
**MILITARY-CIVILIAN AIRCOORDINATION SAFETY MANAGEMENT SYSTEM
(SMS)**

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Abstract: The concept of safety management in the airspace correlates with interdependent and technological, information system development including a thorough analytical and predictive approach, stressing the importance of a smooth flow of air traffic.

There are two major airspace users in the world today — civil and military. The civil aviation sector includes private, commercial and government-owned aircraft that are primarily transporting cargo and passengers, both nationally and internationally. Military aviation comprises State-owned aircraft engaged in transport, training, and security and defense both aviation sectors are essential to global stability and economies.

However, both usually cannot operate simultaneously within the same block of airspace, thus requiring the establishment of boundaries and segregation.

Hence, considering the importance of the subject, specifically the issues of research, the main objective of implementing the below-completed master's thesis will be focused on detailing, analysis of the methodology of implementation of the system of managing air safety in the mechanism of aviation today.

The main object of the research will cover critical segment of risk management of safety, targeting sets of conceptions thorough application of the model of the system of assessment, managing security risk in aviation or air traffic.

Keywords: aviation, air traffic control, management, analysis, prediction, risk, security, safety.

1. INTRODUCTION

This study presents a vision of an integrated, harmonized and globally interoperable ATM system — a system that meets agreed levels of safety, provides for optimum economic operations, is environmentally sustainable and meets national security requirements for all users during all phases of flight. The vision does not discriminate or make any exceptions about the type of traffic the ATM system is designed to serve.

Interoperability can be considered as the ability of “systems” (not exclusively technical systems) to provide information and services to, and accept information and services from, other systems and to use the information and services so exchanged. Interoperability constitutes the driver of standardization, integration and cooperation.

Existing civil standards and specifications are adequate to support technical compliance of civil CNS/ATM systems but tend to overlook the specific characteristics of available military CNS/ATM systems. To enable solutions that would promote civil/military interoperability, planning and procurement should ensure that such specifications respond to the fulfillment of defined performance levels, using an acceptable means of compliance, rather than mandating particular equipage fits.

One of the most significant consequences of the present situation is evidenced whenever a military aircraft that intends to use civil route structures has to be accommodated using special handling or by applying exemption policies for the airborne equipage. It needs to be realized that the need for an exemption for State aircraft should be based on compelling technical or military reasons and used only as a measure of last resort.

This scenario entails the urgent need to identify valid solutions for interoperability between civil and military CNS/ATM systems at an early stage in their development and to define a migration path towards long-term avionics convergence and integration. The GCAA and service providers should establish a formal process of consultation with military users at an early stage of future avionics development with the aim of achieving maximum system interoperability between civil systems and military units through the Enterprise Architecture concept.

2. SAFETY MANAGEMENT SYSTEMS (SMS)

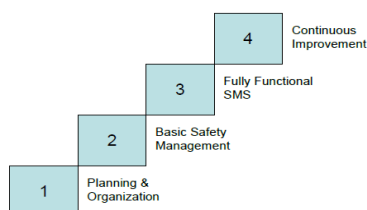
What Is an SMS? SMSs can be a complex topic with many aspects to consider, but the defining characteristic of an SMS is that it is a decisionmaking system. An SMS does not have to be an extensive, expensive, or sophisticated array of techniques to do what it is supposed to do. Rather, an SMS is built by structuring your safety management around four components: safety policy, safety risk management (SRM), safety assurance (SA), and safety promotion. A brief description of these components is provided below.

An SMS is not meant to be a separate system built alongside or on top of your other business systems. An SMS should be integrated into your existing business structure. A properly integrated SMS fosters a fundamental and sustainable change in how you view and analyze data and information, how you make informed decisions, and how you develop new operational and business methods. SMSs are necessary to comply with part 5, but they are not substitutes for compliance with other Federal regulations. However, SMSs can assist service providers in meeting other regulatory requirements.

The difference between a large, medium, and small organization's SMS is primarily one of size and complexity of the operations to be covered, volume of data available, the size of the employee workforce, and the resources needed to manage the organization. The SMS requirements (safety policy, Safety Risk Management (SRM), Safety Assurance (SA), and safety promotion) are the same regardless of the size of your organization. However, part 5 allows organizations of different sizes to meet those requirements in different ways. The SMS functions do not need to be extensive or complex to be effective. All businesses, regardless of size, may use existing systems, programs and resources to document and track safety issues to resolution.

2.1. RECOMMENDED SAFETY MANAGEMENT SYSTEM IMPLEMENTATION LEVELS

Figure 2.1. Recommended safety management system implementation levels



2.2. CASA SAFETY MANAGEMENT SYSTEM FRAMEWORK (CASA, 2009)

Figure 2.2. CASA Safety Management System Framework (CASA, 2009)



3. CIVIL MILITARY COOPERATION IN AIR TRAFFIC MANAGEMENT

In October 2009, ICAO1 hosted the Global Air Traffic Management Forum on Civil/Military Cooperation, which was attended by more than four hundred high-ranking civil and military participants from sixty-seven Member States, six air navigation service providers and forty-six industry organizations. Realizing that there was no existing international framework to bring civil and military authorities together, the Forum recommended that ICAO should play a pivotal role in improving the level of cooperation and coordination between civil and military authorities and should serve as the international facilitating platform. Recognizing that the growing civil air traffic and mission-oriented military air traffic would benefit greatly from a more flexible use of airspace, the Forum recommended that civil and military experts should jointly develop advice and guidance on the best practices for civil/military cooperation.

