SMS Foundation for ANSPs

- State promulgated ANS specific operating regulations.
  - State established procedures for the development and distribution of guidance material on the implementation of ANS specific operating regulations.
- Distinct separation between the regulatory and the service provision functions for Air Traffic Service (ATS).
  - Formal surveillance programme established and implemented for the continuing supervision of the ATS provider.
- Established and implemented system for reporting and following-up air traffic incidents
  - Established and implemented process for the recording and retention of the ATS data.
  - Sufficient number of personnel to perform air traffic incidents investigation and analysis.
  - Safety-critical information is disseminated in an effective and efficient manner.
- Established and implemented a mechanism for the review and elimination of deficiencies.
- ATS provider has developed job descriptions for its ATS staff and implemented a training programme
- Contingency plans have been developed and implemented.
- ATS provider carries out safety assessments, with respect to significant airspace reorganizations.
  - for significant changes in the provision of ATS procedures applicable to an airspace or an aerodrome and for the introduction of new equipment, systems or facilities.
- Safety reviews are conducted regularly by the ATS service provider.

Objective

✈ Review the SMS Framework and raise awareness of the main identified implementation challenges in the Region.

Safety Management System Obligations

✈ Annex 19 establishes that States shall require that the following service providers under their authority implement an SMS:

    ✈ Air Traffic Services (ATS) providers in accordance with Annex 11

          • The SMS of an ATS provider, in accordance with Annex 11, shall be made acceptable to the State responsible for the provider's designation.

Annex 19 SMS Requirements for ATS Providers SCOPE

✈ The provision of AIS, CNS, MET and/or SAR services, when under the authority of an ATS provider, are included in the scope of the ATS provider's SMS.

✈ When the provision of AIS, CNS, MET and/or SAR services are wholly or partially provided by an entity other than an ATS provider, the related services that come under the authority of the ATS provider, or those aspects of their services with direct operational implications, are included in the scope of the ATS provider's SMS.

SMS Framework

1. Safety policy and objectives
- 1.1   Management commitment
- 1.2   Safety accountability and responsibilities
- 1.3   Appointment of key safety personnel
- 1.4   Coordination of emergency response planning
- 1.5   SMS documentation

2. Safety risk management
- 2.1   Hazard identification
- 2.2   Safety risk assessment and mitigation

3. Safety assurance
- 3.1   Safety performance monitoring and measurement
- 3.2   The management of change
- 3.3   Continuous improvement of the SMS

4. Safety promotion
- 4.1   Training and education
- 4.2   Safety communication

Safety Policy and Objectives

Management commitment

✈ The first component of the SMS framework focuses on creating an environment where safety management can be effective. It is founded on a safety policy and objectives that set out senior management's commitment to safety, its goals and the supporting organizational structure.

✈ Management commitment to safety is demonstrated through management decision-making and allocation of resources.

✈ The safety policy should be developed and endorsed by senior management, and is to be signed by the accountable executive. Key safety personnel, and where appropriate, staff representative bodies should be consulted in the development of the safety policy and safety objectives to promote a sense of shared responsibility.

"Don't tell me what you value, show me your budget, and I'll tell you what you value." - Joe Biden.

Safety Policy and Objectives

Safety accountability and responsibilities

✈ Accountable executive
  - ✈ Should have the authority to make decisions on behalf of the organization, have control of resources, both financial and human, be responsible for ensuring appropriate actions are taken to address safety issues and safety risks, and should be responsible for responding to accidents and incidents.

✈ Accountability and responsibilities
  - ✈ Accountabilities and responsibilities of all personnel involved in safety-related duties supporting the delivery of safe products and operations should be clearly defined, stated in the service provider's SMS documentation and communicated throughout the organization.

✈ Accountability and responsibilities and in respect to external organizations
  - ✈ A service provider is responsible for the safety performance of external organizations where there is an SMS interface. The service provider may be held accountable for the safety performance of products or services provided by external organizations supporting its activities, even if the external organizations are not required to have an SMS. It is essential for the service provider's SMS to interface with the safety systems of any external organizations that contribute to the safe delivery of their product or services.

Safety Policy and Objectives

Appointment of key safety personnel

✈ Appointment of a competent person or persons to fulfil the role of safety manager is essential to an effectively implemented and functioning SMS.

✈ Service providers should establish appropriate safety committees that support the SMS functions across the organization. This should include determining who should be involved in the safety committee and frequency of the meetings.

