oversight organization with an opportunity to gain experience in oversight of the SMS, as well as using SMS as a tool for interfacing with the service provider’s management.

Note: An aviation service provider will not be accepted into the SMS Pilot Project without participation of their respective FAA oversight organization.

(2) The oversight organization will be responsible for participating in the development process meetings and gap analysis’s including the Initial Workshop (described in Appendix 1) meeting and the presentation of an implementation plan by the service provider. The oversight organization will also be responsible for reviewing the service provider’s implementation plan and its accomplishment at each maturity level of the SMS implementation.

(3) Specifically, the oversight organization/CMT is responsible to:

- (a.) Oversee and review gap analysis processes;
- (b.) Attend and participate in Orientation, Calibration and Validation meetings with the service provider and IST;
- (c.) Review the service provider’s implementation plan and other documents;
- (d.) Discuss the requirements of the exit criteria for all phases with the service provider’s and the IST; and
- (e.) Provide input and feedback to the IST regarding SMS implementation, documents and assessment tools.

Note: Neither FAA oversight organizations (CMT, FSDO, etc) nor the SMS PO are currently authorized to approve or accept SMS programs. This includes acceptance of any part, process or element of an SMS though inclusion in FAA approved/accepted documents such as operator/agency manuals (e.g. GOM, GMM, etc.). FAA Notice 8900.SMS will address this issue when it is published (expected Jul/Aug, 2010).

8. LIMITATIONS. The SMS in no way substitutes for regulatory compliance with any certificate requirements, where applicable. There are no new regulatory programs introduced.

a. Aviation Safety Action Program (ASAP) and Internal Evaluation Programs (IEP). The FAA is seeking to increase the use of current voluntary programs in the process of safety management, particularly use of the ASAPs and IEPs. Both of these programs have strong relationships to the functions of safety assurance and safety promotion in an SMS. Service providers are encouraged to consider integrating these programs, through existing processes, into a comprehensive approach to SMS.

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b. Enforcement Incentives. Service providers and their employees should be aware that, at present, the SMS and/or participation in the SMS PP and/or voluntary SMS development can not provide enforcement “incentives” that are outside provisions of existing FAA programs (e.g. ASAP, VDRP, ASRS). Additionally, it should be noted that certain aspects of the final SMS rule, if and when issued, may differ from those used in the voluntary implementation program. It is however, the objective of the Flight Standards Service to maintain the voluntary implementation and oversight processes in such a manner as to facilitate the smoothest transition from voluntary to required SMS programs, should they be required by regulations in the future.

9. SMS IMPLEMENTATION STRATEGY.

a. Phased Implementation. Initial SMS implementation strategy follows a four phased process similar to that outlined in the ICAO Safety Management Manual (SMM). ICAO, as well as other governments that are in the process of implementing SMS requirements favor a phased implementation process. The SMS implementation guidance presented in this document closely parallels the ICAO recommended phased implementation process outlined in ICAO Document 9859. The phases of implementation are arranged in four levels of implementation “maturity”, similar to that developed as the Capability Maturity Model (CMM) by the Software Engineering Institute of Carnegie-Mellon University. This technique is employed by the U.K. Health and Safety Executive (HSE – equivalent to U.S. OSHA) as a safety culture maturity model.

Note: The FAA’s approach to a phased implementation of a SMS is based upon, but slightly different than the ICAO implementation strategy expressed in ICAO Document 9859, Safety Management Manual (SMM), Chapter 10, Appendixes 1 and 2 (Gantt Charts).

(1) In the development and implementation of a SMS it is best to break down the overall complexity of the task into smaller, more manageable subcomponents. In this way, overwhelming and sometimes confusing complexity, and its underlying workload, may be turned into simpler and more transparent subsets of activities that only require minor increases in workloads and resources. This partial allocation of resources may be more commensurate with the requirements of each activity as well as the resources available to the service provider.

(2) The reasons that justify why a phased approach to SMS implementation is recommended can be expressed as; (a) providing a manageable series of steps to follow in implementing an SMS, including allocation of resources; and (b) effectively managing the workload associated with SMS implementation. (c) a third reason, quite distinct from the previous two, but equally important, is avoiding “cosmetic compliance”. A service provider should set as its objective the realistic implementation of a comprehensive and effective SMS, not the tokens of it. You simply cannot “buy” an SMS system or manual and expect the benefits of a fully implemented SMS.

(3) Feedback from Pilot Project participants has shown that while full SMS implementation will certainly take longer, the robustness of the resulting SMS will be enhanced and early benefits realized as each implementation phase is completed. In this way, simpler safety management processes are established and benefits realized before moving on to processes of greater complexity. This is especially true with regard to Safety Risk Management (SRM). In the reactive phase (Level 2), a service provider will build an SRM

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system around known hazards which are already identified. This allows company resources to be focused on developing risk analysis, assessment and control processes (that frequently resolve old long term issues and hazards) unencumbered by the complexities necessary at the proactive (Level 3) and predictive phases (Level 4).

(4) In summary, guidance for a phased implementation of SMS aims at:

- (a.) Providing a manageable series of steps to follow in implementing an SMS, including allocation of resources,
- (b.) Effectively managing the workload associated with SMS implementation,
- (c.) Pre-empting a “box checking” exercise, and
- (d.) Realization of safety management benefits and return on investment during an SMS implementation project.

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10. IMPLEMENTATION LEVELS. The overall objective of the levels is to “...develop and implement an integrated, comprehensive SMS for [the] entire organization.”

Figure 1 illustrates the levels of SMS development and implementation.

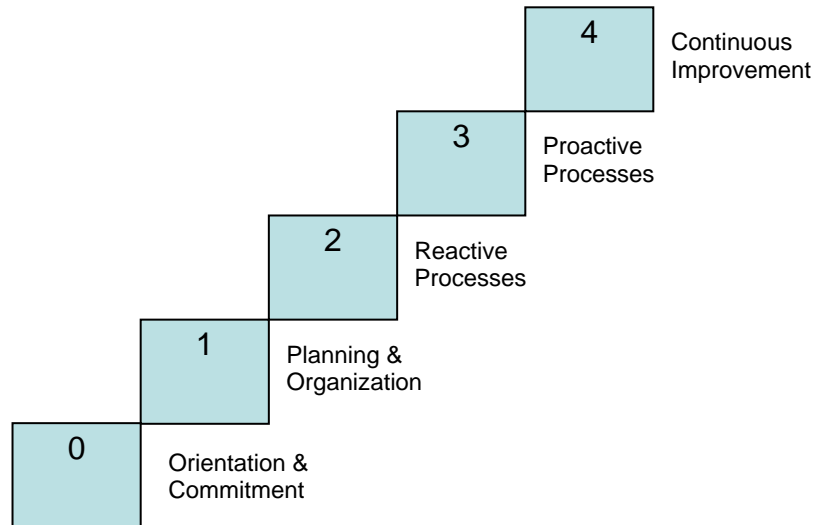


Figure 1. SMS Implementation Levels

a. Implementation Level Zero: Orientation & Commitment. Level zero is not so much a level as a status. It indicates that the service provider has not started formal SMS development or implementation and includes the time period between a service provider’s first request for information from the FAA on SMS implementation and when the service provider’s top management commits to implementing an SMS.

(1) Level zero is a time for the service provider to gather information, evaluate corporate goals and objectives and determine the viability of committing resources to an SMS implementation effort. Information requested from the FAA may be satisfied with emailed documents and/or reference material and/or referrals to Internet web sites (www.faa.gov/about/initiatives/sms) where information/documents/tools may be downloaded.

(2) Face-to face informational meetings between the individual service provider, responsible FAA CMT and the SMS PO are not normally conducted at level zero; however they may be conducted on a case-by-case basis depending upon FAA SMS PO resource availability and other circumstances.

(3) In lieu of individual meetings, activities such as group outreach presentations and group seminars will be conducted in order to establish relationships and define SMS PP expectations for service provider’s top management and oversight organizations.

b. Implementation Level One: Planning and Organization. Level 1 begins when a service provider’s top management commits to providing the resources necessary for full implementation of SMS through out the organization.

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(1) Gap Analysis. The first step in developing an SMS is for the service provider to analyze its existing programs, systems, and activities with respect to the SMS functional expectations found in the *SMS Framework*. This analysis is a process and is called a “gap analysis,” the “gaps” being those elements in the *SMS Framework* that are not already being performed by the service provider.

- (a.) The Gap Analyses process should consider and encompass the entire organization (e.g., functions, processes, organizational departments, etc.) to be covered by the SMS. As a minimum, the gap analysis and SMS should cover all of the expectations of the *SMS Framework*, Component 1.0 b (1) (a) or (b), as appropriate.
- (b.) The gap analysis should be continuously be updated as the service provider progresses through the SMS implementation process. A detailed discussion and a set of tools are available in Appendixes 1, 5 and 6, to assist the service provider in conducting both the preliminary and detailed gap analysis process activities.

(2) Implementation Plan. Once the gap analysis has been performed, an implementation plan is prepared. The implementation plan is simply a “road map” describing how the service provider intends to close the existing gaps by meeting the objectives and expectations in the *SMS Framework*.

- (a.) While no actual development activities are expected during level one, beyond those listed in the *SMS Framework*, Elements 1.1, 1.2 (partial), 1.3 and 4.1.1 (partial), the service provider organizes resources, assigns responsibilities, sets schedules and defines objectives necessary to address all gaps identified.
- (b.) It should be noted that at each level of implementation, top management’s approval of the implementation plan must include allocation of necessary resources IAW element 1.2 b (2).

c. Implementation Level Two: Reactive Process, Basic Risk Management. At level two, the service provider develops and implements a basic SRM process and plan, organize and prepare the organization for further SMS development. Information acquisition, processing, and analysis functions are implemented and a tracking system for risk control and corrective actions are established. At this phase, the service provider corrects known deficiencies in safety management practices and operational processes and develops an awareness of hazards and responds with appropriate systematic application of preventative or corrective actions. This allows the service provider to react to unwanted events and problems as they occur and develop appropriate remedial action. For this reason, this level is termed “reactive.” This will include complying with the expectations in Appendix 2. While this is not the final objective of an SMS, it is an important step in the evolution of safety management capabilities.

d. Implementation Level Three: Proactive Processes, Looking Ahead. (Fully-Functioning SMS) Component 2.0 b (2) (a), of the *SMS Framework* expects SRM to be applied to initial design of systems, processes, organizations, and products, development of operational procedures, and planned

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changes to operational processes. The activities involved in the SRM process involve careful analysis of systems and tasks involved; identification of potential hazards in these functions, and development of risk controls. The risk management process developed at level two is used to analyze, document, and track these activities. Because the service provider is now using the processes to look ahead, this level is termed “proactive.” At this level, however, these proactive processes have been implemented but their performance has not yet been proven.

e. Implementation Level Four: Continuous Improvement, Continued Assurance. The final level of SMS maturity is the continuous improvement level. Processes have been in place and their performance and effectiveness have been verified. The complete SA process, including continuous monitoring and the remaining features of the other SRM and SA processes are functioning. A major objective of a successful SMS is to attain and maintain this continuous improvement status for the life of the organization.

NOTE: Figure 2 shows a graphical representation of development flow throughout SMS Implementation. (Full implementation expectations are in Appendixes 1 thru 4.)

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SMS Development Chart			
Components, Elements and Processes should be completed by the indicated Level of Implementation	Implementation Level		
SMS Framework Expectation	1	2	3
Component 1.0 Safety Policy and Objectives		X	
Element 1.1 Safety Policy	X		
Element 1.2 Mgmt Commitment and Safety Accountabilities	(*1)	X	
Element 1.3 Key Safety Personnel	X		
Element 1.4 Emergency Preparedness and Response		X	
Element 1.5 SMS Documentation and Records		X	
Component 2.0 Safety Risk Management (SRM)		(*3)	X
Element 2.1 Hazard Identification and Analysis		X	
Process 2.1.1 System and Task Analysis			X
Process 2.1.2 Identify Hazards		X	
Element 2.2 Risk Assessment and Control		X	
Process 2.2.1 Analyze Safety Risk		X	
Process 2.2.2 Assess Safety Risk		X	
Process 2.2.3 Control/Mitigate Safety Risk		X	
Component 3.0 Safety Assurance			X
Element 3.1 Safety Performance Monitoring and Measurement		X	
Process 3.1.1 Continuous Monitoring		X	
Process 3.1.2 Internal Audits by Operational Departments		X	
Process 3.1.3 Internal Evaluation		X	
Process 3.1.4 External Auditing of the SMS		X	
Process 3.1.5 Investigation		X	
Process 3.1.6 Employee Reporting and Feedback System		X	
Process 3.1.7 Analysis of Data		X	
Process 3.1.8 System Assessment		X	
Process 3.1.9 Preventive/Corrective Action		X	
Process 3.1.10 Management Review		X	
Element 3.2 Management of Change		(*3)	X
Element 3.3 Continual Improvement		X	
Component 4.0 Safety Promotion			X
Element 4.1 Competencies and Training			X
Process 4.1.1 Personnel Expectations (Competence)	(*2)		X
Process 4.1.2 Training		X	
Element 4.2 Communication and Awareness		X	

(*1) Level 1 - only comply with expectations 1.2 B) 2) & 3)

(*2) Level 1 - only comply with expectation 4.1.1 B) 1)

(*3) Level 2 - Implementation of 2.0 B) 2) a), b) & d) and 3.2, will be limited in level 2 by the lack of the system/task analysis process (process 2.1.1)

Figure 2

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11. ANALYSIS PROCESSES. Guidance and tools have been developed for use in directing and evaluating progress through the SMS implementation process. These tools are based on performance objectives and design expectations developed for each Component, Element and Process of the *SMS Framework*.

- The *SMS Framework* is based upon ICAO and FAA requirements/guidance;
- The *SMS Assurance Guide* is based upon the *SMS Framework*, in question form; and
- The Preliminary and Detailed Gap Analysis Tools are based upon the *SMS Assurance Guide* questions, in a user-friendly format.

a. System Description and Analysis. Prior to performing the preliminary gap analysis process, the IST team will assist the company and their CMT in conducting a System Description and Analysis of the company's operational functions.

(1) System Description and Analysis. Every system contains inherent potential safety vulnerabilities which are characterized in terms of hazards. The boundaries of the system, as per its formal description, must therefore be sufficiently wide to encompass all possible hazards that the system could confront or generate.

(2) Safety Consequences. The potential for loss or degradation of the system will be determined, in part, by the characteristics of the operational environment in which the system will be operated. The description of the environment should therefore, include any factors that could have a significant effect on safety. These factors will vary from one service provider to another. They could include, for example, geographic operational locations, owned vs. leased equipment and facilities, contractor relationships and/or union representation.

(3) Preparatory Briefings. After conducting these briefings the IST team will facilitate the System Description and Analysis activities. At the completion of the System Analysis, the preliminary gap analysis process will be conducted.

b. Preliminary Gap Analysis. The objectives of the preliminary gap analysis process are to:

(1) Service provider Familiarization. Familiarize service provider organization and CMT participants with the process of conducting a gap analysis process;

(2) Company Configuration. Gain a collective awareness of the company's configuration in terms of the allocation of functions to organizational departments of the company;

(3) Company Expectations. Discuss the expectations of the *SMS Framework* ("standard") to develop a common understanding of these expectations in the context of the company and its operations; and

(4) Organizational Operations. Gain a collective awareness of where the service provider's operational functions stand with respect to the "Performance Objectives" of the *SMS Framework*, in the context of the company's unique operations and environment.

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A more detailed discussion of the Preliminary Gap Analysis Tool is in Appendix 1. The Preliminary Gap Analysis Tool is in Appendix 5.

c. Detailed Gap Analysis. As stated earlier, the detailed gap analysis process is a comprehensive, detailed assessment of each element and function of the organization’s systems as compared to the objectives and expectations of the *SMS Framework*. The detailed gap analysis process is performed on a schedule determined by the service provider. Involvement of CMT members during the process is highly encouraged. The detailed gap analysis will be used to fully assess all parts of the *SMS Framework* in comparison to existing programs and processes at the company.

(1) Documentation or “objective evidence” of processes already in place should be recorded during the detailed gap analysis process. Objective evidence may take the form of physical documents, manual references, training material, records, interviews, observations, correspondence (email, memo, etc.), organizational charts, meeting minutes, etc. The Detailed Gap Analysis Tool may be used to record objective evidence by modifying the columns along the top to suit the service provider; however the company may elect their own method of recording.

(2) Because SMS is currently voluntary, it is important to note that if certain SMS expectations are not met, this is not a “deficiency.” The purpose of the gap analysis is to supplement the development of a comprehensive implementation plan. At the conclusion of the detailed gap analysis, the results should be summarized at the component/element/process level to facilitate more efficient implementation planning.

(3) The detailed gap analysis should be continuously updated as the company progresses through SMS implementation.

(4) The detailed gap analysis process is described in detail in Appendix 1 and the Detailed Gap Analysis Tool, is in Appendix 6.

d. Summary Gap Analysis Tool. The summary gap analysis is not a separate analysis but is a summary of the results of the detailed gap analysis. The same tool that was used for the preliminary gap analysis may be used for the summary gap analysis. During or at the end of the detailed gap analysis activity, the results may be summarized as the summary gap analysis at the component/ element/ process level and this summary may then be used by top management to track SMS implementation.

12. IMPLEMENTATION PLAN. Based on the results of the detailed gap analysis process, an implementation plan is prepared to “fill the gaps”, the “gaps” being those elements in the *SMS Framework* that have not completely met expectations (e.g., are not already being performed) by the service provider. The SMS implementation plan is a realistic strategy for the implementation of an SMS that will meet the service provider’s safety objectives while supporting effective and efficient delivery of services. It describes how the service provider will achieve its corporate safety objectives and how it will meet any new or revised safety requirements, regulatory or otherwise.

a. Scope and Objective of the Plan. The implementation plan need not be complex or excessively detailed, but should provide a basic roadmap to meet the overall objective stated in the *SMS Framework* to, “...develop and implement an integrated, comprehensive SMS for [the] entire organization.”

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(1) The SMS implementation plan, which may consist of more than one document, details the actions to be taken, by whom and within what time-frame. The implementation plan can be created in any format that is useful to the company but should provide at least the following:

- (a.) Component/element/process reference from the *SMS Assurance Guide* or *SMS Framework*;
- (b.) Brief description of the actions to be taken and manual/s affected;
- (c.) Responsible organization and/or individual(s); and
- (d.) Expected completion date.

(2) The implementation plan should also span the entire SMS development process. It should start at preparation and organization, and continue through all levels of maturity. It should be updated as necessary (along with the detailed gap analysis) as the projects progress. At each level, top management's approval of the implementation plan must include allocation of necessary resources IAW element 1.2 b (2).

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13. SMS PARTICIPATION VALIDATION PROGRAM.

a. Scope. It is recognized that complete implementation of an SMS at a larger and more complex organization may take as long as 3 years to ensure that all aspects of the program are in place across all departments of the organization. The intent of this validation program is to allow service providers to implement an SMS in phases, in a standardized manner and to allow validation and acknowledgement at each level of participation.

b. Letters of Acknowledgement. Upon successful completion of each level, the service provider will receive a “Letter of Acknowledgement” attesting to their participation in the SMS Pilot Project (SMS PP) and their associated accomplishments in the development of their SMS. The Letter of Acknowledgement will be signed by the FAA, Director of Flight Standards Service, and will be issued to the service provider as outlined below.

NOTE: Participation in the SMS PP and the issuance of Letters of Acknowledgement do not constitute formal acceptance or approval of individual SMS programs.

c. Levels of Participation. Three levels of participation are specified for this validation program. Each service provider may develop their SMS in a modular fashion across their departments or across the functions of their organizations; however, attainment of the levels shown below are based on a comprehensive system covering all of the systems listed in Component 1.0, b, (1), (a) or (b) of the *SMS Framework*. The overall objective is to develop a comprehensive SMS covering the entire organization.

(1) SMS Level One: Commitment, Planning and Organization. This level will be validated when an service provider demonstrates that they have successfully conducted a thorough preliminary and detailed gap analysis, implemented the processes corresponding to level one of this *SMS Implementation Guide, Appendix 1*, developed a comprehensive implementation plan and presented it to the IST and the CMT. While no actual development activities are expected during this level, beyond those listed in the *SMS Framework*, Elements 1.1, 1.2 (partial), 1.3 and 4.1.1 (partial), the service provider commits resources, assigns responsibilities, sets schedules and defines objectives in their implementation plan necessary to comply with all expectations of the *SMS Framework*.

(2) SMS Level Two: Reactive Process, Basic Risk Management. This level will be validated when a service provider demonstrates that they have successfully implemented the processes corresponding to level two of this *SMS Implementation Guide, Appendix 2*, as determined by the CMT, and assisted by the STAT. At this level, all of the processes of the SMS have been designed and implemented in accordance with the *SMS Framework*; however they are only working in a reactive capacity. Sufficient data has not yet been accumulated at this point to enable proactive analysis.

(3) SMS Level Three: Proactive Processes, Looking Ahead. This level will be validated when an service provider demonstrates that they have successfully implemented the processes corresponding with level three of this *SMS Implementation Guide, Appendix 3*, and that the performance of these processes has been demonstrated in a performance review conducted by the CMT, assisted, as necessary, by members of the STAT. At this level, the service provider is

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considered to have a fully instituted SMS, however due to their relative newness the performance and effectiveness of the SMS processes have not yet been validated for continued system effectiveness.

c. Letter of Acknowledgement Protocol. The protocols for recommendation of a Letter of Acknowledgement, attesting to the service provider’s participation in and the development of an SMS are as follows:

(1) Letter of Recommendation. The assigned IST POC, at completion of a successful Level 1, 2 or 3 Exit Briefing, will forward a letter of recommendation and required documents to the SMS Transition and Assistance Team Lead.

(2) Exit Level Checklist. An Exit Level Expectation Checklist (included as an attachment to Appendixes 1, 2 and 3) will be completed by the IST POC and included with the letter of recommendation. It should be noted that involvement, commitment and endorsement of the exit level checklist by a respective CMT Principal Inspector, Supervisor or the Manager will be required for a successful recommendation. In addition, specific documentation that should accompany letters of recommendations and checklist for each level is shown below:

Level	Documents Required
1	Exit Level 1 Checklist with all expectations completed (initialed) plus: <ul style="list-style-type: none"> • Management Commitment Letter; • Safety Policy; • Comprehensive SMS implementation plan (Summary) for the entire organization through SMS Implementation Level 4; and • SMS Training Plan for all employees.
2	Exit Level 2 Checklist with all expectations completed (initialed) plus: <ul style="list-style-type: none"> • Objective evidence that SRM processes and procedures have been applied to at least one existing hazard and that the mitigation process has been initiated; • Updated comprehensive SMS implementation plan (Summary) for all elements to take the organization through Level 4; and • Updated SMS Training Plan for all employees.
3	Exit Level 3 Checklist with all expectations completed (initialed) plus: <ul style="list-style-type: none"> • Objective evidence that SRM processes and procedures have been applied to all Component 2.0 b (2) (a), (b) & (d), operating processes; • Objective evidence that SRM processes and procedures have been applied to at least one existing hazard and that the mitigation process has been initiated; • Updated comprehensive SMS implementation plan (Summary) for all elements; and

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- | |
|--|
| <ul style="list-style-type: none">• Updated SMS Training Plan for all employees. |
|--|

(3) Recommendation Package and Endorsement. The IST Lead will forward the POC's recommendation package, along with appropriate endorsement, to the Manager, SMS Program Office, for review and concurrence.

(4) Recommendation Package Progression. The Manager, SMS Program Office will forward successful recommendation packages and an unsigned Letter of Acknowledgement to the Director, Flight Standards Service for approval and signature. Unsuccessful recommendations will be returned to the IST Lead for appropriate action.

(5) Signed Letters of Acknowledgement. These will be forwarded by the Manager, SMS Program Office to the respective service provider management representative and CMT Manager.

d. Sample Letter of Acknowledgement. An example Letter of Acknowledgement is at Appendix 9.

14. SMS IMPLEMENTATION PROCESSES. The SMS implementation process is based on meeting the expectations of the *SMS Framework*. Specific implementation details and guidance for each level of implementation maturity are contained in Appendixes 1 through 4. Additional tools and reference material are in Appendixes 5 thru 9.

