EASA
European Union Aviation Safety Agency

This project is funded by the European Union.

EU-Africa Safety in Aviation (EU-ASA) project
Supporting SSP implementation

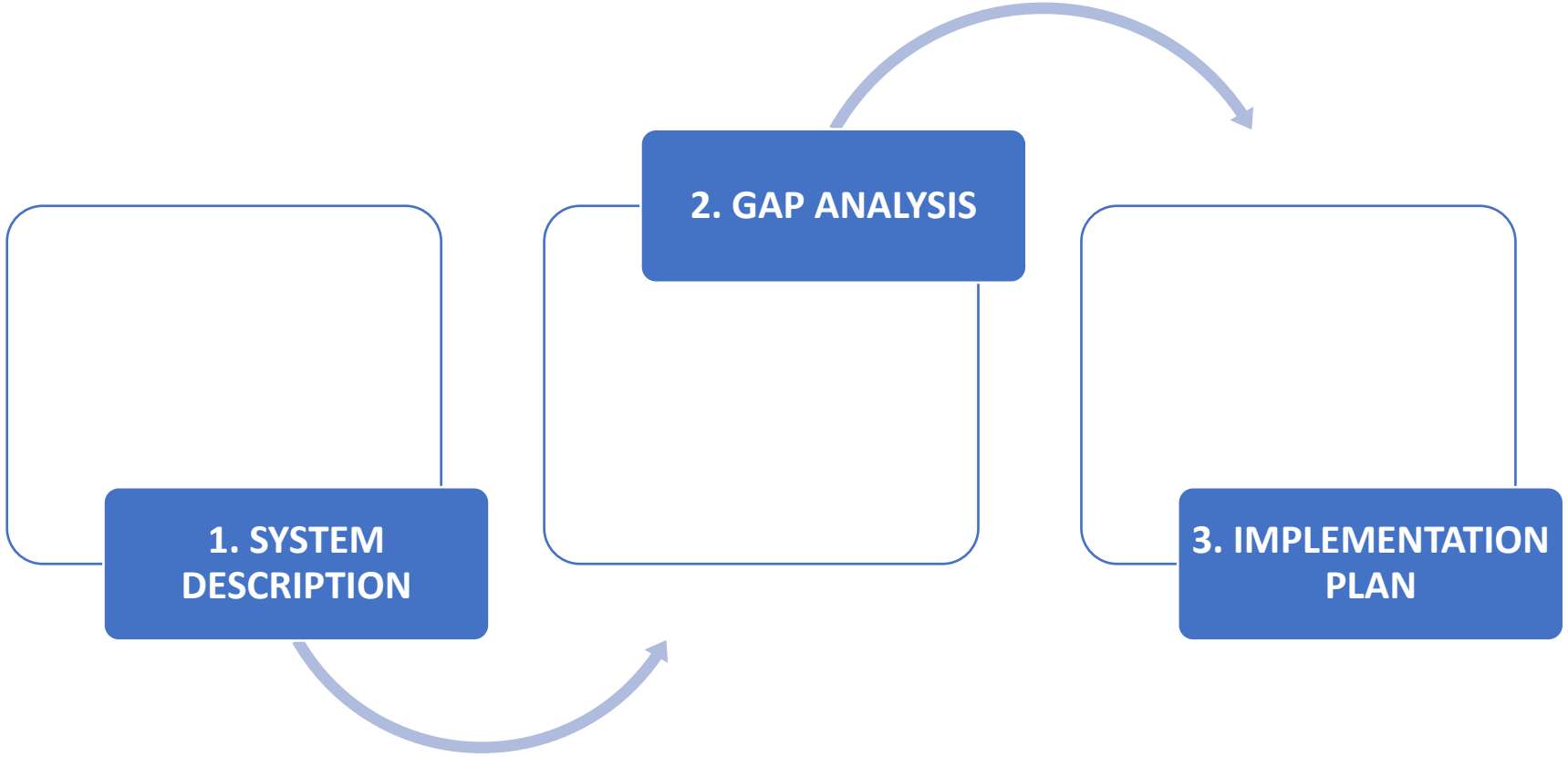
Remote Workshop 16th to 20th December 2024
Day 2

Your safety is our mission.

An Agency of the European Union

SSP – where to start ?

Initial SSP implementation main steps



Initial SSP implementation main steps

- Create an SSP/State safety management coordination group (= implementation team) to take care of :

- **1. SYSTEM DESCRIPTION**
  - Describe your aviation system to determine SSP scope and complexity
  - Describe the operational context

- **2. GAP ANALYSIS**
  - You may use the iSTARS gap analysis tool
  - You may also use the Annex 19 SSPIA PQs markers for 'Present' – also available on OLF
    - ***Provide a lot of details on ICAO expectations on a functioning SSP***
  - list all items that are not in place
  - include all other 'gaps' and deficiencies already identified by other means (ICAO USOAP audits, internal audits, etc..)

- **3. IMPLEMENTATION PLAN**
  - Define and prioritise actions
    - A robust oversight system is the backbone for your SSP
    - Address possible deficiencies in the oversight system as a matter of priority
  - Create a project plan with all tasks required, including all open corrective actions
    - **GASP goal: NASP published by end of 2024 and mature SSP by 2028.**

SSP governance

SSP Implementation – Organisation responsible

- State's safety management responsibilities can be discharged by multiple aviation authorities within the State.
  - For example, the CAA and an independent Accident Investigation Authority.
- States should clarify which authority within the State is responsible for coordinating the implementation and maintenance of the SSP.
  - Many States assign this role to the CAA, given that the CAA is normally responsible for most of the SSP responsibilities.
- **The roles and responsibilities of all the authorities involved should be identified and documented.**

SSP Governance structure

- → There should be appropriate governance structures, in particular for States where the staff involved in safety are geographically dispersed.
- → A complex governance structure may not be necessary for less complex aviation systems, where few people are involved in safety management.
- → The State should ensure that all personnel have the same understanding of SSP implementation at a national level.
- → **The SSP implementation approach should be documented and communicated.**

