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

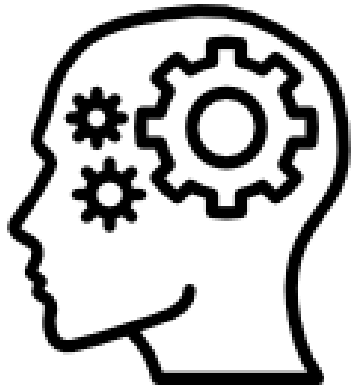
Remote Workshop 16th to 20th December 2024
Day 1

Your safety is our mission.

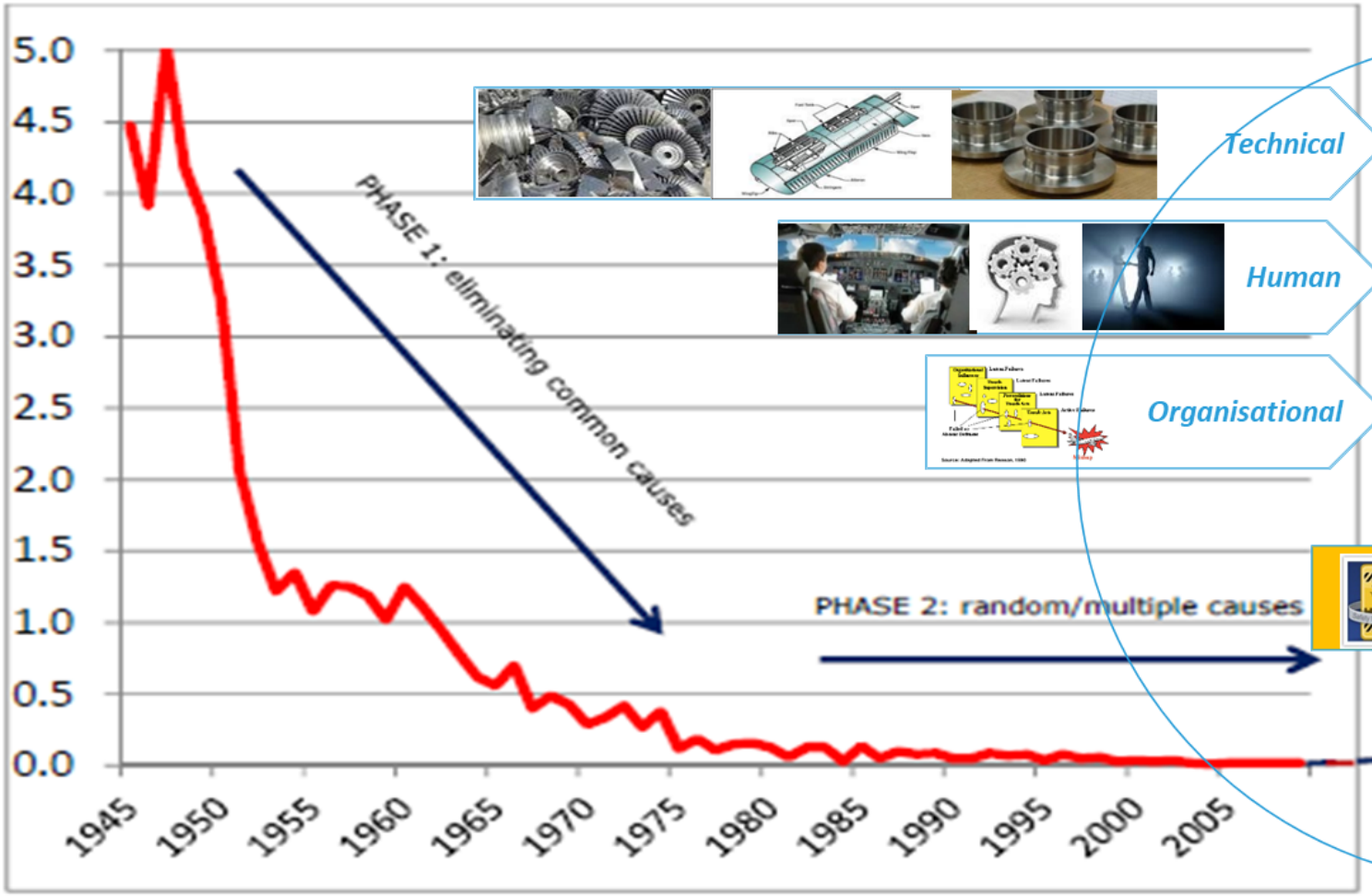
An Agency of the European Union

Back to basics:

What is an SSP and why do we need it ?



Evolution of safety in aviation & related concepts



Technical — *Better technology, better material*

Human — *HF management, Crew Resource Management Fatigue Risk Management etc…*

Organisational — *Quality Assurance, QMS*
Threat & Error management

System safety — *Safety management*
SMS & SSP
addressing all of it :

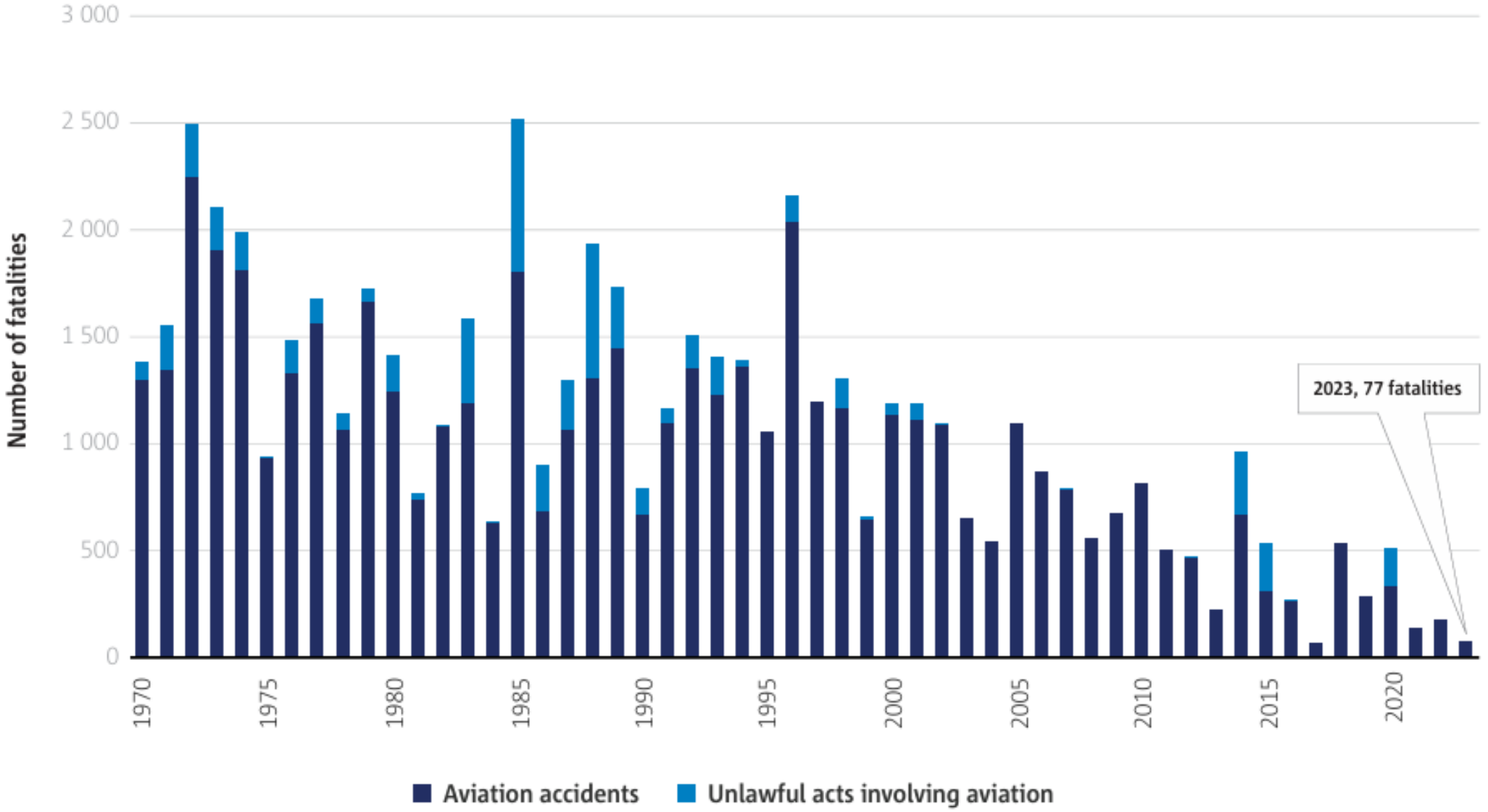
- *Better technology*
- *Human & Organisational factors compliance & risk management*
- *Increased focus on the role of the State*
- *Systematic & holistic*