- a. APPENDIX 1 - Level 1 Detailed Guidance and Expectations
- b. APPENDIX 2 - Level 2 Detailed Guidance and Expectations
- c. APPENDIX 3 - Level 3 Detailed Guidance and Expectations
- d. APPENDIX 4 - Level 4 Detailed Guidance and Expectations (in final development)
- e. APPENDIX 5 - Preliminary Gap Analysis Tool
- f. APPENDIX 6 - Detailed Gap Analysis Tool
- g. APPENDIX 7 - SMS Assessment Protocol for Manager/Supervisor (to be developed)
- h. APPENDIX 8 – Cross Reference between AC 120-92, App 1 and the FAA SMS Framework
- i. APPENDIX 9 - Example of a Letter of Acknowledgement

Appendix 1

Level 1 Expectations

To:

SAFETY MANAGEMENT SYSTEM (SMS)

IMPLEMENTATION GUIDE

For:

Service provider's participating in the Safety Management System Pilot Project (SMS PP) and for voluntary implementation of Safety Management Systems

Federal Aviation Administration
Flight Standards Service - SMS Program Office

Revision 3
June 1, 2010

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

SMS Implementation Guide

APPENDIX 1

NOTE: Some discussion and guidance from the *SMS Implementation Guide* is reproduced here, so that this Appendix may be used as a stand-alone document.

Implementation Level One: Planning and Organization

Level 1 Objective:

- Complete comprehensive preliminary and detailed gap analyses; and
- Complete a detailed implementation plan.

Level 1 Activities: To plan, organize and prepare the service provider for SMS development. These include:

- Top management commitment to implement SMS, define safety policy and convey safety expectations and objectives to its employees (*SMS Framework* Element 1.1; “Safety Policy”);
- Top management commitment to insure adequate resources are available to implement SMS (in accordance with *SMS Framework* Element 1.2 b (2));
- Designating a management official who will be responsible for SMS development (*SMS Framework* Element 1.3; “Key Safety Personnel”);
- Defining safety-related positions for those who will participate in SMS development and implementation (in accordance with *SMS Framework* Element 1.2 b (3));
- Completing a preliminary and detailed gap analysis on the entire organization for all elements of the *SMS Framework* (*SMS Implementation Guide*, Paragraphs 5, 8 & 9, above);
- Comprehensive SMS Implementation Plan addressing implementation of all design expectations of the *SMS Framework* (outlined in the *SMS Assurance Guide* and listed in the Detailed Gap Analysis Tool) for the entire organization; and
- Identifying safety competencies necessary (In accordance with *SMS Framework* Element 4.1.1 b (1), addressing identified training competency needs in a training plan covering each phase of development.

Level 1 Input: The decision of an service provider’s top management team to commit to voluntary implementation of SMS throughout the organization and participation in the SMS Pilot Project (SMS PP) begins the SMS Level 1 implementation process. Initial contact and coordination with the service provider’s FAA oversight organization, i.e. Certificate Management Team (CMT), Flight Standards District Office (FSDO), etc., and the AFS SMS Program Office (SMS PO) will provide the necessary input of guidance, objectives and expectations for Level 1 Implementation efforts.

References:

- SMS Framework, as revised;

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

- SMS Assurance Guide, as revised; and
- SMS Implementation Guide, as revised.

Level 1 Procedural “Options”:

- **Option 1** is for a service provider that is beginning initial development of an SMS.
- **Option 2** is for a service provider that already has an SMS that meets the requirements of one or more of the levels of implementation.

Level 1 Process Overview: Four groups of level 1 activity:

- **Preparation:** Complete the necessary coordination in preparation for activities;
- **Initial Workshop:** Meet for a two to three-day workshop (FAA Pre-brief and Onsite - Orientation Session, see below) and complete a preliminary gap analysis;
- **Gap Analysis/Implementation Plan:** At the completion of the Initial Workshop, the service provider begins detailed gap analysis and implementation plan activities. During these activities, progress on both the detailed gap analysis and implementation plan should be reviewed with the CMT and IST during one (or several) calibration/review meeting(s) (Calibration Sessions) of one to two days in length; and
- **Presentation/Evaluation of Implementation Plan:** When ready, the service provider will present a comprehensive detailed gap analysis and implementation plan to the CMT and IST during a one-day (Validation Session) meeting for review, consensus and agreement (between all parties) to move on to level 2 or for agreement of maturity level.

Steps 1 through 11 guidance material are the same for Option 1 and Option 2. All steps for both Options are necessary for successful base-lining and standardization of objectives and expectations of the service provider and their oversight organization. Depending upon the background, experience and maturity level of the service provider, some steps may be abbreviated, but none may be omitted. Option 2 procedures will follow below Option 1 procedures and will be enclosed within a text “Box”. An example of Option 2 procedures is shown at Figure 1, below.

<p style="text-align: center;">Example of Option 2 Procedure</p> <p>This is an example of how Option 2 procedures will be displayed starting with Step 12 (on page 42, below). Option 2 Service Providers may ignore Option 1 procedures after step 11, and use the option 2 procedures within the text box.</p>

Figure 1 - Example of Option 2 procedures

System Description and Analysis

Every system contains inherent potential safety vulnerabilities, which are characterized in terms of hazards. The hazard identification process can only identify hazards that come within the scope of the system description. The boundaries of the system, as per its formal description, must therefore be sufficiently wide to encompass reasonably foreseeable, potential hazards that the system could

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

confront or generate. In particular, it is important that the description includes the interfaces both within the system, as well as the interfaces with the larger systems of which the system being analyzed is a part.

The emphasis is on gaining an understanding of how the service provider is structured and identifying factors that may be considerations when doing the gap analysis, who needs to be involved, how the gap analysis process itself will be organized, etc.

A detailed description of the system should include:

- The purpose of the system;
- How the system is used;
- The system's functions (as described in *SMS Framework*, Component 1.0, General Design Expectations);
- How the system's functions are allocated to departments, divisions, or other sub-organizations;
- Functions that are contracted out;
- Lines of authority and responsibility within the company (e.g. as described in a typical organization chart);
- Contracted arrangements for the company to provide services to other organizations (e.g. contract maintenance support to air carriers, code sharing, wet leasing, etc.
- The system's boundaries and the external interfaces;
- Locations of facilities and operations; and
- The environment in which the system will operate.

Additionally, if some parts of the service provider are unionized, there maybe an impact on an employee reporting system.

If contractors are used for major functions, that must be taken into account, especially if multiple organizations/vendors are used for the same function.

Distribution of the service provider's facilities over a large geographic area may have significant impact on organizational interfaces.

Gap Analysis Process

An initial step in development of the SMS is for a service provider to analyze its existing programs, systems, and activities with respect to the SMS functional expectations found in the *SMS Framework*. This analysis process is called a "gap analysis," the "gaps" being those items in the *SMS Framework* that are not already being performed and documented by the service provider.

Two types of gap analysis processes are preformed:

Preliminary Gap Analysis:

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

The first type of analysis is a **Preliminary Gap Analysis** process and is utilized during the Initial Workshop phase (Orientation Session), described later in this document. It provides a high level assessment, or “off the top of the head” judgment by company officials (including discussion with the CMT and IST members) to get an initial indication of where the company stands with respect to the **SMS Framework** expectations.

The preliminary gap analysis also provides an opportunity for discussion, with IST support, of how each element applies to the particular service provider.

The preliminary gap analysis is accomplished at the “Performance Objective” level for each component, element and process contained within the **SMS Framework**.

It is recommended that the Preliminary Gap Analysis Tool (contained in Appendix 5 of this implementation guide) be used to record this activity; however the company may elect to use another tool that captures all of the expected material.

Detailed Gap Analysis:

The second type of analysis is a **Detailed Gap Analysis** process which is a much more in-depth analysis performed by the company (with the involvement of the company’s FAA CMT). It is a detailed look at each expectation of the **SMS Framework** as described in the **SMS Assurance Guide**.

During the detailed gap analysis, it is necessary to fully assess all company organizational and functional areas and all elements contained within the **SMS Framework** in order to develop a comprehensive implementation plan. However, it does not entail actual development of any of the elements during level one beyond those listed in the **SMS Framework**, Elements 1.1, 1.2 (partial), 1.3 and 4.1.1 (partial). The purpose of the detailed gap analysis is to determine what is already in place and to provide a basis for further implementation planning.

For those elements of the **SMS Framework** that are deemed to have been already developed, the company should provide objective evidence of their accomplishment. Objective evidence may take the form of physical or electronic documents, manual references, training material, records, interviews, observations, correspondence (email, memo, etc.), organizational charts, meeting minutes, etc.

The Detailed Gap Analysis Tool in Appendix 6 may be used to summarize the results of the detailed gap analysis and to record objective evidence; however the company may elect their own method of recording.

The Detailed Gap Analysis Tool is a spreadsheet that converts the **SMS Assurance Guide** into simple electronic or printed-paper forms to assist in the analysis of all functional expectations of a SMS. A completed Detailed Gap Analysis Tool will reveal organizational status on all of the components, elements and processes of the **SMS Assurance Guide** and therefore, the **SMS Framework**.

Gap analyses (preliminary & detailed) should cover the entire set of functions, processes, and organizational departments in the service provider to be covered by the SMS. As a minimum, the Gap Analyses should cover all of the operational processes listed in the **SMS Framework**, Component 1.0 b

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

(1) (a) or (b), as appropriate. The Detailed Gap Analyses should be continuously updated as the service provider progresses through the SMS implementation process.

The gap analysis tools (and the *SMS Assurance Guide*) contain references to both the current *SMS Framework* (new “standard”) and the published Appendix 1, AC 120-92 (old “standard”), to assist those service providers who began SMS implementation with the old tools and wish to bridge to the new tools.

The MITRE Corporation, a Federally-Funded Research and Development Corporation (FFRDC) have been contracted to conduct a set of studies and analysis on the SMS development and implementation process. MITRE analysts visit selected voluntary implementation sites to collect data on the gap analysis, planning, and implementation processes. Information collected will be at the discretion of the company.

Implementation Plan

Once the gap analyses have been performed, an implementation plan is prepared. The implementation plan is simply a “road map” of how the service provider intends to narrow the existing gaps to meet the objectives and expectations in the *SMS Framework*. The SMS implementation plan is a definition of the approach the service provider will adopt for managing safety. As such, it becomes a realistic strategy for the implementation of an SMS that will meet the service provider’s safety objectives while supporting effective and efficient delivery of services. It describes how a service provider will achieve its corporate safety objectives and how it will meet any new or revised safety requirements, regulatory or otherwise. Significant items in the plan will normally be included in the service provider business plan.

As stated above, no actual development activities are expected during level one, beyond those listed in the *SMS Framework*, Elements 1.1, 1.2 (partial), 1.3 and 4.1.1 (partial). The implementation plan should cover all elements of the framework across all of the operational processes of the company (e.g. flight operations, ground operations, operational control, maintenance, etc.) for all levels of development (i.e. implementation levels 1-4).

It should be noted that at each level of implementation, top management’s approval of the implementation plan must include allocation of necessary resources IAW element 1.2 b (2).

Depending on the size and complexity of the service provider,, the SMS implementation plan may be developed by one person, or by a planning group with an appropriate experience base. Active, personal participation of all levels of management that are responsible for operational processes will be essential for a successful SMS. For this reason, participation of these managers in the planning process is strongly encouraged.

The service provider’s SMS planning group should meet regularly with top management to assess progress of the implementation plan, and receive resources commensurate with the task at hand.

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

Detailed Procedures: Option 1 (Service providers Initial SMS)

The “Flow Diagram of Level 1 Activities” at Figure 2 outlines detailed guidance for Level 1, Option 1, activities. Each activity in the process is represented as a step that corresponds with the flow diagram box numbers. Option 2 activities will be shown in a “text box” following the Option 1 procedures.

OPTION 1- For an service providers initial SMS

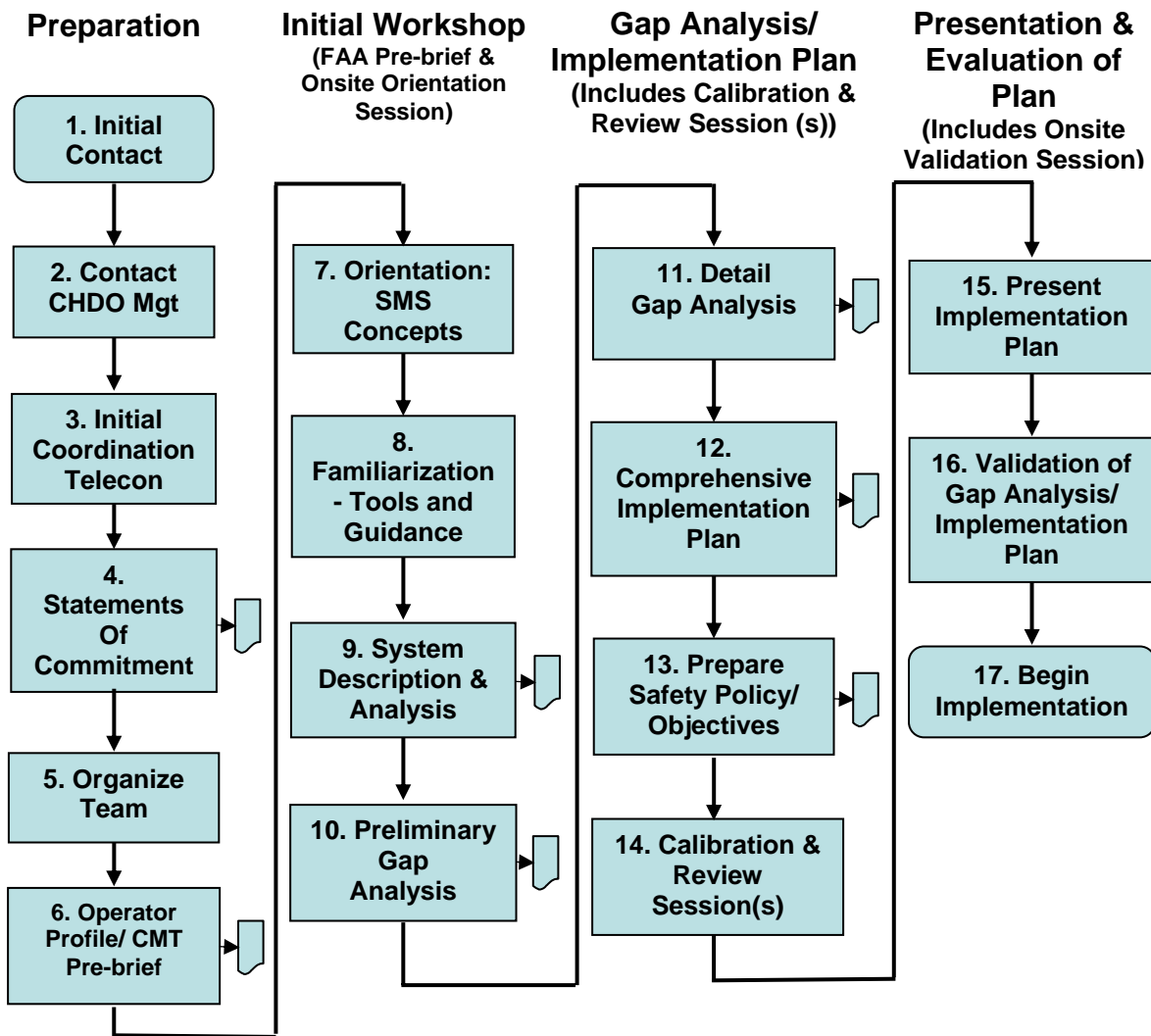


Figure 2 - Flow Diagram of Level 1 Activities (Initial SMS)

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

Option 1 Activities:

Step 1: Initial Contact. Initial communication may come from a service provider to either their FAA CMT (Principal Inspectors) or the FAA SMS Program Office (SMS PO). The receiving FAA representative will complete as much of a SMS Pilot Project Inquiry Information sheet as possible and forward this information to the SMS PO. Depending upon availability of resources, the SMS PO or IST Lead may appoint an IST POC for the service provider (see step 5 below) at this point. It is important for the IST POC to be appointed and involved early in the process. Coordination between the FAA Offices will be conducted internally (see note below). A *SMS Pilot Project Inquiry Information* sheet is in Attachment 1.

Note: From this point on, all communication and activity between the service provider, CMT and the SMS PO will be coordinated and/or shared with the SMS PO Manager, Assistant Manager, National Coordinator (703-661-0565 or 703-656-6332) and IST Lead or as directed by SMS PO internal policy. For the purposes of this document, reference to the SMS PO will imply conformance to the above communication/activity requirement.

Step 2: Contact CMT Management. If the CMT is not already involved, the SMS PO, SMS IST Lead or IST POC will contact the service providers CMT Office Manager and Principal Inspectors (PI's). The CMT Office Manager and the PI's will be familiarized with the SMS implementation process and their specific roles in the process. Commitment of the CMT for time and other resources is required prior to the service provider becoming a SMS Pilot Project participant. A sample "CMT Contact" message is in Attachment 2.

Step 3: Initial Assessment and Coordination Telecon. The SMS PO, IST Lead or IST POC will assess the service provider request and determine a course of action considering needs, resources, experience level and culture between the service provider and CMT. At this stage of the process, communication and information exchange may include telephone conversations, Polycoms, screen sharing, email messages and attachments. No face-to-face meetings are necessary at this juncture; however exceptions will be considered depending upon SMS PO resources available.

An initial coordination telecon between the service provider, CMT, SMS PO and IST may be conducted to facilitate organization of activities, establish tentative schedules and answer service provider/CMT questions. IST Lead will coordinate telecomm time and date.

Step 4: Statements of Commitment. Statements of Commitment must be received from the service provider's top management and the responsible FAA CMT Office Manager. Progress beyond this point will not proceed without **firm** commitments from both organizations. Statements of Commitment may be in the form of a written document, electronic document, email, memo or meeting notes.

NOTE: Since resources will be allocated from both the service provider and the FAA oversight organization during the voluntary Implementation of an SMS, it is necessary that some form of written commitment be obtained from both the service provider and the FAA oversight organization.

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

Step 5: Organize Team. The SMS Program Office or IST Lead will coordinate appointment of an SMS IST Point-of-Contact (POC). The IST POC may be the IST Lead or another member of the IST. The POC will act as a facilitator between the service provider and CMT, assisting them through the SMS implementation process, as well as the point-lead, for all site visits and evaluations. Additionally, the POC will receive assistance in the form of team members from Regional POC's, AFS 900 Field Support Team, FAAS Team, SMS PO and/or other FAA organizations. IST POCs must be a qualified IST member (to include SMS PO initial training) and have observed at least one complete set of Level 1 activities, and conducted at least one set of SMS PP activities under observation of another qualified IST POC. POCs must also be able to participate in regularly scheduled IST calibration seminars in order to assure accuracy and currency of the service provider's SMS implementation.

An "Information Package" on the service provider that includes any dialog or background information the POC might need will be developed by the team. Once the IST for the service provider is formed, the POC will coordinate the first onsite face-to-face meeting with the CMT and service provider (Initial Workshop, Orientation Session).

Step 6: Prepare Service provider Profile.

Service provider Profile: The service providers IST POC will insure all necessary information regarding the service provider is compiled and shared with the CMT and IST members.

Step 7: Orientation: SMS Concepts.

Orientation: IST Pre-brief Visit with CMT. Day 1, Afternoon:

CMT Pre-brief: The POC will arrange with the service providers respective CMT Manager, an onsite CMT Pre-brief. This is a separate briefing prior to the commencement of the Initial Workshop with the service provider, preferably one day prior to the Initial Workshop date.

The objective of the CMT Pre-brief is too:

- Review the SMS "Key Points" Presentation;
- Discuss the Pilot Project program;
- Briefly familiarize CMT with SMS implementation process;
- Review Level 1 expectations (see below);
- Review Initial Workshop agenda;
- Review all SMS documents and tools (*SMS Framework*, *SMS Assurance Guide*, *SMS Implementation Guide* and gap analysis process/tools); and
- Review FAA roles in voluntary implementation projects.

After arrangements for the CMT Pre-brief have been confirmed with the Office Manager, courtesy calls to the Principal Inspectors will be made to answer any questions they might have. If the Manager

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

or Principal's desire an agenda or subjects for discussion significantly different from the above objectives, contact the SMS PO IST Lead for additional guidance.

The CMT Pre-brief will normally take half a day to complete. As a minimum, the Principal Inspectors will attend the Pre-brief. Additionally, the CMT Unit Supervisors and the CMT Office Manager are encouraged to attend. Other members of the CMT may attend as agreed upon by the IST POC and CMT Office Manager.

All CMT questions and concerns should be addressed during the Pre-brief meeting.

Orientation: SMS Concepts. Day 2, Morning: This is the first onsite face-to-face meeting between the service provider, CMT and IST members. The IST will present the standardized *4-hour Introduction to SMS* presentation to both the service provider and CMT Management Team/Principals. The topics within the SMS presentation should be covered in sufficient detail to ensure a level of knowledge and standardization between the service provider and CMT needed to support initial SMS development and evaluation activities.

Step 8: Familiarization: Tools and Guidance. Day 2, Afternoon:

The IST will facilitate an in-depth walk through of the **SMS Framework, SMS Assurance Guide, and SMS Implementation Guide** (including an in-depth review of the Preliminary / Detailed Gap Analysis Tools and processes). The *Level 1 Tools & Guidance* PowerPoint Presentation may be utilized in conjunction with handouts and/or a projected display of the actual tools and guidance material.

Step 9: System Description and Analysis. Day 2, Afternoon or Day 3, Morning:

The purpose of the System Description and Analysis is to gain a collective understanding of how the service provider's operational functions compare with respect to the "Performance Objectives" of the **SMS Framework**. This will assist both the service provider and CMT members with their understanding of SMS expectations in the context of the service provider's unique operations and environment.

Prior to the gap analyses it's beneficial to get an idea of how the service provider is structured. For instance, the gap analyses tools have 7 operational functions listed (for air carriers, Component 1.0 b (1) (a)) but some service providers maybe laid out in more or less divisions. This means that the functions are grouped differently than in the gap analyses tools, but this is information that is needed before starting the preliminary gap analysis.

Much of this information will initially be gathered during Step 6, Prepare Service provider Profile, and from questionnaires, discussion, etc.; however all such information should then be finalized onsite during the Orientation Session.

IST team will assist the service provider and their CMT in preparing a system description and conducting the analysis.

Step 10: Preliminary Gap Analysis. Day 3:

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

Objective: The objective of the preliminary gap analysis is to:

- Familiarize service provider and CMT participants with the process of conducting a gap analysis process.
- Gain a collective awareness of the company’s configuration in terms of the allocation of functions to organizational departments of the company. This will help to organize the subsequent and more in-depth detailed gap analysis and planning activities.
- Discuss the expectations of the *SMS Framework* to develop a common understanding of these expectations in the context of the company and its operations. This may be a combined presentation/discussion format facilitated by the IST.
- Obtain an initial idea of the company’s status across its operational divisions in terms of SMS requirements versus processes and programs already in place.

Input: The preliminary gap analysis process is confined to a high level assessment, based on the judgment of service provider officials and discussion with the CMT and IST members to develop an initial idea of where the service provider stands with respect to the *SMS Framework* expectations. It is a high level “off the top of the head” subjective analysis; a detailed analysis will be completed later, during Step 11, with the detailed gap analysis process.

Procedures: The preliminary gap analysis is accomplished in a group meeting environment and is focused at the “Performance Objective” level for each Component, Element and Process contained within the *SMS Framework*. The Preliminary Gap Analysis Tool is used to facilitate the analysis process and is contained in Appendix 5 of the *SMS Implementation Guide*. IST team will assist the service provider and their CMT in conducting the preliminary gap analysis.

Each SMS Component, Element and Process within the *SMS Framework* will be assessed for matching service provider operational processes. These will be scored using the assessment scale below. For those elements or processes that are deemed to have been already developed, the service provider may provide objective evidence in terms of references to existing documentation, however, it is not necessary to conduct a rigorous document review at this stage of the project.

The Preliminary Gap Analysis Tool may be used to summarize the results of the preliminary gap analysis, including documentation of existing programs, but these results may also be maintained in any manner of the service provider’s choosing.

Output: The completed Preliminary Gap Analysis Tool or other documentation should be maintained for input into the detailed gap analysis process and as a reference for future planning and analysis.

Preliminary Gap Analysis - Assessment Scale. All elements of the preliminary gap analysis will be given a subjective score, as defined in Figure 3, below, based on the judgment of the company’s management. All individual questions receiving less than a score of 1 will be reviewed by the service provider, CMT and the IST for creation of a mutually agreeable solution.

Assessment Rating Scale Word Picture	Assessment Scale Value
This objective of the <i>SMS Framework</i> is not performed.	NP = Not Performed
This objective of the <i>SMS Framework</i> is in place;	PAR = Partial

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

however it does not include all SMS processes.	
This objective of the <i>SMS Framework</i> is in place; and it does include all SMS processes.	COM = Complete

Figure 3 – Preliminary Gap Analysis Assessment Scale

Prior to departing from the Orientation Session, the IST will coordinate a tentative schedule for a Calibration Session meeting. It should also be noted that additional meetings might be desirable (e.g., Safety Assurance Seminar) during the Level 1 process. Flexibility to respond to the needs of the CMT and service provider should be allowed.

Step 11: Detail Gap Analysis.

