

ANS Audit Training

Day #1 – Focus on SMS

ICAO Bangkok Regional Office
December 2024

Summary

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ Detailed requirements in Annex 19
- ❖ SMS Implementation in ANSPs

- ❖ **General ICAO requirements**
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ Detailed requirements in Annex 19
- ❖ SMS Implementation in ANSPs

ICAO Annexes

ICAO Annexes :



- Annex 1 : Personnel licensing
- Annex 2 : Rules of the air
- Annex 3 : Meteorological Service ...
- Annex 4 : Aeronautical charts
- Annex 5 Units of measurements to be used ...
- Annex 6 P1 : International commercial air transport– airplanes
- Annex 6 P2 : International general aviation– airplanes
- Annex 6 P3 : International operations helicopters
- Annex 7 : Aircraft nationality and registration marks
- Annex 8 : Airworthiness of aircraft
- Annex 9 : Facilitation
- Annex 10 vol 1 : Radio navigation aids
- Annex 10 vol 2 : Communication procedures
- Annex 10 vol 3 : Communication systems
- Annex 10 vol 4 : Surveillance and collision avoidance system
- Annex 10 vol 5 : Aviation radio communication spectrum utilization
- Annex 10 vol 6 : Communication systems and procedures relating to remote pilot aircrafts
- Annex 11 : Air Traffic Services
- Annex 12 : Search and Rescue
- Annex 13 : Aircraft accident and incidents investigations
- Annex 14 vol 1 : Aerodrome design and operations
- Annex 14 vol 2 : Heliports
- Annex 15 : Aeronautical Information Services
- Annex 16 vol 2 : Aircraft engine emissions
- Annex 16 vol 3 : CO2 emission
- Annex 16 vol 4 : Carbon offsetting and reduction ...
- Annex 17 : Security
- Annex 18 : Safe transport of dangerous goods by air
- Annex 19 : Safety Management

- ❖ **General ICAO requirements**
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ Detailed requirements in Annex 19
- ❖ SMS Implementation in ANSPs

ICAO Annexes by domain

**Basic aeronautical legislation
and specific operating regulations
(LEG)**

**Licensing and staff training
(PEL)
Annex 1**

**Aircraft airworthiness
(AIR)
Annexes 6, 7, 8 et 16**

**Air Navigation Services
(ANS)
Annexes 2, 3, 4, 5, 10, 11, 12,
15 et PANS-ATS**

**Civil aviation organization
(ORG)**

**Technical operation of aircraft
(OPS)
Annexes 6, 9, 18 et PAN-OPS**

**Aviation Accident and
Incident Investigations(AIG)
Annex 13**

**Aerodromes and ground aids
(AGA)
Annex 14 et PANS-AGA**

- ❖ General ICAO requirements
- ❖ **Auditing requirements**
- ❖ Focus on Annex 19
- ❖ Detailed requirements in Annex 19
- ❖ SMS Implementation in ANSPs

Requirements checked by Authorities

A little bit of history...

- ❖ In the early times : Almost no supervision and Public ANSPs with compliance to ICAO requirements
- ❖ Separation between ANSP and Authorities (Provider & Surveillance)
- ❖ Attempts from Authorities to check compliance to **all ICAO Annexes**
- ❖ But... difficult and hard to manage !
- ❖ Today : Check the Management of Safety → **ANNEX 19**
- ❖ For all types of providers (ANSP, Airlines, Airports, ...)

- ❖ General ICAO requirements
- ❖ **Auditing requirements**
- ❖ Focus on Annex 19
- ❖ Detailed requirements in Annex 19
- ❖ SMS Implementation in ANSPs

Requirements checked by Authorities

- ❖ Almost Impossible to audit **all** technical requirements of **all** ICAO annexes
- ❖ ANSP is responsible to demonstrate its compliance to ICAO Annexes
- ❖ Annex 19 is the base for SMS auditing for an Authority

- ❖ General ICAO requirements
- ❖ **Auditing requirements**
- ❖ Focus on Annex 19
- ❖ Detailed requirements in Annex 19
- ❖ SMS Implementation in ANSPs

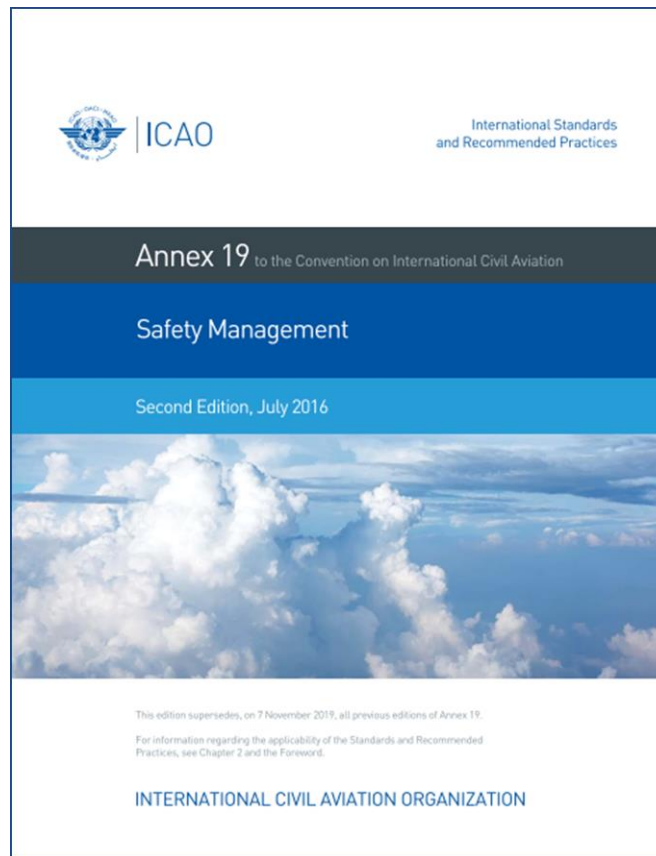
Requirements checked by Authorities

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- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ **Focus on Annex 19**
- ❖ Detailed requirements in Annex 19
- ❖ SMS Implementation in ANSPs

Annex 19

ICAO Annex 19 relates to:
Civil Aviation Authority/ies and
Air Navigation Service Providers



- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ **Focus on Annex 19**
- ❖ Detailed requirements in Annex 19
- ❖ SMS Implementation in ANSPs

Annex 19

❖ Content

- State Safety Programme
- Safety Management Systems
- Data Collection & Safety Information Protection

❖ Rationale

- Basic Enablers to support safety management
- Compliance not enough
- Dynamic performance-based system



- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ **Focus on Annex 19**
- ❖ Detailed requirements in Annex 19
- ❖ SMS Implementation in ANSPs

Annex 19

CHAPTER 1.	Definitions
CHAPTER 2.	Applicability
CHAPTER 3.	State safety management responsibilities
3.1	State safety programme (SSP)
3.2	State safety policy, objectives and resources
3.3	State safety risk management
3.4	State safety assurance
3.5	State safety promotion
APPENDIX 1.	State safety oversight (SSO) system critical elements (CEs).....
1.	Primary aviation legislation (CE-1)
2.	Specific operating regulations (CE-2)
3.	State system and functions (CE-3).....
4.	Qualified technical personnel (CE-4)
5.	Technical guidance, tools and provision of safety-critical information (CE-5).....
6.	Licensing, certification, authorization and approval obligations (CE-6)
7.	Surveillance obligations (CE-7).....
8.	Resolution of safety issues (CE-8).....