Global rate of accidents involving passenger fatalities per 100 million passenger miles, scheduled commercial air transport operations, excluding acts of unlawful interference - Source: ICAO

How safe are we?

- → ‘Aviation is the safest mode of transport’
- → ‘Aviation is an ultra-safe industry’
- → ‘SMS will yield marginal improvements only’
- → ‘We are safe – we do not need SMS/SSP’
- → etc….

Worldwide fatalities since 1970

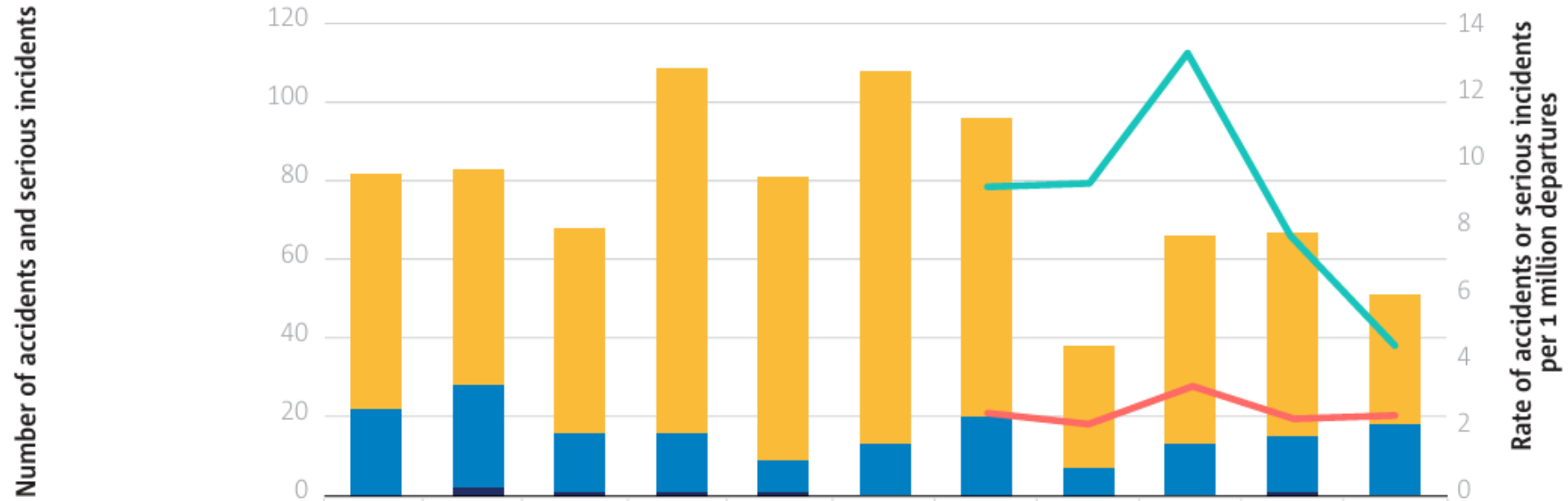


Number of Fatalities Involving Large Aeroplane Passenger and Cargo Operations

Source: EASA Annual Safety Review 2024

Accidents & serious incidents

EASA Large Commercial Aeroplane Operations –EASA Member States



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Serious incidents	60	55	52	93	72	95	76	31	53	52	33
Non-fatal accidents	22	26	15	15	8	13	20	7	13	14	18
Fatal accidents	0	2	1	1	1	0	0	0	0	1	0
Serious incident rate							9.2	9.3	13.0	7.9	4.5
Accident rate							2.4	2.1	3.2	2.3	2.5

Source: EASA Annual Safety Review 2024

How will the aviation system evolve?

Increase in traffic volumes over the next decades

- Latest projections
  - ACI: between 2024 and 2042 traffic will double
  - IATA: predicts 100% traffic increase for 2040

Fast pace of technological change – new business models

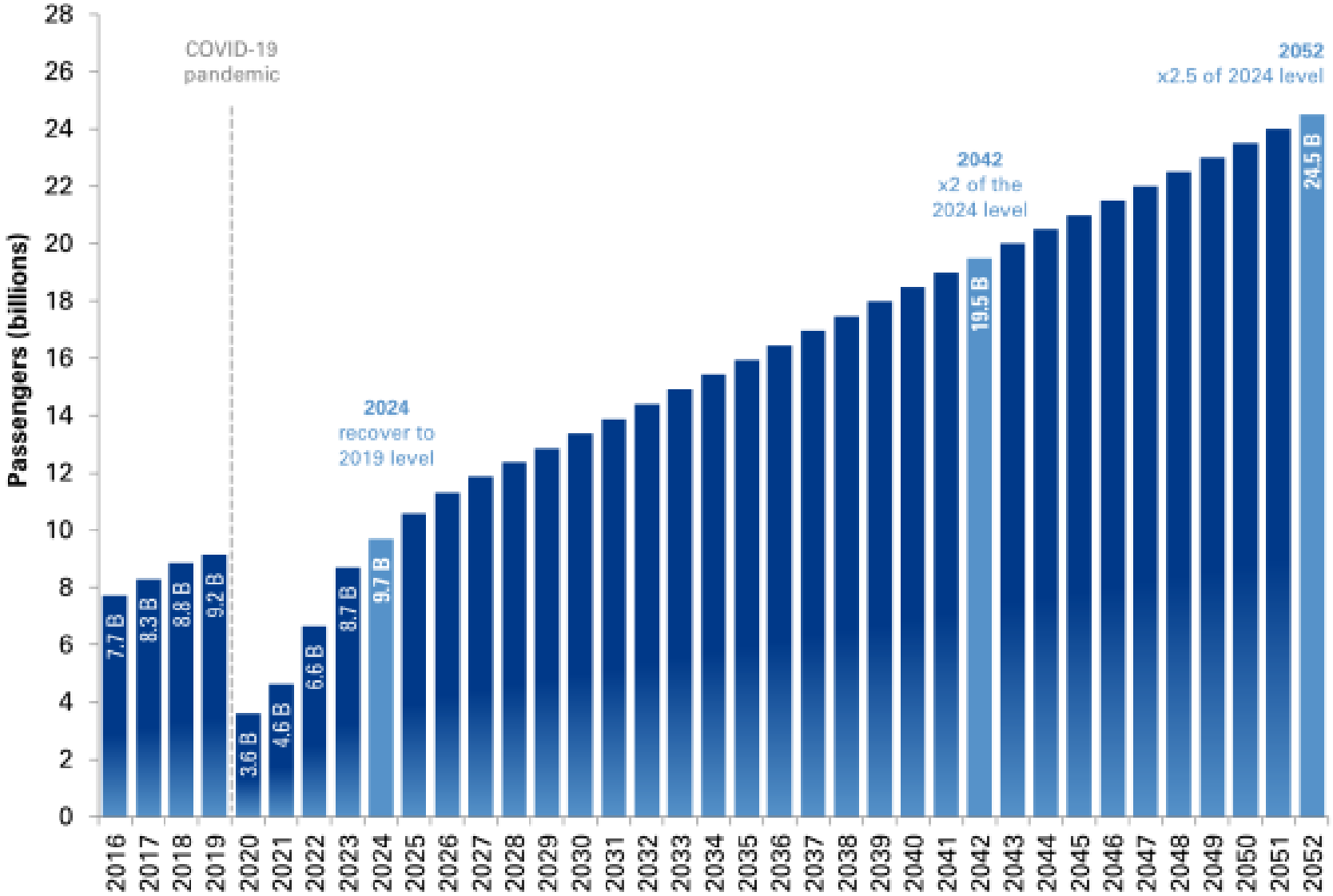
- regulations cannot keep pace and will less an less be able to cover all possible variants
- regulations can never address all possible causes of accidents and incidents
- regulations will need to become more and more ‘technology neutral’