Objective: The objective of the detailed gap analysis is to:

- Determine what components of a SMS may already be in place; and
- To provide a basis for implementation planning.

Input: During the detailed gap analysis, it is necessary to receive input from all organizational and functional areas of the service provider that will be covered by the SMS in order to determine accurate “gaps” and to facilitate a comprehensive implementation plan. It does not however, require actual development of any of the elements during level one, beyond those listed in the *SMS Framework*, Elements 1.1, 1.2 (partial), 1.3 and 4.1.1 (partial).

Procedure: The detailed gap analysis process is performed by the service provider and is accomplished at the “Design Expectation” level for each Component, Element and Process contained within the *SMS Framework*. It is a detailed analysis of each element of the SMS, as applied to each operational process of the service provider, as compared to the expectations of the *SMS Framework*. It is performed in a manner and on a schedule determined by the service provider. Involvement of CMT members during the process is encouraged. As with the preliminary gap analysis, each SMS Component, Element and Process within the *SMS Framework* will be scored using the assessment scale below.

Documentation or “objective evidence” of processes already in place should be recorded during the detailed gap analysis process. For those elements that are considered already developed, the service provider should provide objective evidence in terms of references to existing manuals or other documentation. Objective evidence may also take the form of training material, records, interviews, observations, correspondence (email, memo, etc.), organizational charts, meeting minutes, etc.

The Detailed Gap Analysis Tool in Appendix 6 may be used to record objective evidence; however the company may elect their own method of recording.

SMS is currently voluntary and therefore any findings that SMS expectations are not met should not be construed as a “deficiency.” Such findings or “gaps” discovered during the detailed gap analysis process are used to develop a comprehensive implementation plan and represent opportunities for future improved safety performance.

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

At the conclusion of the detailed gap analysis, the results should be summarized at the component/element/process level to facilitate more efficient implementation planning. The detailed gap analysis should be continuously updated as the company progresses through SMS implementation.

NOTE: The service provider may require several months to complete a thorough detailed gap analysis. This is an extremely important activity, upon which the development and implementation of the SMS depends. It is, therefore, more important to conduct an in depth and comprehensive job than to meet arbitrary timelines.

Output: The results of the completed detailed gap analysis function as input to the service provider’s implementation plan.

Detailed Gap Analysis - Assessment Scale. All questions on the Detailed Gap Analysis Tool should receive a subjective score, as defined in Figure 4, below. All individual questions receiving less than a score of 1 will be reviewed by the service provider, CMT and the IST for creation of a mutually agreeable solution.

Assessment Level	Assessment Rating Scale Word Picture	Assessment Scale Value
Not Performed	No action has been taken on this expectation of the <i>SMS Framework</i> .	NP
Planned	A plan exists with resources and schedule identified to meet this expectation of the <i>SMS Framework</i> .	PLN
Documented	The expectations of this element/process are incorporated into company documents such as manuals, training material, and work instructions.	DOC
Implemented	Identifiable actions have satisfied this expectation of the <i>SMS Framework</i> . Resources have been allocated to accomplish the objectives of the elements, in accordance with SMS expectations. These actions have been observed in policies, procedures, organizational actions, and employee actions. However, performance need not be demonstrated at this level.	IMP
Demonstrated	This element of the service provider’s SMS has been subjected to at least one round of evaluation/auditing to demonstrate performance and there is evidence these expectations are being performed and are effective. Further, there are no identifiable reasons suggesting that continued sustainment will not occur.	DEM

Figure 4 – Detailed Gap Analysis Assessment Scale

Note: IST and CMT will be available for questions and guidance while the operator is performing their detailed gap analysis.

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

Growth and Maturity: It is recommended that the detailed gap analysis be maintained, along with the implementation plan. It should be updated on a periodic basis as a means of measuring progress as the SMS is implemented.

Summarizing the Detailed Gap Analysis (Summary Gap Analysis): The summary gap analysis is not a separate analysis, nor is it a required process. It is a summary of the results of the detailed gap analysis. The results may be summarized at the performance objective level for each component, element and process and may be used by senior management to track SMS implementation. The same tool that was used for the preliminary gap analysis may be used for the summary gap analysis.

Step 12: Comprehensive Implementation Plan.

Objective: The objective of the implementation plan is to address the gaps noted during the detailed gap analysis by establishing responsibility, assigning tasks/actions and developing a timeline for completion.

Input: Based on the results of the detailed gap analysis, an implementation plan is prepared to describe how the service provider plans to “fill the gaps” between their existing organization and the objectives/expectations of the *SMS Framework*.

Procedures: The implementation plan need not be complex or excessively detailed but should provide a basic roadmap to meet the overall objectives and expectations as stated in the *SMS Framework* to,

“...develop and implement an integrated, comprehensive SMS for [the] entire organization.”

The SMS implementation plan, which may consist of more than one document, details the actions to be taken, by whom and in what timeframe. The implementation plan can be created in any format that is useful to the company but should provide at least the following:

- Component/element/process reference from the *SMS Framework*,
- Brief description of the location of objective evidence indicating that the service provider is meeting the objectives and expectations of each component, element or process;
- Brief description of the actions to be taken to resolve existing gaps and how the actions and processes will be documented;
- Responsible organization and/or individual(s), and
- Expected completion date.

The implementation plan should also span the entire SMS development process through all levels of maturity and should be updated as necessary as the project progresses. At each level, top management's approval of the implementation plan should include allocation of necessary resources IAW element 1.2 b (2).

Output: The completed implementation plan is the guidance for the service provider's organization to complete the transition to a robust SMS through Level 4.

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

Step 13: Prepare Safety Policy/Objectives.

Top management will define the service provider's safety policy and convey the expectations and objectives to its employees. Top management will designate a management official who will be responsible for SMS development. Each of the items in element 1.1 in the SMS Framework should be addressed in the top management policy statement or other company documentation addressed by top management.

Step 14: Calibration and Review Session(s).

During the gap analysis and planning process, additional onsite face-to-face program reviews between the service provider, CMT, and IST may be conducted to review of the progress of the detailed gap analysis process and implementation planning activities. This may include one or more meetings, as necessary. Program calibration and reviews may involve some or all of the following, depending on the status and progress of the project and the objectives of the particular review. Service providers may be asked to:

- Forward their most current detailed gap analysis and implementation plan to their CMT and IST at least 1 week prior to the Session;
- Brief an overview of their detailed gap analysis results;
- Brief gaps found and how they intend to develop processes to close the gaps;
- Present objective evidence of current conformities;
- Brief SMS training accomplished and future training needs;
- Brief an overview of progress on their implementation plan; and
- Discuss any problems and barriers to progress.

The objective is to ensure the processes are performed correctly in scope, depth & detail. These "calibration" or "status checks" can be important parts of the process because they are an opportunity for the IST to assist in SMS implementation course corrections, if needed, provide additional training, if needed, and to gather data and to provide feedback to the service provider/CMT on their planning process.

At the conclusion of the detailed gap analysis, a copy will be provided to the MITRE Corporation for documenting purposes. Additionally, the service provider is requested to present a possible date for exiting Level 1.

NOTE: Program reviews are "in-progress" events and the service provider may require 2 or 3 more months to finalize their gap analysis and implementation plan. Again, it should be noted that additional meetings might be desirable (e.g., Assurance/Validation Seminar) during the Level 1 process. Flexibility during the implementation process should be allowed so the IST can respond to the needs of the CMT and service provider.

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

Step 15: Presentation of Implementation Plan.

During the final face-to-face meeting (Validation Session) between the service provider, CMT and IST, the service provider will present a detailed overview and discussion of their SMS implementation plan. The service provider will forward their most current detailed gap analysis and implementation plan to their CMT and IST at least 1 week prior to the Validation Session.

Step 16: Validation of Gap Analysis/Implementation Plan.

This step involves consensus on the gap analysis and implementation plan among service provider, CMT and IST. Agreement will be required that the service provider has satisfied Level 1, Exit Criteria (see below) and is ready to move to Level 2 of the pilot project.

Level 1 - Exit Expectations:

While no actual development activities are expected during level one, beyond those listed in the *SMS Framework*, Elements 1.1, 1.2 (partial), 1.3 and 4.1.1 (partial), the following items are expected prior to Level 1 exit:

- Objective Evidence of top management’s commitment to implement SMS, define safety policy and convey safety expectations and objectives to its employees (*SMS Framework* Element 1.1; “Safety Policy”);
- Objective Evidence of top management’s commitment to ensure adequate resources are available to implement SMS (in accordance with *SMS Framework* Element 1.2 b (2));
- Designation of a management official who will be responsible for SMS development (*SMS Framework* Element 1.3; “Key Safety Personnel”);
- Definition of safety-related positions for those who will participate in SMS development and implementation (in accordance with *SMS Framework* Element 1.2 b (3));
- Completed preliminary and detailed gap analyses on the entire organization for all elements of the *SMS Framework* (*SMS Implementation Guide*, Appendices 5 & 6);
- Completed comprehensive SMS implementation plan for all elements to take the service provider through Level 4 (*SMS Implementation Guide*, Section 12); and
- Identified safety competencies necessary (in accordance with *SMS Framework* Element 4.1.1,b (1), completed training commensurate with Level 1 implementation phase of maturity for those competencies and a developed training plan for all employees (in accordance with *SMS Framework* Element 4.1.2, b).

Level 1 - Output Documents

- Management Commitment definition;
- Safety Policy;

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

- Comprehensive SMS implementation plan (Summary) for the entire organization through SMS Implementation Level 4; and
- SMS Training Plan for all employees.

A Level 1 exit criteria worksheet is at Attachment 4.

At successful exit from Level 1, the IST POC will begin the SMS Participation Validation Program (*SMS Implementation Guide*, Section 13) process and ensure a “Letter of Acknowledgement” is delivered to the service provider.

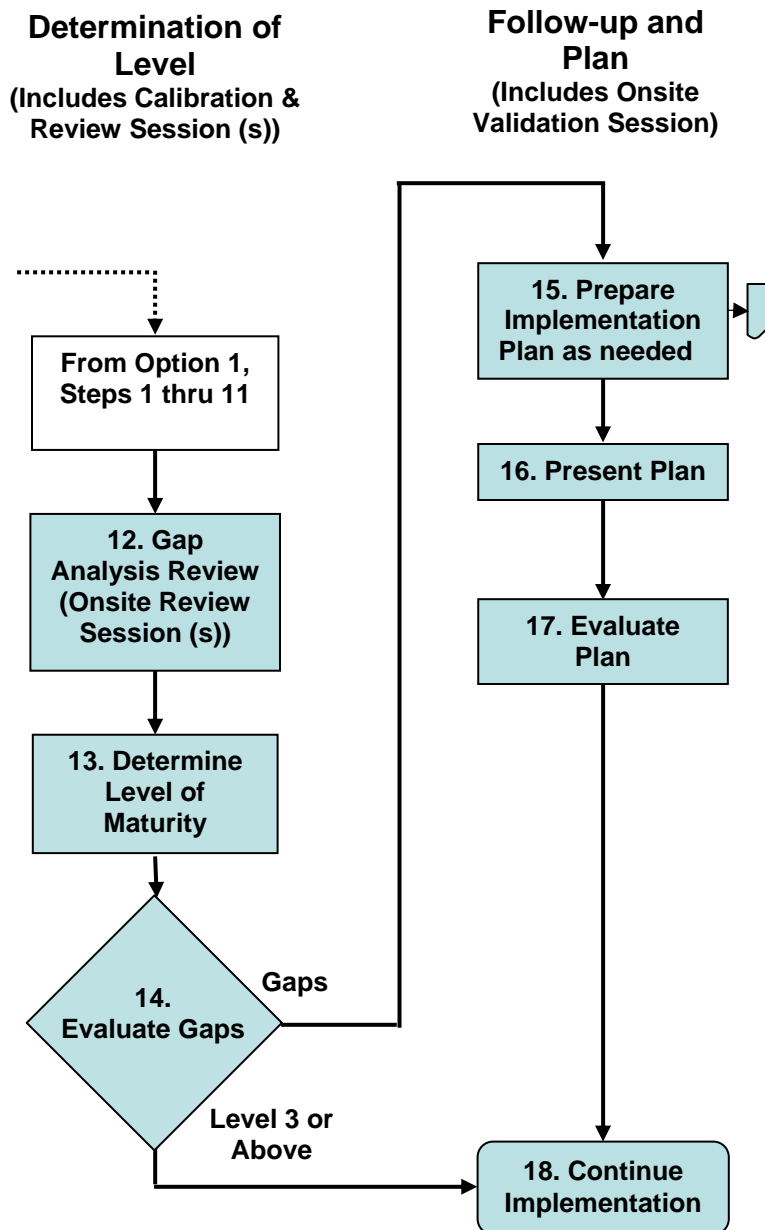
Step 17: Begin Implementation. The service provider will begin implementation of Level 2 *SMS Framework* objectives and expectations throughout their organization.

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

This section starts Option 2 Activities:

The following Flow Chart, Figure 5, graphically shows the Option 2 (service providers with SMS) activities. Steps 1 through 11 are the same for both Options. The flowchart begins at Step 12, the step where variance between Options 1 and 2 begins.

**Figure 5 – Differences - Flow Diagram of Option 2 Activities
For Service providers with SMS**



SMS Implementation Guide - Appendix 1 - Level 1 Expectations

Step 12: Gap Analysis Review.

Objective: Review and evaluate the results of the detailed gap analysis with the focus of determining a maturity level (Level 1, 2, 3, etc.) of the organization's SMS.

Input: Based on the results of the detailed gap analysis, an evaluation is prepared to determine how mature the organization's existing SMS is in relation to the objectives/expectations of the *SMS Framework*.

Procedures: The organization, CMT, and IST, meet to conduct a review of the detailed gap analysis. The organization will:

- Forward their most current detailed gap analysis to their CMT and IST at least 2 weeks prior to the session,
- Brief an overview of their detailed gap analysis results,
- Where conformity exists, present objective evidence of that conformity,
- Where gaps are found, if any, present a comprehensive plan on how they intend to develop processes to resolve the gaps, and
- Brief successes within the SMS training arena and future training needs.

The Gap Analysis Review may be created in any format that is useful to the organization but should provide at least the same information that would be contained in the Detailed Gap Analysis Tool in Appendix 6.

The Gap Analysis Review should span the entire SMS development process through all 4 levels of SMS implementation.

Output: The completed Gap Analysis Review will be the basis for determination of the level of implementation that the organization has achieved. It will also be used to further develop an organization's implementation plan leading to complete implementation.

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

Step 13: Determine Level of Maturity.

Objective: To ensure that any gaps discovered during the Detailed Gap Analysis review would preclude the organization from satisfying Level 1, 2, 3 or 4 performance objectives or design expectations.

Input: If gaps are discovered during the detailed gap analysis, they will be evaluated to determine maturity level.

Procedures: At the completion of the Detailed Gap Analysis Review, the organization, CMT and IST should mutually agree on the Level of Maturity achieved by the organization's SMS.

Output: This "evaluation" is an important part of the process because it is an opportunity for IST to assist in SMS implementation course corrections, if needed, provide additional training, if needed, and to gather data and to provide feedback to the organization/CMT on their planning process.

Step 14: Evaluate Remaining Gaps.

Once the maturity level is determined, the organization, CMT and IST will mutually agree on one of two courses of action:

- If no gaps exist or if all detailed gap analysis scores are at an assessment score of I (Implemented) or above, the organization will continue to implement their SMS, as per their plan. The CMT and IST will continue to coordinate, oversee and assist the organization, as necessary. The IST POC will begin the SMS Participation Validation Program (*SMS Implementation Guide*, Paragraph 13) process and ensure appropriate Letter of Acknowledgement is delivered to the organization.
- If the determination of maturity level is below assessment score of I (Implemented) on any *SMS Framework* process, element or component, the organization will develop or modify their Implementation Plan in accordance with Step 15, below and continue to progress to the next level of implementation.

At the conclusion of this Evaluation/Calibration Session, the Service Provider is requested to present a possible date for exiting the agreed upon level of implementation.

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

Step 15: Prepare Implementation Plan, as needed.

Objective: The objective of the implementation plan is to address the gaps noted during the detailed gap analysis and establish responsibility.

Input: Based on the results of the detailed gap analysis evaluation, an implementation plan is prepared to describe how the organization plans to “fill the gaps” between their existing organization and the objectives/expectations of the *SMS Framework*.

Procedures: The implementation plan need not be complex or excessively detailed but should provide a basic roadmap to meet the overall objectives and expectations as stated in the *SMS Framework* to, “...develop and implement an integrated, comprehensive SMS for [the] entire organization.”

The SMS implementation plan, which may consist of more than one document, details the actions to be taken, by whom and in what time-scale. The implementation plan can be created in any format that is useful to the company but should provide at least the following:

- Component/element/process reference from the *SMS Framework*;
- Brief description of the location of objective evidence indicating that the organization is meeting the objectives and expectations of each component, element or process;
- If the organization does not meet the objectives and expectations, then the following will be documented for each component, element or process:
 - Brief description of the actions to be taken to resolve existing gaps and manual/s affected;
 - Responsible organization and/or individual(s); and
 - Expected completion date.

The implementation plan should also span the entire SMS development process through all levels of maturity and should be updated as necessary as the project progresses. At each level, top management's approval of the implementation plan should include allocation of necessary resources IAW element 1.2, b (2).

Output: The completed implementation plan is the guidance for the entire organization's transition to a robust SMS through Level 4.

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

Step 16: Present Implementation Plan.

During the final face-to-face meeting (Validation Session) between the organization, CMT and IST, the organization will present a detailed overview and discussion of their SMS implementation plan. The organization will forward their most current detailed gap analysis and implementation plan to the CMT and IST at least 2 weeks prior to this session.

Step 17: Evaluate Implementation Plan.

This step involves consensus on the implementation plan between the organization, CMT and IST. Additionally, agreement will be required that the organization has achieved all Level 1 expectations, criteria and documentation and is ready to proceed to Level 2 and/or another level, as appropriate. The exit expectations, criteria and documentation for Level 2, 3 and 4 can be found in the *SMS Implementation Guide*, Appendices 2, 3 and 4, respectively.

Level 1 - Exit Expectations: Same as for Option 1

Level 1 - Output Documents: Same as for Option 1

A sample organization Exit Criteria Worksheet is in Attachment 4.

At completion of Level 1, the IST POC will begin the SMS Participation Validation Program (*SMS Implementation Guide*, Section 13) process and insure a “Letter of Acknowledgement” is delivered to the organization.

Step 18: Continue SMS Implementation.

The organization will continue implementation of their SMS.

List of Attachments

Attachment 1 - SMS Pilot Project Inquiry Information Sheet

Attachment 2 - Sample Initial Contact Messages

Attachment 3 - Sample Initial Workshop Agenda

Attachment 4 – Example of Level 1 Exit Criteria Worksheet

**SMS Implementation Guide - Appendix 1 - Level 1 Expectations
Attachment 1**

SMS Pilot Project Inquiry Information Sheet

Service Provider Name: _____

Designator: _____

Address: _____

Provider POC - Name & Phone: _____

FAA Oversight Office: _____

FAA Manager & Phone: _____

FAA PI & Phone: _____

FAA PI & Phone: _____

FAA PI & Phone: _____

Notes: _____

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

Attachment 2

Sample Service Provider Initial Contact Message

Dear Mr. (or) Ms, _____:

Hello, my name is, [your name], and I'm with the Federal Aviation Administration's, *Safety Management Systems (SMS), Implementation Support Team (IST)*. We're happy to know of your interest in Safety Management Systems, and possible desire to implement SMS into your organization. We believe that this initiative introduces the next evolutionary step in how organizations account for safety risks in their operation.

As you might be aware, Safety Management Systems (SMS) is not an isolated company "Safety Program," functioning within only one department, nor a simple program that can be easily understood and quickly instituted. In actuality, SMS involves the entire company including Top Management to play an active roll and includes components of: Safety Policy, Safety Risk Management, Safety Assurance, and the establishment of a Positive Safety Culture.

Our SMS Implementation Support Team has the ability to:

- Present an on-site "*SMS Information and Orientation*" presentation to your company. During this time we will explain the background of the program, its functionality, the value SMS brings to an organization, and future SMS ideology / development within the FAA.
- Provide assistance, guidance and recognition to your company as you develop and implement a functioning SMS throughout your organization.

Depending on an organization's size, structure, internal safety programs, values and culture, building and maintaining an SMS may take a considerable amount of time, effort and resources. Additionally, the SMS initiative includes the involvement of your FAA Certificate Management Team and/or Principle Inspectors, which we help facilitate.

Your company's request for SMS information and development is being processed and an SMS Point-Of-Contact is being established. Once this occurs, that person will serve as your SMS liaison and will contact you with further information and possible working relationship on this initiative.

In the interim, you may be interested in our guidance material at <http://www.faa.gov/about/initiatives/sms/>. If you have any questions or comments you are welcome to contact me by email or phone, either way works fine.

Office: [phone number], or email: [email address]

Sincerely,

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

Sample CMT Initial Contact Message

Mr./Ms. [Manager Name],

Hello, my name is [your name]; I'm with the Federal Aviation Administration's, *Safety Management System (SMS) Program Office*, AFS 920.

One of your certificate holders, [service provider name], has shown interest in joining our SMS Pilot Project and has requested from our office an initial evaluation of their organization's SMS implementation efforts. We would like to schedule an initial visit and several meetings with you, your Principal Inspectors and [service provider name] at a time that is convenient to all involved.

If you concur, we would like to bring a SMS Implementation Support Team (IST), comprised of [number] individuals, and spend approximately one half day briefing your CMT on SMS background, doctrine, standards, policy, procedures and implementation tools. This would be an FAA only meeting. The following two days would be spent briefing [service provider] and your Office representatives much more detailed SMS orientation and conducting a SMS Preliminary Gap Analysis of [service provider].

Our recommended Level 1 SMS Implementation Process is outlined in our SMS Implementation Guide, Appendix 1, Pages 23 to 32. The Implementation Guide and other guidance resources may be found at: <https://avssharepoint.faa.gov/afs/900/SMS/pilot/Forms/default.aspx>, under: Category: SMS PO Document.

As you know, SMS implementation is voluntary in the United States, in difference to ICAO's adoption of the SMS Standard (ICAO; Annex 6 to the Convention on International Civil Aviation, and Document 9859) and the FAA's efforts (Order 8000.369, VS 8000.367, and AC 120-92). There is, however, considerable interest in SMS among the U.S. aviation community. To date we have approximately [current number] Part 121, 135 and 145 organizations enrolled in the SMS Pilot Project, a program to assist with their SMS implementation efforts and to assist the FAA in learning best practices.

Safety Management Systems (SMS) is not an isolated company "Safety Program," functioning only within one department, nor a simple program that can be easily understood and quickly instituted. In actuality, SMS involves the entire company including top management to play an active roll in safety management. Implementing and maintaining an SMS may take a considerable amount of time (3 to 5 years), effort and resources. Additionally, the SMS initiative includes the involvement of your FAA Certificate Management Team and/or Principal Inspectors, which we help facilitate. However, we believe that both your Office and the Certificate Holders organization will find that the investment in SMS is well worth the time and effort.

If you have any questions or comments, please contact me by email or phone, either way works fine.

Office: [phone number] or [email address]

Sincerely,

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

Attachment 3

Sample Initial Workshop Agenda

[Service provider] - SMS Level 1 - Orientation Session

Agenda

[Date]

Pre-Brief Visit with CMT - Day 1, Half day ([Date])

- **IST** - Review SMS “*Key Points*” briefing, discuss Pilot Project program, and review Level 1 expectations and agenda with CMT. This briefing will take approximately 4 hours. Request all [service provider] Principal Inspectors, Supervisors and Manager attend. Other FAA Office personnel may attend at discretion of Office Manager. (Reference: SMS Implementation Guide, Appendix 1, Step 7, *CMT Pre-brief*)
- **IST** - Discuss CMT questions and concerns.
- **IST** - Briefly familiarize CMT with SMS implementation process and documents (*SMS Framework, SMS Assurance Guide, SMS Implementation Guide* and gap analysis process/tools) to include FAA roles in voluntary implementation projects.

Orientation Session – Day 2, Morning ([Date])

- **IST** - Present standard “*4-hour Intro to SMS*” briefing (this is a generic overview based on the courseware used for the FAA Academy course and the ICAO SMS course). This briefing gives an overview of general SMS concepts; ICAO requirements and discussion of each of the four SMS components: safety policy, safety risk management, safety assurance, and safety promotion. (Reference: SMS Implementation Guide, Appendix 1, Step 7, *Orientation: SMS Concepts*).