　　✈ Safety review board (SRB).
　　✈ Safety action groups (SAGs).

Safety Policy and Objectives

Coordination of emergency response planning

✈ Coordination of emergency response planning refers to planning for activities that take place within a limited period of time during an unplanned aviation operational emergency situation.

✈ An emergency response plan (ERP) is an integral component of a service provider's Safety Risk Management (SRM) process to address aviation-related emergencies, crises or events.

✈ The ERP should address foreseeable emergencies as identified through the SMS and include mitigating actions, processes and controls to effectively manage aviation-related emergencies.

✈ The overall objective of the ERP is the safe continuation of operations and the return to normal operations as soon as possible.

✈ The ERP identifies actions to be taken by responsible personnel during an emergency. Most emergencies will require coordinated action between different organizations, possibly with other service providers and with other external organizations such as non-aviation-related emergency services.

✈ The ERP should be easily accessible to the appropriate key personnel as well as to the coordinating external organizations.

Safety Policy and Objectives

SMS documentation

✈ SMS Manual.

✈ Should include a system description that provides the boundaries of the SMS

✈ Accepted by the CAA.

Safety Risk Management

- ✈ Service providers should ensure they are managing their safety risks. This process is known as safety risk management (SRM), which includes hazard identification, safety risk assessment and safety risk mitigation.

- ✈ The SRM process systematically identifies hazards that exist within the context of the delivery of its products or services. Hazards may be the result of systems that are deficient in their design, technical function, human interface or interactions with other processes and systems. They may also result from a failure of existing processes or systems to adapt to changes in the service provider's operating environment.

- ✈ Understanding the system and its operating environment is essential for the achievement of high safety performance. Having a detailed system description that defines the system and its interfaces will help. Hazards may be identified throughout the operational life cycle from internal and external sources.

- ✈ Safety risk assessments and safety risk mitigations will need to be continuously reviewed to ensure they remain effective.
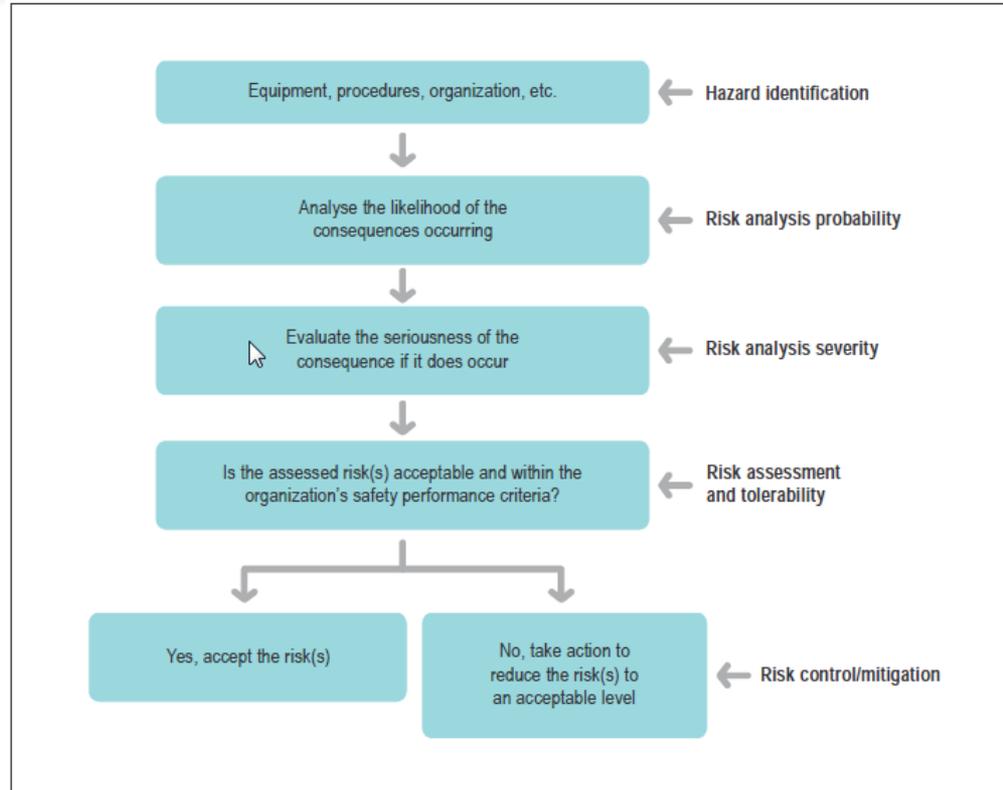
Figure 9-1.   Hazard identification and risk management process

Safety Risk Management

Hazard identification

✈ Hazard identification is the first step in the SRM process. The service provider should develop and maintain a formal process to identify hazards that could impact aviation safety in all areas of operation and activities. This includes equipment, facilities and systems. Any aviation safety-related hazard identified and controlled is beneficial for the safety of the operation. It is important to also consider hazards that may exist as a result of the SMS interfaces with external organizations.