Reduced ability to learn from experience

- ‘time to market’ for new technologies & products has greatly decreased
- the number of accidents to learn from continues to decrease

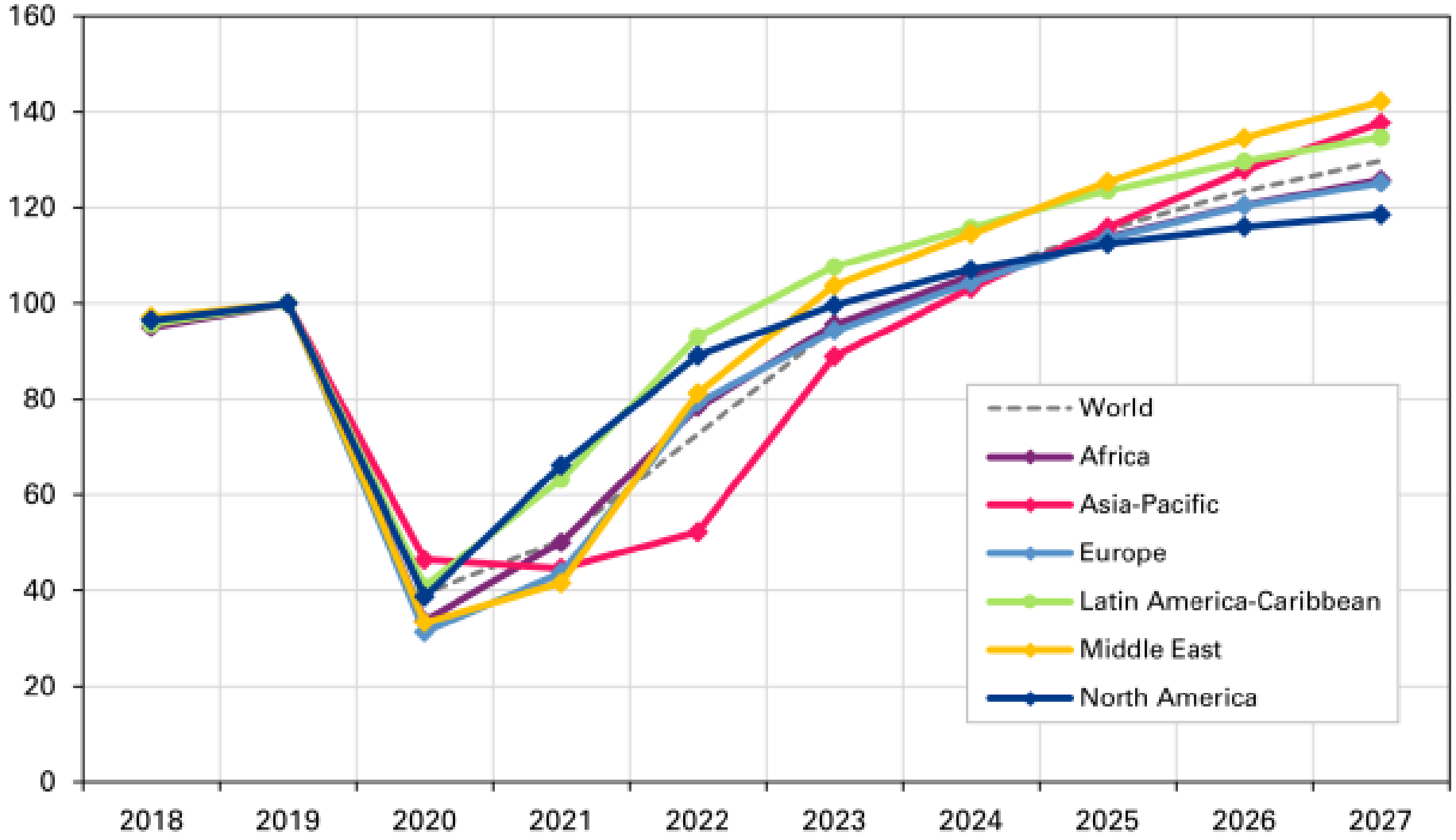
Long-term global passenger traffic forecast 2016–2052

Source: ACI [WATF-Executive-Summary.pdf]



Medium-term passenger traffic forecast by regions
(indexed, 2019 = 100)

Source: ACI [WATF-Executive-Summary.pdf]



How will the aviation system evolve?

Changing regulatory and public views (perception) on safety

- expectation that a risk-free society is possible

Changing nature of accidents

- current-generation aircraft operate as highly integrated systems with extensive cross-linking
- less ‘common cause’ accidents – more ‘random causes’
- new and different failure modes that multiply the number of potential accident/incident scenarios

Emergence of organisational accidents

What do we mean by ‘organisational accident’?

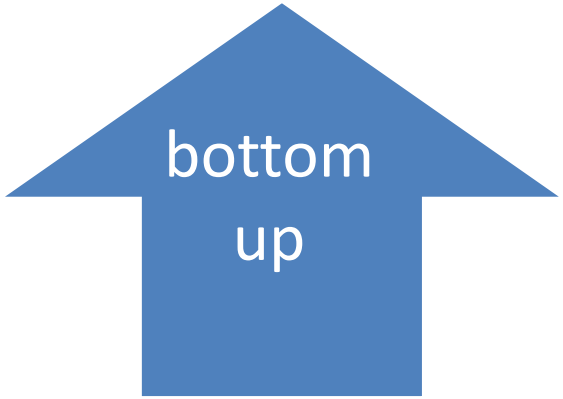
- The immediate cause of many accidents is identified as human or technical failure, **but**
  - these in turn usually stem from organisational failures which are the responsibility of management.
- Individual accidents are by far the larger in number.
- Organisational accidents are comparatively rare, **but** they are
  - often catastrophic, events that occur within complex modern technologies.
- Organisational accidents
  - have multiple causes involving many people operating at different levels of their respective companies.
  - are a product of technological innovations which have radically altered the relationship between systems and their human elements.