Orientation Session – Day 2, Afternoon ([Date])

- **IST** – Present standard “*SMS Tools and Guidance*” briefing. Conduct familiarization with *SMS Framework, SMS Assurance Guide, SMS Implementation Guide* and Preliminary / Detailed Gap Analysis Tools; SMS Pilot Project (SMS PP) implementation process; and bridging procedures between old and new procedures. (Reference: SMS Implementation Guide, Appendix 1, Step 8).
- **[Service provider]** – Present system description and analysis. Basic information about how the carrier is organized including the essential details about accountability and management structure, outsourcing, labor agreements, etc. (Reference: SMS Implementation Guide, Appendix 1, Step 9)
- **[Service provider]** - Overview of their SMS implementation project to include time permitting, review and joint discussion with their CMT and the IST of their preliminary gap analysis process.

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

Sample Initial Workshop Agenda (Cont)

Orientation Session – Day 3, Half to all day ([Date])

- Finish overflow from first day, if any.
- **[Service provider]** - Conduct, along with their CMT and the IST, their Preliminary Gap Analysis process. This will indicate their conformance, where appropriate, to the Performance Objectives of the SMS Framework. The IST representatives will facilitate a discussion of the status of the service provider's implementation project vs. the objectives of the **SMS Framework**. (See SMS Implementation Guide, Appendix 1, Step 10)
- **[Service provider]** - Briefing on the status of their implementation plan, if any.
- **IST** - Address questions and/or concerns of [service provider] and CMT.
- **IST** - Discuss future timeline of the SMS implementation plan.
- **IST** - Discuss dates and objectives of next steps.

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

Attachment 4

Exit - Level 1 Criteria - Worksheet

See next page for full size printable worksheet

SMS Implementation Guide - Appendix 1 - Level 1 Expectations

Exit - Level 1 Criteria - Worksheet

Level 1

To be completed during Level 1 Validation Session. Forward completed copy to SMS PO IST Lead.

Exit Expectation	Validated	Initials	Date
1. Objective evidence of top management’s commitment to implement SMS, define safety policy and convey safety expectations and objectives to its employees (<i>SMS Framework</i> Element 1.1; “Safety Policy“),			
2. Objective evidence of top management’s commitment to ensure adequate resources are available to implement SMS (in accordance with <i>SMS Framework</i> Element 1.2 b (2),			
3. Designation of a management official who will be responsible for SMS development (<i>SMS Framework</i> Element 1.3; “Key Safety Personnel“),			
4. Definition of safety-related positions for those who will participate in SMS development and implementation (in accordance with <i>SMS Framework</i> Element 1.2 b (3),			
5. Completed Preliminary and Detailed Gap Analysis’ for the entire organization on all elements of the <i>SMS Framework</i> (<i>SMS Implementation Guide</i> , Section 5, 8 & 9),			
6. Comprehensive SMS Implementation Plan addressing implementation of all design expectations of the <i>SMS Framework</i> , (outlined in the <i>SMS Assurance Guide</i> and listed in the Detailed Gap Analysis Tool) for the entire organization, and			
7. Identified safety competencies necessary (in accordance with <i>SMS Framework</i> Element 4.1.1 b (1), completed training commensurate with Level 1, implementation phase of maturity for those competencies and developed a training plan for all employees.			

Output Documents	Document Attached?		
8. Management Commitment document.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
9. Safety Policy.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
10. Summary of SMS Implementation Plan	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
10. SMS Training Plan for all employees.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

The undersigned attest to the participation of _____ in the FAA SMS Pilot Project (SMS PP) and their associated accomplishment in the development, through Level 1, of their SMS.

IST POC:

CMT/CHDO - MGR -or- SPVR -or- PI:

SMS Implementation Guide - Appendix 2 - Level 2 Expectations

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Appendix 2

Level 2 Expectations

To:

SAFETY MANAGEMENT SYSTEM (SMS)

IMPLEMENTATION GUIDE

For:

Service provider's participating in the Safety Management System Pilot Project (SMS PP) and for voluntary implementation of Safety Management Systems

**Federal Aviation Administration
Flight Standards Service - SMS Program Office**

**Revision 3
June 1, 2010**

SMS Implementation Guide - Appendix 2 - Level 2 Expectations

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SMS Implementation Guide

APPENDIX 2

NOTE: Some discussion and guidance from the *SMS Implementation Guide* is reproduced here, so that this Appendix may be used as a stand-alone document.

Implementation Level Two: Reactive Process, Basic Risk Management

Level 2 Objective:

The objective of Level 2 is to correct **known** deficiencies in safety management practices and operational processes.

Note: These known deficiencies may be based on a variety of sources including past inspection and audit reports, accident and incident investigations and employee reports, among others.

The Service provider will plan, organize and prepare the organization for further SMS development. This will include complying with the following expectations in the *SMS Framework*:

- A. Component 1.0 Safety Policy and Objectives
 - Element 1.1 Safety Policy (From Level 1)
 - Element 1.2 Management Commitment and Safety Accountabilities
 - Element 1.3 Key Safety Personnel (From Level 1)
 - Element 1.4 Emergency Preparedness
 - Element 1.5 SMS Documentation and Records

- B. Component 2.0 Safety Risk Management (except 2.0 b (2) (a), (b) & (d),
 - Element 2.1 Hazard Identification and Analysis
 - Process 2.1.2 Identify Hazards
 - Element 2.2 Risk Assessment and Control
 - Process 2.2.1 Analyze Safety Risk
 - Process 2.2.2 Assess Safety Risk
 - Process 2.2.3 Control/Mitigate Safety Risk

- C. Component 3.0 Safety Assurance (except 3.2 Management of Change)
 - Element 3.1 Safety Performance Monitoring and Measurement
 - Process 3.1.1 Continuous Monitoring
 - Process 3.1.2 Internal Audits by Operational Departments
 - Process 3.1.3 Internal Evaluation

SMS Implementation Guide - Appendix 2 - Level 2 Expectations

Process 3.1.4 External Auditing of the SMS
Process 3.1.5 Investigation
Process 3.1.6 Employee Reporting and Feedback System
Process 3.1.7 Analysis of Data
Process 3.1.8 System Assessment
Process 3.1.9 Preventive/Corrective Action
Process 3.1.10 Management Review
Element 3.3 Continual Improvement

D. Component 4.0 Safety Promotion (except Element 4.1 Competencies and Training and Process 4.1.1 Personnel Expectations (Competence))
Process 4.1.2 Training
Element 4.2 Communication and Awareness

Level 2 Input:

The outputs, documentation, detailed gap analysis and implementation plan from the Level 1 exit process will provide the initial input for Level 2 development.

Additional input includes results from:

- Internal Evaluation Program (IEP),
- Aviation Safety Action Plan (ASAP),
- Continuing Analysis and Surveillance (CAS),
- Flight Operations Quality Assurance (FOQA),
- Previous internal and external audit reports and evaluations,
- Accident and incident investigations, and
- Employee reports and / or feedback.

Consider input from existing data sources such as:

- Flight dispatch records
- Flight schedules
- Financial data
- Crew schedules and records
- Warranty return reports
- Aircraft discrepancy reports
- Flight cancellation and delay reports

References:

- *SMS Framework*, as revised,
- *SMS Assurance Guide*, as revised, and
- *SMS Implementation Guide*, as revised.

Level 2 Process Overview:

SMS Implementation Guide - Appendix 2 - Level 2 Expectations

At this step, the service provider develops and implements basic safety risk management and safety assurance processes. Information acquisition, processing, and analysis functions are implemented and a tracking system for risk control and corrective actions is developed. This allows the service provider to systematically address known problems and react to newly identified problems as they occur and to develop appropriate remedial action.

At the end of Level 2, most of the essential safety management structure and basic identification, analysis and assessment functions of an SMS will be in place, however because the forward looking systems and task analyses have not yet been conducted, the system is still functioning at a reactive level. For this reason, this level is termed “reactive.” While this is not the final objective of an SMS, it is an important step in the evolution of safety management capabilities.

Level 2 Procedures:

During the Level 2 implementation phase, the service provider will:

1. Develop basic safety information management and analytical processes,
2. Identify, analyze and assess known hazards,
3. Design and implement risk controls,
4. Develop basic safety assurance and analytical processes, to include management reviews,
5. Develop non-punitive voluntary employee reporting system, and
6. Identify, document and complete necessary training relevant to SMS implementation at level 2.

Level 2 Output:

Completion Criteria: The documentation and performance desired for level 2 exit status assessment are listed below:

1. Processes and procedures documented for operating the SMS to the level of reactive analysis, assessment and mitigating actions;
2. Develop documentation relevant to SMS implementation plan and SRM components (reactive processes);
3. Initiate and document voluntary non-punitive employee reporting and feedback program;
4. Conducted SMS training for the staff directly involved in the SMS process to at least the level necessary for the SMS reactive processes;
5. Apply Safety Risk Management (SRM) processes and procedures to at least one known (existing) hazard and initiate the mitigation process to control / mitigate the risk associated with the hazard.;

SMS Implementation Guide - Appendix 2 - Level 2 Expectations

6. Update the detailed gap analysis on the entire organization for all elements of the SMS Framework; and

7. Update the comprehensive SMS implementation plan for all elements to take the service provider through Level 4.

Documents: Documentation or objective evidence for the following (The elements and processes implemented during level 1 have already been documented and need not be repeated for Level 2):

8. Objective evidence that SRM processes and procedures have been applied to at least one existing hazard and that the mitigation process has been initiated.

9. Updated comprehensive SMS implementation plan for all elements to take the service provider through Level 4.

10. Updated SMS Training Plan for all employees.

Once the process and procedural items listed above have been completed, there will a joint assessment of the status of the service provider's SMS development. The service provider will present their progress (to include updated and current detailed gap analysis and implementation plan) to their oversight organization and the IST prior to proceeding to Level 3.

In conducting the document review and assessment, it should be noted that the objective is to develop and implement the specific processes and procedures necessary for applying SMS reactively for the systems listed in the *SMS Framework*, Component 1.0 b (1) (a) or (b), as appropriate.

At completion of Level 2, the IST POC will begin the SMS Participation Validation Program (*SMS Implementation Guide*, Section 13) process and ensure a "Letter of Acknowledgement" is delivered to the Service provider.

List of Attachments

Attachment 1 - Example of level 2 exit criteria worksheet

SMS Implementation Guide - Appendix 2 - Level 2 Expectations

Attachment 1

Exit - Level 2 Criteria – Worksheet

See next page for full size printable worksheet

SMS Implementation Guide - Appendix 2 - Level 2 Expectations

Exit - Level 2 Criteria - Worksheet			
Level 2			
To be completed during Level 2 joint assessment. Forward completed copy to SMS PO IST Lead.			
Exit Expectation	Validated	Initials	Date
1. Processes and procedures documented for operating the SMS to the level of reactive analysis, assessment and mitigating actions;			
2. Develop documentation relevant to SMS implementation plan and SRM components (reactive processes);			
3. Document and initiate voluntary non-punitive employee reporting and feedback program;			
4. Completed SMS training for the staff directly involved in the SMS process and initiated training for all employees to at least the level necessary for the SMS reactive processes;			
5. Apply Safety Risk Management (SRM) processes and procedures to at least one known (existing) hazard and initiate the mitigation process to control / mitigate the risk associated with the hazard;			
6. Update the detailed gap analysis on the entire organization for all elements of the <i>SMS Framework</i> ; and			
7. Update comprehensive SMS implementation plan for all elements to take the service provider through Level 4.			

Output Documents	Document Attached?
8. Objective evidence that SRM processes and procedures have been applied to at least one existing hazard and that the mitigation process has been initiated.	<input type="checkbox"/> Yes <input type="checkbox"/> No
9. Updated comprehensive SMS implementation plan (or summary) for all elements to take the service provider through Level 4.	<input type="checkbox"/> Yes <input type="checkbox"/> No
10. Updated SMS Training Plan for all employees.	<input type="checkbox"/> Yes <input type="checkbox"/> No

<p><i>The undersigned attest to the participation of _____ in the FAA SMS Pilot Project (SMS PP) and their associated accomplishment in the development, through Level 2, of their SMS.</i></p>
IST POC:
CMT/CHDO - MGR -or- SPVR -or- PI:

SMS Implementation Guide - Appendix 3 – Level 3 Expectations

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Appendix 3

Level 3 Expectations

To:

SAFETY MANAGEMENT SYSTEM (SMS)

IMPLEMENTATION GUIDE

For:

Service provider's participating in the Safety Management System Pilot Project (SMS PP) and for voluntary implementation of Safety Management Systems

Federal Aviation Administration
Flight Standards Service - SMS Program Office

Revision 3
June 1, 2010

SMS Implementation Guide - Appendix 3 – Level 3 Expectations

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SMS Implementation Guide

APPENDIX 3

NOTE: Some discussion and guidance from the *SMS Implementation Guide* is reproduced here, so that this Appendix maybe used as a stand-alone document.

Level 3 - Detailed Guidance and Expectations

Level 3: Proactive Processes, Looking Ahead. (Fully Functioning SMS) Component 2.0 b (2) (a), of the *SMS Framework* expects Safety Risk Management (SRM) to be applied to initial design of systems, organizations, and products, development of operational procedures, and planned changes to operational processes. The activities that make up the SRM process involve careful analysis of systems and tasks, identification of potential hazards in these functions, and development of risk controls. The risk management process developed at level two is used to analyze, document, and track these activities. At this level, the service provider is now using the processes to look ahead, this level is called “proactive.” At this level, however, these proactive processes have been implemented but their performance has not yet been proven.

The service provider will develop processes to understand the critical characteristics of its systems and operational environment and apply this knowledge to the identification of hazards, risk decision-making, and the design of risk controls.

Level 3 Objective:

The first overall objective of SMS development is captured in the first objective of the policy component of the *SMS Framework*:

“The Service Provider will develop and implement an integrated, comprehensive SMS for its entire organization.”

The specific objective of Level 3 is to develop processes to understand the critical characteristics of its systems and operational environment and apply this knowledge to the identification of hazards, risk decision-making, and the design of risk controls. This will include complying with the following expectations in the *SMS Framework*:

- Demonstrated performance of Level 2 Expectations;
- Objective evidence that the processes are being updated, maintained and practiced;
- Apply the Safety Risk Management process to all Element 2.0 b (2) (a), (b) & (d) operating processes;

SMS Implementation Guide - Appendix 3 – Level 3 Expectations

- Comply with Process 2.1.1;
- Comply with Element 3.2;
- Comply with Element 4.1;
- Comply with Element 4.1.1;
- Apply the SRM processes and procedures to at least one existing hazard and initiate the mitigation process; and
- Complete all SMS Staff and employee training commensurate with this level of implementation phase maturity.

Level 3 Input:

The outputs, documentation and Implementation Plan from the Level 2 Exit process will provide the initial input for Level 2 development. Additional input includes results from Internal Evaluation Program, ASAP, CAS, FOQA, previous internal and external audit reports, accident and incident investigations and employee reports.

References:

- *SMS Framework*, as revised,
- *SMS Assurance Guide*, as revised, and
- *SMS Implementation Guide*, as revised.

Level 3 Procedure:

During the Level 3 implementation phase, the service provider will:

1. Implement Safety Risk Management for proactive and predictive processes.
 - Initial designs of systems, organizations, and/or products;
 - The development of operational procedures; and
 - Planned changes to the operational processes
2. System and task descriptions will be developed to the level of detail necessary to:
 - Identify hazards;
 - Develop operational procedures; and
 - Develop and implement risk controls.
3. Perform training relevant to proactive and predictive processes.
 - Personnel Competency and Training.
4. Develop documentation relevant to proactive and predictive processes.
 - SMS Implementation Plan, and
 - SMS Documentation.
5. Incorporate identified hazards from System and Task Analyses into SRM process.

SMS Implementation Guide - Appendix 3 – Level 3 Expectations

6. Refine safety information management and analytical processes to incorporate proactive safety management processes for:
 - Information acquisition
 - Analysis of data
 - System assessment
 - Preventive and corrective actions
 - Management reviews
7. Initiate policy and procedures for:
 - Management of Change, and
 - Continual Improvement.
8. Complete training of all employees commensurate with the Level 3 implementation phase of maturity.

Level 3 Output:

Completion Criteria: Once the objectives and procedures outlined above have been completed, there will be a joint assessment of the status of SMS development by the service provider, the oversight organization and the IST prior to proceeding to Level 4. The documentation and Gap Analysis Tools used for Level 3 status assessment are listed below. In conducting the document review and assessment, it should be noted that the objective is to develop and implement the full capabilities necessary for applying SMS.

Assessment Criteria: The service provider must have accomplished at least the following:

- Demonstrated performance of Level 2 expectations;
- Objective evidence that all SMS processes are being updated, maintained and practiced;
- Objective evidence that the SRM process has been conducted on all Component 2.0 b (2), (a), (b) & (d), operating processes;
- Objective evidence of compliance with Process 2.1.1;
- Objective evidence of compliance with Element 3.2;
- Objective evidence of compliance with Element 4.1;
- Objective evidence of compliance with Element 4.1.1;
- All applicable SMS processes and procedures must have been applied to at least one existing hazard and the mitigation process must have been initiated;
- Complete SMS training for the staff directly involved in the SMS process to the level of accomplishing all SMS processes; and
- Complete employee training commensurate with this level of implementation phase maturity.

SMS Implementation Guide - Appendix 3 – Level 3 Expectations

Documents: All processes and procedures for operating the SMS should be documented. This document, or documents, should cover all processes and procedures necessary from information gathering through SRM and mitigation. As the Safety Assurance processes are not mature enough, at this point, to be verifiable, as a minimum the policy and procedures will be documented. The service provider must provide documentation or objective evidence for the following:

- Objective evidence that SRM processes and procedures have been applied to all Component 2.0 b (2), (a), (b) & (d), operating processes;
- Objective evidence that SRM processes and procedures have been applied to at least one existing hazard and that the mitigation process has been initiated;
- Updated comprehensive SMS implementation plan for all elements; and
- Updated SMS Training Plan for all employees.

When conducting the document review and assessment, the objective is to develop and implement the specific processes and procedures necessary for applying SMS proactively for the systems listed in the *SMS Framework*, Component 1.0 b (1), (a) or (b), as appropriate.

At completion of Level 3, the IST POC will begin the SMS Pilot Project and Voluntary Program Validation (*SMS Implementation Guide*, Paragraph 11) process and insure a Letter of Participation is delivered to the Service Provider.

List of Attachments

Attachment 1 - Example of level 3 exit criteria worksheet

Attachment 1

Exit - Level 3 Criteria - Worksheet

See next page for full size printable worksheet

SMS Implementation Guide - Appendix 3 – Level 3 Expectations

Exit - Level 3 Criteria - Worksheet			
Level 3			
To be completed during Level 3 Validation Session. Forward completed copy to SMS PO IST Lead.			
Exit Expectation	Validated	Initials	Date
1. Demonstrated performance of Level 2 Expectations;			
2. Objective evidence that all SMS processes are being updated, maintained and practiced;			
3. Objective evidence that the Safety Risk Management process has been conducted on all Component 2.0 b (2), (a), (b) & (d), operating processes;			
4. Objective evidence of compliance with Process 2.1.1;			
5. Objective evidence of compliance with Element 3.2;			
6. Objective evidence of compliance with Element 4.1;			
7. Objective evidence of compliance with Process 4.1.1;			
8. All applicable SMS processes and procedures must have been applied to at least one existing hazard and the mitigation process must have been initiated.			
9. Complete SMS training for the staff directly involved in the SMS process to the level of accomplishing all SMS processes;			
10. Complete employee training commensurate with this level of implementation phase maturity;			

Output Documents	Document Attached?
11. Objective evidence that SRM processes and procedures have been applied to all Component 2.0 b (2), (a), (b) & (d), operating processes;	<input type="checkbox"/> Yes <input type="checkbox"/> No
12. Objective evidence that SRM processes and procedures have been applied to at least one existing hazard and that the mitigation process has been initiated;	<input type="checkbox"/> Yes <input type="checkbox"/> No
13. Updated comprehensive SMS implementation plan (or summary) for all elements; and	<input type="checkbox"/> Yes <input type="checkbox"/> No
14. Updated SMS Training Plan for all employees.	<input type="checkbox"/> Yes <input type="checkbox"/> No

The undersigned attest to the participation of _____ in the FAA SMS Pilot Project (SMS PP) and their associated accomplishment in the development, through Level 3, of their SMS implementation.

IST POC:

CMT/CHDO - MGR -or- SPVR -or- PI:

SMS Implementation Guide - Appendix 4 – Level 4 Expectations

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Appendix 4

Level 4 Expectations

To:

SAFETY MANAGEMENT SYSTEM (SMS)

IMPLEMENTATION GUIDE

For:

Service provider's participating in the Safety Management System Pilot Project (SMS PP) and for voluntary implementation of Safety Management Systems

Federal Aviation Administration
Flight Standards Service - SMS Program Office

Revision 3
June 1, 2010

SMS Implementation Guide

APPENDIX 4

NOTE: Some discussion and guidance from the *SMS Implementation Guide* is reproduced here, so that this Appendix maybe used as a stand-alone document.

Level 4 - Detailed Guidance and Expectations

Level 4: Continuous Improvement. The final level of SMS maturity is the continuous improvement level. Processes have been in place and their performance and effectiveness has been verified. The complete safety assurance process, including continuous monitoring and the remaining features of the other SRM and safety assurance processes are functioning. A major objective of a successful SMS is to attain and maintain this continuous improvement status for the life of the organization.

Level 4 Objective

The overall objective of SMS development is captured in the first objective of the policy component of the *SMS Framework*:

“The Service Provider will develop and implement an integrated, comprehensive SMS for its entire organization.”

The specific objective of Level 4 is for the service provider to verify the performance and effectiveness of their SMS management practices and operational processes.

Level 4 Input:

To be developed

References:

- *SMS Framework*, as revised,
- *SMS Assurance Guide*, as revised, and
- *SMS Implementation Guide*, as revised.

Level 4 Procedure:

To be developed

Level 4 Output:

To be developed

Appendix 5

Preliminary Gap Analysis Tool

To:

SAFETY MANAGEMENT SYSTEM (SMS)

IMPLEMENTATION GUIDE

For:

**Service provider's participating in the Safety Management
System Pilot Project (SMS PP) and for voluntary implementation
of Safety Management Systems**

**Federal Aviation Administration
Flight Standards Service - SMS Program Office**

**Revision 3
June 1, 2010**

SMS Implementation Guide - Appendix 5 – Preliminary Gap Analysis Tool

SMS Implementation Guide

APPENDIX 5

The following extract of the Preliminary Gap Analysis Tool is designed for Air Carrier (AC) operators.

The Preliminary Gap Analysis Tool for Maintenance Repair Organizations (MRO) is identical, except for the column headings.

The full complete electronic copies of both Air Carrier and Maintenance Repair Organizations Preliminary Gap Analysis Tools are available for download at:

FAA Employees - <https://avssharepoint.faa.gov/afs/900/SMS/pilot/Forms/default.aspx>

Service Providers - <http://www.faa.gov/about/initiatives/sms/>

For questions, please contact your oversight organization or the SMS Program Office at:

Dr. Don Arendt, Manager - Don.Arendt@faa.gov

Dale Whitmore, Assistant Manager - Dale.Whitmore@faa.gov

Roger Roberts, National Coordinator - Roger.Roberts@faa.gov

Dudley Oatman, Doctrine & Policy Lead – Dudley.B.Oatman@faa.gov

Jennifer Adair, Training & Outreach Lead – Jennifer.A.Adair@faa.gov

Derek Cheatham, IST Lead – Derek.Cheatham@faa.gov

The electronic copies of the Preliminary Gap Analysis Tool are not password protected and may be edited to reflect the organizational structure unique to specific organizations.

SMS Implementation Guide - Appendix 5 – Preliminary Gap Analysis Tool

<p>Preliminary Air Carrier Gap Analysis Tool</p> <p>Note: This tool is designed to be used with SMS Assurance Guide, Rev 3 (6-1-10)</p> <p>Participant:</p> <p>Location:</p>
<p>Assurance Guide Question</p>
<p>Component 1.0 Safety Policy and Objectives</p>
<p><i>Policy: General Expectations</i></p>
<p>Performance Objective</p>
<p>The organization will develop and implement an integrated, comprehensive SMS for its entire organization and will incorporate a procedure to identify and maintain compliance with current safety-related legal, regulatory, and statutory requirements.</p>
<p>Element 1.1 Safety Policy</p>
<p>Performance Objective</p>
<p>Top management will define the organization's Safety Policy and convey its expectations and objectives to its employees.</p>
<p><i>Element 1.2 Management Commitment and Safety Accountabilities</i></p>
<p>Performance Objective</p>
<p>The organization will define, document, and communicate the safety roles, responsibilities, and authorities throughout its organization.</p>
<p><i>Element 1.3 Key Safety Personnel</i></p>
<p>Performance Objective</p>

SMS Implementation Guide - Appendix 5 – Preliminary Gap Analysis Tool

The organization will appoint a management representative to manage, monitor and coordinate the SMS processes throughout its organization.

Element 1.4 Emergency Preparedness and Response

Performance Objective

The organization will develop and implement procedures that it will follow in the event of an accident, incident or operational emergency to mitigate the effects of these events.