Meaning of governance

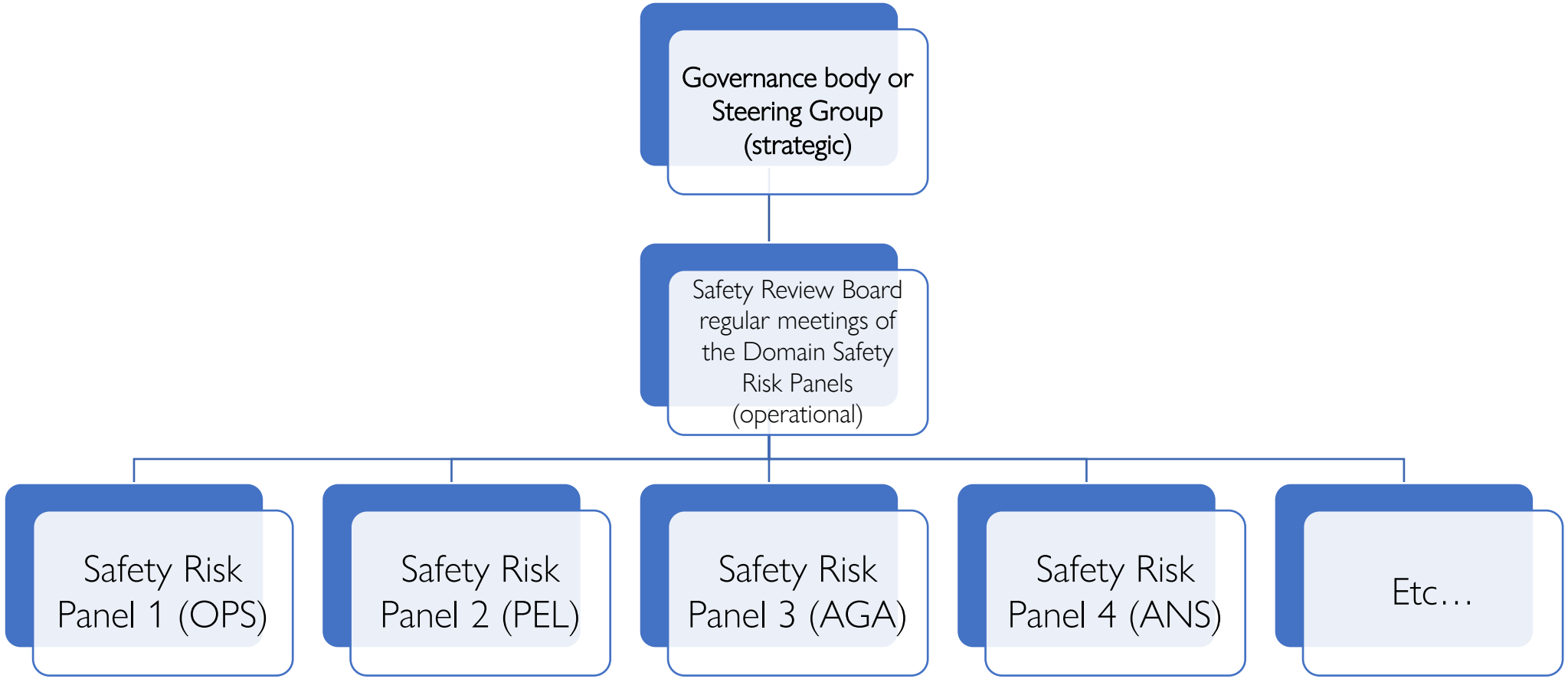
→ Establishment of policies, and continuous monitoring of their proper implementation, by the members of the governing body of an organisation.

→ It includes the mechanisms required to balance the powers of the members (with the associated accountability), and their primary duty of enhancing the prosperity (safety) and viability of the organisation.

Source: http://www.businessdictionary.com/definition/governance.html

SSP – Governance

one possible set-up



SSP implementation – Coordination Group

Referred to as the SSP implementation team in SMM third edition

- The State should establish a suitable coordination group with representation from all aviation authorities with responsibilities related to the **implementation and maintenance of the SSP**.

- The coordination group will
  - facilitate good communication,
  - avoid duplication of effort and conflicting policies, and
  - ensure effective and efficient SSP implementation.

- This group is a form of committee chaired by the head of the organisation responsible for coordinating the SSP.

SSP implementation – coordination group

Composition

- Staff from several departments
- Representatives from all State organisations having a role in aviation safety

SSP implementation & maintenance tasks are usually shared with other (existing) tasks

SSP implementation – coordination group

Typical tasks

- ✓ Describe the State civil aviation system & operational context
- ✓ Coordinate the gap analysis process
- ✓ Develop an SSP implementation plan
- ✓ Ensure adequate training for the team
- ✓ Monitor and report on SSP progress

SSPIA PQs addressing coordination

SSP.GEN.02	Level 'Present' means that:
How does the State ensure that the relevant State authorities are involved in the implementation and maintenance of the SSP?	• There is an established SSP coordination group at the State level, chaired by the designated authority in charge of coordinating the SSP implementation and maintenance. • All relevant State authorities are represented in the coordination group. • The coordination group addresses both strategic and operational aspects of State safety management. • The coordination group meetings have defined objectives and established meetings frequency

→ Relevant State authorities may include the Civil Aviation Authorities for each domain, Accident Investigation Authority, Licensing Authority, Military Aviation Authority, body in charge of the administration of Justice

System description

System description – ISO 9004 ‘Process Approach’

- For an organization to function effectively and efficiently, it resources and identify and manage numerous linked activities.
- An activity using resources and managed in order to enable the transformation of inputs into outputs, is considered as a process.
- Often the output from one process directly forms the input to the next.
- The application of a system of processes within an organization, together with the identification and interactions and managing of these processes can be referred to as the “process approach”.

System description see also SMM Chapter 1. § 8.7.1.2

- Why does it matter? It will allow you to connect the ICAO expectations with your aviation system

- **Items to consider for the system description:**
  - State's regulatory and administrative organization structure/chart
  - aviation safety regulatory structure
  - number of service providers in each aviation domain, their size and complexity and the regional environment
  - maturity of SMS implementation in the various domains
  - expected evolution of civil aviation in the State
  - sharing of roles among the various State aviation authorities

- **This information may also be used to**
  - draft your SSP document (or State Safety Management Manual)
  - define where to focus on when performing safety risk management (output: NASP)

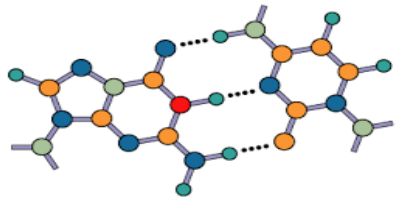
Can you give a few examples?

Size & complexity
(potential risk factors)

- Nb/type of airports
- nb of airlines
- nb of flights
- type of airlines
- nb of aeroclubs
- nb of local offices
- total nb of staff
- type of airline fleets
- nb & type of State entities for civil aviation
- nb of licensed pilots
- delegation of tasks
- Part of a RSOO?

System description: also important for service providers!

- ✓ The system description is the **most important step in the development of a safety management system.**
- ✓ Unfortunately, too many organisations skip it and this often results in creating a ‘paper SMS’.
- ✓ What needs to be captured?
  - ✓ System Input & Outputs (processes)
  - ✓ System boundary – scope of the SMS (e.g. non-aviation processes, partners, contractors)
  - ✓ Interface (internal and external), e.g. Air operator <-> Airport operator

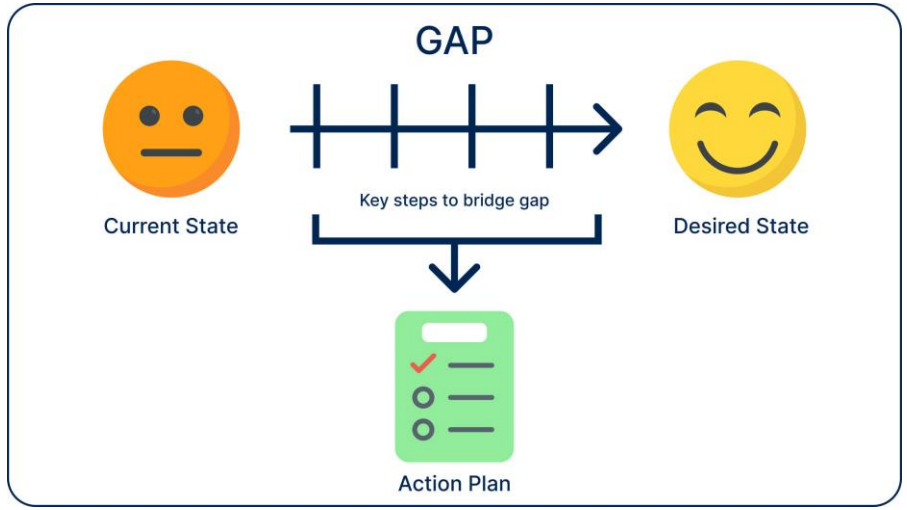


- ✓ Organisations that are ISO 9001 certified should have such description already in place because ISO 9001 promotes system and process approach.
- ✓ **The system description will facilitate the identification of hazards.**

System description benefits

- ✓ The benefits of a well-documented system description include:
  - ✓ identification of performance requirements for processes.
  - ✓ identification of performance measures for determining the effectiveness of activities.
  - ✓ identification of controls required to manage defined performance goals.
  - ✓ development of performance indicators to determine if controls are meeting expectations.
  - ✓ documentation of a baseline to support the management of changes and for continuous improvement.