Source: James Reason, Managing the Risk of Organizational Accidents, Ashgate publishing, 1997.

Why focus on organisational accidents ?

Once organisational factors are identified, **interventions aimed at the supervisory and organisational levels have the potential to improve the entire system** when compared to issues at the operational level, which usually focus on just one error or failure at a time.

Valuable resources are better spent on **prevention and control at the organisational level**, rather than on trying to fix, after-the-fact, the numerous ways people or components may fail at the operational level.



Source: James Reason, Managing the Risk of Organizational Accidents, Ashgate publishing, 1997.

Example of an organisational accident

Deep Water Horizon oil spill

Starting April 20, 2010

Direct cause: failure of a cement barrier allowing hydrocarbons to flow up the wellbore

poor risk management, last-minute changes to plans

failure to observe and respond to critical indicators

ignoring a pressure test that had failed

Ineffective control of contractors

insufficient emergency bridge response training

government officials relying too much on industry assertions of the safety of their operations

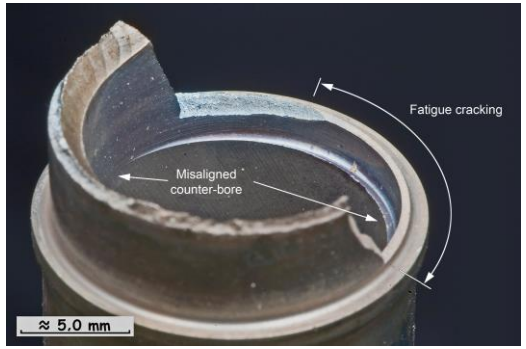
Example of an organisational accidents

Quantas A380 VH-OQA in-flight uncontained engine failure overhead Batam Island, Indonesia

04 Nov. 2010

Direct cause: a turbine disc in the aircraft's no. 2 Rolls-Royce Trent 900 engine (on the port side nearest the fuselage) had disintegrated.

The failure was determined to have been caused by the **breaking of an oil feed stub pipe** which had been manufactured improperly (wall sections did not conform to design specifications): **The non-conforming thin pipe stressed and cracked under normal operating conditions.**



Source: ATSB

See also:

[Fractured Oil Feed Stub Pipe and Diagrammatic Representation | Federal Aviation Administration]

Can you give other examples?

(aviation/non-aviation)

The QMS versus SMS ‘debate’

Prescriptive approach → **Performance based approach**

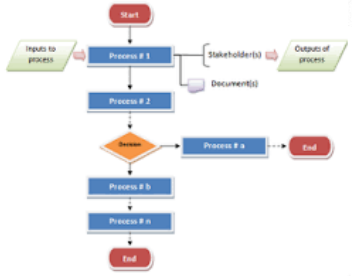
Quality control

Quality assurance

Quality management

Safety management

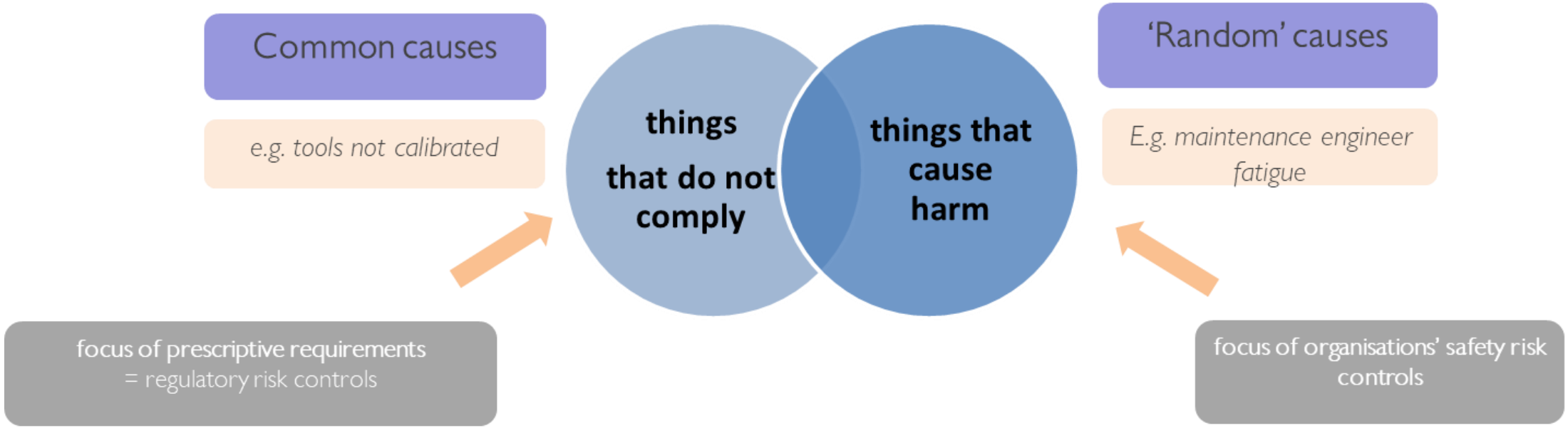
Management system



product safety → compliance (processes) → performance (system)

Why is compliance with prescriptive requirements not enough?

Without compliance no effective safety management, but compliance alone does not guarantee that an organisation is operating safely.



However: Do not ‘downplay’ the importance of QMS

- ✓ QMS is focused on **compliance** with **prescriptive regulations**, requirements to meet **customer expectations** and **contractual obligations**.
  - ✓ Internal audit also needs to verify adherence to the various SMS procedures
  - ✓ Internal audit calls for causal analysis – this in return can feed hazard identification
- ✓ SMS is focused on safety risk management capability
  - ✓ It requires a thorough understanding of how the organisation works
  - ✓ Internal audit provides valuable information in this regard.
  - ✓ In return, the safety risk management processes may be used to determine focus areas for compliance monitoring.
- ✓ The combination of safety risk management and compliance monitoring should lead to an enhanced understanding of the end-to-end process and the process interfaces, exposing opportunities for increased efficiencies, which are not limited to safety aspects.

Further guidance: https://www.skybrary.aero/index.php/SM_ICG_Position_Paper_on_the_SMS/QMS_Relationship