Element 1.5 SMS Documentation and Records

Performance Objective

The organization will have documented safety policies, objectives, procedures, a document/record management process, and a management plan that meet organizational safety expectations and objectives.

Component 2.0 Safety Risk Management

Safety Risk Management: General Expectations

Performance Objective

The organization will develop processes to understand the critical characteristics of its systems and operational environment and apply this knowledge to identify hazards, analyze and assess risk and design risk controls.

Element 2.1 Hazard Identification and Analysis:

Process 2.1.1 System Description and Task Analysis

Performance Objectives

SMS Implementation Guide - Appendix 5 – Preliminary Gap Analysis Tool

The organization will describe and analyze its systems, operations, and operational environment to gain an understanding of critical design and performance factors, processes, and activities to identify hazards.

Process 2.1.2 Identify Hazards

Performance Objective

The organization will identify and document the hazards in its operations that are likely to cause death, serious physical harm, or damage to equipment or property in sufficient detail to determine associated level of risk and risk acceptability

Element 2.2 Risk Assessment and Control

Process 2.2.1 Analyze Safety Risk

Performance Objective

The organization will determine and analyze the severity and likelihood of potential events associated with identified hazards and will identify risk factors associated with unacceptable levels of severity or likelihood.

Process 2.2.2 Assess Safety Risk

Performance Objective

The organization will assess risk associated with each identified hazard and define risk acceptance procedures and levels of management that can make safety risk acceptance decisions.

Process 2.2.3 Control/Mitigate Safety Risk

Performance Objective

The organization will design and implement a risk control for each identified hazard for which there is an unacceptable risk, to reduce risk to acceptable levels. The residual or substitute risk will be analyzed before implementing any risk control.

Component 3: Safety Assurance

Safety Assurance: General Expectations

SMS Implementation Guide - Appendix 5 – Preliminary Gap Analysis Tool

<p>Performance Objective</p> <p>The organization will monitor, measure, and evaluate the performance of their systems to identify new hazards, measure the effectiveness of risk controls, (to include preventative and corrective actions) and ensure compliance with regulatory requirements.</p>
<p><i>Element 3.1 Safety Performance Monitoring and Measurement:</i></p>
<p>Process 3.1.1 Continuous Monitoring</p> <p>Performance Objective</p> <p>The organization will monitor operational data, including products and services received from contractors, to identify hazards, measure the effectiveness of safety risk controls, and assess system performance.</p>
<p>Process 3.1.2 Internal Audits by Operational Departments</p> <p>Performance Objective</p> <p>The organization will perform regularly scheduled internal audits of its operational processes, including those performed by contractors, to verify safety performance and evaluate the effectiveness of safety risk controls.</p>
<p>Process 3.1.3 Internal Evaluation</p> <p>Performance Objective</p> <p>The organization will conduct internal evaluations of the SMS and operational processes at planned intervals to determine that the SMS conforms to its objectives and expectations.</p>
<p>Process 3.1.4 External Auditing of the SMS</p> <p>Performance Objective</p> <p>The organization will include the results of assessments performed by oversight organizations, and other external audit results, in its data analysis.</p>
<p>Process 3.1.5 Investigation</p> <p>Performance Objective</p>

SMS Implementation Guide - Appendix 5 – Preliminary Gap Analysis Tool

The organization will establish procedures to collect data and investigate incidents, accidents, and instances of potential regulatory non-compliance to identify potential new hazards or risk control failures.

Process 3.1.6 Employee Reporting and Feedback System

Performance Objective

The organization will establish and maintain a confidential employee safety reporting and feedback system. Data obtained from this system will be monitored to identify emerging hazards and to assess performance of risk controls in the operational systems.

Process 3.1.7 Analysis of Data

Performance Objective

The organization will analyze the data described in SMS Framework Processes 3.1.1 thru 3.1.6, to assess the risk controls' performance and effectiveness in the organization's operational processes and the SMS, and to identify root causes of deficiencies and potential new hazards.

Process 3.1.8 System Assessment

Performance Objective

The organization will perform an assessment of the safety performance and effectiveness of risk controls, conformance to SMS expectations as stated within the SMS Assurance Guide, and the objectives of the safety policy.

Element 3.2 Management of Change

Performance Objective

The organization's management will identify and determine acceptable safety risk for changes within the organization that may affect established processes and services by new system design, changes to existing system designs, new operations/procedures, or modified operations/procedures.

Element 3.3 Continuous Improvement

Performance Objective

SMS Implementation Guide - Appendix 5 – Preliminary Gap Analysis Tool

The organization will promote continuous improvement of its SMS through recurring application of Safety Risk Management (Component 2.0), Safety Assurance (Component 3.0), and by using safety lessons learned and communicating them to all personnel.

Process 3.3.1 Preventive/Corrective Action

Performance Objective

The organization will take preventive and corrective action to eliminate the causes of nonconformance, identified during analysis, to prevent recurrence.

Process 3.3.2 Management Review

Performance Objective

Top management will conduct regular reviews of the SMS to assess the performance and effectiveness of an organization's operational processes and the need improvements.

Component 4: Safety Promotion

Safety Promotion: General Expectations

Performance Objective

Top management will promote the growth of a positive safety culture and communicate it throughout the organization.

Element 4.1 Competencies and Training

Process 4.1.1 Personnel Expectations (Competence)

Performance Objective

The organization will document competency requirements for those positions identified in Element 1.2 b, (3) and 1.3 and ensure those requirements are met.

Process 4.1.2 Training

Performance Objective

SMS Implementation Guide - Appendix 5 – Preliminary Gap Analysis Tool

The organization will develop, document, deliver and regularly evaluate training necessary to meet competency requirements of Process 4.1.1 b, (1).

Element 4.2 Communication and Awareness

Performance Objective

Top management will communicate the output of its SMS to its employees, and will provide its oversight organization access to SMS outputs in accordance with established agreements and disclosure programs.

Appendix 6

Detailed Gap Analysis Tool

To:

SAFETY MANAGEMENT SYSTEM (SMS)

IMPLEMENTATION GUIDE

For:

Service provider's participating in the Safety Management System Pilot Project (SMS PP) and for voluntary implementation of Safety Management Systems

Federal Aviation Administration
Flight Standards Service - SMS Program Office

Revision 3
June 1, 2010

SMS Implementation Guide

APPENDIX 6

The following extract of the Detailed Gap Analysis Tool is designed for Air Carrier (AC) operators.

The Detailed Gap Analysis Tool for Maintenance Repair Organizations (MRO) is identical, except for lines 13 thru 30 and the column headings.

The full complete electronic copies of both Air Carrier and Maintenance Repair Organizations Detailed Gap Analysis Tools are available for download at:

FAA Employees - <https://avssharepoint.faa.gov/afs/900/SMS/pilot/Forms/default.aspx>

Service Providers - <http://www.faa.gov/about/initiatives/sms/>

For questions, please contact your oversight organization or the SMS Program Office at:

Dr. Don Arendt, Manager - Don.Arendt@faa.gov

Dale Whitmore, Assistant Manager - Dale.Whitmore@faa.gov

Roger Roberts, National Coordinator - Roger.Roberts@faa.gov

Dudley Oatman, Doctrine & Policy Lead – Dudley.B.Oatman@faa.gov

Jennifer Adair, Training & Outreach Lead – Jennifer.A.Adair@faa.gov

Derek Cheatham, IST Lead – Derek.Cheatham@faa.gov

The electronic copies of the Detailed Gap Analysis Tool are not password protected and may be edited to reflect the organizational structure unique to specific organizations.

SMS Implementation Guide - Appendix 6 – Detailed Gap Analysis Tool

Extract from the Detailed Gap Analysis Tool

<p>Note: This tool is designed to be used with SMS Assurance Guide, Rev 3 (6-1-10)</p> <p>Participant:</p> <p>Location:</p>
<p>Assurance Guide Question</p>
<p>Component 1.0 Safety Policy and Objectives</p>
<p><i>Policy: General Expectations</i></p>
<p>Performance Objective</p>
<p>An organization will develop and implement an integrated, comprehensive SMS for its entire organization and will incorporate a procedure to identify and maintain compliance with current safety-related, regulatory, and other requirements.</p>
<p>Design Expectations</p>
<p><i>Management Accountability</i></p>
<p>The organization will clearly identify who is responsible for the quality of the organizational management processes (name, position, organization). Procedures will also define who is responsible for accomplishing the process.</p> <p><i>Reference: SMS Framework 1.2 b, (3) (R/A)</i></p>
<p><i>Procedure: Scope - Air Operators</i></p>
<p>Does the organization's SMS include the complete scope and life cycle of the organization's systems, including -</p>

SMS Implementation Guide - Appendix 6 – Detailed Gap Analysis Tool

<p>Flight Operations? <i>Reference: SMS Framework: 1.0 b, (1) (a) (1) (P)</i></p>
<p>Operational Control (Dispatch/Flight Following)? <i>Reference: SMS Framework: 1.0 b, (1) (a) (2) (P)</i></p>
<p>Maintenance and inspection? <i>Reference: SMS Framework: 1.0 b, (1) (a) (3) (P)</i></p>
<p>Cabin safety? <i>Reference: SMS Framework: 1.0 b, (1) (a) (4) (P)</i></p>
<p>Ground handling and servicing? <i>Reference: SMS Framework: 1.0 b, (1) (a) (5) (P)</i></p>
<p>Cargo handling? <i>Reference: SMS Framework: 1.0 b, (1) (a) (6) (P)</i></p>
<p>Training? <i>Reference: SMS Framework: 1.0 b, (1) (a) (7) (P)</i></p>
<p>Procedure: Management</p>
<p>Does the organization require the SMS processes to be -</p>
<p>Documented? <i>Reference: SMS Framework: 1.0 b, (2)(a) (P)</i></p>
<p>Monitored? <i>Reference: SMS Framework: 1.0 b, (2) (b) (P)</i></p>
<p>Measured? <i>Reference: SMS Framework: 1.0 b, (2) (c) (P)</i></p>
<p>Analyzed? <i>Reference: SMS Framework: 1.0 b, (2) (d) (P)</i></p>
<p>Procedure: Promotion of Positive Safety Culture</p>

SMS Implementation Guide - Appendix 6 – Detailed Gap Analysis Tool

<p>Does the organization promote a positive safety culture as in Component 4.0 B?</p> <p><i>Reference: SMS Framework 1.0 b, (4)(a) (P)</i></p>
<p>Procedure: Quality Policy</p>
<p>Does top management ensure that the organization's quality policy, if present, is consistent with (or not in conflict with) it's SMS?</p> <p><i>Reference: SMS Framework 1.0 b, (4) (b) (P)</i></p>
<p>Procedure: Safety Management Planning</p>
<p>Does the organization establish and maintain measurable criteria that accomplish the objectives of its safety policy?</p> <p><i>Reference: SMS Framework 1.0 b, (4) (e) (PM)</i></p>
<p>Does the organization establish and maintain a safety management plan to describe methods for achieving the safety objectives set forth in its Safety Policy?</p> <p><i>Reference: SMS Framework 1.0 b, (4) (g) (PM)</i></p>
<p>Procedure: Regulatory Compliance</p>
<p>Does the organization ensure the SMS complies with legal and regulatory requirements?</p> <p><i>Reference: SMS Framework 1.0 b, (4) (c) (P)</i></p>
<p>Does the organization identify current FAA policy, legal, regulatory and statutory requirements applicable to the SMS?</p> <p><i>Reference: SMS Framework 1.0 b, (4) (d) (P)</i></p>
<p>Outputs and Measures</p>
<p>Does the organization ensure all SMS outputs are -</p>
<p style="text-align: center;">Recorded?</p>

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<p style="text-align: center;"><i>Reference: SMS Framework 1.0 b, (3)(a) (I/P)</i></p>
<p style="text-align: center;">Monitored?</p>
<p style="text-align: center;"><i>Reference: SMS Framework 1.0 b, (3) (b) (I/P)</i></p>
<p style="text-align: center;">Measured?</p>
<p style="text-align: center;"><i>Reference: SMS Framework 1.0 b, (3) (c) (I/P)</i></p>
<p style="text-align: center;">Analyzed?</p>
<p style="text-align: center;"><i>Reference: SMS Framework 1.0 b, (3) (d) (I/P)</i></p>
<p>The organization will periodically measure performance objectives and design expectations of the general Safety Policy Component.</p>
<p style="text-align: center;"><i>Reference: SMS Framework note at 3.1.3 & SMS Framework 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PM/I)</i></p>
Controls
<p>Does the organization establish and maintain supervisory and operational controls to ensure procedures are followed for safety-related operations and activities?</p>
<p style="text-align: center;"><i>Reference: SMS Framework 1.0 b, (4) (f) (C)</i></p>
Bottom Line Assessment
<p>Has the organization developed and implemented an integrated, comprehensive SMS for its entire organization and incorporated a procedure to identify and maintain compliance with current safety-related, regulatory, and other requirements?</p>
Element 1.1 Safety Policy
Performance Objective
<p>Top management will define the organization's Safety Policy and convey its expectations and objectives to its employees.</p>

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Design Expectations
<i>Management Accountability</i>
<p>Does top management define the organization's Safety Policy?</p> <p><i>Reference: SMS Framework 1.1 b, (1) (P/R/A)</i></p>
<i>Procedure</i>
<p>Does the organization's safety policy include the following -</p>
<p style="padding-left: 40px;">A commitment to implement and maintain the SMS?</p> <p><i>Reference: SMS Framework 1.1 b, (2)(a) (P)</i></p>
<p style="padding-left: 40px;">A commitment to continuously improve the level of safety?</p> <p><i>Reference: SMS Framework 1.1 b, (2) (b) (P)</i></p>
<p style="padding-left: 40px;">A commitment to managing safety risk?</p> <p><i>Reference: SMS Framework 1.1 b, (2) (c) (P)</i></p>
<p style="padding-left: 40px;">A commitment to comply with all applicable regulatory requirements?</p> <p><i>Reference: SMS Framework 1.1 b, (2) (d) (P)</i></p>
<p style="padding-left: 40px;">A commitment to encourage employees to report safety issues without reprisal, as per SMS Framework Employee Reporting and Feedback System Process 3.1.6?</p> <p><i>Reference: SMS Framework 1.1 b, (2) (e) (P)</i></p>
<p style="padding-left: 40px;">Clear standards for acceptable behavior for all employees?</p> <p><i>Reference: SMS Framework 1.1 b, (2) (f) (P)</i></p>
<p>Is the safety policy documented?</p> <p><i>Reference: SMS Framework 1.1 b, (2)(i) (P)</i></p>
<i>Outputs and Measures</i>
<p>Does the Safety Policy provide guidance to management on setting safety objectives?</p>

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<p><i>Reference: SMS Framework 1.1 b, (2) (g) (I)</i></p>
<p>Does the Safety Policy provide guidance to management on reviewing safety objectives?</p> <p><i>Reference: SMS Framework 1.1 b, (2) (h) (I)</i></p>
<p>Does the organization ensure the safety policy is communicated, with visible management endorsement, to all employees and responsible parties?</p> <p><i>Reference: SMS Framework 1.1 b, (2)(j) (I)</i></p>
<p>Does the organization ensure the Safety Policy is reviewed periodically to verify it remains relevant and appropriate to the organization?</p> <p><i>Reference: SMS Framework 1.1 b, (2)(k) (I)</i></p>
<p>Does the organization identify and communicate management and individuals' safety performance responsibilities?</p> <p><i>Reference: SMS Framework 1.1 b, (2) (l) (I/R/A)</i></p>
<p>Does the organization have methods to periodically measure performance objectives and design expectations of the Safety Policy Element?</p> <p><i>Reference: SMS Framework note at 3.1.3 & SMS Framework 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PM/I)</i></p>
<p>Bottom Line Assessment</p>
<p>Has top management defined the organization's Safety Policy and conveyed the expectations and objectives of that policy to its employees?</p>
<p>Element 1.2 Management Commitment and Safety Accountabilities</p>

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Performance Objective
The organization will define, document, and communicate the safety roles, responsibilities, and authorities throughout its organization.
Design Expectations
<i>Management Accountability</i>
Does the organization ensure top management has the ultimate responsibility for the SMS? <i>Reference: SMS Framework 1.2 b, (1) (R/A)</i>
Does the organization's top management provide the resources needed to implement and maintain the SMS? <i>Reference: SMS Framework 1.2 b, (2) (P/R/A)</i>
Does the organization define levels of management that can make safety risk acceptance decisions as described in Component 2.0, b, (4) (c)? <i>Reference: SMS Framework 1.2 b, (4) (P/R/A)</i>
<i>Procedure/Output/Measure</i>
Does the organization ensure that aviation safety-related positions, responsibilities, and authorities are -
Defined? <i>Reference: SMS Framework 1.2 b, (3)(a) (P)</i>
Documented? <i>Reference: SMS Framework 1.2 b, (3) (b) (P)</i>
Communicated throughout the organization? <i>Reference: SMS Framework 1.2 b, (3) (c) (P)</i>

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<p>The organization will periodically measure performance objectives and design expectations of the Management Commitment and Safety Accountability Element?</p> <p><i>Reference: SMS Framework note at 3.1.3 & SMS Framework 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PM/I)</i></p>
<p>Bottom Line Assessment</p>
<p>Has the organization defined, documented, and communicated the safety roles, responsibilities, and authorities throughout the organization?</p>
<p>Element 1.3 Key Safety Personnel</p>
<p>Performance Objective</p>
<p>The organization will appoint a management representative to manage, monitor and coordinate the SMS processes throughout its organization.</p>
<p>Design Expectations</p>
<p>Management Responsibility/Procedure</p>
<p>Did top management appoint a member of management who, irrespective of other responsibilities, will be responsible for and authorized to -</p>
<p>Ensure that SMS processes are established, implemented, and maintained?</p> <p><i>Reference: SMS Framework 1.3 b, (1)(a) (R/A/P)</i></p>
<p>Report to top management on the performance of the SMS and what needs to be improved?</p> <p><i>Reference: SMS Framework 1.3 b, (1) (b) (R/A/P)</i></p>

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<p>Ensure the organization communicates its safety requirements throughout the organization?</p> <p><i>Reference: SMS Framework 1.3 b, (1) (c) (R/A/I/P)</i></p>
<p>Outputs and Measures</p>
<p>Does the organization ensure that Key Safety Personnel positions, responsibilities, and authorities are communicated throughout the organization?</p> <p><i>Reference: SMS Framework 1.2 b, (3) (c) (I/R/A)</i></p>
<p>The organization will periodically measure performance objectives and design expectations of the Key Safety Personnel Element 1.3?</p> <p><i>Reference: SMS Framework note at 3.1.3 & SMS Framework 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PM/I)</i></p>
<p>Bottom Line Assessment</p>
<p>Has the organization appointed a management representative to manage, monitor and coordinate the SMS processes throughout its organization?</p>
<p>Element 1.4 Emergency Preparedness and Response</p>
<p>Performance Objective</p>
<p>The organization will develop and implement procedures that it will follow in the event of an accident, incident or operational emergency to mitigate the effects of these events.</p>
<p>Design Expectations</p>
<p>Management Responsibility</p>

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<p>The organization will clearly identify who is responsible for the quality of the Emergency Preparedness and Response Process and associated documentation. Procedures will also define who is responsible for accomplishing the process.</p> <p><i>Reference: SMS Framework 1.2 b, (3) (R/A)</i></p>
<p>Procedure</p>
<p>Does the organization establish procedures across all operational departments as expected in Safety Policy and Objectives Component 1.0 b, (1)(a) or (b), to -</p>
<p>Identify hazards which have potential for accidents, incidents or operational emergencies?</p> <p><i>Reference: SMS Framework 1.4 b, (1) (P)</i></p>
<p>Coordinate and plan the organization's response to accidents, incidents or operational emergencies?</p> <p><i>Reference: SMS Framework 1.4 b, (2) (P)</i></p>
<p>Execute periodic exercises of the organization's emergency response procedures?</p> <p><i>Reference: SMS Framework 1.4 b, (3) (P)</i></p>
<p>Outputs and Measures</p>
<p>The organization will:(1) identify interfaces between the emergency response functions of different operational elements of the organization, and (2) periodically measure performance objectives and design expectations of the Emergency Preparedness and Response Element.</p> <p><i>Reference: (1) SMS Framework 1.5 b, (1) (f); (2) SMS Framework note at 3.1.3 & 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PM/I)</i></p>
<p>Bottom Line Assessment</p>

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Has the organization developed and implemented procedures that it will follow in the event of an accident, incident or operational emergency to mitigate the effects of these events?
<p>Element 1.5 SMS Documentation and Records</p>
<p>Performance Objective</p>
The organization will have documented safety policies, objectives, procedures, a document/record management process, and a management plan that meet organizational safety expectations and objectives.
<p>Design Expectations</p>
<p>Management Responsibility</p>
The organization will clearly identify who is responsible for the quality of the Documentation and Records Process. Procedures will also define who is responsible for accomplishing the process. <i>Reference: SMS Framework 1.2 b, (3) (R/A)</i>
<p>Procedure: Document Contents</p>
Does the organization establish and maintain, in paper or electronic format, information to describe the following -
<p>Safety policies? <i>Reference: SMS Framework 1.5 b, (1)(a) (P)</i></p>
<p>Safety objectives? <i>Reference: SMS Framework 1.5 b, (1) (b) (P)</i></p>
<p>SMS expectations? <i>Reference: SMS Framework 1.5 b, (1) (c) (P)</i></p>

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<p>Safety-related procedures and processes? <i>Reference: SMS Framework 1.5 b, (1) (d) (P)</i></p>
<p>Accountabilities, responsibilities and authorities for safety-related procedures and processes? <i>Reference: SMS Framework 1.5 b, (1) (e) (P)</i></p>
<p>Interactions and interfaces between safety-related procedures and policies? <i>Reference: SMS Framework 1.5 b, (1) (f) (P)</i></p>
<p>SMS outputs? <i>Reference: SMS Framework 1.5 b, (1) (g) (P)</i></p>
<p>Procedure: Document Quality</p>
<p>Does the organization require all documentation be -</p>
<p>Legible? <i>Reference: SMS Framework 1.5 b, (3)(a) (1) (P)</i></p>
<p>Dated (with the dates of revisions)? <i>Reference: SMS Framework 1.5 b, (3)(a)(2) (P)</i></p>
<p>Readily identifiable? <i>Reference: SMS Framework 1.5 b, (3)(a) 3 (P)</i></p>
<p>Maintained in an orderly manner? <i>Reference: SMS Framework 1.5 b, (3)(a)(4) (P)</i></p>
<p>Retained for a specified period as determined by the organization? Note: Under voluntary implementation of the SMS, the SMS records system does not require FAA approval. <i>Reference: SMS Framework 1.5 b, (3)(a)5 (P)</i></p>
<p>Procedure: Document Management</p>
<p>Does the organization control all documents to ensure -</p>

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<p>They are easily located?</p> <p><i>Reference: SMS Framework 1.5 b, (3) (b) 1 (P)</i></p>
<p>They are periodically reviewed?</p> <p><i>Reference: SMS Framework 1.5 b, (3) (b) 2 (a) (P)</i></p>
<p>They are revised as needed?</p> <p><i>Reference: SMS Framework 1.5 b, (3) (b) 2 (b) (P)</i></p>
<p>Authorized personnel approve them for adequacy?</p> <p><i>Reference: SMS Framework 1.5 b, (3) (b) 2 (c) (P)</i></p>
<p>Does the organization ensure that all current document versions are available at all locations where essential SMS operations are performed?</p> <p><i>Reference: SMS Framework 1.5 b, (3) (c) (P/C)</i></p>
<p>Does the organization ensure that obsolete documents are either removed as soon as possible, or that they are not used accidentally?</p> <p><i>Reference: SMS Framework 1.5 b (3) (d) (P/C)</i></p>
<p>Outputs and Measures</p>
<p>Has the organization maintained their safety management plan in accordance with the objectives and expectations contained within this Element?</p> <p><i>Reference: SMS Framework 1.5 b, (2) (I/P)</i></p>
<p>Does the organization ensure SMS records are -</p>
<p>Identified?</p> <p><i>Reference: SMS Framework 1.5 b, (4)(a) (1) (P)</i></p>