CAA :

Chapter 3 = SSP framework,
Appendix 1 = Critical Elements (CEs)
of a SSP

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ **Focus on Annex 19**
- ❖ Detailed requirements in Annex 19
- ❖ SMS Implementation in ANSPs

Annex 19

**Chapter 4 appendix 2 =
framework for SMS
implementation.**

CHAPTER 4. Safety management system (SMS)

- 4.1 General
- 4.2 International general aviation — aeroplanes

APPENDIX 2. Framework for a safety management system (SMS).....

- 1. Safety policy and objectives
- 2. Safety risk management.....
- 3. Safety assurance
- 4. Safety promotion

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ **Focus on Annex 19**
- ❖ Detailed requirements in Annex 19
- ❖ SMS Implementation in ANSPs

Annex 19

CHAPTER 5. Safety data and safety information collection, analysis, protection, sharing and exchange

5.1 Safety data collection and processing systems

5.2 Safety data and safety information analysis

5.3 Safety data and safety information protection

5.4 Safety information sharing and exchange

APPENDIX 3. Principles for the protection of safety data, safety information and related sources

1. General principles.....

2. Principles of protection.....

3. Principles of exception

4. Public disclosure.....

5. Responsibility of the custodian of safety data and safety information

6. Protection of recorded data.....

**Chapter 5 and appendix 3 =
done by providers under state
responsibility**

- ❖ General ICAO requirements
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ICAO Annex 19



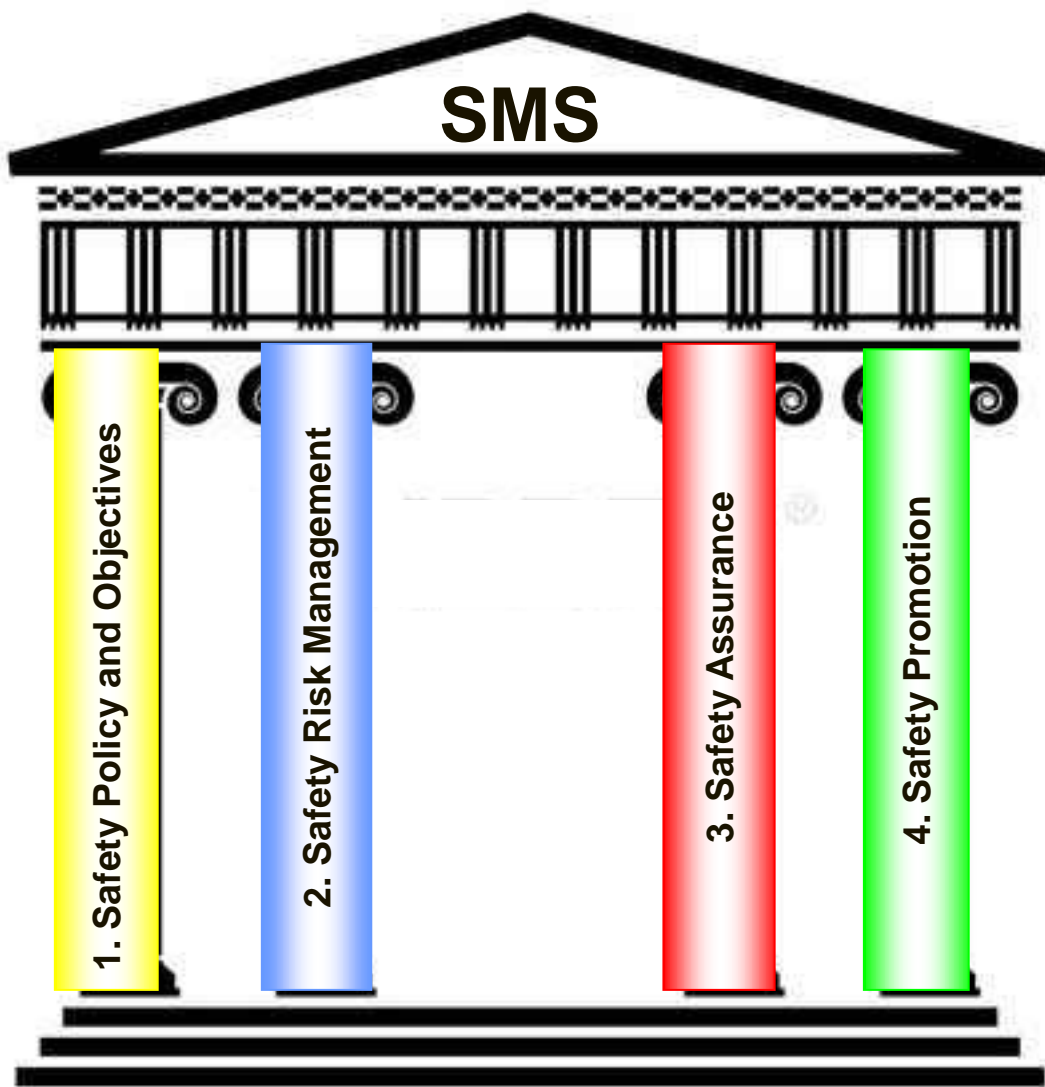
**Annex 19 Appendix 2 :
framework for a safety
management system. 4
main items that are the 4
pillars of the SMS.**

1. Safety Policy and Objectives

2. Safety Risk Management

3. Safety Assurance

4. Safety Promotion



- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ **Focus on Annex 19**
- ❖ Detailed requirements in Annex 19
- ❖ SMS Implementation in ANSPs

Annex 19 vs State Regulations

Annex 19 must be transposed in state regulations :

