

APAC's Safety Management System Audit for Air Navigation Service Providers (ANSPs)

1 INTRODUCTION

1.1 Why Audits?

The overall objective of a safety programme is to reduce potential risks caused by your system or service to the reasonably most practicable extent. In this context, there are applicable standards to be implemented to reach this goal.

The regulator requests proof of the adequate implementation of the standards. **An audit result proves your level of compliance.**

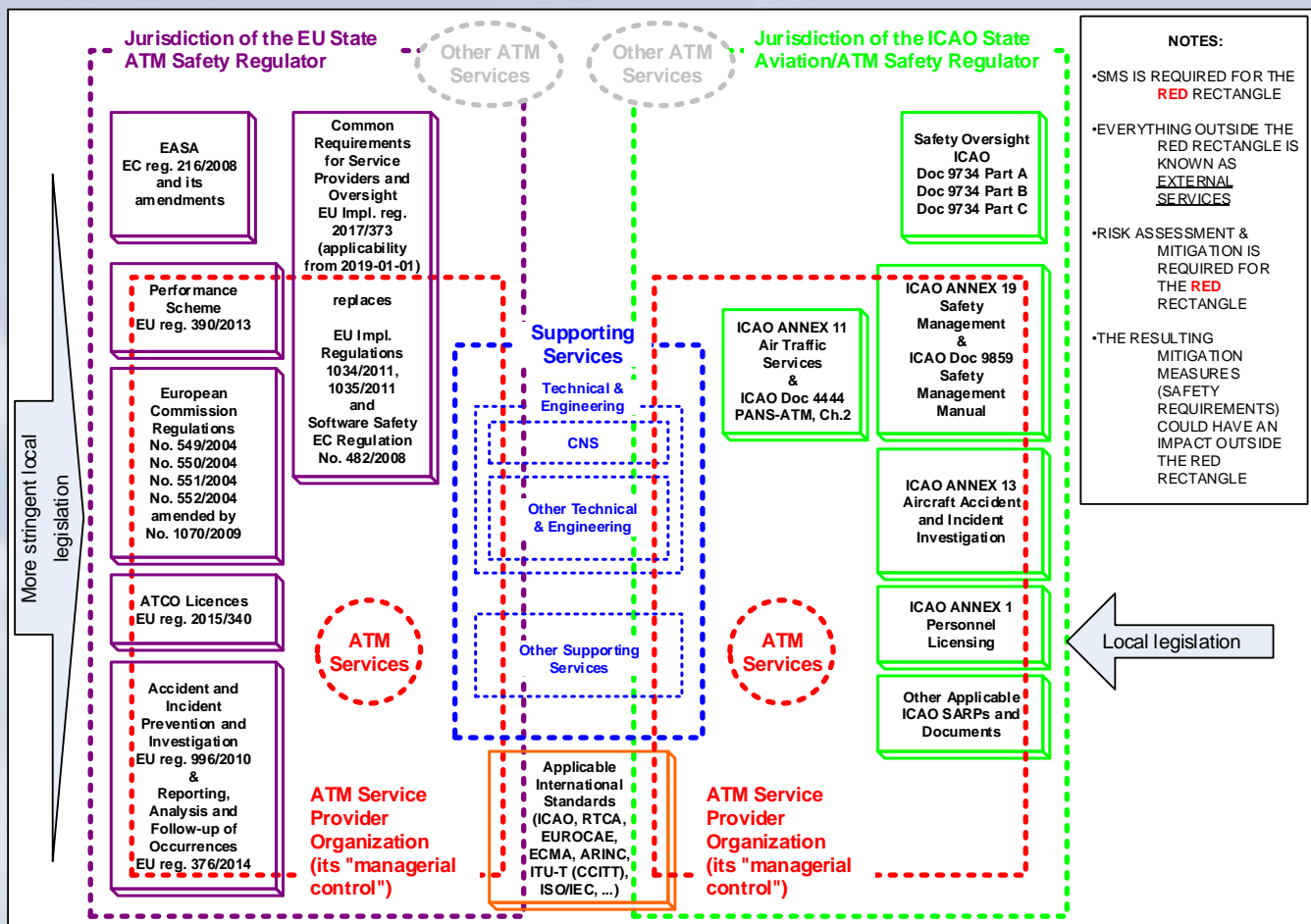
1.2 Applicable Safety Standards

I. ANSPs under jurisdiction of the EU State ATM Safety Regulator

With the European Commission Single European Sky (SES) Regulations a number of EUROCONTROL Safety Regulatory Requirements (ESARRs) were transposed into Community Law. ANSPs are required to prove compliance with these requirements and applicable Community Law by means of certification.