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Maintained? <i>Reference: SMS Framework 1.5 b, (4)(a) (2) (P)</i>
Disposed of? <i>Reference: SMS Framework 1.5 b, (4)(a) (3) (P)</i>
Legible? <i>Reference: SMS Framework 1.5 b, (4) (b) (1) (P)</i>
Easy to identify? <i>Reference: SMS Framework 1.5 b, (4) (b) (2) (P)</i>
Traceable to the activity involved? <i>Reference: SMS Framework 1.5 b, (4) (b) (3) (P)</i>
Easy to find? <i>Reference: SMS Framework 1.5 b, (4) (c) (1) (P)</i>
Protected against damage? <i>Reference: SMS Framework 1.5 b, (4) (c) (2) (A) (P)</i>
Protected against deterioration? <i>Reference: SMS Framework 1.5 b, (4) (c) (2) (b) (P)</i>
Protected against loss? <i>Reference: SMS Framework 1.5 b, (4) (c) (2) (c) (P)</i>
Annotated with record retention times? <i>Reference: SMS Framework 1.5 b, (4) (d) (P)</i>
The organization will periodically measure performance objectives and design expectations of the Documentation and Records Element. <i>Reference: SMS Framework note at 3.1.3 & 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PM/I)</i>
Bottom Line Assessment

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<p>Has the organization clearly defined and documented (in paper or electronic format) safety policies, objectives, procedures, and document/record maintenance processes and established, implemented, and maintained a safety management plan that meets the safety expectations and objectives?</p>
<p>Component 2.0 Safety Risk Management</p>
<p>Safety Risk Management: General Expectations</p>
<p>Performance Objective</p>
<p>The organization will develop processes to understand the critical characteristics of its systems and operational environment and apply this knowledge to identify hazards, analyze and assess risk and design risk controls.</p>
<p>Design Expectations</p>
<p>Input</p>
<p>The organization will identify inputs (interfaces) for this Component obtained from the critical expectations of its systems and operational environment?</p> <p>Reference: <i>SMS Framework 1.5 b, (1) (f) (I)</i></p>
<p>Management Responsibility</p>
<p>The organization will clearly identify who is responsible for the quality of the Safety Risk Management Process. Procedures will also define who is responsible for accomplishing the process.</p> <p>Reference: <i>SMS Framework 1.2 b, (3) (R/A)</i></p>

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Procedure
Does the organization's SMS, at a minimum, include the following processes -
<p>System description and task analysis? <i>Reference: SMS Framework 2.0 b, (1) (a) (P)</i></p>
<p>Hazard Identification? <i>Reference: SMS Framework 2.0 b, (1) (b) (P)</i></p>
<p>Safety Risk Analysis? <i>Reference: SMS Framework 2.0 b, (1) (c) (P)</i></p>
<p>Safety Risk Assessment? <i>Reference: SMS Framework 2.0 b, (1) (d) (P)</i></p>
<p>Safety Risk Control and Mitigation? <i>Reference: SMS Framework 2.0 b, (1) (e) (P)</i></p>
Does the organization's SMS processes apply to -
<p>Initial designs of systems, organizations, and/or products? <i>Reference: SMS Framework 2.0 b, (2) (a) (P)</i></p>
<p>The development of operational procedures? <i>Reference: SMS Framework 2.0 b, (2) (b) (P)</i></p>
<p>Hazards that are identified in the safety assurance functions (described in Component 3.0, b)? <i>Reference: SMS Framework 2.0 b, (2) (c) (P)</i></p>
<p>Planned changes to the operational processes? <i>Reference: SMS Framework 2.0 b, (2) (d) (P)</i></p>

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<p>Does the organization establish feedback loops between assurance functions described in the Continuous Monitoring Process 3.1.1, b, to evaluate the effectiveness of safety risk controls?</p> <p><i>Reference: SMS Framework 2.0 b, (3) (P)</i></p>
<p>Does the organization define acceptable and unacceptable levels of safety risk (for example, does the organization have a safety risk matrix)?</p> <p><i>Reference: SMS Framework 2.0 b, (4) (a) (P)</i></p>
<p>Does the organization's safety risk acceptance process include descriptions of the following -</p>
<p>Severity levels?</p> <p><i>Reference: SMS Framework 2.0 b, (4) (b) (1) (P)</i></p>
<p>Likelihood levels?</p> <p><i>Reference: SMS Framework 2.0 b, (4) (b)(2) (P)</i></p>
<p>Level of management that can make safety risk acceptance decisions in accordance with Element 1.2 b (3)?</p> <p><i>Reference: SMS Framework 2.0 b, (4) c)(P/R/A)</i></p>
<p>Does the organization define acceptable risk for hazards that will exist in the short-term while safety risk control/mitigation plans are developed and implemented?</p> <p><i>Reference: SMS Framework 2.0 b, (4) (d) (P)</i></p>
<p>Outputs and Measures</p>

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The organization will: (1) identify interfaces between the Safety Risk Management Component (this Component) and the Safety Assurance Component (3.0), and (2) periodically measure performance objectives and design expectations of the safety risk management component.

Reference: (1) SMS Framework 1.5 b, (1) (f); (2) SMS Framework note at 3.1.3 & 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PMI)

Controls

The organization will ensure that: (1) procedures are followed for safety-related operations and activities, and (2) they periodically review supervisory and operational controls to ensure the effectiveness of the Safety Risk Management Component (2.0).

Reference: (1) SMS Framework: 1.0 b, (4) (f); (2) SMS Framework 1.1 b, (2) k); 3.1.3 b, (1); 3.3.2 b (1)&(2)(C)

Bottom Line Assessment

Has the organization developed processes to understand the critical characteristics of its systems and operational environment and applied this knowledge to the identification of hazards, risk analysis and risk assessment, and the design of risk controls?

Element 2.1 Hazard Identification and Analysis:

Process 2.1.1 System and Task Analysis

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Performance Objectives
The organization will describe and analyze its systems, operations, and operational environment to gain an understanding of critical design and performance factors, processes, and activities to identify hazards.
Design Expectations
Input
Inputs (interfaces) for the System Description and Task Analysis process will be obtained from the Safety Risk Management Component 2.0 b, (2). <i>Reference: SMS Framework 2.0 b, (2) (I).</i>
Management Responsibility
The organization will clearly identify who is responsible for the quality of the System Description and Task Analysis Process. Procedures will also define who is responsible for accomplishing the process. <i>Reference: SMS Framework 1.2 b, (3) (R/A)</i>
Procedure
Does the organization develop system descriptions and task analysis to the level of detail necessary to -
Identify hazards? <i>Reference: SMS Framework 2.1.1 b, (1)(a) (P)</i>
Develop operational procedures? <i>Reference: SMS Framework 2.1.1 b, (1) (b) (P)</i>
Develop and implement risk controls? <i>Reference: SMS Framework 2.1.1 b, (1) (c) (P)</i>
Outputs and Measures

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The organization will: (1) identify interfaces between the system description and task analysis function (this process) and the Hazard Identification Process 2.1.2 below, and
 (2) periodically measure performance objectives and design expectations of the System Description and Task Analysis Process (2.1.1).

Reference: (1) SMS Framework 1.5 b, (1) (f); (2) SMS Framework note at 3.1.3 & 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PMI)

Controls

The organization will ensure that: (1) procedures are followed for safety-related operations and activities, and (2) they periodically review supervisory and operational controls to ensure the effectiveness of the System Description and Task Analysis Process (2.1.1).

Reference: (1) SMS Framework: 1.0 b, (4) (f); (2) SMS Framework 1.1 b, (2) k); 3.1.3 b, (1); 3.3.2, b (1) & (2) (C)

Bottom Line Assessment

Has the organization analyzed its systems, operations and operational environment to gain an understanding of critical design and performance factors, processes, and activities to identify hazards?

Process 2.1.2 Identify Hazards

Performance Objective

The organization will identify and document the hazards in its operations that are likely to cause death, serious physical harm, or damage to equipment or property in sufficient detail to determine associated level of risk and risk acceptability.

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Design Expectations
Input
<p>Inputs (interfaces) for the Hazard Identification Process will be obtained from the System Description and Task Analysis Process 2.1.1, to include a new hazard identified from the Safety Assurance Component 3.0, failures of risk controls due to design deficiencies found in the System Assessment Process 3.1.8 (b)(3), and/or from any other source.</p> <p><i>Reference: SMS Framework 1.5 b, (1) (f) (I)</i></p>
Management Responsibility
<p>The organization will clearly identify who is responsible for the quality of the Hazard Identification Process. Procedures will also define who is responsible for accomplishing the process.</p> <p><i>Reference: SMS Framework 1.2 b, (3) (R/A)</i></p>
Procedure
<p>Does the organization identify hazards for the entire scope of each system, as defined in the system description? Note: While it is recognized that identification of every conceivable hazard is impractical, aviation service providers are expected to exercise due diligence in identifying and controlling significant and reasonably foreseeable hazards related to their operations.</p> <p><i>Reference: SMS Framework 2.1.2 b, (1)(a) (P)</i></p>
<p>Does the organization document the identified hazards?</p> <p><i>Reference: SMS Framework 2.1.2 b, (1) (b) (P)</i></p>
<p>Does the organization have a means of tracking hazard information?</p> <p><i>Reference: SMS Framework 2.1.2 b, (2)(a) (P)</i></p>

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<p>Does the organization manage hazard information through the entire Safety Risk Management Process?</p> <p><i>Reference: SMS Framework 2.1.2 b, (2) (b) (P)</i></p>
<p>Outputs and Measures</p>
<p>The organization will: (1) identify interfaces between this process and the Analysis of Safety Risk Process (2.2.1, below), and (2) periodically measure performance objectives and design expectations of the Hazard Identification Process.</p> <p><i>Reference: (1) SMS Framework 1.5 b, (1) (f); (2) SMS Framework note at 3.1.3 & 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PMI)</i></p>
<p>Controls</p>
<p>The organization will ensure that: (1) procedures are followed for safety-related operations and activities, and (2) they periodically review supervisory and operational controls to ensure the effectiveness of the Hazard Identification Process.</p> <p><i>Reference: (1) SMS Framework: 1.0 b, (4) (f); (2) SMS Framework 1.1 b, (2) k); 3.1.3 b, (1); 3.3.2, b, (1) & (2) (C)</i></p>
<p>Bottom Line Assessment</p>
<p>Has the organization identified and documented hazards that are likely to cause death, serious physical harm, or damage to equipment or property in sufficient detail to determine associated risk and acceptability?</p>
<p>Element 2.2 Risk Assessment and Control</p>

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Process 2.2.1 Analyze Safety Risk
Performance Objective
The organization will determine and analyze the severity and likelihood of potential events associated with identified hazards and will identify risk factors associated with unacceptable levels of severity or likelihood.
Design Expectations
<i>Input</i>
Inputs (interfaces) for this process will be obtained from the Hazard Identification Process (2.1.2). Reference: <i>SMS Framework 1.5 b, (1) (f) (I).</i>
Management Responsibility
The organization will clearly identify who is responsible for the quality of the Safety Risk Analysis Process. Procedures will also define who is responsible for accomplishing the process. Reference: <i>SMS Framework 1.2 b, (3) (R/A)</i>
Procedure
Does the organization's safety risk analysis functions include -
Analysis of existing safety risk controls? Reference: <i>SMS Framework 2.2.1 b, (1)(a) (P)</i>
Triggering mechanisms? Reference: <i>SMS Framework 2.2.1 b, (1) (b) (P)</i>
Safety risk of a reasonably likely outcome from the existence of a hazard? Reference: <i>SMS Framework 2.2.1 b, (1) (c) (P)</i>

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Does the organization's reasonably likely outcomes from the existence of a hazard, include estimations of the following -
<p>Likelihood?</p> <p><i>Reference: SMS Framework 2.2.1 b, (1) (c) 1 (P)</i></p>
<p>Severity?</p> <p><i>Reference: SMS Framework 2.2.1 b, (1) (c) 2 (P)</i></p>
Outputs and Measures
<p>The organization will: (1) identify interfaces between the risk analysis functions (this process) and the Risk Assessment Process 2.2.2, below), and (2) periodically measure performance objectives and design expectations of the Risk Analysis Process.</p> <p><i>Reference: (1) SMS Framework 1.5 b, (1) (f); (2) SMS Framework note at 3.1.3 & 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PMT)</i></p>
Controls
<p>The organization will ensure that: (1) procedures are followed for safety-related operations and activities, and (2) they periodically review supervisory and operational controls to ensure the effectiveness of the Analysis of Safety Risk Process.</p> <p><i>Reference: (1) SMS Framework: 1.0 b, (4) (f); (2) SMS Framework 1.1 b, (2) k); 3.1.3 b, (1); 3.3.2, b, (1) & (2) (C)</i></p>
Bottom Line Assessment

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Has the organization determined and analyzed the factors related to the severity and likelihood of potential events associated with identified hazards and identified factors associated with unacceptable levels of severity or likelihood?
Process 2.2.2 Assess Safety Risk
Performance Objective
The organization will assess risk associated with each identified hazard and define risk acceptance procedures and levels of management that can make safety risk acceptance decisions.
Design Expectations
Input
Inputs (interfaces) for this process will be obtained from the Safety Risk Analysis Process 2.2.1 in terms of estimated severity and likelihood. <i>Reference: SMS Framework 1.5 b, (1) (f) (I)</i>
Management Responsibility
The organization will clearly identify who is responsible for the quality of the Safety Risk Assessment Process. Procedures will also define who is responsible for accomplishing the process. <i>Reference: SMS Framework 1.2 b, (3) (R/A)</i>
Procedure
Does the organization analyze each hazard for its safety risk acceptability using their safety risk acceptance process as described in the SMS Framework Component 2.0, b (4)? <i>Reference: SMS Framework 2.2.2 b, (P)</i>

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Outputs and Measures
<p>The organization will: (1) identify interfaces between the risk assessment functions (this process) and the Control/Mitigate Safety Risk Process 2.2.3. below, and (2) periodically measure performance objectives and design expectations of the Safety Risk Assessment Process.</p> <p><i>Reference: (1) SMS Framework 1.5 b, (1) (f); (2) SMS Framework note at 3.1.3 & 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PMI)</i></p>
Controls
<p>The organization will ensure that: (1) procedures are followed for safety-related operations and activities, and (2) they periodically review supervisory and operational controls to ensure the effectiveness of the Safety Risk Assessment Process.</p> <p><i>Reference: (1) SMS Framework: 1.0 b, (4) (f); (2) SMS Framework 1.1 b, (2) k; 3.1.3 b, (1); 3.3.2, b, (1) & (2) (C)</i></p>
Bottom Line Assessment
<p>Has the organization assessed risk associated with identified hazards and defined risk acceptance procedures and levels of management that can make safety risk acceptance decisions?</p>
Process 2.2.3 Control/Mitigate Safety Risk
Performance Objective

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<p>The organization will design and implement a risk control for each identified hazard for which there is an unacceptable risk, to reduce risk to acceptable levels. The potential for residual risk and substitute risk will be analyzed before implementing risk controls.</p>
<p>NOTE: Although Process 2.2.3 is very similar to the Preventive/Corrective Action Process 3.3.1, the primary differences are:</p> <ul style="list-style-type: none">• Process 2.2.3 is used during the design of a system (often looking to the future) or in the redesign of a non-performing system where system requirements are being met, however the system is not producing the desired results.• Process 2.2.3 is also used when new hazards are discovered during the safety assurance process that were not taken into account during initial design.• Process 3.3.1 is used to develop actions to bring a non-performing system back into conformance to its design requirements.
Design Expectations
<i>Input</i>
<p>Inputs (interfaces) for the Control/Mitigation Safety Risk process will be obtained from the Safety Risk Assessment Process 2.2.2.</p> <p><i>Reference: SMS Framework 1.5 b, (1) (f) (I)</i></p>
<i>Management Responsibility</i>
<p>The organization will clearly identify who is responsible for the quality of the Control/Mitigate Safety Risk Process. Procedures will also define who is responsible for accomplishing the process.</p> <p><i>Reference: SMS Framework 1.2 b, (3) (R/A)</i></p>

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Procedure
<p>Does the organization have a safety risk control/mitigation plan for each hazard with unacceptable risk?</p> <p><i>Reference: SMS Framework 2.2.3 b, (1) (P/C)</i></p>
<p>Are the organization's safety risk controls -</p>
<p>Clearly described?</p> <p><i>Reference: SMS Framework 2.2.3 b, (2)(a) (P)</i></p>
<p>Evaluated to ensure that the expectations have been met?</p> <p><i>Reference: SMS Framework 2.2.3 b, (2) (b) (P)</i></p>
<p>Ready to be used in their intended operational environment?</p> <p><i>Reference: SMS Framework 2.2.3 b, (2) (c) (P)</i></p>
<p>Documented?</p> <p><i>Reference: SMS Framework 2.2.3 b, (2) (c) (P)</i></p>
<p>Does the organization ensure that substitute risk will be evaluated when creating safety risk controls and mitigations?</p> <p><i>Reference: SMS Framework 2.2.3 b, (3) (P/C)</i></p>
Outputs and Measures
<p>The organization will: (1) identify interfaces between the risk control/mitigation functions (this process) and the Safety Assurance Component 3.0, specifically 3.1.1 thru 3.1.6, below, and (2) periodically measure performance objectives and design expectations of the risk Control/Mitigate Safety Risk Process.</p> <p><i>Reference: (1) SMS Framework 1.5 b, (1) (f); (2) SMS Framework note at 3.1.3 & 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PMT)</i></p>
Controls

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<p>The organization will ensure that: (1) procedures are followed for safety-related operations and activities, and (2) they periodically review supervisory and operational controls to ensure the effectiveness of the safety risk control process.</p> <p><i>Reference: (1) SMS Framework: 1.0 b, (4) (f); (2) SMS Framework 1.1 b, (2) k); 3.1.3 b, (1); 3.3.2, b, (1) & (2) (C)</i></p>
<p>Bottom Line Assessment</p>
<p>Has the organization designed and implemented a risk control for each identified hazard for which there is unacceptable risk, to reduce to acceptable levels the potential for death, serious physical harm, or damage to equipment or property? Has the residual or substitute risk been analyzed before implementing any risk control?</p>
<p>Component 3.0: Safety Assurance</p>
<p><i>Safety Assurance: General Expectations</i></p>
<p>Performance Objective</p>
<p>The organization will monitor, measure, and evaluate the performance of their systems to identify new hazards, measure the effectiveness of risk controls, (to include preventative and corrective actions) and ensure compliance with regulatory requirements.</p>
<p>Design Expectations</p>
<p><i>Input</i></p>

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<p>Inputs (interfaces) for this component will be obtained from the Safety Risk Management Component 2.0.</p> <p><i>Reference: SMS Framework 1.5 b, (1) (f) (I)</i></p>
<p>Management Responsibility</p>
<p>The organization will clearly identify who is responsible for the quality of the Safety Assurance Component. Procedures will also define who is responsible for accomplishing the process.</p> <p><i>Reference: SMS Framework 1.2 b, (3) (R/A)</i></p>
<p>Procedure</p>
<p>Does the organization monitor their systems and operations to -</p>
<p>Identify new hazards?</p> <p><i>Reference: SMS Framework 3.0 b, (1)(a) (P)</i></p>
<p>Measure the effectiveness of safety risk controls?</p> <p><i>Reference: SMS Framework 3.0 b, (1) (b) (P)</i></p>
<p>Ensure compliance with regulatory requirements applicable to the SMS?</p> <p><i>Reference: SMS Framework 3.0 b, (1) (c) (P)</i></p>
<p>Is the organization's safety assurance function based upon a comprehensive system description and task analysis as described in Process 2.1.1, System Description and Task Analysis?</p> <p><i>Reference: SMS Framework 3.0 b, (1) (d) (P)</i></p>
<p>Does the organization collect the data necessary to demonstrate the effectiveness of its -</p>
<p>Operational processes?</p>

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<i>Reference: SMS Framework 3.0 b, (2)(a) (P)</i>
The SMS?
<i>Reference: SMS Framework 3.0 b, (2) (b) (P)</i>
Outputs and Measures
The organization will identify interfaces between the data acquisition processes (3.1.1 to 3.1.6) and -
The system assessment process (2.2.2) <i>Reference: SMS Framework 1.5 b, (1) (f) (I)</i>
The hazard identification process (2.1.2) <i>Reference: SMS Framework 1.5 b, (1) (f) (I)</i>
The organization will periodically measure performance objectives and design expectations of the Safety Assurance Component? <i>See note at 3.1.3 & SMS Framework 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PM/I)</i>
Controls
The organization will ensure that: (1) procedures are followed for safety-related operations and activities, and (2) they periodically review supervisory and operational controls to ensure the effectiveness of the Safety Assurance Component. <i>Reference: (1) SMS Framework: 1.0 b, (4) (f); (2) SMS Framework 1.1 b, (2) k; 3.1.3 b, (1); 3.3.2, b, (1) & (2) (C)</i>
Bottom Line Assessment

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Has the organization monitored, measured, and evaluated the performance of their systems to identify new hazards, measure the effectiveness of risk controls, (to include preventative and corrective actions) and ensured compliance with regulatory requirements?
Element 3.1 Safety Performance Monitoring and Measurement:
Process 3.1.1 Continuous Monitoring
Performance Objective
The organization will monitor operational data, including products and services received from contractors, to identify hazards, measure the effectiveness of safety risk controls, and assess system performance.
Design Expectations
Input
Inputs (interfaces) for this process will be obtained from the Risk Assessment Process 2.2.2, Risk Control/Mitigation Process 2.2.3, System Assessment Process 3.1.8 or Preventive/Corrective Action Process 3.3.1. <i>Reference: SMS Framework 1.5 b, (1) (f) (I)</i>
Management Responsibility
The organization will clearly identify who is responsible for the quality of the Continuous Monitoring Process. Procedures will also define who is responsible for accomplishing the process.