SSP Gap Analysis



Which gaps to consider?

→ SSP foundation PQs

→ Open findings from USOAP audits

→ Open findings from internal audits

How to perform the Gap Analysis?

→ Use the iSTARS Gap Analysis Tool

→ Plus (optional): SSPIA Protocol Questions at level ‘Present’

ICAO SSP Gap Analysis Tool

→ **can be found on iSTARS in ICAO portal:**

- → iSTARS 4.0 (log-in & password needed)

- → Designed for States at the beginning stages of implementing an SSP.
- → Helps identify gaps between current safety management practices and the requirements outlined in ICAO Annex 19, Amendment 1
- → Aligned with ICAO SMM (Doc. 9859) fourth edition.

ICAO SSP Gap Analysis Tool

- States are expected to
  - submit their up-to-date SSP Gap Analysis on iSTARS.
    - 62 individual YES/NO questions - (different from SSPIA)

SSP Gap Analysis

State Safety Programs

SSP Foundation Protocol Questions

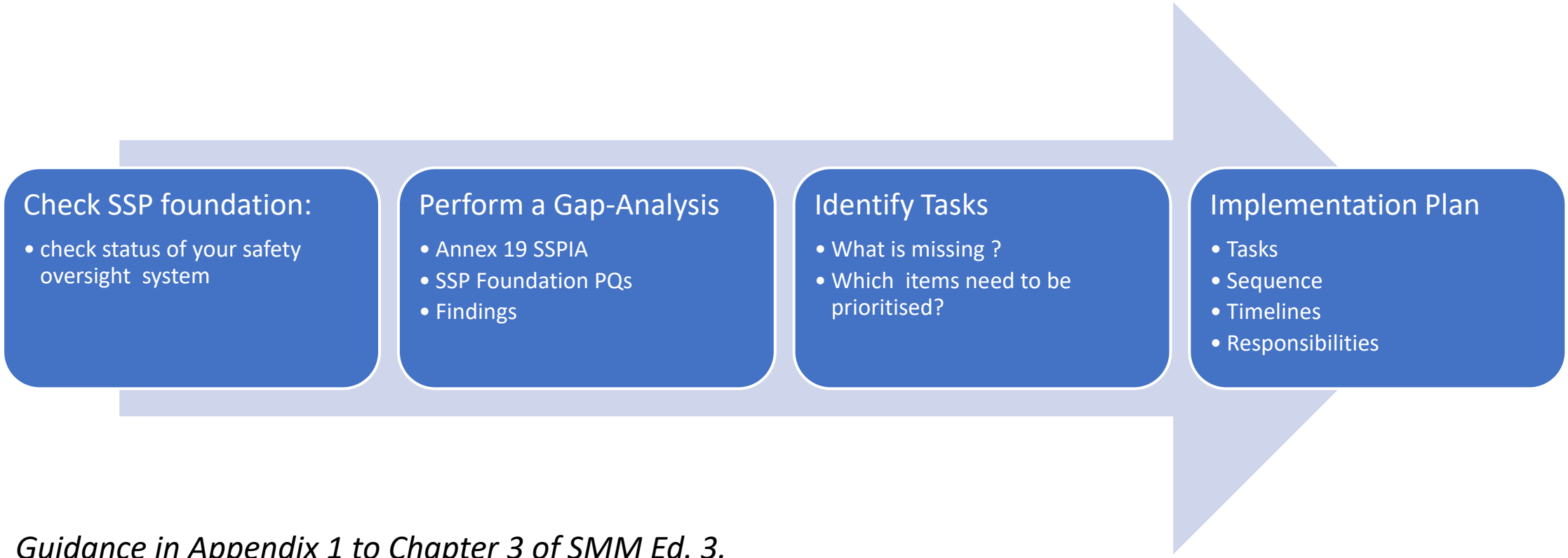
- **Oversight System remains the foundation upon which SSP will be built.**
- Overall SSP Foundation is the percentage of the sub-set of 277 PQs from Annexes 1 to 18 identified by ICAO as ‘foundational’ for a successful State Safety Programme (SSP) implementation
  - *status either validated by USOAP*
  - *or submitted as completed through the corrective action plans (CAP) on the USOAP CMA Online Framework*
- A SSP Foundation indicator:
  - (validated + completed PQs) / all applicable PQs * 100

- **See ISTARS SSP Foundation App**

SSP Foundation

Status of SSP Foundation Protocol Questions

Gap Analysis process

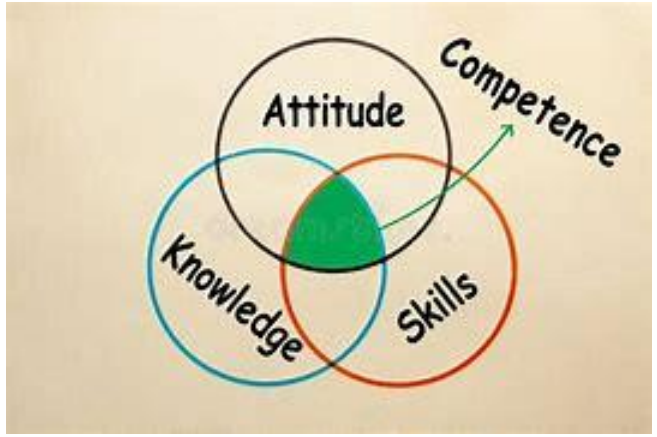


Guidance in Appendix 1 to Chapter 3 of SMM Ed. 3.

This is a recommendation only. States do not need to follow the 4-step approach.

SSP Gap Analysis

→ Which competencies are needed for those performing it?



Gap Analysis – competencies (Knowledge – Skills - Attitude)

Source: **State Safety Programme - JOB Analysis – SMI website**

Knowledge	K- Demonstrate familiarization with Safety Management principles as described in SMM
	K- Demonstrate familiarization with the SSP structure as stated in ICAO Annex 19
	K- Demonstrate familiarization with State civil aviation system including State bodies and industry
	K – Define the SSP functions and activities
Skills	S- Analyse reports and documents to incorporate results of analysis into the gap analysis
	S- Compare SSP elements with what is currently implemented in the organization
	S- Assess State's internal oversight system
Attitude	A -Demonstrate analytical attitude
	A- Demonstrate open attitude towards changes
	A- Demonstrate commitment to organizational performance

NOTE: This slide only lists those KSA items that are relevant for the staff performing the gap analysis. **The competency framework needs to consider each job family / function.**

ICAO SMI
State Safety Programme - JOB Analysis

The State Safety Programmes (SSP) Job Analysis was part of the development of the ICAO SSP classroom course that was designed using the Training Development Guide Competency-Based Training Methodology. It outlines each function and its related tasks and subtasks that managers and personnel within State safety agencies involved on the effective implementation and operation of SSP should perform. The set of required competencies (Knowledge/ Skills/ Attitudes) have been identified for managers/personnel in charge of the development and implementation of each SSP subtask.