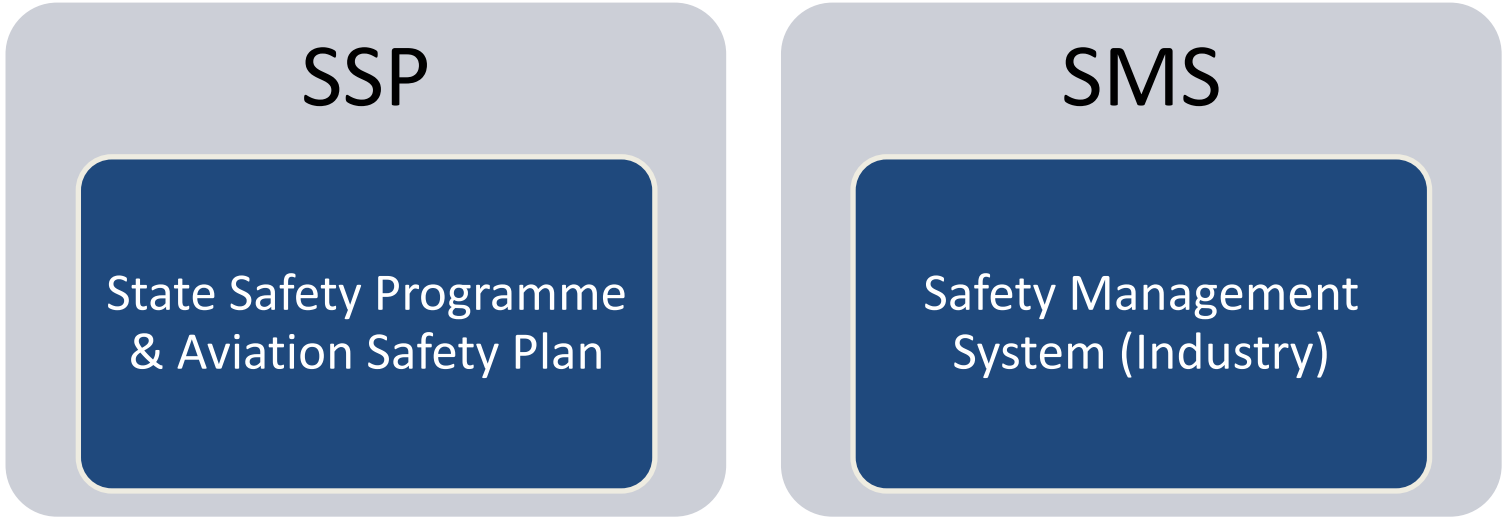
Systems thinking and why it is important for SMS/SSP

- Systems thinking means considering the interactions between all the parts of the system:
  - Human,
  - Legal / Regulatory,
  - Technical,
  - Information and data,
  - Economic, and
  - Organisational

  to understand why things went wrong/or why they go right most of the times.

Most aviation organisations are required by applicable regulations to develop

SAFETY MANAGEMENT CAPABILITIES



Was aviation pioneering SMS?

→ SMS had been introduced in many industries prior to being mandated in aviation, such as

- ***Oil and Gas industry***
  - *Piper Alpha disaster - July 1988*
- ***Nuclear Industry***
  - *Three Miles Island (US) – March 1997*
  - *Chernobyl (ex-URSS) April 1986*
- ***Railway Industry***
  - *e.g. EU Directive 2004/49/EC (= the Railway Safety Directive) mandates railway undertakings and infrastructu managers to implement SMS ……*
- ***Maritime***
  - *Herald of Free Enterprise capsizing – March 1987*
- ***Chemical Industry***
  - *Bophal disaster – December 1984 – more than 15.000 people killed over the years*

When was SMS/SSP introduced by ICAO?

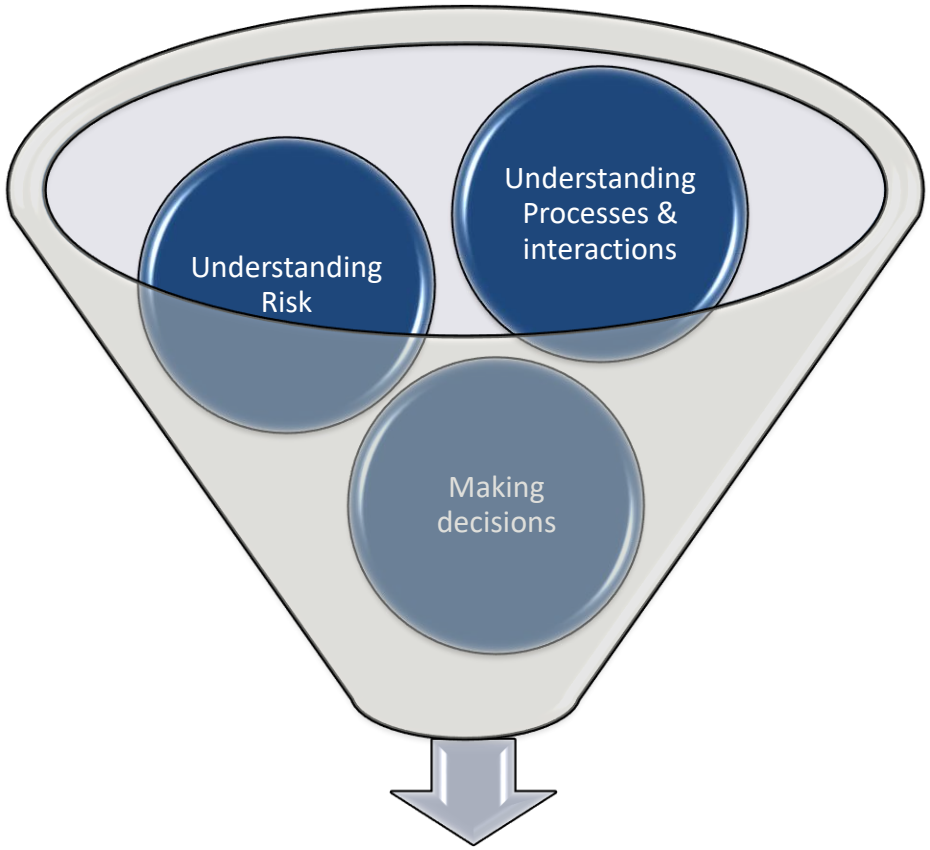
ICAO Safety Management SARPs for States

Description	Annex	Effective Date	Applicability Date
Safety Programme	6, 11 and 14	17 July 2006	23 November 2006
State Safety Programmes	1, 8, 13	20 July 2009	18 November 2010
SSP Framework (Attachment)	1, 6, 8, 11, 13 and 14	20 July 2009	18 November 2010

ICAO Safety Management SARPS for Service Providers

Description	Annex	Service Provider	Effective Date	Applicability Date
Safety Management Programme	11, amdt. 40	Air Traffic Services (ATS) Providers	16 July 2001	1 November 2001
Safety Management Programme	14, Vol 1, amdt. 4	Certified Aerodromes	16 July 2001	1 November 2001
Safety Management Systems	11, amdt 44	ATS providers	17 July 2006	23 November 2006
Safety Management Systems	14, Vol 1, amdt. 8	Certified Aerodromes	17 July 2006	23 November 2006

What is a safety management system?



*A series of defined, **organisation**-wide processes that provide for effective risk-based decision-making related to a company's **strategic** and **daily business**.*

What is a Safety Management System?

Traditional approach focusses a lot on technical and human factors.

New approach brings
MANAGEMENT
into the equation!
(organisational accident theory)