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<i>Reference: SMS Framework 1.2 b, (3) (R/A)</i>
Procedure
Does the organization monitor operational data (e.g., duty logs, crew reports, work cards, process sheets, and reports from the employee safety feedback system specified in Process 3.1.6) to -
Determine whether it conforms to safety risk controls (described in Process 2.2.3)? <i>Reference: SMS Framework 3.1.1 b, (1)(a) (P)</i>
Measure the effectiveness of safety risk controls (described in Process 2.2.3)? <i>Reference: SMS Framework 3.1.1 b, (1) (b) (P)</i>
Assess SMS system performance? <i>Reference: SMS Framework 3.1.1 b, (1) (c) (P)</i>
Identify hazards? <i>Reference: SMS Framework 3.1.1 b, (1) (d) (P)</i>
Does the organization monitor products and services from contractors? <i>Reference: SMS Framework 3.1.1 b, (2) (P)</i>
Outputs and Measures
The organization will: (1) identify interfaces between these continuous monitoring functions and the Analysis of Data Process 3.1.7 below, and (2) periodically measure performance objectives and design expectations of the Continuous Monitoring Process. <i>Reference: (1) SMS Framework 1.5 b, (1) (f); (2) SMS Framework note at 3.1.3 & 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PMI)</i>
Controls

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<p>The organization will ensure that: (1) procedures are followed for safety-related operations and activities, and (2) they periodically review supervisory and operational controls to ensure the effectiveness of the Continuous Monitoring Process.</p> <p><i>Reference: (1) SMS Framework: 1.0 b, (4) (f); (2) SMS Framework 1.1 b, (2) k); 3.1.3 b, (1); 3.3.2, b, (1) & (2) (C)</i></p>
<p>Bottom Line Assessment</p>
<p>Has the organization monitored operational data, including products and services received from contractors, to identify hazards, measure the effectiveness of safety risk controls, and assess system performance?</p>
<p>Process 3.1.2 Internal Audits by Operational Departments</p>
<p>Performance Objective</p>
<p>The organization will perform regularly scheduled internal audits of its operational processes, including those performed by contractors, to verify safety performance and evaluate the effectiveness of safety risk controls.</p>
<p>Design Expectations</p>
<p>Input</p>
<p>Inputs (interfaces) for this process will be obtained from the Control/Mitigate Safety Process 2.2.3.</p> <p><i>Reference: SMS Framework 1.5 b, (1) (f) (I)</i></p>
<p>Management Responsibility</p>

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<p>The organization will clearly identify who is responsible for the quality of the Internal Auditing Process. Procedures will also define who is responsible for accomplishing the process.</p> <p><i>Reference: SMS Framework 1.2 b, (3) (R/A)</i></p>
<p>Procedure:</p>
<p>Does the organization's line management ensure regular internal audits of safety-related functions of the organization's operational processes (production system) are conducted?</p> <p><i>Reference: SMS Framework 3.1.2 b, (1) (P)</i></p>
<p>Procedure: Auditing of Contractors</p>
<p>Does the organization's line management ensure regular audits are conducted of their safety-related departmental functions which are performed by subcontractors?</p> <p><i>Reference: SMS Framework 3.1.2 b, (1) (P)</i></p>
<p>Procedure: Objectives of Audits</p>
<p>Does the organization conduct regular audits to -</p>
<p>Determine conformity to safety risk controls?</p> <p><i>Reference: SMS Framework 3.1.2 b, (2)(a) (P)</i></p>
<p>Assess safety risk controls' performance?</p> <p><i>Reference: SMS Framework 3.1.2 b, (2) (b) (P)</i></p>
<p>Procedure: Audit Planning</p>
<p>Does the organization's audit program planning take into account -</p>
<p>Safety criticality of the processes to be audited?</p> <p><i>Reference: SMS Framework 3.1.2 b, (3)(a) (P)</i></p>

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Results of previous audits? <i>Reference: SMS Framework 3.1.2 b, (3) (b) (P)</i>
Procedure: Audit Program Management
Does the organization define -
Audits, including -
Criteria? <i>Reference: SMS Framework 3.1.2 b, (4)(a) (1) (P)</i>
Scope? <i>Reference: SMS Framework 3.1.2 b, (4)(a) (2) (P)</i>
Frequency? <i>Reference: SMS Framework 3.1.2 b, (4)(a) (3) (P)</i>
Methods? <i>Reference: SMS Framework 3.1.2 b, (4)(a) (4) (P)</i>
How the auditors will be selected? <i>Reference: SMS Framework 3.1.2 b, (4) (b) (P)</i>
How they will ensure that auditors do not audit their own work? <i>Reference: SMS Framework 3.1.2 b, (4) (c) (P)</i>
Procedure: Documentation
Does the organization define -
Internal audit responsibilities? <i>Reference: SMS Framework 3.1.2 b, (5)(a) (P)</i>
Expectations for -
Planning audits? <i>Reference: SMS Framework 3.1.2 b, (5) (b) 1 (P)</i>

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<p>Conducting audits?</p> <p><i>Reference: SMS Framework 3.1.2 b, (5) (b) 2 (P)</i></p>
<p>Reporting results?</p> <p><i>Reference: SMS Framework 3.1.2 b, (5) (b) 3 (P)</i></p>
<p>Maintaining records?</p> <p><i>Reference: SMS Framework 3.1.2 b, (5) (b) 4 (P)</i></p>
<p>Audits of contractors and vendors?</p> <p><i>Reference: SMS Framework 3.1.2 b, (5) (b) 5 (P)</i></p>
Outputs and Measures
<p>The organization will: (1) identify interfaces between the Internal Audits of Operational Departments Process and the Analysis of Data Process 3.1.7 below, and (2) periodically measure performance objectives and design expectations of the Internal Audits of Operational Departments Process.</p> <p><i>Reference: (1) SMS Framework 1.5 b, (1) (f); (2) SMS Framework note at 3.1.3 & 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PMT)</i></p>
Controls
<p>The organization will ensure that: (1) procedures are followed for safety-related operations and activities, and (2) they periodically review supervisory and operational controls to ensure the effectiveness of the Internal Audit of Operational Departments Process.</p> <p><i>Reference: (1) SMS Framework: 1.0 b, (4) (f); (2) SMS Framework 1.1 b, (2) k); 3.1.3 b, (1); 3.3.2, b, (1) & (2) (C)</i></p>
Bottom Line Assessment

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Has the organization performed regularly scheduled internal audits of its operational processes, including those performed by contractors, to determine the performance and effectiveness of risk controls?
Process 3.1.3 Internal Evaluation
Performance Objective
The organization will conduct internal evaluations of the SMS and operational processes at planned intervals to determine that the SMS conforms to its objectives and expectations.
Design Expectations
Input
Inputs (interfaces) for this process will be obtained from the Risk Assessment Process 2.2.2 or Control/Mitigate Safety Risk Process 2.2.3. <i>Reference: SMS Framework 1.5 b, (1) (f) (I)</i>
Management Responsibility
The organization will clearly identify who is responsible for the quality of the Internal Evaluation Process. Procedures will also define who is responsible for accomplishing the process. <i>Reference: SMS Framework 1.2 b, (3) (R/A)</i>
Procedure

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<p>Does the organization ensure internal evaluations of operational processes and the SMS are conducted at planned intervals, to determine that the SMS conforms to objectives and expectations? Note: Sampling of SMS output measurement is a primary control under Component 1.0, b, (3) (c) and (4) (e).</p> <p><i>Reference: SMS Framework 3.1.3 b, (1) (P)</i></p>
<p>Does the organization's planning of the internal evaluation program take into account -</p>
<p>Safety criticality of the processes to be evaluated?</p> <p><i>Reference: SMS Framework 3.1.3 b, (2)(a) (P)</i></p>
<p>Results of previous evaluations?</p> <p><i>Reference: SMS Framework 3.1.3 b, (2) (b) (P)</i></p>
<p>Procedure: Program Contents</p>
<p>Does the organization define -</p>
<p>Evaluation's, including -</p>
<p>Criteria?</p> <p><i>Reference: SMS Framework 3.1.3 b, (3) (a) 1 (P)</i></p>
<p>Scope?</p> <p><i>Reference: SMS Framework 3.1.3 b, (3) (a) 2 (P)</i></p>
<p>Frequency?</p> <p><i>Reference: SMS Framework 3.1.3 b, (3) (a) 3 (P)</i></p>
<p>Methods?</p> <p><i>Reference: SMS Framework 3.1.3 b, (3) (a) 4 (P)</i></p>
<p>Processes used to select the evaluators?</p>

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<i>Reference: SMS Framework 3.1.3 b, (3) (b) (P)</i>
Procedure: Documentation
Does the organization's document procedures include -
Evaluation responsibilities? <i>Reference: SMS Framework 3.1.3 b, (3) (c)(1) (P)</i>
Requirements for -
Planning evaluations? <i>Reference: SMS Framework 3.1.3 b, (3) (c) 2 (a)</i> (P)
Conducting evaluations? <i>Reference: SMS Framework 3.1.3 b, (3) (c) 2 (b)</i> (P)
Reporting results? <i>Reference: SMS Framework 3.1.3 b, (3) (c) 2 (c)</i> (P)
Maintaining records? <i>Reference: SMS Framework 3.1.3 b, (3) (c) 2 (d)</i> (P)
Evaluating contractors and vendors? <i>Reference: SMS Framework 3.1.3 b, (3) (c) 2 (e)</i> (P)
Procedure: Scope
Does the organization's evaluation program include an evaluation of the operational departments described in SMS Framework Safety Policy Component 1.0 b, (1) & (2)? <i>Reference: SMS Framework 3.1.3 b, (4) (P)</i>
Procedure: Independence of Evaluators

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<p>Does the organization ensure the person or organization performing evaluations of operational processes are independent of the process being evaluated?</p> <p><i>Reference: SMS Framework 3.1.3 b, (5) (P)</i></p>
<p>Outputs and Measures</p>
<p>The organization will: (1) identify interfaces between this process and the Analysis of Data Process 3.1.7 below, and (2) periodically measure performance objectives and design expectations of the Internal Evaluation Process.</p> <p><i>Reference: (1) SMS Framework 1.5 b, (1) (f); (2) SMS Framework note at 3.1.3 & 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PM/I)</i></p>
<p>Controls</p>
<p>The organization will ensure that: (1) procedures are followed for safety-related operations and activities, and (2) they periodically review supervisory and operational controls to ensure the effectiveness of the Internal Evaluation Process.</p> <p><i>Reference: (1) SMS Framework: 1.0 b, (4) (f); (2) SMS Framework 1.1 b, (2) k); 3.1.3 b, (1); 3.3.2, b, (1) & (2) (C)</i></p>
<p>Bottom Line Assessment</p>
<p>Has the organization conducted internal evaluations of the SMS and operational processes at planned intervals to determine that the SMS conforms to its requirements?</p>
<p>Process 3.1.4 External Auditing</p>
<p>Performance Objective</p>

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<p>The organization will include the results of assessments performed by oversight organizations, and other external audit results, in its data analysis.</p>
<p>Design Expectations</p>
<p><i>Input</i></p>
<p>Inputs (interfaces) for this process will be obtained from the Control/Mitigate Safety Risk Process 2.2.3 and from the FAA and/or other external agencies.</p> <p><i>Reference: SMS Framework 1.5 b, (1) (f) (I)</i></p>
<p><i>Management Responsibility</i></p>
<p>The organization will clearly identify who is responsible for the quality of the External Auditing Process. Procedures will also define who is responsible for accomplishing the process.</p> <p><i>Reference: SMS Framework 1.2 b, (3) (R/A)</i></p>
<p><i>Procedure</i></p>
<p>Does the organization ensure it includes the results of oversight organization audits, and other external audit results, in the analyses conducted under SMS Framework Analysis of Data Process 3.1.7?</p> <p><i>Reference: SMS Framework 3.1.4 b, (P/I)</i></p>
<p><i>Outputs and Measures</i></p>
<p>The organization will: (1) identify interfaces between this process and the Analysis of Data Process 3.1.7 below, and (2) periodically measure performance objectives and design expectations of the External Auditing Process.</p> <p><i>Reference: (1) SMS Framework 1.5 b, (1) (f); (2) SMS Framework note at 3.1.3 & 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PMI)</i></p>

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Controls
<p>The organization will ensure that: (1) procedures are followed for safety-related operations and activities, and (2) they periodically review supervisory and operational controls to ensure the effectiveness of the External Auditing Process.</p> <p><i>Reference: (1) SMS Framework: 1.0 b, (4) (f); (2) SMS Framework 1.1 b, (2) k); 3.1.3 b, (1); 3.3.2, b, (1) & (2) (C)</i></p>
Bottom Line Assessment
<p>Has the organization included the results of audits performed by oversight organizations, and other external audit results, in its analysis of data?</p>
Process 3.1.5 Investigation
Performance Objective
<p>The organization will establish procedures to collect data and investigate incidents, accidents, and instances of potential regulatory non-compliance to identify potential new hazards or risk control failures.</p>
Design Expectations
Input
<p>Inputs (interfaces) for this process will be obtained from the Control/Mitigate Safety Risk Process 2.2.3 and as needed upon occurrence of events.</p> <p><i>Reference: SMS Framework 1.5 b, (1) (f) (I)</i></p>
Management Responsibility

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<p>The organization will clearly identify who is responsible for the quality of the Investigation Process. Procedures will also define who is responsible for accomplishing the process.</p> <p><i>Reference: SMS Framework 1.2 b, (3) (R/A)</i></p>
Procedure
<p>Does the organization ensure it collects data on-</p>
<p style="text-align: center;">Incidents?</p> <p><i>Reference: SMS Framework 3.1.5 b, (1)(a) (P)</i></p>
<p style="text-align: center;">Accidents?</p> <p><i>Reference: SMS Framework 3.1.5 b, (1) (b) (P)</i></p>
<p style="text-align: center;">Potential regulatory non-compliance?</p> <p><i>Reference: SMS Framework 3.1.5 b, (1) (c) (P)</i></p>
<p>Does the organization ensure that procedures are established to investigate -</p>
<p style="text-align: center;">Accidents?</p> <p><i>Reference: SMS Framework 3.1.5 b, (2) (a) (P)</i></p>
<p style="text-align: center;">Incidents?</p> <p><i>Reference: SMS Framework 3.1.5 b, (2) (b) (P)</i></p>
<p style="text-align: center;">Instances of potential regulatory non-compliance?</p> <p><i>Reference: SMS Framework 3.1.5 b, (2) (c) (P)</i></p>
Outputs and Measures
<p>The organization will: (1) identify interfaces between this process and the Analysis of Data Process 3.1.7 below, and (2) periodically measure performance objectives and design expectations of the Investigation Process.</p>

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<p><i>Reference: (1) SMS Framework 1.5 b, (1) (f); (2) SMS Framework note at 3.1.3 & 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PMI)</i></p>
<p>Controls</p>
<p>The organization will ensure that: (1) procedures are followed for safety-related operations and activities, and (2) they periodically review supervisory and operational controls to ensure the effectiveness of the Investigation Process.</p> <p><i>Reference: (1) SMS Framework: 1.0 b, (4) (f); (2) SMS Framework 1.1 b, (2) k); 3.1.3 b, (1); 3.3.2, b, (1) & (2) (C)</i></p>
<p>Bottom Line Assessment</p>
<p>Has the organization established procedures to collect data and investigate incidents, accidents, and instances of potential regulatory non-compliance that occur to identify potential new hazards or risk control failures?</p>
<p>Process 3.1.6 Employee Reporting and Feedback System</p>
<p>Performance Objective</p>
<p>The organization will establish and maintain a confidential Employee Safety Reporting and Feedback System. Data obtained from this system will be monitored to identify emerging hazards and to assess performance of risk controls in the operational systems.</p>
<p>Design Expectations</p>
<p>Input</p>

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<p>Inputs (interfaces) for the Employee Reporting and Feedback System will be obtained from employees.</p> <p><i>Reference: SMS Framework 1.5 b, (1) (f) (I)</i></p>
Management Responsibility
<p>The organization will clearly identify who is responsible for the quality of the Employee Reporting and Feedback Process. Procedures will also define who is responsible for accomplishing the process.</p> <p><i>Reference: SMS Framework 1.2 b, (3) (R/A)</i></p>
Procedure
<p>Has the organization established and maintained a confidential Employee Reporting and Feedback System as in Component 4.0 b, (1) (e), Safety Promotion?</p> <p><i>Reference: SMS Framework 3.1.6 b, (1) (P)</i></p>
<p>Does the organization ensure employees are encouraged to use the Safety Reporting and Feedback System without fear of reprisal and to encourage submission of solutions/safety improvements where possible?</p> <p><i>Reference: SMS Framework 3.1.6 b, (2) (P)</i></p>
<p>Does the organization ensure data from the Safety Reporting and Feedback System is monitored to identify emerging hazards?</p> <p><i>Reference: SMS Framework 3.1.6 b, (3) (P)</i></p>
<p>Does the organization ensure the data collected in the Employee Reporting and Feedback System is included in the analyses conducted under SMS Framework Analysis of Data Process 3.1.7?</p>

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<p><i>Reference: SMS Framework 3.1.6 b, (4) (P)</i></p>
<p>Outputs and Measures</p>
<p>The organization will: (1) identify interfaces between this process and the Analysis of Data Process 3.1.7 below, and (2) periodically measure performance objectives and design expectations of the Employee Reporting and Feedback Process.</p> <p><i>Reference: (1) SMS Framework 1.5 b, (1) (f); (2) SMS Framework note at 3.1.3 & 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PMI)</i></p>
<p>Controls</p>
<p>The organization will ensure that: (1) procedures are followed for safety-related operations and activities, and (2) they periodically review supervisory and operational controls to ensure the effectiveness of the Employee Reporting and Feedback Process.</p> <p><i>Reference: (1) SMS Framework: 1.0 b, (4) (f); (2) SMS Framework 1.1 b, (2) k); 3.1.3 b, (1); 3.3.2, b, (1) & (2) (C)</i></p>
<p>Bottom Line Assessment</p>
<p>Has the organization established and maintained a Confidential Employee Safety Reporting and Feedback System? Are the data obtained from this system monitored to identify emerging hazards and to assess performance of risk controls in the operational systems?</p>
<p>Process 3.1.7 Analysis of Data</p>
<p>Performance Objective</p>

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<p>The organization will analyze the data described in SMS Framework Processes 3.1.1 thru 3.1.6, to assess the risk controls' performance and effectiveness in the organization's operational processes and the SMS, and to identify root causes of deficiencies and potential new hazards.</p>
<p>Design Expectations</p>
<p><i>Input</i></p>
<p>Inputs (interfaces) for this process will be obtained from the data acquisition processes 3.1.1 thru 3.1.6.</p> <p>Reference: <i>SMS Framework 1.5 b, (1) (f) (I)</i></p>
<p><i>Management Responsibility</i></p>
<p>The organization will clearly identify who is responsible for the quality of the Analysis of Data Process. Procedures will also define who is responsible for accomplishing the process.</p> <p>Reference: <i>SMS Framework 1.2 b, (3) (R/A)</i></p>
<p><i>Procedure</i></p>
<p>Does the organization analyze the data that it collects to demonstrate the effectiveness of -</p>
<p>Risk controls in the organization's operational processes (SMS Framework Safety Policy Component 1.0 b, (1) (a) & (b))?</p> <p>Reference: <i>SMS Framework 3.1.7 b, (1) (a) (P)</i></p>
<p>The organization's SMS?</p> <p>Reference: <i>SMS Framework 3.1.7 b, (1) (b) (P)</i></p>

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<p>Does the organization ensure it analyzes the data it collects to identify root causes of deficiencies and potential new hazards and evaluate where improvements can be made in the organization's -</p>
<p>Operational processes (SMS Framework Safety Policy Component 1.0 b, (1) (a) & (b))?</p> <p><i>Reference: SMS Framework 3.1.7 b, (2) (a) (P)</i></p>
<p>The SMS?</p> <p><i>Reference: SMS Framework 3.1.7 b, (2) (b) (P)</i></p>
<p>Outputs and Measures</p>
<p>The organization will: (1) identify interfaces between this process and the System Assessment Process 3.1.8 below, and (2) periodically measure performance objectives and design expectations of the Analysis of Data Process.</p> <p><i>Reference: (1) SMS Framework 1.5 b, (1) (f); (2) SMS Framework note at 3.1.3 & 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PMI)</i></p>
<p>Controls</p>
<p>The organization will ensure that: (1) procedures are followed for safety-related operations and activities, and (2) they periodically review supervisory and operational controls to ensure the effectiveness of the Analysis of Data Process.</p> <p><i>Reference: (1) SMS Framework: 1.0 b, (4) (f); (2) SMS Framework 1.1 b, (2) k; 3.1.3 b, (1); 3.3.2, b, (1) & (2) (C)</i></p>
<p>Bottom Line Assessment</p>

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<p>Has the organization analyzed the data described in SMS Framework processes 3.1.1 thru 3.1.6 to assess the risk controls' performance and effectiveness in the organization's operational processes and the SMS and to identify root causes of deficiencies and potential new hazards?</p>
<p>Process 3.1.8 System Assessment</p>
<p>Performance Objective</p>
<p>The organization will perform an assessment of the safety performance and effectiveness of risk controls, conformance to SMS expectations as stated herein, and the objectives of the safety policy.</p>
<p>Design Expectations</p>
<p>Input</p>
<p>Inputs (interfaces) for this process will be obtained from the Analysis of Data Process 3.1.7.</p> <p><i>Reference: SMS Framework 1.5 b, (1) (f) (I)</i></p>
<p>Management Responsibility</p>
<p>The organization will clearly identify who is responsible for the quality of the System Assessment Process. Procedures will also define who is responsible for accomplishing the process.</p> <p><i>Reference: SMS Framework 1.2 b, (3) (R/A)</i></p>
<p>Procedure</p>
<p>Does the organization assess the performance and effectiveness of the -</p>

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<p>Safety-related functions of operational processes (Safety Policy Component 1.0 b (1) (a)) against their requirements?</p> <p><i>Reference: SMS Framework 3.1.8 b, (1)(a) (P)</i></p>
<p>SMS against its objectives and expectations?</p> <p><i>Reference: SMS Framework 3.1.8 b, (1) (b), (P)</i></p>
<p>Does the organization record system assessments and risk control performance reports that result in a finding of -</p>
<p>Conformity or nonconformity with existing safety risk controls and/or SMS expectations, including regulatory requirements applicable to the SMS?</p> <p><i>Reference: SMS Framework 3.1.8 b, (2) (a) & (b) (P)</i></p>
<p>New hazards found?</p> <p><i>Reference: SMS Framework 3.1.8 b, (2) (c) (P)</i></p>
<p>Outputs and Measures</p>
<p>Does the organization use the Safety Risk Management (Component 2.0) if risk assessment and risk control performance indicates -</p>
<p>That new hazards or potential hazards have been found?</p> <p><i>Reference: SMS Framework 3.1.8 b, (3) (a) (I)</i></p>
<p>That the system needs to be changed?</p> <p><i>Reference: SMS Framework 3.1.8 b, (3) (b) (I)</i></p>
<p>Does the organization maintain records of assessments in accordance with the requirements of SMS Documentation and Records Element 1.5?</p>

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<p><i>Reference: SMS Framework 3.1.8 b, (4) (P/I)</i></p>
<p>The organization will identify interfaces between the system assessment function and -</p>
<p>The hazard identification function (2.1.2, Identify Hazards Element)</p>
<p><i>Reference: SMS Framework 1.5 b, (1) (f) (I)</i></p>
<p>The preventive and corrective action function (3.3.1, Preventive/Corrective Action Element)</p>
<p><i>Reference: SMS Framework 1.5 b, (1) (f) (I)</i></p>
<p>The organization will periodically measure performance objectives and design expectations of the System Assessment Process?</p>
<p><i>Reference: SMS Framework note at 3.1.3 & SMS Framework 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PM/I)</i></p>
<p>Controls</p>
<p>The organization will ensure that: (1) procedures are followed for safety-related operations and activities, and (2) they periodically review supervisory and operational controls to ensure the effectiveness of the System Assessment Process.</p>
<p><i>Reference: (1) SMS Framework: 1.0 b, (4) (f); (2) SMS Framework 1.1 b, (2) k; 3.1.3 b, (1); 3.3.2, b, (1) & (2) (C)</i></p>
<p>Bottom Line Assessment</p>

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Has the organization assessed risk controls' performance and effectiveness, conformance with SMS requirements, and the objectives of the safety policy?
Element 3.2 Management of Change
Performance Objective
The organization's management will identify and determine acceptable safety risk for changes within the organization that may affect established processes and services by new system design, changes to existing system designs, new operations/procedures, or modified operations/procedures.
Design Expectations
Input
Inputs (interfaces) for this process will be obtained from proposed changes to systems, processes, procedures, or organizational structures. <i>Reference: SMS Framework 1.5 b, (1) (f) (I)</i>
Management Responsibility
The organization will clearly identify who is responsible for the quality of the Management of Change Process. Procedures will also define who is responsible for accomplishing the process. <i>Reference: SMS Framework 1.2 b, (3) (R/A)</i>
Procedure

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Does the organization ensure it does not implement any of the following until the level of safety risk of each identified hazard is determined to be acceptable for -
<p>New system designs?</p> <p><i>Reference: SMS Framework 3.2 b, (1) (a) (P)</i></p>
<p>Changes to existing system designs?</p> <p><i>Reference: SMS Framework 3.2 b, (1) (b) (P)</i></p>
<p>New operations or procedures?</p> <p><i>Reference: SMS Framework 3.2 b, (1) (c) (P)</i></p>
<p>Modifications to existing operations or procedures?</p> <p><i>Reference: SMS Framework 3.2 b, (1) (d) (P)</i></p>
Outputs and Measures
<p>The organization will: (1) ensure that this process is interfaced with the SRM process (System Description and Task Analysis 2.1.1), and (2) periodically measure performance objectives and design expectations of the Management of Change Process.</p> <p><i>Reference: (1) SMS Framework 1.5 b, (1) (f); (2) SMS Framework note at 3.1.3 & 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PMI)</i></p>
Controls
<p>The organization will ensure that: (1) procedures are followed for safety-related operations and activities, and (2) they periodically review supervisory and operational controls to ensure the effectiveness of the Management of Change Process.</p>

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<p><i>Reference: (1) SMS Framework: 1.0 b, (4) (f); (2) SMS Framework 1.1 b, (2) k); 3.1.3 b, (1); 3.3.2, b, (1) & (2) (C)</i></p>
<p>Bottom Line Assessment</p>
<p>Has the organization’s management assessed risk for changes within the organization that may affect established processes and services by new system designs, changes to existing system designs, new operations/procedures or modified operations/procedures?</p>
<p><i>Element 3.3 Continuous Improvement</i></p>
<p>Performance Objective</p>
<p>The organization will promote continuous improvement of its SMS through recurring application of SRM (Component 2.0), SA (Component 3.0), and by using safety lessons learned and communicating them to all personnel.</p>
<p>Design Expectations</p>
<p><i>Input</i></p>
<p>Inputs (interfaces) for this process will be obtained through continuous application of Safety Risk Management (Component 2.0), Safety Assurance (Component 3.0) and the outputs of the SMS, including safety lessons learned.</p> <p><i>Reference: SMS Framework 1.5 b, (1) (f) (I)</i></p>
<p><i>Management Responsibility</i></p>

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<p>The organization will clearly identify who is responsible for the quality of the Continual Improvement Process. Procedures will also define who is responsible for accomplishing the process.</p> <p><i>Reference: SMS Framework 1.2 b, (3) (R/A)</i></p>
<p>Procedure</p>
<p>Does the organization continuously improve the effectiveness of the SMS and of safety risk controls through the use of the safety and quality policies, objectives, audit and evaluation results, analysis of data, corrective and preventive actions, and management reviews?</p> <p><i>Reference: SMS Framework 3.3 b, (1) (P)</i></p>
<p>Does the organization develop safety lessons learned and -</p> <p><i>Reference: SMS Framework 3.3 b, (2) (P)</i></p>
<p>Use safety lessons learned to promote continuous improvement of safety?</p> <p><i>Reference: SMS Framework 3.3 b, (2)(a) (P)</i></p>
<p>Ensure that safety lessons learned are communicated to all personnel?</p> <p><i>Reference: SMS Framework 3.3 b, (2) (b) & 4.2 (P)</i></p>
<p>Outputs and Measures</p>