Click link to download:

SSP JOB Analysis.pdf(opens in a new tab)

Source: International Civil Aviation Organization (ICAO)

ICAO Annex 19 PQs

Initially developed for the SSP implementation assessments (SSPIA)

- ICAO will no longer perform SSPIAs – SSP merged with traditional PQs
  - an update will be provided on this on day 5
- The existing SSPIA PQs can still be used to determine SSP maturity and to identify gaps
- The PQs are not based on CEs, but on the four SSP components
  - State safety policy and objectives
  - State safety risk management
  - State safety assurance
  - State safety promotion

with A19 second edition the 8 CEs were merged into the SSP elements

- SSPIA assessment tool = SSP-related PQs + associated maturity level matrices

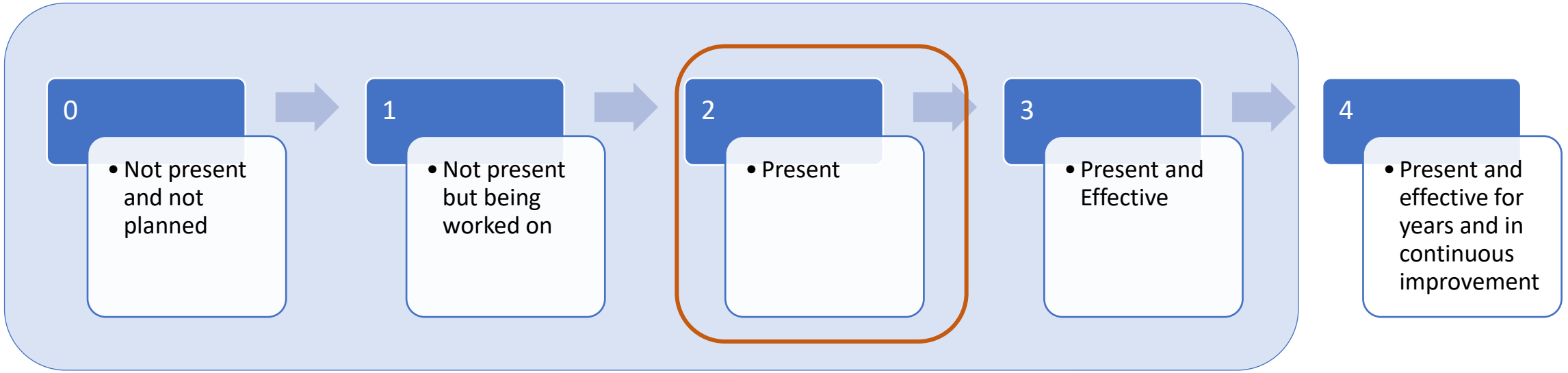
SSPIA PQs

- → not linked to Critical Elements (CEs), but to applicable SSP components (e.g. State safety policy and objectives, State Safety Risk Management, State Safety Assurance and State Safety Promotion)
- → not assessed as 'satisfactory/non-satisfactory', but in terms of **maturity levels**
- → 80 SSP PQs - broken down into 8 areas [nb of questions] :

[14] **GEN** (SSP general aspects – SSP Governance, SPIs, Safety Culture)	[8] **SDA** (safety data analysis, data protection – general aspects)
[11] **PEL** (ATO aspects only)*	[11] **OPS***
[11] **AIR** (AMO aspects only)*	[11] **ANS** (ATS aspects only)*
[11] **AGA***	[3] **AIG**

* same questions for all domains

SSPIA PQ Maturity levels



- → States were initially requested to perform a self-assessment and upload it on OLF
- → For the SSP gap analysis the maturity markers in Level 2 can be used
- → For an SSP maturity assessment later on (continual improvement) the States could assess themselves against the markers listed under Level 3.

SSPIA PQ – example for SSP.SDA.01

PQ No.	Protocol Question	References in ICAO Guidance Material	SSP Component	Maturity Levels			
				Not Present and Not Planned	Not Present but Being Worked On	Present	Present and Effective
SSP.SDA.01	What safety data collection and processing systems has the State established to support safety data analysis at the State level?	SMM Ch. 5	State Safety Risk Management	Based on current situation in State	Based on State's work in progress	1. There is a mechanism in place to ensure the collection, processing and analysis of safety data at the State level. 2. The sources for safety data and safety information include data and information derived from accident and incident investigations, mandatory occurrence reporting systems and other sources, including voluntary reporting. 3. There is a mechanism in place at the State level to ensure the categorization of safety data and an agreed upon taxonomy at the State level, with supporting definitions.	1. The safety data that are collected, processed and analyzed contain all relevant data that might be collected. 2. The safety data at the State level are categorized using an agreed upon taxonomy and supporting definitions, in a way that supports analysis of the safety data.

SSPIA - ‘mechanism in place’ -> what does this mean?

- Quite open, giving a precise definition would make the question ‘prescriptive’. It needs to be something that is documented and traceable. In the normal case it would be a procedure, but this may vary depending on the domain.
- Definition proposed by EASA:
  - *“An established process or assembly of means by which something takes place or is brought about. It can include, but is not limited to : a policy, a procedure or set of, tools (including IT tools), etc. or be a combination of those.”*
- The mechanism must be **documented**.

SSP Implementation Plan

SSP Implementation Plan (project plan)

- ICAO considers four years a realistic timeframe for full implementation

- Creation of the SSP coordination group should be one of the very first tasks
  - draft ToRs of the group
  - submit ToRs for approval
  - schedule first meeting
  - create a platform or mechanism for coordination and information exchange on SSP amongst the various entities involved (for example: SharePoint or Google docs)

Define an SSP Implementation plan– competencies (K – S - A)

Source: State Safety Programme - JOB Analysis – SMI website

K- Demonstrate awareness of State institutional structure and its aviation system

K- Describe State's policies and procedures

K- Define planning techniques

S –Determine tasks establishing implementation timelines

S- Identify internal and external stakeholders to be involved in the plan

S- Allocate tasks as appropriate

S – Determine communication plan

S- Identify human and financial resources for the implementation of the plan

S- Obtain buy-in from the SSP coordination group

S – Determine the functions and sub-tasks to implement the SSP

A -Demonstrate analytical attitude

A- Demonstrate open attitude towards changes

A - Demonstrate ability to work in a team

A- Demonstrate commitment to organizational performance

SSP Implementation Plan

- → Select planning tool (e.g. Microsoft Project)
- → Determine tasks (based on gap analysis), sequence of tasks and establish implementation timelines (target dates)
  - → Identify human and financial resources for the implementation of the plan
  - → Identify internal and external stakeholders to be involved in the plan
- → Allocate tasks as appropriate
- → **Obtain senior management endorsement of the plan**
- → Create a 'communication plan'
  - → How will the plan and progress with SSP be communicated internally?
  - → How do you wish to communicate externally?