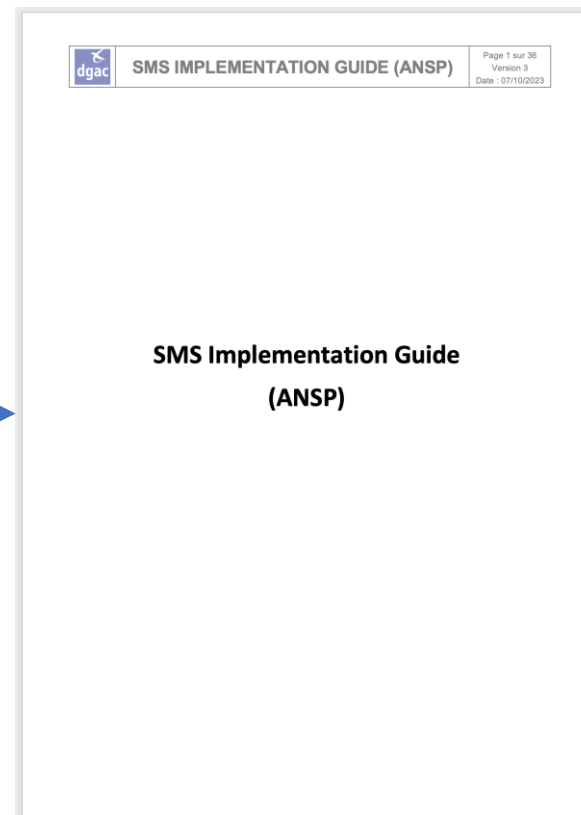
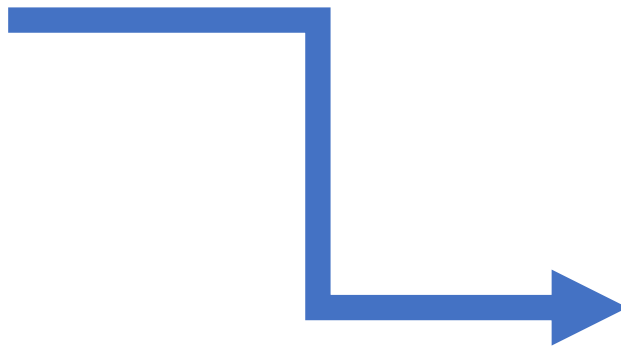
→ Copied in extenso in some cases

→ Adapted and more precise (ex: EU Regulations, US regulations, National regulations)

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ **Detailed requirements in Annex 19**
- ❖ SMS Implementation in ANSPs

Annex 19 – Detailed requirements

- ❖ Refer to document « SMS Implementation guide (ANSP) »



- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ **Detailed requirements in Annex 19**
- ❖ SMS Implementation in ANSPs

Annex 19 – Detailed requirements



- ❖ Safety Management System (SMS) requirements are listed in ICAO Annex 19
- ❖ For each requirement of Annex 19 **this guide**:
 - Recalls the requirement
 - Defines means of implementation that allows the ANSP to be compliant with the requirement
 - Provides questions for a self-assessment by ANSP prior to audit and supervisory actions by Civil Aviation Authority (CAA)
- ❖ *Examples are given to illustrate the implementation of the SMS*
- ❖ *They are not models but a way to meet the requirement. Examples are shown in blue and italics.*

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ **Detailed requirements in Annex 19**
- ❖ SMS Implementation in ANSPs

Let's go to the detailed requirements !

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ **Detailed requirements in Annex 19**
- ❖ SMS Implementation in ANSPs

1 SAFETY POLICY AND OBJECTIVES

1.1 Management commitment



❖ Safety policy

The ANSP must:

- Define a safety policy that contains a clear commitment signed by the highest level.
- Ensure that safety is a priority issue for the ANSP;
- Display as an objective the continuous improvement of safety;
- Define a few priority areas for improvement on points identified as needing improvement;
- Guarantee that the SMS and its procedures are documented, updated, and effectively applied;
- Implement this policy via an annual action plan;
- Clearly specify that any involuntary error will not be subject to a sanction and that any voluntary violation of the rules will be punished (just culture);
- Have sufficient resources to implement this policy;
- Periodically review this policy;
- Disseminate this policy widely by all appropriate means (letter, SMS manual, posting in the premises, etc.);
- Present and explain this policy to all agents;
- Have sufficient resources to implement this policy;
- Monitor the implementation of the annual action plan.

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ **Detailed requirements in Annex 19**
- ❖ SMS Implementation in ANSPs

1 SAFETY POLICY AND OBJECTIVES

1.1 Management commitment



Non-exhaustive topics and list of questions

- **Has the safety policy been defined?**
- **Is it signed by the director of the ANSP?**
- Does it include areas for improvement?
- Does it contain a reference to “just culture”?
- **How was it distributed, to whom?**
- Is it associated with an action plan?
- Who is responsible for implementing these actions? How were they informed?
- Is the action plan followed? By whom, when how?

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ **Detailed requirements in Annex 19**
- ❖ SMS Implementation in ANSPs

1 SAFETY POLICY AND OBJECTIVES

1.2 Safety accountability and responsibilities



- **The head of ANSP is accountable for safety and safety management performance of the ANSP.**
- **For all existing functions responsibilities for safety and safety management must be defined.**
- **These responsibilities must appear in a document signed by the accountable manager (decision, job descriptions, SMS manual, etc.).**
- **Responsibilities should be communicated to all agents, known by all agents, and enforced.**

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ **Detailed requirements in Annex 19**
- ❖ SMS Implementation in ANSPs

1 SAFETY POLICY AND OBJECTIVES

1.2 Safety accountability and responsibilities



→ Non-exhaustive topics and list of questions

- **Is the organization of the SMS defined? Where? Is it broadcast?**
- Has it been presented, explained?
- **Have responsibilities for safety and safety management been defined?**
- Has the document defining them been signed by the director of the ANSP?
- Have the agents been informed of their responsibilities? How?

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ **Detailed requirements in Annex 19**
- ❖ SMS Implementation in ANSPs

1 SAFETY POLICY AND OBJECTIVES

1.3 Appointment of key safety personnel



- ❖ A SMS manager is appointed to implement and manage the SMS :
 - Under the direct authority of the chief of ANSP
 - Independent of the operational hierarchy (ATS and CNS)
 - Member of the management team to have a transversal vision of the activities of the organization
 - He writes the SMS manual and the procedures in collaboration with the experts concerned.
- ❖ The SMS manager of an ANSP has skills in:
 - The operation of the ATS and CNS services,
 - The processing of safety events,
 - Safety studies,
 - Audits,
 - Management systems,
 - Running a project.