Main purpose: risk-based decision making

Types of management systems

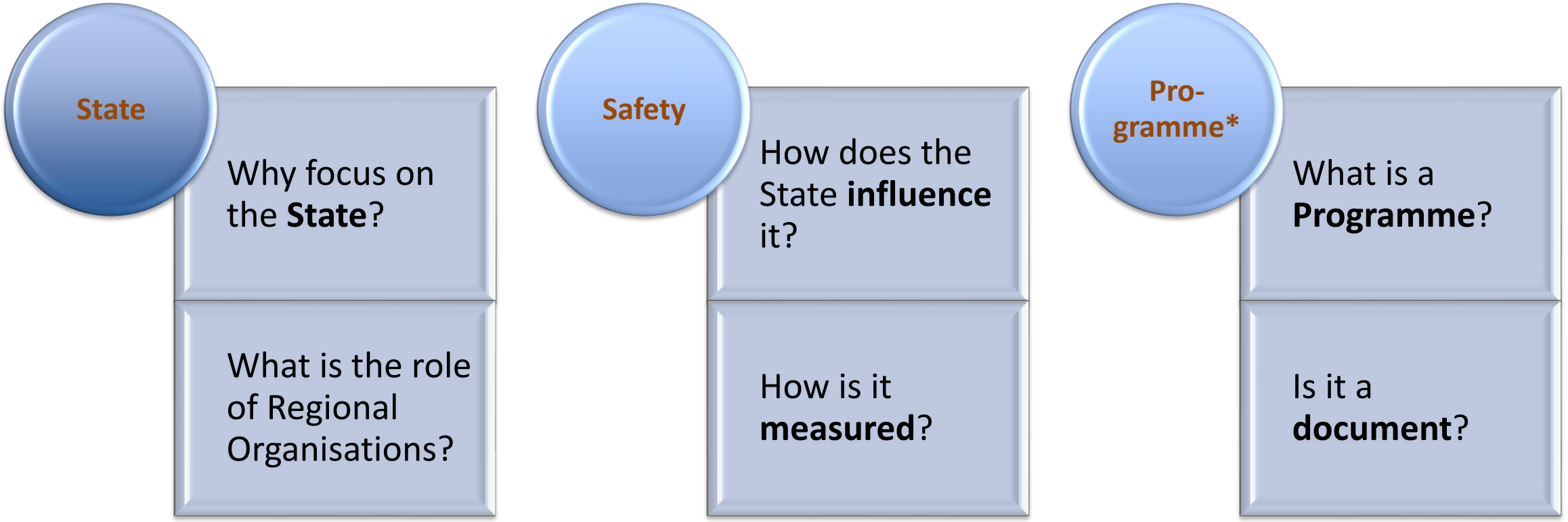
Typical management systems within an aviation organisation may include:

- a quality management system (QMS);
- a safety management system (SMS);
- a security management system (SeMS);
- an environmental management system (EMS);
- an occupational health and safety management system (OHSMS);
- a financial management system (FMS);
- a documentation management system (DMS);
- etc.

SMS Definition (ICAO Annex 19 second edition)

Safety Management System: A systematic approach to managing safety, including the necessary organizational structures, accountability, responsibilities, policies and procedures.

SSP: State Safety Programme



* Programme: a set of related measures or activities with a particular **long-term aim**

SSP: Definition (Annex 19 second edition)

SSP: *'An integrated set of **regulations** and **activities** aimed at improving safety'*

SSP -> changes proposed with State Letter 23/18

A19 amdt. 2

*SSP: 'An integrated set of **laws,** regulations, **policies, objectives, processes** and activities aimed at **proactively** ~~improving~~ **managing** safety'*

Rationale:

The definition is proposed to be updated to include important aspects of a State safety programme and highlight that the purpose of an SSP is to support the State in proactively managing safety.

The current definition implies that the purpose of an SSP is limited to regulations and activities, which is not in alignment with the intent described in the spirit of Annex 19. ***The term "managing" replaces "improving" as it is broader and serves a variety of circumstances.***

SSP -> changes proposed with State Letter 23/18

A19 amdt. 2

→ IMPORTANT DISCLAIMER

- → The Type II State Letter for the upcoming amendment of ICAO Annex 19 has not yet been released.
- → Text changes are still being discussed with the Safety Management Panel to address State comments and subsequent review by the Air Navigation Commission.
- → **Accordingly, there is no guarantee that the changes proposed with the Type I State Letter will be confirmed, although the overall direction will not change.**

Example of changes proposed following review by the Air Navigation Commission (AN.2024.WP/9709)

A19 amdt. 2

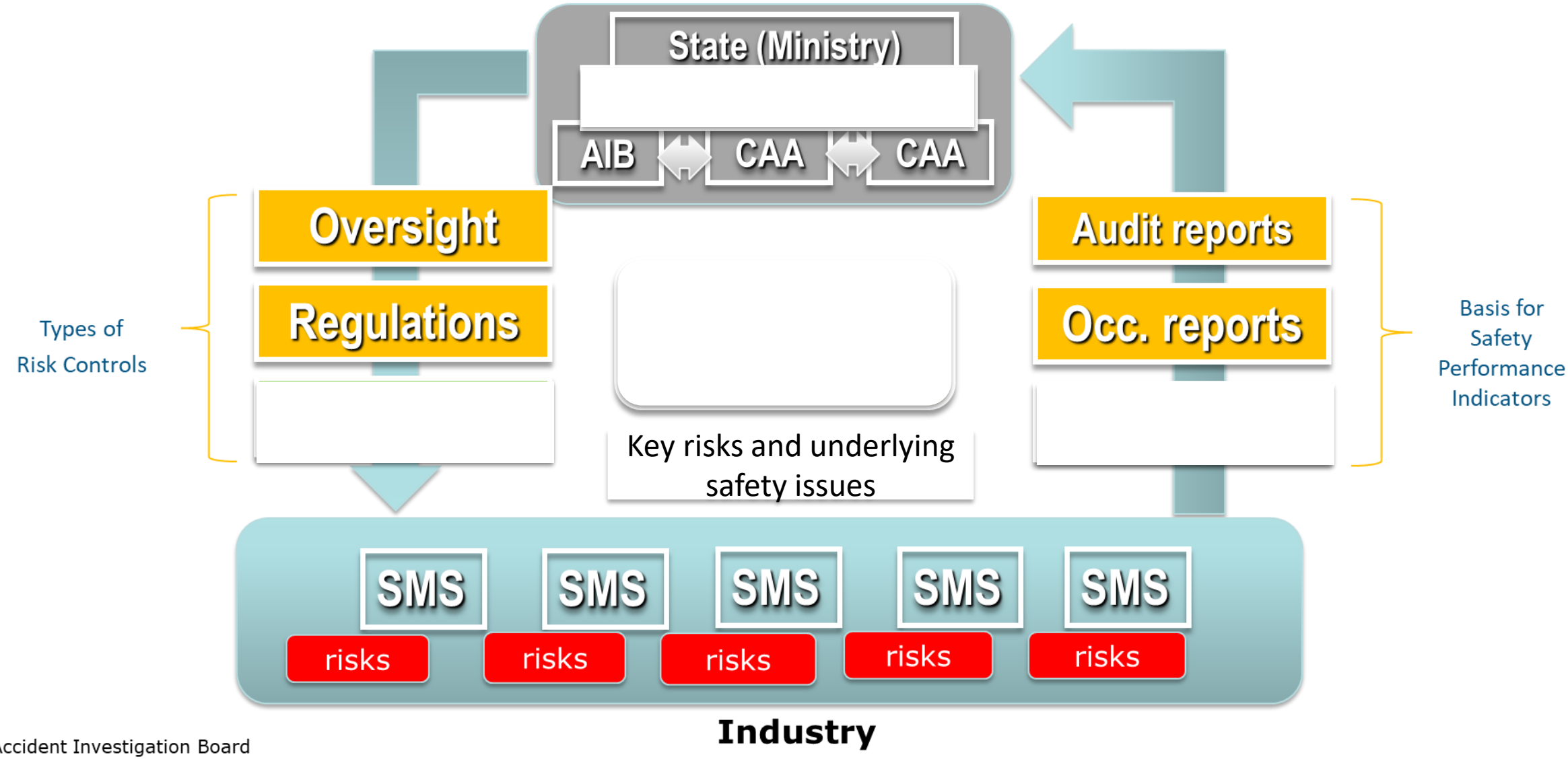
SSP: 'An integrated set of ***laws,*** *regulations,* ***policies, objectives, processes, procedures*** *and activities* ***that support the continued evolution of a proactive strategy for managing safety at the State level****.'*