Example of implementation Phases

SSP Phased Approach (as proposed in ICAO SMM Edition 3)

Phase I	Phase II	Phase III	Phase IV
SSP element 1.2 (i) a. Identify SSP Place Holder Organisation and Accountable Executive. b. Establish SSP Implementation Team. c. Perform SSP Gap Analysis. d. Develop SSP Implementation Plan e. Establish SSP coordination mechanism. f. SSP Documentation including the State's SSP framework, its components and elements.	**SSP element 1.1** National aviation legislative framework. **SSP element 1.2 (ii)** a. A Safety management responsibilities & accountabilities b. State Safety Policy & Objectives **SSP element 1.3** Accident and serious incident investigation **SSP element 1.4 (i)** Establish basic enforcement (penalty) legislation. **SSP element 3.1 (i)** State safety oversight and surveillance of its service providers. **SSP element 2.1 (i)** SMS education & promotion for service providers.	**SSP element 1.4 (ii)** c. Provision to prevent use or disclosure of safety data for purposes other than safety improvement. d. Provision to protect the sources of information obtained from voluntary confidential reporting systems. **SSP element 3.2 (i)** a. Safety data collection & exchange systems b. Establish high consequence (or Tier 1) State safety performance indicators and target/alert levels.	**SSP element 2.2** Service provider safety performance indicators. **SSP element 3.1 (ii)** Incorporation of service providers' SMS and safety performance indicators as part of routine surveillance program. **SSP element 3.2 (ii)** a. Implement voluntary/confidential safety reporting systems. b. Establish lower consequence safety indicators with target/alert level monitoring as appropriate. c. Promote safety information exchange with and amongst service providers and other States. **SSP element 3.3** Prioritize inspections and audits based on the analysis of safety risk or quality data where applicable. **SSP element 3.1 (iii)** Establish internal review mechanism covering the SSP to assure continuing effectiveness and improvement.
SSP element 4.1 Internal training, communication and dissemination of safety information. **SSP element 4.2** External training, communication and dissemination of safety information.			

SSP Implementation – other considerations

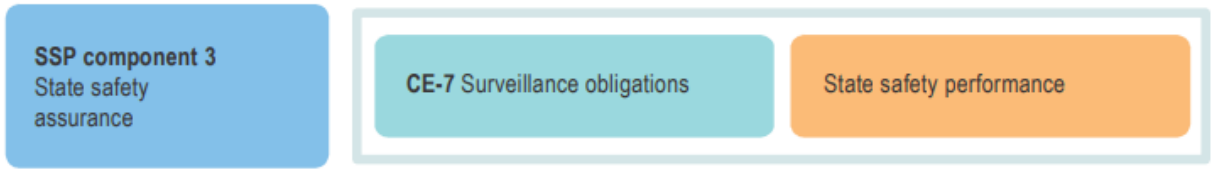
- Do not wait for full implementation to get thing started
  - An initial State Risk Picture should be compiled
    - Use existing data (oversight, occurrence reports etc.)
    - Optional: Review existing risk pictures, for example EPAS Volume III 'Safety Risk Portfolios'
      - Select those safety issues you consider most relevant
      - Discuss those safety issues with your aviation industry
  - An initial NASP should be prepared
    - review SEIs in the GASP and AFI-RASP to get started
    - propose actions to address the risks identified at State level
  - An initial Safety Promotion Programme may already be defined and discussed with your Industry
    - Make use of available material where possible – review sources of such material in the Global Aviation Safety Roadmap

SSP Implementation - recommendations:

- → Take a holistic approach: address as a matter of priority the areas with low EI, SSP gaps and non-compliance findings (internal and external audits).
- → Provide senior management with full visibility on the missing items (policies, procedures, mechanisms, training plans etc..).
- → Communicate - obtain buy-in from all CAA staff & keep them informed along the way.
- → Give priority to the development of the first NASP and the implementation of processes for risk-based resource allocation at State level.

Safety performance monitoring and measurement

Safety Performance Indicators and Targets



- **SPIs and SPTs should consider, but not be limited to:**
  - Industry safety performance
  - Industry compliance levels
  - Effectiveness of the NASP actions
  - Performance of State aviation safety agencies
  - Performance of other State agencies involved with aviation safety, i.e.: accident investigation, military and space
  - Performance of other States (benchmarking),
    - e.g. checking ICAO State Safety briefings (iSTARS).

SPI examples

- **Outcome oriented safety objectives - generally related to operational risks**
  - Reflecting high level aspiration or ambition such as:
    - Continuously reduce the number of fatalities or accidents over a period of 5 years in Rotorcraft operations
      - SPIs: annual number of fatalities, annual number of accidents.
    - Reduce the number of General Aviation accidents and serious injuries by 50% over the next 10 years
      - SPI: annual number of accidents and serious incidents.
    - Reduce the rate of serious incidents in Commercial Air Trans the period 2022- 2026 by comparison with the period 2016-
      - SPI: rate of serious incidents (by FH or cycle)
    - Reduce the number of go-arounds
      - SPI: number of go-arounds in Commercial Air Transport per 1000 flights

What may be some unintended consequences of such SPI?

SPI examples

→ **Outcome oriented**

→ Ambition for specific operational risks such as

→ airspace infringement - reduce the number of occurrences by 50% over the next 5 years

→ **SPI: number of occurrences/year**

→ modernise the rotorcraft fleet to reduce the number of rotorcraft accidents, phase out rotorcraft older than 30 years within the next 10 years

→ **SPI: % of rotorcraft > 30 years**

SPIs/SPTs will need to be monitored over some time to be able to establish baseline performance and see the trends.

SPI examples

- **Process oriented safety objectives – Oversight/SSP related -> what we do to improve safety**
  - Improve oversight capabilities in the AGA domain.
    - **SPI: EI score for that domain**
    - **SPI: % increase in inspector time spent on surveillance activities as opposed to administrative tasks.**
  - Improve adherence to the established surveillance programme
    - **SPI: % of audits performed as initially planned**
  - Provide training for all CAA inspectors on safety risk assessment methodologies within the next two years
    - **SPI: % of inspectors trained per year**
  - Foster State safety management capabilities.
    - **SPI: % of SSP implementation steps completed within the dates set out in the implementation plan**
  - Reduce the turn-over rate within the CAA
    - **SPI: annual turn-over rate (nb of staff leaving/nb of new staff within the various operational departments).**

SPI examples

- **Process oriented safety objectives – operational**
  - Reduce the risk of Mid-Air Collision by developing a safety promotion campaign about “airspace infringement” targeting aero clubs and the General Aviation pilot community through social media.
    - **SPI: survey on campaign outreach to intended audience.**
  - Promote the use of up-to-date technology and equipment to avoid traffic collision, through financial support e.g. to equip small a/c with FLARM
    - **SPI: % of the fleet equipped with new equipment**
  - Improve safety risk management capability by organising annual SMS workshops in each sector with follow-up of safety promotion actions and the ambition to effectively reach out to the community at stake.
    - **SPI: rate of stakeholder attendance**
    - **SPI: rate of stakeholders taking up the workshop actions etc.**

SPI examples

Member States

- → Finland
  - → Finnish Aviation Safety Objectives and Safety Performance Indicators and Targets
    (Finnish Aviation Safety Programme – Annex 2)

- → Ireland
  - → State Plan for Aviation Safety 2023-2025 – Volume I Chapter 5: SPAS Safety Objectives, SPIs and SPTs
  - → Annual Safety Performance Reviews