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ **Detailed requirements in Annex 19**
- ❖ SMS Implementation in ANSPs

1 SAFETY POLICY AND OBJECTIVES

1.3 Appointment of key safety personnel



Non-exhaustive topics and list of questions

- **Has an SMS manager been appointed?**
- What is his role?
- Who does he report to?
- **Does he have easy access to the director of the ANSP?**
- What is his position in relation to the other executives?
- Who does he work with?
- **What training did he follow?**
- Does he have access to all the information he needs (indicators, safety events, changes, etc.)?
- Does it monitor the processing of safety events?
- Does it ensure the transmission of events to the CAA?
- Does it check the safety studies (methodology, risk reduction actions)?
- Does it provide follow-up functions (action plan, corrective actions, etc.)?
- Is he the writer of the SMS manual?
- Does it manage training relating to the SMS (internal auditors, safety studies, handling of events, etc.)?

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ **Detailed requirements in Annex 19**
- ❖ SMS Implementation in ANSPs

1 SAFETY POLICY AND OBJECTIVES

1.4 Coordination of emergency response planning



- ❖ **The ANSP defines one (or more) emergency plan to be activated in case of total or partial inability to provide ATS and CNS services (tropical cyclones, floods, earthquakes, tidal waves/tsunamis, technical breakdowns, pandemics, etc.)**
- ❖ **The emergency plan is simple and explicit to allow:**
 - **Either to continue to provide services in a degraded manner,**
 - **Or to stop providing the services, while maintaining an acceptable level of safety.**
 - **Define how to operate the return to normal.**
- ❖ **It is coordinated:**
 - **At the regional level with the adjacent ANSPs,**
 - **Locally with other service providers such as airport managers and air operators.**
- ❖ **→ A test of local emergency plans is carried out regularly.**

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
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- ❖ SMS Implementation in ANSPs

1 SAFETY POLICY AND OBJECTIVES

1.4 Coordination of emergency response planning



Non-exhaustive topics and list of questions

- **Have one or more emergency plan(s) been defined?**
- Do these plans cover ACC and airports?
- Do these plans cover the ATS and CNS domains?
- **Are they coordinated with adjacent centers? With whom?**
- Have they been presented and explained?
- **Who triggers them? How?**
- Are they tested?

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ **Detailed requirements in Annex 19**
- ❖ SMS Implementation in ANSPs

1 SAFETY POLICY AND OBJECTIVES

1.5 SMS documentation



- ❖ **The SMS manual must demonstrate how the ANSP meets the SMS requirements of Annex 19.**
- ❖ **It includes the following elements:**
 - **The safety policy**
 - **The organization of the ANSP,**
 - **The links to the processes and procedures impacting safety**
- ❖ **It must be as simple as possible and refer to existing documents (procedures, decisions, etc.) whenever possible.**
- ❖ **Do not paraphrase existing documents elsewhere !**

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ **Detailed requirements in Annex 19**
- ❖ SMS Implementation in ANSPs

1 SAFETY POLICY AND OBJECTIVES

1.5 SMS documentation



Non-exhaustive topics and list of questions

SMS Manual

- **Does the SMS manual meet the requirements of Annex 19?**
- By whom was it written?
- **Is it signed by the director of the ANSP?**
- Was it widely distributed within the ANSP?

Procedures

- **Have one or more document management procedures been defined?**
- Do these procedures cover all SMS documentation (including ATS and CNS operational documentation)?
- Has a procedure relating to recordings been defined?
- Has a procedure relating to findings/corrective actions been defined?
- Has a procedure relating to the management of internal audits been defined?
- Have these procedures been disseminated and presented to the actors concerned?

ATS and CNS operational documentation

- **How is it ensured that documentation provided to front line workers is up to date?**

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
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2 SAFETY RISK MANAGEMENT

2.1 Hazard identification



PROCESSING OF SAFETY EVENTS

- ❖ **Process of safety events must contain at least the following steps:**
 - **Report**
 - **Notification**
 - **Analysis: risk assessment (severity and frequency) and search causes**
 - **Definition and implementation of corrective actions**
 - **Feedback to ATCO or ATSEP**
 - **Follow-up of corrective actions.**
 - **Safety events are handled by trained agents, mostly chosen from first-line players (ATCO for ATS and ATSEP for CNS).**
 - **A debriefing with the agents involved is done as quickly as possible so as not to lose any element of the context of the incident.**
 - **Report (Any known safety event is reported via an Incident Notification Form)**
 - **Notification (Transmission to the CAA)**
 - **Analysis (Severity / Frequences / Causes)**
- ❖ **For each event, the risk is assessed according to severity and frequency classified according to from ICAO DOC9859**

- ❖ General ICAO requirements
- ❖ Auditing requirements
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- ❖ SMS Implementation in ANSPs

2 SAFETY RISK MANAGEMENT

2.1 Hazard identification



Non-exhaustive topics and list of questions

- **Is there a procedure and/or a safety event processing manual for ATS and CNS?**
- Does the procedure and/or processing manual comply with the requirements of Annex 19?
- **Have the agents who deal with ATS, and CNS safety events been trained?**
- Are all events processed (severity, frequency, causes, corrective actions, feedback)?
- **Can the traceability of event processing be demonstrated?**
- Are safety events stored and backed up?
- **Can the link between a safety event and the corrective actions be demonstrated?**
- Who transmits safety events to the CAA? How? When?

- ❖ General ICAO requirements
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- ❖ Focus on Annex 19
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- ❖ SMS Implementation in ANSPs

3 SAFETY ASSURANCE

3.1 Safety performance monitoring and measurement



❖ **2 ways to monitor safety performance:**

- **Indicators (see all examples) in the guide**
- **Audits (external and internal).**

❖ **Indicators definition**

- **source (source of data)**
- **calculation method (case of a complex indicator)**
- **manager (calculation and production)**
- **periodicity (weekly, monthly, annual)**
- **objective (target)**
- **alert threshold (bad result from which it is necessary to react immediately).**
- **The alert threshold is a value that requires immediate corrective action when reached.**

❖ **Some safety indicators (with target and alert threshold) must be validated by the CAA during the ANSP-CAA coordination meetings.**

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
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3 SAFETY ASSURANCE

3.1 Safety performance monitoring and measurement

Non-exhaustive topics and list of questions

Indicators

- **How are the indicators defined?**
- **Have the characteristics of each indicator been defined (source, calculation method, person responsible, periodicity, objective, and alert threshold)? Where are they found?**
- **Are the indicators monitored? By whom, when and how?**
- **What do we do in the event of a poor result for an indicator?**

Audits

- **Do we have a procedure for internal audits?**
- **Do we have internal auditors?**
- **Have they been trained? By whom?**
- **Who monitors internal auditors?**
- **Do we have an annual internal audit program?**
- **How is it built? By whom?**
- **Who validates it?**
- **Is there a procedure to define how audit findings (internal and external) are handled?**
- **Who decides on the corrective actions implemented after an audit report?**
- **How do we follow them? Who?**

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ **Detailed requirements in Annex 19**
- ❖ SMS Implementation in ANSPs

3 SAFETY ASSURANCE

3.2 The management of change



❖ **Important Note** : The safety study process described below relates to a mature SMS.