Next milestones following review by the Air Navigation Commission (AN.2024.WP/9709)

A19 amdt. 2

- → by Dec 2024
  - → ANC request to the Safety Management Panel to provide recommendations for the pending items
- → Spring 2025
  - → ANC final review and Council adoption:
- → November 2026
  - → Applicability date
  - → Determined by intended applicability of the new Part IV to Annex 6 ‘RPAS’

The role of the State

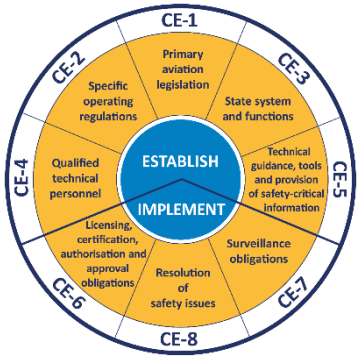


AIB = Accident Investigation Board

SSP: existing functions & processes

- → Oversight policies, procedures
- → Mechanism to manage audit data and support programming
- → Regulatory function
- → Mechanism to regularly review regulations
- → Policies and tools for the resolution of safety concerns
- → Mechanism to collect safety data & information (accidents, serious incidents, occurrences)
- → Training policies and programmes
- → Etc. (covering the 8 **Critical Elements**)

ICAO Critical Elements (CEs)



- The effective implementation of the CEs is an indication of a State's capability for safety oversight.
- CEs are applied to assess:
  - authorities performing safety oversight functions
  - authorities performing investigation of accidents and incidents or
  - other State safety management activities.

Guidance on the Critical Elements (CEs) of a system that enables a State to discharge its responsibility for safety oversight is contained in the Safety Oversight Manual, Part A, 'The Establishment and Management of a State's Safety Oversight System' (Doc 9734).

SSP: new functions & processes to be implemented

- State safety governance
  - Including clear definition of accountability, roles and responsibilities for risk-based decision-making
- A State Safety Management coordination mechanism
  - federate all State entities having a role in aviation safety
- An explicit State safety policy and measurable objectives
- A mechanism for risk- and performance-based decision making
- A State level Safety Risk Management process
  - allowing to create and maintain the State Risk Picture
  - ensuring involvement of all relevant stakeholders
- State safety promotion
- Etc……

State ‘Risk Picture’ (a.k.a. ‘Risk Portfolio’ or ‘Risk Map’)

States need a defined safety risk picture at the State level. This will be at the core of their SSP.

- → The risk picture reflects the State’s understanding of the most significant safety risks in its aviation system, including **systemic**, **operational** and **organisational** risks.
- → Based on this risk picture, and taking into consideration constraints (resource availability, legislative imperatives, technological capability), the State will define safety objectives which guide safety actions.
- → **The ‘risk picture’ established at regional level should be considered.**
  - → **Example for EASA Member States: EPAS Volume III ‘Safety Risk Portfolios’**

Different State entities having a role in the SSP

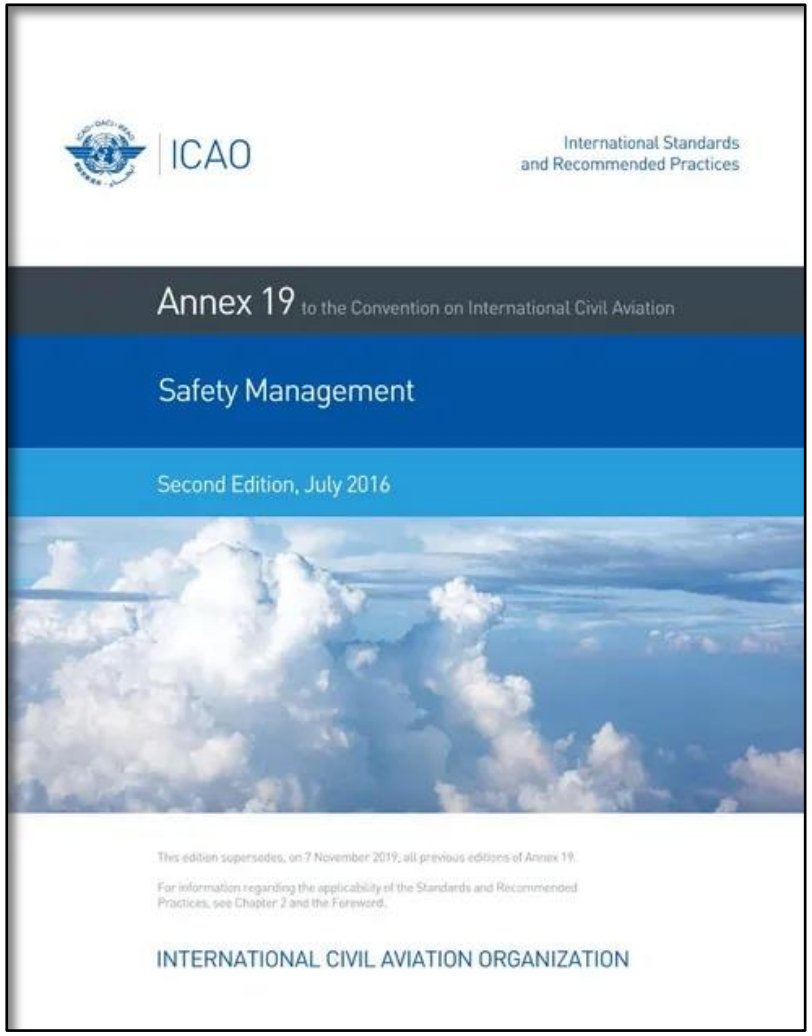
MOR: Mandatory Occurrence Reporting

VOR: Voluntary Occurrence Reporting

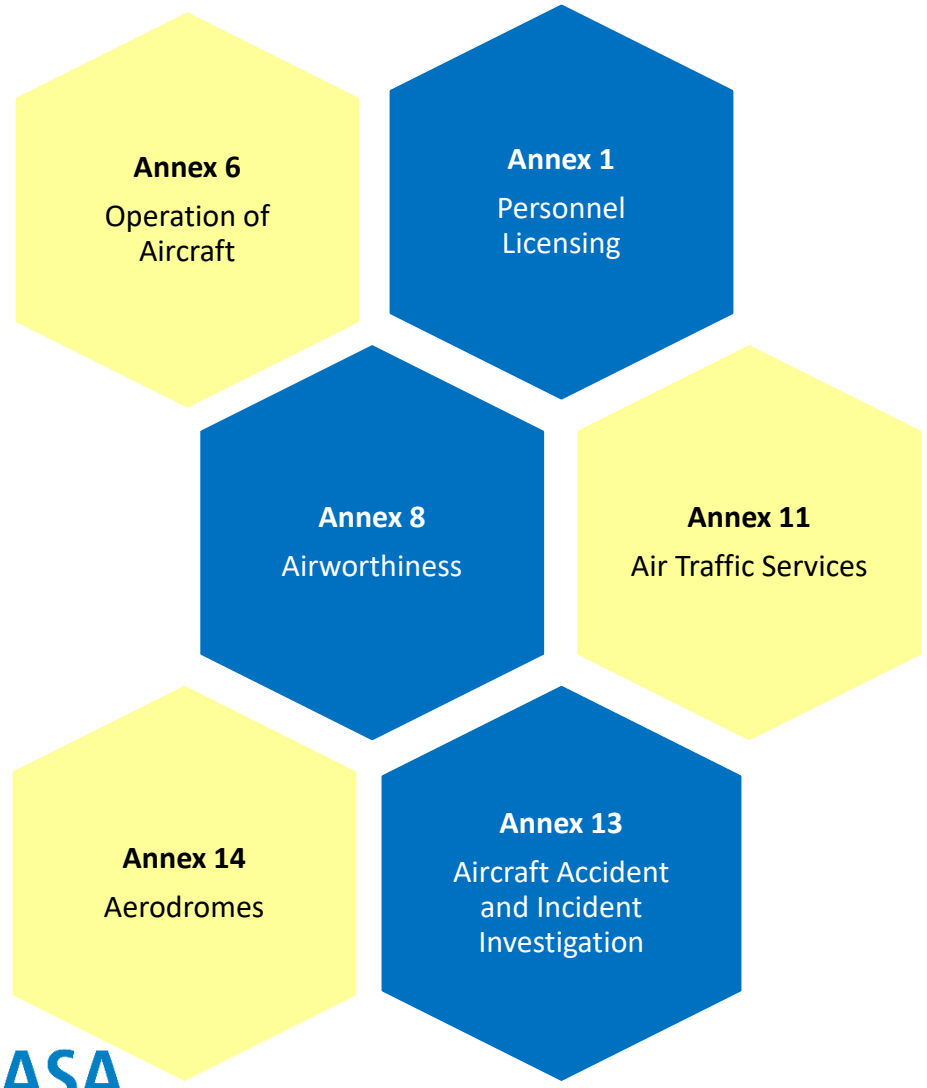
SSP: what are the objectives?