Further guidance for SSP Component 3

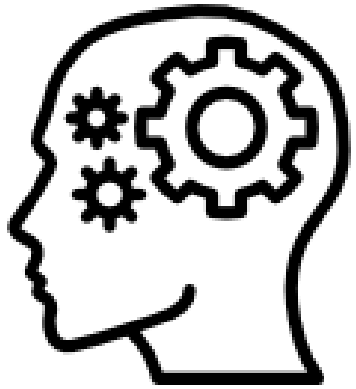
EASA

- → EPAS 2023-2025 Volume I – Section 4.1 ‘Safety Performance’
- → EASA Guidance on the Acceptable Level of Safety Performance (ALoSP), Safety Performance Management and Safety Assurance
- → EASA Management System Assessment Tool
- → Practices for risk-based oversight

SMICG

- → A Systems Approach to Measuring Safety Performance – The Regulator Perspective
- → Guidance for Comprehensive Safety Performance Management in an SSP
- → Sector Safety Risk Profiling at State Level

CAA resources and competencies



Critical Element 04

→ Qualified technical personnel (training)

3.2.4 Qualified technical personnel

States shall establish requirements for the qualification of technical personnel in accordance with section 4 of Appendix 1.

Note.— The term "technical personnel" refers to those persons performing safety-related functions for or on behalf of the State.

Training: Implementation strategy

Job families

SSP/SMS Training

- The State should determine the most appropriate training for personnel with different roles and responsibilities in the organization.
- The following are examples of training that should be considered:
  - briefings or familiarization training for senior management on SSP, SMS, safety policy, objectives and Safety Performance Measurement;
  - training for inspectors on the SSP and SMS principles, how to carry out SMS assessments, how to evaluate a service provider's SPIs for acceptance and how to generally oversee the service provider in a safety management environment;
  - soft skills training (effective communication skills, negotiation skills, conflict resolution, etc.) to support inspectors in working collaboratively with service providers to improve safety performance whilst ensuring continued compliance with established regulations;
  - training for personnel responsible for data analysis, safety objectives, SPIs and SPTs;
  - training for aviation medical examiners and medical assessors;
  - training on protection of safety data, safety information and related sources and enforcement policy
  - training for legal personnel, etc..

SSP/SMS Training

- → The scope of SSP and SMS training/familiarisation material will evolve to reflect the actual SSP status and related processes as they are being implemented.
- → Initial SSP and SMS training may be limited to generic SSP/SMS framework elements and guidance material such as that contained in ICAO SSP/SMS training courses.
- → Recurrent training should take into account the maturity of the SSP and the risks identified at State level.
- → On-the-job training should also be organised, e.g. for SMS assessment

SSP/SMS Training - Inspectors

- Surveillance and monitoring of service providers' SMS will require competencies that may not have been critical before SMS requirements were introduced.

- Inspectors will need to complement their existing technical knowledge with **additional skills to assess the suitability and effectiveness of the service providers' SMS.**
  - This requires working in partnership with industry; to gain the trust of service providers to facilitate sharing of safety data and safety information.

- States will need to provide the appropriate training
  - ensure that personnel responsible for interaction with the industry have the competencies and flexibility to perform the surveillance activities in an SMS environment.

SSP/SMS Training - Safety awareness

- The training should also provide staff with an awareness of their own role and the role and contributions of other departments within their aviation authority and other State aviation authorities.
- This will allow inspectors as well as staff from different State aviation authorities to have a consistent approach.
- **It will also facilitate a better understanding of safety risks across various sectors. Inspectors can also better understand how they contribute to achieving the State safety objectives.**

SSP/SMS Training - Records

- Records of the training policy, training programme, training plan, training certificates and feedback on training should be kept.

- A training file should be developed for each staff member, including management staff, to record the results of training and where applicable, of related assessments.

Competency-based training

- **What Is a Competency?**

> *"A capability that allows a person to perform various processes or tasks and achieve outcomes. It is a combination of relevant **knowledge**, **skills**, and **attitudes (KSA model)**. It is the demonstrated ability to apply knowledge and skills."*

- In essence, competencies are the integrated knowledge, skills, judgment, and attributes that people need to perform a job effectively.
- By having a defined set of competencies for each role, the organisation shows employees the kind of behaviours it values and those it requires to help achieve its objectives

SSP/SMS core competencies

→ *Can you name a few?*

SSP/SMS core competencies

- Working understanding of management systems to be able to evaluate how an organization ensures compliance with regulatory requirements on an on-going basis.
- Understanding the regulatory framework and its intent to ensure an organization meets the requirements for its certificates.
- Understanding of SMS oversight techniques.
- Understanding how organizational safety performance indicators are developed and used in a management system.
- Understanding of the different types of cultures found in an organization and how they can affect the system performance.
- Understanding sensitivity of confidential issues to prevent inadvertent disclosure of specific organizational data by the regulator.

SSP/SMS core competencies

- **Communication skills** necessary to interface effectively between industry and internal stakeholders.
- **Analytical skills** commensurate with roles and responsibilities to assess the organizations safety performance.
- **Decision making skills** necessary to exercise judgment based on all available information.
- **Open-mindedness:** To be able to accept new ideas or different viewpoints including being able to recognize that a management system is proportionate to the size and complexity of the organization.
- **Systems thinking:** The ability to recognize the components of a system and how they interact and interface.

SSP/SMS core competencies

- **Assertiveness:** The quality of being able to confidently and vigorously state and defend one's opinion.
- **Teamwork:** SMS assessment is often carried out as part of a team so there is a need to be able to work in a multi-disciplinary environment in a cooperative manner.
- **Appreciation of the subjectivity** of safety management and the need to establish objective evidence where possible.
- **Understanding of human performance and limitations** and understanding of the organizational factors that may influence these.
- **Understanding risk** to evaluate issues or proposed changes and the impact on the organisation and the aviation system; and to evaluate the need for safety risk controls.

SSP/SMS competencies

More on training and competencies

SMS Inspector Competency Guidance

Training Program Outline for Inspector SMS Competency

- → Key competencies
- → Learning objectives
- → Key learning points

Safety Data Analysis – competencies (Knowledge – Skills - Attitude)

Source: State Safety Programme - JOB Analysis – SMI website

K - Demonstrate familiarization with aviation data driven decision-making process

K – Take account of a variety of statistical approaches

K – Differentiate the best visualization tool among a variety of visualization tools

K- Differentiate between safety information and safety data according to ICAO provision documents

S – Establish safety presentation capabilities for interpretation by decision makers

S- Perform analysis using a variety of statistical approaches

S – Present analysis results using a variety of visualization tools

S - Develop mechanisms for safety information sharing and exchange

A -Demonstrate analytical attitude

A- Demonstrate commitment to organizational performance

Safety Data Analysis – competencies Knowledge

Source: WACAF Office

- Comprehensive understanding of aviation safety principles, regulations, and standards, including ICAO requirements and industry best practices.
- Knowledge of data management principles, statistical analysis methods, and data visualization techniques.
- Familiarity with safety intelligence systems, dashboards, and related technologies.
- Understanding of safety management systems (SMS) and their implementation in the aviation industry.
- Knowledge of risk assessment methodologies and safety performance indicators.
- Awareness of emerging trends, technologies, and advancements in safety data analysis and management

Safety Data Analysis – competencies Skills

Source: WACAF Office

- Proficiency in data analysis tools and software, such as Excel, SQL, Tableau, or similar platforms.
- Strong analytical skills with the ability to interpret complex data sets and identify trends, patterns, and insights.
- Excellent communication and presentation skills, both verbal and written, with the ability to convey technical information to non-technical audiences.
- Ability to develop and implement safety data strategies, including defining objectives, data sources, analysis methods, and performance metrics.
- Competence in developing dashboards and visualization tools to present safety data and key performance indicators effectively.
- Attention to detail and accuracy in data analysis, reporting, and documentation.
- Collaboration and teamwork skills, with the ability to work effectively with internal and external stakeholders.
- Project management skills, including the ability to prioritize tasks, meet deadlines, and manage resources effectively.