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<p>The organization will: (1) ensure that trend analysis of safety and quality policies, objectives, audit and evaluation results, analysis of data, and corrective and preventive actions are interfaced with Management Review Process 3.3.2, below), and (2) periodically measure performance objectives and design expectations of the Continual Improvement Process.</p> <p><i>Reference: (1) SMS Framework 1.5 b, (1) (f); (2) SMS Framework note at 3.1.3 & 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PM/I)</i></p>
<p>Controls</p>
<p>The organization will ensure that: (1) procedures are followed for safety-related operations and activities, and (2) they periodically review supervisory and operational controls to ensure the effectiveness of the Continuous Improvement Process.</p> <p><i>Reference: (1) SMS Framework: 1.0 b, (4) (f); (2) SMS Framework 1.1 b, (2) k); 3.1.3 b, (1); 3.3.2, b, (1) & (2) (C)</i></p>
<p>Bottom Line Assessment</p>
<p>Has the organization promoted continuous improvement of its SMS through recurring application of Safety Risk Management (Component 2.0), Safety Assurance (Component 3.0), and by using safety lessons learned and communicating them to all personnel?</p>
<p>Process 3.3.1 Preventive/Corrective Action</p>
<p>Performance Objective</p>

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<p>The organization will take preventive and corrective action to eliminate the causes or potential causes of nonconformance identified during analysis, to prevent recurrence.</p>
<p>NOTE: Although Process 2.2.3 (Control/Mitigate Safety Risk) is very similar to Process 3.3.1, the primary differences are:</p> <ul style="list-style-type: none"> • Process 2.2.3 is used during the design of a system (often looking to the future) or in the redesign of a non-performing system where system requirements are being met, but the system is not producing the desired results. • Process 2.2.3 is also used where new hazards are discovered during Safety Assurance that were not taken into account during initial design. • Process 3.3.1 is used to develop actions to bring a non-performing system back into conformance to its design requirements.
<p>Design Expectations</p>
<p>Inputs</p>
<p>Inputs (interfaces) for this process will be obtained from System Assessments (Process 3.1.8) with findings of non-performing risk controls.</p> <p><i>Reference: SMS Framework 1.5 b, (1) (f) (I)</i></p>
<p>Management Responsibility</p>
<p>The organization will clearly identify who is responsible for the quality of the Preventive/Corrective Action Process. Procedures will also define who is responsible for accomplishing the process.</p> <p><i>Reference: SMS Framework 1.2 b, (3) (R/A)</i></p>

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Procedure
Does the organization develop the following -
<p>Preventive actions for identified potential nonconformities with risk controls?</p> <p><i>Reference: SMS Framework 3.3.1 b, (1) (a) (P)</i></p>
<p>Corrective actions for identified nonconformities with risk controls?</p> <p><i>Reference: SMS Framework 3.3.1 b, (1)(b) (P)</i></p>
Does the organization consider safety lessons learned in the development of -
<p>Preventive actions?</p> <p><i>Reference: SMS Framework 3.3.1 b, (2) (a) (P)</i></p>
<p>Corrective actions?</p> <p><i>Reference: SMS Framework 3.3.1 b, (2)(b) (P)</i></p>
Does the organization take necessary preventive and corrective action based on the findings of investigations?
<p><i>Reference: SMS Framework 3.3.1 b, (3) (P)</i></p>
Does the organization prioritize and implement preventive and corrective actions in a timely manner?
<p><i>Reference: SMS Framework 3.3.1 b, (4) (P)</i></p>
Outputs and Measures
Does the organization keep and maintain records of the disposition and status of preventive and corrective actions according to established record retention policy?
<p><i>Reference: SMS Framework 3.3.1 b, (5) (PM/I)</i></p>

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<p>The organization will: (1) identify interfaces between this process and the Continuous Monitoring Process 3.1.1 above, and (2) periodically measure performance objectives and design expectations of the Preventive and Corrective Action Process.</p> <p><i>Reference: (1) SMS Framework 1.5 b, (1) (f); (2) SMS Framework note at 3.1.3 & 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PMI)</i></p>
<p>Controls</p>
<p>The organization will ensure that: (1) procedures are followed for safety-related operations and activities, and (2) they periodically review supervisory and operational controls to ensure the effectiveness of the Preventive and Corrective Action Process.</p> <p><i>Reference: (1) SMS Framework: 1.0 b, (4) (f); (2) SMS Framework 1.1 b, (2) k); 3.1.3 b, (1); 3.3.2, b, (1) & (2) (C)</i></p>
<p>Bottom Line Assessment</p>
<p>Has the organization taken preventive or corrective actions to eliminate the causes of non-conformances, identified during analysis, to prevent recurrence?</p>
<p>Process 3.3.2 Management Review</p>
<p>Performance Objective</p>
<p>Top management will conduct regular reviews of the SMS to assess the performance and effectiveness of an organization's operational processes and the need improvements.</p>

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Design Expectations
<i>Input</i>
Inputs (interfaces) for this process will be obtained from the outputs of Safety Risk Management (Component 2.0) and Safety Assurance (Component 3.0) activities including -
Hazard identification (Process 2.1.2)
Risk analysis (severity and likelihood) (Process 2.2.1)
Risk assessments (Process 2.2.2)
Risk control/mitigation plans (Process 2.2.3)
Results of analysis of data (Process 3.1.7)
<i>Reference: SMS Framework 1.5 b, (1) (f) (I)</i>
<i>Management Responsibility</i>
The organization will clearly identify who is responsible for the quality of the Management Review Process. Procedures will also define who is responsible for accomplishing the process.
<i>Reference: SMS Framework 1.2 b, (3) (R/A)</i>
<i>Procedure</i>
Does top management conduct regular reviews of the SMS, including the outputs of the Safety Risk Management Process, the outputs of the Safety Assurance Process, and safety lessons learned?
<i>Reference: SMS Framework 3.3.2 b, (1)(a), (b) & (c) (P)</i>

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<p>Does top management include in its reviews of the SMS, an assessment of the need for improvements to the organization's operational processes and SMS?</p> <p><i>Reference: SMS Framework 3.3.2 b, (2) (a) & (b) (P)</i></p>
<p>Outputs and Measures</p>
<p>The organization will keep records of the disposition and status of management reviews according to the organization's record retention policy.</p> <p><i>Reference: SMS Framework 1.5 b, (3)(a)(5) (I)</i></p>
<p>The organization will: (1) identify interfaces between this process and the Hazard Identification Process (2.1.2, above) and Preventive and Corrective Action Process (3.3.1, above), and (2) periodically measure performance objectives and design expectations of the Management Review Process.</p> <p><i>Reference: (1) SMS Framework 1.5 b, (1) (f); (2) SMS Framework note at 3.1.3 & 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PMI)</i></p>
<p>Controls</p>
<p>The organization will ensure that: (1) procedures are followed for safety-related operations and activities, and (2) they periodically review supervisory and operational controls to ensure the effectiveness of the Management Review Process.</p> <p><i>Reference: (1) SMS Framework: 1.0 b, (4) (f); (2) SMS Framework 1.1 b, (2) k); 3.1.3 b, (1); 3.3.2, b, (1) & (2) (C)</i></p>

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Bottom Line Assessment
Has top management conducted regular reviews of the SMS, including outputs of Safety Risk Management (Component 2.0), Safety Assurance (Component 3.0), and lessons learned? Has management reviews included assessing the performance and effectiveness of an organization's operational processes and the need for improvements?
Component 4.0: Safety Promotion
<i>Safety Promotion: General Expectations</i>
Performance Objective
Top management will promote the growth of a positive safety culture and communicate it throughout the organization.
Design Expectations
<i>Input</i>
Inputs (interfaces) will be identified between top management and organizational personnel. <i>Reference: SMS Framework 1.5 b, (1) (f) (I)</i>
<i>Management Responsibility</i>
The organization will clearly identify who is responsible for the quality of the Safety Promotion Component (4.0). Procedures will also define who is responsible for accomplishing the process. <i>Reference: SMS Framework 1.2 b, (3) (R/A)</i>

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<i>Procedure/Output/Measure</i>
Does top management promote the growth of a positive safety culture through -
<p>Publication of Top Management's stated commitment to safety to all employees?</p> <p><i>Reference: SMS Framework 4.0 b, (1)(a) (P/I)</i></p>
<p>Visible demonstration of their commitment to the SMS?</p> <p><i>Reference: SMS Framework 4.0 b, (1) (b) (P/I)</i></p>
<p>Communication of the safety responsibilities for the organization's personnel?</p> <p><i>Reference: SMS Framework 4.0 b, (1) (c) (P/I)</i></p>
<p>Clear and regular communication of safety policy, goals, expectations, standards, and performance to all employees of the organization?</p> <p><i>Reference: SMS Framework 4.0 b, (1) (d) (P/I)</i></p>
<p>An effective employee reporting and feedback system that provides confidentiality?</p> <p><i>Reference: SMS Framework 4.0 b, (1) (e) (P/I)</i></p>
<p>Use of a safety information system that provides an accessible efficient means to retrieve information?</p> <p><i>Reference: SMS Framework 4.0 b, (1) (f) (P/I)</i></p>
<p>Allocation of resources essential to implement and maintain the SMS?</p> <p><i>Reference: SMS Framework 4.0 b, (1) (g) (P/I)</i></p>

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<p>The organization will periodically measure performance objectives and design expectations of the Safety Promotion Component.</p> <p><i>Reference: (1) SMS Framework 1.5 b, (1) (f); (2) SMS Framework note at 3.1.3 & 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PM/I)</i></p>
<p>Controls</p>
<p>The organization will ensure that: (1) procedures are followed for safety-related operations and activities, and (2) they periodically review supervisory and operational controls to ensure the effectiveness of the Safety Promotion Component.</p> <p><i>Reference: (1) SMS Framework: 1.0 b, (4) (f); (2) SMS Framework 1.1 b, (2) k); 3.1.3 b, (1); 3.3.2, b, (1) & (2) (C)</i></p>
<p>Bottom Line Assessment</p>
<p>Has top management promoted the growth of a positive safety culture and communicate it throughout the organization.</p>
<p>Element 4.1 Competencies and Training</p>
<p>Process 4.1.1 Personnel Expectations (Competence)</p>
<p>Performance Objective</p>
<p>The organization will document competency requirements for those positions identified in Element 1.2 b, (3) and 1.3 and ensure those requirements are met.</p>

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Design Expectations
<i>Input</i>
<p>Inputs (interfaces) for this process will be identified between top management and the key safety personnel referenced in Management Commitment and Safety Accountabilities Element 1.2 b, (3) & Key Safety Personnel Element 1.3.</p> <p><i>Reference: SMS Framework 1.5 b, (1) (f) (I)</i></p>
<i>Management Responsibility</i>
<p>The organization will clearly identify who is responsible for the quality of the Personnel Expectations Process. Procedures will also define who is responsible for accomplishing the process.</p> <p><i>Reference: SMS Framework 1.2 b, (3) (R/A)</i></p>
<i>Procedure</i>
<p>Does the organization identify the competency requirements for safety-related positions identified in Management Commitment and Safety Accountabilities Element 1.2 b, (3) & Key Safety Personnel Element 1.3?</p> <p><i>Reference: SMS Framework 4.1.1 b, (1) (P)</i></p>
<i>Outputs and Measures</i>
<p>Does the organization ensure that the personnel in the safety-related positions identified in Management Commitment and Safety Accountabilities Element 1.2 b, (3) & Key Safety Personnel Element 1.3 meet the documented competency requirements of Personnel Expectations Process 4.1.1 b, (1)?</p> <p><i>Reference: SMS Framework 4.1.1 b, (2) (P)</i></p>

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<p>The organization will periodically measure performance objectives and design expectations of the Personnel Expectations Process.</p> <p><i>Reference: SMS Framework note at 3.1.3 & 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PM/I)</i></p>
<p>Controls</p>
<p>The organization will ensure that: (1) procedures are followed for safety-related operations and activities, and (2) they periodically review supervisory and operational controls to ensure the effectiveness of the personnel qualification and training process.</p> <p><i>Reference: (1) SMS Framework: 1.0 b, (4) (f); (2) SMS Framework 1.1 b, (2) k); 3.1.3 b, (1); 3.3.2, b, (1) & (2) (C)</i></p>
<p>Bottom Line Assessment</p>
<p>Has the organization documented competency requirements for those positions identified in Management Commitment and Safety Accountabilities Element 1.2 b, (3) and Key Safety Personnel Element 1.3 and ensured those requirements were met?</p>
<p>Process 4.1.2 Training</p>
<p>Performance Objective</p>
<p>The organization will develop, document, deliver and regularly evaluate training necessary to meet to meet competency requirements of Process 4.1.1 b (1).</p>

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Design Expectations
<i>Input</i>
<p>Inputs (interfaces) for the Training Process will be obtained through the outputs of the SMS and the documented competency expectations of Personnel Expectations Process 4.1.1 b, (1)</p> <p><i>Reference: SMS Framework 1.5 b, (1) (f) (I)</i></p>
<i>Management Responsibility</i>
<p>The organization will clearly identify who is responsible for the quality of the SMS Training Process. Procedures will also define who is responsible for accomplishing the process.</p> <p><i>Reference: SMS Framework 1.2 b, (3) (R/A)</i></p>
<i>Procedure</i>
<p>Does the organization's training meet the competency expectations of Personnel Expectations Process 4.1.1 b, (1) for the personnel in the safety-related positions identified in Management Commitment and Safety Accountability Element 1.2 b, (3) & Key Safety Personnel Element 1.3?</p> <p><i>Reference: SMS Framework 4.1.2 b, (1) (P)</i></p>
<p>Does the organization consider scope, content, and frequency of training required to meet and maintain competency for those individuals in the positions identified in Management Commitment and Safety Accountability Element 1.2 b, (3) and Key Safety Personnel 1.3.</p> <p><i>Reference: SMS Framework 4.1.2 b, (2) (P)</i></p>

SMS Implementation Guide - Appendix 6 – Detailed Gap Analysis Tool

Does the organization's employees receive training commensurate with their -
<p style="text-align: center;">Position level within the organization?</p> <p style="text-align: center;"><i>Reference: SMS Framework 4.1.2 b, (3) (a) (P)</i></p>
<p style="text-align: center;">Impact on the safety of the organization's products or services?</p> <p style="text-align: center;"><i>Reference: SMS Framework 4.1.2 b, (3) (b) (P)</i></p>
Does the organization maintain training currency by periodically -
<p style="text-align: center;">Reviewing the training?</p> <p style="text-align: center;"><i>Reference: SMS Framework 4.1.2 b, (4)(a) (P)</i></p>
<p style="text-align: center;">Updating the training?</p> <p style="text-align: center;"><i>Reference: SMS Framework 4.1.2 b, (4) (b) (P)</i></p>
Outputs and Measures
<p>The organization will maintain records of required and delivered training.</p> <p><i>Reference: SMS Framework 1.5 b, (4) (I)</i></p>
<p>The organization will: (1) identify interfaces between safety lessons learned and the training functions, as well as the interfaces between the training functions and the delivery of training deemed to be necessary to meet competency requirements of (4.1.1 b, 1, above), and (2) periodically measure performance objectives and design expectations of SMS Training Process.</p> <p><i>Reference: (1) SMS Framework 1.5 b, (1) (f); (2) SMS Framework note at 3.1.3 & 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PM/I)</i></p>
Controls

SMS Implementation Guide - Appendix 6 – Detailed Gap Analysis Tool

<p>Does the organization ensure that safety-related training media is periodically reviewed and updated for target populations?</p> <p><i>Reference: SMS Framework 3.3.2 b, (2) and 4.1.2 b, (4) (C)</i></p>
<p>The organization will ensure that: (1) procedures are followed for safety-related operations and activities, and (2) they periodically review supervisory and operational controls to ensure the effectiveness of the SMS Training Process.</p> <p><i>Reference: (1) SMS Framework: 1.0 b, (4) (f); (2) SMS Framework 1.1 b, (2) k); 3.1.3 b, (1); 3.3.2, b, (1) & (2) (C)</i></p>
<p>Bottom Line Assessment</p>
<p>Has the organization developed, documented, delivered and regularly evaluated training necessary to meet to meet competency expectations of the Personnel Expectations Process 4.1.1 b, (1).</p>
<p><i>Element 4.2 Communication and Awareness</i></p>
<p>Performance Objective</p>
<p>Top management will communicate the output of its SMS to its employees, and will provide its oversight organization access to SMS outputs in accordance with established agreements and disclosure programs.</p>
<p>Design Expectations</p>
<p><i>Input</i></p>

SMS Implementation Guide - Appendix 6 – Detailed Gap Analysis Tool

Inputs (interfaces) for this process will be obtained from the outputs of Safety Risk Management (2.0) and Safety Assurance (3.0) including -
Hazard identification (2.1.2)
Risk severity and likelihood (2.2.1)
Risk assessments (2.2.2)
Risk control/mitigation plans (2.2.3)
Safety lessons learned
Results of analysis of data (3.1.7)
<i>Reference: SMS Framework 1.5 b, (1) (f) & 3.3 b, (2) (I)</i>
Management Responsibility
The organization will clearly identify who is responsible for the quality of the Communication and Awareness Process. Procedures will also define who is responsible for accomplishing the process. <i>Reference: SMS Framework 1.2 b, (3) (R/A)</i>
Procedure/Output/Measure
Does the organization ensure it communicates outputs of the SMS, rationale behind controls, preventive and corrective actions and ensure awareness of SMS objectives to its employees? <i>Reference: SMS Framework 4.2 b, (1) (P/PM/I)</i>
Does the organization ensure it provides its oversight organization access to the outputs of the SMS in accordance with established agreements and disclosure programs? <i>Reference: SMS Framework 4.2 b, (2) (P/PM/I)</i>

SMS Implementation Guide - Appendix 6 – Detailed Gap Analysis Tool

Does the organization interface with other organization's SMSs to cooperatively manage issues of mutual concern?

Reference: SMS Framework 4.2 b, (3) (P/PM/I)

Does the organization periodically measure performance objectives and design expectations of the Communication and Awareness Process?

Reference: SMS Framework note at 3.1.3 & 1.0 b, (2) (c) and (3) (c); 3.1.3 b, (1) (PM/I)

Controls

The organization will ensure that: (1) procedures are followed for safety-related operations and activities, and (2) they periodically review supervisory and operational controls to ensure the effectiveness of the Communication and Awareness Process.

Reference: (1) SMS Framework: 1.0 b, (4) (f); (2) SMS Framework 1.1 b, (2) k); 3.1.3 b, (1); 3.3.2, b, (1) & (2) (C)

Bottom Line Assessment

Has top management communicated the output of its SMS to employees and provided its oversight organization access to SMS outputs in accordance with established agreements and disclosure programs?

Appendix 7
**SMS Assessment Protocol for
Manager/Supervisor**

To:

**SAFETY MANAGEMENT SYSTEM (SMS)
IMPLEMENTATION GUIDE**

For:

**Service provider's participating in the Safety Management System Pilot Project
(SMS PP) and for voluntary implementation of Safety Management Systems**

**Federal Aviation Administration
Flight Standards Service - SMS Program Office**

**Revision 3
June 1, 2010**

SMS Implementation Guide - Appendix 7 – SMS Assessment Protocol for Manager/Supervisor

To be developed

Appendix 8

Cross Reference between AC 120-92 and the SMS Framework

To:

SAFETY MANAGEMENT SYSTEM (SMS)

IMPLEMENTATION GUIDE

For:

**Service provider's participating in the Safety Management System Pilot Project
(SMS PP) and for voluntary implementation of Safety Management Systems**

**Federal Aviation Administration
Flight Standards Service - SMS Program Office**

**Revision 3
June 1, 2010**

**SMS Implementation Guide - Appendix 8 – Cross reference between AC 120-92
and the SMS Framework**

SUMMARY CROSS REFERENCE:

AC 120-92 (Appendix 1)	SMS Framework, Revision 3 (6-1-2010)
4. Policy	1.0 Safety Policy and Objectives
4.1. General Requirements	1.0 Safety Policy and Objectives
4.2. Safety Policy	1.1 Safety Policy
4.3. Quality Policy	1.0 Safety Policy and Objectives, b (4) (b)
4.4. Safety Planning	1.0 Safety Policy and Objectives, b (4) (g)
4.5. Organizational Structure and Responsibilities	1.2 Management Commitment and Safety Accountabilities
4.5. Organizational Structure and Responsibilities	1.3 Key Safety Personnel
4.6. Compliance with Legal and Other Requirements	1.0 Safety Policy and Objectives, b (4) (c) and (d)
4.7. Procedures and Controls	1.0 Safety Policy and Objectives, b (4) (e) and (f)
4.8. Emergency preparedness and Response	1.4 Emergency Preparedness and Response
4.9. Documentation and Records Management	1.5 Documentation and Records
5. Safety Risk Management	2.0 Safety Risk Management (SRM) and 3.2 Management of Change
5.1. System and Task Analysis	2.1.1 System and Task Analysis
5.2. Identify Hazards	2.1.2 Identify Hazards
5.3. Analyze Safety Risk	2.2.1 Analyze Safety Risk
5.4. Assess Safety Risk	2.2.2 Assess Safety Risk and 1.2, Management Commitment and Safety Accountabilities, b (4)
5.5. Control Safety Risk	2.2.3 Control/Mitigate Safety Risk
5.7 Change Management (proposed)	3.2, Management of Change
6. Safety Assurance and Internal Evaluation	3.0 Safety Assurance
6.1. General Requirements	3.0 Safety Assurance
6.2. System Description	3.0 Safety Assurance, b (1) (d)
6.3. Information Acquisition	3.0 Safety Assurance, b (2)
6.3.1 Continuous Monitoring	3.1.1 Continuous Monitoring
6.3.2 Internal Audits by Operational Departments	3.1.2 Internal Audits by Operational Departments
6.3.3 Internal Evaluation	3.1.3 Internal Evaluation
6.3.4 External Auditing of the SMS	3.1.4 External Auditing of the SMS
6.3.5 Investigation	3.1.5 Investigation
6.3.6 Employee Reporting and Feedback System	3.1.6 Employee Reporting and Feedback System
6.4. Analysis of Data	3.1.7 Analysis of Data
6.5. System Assessment	3.1.8 System Assessment

**SMS Implementation Guide - Appendix 8 – Cross reference between AC 120-92
and the SMS Framework**

AC 120-92 (Appendix 1)	SMS Framework, Revision 3 (6-1-2010)
6.6. Preventive/Corrective Action	3.1.9 Preventive/Corrective Action
6.7. Management Reviews	3.1.10 Management Review
6.8. Continual Improvement	3.3 Continual Improvement
7. Safety Promotion	4.0 Safety Promotion
7.1. Safety Culture	4.0 Safety Promotion
7.2. Communication and Awareness	4.2 Communication and Awareness
7.3. Personnel Requirements (Competence)	4.1.1 Personnel Requirements (Competence)
7.4. Training	4.1.2 Training
7.5. Safety Lessons Learned	3.3 Continual Improvement

Appendix 9

Example Letter of Acknowledgement

To:

**SAFETY MANAGEMENT SYSTEM (SMS)
IMPLEMENTATION GUIDE**

For:

Service provider's participating in the Safety Management System Pilot Project (SMS PP) and for voluntary implementation of Safety Management Systems

**Federal Aviation Administration
Flight Standards Service - SMS Program Office**

**Revision 3
June 1, 2010**

(Sample)
Letter of Acknowledgement

**Safety Management System Pilot Project
Participation: Level [One, Two or Three]**

Dear Mr./ Ms. _____

This is to acknowledge the participation of [airline name] in the Federal Aviation Administration's Safety Management System (SMS) pilot projects. Based on our review of your company's plans, documentation, and activities, we have determined that your SMS project meets the expectations of the Flight Standards SMS Framework and the SMS Pilot Project Implementation Guide for [Level One, Level 2 SMS, Level 3 SMS, etc.]. This achievement has been validated by representatives of your FAA Certificate Management Team and the Flight Standards SMS Program Office.

The FAA currently does not have regulatory requirements for SMS but is considering SMS regulations. The SMS Pilot Projects consist of voluntary implementation of SMS by operators and other aviation service providers. The FAA Flight Standards SMS Framework used in these projects is based upon the requirements of Order VS 8000.367, Appendix B and the SMS Framework specified by the International Civil Aviation Organization in ICAO Annex 6 and further detailed in ICAO doc. 9859, *Safety Management Manual*.

The implementation process in the SMS Pilot Project Implementation Guide is based on a four phase process as recommended by ICAO in ICAO document 9859 *Safety Management Manual*. Your company will be expected to advance to the next level of SMS maturity within twelve months upon satisfactory completion of a program review.

This assessment of your company's achievements does not imply formal FAA acceptance or approval of your SMS or its components but does recognize your active participation to this vital phase of development. We are grateful for your contributions to the continued improvement of the U.S. level of safety.

/s/
John M, Allen,
Director,
Flight Standards Service