3.1. EXISTING REGULATORY FRAMEWORK

Obligations of ICAO Member States under the Chicago Convention germane to civil/military issues include:

- a) Rule-making as regards aviation safety rules in compliance with ICAO SARPs contained in the Annexes to the Convention (Article 37); and

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b) Carrying out tasks which pertain to, for instance, ATM and which are laid down in the Annexes to the Convention, such as the classification of airspace and coordination between civil and military air traffic.

c) Annex 2 — *Rules of the Air* contains rules relating to the flight and manoeuvre of aircraft within the meaning of Article 12 of the Convention. It includes provisions on the coordination with military authorities for reason of a State's territorial integrity and sovereignty, namely for air defence reasons. To facilitate coordination with appropriate military units, a flight plan has to be submitted for any flight within or into designated areas or along designated routes. In those instances a flight plan is submitted to facilitate coordination and control of flights with transparent and real-time data exchange.

d) Annex 11 contains the SARPS that States use as reference for the provision of air traffic services (ATS). Currently, the Annex addresses only the need for coordination with military authorities or units, mainly the degree and level to which State aircraft activities may affect civilian operations or vice versa. Topics covered include activities that may directly affect flight safety, be potentially hazardous to civil aircraft, or require interception of civil aircraft or coordination due to unlawful interference of air traffic.

e) The *Procedures for Air Navigation Services — Air Traffic Management* (PANS-ATM, Doc 4444), together with the Standards in Annex 2 and the Regional SUPPS, govern the application of the rules of the air and ATS. The PANS-ATM contains procedures applicable to other in-flight contingencies, such as strayed or unidentified aircraft, that involve coordination with military authorities. Some miscellaneous procedures are detailed for the conduct of special military operations.

f) The *Manual Concerning Safety Measures Relating to Military Activities Potentially Hazardous to Civil Aircraft Operations* (Doc 9554) describes the coordination that should take place between military units and ATS units. It details the requirements to establish and maintain close cooperation with military authorities responsible for activities that may affect flights of civil aircraft. The *Air Traffic Services Planning Manual* (Doc 9426), published in 1984, was one of the first manuals to provide ICAO guidance material on civil/military coordination and cooperation. Most of that guidance material remains valid today.

g) an integrated, harmonized and globally interoperable ATM system. A global system can be described as a worldwide system that, on a global basis, achieves interoperability and seamlessness across regions for all users during all phases of flight. The Global Plan includes technical, operational, economic, environmental, financial, legal and institutional elements and also offers States practical guidance on implementation and funding strategies. In accordance with the Plan, States and regions will choose objectives and draft their guidance in support of the particular needs of a homogenous ATM system.

i) Doc 9750 aims to provide initial guidance on, and facilitate implementation of, the civil/military coordination measures and cooperation concepts embedded in the *Global Air Traffic Management Operational Concept* (Doc 9854).

Achievements in the integration of the specified Global Plan initiatives (GPI) require the implementation of collaborative airspace design and management, performance-based navigation (PBN), the integration of ground and airborne systems or data link or communications. It is significant to note that the first of the twenty-three detailed GPIs of the Global Air Navigation Plan is GPI-1, "Flexible Use of Airspace".

i) Doc 9854 is a relatively new document that describes the services that will be required to operate the global air traffic system in the near future and beyond. The Operational Concept highlights the elements needed to increase user flexibility, maximize efficiencies and increase system capacity while at the same time improving safety. Consideration of the interoperability and operations of military systems is an integral part of these elements.

4. CONCLUSION

In order for the risk of danger to people and objects to reduce or maintain an acceptable level, it is necessary to use a complete safety management system. Managing safety as can be seen from the above data is implemented constant activity whose task is to promote, maintain, adjust the security, compliance functionality organizations and daily training and effective supervision of the circumstances and events.

Safety management system provides security solutions to problems of cost and security, and in a way that with increased investment in safety reduces the likelihood of aviation accidents or accidents, with a final result of the increasing cost.

With the reactive approach to safety is fully introduced proactive approach, where by collecting and analyzing data intensive work of increased reliability where the plan is adoption of predictive approach. European Aviation Safety Directive brings that all air carriers must implemented management system reliability, which is then adjusted their practice of action with the need for the regulation of action .A series of these kind of continuous

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process to detect the hazards and the risk management within the aviation, air traffic is becoming one of the safest branches of the Traffic.

All above mentioned brochures are in need of adequate infrastructure, planning and appropriate and effective use of the air space that needs to be enabled through effective cooperation, collaboration and coordination between military-civilian units.

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