❖ **A safety study contains at least:**

- The search for risks with an assessment of their severity and frequency,
- The definition of risk reduction means,
- Internal coordination (ATS – CNS) and external coordination with other ACC and/or airports,
- Transition phase (work during implementation),
- Traceability of all actions.

❖ **Definition of a change**

A change may concern the airspace (airspace structure, new route, new flight procedure, etc.) or the technical field (new system or modification of an existing system). A new way of working is also considered as a change.

❖ **Notification of the change to the CAA**

The ANSP notifies the CAA of any planned change using the form provided for this purpose.

❖ **Change monitored by the CAA**

If the CAA decides to follow a change, the ANSP carries out the safety study and exchanges regularly with the CAA in order to provide it with all the elements necessary for its decision-making.

❖ **Change not followed by the CAA**

The ANSP carries out the safety study and implements the change without approval from the CA

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ **Detailed requirements in Annex 19**
- ❖ SMS Implementation in ANSPs

3 SAFETY ASSURANCE

3.2 The management of change



- ❖ **Commissioning of the change** : The commissioning decision by the ANSP must be traced and based on the approval of the Authority (if exists) and on the reference of the safety study.
- ❖ **Archiving of the safety study** : The safety studies are “record” of the SMS.
- ❖ **Important Note** : The full safety process should be practiced when the SMS is mature and for major changes.
- ❖ **Safety studies must include at least:**
 - Search for risks with an assessment of their severity
 - Frequency
 - Means of risk reduction
 - Internal and external coordination
 - Transition phase (work during implementation)
 - Traceability of all actions

- ❖ General ICAO requirements
- ❖ Auditing requirements
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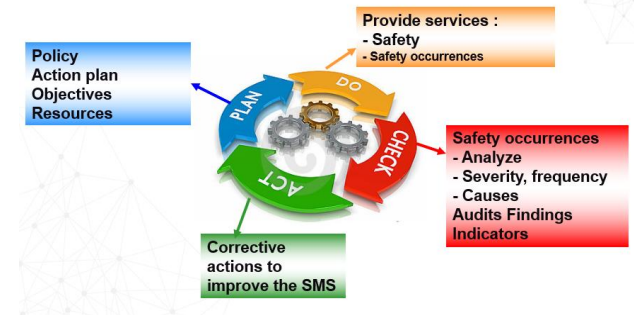
3 SAFETY ASSURANCE

3.3 Continuous improvement of SMS



❖ **Periodic SMS Monitoring** should be put in place, the role of which is to:

- Manage corrective actions (creation, follow-up, closure),
- Monitoring the implementation of the action plan,
- Examine the indicators,
- Manage serious events.
- Process audit findings.



❖ **SMS monitoring** can be done by the SMS manager in coordination with the ATS and CNS department heads.

N° Ref	Origin	Finding	in charge	Date objective	Corrective actions	Effectiveness
002/20	Audit CAA 01/20	ATS: corrective actions are defined too long after the safety events have been processed.	Chief ATS	03/20 12/20	Periodicity of safety monitoring group is now 1 month (previously 2 months)	3 monitoring groups with periodicity of 1 month

- ❖ General ICAO requirements
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- ❖ Focus on Annex 19
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3 SAFETY ASSURANCE

3.3 Continuous improvement of SMS

Non-exhaustive topics and list of questions

❖ Corrective actions

- **Has a procedure for findings/corrective actions been defined?**
- Does this procedure specify: who decides, who implements, who monitors the corrective actions?
- Does this procedure explain the management in the event of non-compliance with a target date for corrective action?
- Has it been defined how the corrective actions are stored and saved?
- **Can a link be made between the findings (causes of safety events, audit reports, etc.) and the corrective actions?**

❖ Management review

- **Has the outline of the management reviews been defined (participants, agenda, frequency)? Where?**
- **Who chairs the reviews? Is he still present?**
- Who provides the secretariat, including the preparation?
- Are the minutes distributed? Whose?
- **Follow-up actions ?**
- Between the 2 annual management reviews, how is the monitoring of the SMS carried out?
- Where is this monitoring formalized?
- **Who is in charge of this follow-up?**
- Do we have traceability of the follow-up?
- Does this follow-up contain a review of the annual action plan, corrective actions, main incidents, - indicators, audit reports?

- ❖ General ICAO requirements
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4 SAFETY PROMOTION

4.1 Training and education



- ❖ The ANSP develops, maintains, and delivers a safety management training program. In order to have trained and competent personnel to operate the SMS, it is necessary to:
 - Identify the functions which have an impact on the SMS
 - Define a training program for each function
 - Carry out the training program
 - Ensure that the skills acquired are maintained over the long term

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ **Detailed requirements in Annex 19**
- ❖ SMS Implementation in ANSPs

4 SAFETY PROMOTION

4.1 Training and education



Non-exhaustive topics and list of questions

- **Is there a global training plan for the organization ?**
- Management of training related to the SMS ?
- Have the functions that play an important role in the SMS been identified?
- **Has a training plan been defined for each function concerned?**
- **Has this plan been validated? By whom?**
- **Has it been implemented?**
- Can the traceability of these trainings be demonstrated?
- Have all agents been made aware of the SMS?
- Can we demonstrate the traceability of these sensitizations?

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
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4 SAFETY PROMOTION

4.2 Safety communication

❖ SMS information

The ANSP provides all agents with information from the SMS: the SMS manual, procedures, safety review reports, audit reports, etc. Agents must be able to find this information easily.

❖ Safety information

The ANSP ensures that the agents concerned are informed of the main safety problems encountered internally or originating from another organization.

❖ Internal information

In order to encourage the postponement of events, it is appropriate in return to inform the agents concerned (ATCO and/or ATSEP) of the actions taken (corrective actions and feedback) and to reply systematically to **any request concerning safety**.

❖ External information

Safety information from other organizations, particularly at the regional level, can be made available to agents.