✈ Safety reporting system.

　✈ Mandatory

　✈ Voluntary

✈ Service provider safety investigation.
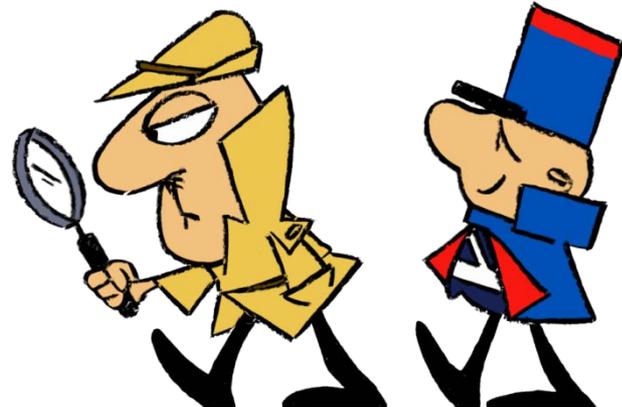
Safety Risk Management

Safety risk assessment and mitigation

- ✦ The service provider must develop a safety risk assessment model and procedures which will allow a consistent and systematic approach for the assessment of safety risks.

- ✦ This should include a method that will help determine what safety risks are acceptable or unacceptable and to prioritize actions. The service provider and the CAA should agree on a methodology.

- ✦ The safety risk assessment process should use whatever safety data and safety information is available. Once safety risks have been assessed, the service provider will engage in a data-driven decision-making process to determine what safety risk controls are needed. After safety risks have been assessed, appropriate safety risk controls can be implemented.

- ✦ Ensuring the right people are involved will maximize the practicality of safety risk chosen mitigations.

- ✦ Once the safety risk control has been agreed and implemented, the safety performance should be monitored to assure the effectiveness of the safety risk control. This is necessary to verify the integrity, efficiency and effectiveness of the new safety risk controls under operational conditions.

- ✦ The SRM outputs should be documented.
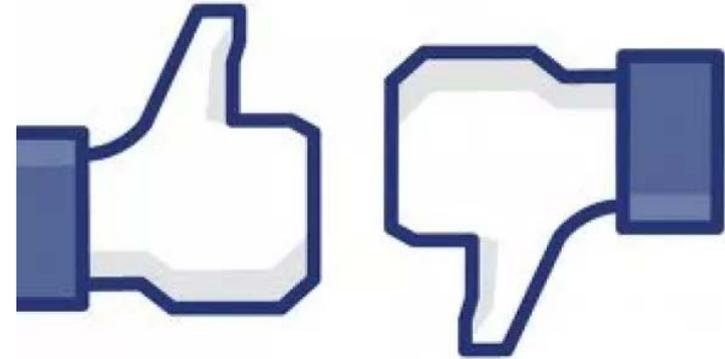
Safety Assurance

✈ Annex 19 requires that service providers develop and maintain the means to verify the safety performance of the organization and to validate the effectiveness of safety risk controls. The safety assurance component of the service provider's SMS provides these capabilities.

✈ Safety assurance consists of processes and activities undertaken to determine whether the SMS is operating according to expectations and requirements. This involves continuously monitoring its processes as well as its operating environment to detect changes or deviations that may introduce emerging safety risks or the degradation of existing safety risk controls. Such changes or deviations may then be addressed through the SRM process.

