TECHNICAL GUIDANCE MATERIAL
for
SYSTEM DESCRIPTION

SUBJECT: ORGANISATIONAL SYSTEM DESCRIPTION

EFFECTIVE DATE: 28 NOVEMBER 2024

1. APPLICABILITY

To all the civil aviation authority stakeholders, service providers that need the basic knowledge on understanding what system description is, as indicated in Part 140.01.2 (1) (a) for organisation that are to comply with the Part 140.01.1 (1) applicability. by virtue, to improve effective implementation of the SSP for the State and SMS for the service providers.

2. PURPOSE

This guidance material serves to provide a basic understanding of what system description is when developing SMS and undertaking SMS functions. Thus, identifying what other are system/s both internally and externally that have a direct or indirect interface with the organisational system/s operation/s.

3. REQUIREMENTS

In addressing all of the SACARS Part 140.01.3 requirements of SMS regarding each organisation's service or product output, the service provider's system description should have regard for the functions, support provided by other organisations to it, and the relationship to each other.

4. REFERENCE:

  i.   ICAO Annex 19
 ii.   ICAO Doc. 9859
iii.   Civil Aviation Regulations Part 140 and Technical Standards

5.   LIST OF DEFINITIONS AND ABBREVIATIONS USED IN THIS DOCUMENT

5.1.   Definitions

TERMINOLOGY	DESCRIPTION
System	5.1.1 An organized, purposeful structure that consists of interrelated and interdependent elements and components, and related policies, procedures and practices created to carry out a specific activity or solve a problem.

5.2. Abbreviations

ABBREVIATION	MEANING
E: SSA	Executive: Safety Standards and Assurance
SMS	Safety Management System
SRM	Safety Risk Management
SSP	State Safety Programme
SM: CSD	Senior Manager: Consistency and Standardisation Department
TO	Technical Officer
TGM	Technical Guidance Material
M: QC & AIIR	Manager: Quality Control and Accident Incident Investigation and Review
TGM	Technical Guidance Material
SMS TO	Safety Management System Technical Officer

6. GENERAL

6.1 System Description

6.1.1 In the SMS, "System description" is "any of an organisation's products, people, processes, procedures, facilities, services, and other aspects (including external factors), which are related to, and can affect the organisation's aviation safety activities. Often, a "system" is a collection of systems, which may also be viewed as a system with subsystems. These systems and their interactions with one another make up the sources of hazards and contribute to the control of safety risks. The important systems include both those which could directly impact aviation safety and those which affect the ability or capacity of an organisation to perform effective safety management".

6.1.2 A system description helps to identify the organisational processes, including any interfaces, to define the scope of the SMS within an organization. This provides an opportunity to identify related gaps to the service provider's SMS components and elements and may serve as a starting point to identify organisational and operational hazards. A system description serves to identify the features of the product, the service, or the activity so that SRM and safety assurance can be effective.

6.1.3 A comprehensive system description enables an organisation to better identify its organisational structures, processes, and business arrangements that are important for the management of aviation safety. Starting from the system description, the organisation will be better prepared to develop policies, processes, and procedures for the effective implementation of an SMS, thus following a tailored approach to SMS design and implementation.

6.1.4 System description is a summary of the organisation's (State or service provider) process, activities, and interfaces that need to be assessed for hazard identification and safety risk assessment that is covered by their safety system. It describes the aviation system, within which the organisation, as well as the interfaces with other external organisation that is in coexistence and of which there is a contribution to the safe delivery of services/products.

6.1.5 An overview of the system description and the SMS interface should be included in the SMS manual. A graphic depiction, such as process flow chart or annotated organisation chart, may be enough for some organisations. An organisation should use a method and format that works well for that organisation.

6.1.6 Since each organisation is unique, there is no "one size fits all" method for SMS implementation. The expectation is that each organisation will implement an SMS that works for its unique situation to achieve the acceptable level of safety performance.

6.1.7 When an organisation elects to make a significant/major or substantive change to the processes identified in the system description, the changes should be viewed as potentially affecting its baseline safety risk management. Thus, the system description should be reviewed as part of the management of change processes as outlined in the management of change TGM.

6.2 Interface

6.2.1 When States and service providers are implementing safety management it is important to consider the safety risks induced by interfacing entities. Interfaces can be internal (e.g., between operations and maintenance, or finance, human resources or legal departments), or they can be external (e.g., other State, service providers or contracted services). State and service providers have greater control over any related safety risks when interfaces are identified and managed. These interfaces should be defined within or as part of the system description.