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ **Detailed requirements in Annex 19**
- ❖ SMS Implementation in ANSPs

4 SAFETY PROMOTION

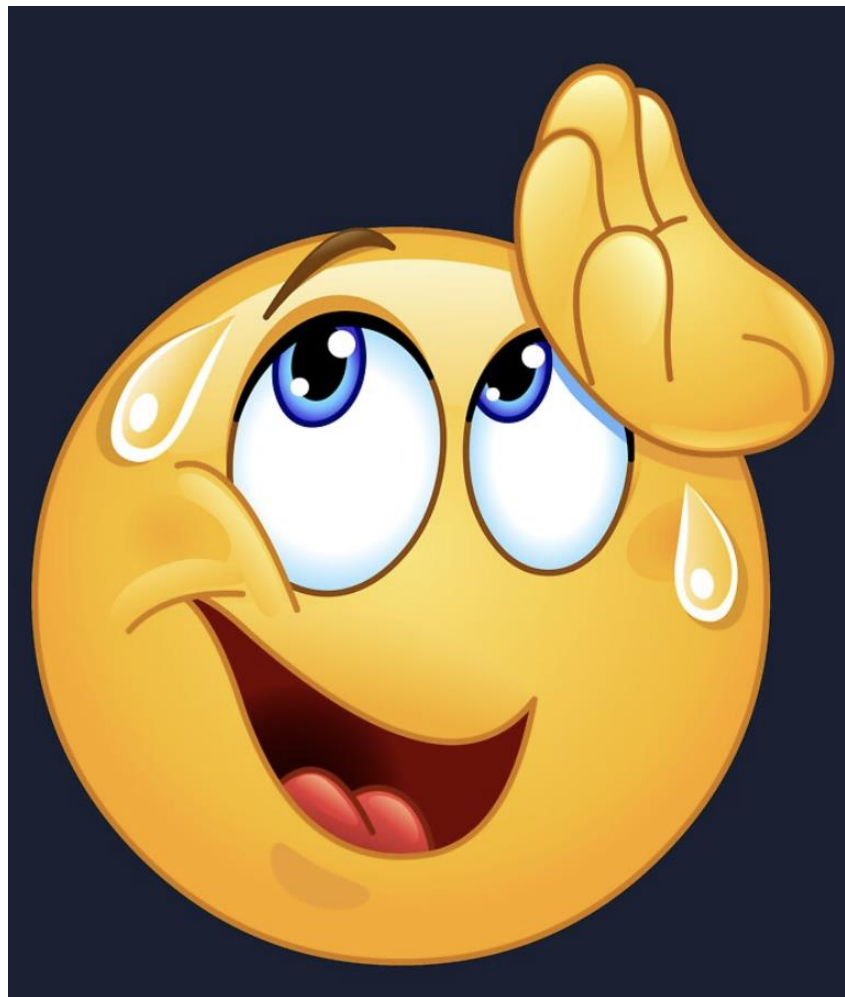
4.2 Safety communication

Non-exhaustive topics and list of questions

- **Is information relating to the SMS (SMS manual, procedures, management review report, audit reports, annual action plan, corrective actions, etc.) made available to all agents?**
- How and by whom?
- Are the indicators published?
- How and by whom?
- **Are ATCOs and ATSEPs informed of safety issues in other organizations? How and by whom?**

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ **Detailed requirements in Annex 19**
- ❖ SMS Implementation in ANSPs

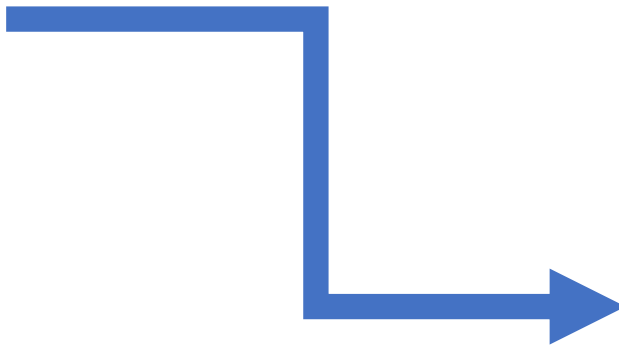
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- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ **Detailed requirements in Annex 19**
- ❖ SMS Implementation in ANSPs

Annex 19 – Detailed requirements

- ❖ Refer to document « Annex 19 – COMPLIANCE MATRIX»