✈ Safety assurance activities should include the development and implementation of actions taken in response to any identified issues having a potential safety impact. These actions continuously improve the performance of the service provider's SMS.
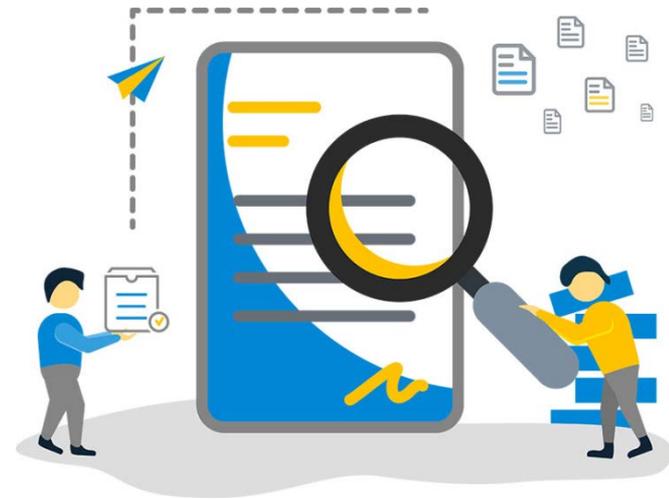
Safety Assurance

Safety performance monitoring and measurement

- ✈ To verify the safety performance and validate the effectiveness of safety risk controls requires the use of a combination of internal audits and the establishment and monitoring of Safety Performance Indicators (SPIs).

- ✈ Assessing the effectiveness of the safety risk controls is important as their application does not always achieve the results intended. This will help identify whether the right safety risk control was selected and may result in the application of a different safety risk control strategy.
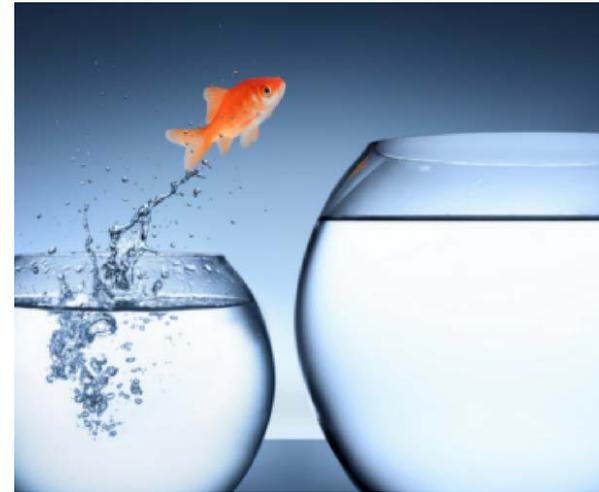
Safety Assurance

The management of change

- ✈ Service providers experience change due to a number of factors.
- ✈ Change may affect the effectiveness of existing safety risk controls. In addition, new hazards and related safety risks may be inadvertently introduced into an operation when change occurs.
- ✈ Hazards should be identified and related safety risks assessed and controlled as defined in the organization's existing hazard identification or SRM procedures.

Safety Assurance

Continuous improvement of the SMS

✈ Annex 19 requires that… "the service provider monitor and assess its SMS processes to maintain or continuously improve the overall effectiveness of the SMS."

✈ Maintenance and continuous improvement of the service provider's SMS effectiveness is supported by safety assurance activities that include the verification and follow-up of actions and the internal audit processes. SMS effectiveness should not be based solely on SPIs; service providers should aim to implement a variety of methods to determine its effectiveness. Such methods may include:

a) Audits; this includes internal audits and audits carried out by other organizations.

b) Assessments: includes assessments of safety culture and SMS effectiveness.

c) Monitoring of occurrences

d) Safety surveys; including cultural surveys providing useful feedback on staff engagement with the SMS..

e) Management reviews: examine whether the safety objectives are being achieved by the organization..

f) Evaluation of SPIs and SPTs; possibly as part of the management review.

g) Addressing lessons learnt, from safety reporting systems and service provider safety investigations. These should lead to safety improvements being implemented.

Safety Promotion

✈ Safety promotion encourages a positive safety culture and helps achieve the service provider's safety objectives through the combination of technical competence that is continually enhanced through training and education, effective communication, and information-sharing.

✈ Senior management provides the leadership to promote the safety culture throughout an organization.

✈ Effective safety management cannot be achieved solely by mandate or strict adherence to policies and procedures.

✈ Safety promotion affects both individual and organizational behaviour, and supplements the organization's policies, procedures and processes, providing a value system that supports safety efforts.

✈ The service provider should establish and implement processes and procedures that facilitate effective two-way communication throughout all levels of the organization.

Safety Promotion

Training and education

✈ Annex 19 requires that "the service provider shall develop and maintain a safety training programme that ensures that personnel are trained and competent to perform their SMS duties." It also requires that "the scope of the safety training programme be appropriate to each individual's involvement in the SMS."

