



The 4 pillars of aviation safety: Part 1 - Can SMS solutions help implement safety policy?

Executive Summary

Since 2009, the International Civil Aviation Organisation (ICAO) has required member states to make the implementation of safety management systems (SMS) that comply with ICAO standards and recommended practices (SARPs) mandatory for aviation organisations.

As put forward by ICAO, an SMS comprises four basic components, or pillars, of safety management:

1. Safety policy
2. Safety assurance
2. Safety risk management
4. Safety promotion

The first of these four pillars, safety policy, enables aviation organisations to establish and implement a procedural framework in which roles, responsibilities, authority and accountability can be established in order to implement safety management at all levels and in all areas of the organisation.

This white paper considers how an integrated SMS solution can help implement safety policy whilst streamlining processes and identifying improvement opportunities.



Introduction

What is safety policy?

Within an ICAO-compliant SMS, safety policy forms the basis of a procedural framework in which aviation organisations can set objectives in order to ensure an acceptable level of operational safety throughout the organisation.

By establishing roles, responsibilities, authority and accountability to manage safety effectively, an organisation can develop and encourage safety as the core of every aspect of its activities and actions.

Safety policy itself, then, can be broken down into four elements:

1. Procedural frameworks
2. Roles, responsibilities and relationships
3. Executive management involvement
4. Safety and quality

What is an integrated safety management system (SMS) solution?

An integrated SMS solution offers software and services that provide a framework for a systematic and holistic approach to SMS management. Such solutions also provide a centralised system to implement and manage SMS processes.

From documenting and distributing policies and procedures through to identifying opportunities for continuous improvement, SMS solutions enable aviation organisations to adopt a systematic approach to managing safety, and at the same time attain a holistic viewpoint of their SMS status.



How can an integrated SMS solution help to establish procedural frameworks?

Within any management system, two key components are procedures and controls.

Within an SMS, having first established safety policies and objectives, organisations must then develop procedures from them to enable their implementation.

Organisations must also put controls in place to monitor safety-related activities and actions. Such controls ensure that procedures can be carried out in compliance with safety policies and objectives.

Document management

An integrated SMS solution enables management to give appropriate staff on-demand access to relevant, accurate information at the point of need. With an integrated solution that incorporates a comprehensive document management system, organisations can ensure that SMS policies and procedures are up-to-date and directly available.

Change management

As well as a centralised system to manage documents, an integrated solution can also offer automated change control management, including the ability to notify relevant staff of actions for which they are responsible, and to escalate outstanding approvals and acknowledgements to the appropriate person.

Raising change requests

By automating the change request process, an integrated SMS solution can enable all staff to raise changes against controlled documentation at each and every stage of the document management process. This ensures that aviation organisations can encourage relevant personnel to contribute to the change management process.

Procedure-based training

By automatically identifying staff impacted by changes to safety and quality policies, an integrated solution can enable the scheduling of relevant procedure-based training. Integrated SMS solutions can also enable the scheduling, tracking and recording of training activities and actions by notifying appropriate staff about upcoming safety and quality training events automatically.

Analysis and improvement

An integrated SMS solution enables the analysis of information related to aviation safety in order to identify root causes. By being able to carry out detailed analysis of all incidents, occurrences and audit findings, such solutions can enable the analysis of root cause trends to identify improvement opportunities, to reduce overhead costs and to reduce exposure to risk.

How can an integrated SMS solution help to manage roles, responsibilities and relationships?

Within aviation, regulators must establish and implement oversight systems to maintain and improve safety levels. A critical element of any safety oversight system is the publication and distribution of regulations, standards and policies to ensure that safety risk can be managed effectively.

An integrated SMS solution offers software and services that provide a framework for a systematic and holistic approach to SMS management. Such solutions also provide a centralised system to implement and manage SMS processes.

Correspondingly, a key component of an aviation organisation's SMS is to ensure that the organisation can achieve the safety objectives identified by such regulations and standards, and that the organisation can demonstrate compliance with regulatory requirements.

Recognising that many organisations share the responsibility for overall safety, SMS defines the relationships between them in maintaining the highest levels of safety, as well as documenting the roles and responsibilities of all relevant individuals in performing safety activities and actions.

Regulatory compliance

By enabling completed, outstanding and overdue safety actions to be tracked and monitored, an integrated SMS solution provides a systematic and holistic view of the compliance status throughout the organisation, and enables the demonstration of regulatory compliance on demand.