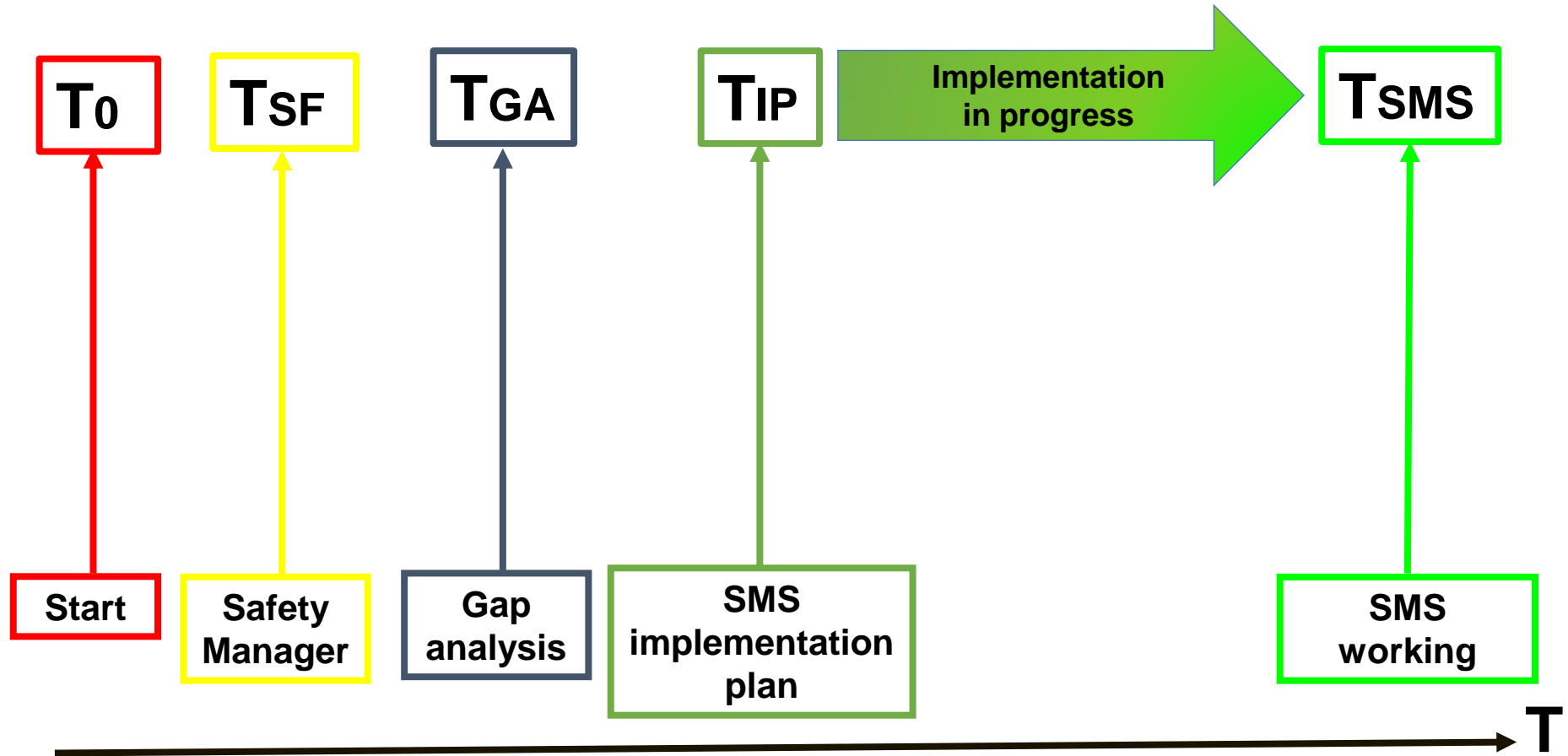


ANNEX 19 - COMPLIANCE MATRIX

Annex 19 Requirement	SMS		
	Starting	Partial	Completed
1. SAFETY POLICY AND OBJECTIVES			
1.1 Management commitment			
Commitment of main managers			
Policy: content, signed ...			
Policy: dissemination and knowledge			
Action plan			
1.2 Accountabilities and responsibilities			
Responsibilities defined			
Responsibilities known and applied			
1.3 Appointment of key safety personnel			

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ Detailed requirements in Annex 19
- ❖ **SMS Implementation in ANSPs**

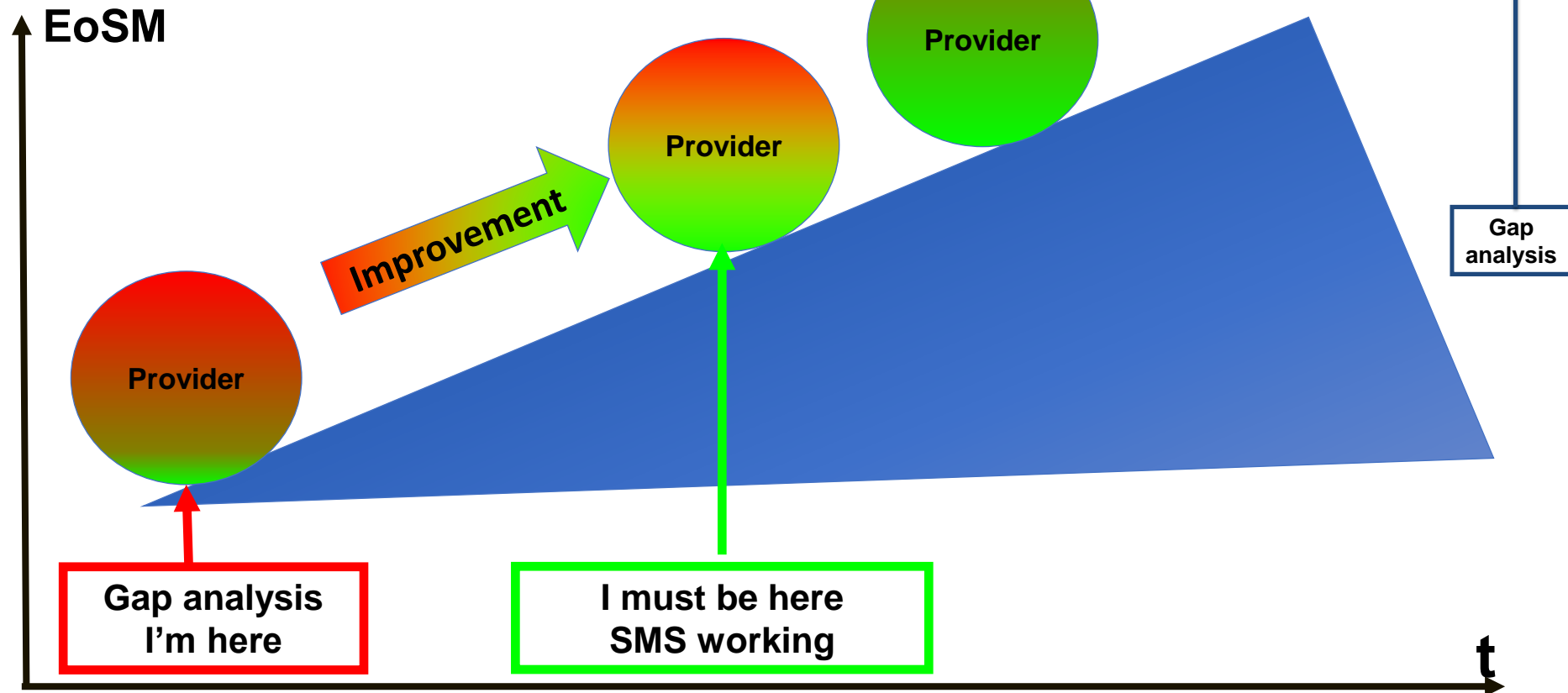
Implementation of a SMS Chronology



- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ Detailed requirements in Annex 19
- ❖ **SMS Implementation in ANSPs**

Gap Analysis

A gap analysis compares the service provider's existing safety management processes and procedures with SMS requirements.
(EoSM : Effectiveness of Safety Management)

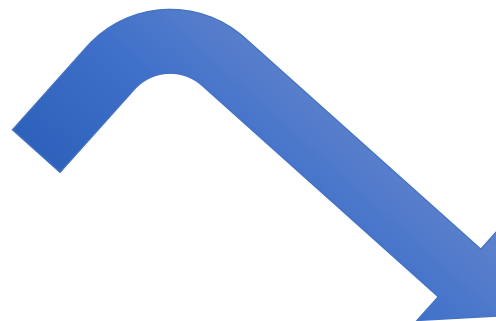


- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ Detailed requirements in Annex 19
- ❖ **SMS Implementation in ANSPs**