✈ The safety manager is responsible for ensuring there is a suitable safety training programme in place. This includes providing appropriate safety information relevant to specific safety issues met by the organization.

✈ Personnel who are trained and competent to perform their SMS duties, regardless of their level in the organization, is an indication of management's commitment to an effective SMS.

✈ The training programme should include initial and recurrent training requirements to maintain competencies.

Safety Promotion

Safety communication

✈ The service provider should communicate the organization's SMS objectives and procedures to all appropriate personnel.

✈ There should be a communication strategy that enables safety communication to be delivered by the most appropriate method based on the individual's role and need to receive safety related information. This may be done through safety newsletters, notices, bulletins, briefings or training courses.

✈ The safety manager should also ensure that lessons learned from investigations are distributed widely, both internally and from other organizations.

✈ Service providers should consider whether any of the safety information listed above needs to be communicated to external organizations.

✈ Service providers should assess the effectiveness of their safety communication by checking personnel have received and understood any safety critical information that has been distributed. This can be done as part of the internal audit activities or when assessing the SMS effectiveness. Safety promotion activities should be carried out throughout the life cycle of the SMS.
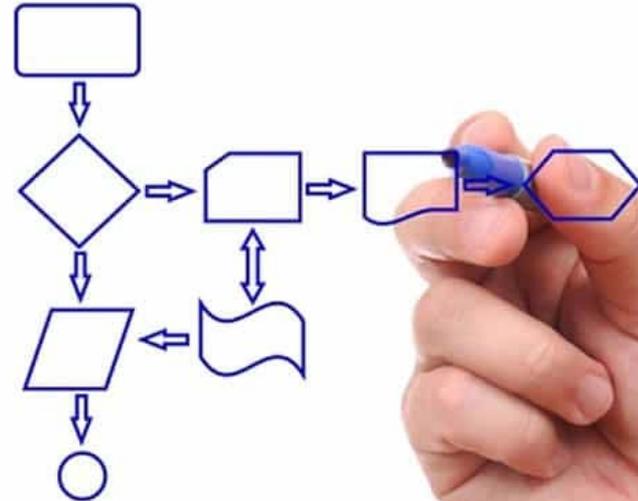
IMPLEMENTATION PLANNING

Role of the Authority

✈ The CAA responsible for the oversight of the SMS, needs to provide detailed guidance on SMS requirements.

✈ Every component of the SMS needs to be clearly specified by the CAA in order to ensure the SMS of the ATS provider will respond and perform according to their expectations.

IMPLEMENTATION PLANNING

Role of the Authority

✈ The CAA also needs to provide clear steps for the implementation of each SMS requirement.

✈ Specific timeframes (with details for acceptance requirements) for the acceptance of every phase of the implementation needs to be clearly established in your regulation. Detailed process for the evaluation of each phase needs to be developed and shared with the service provider. Also, consequences for non-compliance need to be clearly established and explained to the service provider.

✈ It is a responsibility of the Authority to guide this process!. This process should be (wise to be) similar for all operators and service providers required to have an SMS.

IMPLEMENTATION PLANNING

Role of the Authority

✈ The implementation of the SMS can not be a random and isolated process.

✈ Remember! this is part of the Safety Management of the State

✈ "The Brain" of the SSP should know from the beginning how each component will fit into the whole system.

IMPLEMENTATION PLANNING

Role of the Service Provider

- ✈ The implementation of the SMS requires resources. Expecting an implementation with the traditional safety related resources may not be successful.

- ✈ The implementation of the SMS may produce (hopefully) a significant transformation of the service provider organization.

- ✈ The service provider leadership needs to be fully on board before the implementation starts. The Safety Manager needs to be ready to motivate the whole organization (with the support of the Accountable Executive).

IMPLEMENTATION PLANNING

Role of the Service Provider

✈ The SMS implementation plan needs to be adequately approved and resourced.

✈ The implementation will normally be developed by an implementation Team, comprised by key personnel of each area within the scope of the SMS.