II. ANSPs under jurisdiction of the ICAO State Aviation/ATM Safety Regulator

Based on the ICAO SARP Annex 19, all ANSPs are required to develop, implement and maintain their Safety Management System. For the continuous review and improvement of the ANSPs' SMS the audits are mandatory.



APAC has experience in applying EUROCONTROL ESARR guidelines (including Safety Assessment Methodology (SAM)) and applicable Community Regulations in projects as well as in the set-up of safety management systems in industrial organisations and at ANSPs.

APAC's Safety Management System Audit for Air Navigation Service Providers (ANSPs)

1.3 Audits

General definition of an audit (according to ISO 19011:2011): A systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled.

Audits are the most important tool to prove compliance with applicable standards.

1.4 Independent Audits

Any recognised quality management system standard requires audits to be performed at regular intervals. The same is applicable to safety management systems. Some standards require a certain independence, e.g. the auditor must not belong to the same organisational unit than the unit to be audited. In any case, it is recommended to choose a completely independent auditor, as the results will usually be more objective and better accepted internally and externally. If you have to prove that the processes you implemented conform to the regulations and are adequate to the criticality of the tasks the organisation is to perform, you will always be in a better position if you can substantiate this by the results of an independent auditor.

Substantial cost savings, when compared to setting up audit resources (preparation of the questionnaire, staff involvement), training and preparation of the report internally, are also very likely.

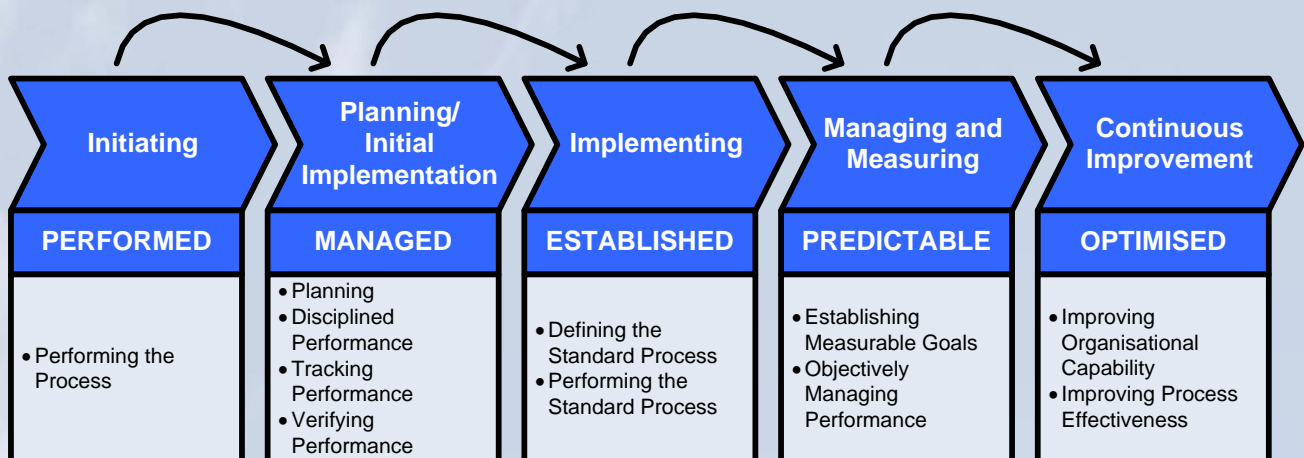
An additional aspect is that an external auditor performs more audits and for several organisations. The auditor knows the best practices and how standards are implemented at other organisations. In most cases, the auditor has also clarified the interpretation of the standards before the actual audit, which avoids time-consuming internal discussions.

An external organisation is liable for the correctness of the results of its audit. Therefore, an external report counts more towards a third party than an internal report.

1.5 Audit Tool Support and Maturity Levels

APAC has developed various questionnaires for auditing ANSPs' compliance against different requirements (SMS, ESSARs, SES Common Requirements, etc.). Questionnaires are structured similarly to the ISO/IEC15504/SPICE principles that also allow a scoring resulting in a graphical representation of the organisation's process capabilities. APAC uses a maturity model compatible with CMMI. Key process areas' best practices are allocated to certain maturity levels (1...5). The representation of the audit results in the form of maturity levels allows benchmarking against previous audits or domain averages.