6.2.2 Most organisations are made up of a complex network of interfaces and interactions involving different internal departments as well as different external organisations that all contribute to the safe operation of the organisation. The use of a system description enables the organisation to have a clear picture of its many interactions and interfaces. This will enable better management of safety risks and safety risks controls if they are described and help in understanding the changes and change management to the SMS processes and procedures. In that manner it is important to emphasis the development system description as a starting point of SSP/SMS implementation.

6.3 Identification of SMS Interfaces

6.3.1 Initially, service providers should concentrate on interfaces concerning its business activities. The identification of these interfaces should be detailed in the system description that sets out the scope of the SMS and should include internal and external interfaces.

6.3.2 The following is an example of an air traffic service provider SMS interfaces with other organisations for the completion of air traffic services offerings:
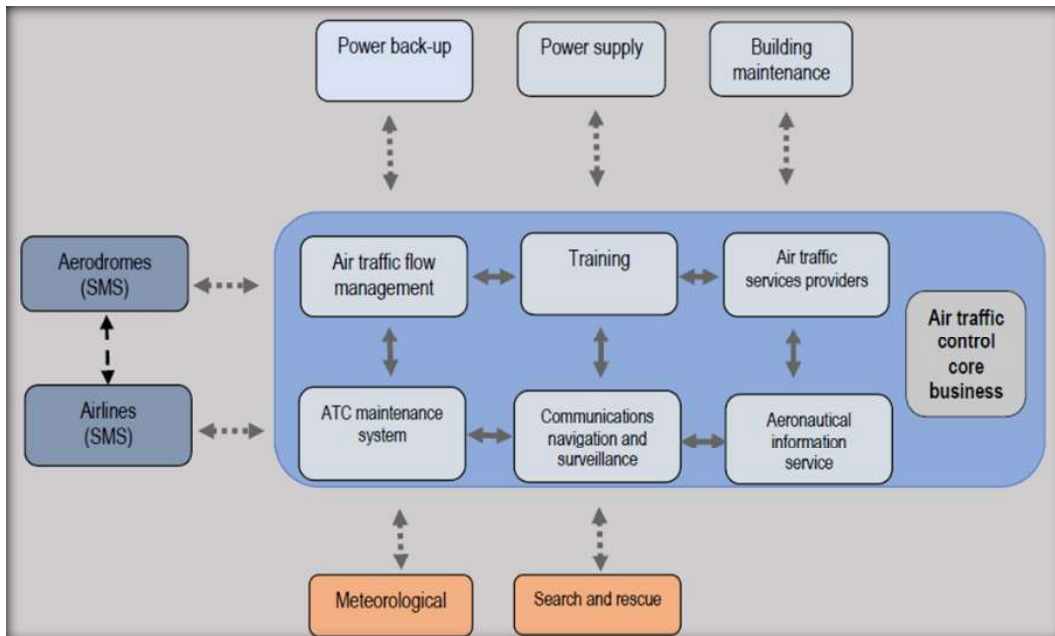
Figure 1: Example of air traffic service provider SMS interfaces

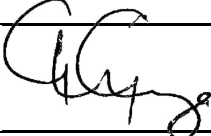## 6.4 Interface Safety Impact Assessment

6.4.1   Once a service provider has identified its interfaces, the safety risk posed by each interface is assessed using the organisation's existing safety risk assessment processes. Based on the safety risks identified, the service provider may consider working with other organisations to determine an appropriate safety risk control strategy. Organisations working collaboratively may be able to identify more interface hazards; assessing any related safety and determining mutually appropriate controls. Collaboration is highly desirable because the safety risk perception may vary between organisations.

6.4.2   It is also important to recognize that each organisation involved is responsible for identifying and managing any identified hazards that affect its organisation. The criticality of the interface may differ for each organisation. Each organisation might reasonably apply different safety risk classifications and have different safety risk priorities (in terms of safety performance, resources, and time).

6.5 Monitoring and Management of Interfaces

Service providers are responsible for ongoing monitoring and management of their interfaces to ensure the safe provision of services. An effective approach to interface SRM is to establish formal agreements between interfacing organisations with defined monitoring and management responsibilities. Documenting and sharing all interface safety issues, safety reports, and lessons learned, as well as safety risks between interfacing organisations will ensure understanding. Sharing enables the transfer of knowledge practices that could improve the safety effectiveness of each organisation.

7. AUTHORISATION

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