✈ The Team needs to have time allocated to comply with specific tasks, under the guidance and leadership of the safety manager.
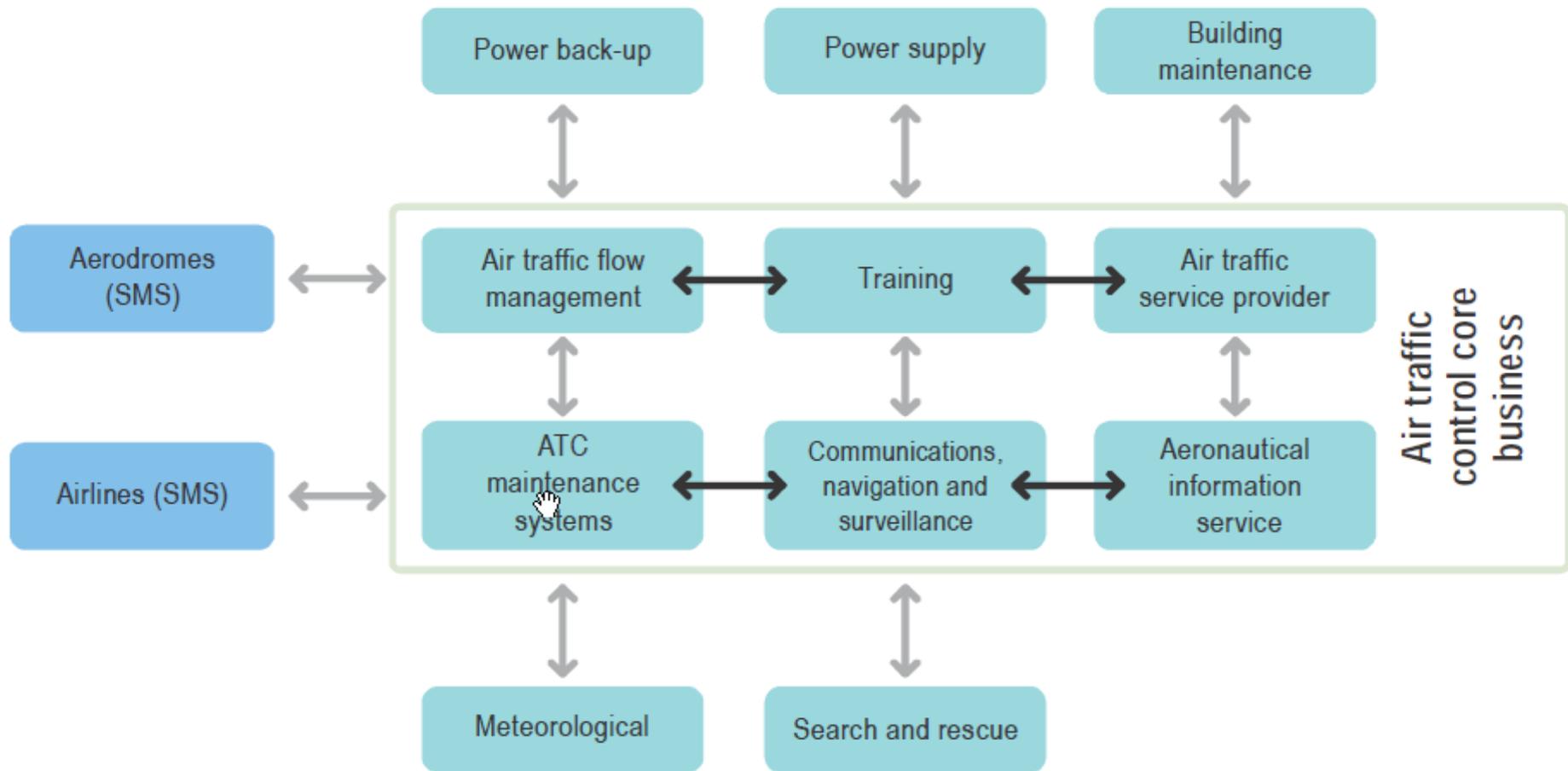
IMPLEMENTATION PLANNING

Role of the Service Provider

✈ System description.

✈ Interfaces.

✈ SMS scalability.

✈ Integration of management systems.

IMPLEMENTATION PLANNING

Role of the Service Provider

✈ Before implementing an SMS, the service provider should carry out a gap analysis. This compares the service provider's existing processes and procedures with the SMS requirements by the State.

✈ The development of an SMS should build upon existing organizational policies and processes.

✈ The gap analysis identifies the gaps that should be addressed through an SMS implementation plan.

  ✈ Note: The CAA must prescribe detailed content of the implementation plan and normally will accept this Plan as the initial phase of the SMS implementation.

Questions?