Safety Data Analysis – competencies Attitude

Source: WACAF Office

- Critical thinking and problem-solving skills, with the ability to analyze complex issues and develop innovative solutions.
- Adaptability and flexibility to respond to changing organizational needs and industry requirements.
- Commitment to continuous learning and professional development in the field of aviation safety and data analysis.
- Integrity and ethical behavior in handling sensitive safety data and information.
- Leadership qualities, including the ability to influence others and drive positive change within the organization.
- Customer focus and responsiveness to stakeholder needs and expectations.
- Resilience and composure under pressure, with the ability to manage multiple tasks and priorities effectively.
- Positive attitude and enthusiasm for promoting a culture of safety and excellence within the organization.

SSP Tools and Templates

iSTARS

SSP Foundation

Status of SSP Foundation Protocol Questions

Safety Audit Information

Level of Implementation and SSCs

SSP Gap Analysis

State Safety Programs

State Safety Briefing

Summary of State Safety Indicators.

ICAO SMI website – examples & guidance

The SSP Implementation plan(opens in a new tab)

Source: SMM 3rd ed. 4-App 7-7
Updated to reflect Annex 19, Amendment 1.

SSP JOB Analysis.pdf(opens in a new tab)

Source: International Civil Aviation Organization (ICAO)

SMICG

The Safety Management International Collaboration Group (SM ICG) was founded in 2009 by the United States Federal Aviation Administration (FAA), the European Union Aviation Safety Agency (EASA) and Transport Canada Civil Aviation (TCCA) and is a joint cooperation between many regulatory authorities for the purpose of promoting a common understanding of safety management and Safety Management System (SMS)/State Safety Program (SSP) principles and requirements, facilitating their implementation across the international aviation community. **Since then many other States joined the group.**

Members of the SM ICG:

- Collaborate on common SMS/SSP topics of interest
- Share lessons learned
- Encourage the progression of a harmonized SMS
- Share products with the aviation community
- Collaborate with international organizations such as ICAO and civil aviation authorities that have implemented or are implementing SSP/SMS

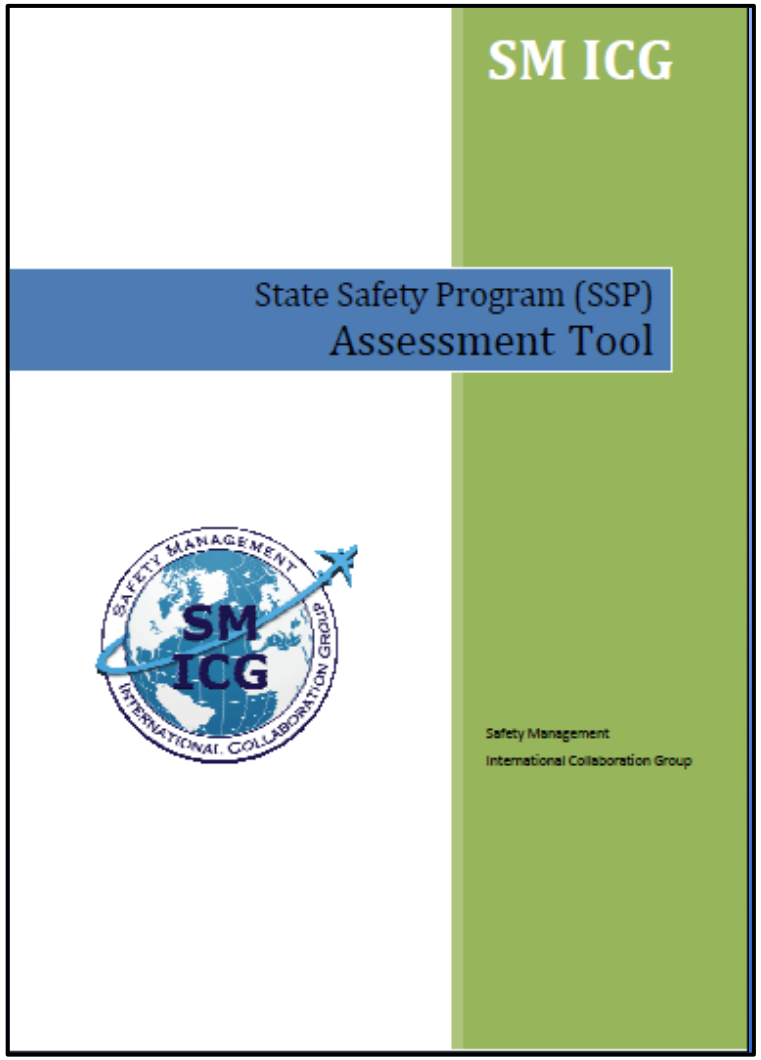
SMICG ‘products’ -> Skybrary

Below is a link to resources developed by the Safety Management International Collaboration Group (SM ICG) on topics related to implementing a State Safety Program (SSP). Among these are tools and guidance material that will help States develop an SSP, measure its performance, and improve it over time.
https://skybrary.aero/enhancing-safety/sm-icg-safety-management-products/ssp-implementation

For example:

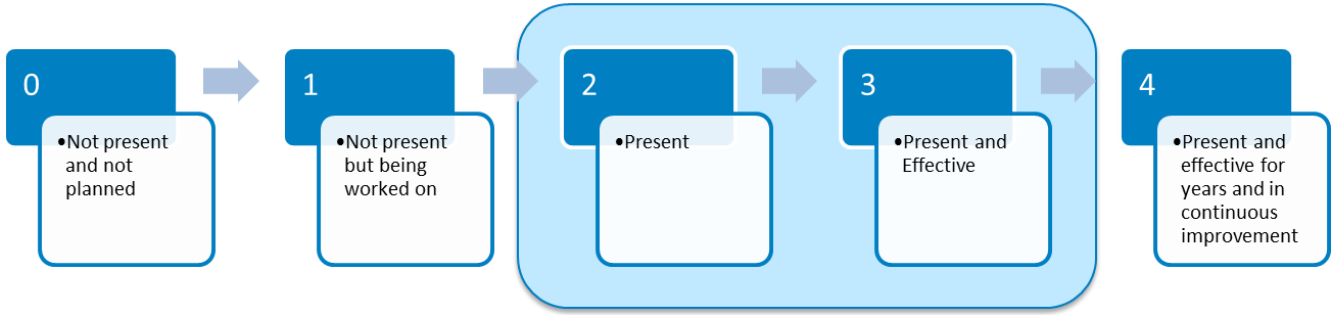
- Risk-Based and Performance-Based Oversight Guidance
- Safety Culture for Effective Safety Management
- Safety Oversight Following the Implementation of SMS
- Sector Safety Risk Profiling at the State Level
- SMS and SSP Reference Library
- SSP Factsheet: Planning and Conducting Surveillance Based on Risk Profiling and Performance Monitoring
- State Safety Programme (SSP) Brochure

Evaluating the effectiveness of the SSP



ICAO Annex 19 PQs

Developed by ICAO for the SSP implementation assessments (SSPIA)



BAGASOO comprehensive SSP sample doc

- Will be presented on day 2
- The template facilitates the development and publication of the State's high-level national strategic document (SSP).