Audit management

From scheduling, planning and conducting to reporting, follow-up and conclusion, an integrated SMS solution enables aviation organisations to manage all internal and external audits, including FAR-OPS, FAR-FCL and FAR-145, as well as ICAO SMS, IOSA and ISAGO.

Corrective and preventive action (CA/PA) management

By enabling organisations to quickly and easily report hazards and non-compliances, an integrated SMS solution helps to reduce the time and effort spent in managing corrective and preventive actions as well as to accelerate time to completion.

Occurrence management

An integrated SMS solution enables all staff to raise reports on safety deficiencies at the point of need, irrespective of their position or seniority, ensuring that organisations can adopt a systematic and holistic approach to managing subsequent investigations.

Distribution of safety-related information

By providing a centralised system for the distribution of relevant safety-related information to appropriate personnel, an integrated SMS solution can enable greater visibility of such information, as well as encouraging greater ownership in safety-related activities and actions.

Notification and escalation

An integrated SMS solution can automatically notify relevant personnel of upcoming actions, as well as enabling the escalation of overdue actions. Such solutions can also enhance SMS ownership by offering point-of-need access to the SMS from notifications of upcoming or overdue actions.

Training management

With the ability to review training needs against policy requirements and person specifications, an integrated SMS solution enables organisations to ensure that the appropriate personnel have the relevant expertise and experience to carry out their roles and responsibilities.



How can an integrated SMS solution help to encourage executive management involvement?

SMS specifies that executive management bear ultimate responsibility for the safety of the system, as well as for overall operational safety. Having established safety policy and objectives, executive management must also define the organisation's expectations of staff at all levels and in all areas.

As well as ensuring that staff know and understand their responsibilities, executive management must encourage them to participate in activities relating to safety. To ensure the effectiveness of safety controls, management must plan, organise, direct, and control safety-related activities and actions.

Document management

With direct access to controlled documents and the ability to manage change control quickly and easily, an integrated SMS solution enables management to implement and disseminate changes to safety policies and procedures, while simultaneously reducing the impact of changes on safety-related activities.

Training management

Management can track and monitor staff training centrally to ensure that all information related to employee competencies and job descriptions can be continuously maintained. Management can also identify training needs in order to prevent competency gaps that could impact the SMS and ultimately safety.

Workload

Automatic escalation and delegation ensures that overdue actions can be addressed and completed, with outstanding actions delegated and controlled. With increased visibility of all actions across the SMS and therefore the organisation, management can encourage greater ownership of the actions for which staff are responsible.

Analysis

With quick and easy access to all safety-related information, an integrated solution enables greater traceability during internal and external audit. Such solutions also provide detailed graphical analysis that assists in management review by enabling the comparison of safety-related information across the organisation.



Regulatory compliance

By enabling completed, outstanding and overdue safety actions to be tracked and monitored, an integrated SMS solution provides a systematic and holistic view of the compliance status throughout the organisation. With greater transparency, organisations can demonstrate their compliance with the requirements of national and international regulations to customers, regulators and shareholders.

Procedures and controls

An integrated SMS solution enables management to effectively plan and organise safety-related activities within a systematic and holistic framework. In addition, integrated solutions can ensure direct access to safety-critical information and enable comprehensive monitoring and control of all actions required by the SMS across the organisation.

How can an integrated SMS solution help to improve safety and quality?

Within the aviation industry, safety policy is the foundation of the SMS: industry best practice recommends that SMS should be based on quality processes; and regulatory guidance material recognises the QMS as the foundation on which SMS should be built.

A vital aspect of safety management is maintaining and improving process quality, particularly where activities and actions impact on safety. As well as specifying the definition of safety and quality policies, SMS recommends that aviation organisations integrate both management systems wherever possible.

Document management

By assisting with the creation and control of Quality and Safety documentation, an integrated SMS solution enables Quality and Safety processes to be communicated across the organisation, including Operations, Ground Handling and Engineering.

Change management

An integrated SMS solution enables the effective management of policy change from initial request through drafting, approval, distribution and publishing, as well as ensuring the availability of policy and procedure documentation across the organisation through secure web-based access.

Distribution of safety- and quality-related information

By providing a system for the distribution of relevant safety-related information to appropriate personnel, an integrated SMS solution can ensure that every person throughout the organisation can contribute to the organisation's knowledge and understanding of its operations.