From the gap analysis to the implementation plan

- Mature
- Gap easy to correct (short time)
- Gap difficult to correct (long time)

Annex 19	SMS		
	Not implemented	Partially implemented	Implemented
1 Safety policy and objectives			
1.1 Management commitment and responsibility			
Commitment at the highest level			●
Safety policy diffusion and knowledge			●
Priority to safety			●
Action plan		●	
1.2 Safety accountabilities			
Responsibilities (definition, diffusion ...)		●	●
Knowledge of the decision DG		●	
Responsibilities known and applied		●	
1.3 Appointment of key safety personnel			
Safety manager			●
Position of the safety manager			●
1.4 Coordination of emergency response planning			
Contingency plan		●	



IMPLEMENTATION PLAN

GAP ANALYSIS REPORT

Action	Target	Who ?	How ?	State
Write safety policy.	15/06/2017	Director	Project by safety manager.	
Diffusion safety policy.	01/07/2017	Safety manager	Letter to personnel by e-mail During training SMS Pinned up in provider's facilities	
Define safety responsibilities	01/12/2017	Director human resources	Working Group (Deputy director, Director human resources, Flight OPS manager, Ground OPS manager, Training manager, Maintenance manager, Safety manager ...)	
Appointment of safety manager	01/04/2017	Director		

1 Safety policy

2 Safety Risk Management

3 Safety assurance

4 Safety promotion

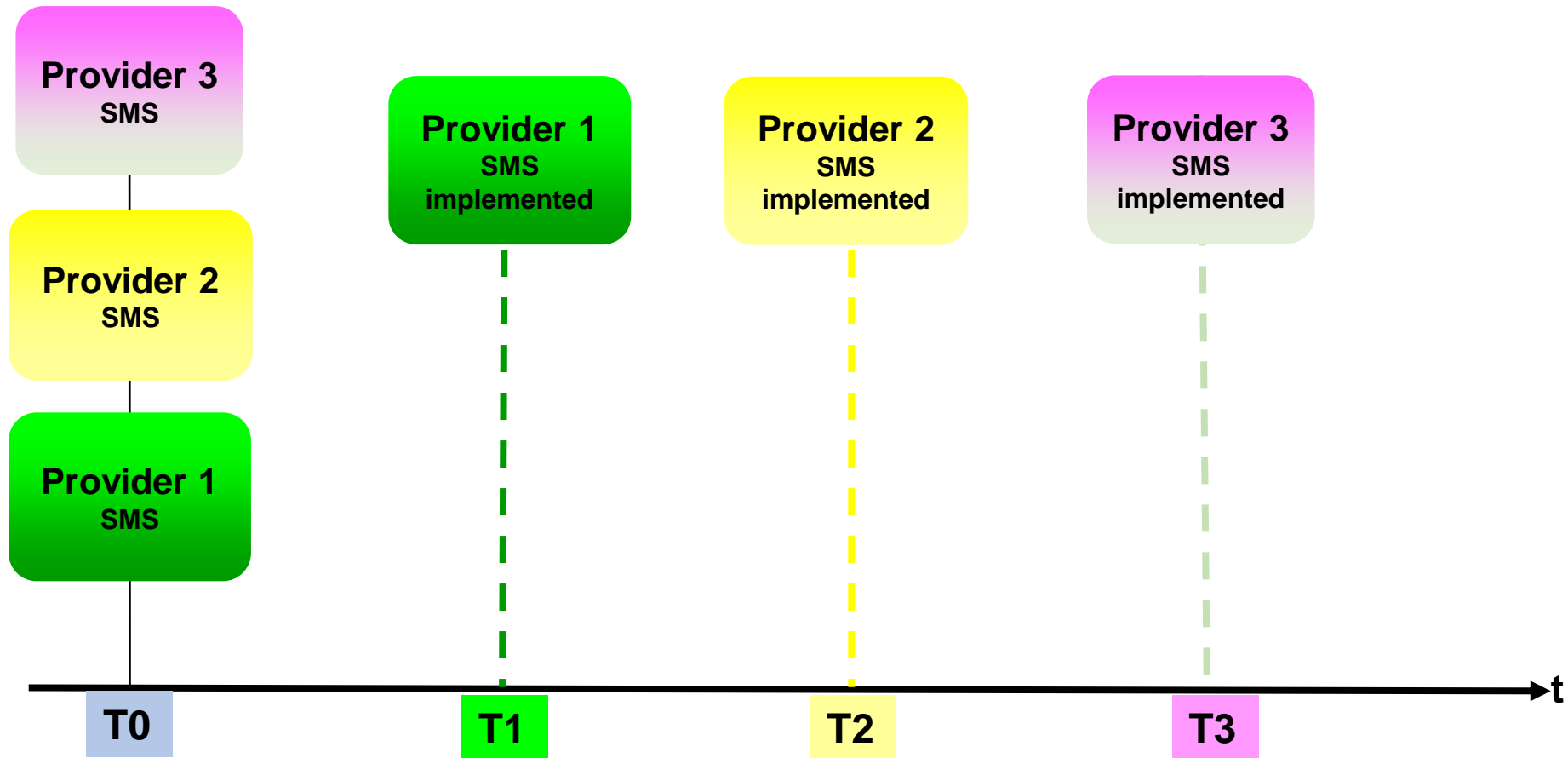
Documentation

Training

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ Detailed requirements in Annex 19
- ❖ **SMS Implementation in ANSPs**

SMS implementation

Which provider has the best SMS ?



- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ Detailed requirements in Annex 19
- ❖ **SMS Implementation in ANSPs**

Integrated management System (IMS)

If you have both a SMS and a QMS, you have an Integrated management System (IMS).

In an IMS you can have :

Safety Management System (SMS)

Security Management System (SeMS)

Quality Management System (QMS)

Environmental Management System (EMS)

Occupational Health and Safety Management System (OHSMS)

Financial Management System (FMS)

Documentation Management System (DMS)

Fatigue Risk Management System (FRMS)

- ❖ General ICAO requirements
- ❖ Auditing requirements
- ❖ Focus on Annex 19
- ❖ Detailed requirements in Annex 19
- ❖ **SMS Implementation in ANSPs**

Integrated management System (IMS)

- ❖ **Difficulty for CAAs : Isolated safety bits of the IMS**
- ❖ **IMS : provider must define priorities and it should be explicit : **Priority to safety****

Example of priorities if SMS, SeMS, EMS and QMS.

Safety Management System (SMS)

Security Management System (SeMS)

Environmental Management System (EMS)

Quality Management System (QMS)

The End