NASP template

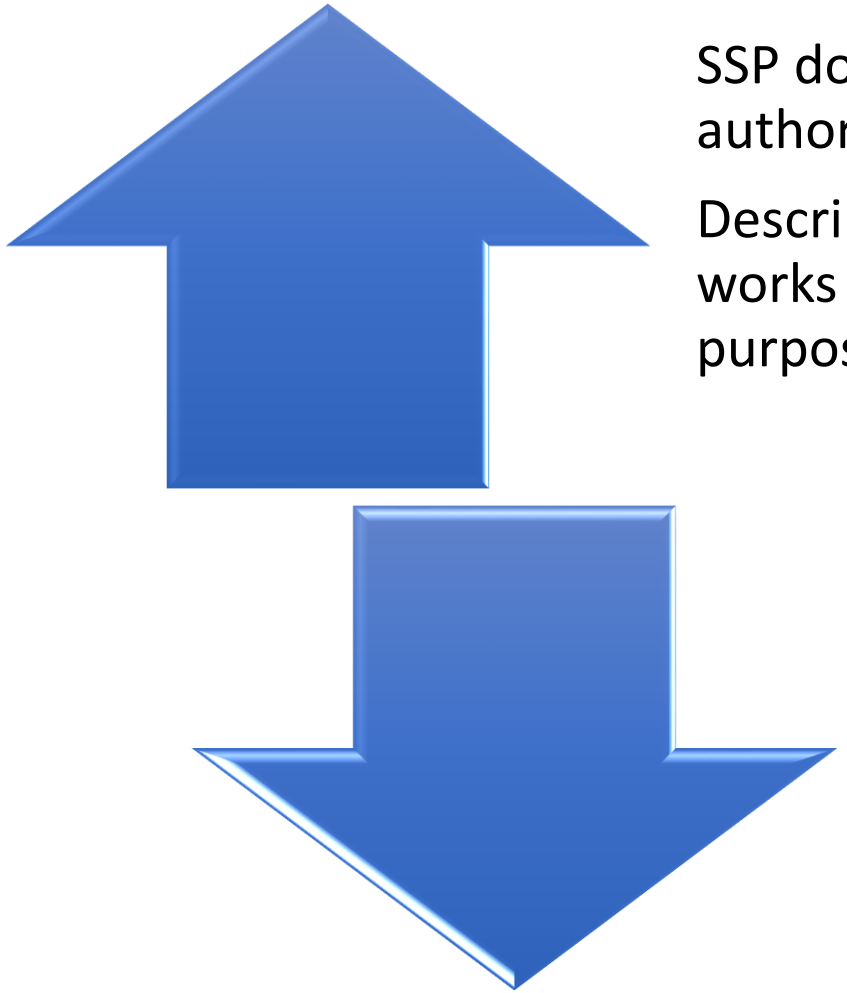
ICAO Doc 10131: Manual on the Development of Regional and National Aviation Safety Plans ·

TABLE DES MATIERES

Contenu

SECTION 1. INTRODUCTION *6*
1.1 Structure du plan 6
1.2 Lien entre le NASP et le programme national de sécurité (PNS) 6
1.3 Responsabilité de l'élaboration, de la mise en œuvre et du suivi du NASP 6
1.4 Problèmes, objectifs et cibles nationaux de sécurité 6
1.5 Contexte opérationnel 7
SECTION 2. OBJET DU PLAN NATIONAL DE SÉCURITÉ DE L'AVIATION DE [L'ÉTAT] *8*
SECTION 3. ORIENTATION STRATÉGIQUE DE [L'ÉTAT] EN MATIÈRE DE GESTION DE LA SÉCURITÉ DE L'AVIATION *9*
SECTION 4. RISQUES NATIONAUX DE SÉCURITÉ OPÉRATIONNELLE *11*
N-H HRC 2 : [nom de la catégorie d'événement] 12
N-H HRC *n* : [nom de la catégorie d'événement] 12
SECTION 5. DÉFIS ORGANISATIONNELS *13*
Figure 1. Éléments cruciaux d'un système national de supervision de la sécurité 13
SECTION 6. SUIVI DE LA MISE EN ŒUVRE *15*
APPENDICE AU NASP *16*
SEI DÉTAILLÉES : RISQUES NATIONAUX DE SÉCURITÉ OPÉRATIONNELLE 16
SEI DÉTAILLÉES : DÉFIS ORGANISATIONNELS 17

SSP document versus NASP



SSP document more for the use of the State authorities and auditors (ICAO)

Descriptive – explaining how safety management works in the State (who is doing what and for which purpose).

NASP ideally suited to communicate with stakeholders

More specific - concrete actions to address key risks

Link with GASP SEIs and Regional Plan (AFI-RASP).

NASP –> possible structure

based on ICAO Doc. 10131 Manual on the Development of Regional and National Aviation Safety Plans

VOLUME I - INTRODUCTION, STRATEGIC PRIORITIES, MONITORING

- **SECTION 1: INTRODUCTION**
  - 1.1 Purpose and Overview of the NASP
  - 1.2 Structure of the NASP
  - 1.3 Relationship between the NASP and the SSP
  - 1.4 Responsibility for the NASP development, implementation and monitoring
  - 1.5 How the NASP is disseminated and communicated
- **SECTION 2: STRATEGIC DIRECTION FOR THE MANAGEMENT OF AVIATION SAFETY**
  - 2.1 Operational context
  - 2.2 Stakeholders
  - 2.2 Goals, targets and Indicators
- **SECTION 3: MONITORING SPAS IMPLEMENTATION**
  - 3.1 Monitoring action implementation
  - 3.2 Monitoring the effectiveness of actions

NASP –> possible structure (continued)

based on ICAO Doc. 10131 Manual on the Development of Regional and National Aviation Safety Plans

VOLUME II – RISKS AND SAFETY ISSUES

- **SECTION 1: NATIONAL OPERATIONAL SAFETY RISKS (and ref. to RASP)**
- **SECTION 2: ORGANIZATIONAL CHALLENGES (and ref. to RASP)**
- **SECTION 3: EMERGING ISSUES (and ref. to RASP)**

VOLUME III - SAFETY ENHANCEMENT INITIATIVES AND RELATED ACTIONS

- **SECTION 1: DETAILED SEIs - NATIONAL OPERATIONAL SAFETY RISKS (and ref. to RASP)**
- **SECTION 2: DETAILED SEIs - ORGANIZATIONAL CHALLENGES (and ref. to RASP)**
- **SECTION 3: DETAILED SEIs - EMERGING ISSUES (and ref. to RASP)**

APPENDICES

- Acronyms and definitions

EASA
European Union Aviation Safety Agency

This project is funded by the European Union.

- end of presentation -

easa.europa.eu/connect

Your safety is our mission.

An Agency of the European Union