Maturity Levels with Common Features



APAC's Safety Management System Audit for Air Navigation Service Providers (ANSPs)

1.6 Example: Visualisation of Audit Results against Common Requirements from EU Regulation No. 1035/2011

1. GENERAL REQUIREMENTS FOR THE PROVISION OF AIR NAVIGATION SERVICES

- 1.1. Technical and operational competence and capability
- 1.2. Organisational structure and management
- 1.3. Safety and quality management
- 1.4. Security
- 1.5. Human resources
- 1.6. Financial strength
- 1.7. Liability and insurance cover
- 1.8. Quality of services
- 1.9. Reporting requirements

2. SPECIFIC REQUIREMENTS FOR THE PROVISION OF AIR TRAFFIC SERVICES

- 2.1. Ownership
- 2.2. Open and transparent provision of services
- 2.3. Safety of services
 - 2.3.1. Safety management system (SMS)
 - 2.3.1.1. General safety requirements
 - 2.3.1.1.1. Safety Management
 - 2.3.1.1.2. Safety Responsibility
 - 2.3.1.1.3. Safety Priority
 - 2.3.1.1.4. Safety Objective
 - 2.3.1.2. Requirements for safety achievement
 - 2.3.1.2.1. Competency
 - 2.3.1.2.2. Safety Management Responsibility
 - 2.3.1.2.3. Quantitative Safety Levels
 - 2.3.1.2.4. SMS Documentation
 - 2.3.1.2.5. External Services and Supplies
 - 2.3.1.2.6. Risk Assessment and Mitigation
 - 2.3.1.2.7. Safety Occurrences
 - 2.3.1.3. Requirements for safety assurance
 - 2.3.1.3.1. Safety Surveys
 - 2.3.1.3.2. Safety Monitoring
 - 2.3.1.3.3. Safety Records
 - 2.3.1.4. Requirements for safety promotion
 - 2.3.1.4.1.
 - 2.3.1.4.2.
 - 2.3.1.4.3.

Safety Key Process Area (SKPA)



Required Maturity Level



Maturity Level Chart for Safety Assurance							
Process	Assessment	Maturity Level					Comments
		1	2	3	4	5	
Safety Surveys	January 2016						
	March 2017						
Safety Monitoring	January 2016						
	March 2017						
Safety Records	January 2016						
	March 2017						

Export to Excel

3. SPECIFIC REQUIREMENTS FOR THE PROVISION OF AIR TRAFFIC SERVICES

- 3.1. Technical and operational competence and capability
- 3.2. Working methods and operating procedures

4. SPECIFIC REQUIREMENTS FOR THE PROVISION OF AIR TRAFFIC SERVICES

- 4.1. Technical and operational competence and capability
- 4.2. Working methods and operating procedures

5. SPECIFIC REQUIREMENTS FOR THE PROVISION OF COMMUNICATION, NAVIGATION OR SURVEILLANCE SERVICES

- 5.1. Technical and operational competence and capability
- 5.2. Safety of services
- 5.3. Working methods and operating procedures

1.7

APAC's Safety Management System Audit for Air Navigation Service Providers (ANSPs)

2 SAFETY MANAGEMENT SYSTEM AUDIT PROCESS

This kind of audit proves that organisations that provide safety related services as an Air Navigation Service Provider (ANSP) meet the requirements identified above.

2.1 Audit Preparation

The scope of the audit, i.e. the organisational boundaries and the services to be audited, have to be defined and the applicable requirements and standards/regulations have to be identified. Both internal and external standards may be taken into account, always with the more rigid standards being applicable.

A presentation of the audit approach to the persons involved at the audited organisation is highly recommended.

2.2 Document Validation

During the first phase of the audit, which is performed mostly off-line and is based on the documents provided by the audited organisation, the auditor checks whether the applicable internal standards and guidelines conform to the applicable external standards and are tailored adequately. The effort of the audited organisation is minimal in this phase, as they only have to answer questions if the written material does not provide the information necessary. The auditor will also check the internal documents for readability, consistency, completeness and validity. The result of this phase is a document review report. The results will be presented to the safety and quality manager and deficiencies will be pointed out, which means that the audit has to be against applicable external standards as the internal standards are too weak. The auditor will provide a written recommendation concerning the update of the internal documents.

2.3 On-Site Audit

The major goal of this phase is to verify whether the applicable standards and guidelines are implemented in everyday work life. We look for evidence, which means, for example, that we check whether the required records are correct and available, the staff actively supports safety management, identified deficiencies are mitigated actively, improvement proposals are promoted adequately, staff is well trained and the management fully committed to safety. The auditor interviews the staff based on the questionnaire and records all inputs, references and findings as well as the result of the discussions in the tool.

The on-site audit activities end with a close-out meeting to which all major audit partners of the audited organisation are invited. The auditor explains how the auditor sees the standards implemented at the organisation, clarifies open issues and presents auditor's first version of the findings. The feedback of the audited organisation is very important to avoid any misunderstandings.

2.4 Audit Report

An audit report consists of:

- an executive summary with a chart incl. a scoring of the capability of the safety management's key process areas and the major findings and recommendations;
- a detailed report of the findings identified and a high-level explanation for the organisation's ranking on the key process areas' capability scale;
- recommendations for improvements;
- references to documents and standards used during the audit;
- an appendix with the description of the assessment model.