Notification and escalation

By notifying relevant personnel of SMS and QMS activities and actions, an integrated SMS solution provides greater visibility and traceability of safety and quality related actions and encourages greater participation in SMS and QMS activities.

Audit management

By integrating multiple management systems within a single solution, organisations can reduce the duplication of effort that multiple safety and quality audit programmes can incur, as well as more closely integrate safety and quality related activities to reduce gaps between systems and controls.

Corrective and preventive action (CA/PA) management

With an integrated solution that enables the follow-up and completion of corrective and preventive actions resulting from findings raised, management can monitor all information related to internal and external evaluation programmes at each and every stage of the audit management process.

Analysis and improvement

By enhancing the identification of opportunities for improvement throughout the organisation, an integrated SMS solution based on the PLAN-DO-CHECK-ACT cycle helps to continually improve safety and quality by promoting a corporate culture that develops and encourages adherence to best practices.

Integrated safety and quality management

In maintaining both SMS and QMS activities with an integrated SMS solution, aviation organisations can achieve a systematic approach to managing Safety and Quality, at the same time attaining a holistic view of their Safety and Quality status throughout the organisation.

How can an integrated SMS solution help to implement a framework for safety policy?

Q-Pulse from Gael Ltd comprises a series of interconnected modules which provides aviation organisations with an integrated framework that supports Safety and Quality management processes.

By integrating quality and safety management systems with Q-Pulse, aviation organisations can achieve a systematic approach to managing Safety and Quality, and at the same time attain a holistic viewpoint of their QMS and SMS status in all areas and at all levels of the organisation.

Based on the PLAN-DO-CHECK-ACT cycle, Q-Pulse applies a systematic and holistic approach to QMS and SMS management, from documenting and distributing policies and procedures through to identifying opportunities for continual improvement.

The Q-Pulse Integrated Safety & Quality Framework



1. Document and distribute

Q-Pulse enables the documentation and distribution of SMS and QMS policies and procedures, all with watertight Document Control.

2. Promote corporate culture

Q-Pulse enables the promotion of a corporate Safety and Quality culture through a robust and scalable framework for training and development.

3. Assure regulatory compliance

Q-Pulse enables you to ensure your regulatory compliance across the organisation through regular internal and external audit.

4. Manage incident investigations

Q-Pulse enables the promotion of a corporate reporting culture, with the easy creation of safety reports and subsequent investigations to be performed in a structured, methodical manner.

5. Analyse and improve

Q-Pulse enables detailed analysis of incidents, occurrences and audit findings with its powerful graphical analysis functionality, resulting in the highlighting of opportunities for continuous Quality and Safety improvement.

Safety policy – the Q-Pulse advantage

With SMS an international regulatory requirement from 2009, establishing safety policy effectively at all levels and in all areas of the organisation is of paramount importance for aviation organisations.

The effective establishment of safety policy is vital to successfully implementing SMS that comply with ICAO SARPs and contribute to the continual improvement of safety and quality throughout the organisation.

With a SMS solution developed around the four components of safety management, organisations can put into place a robust and scalable framework that supports the effective establishment of safety policy and the implementation of ICAO-compliant SMS.

Based on the PLAN-DO-CHECK-ACT cycle, Q-Pulse from Gael Ltd is the only commercially available solution that provides a centralised and standardised framework for maintaining and improving safety and quality management in all areas and at all levels of the organisation.

From documenting and distributing policies and procedures to continually identifying opportunities for improvement, Q-Pulse is your solution for:

- managing roles, responsibilities and relationships
- encouraging executive management involvement
- establishing procedural frameworks
- improving safety and quality

With Q-Pulse, aviation organisations can adopt a systematic and holistic approach to managing safety and quality that meets the requirements of multiple regulations, from ICAO SMS, ISAGO and IOSA, to FAR-OPS, FAR-FCL and FAR-145, through to EU-OPS, JAR-FCL and EASA-145.

The 4 pillars of aviation safety: Part 1 - Can SMS solutions help implement safety policy?

Contact us now at aviation@gaelquality.com to find out how you can effectively establish safety policy throughout your organisation with Q-Pulse.



Gael Ltd.

Orion House,
S.E. Technology Park,
East Kilbride,
Scotland G75 0RD

t: +44(0)1355 593400
f: +44(0)1355 579191
e: info@gaelquality.com
w: www.gaelquality.com