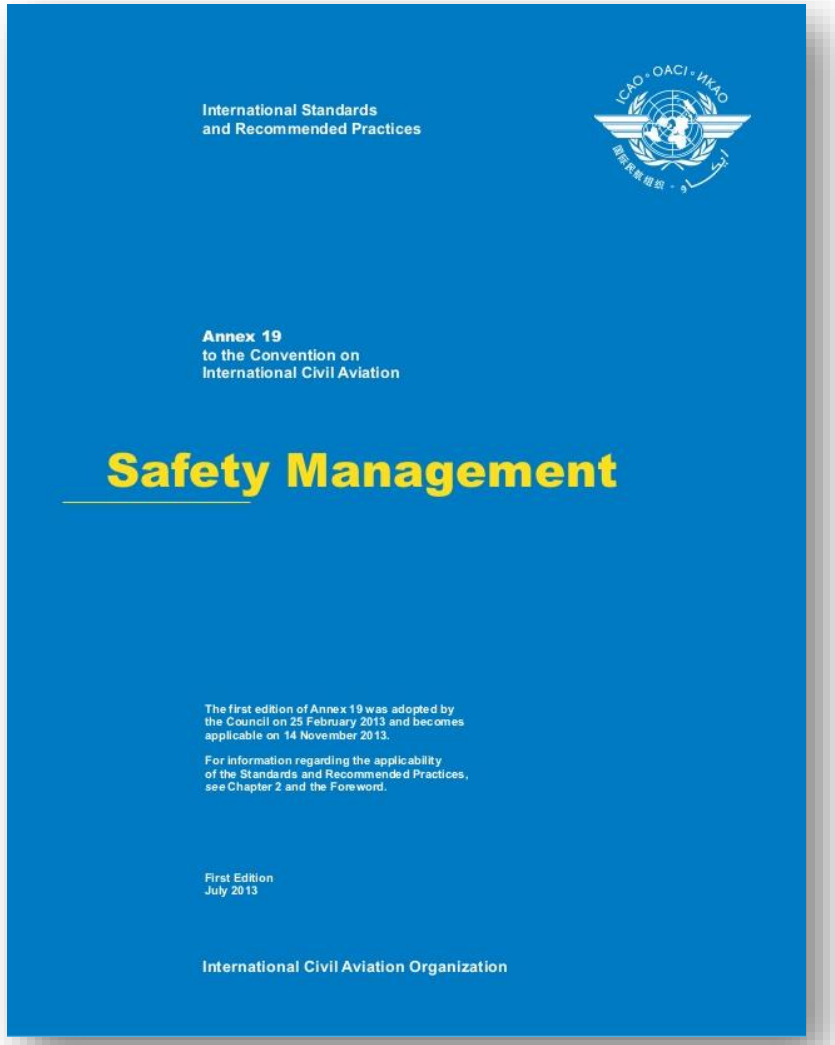
- ensure that a State has the minimum required regulatory framework in place
- ensure harmonisation amongst the State‘s regulatory and administrative organisations in their respective safety management roles
- facilitate monitoring and measurement of the aggregate safety performance of the State‘s aviation industry
- coordinate and continuously improve the State‘s safety management functions
- get a wider and better view on existing and emerging risks
- **support effective implementation and interaction with service providers‘ SMS.**

ICAO Annex 19



Origin of ICAO Annex 19 first edition





Second edition published in March 2016

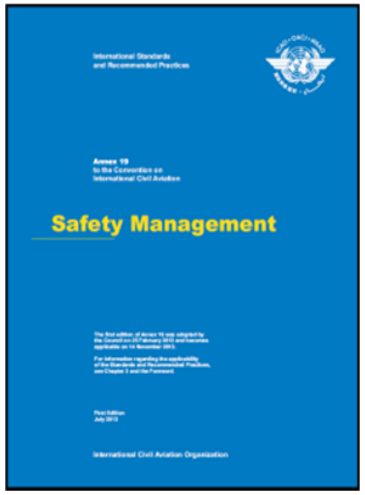
1st Phase *

Annex 19 First Edition

Adoption: 25 February 2013

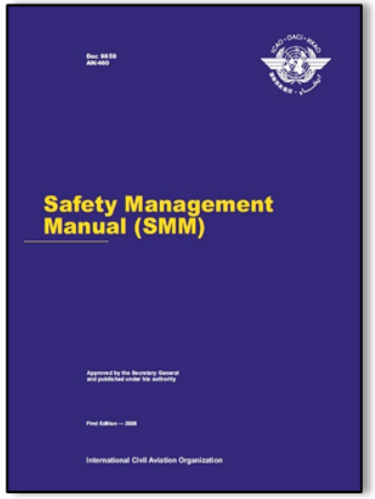
Effective: 15 July 2013

Applicable: 14 November 2013



Safety Management Manual SMM (Doc 9859)

Third Edition, free of charge here



2nd Phase*

Amendment 1 to Annex 19

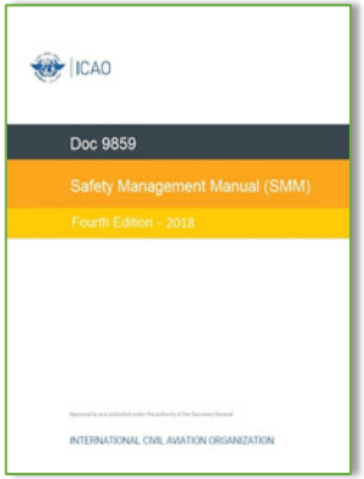
Adoption: 2 March 2016

Effective: 11 July 2016

Applicable: **7 November 2019**

Safety Management Manual SMM (Doc 9859)

Fourth edition: online-version



*** PANELS INVOLVED:**

Safety Management Panel **(SMP)** ,

Airworthiness Panel **(AIRP),** Safety Information Protection Task Force **(SIP TF)**

Annex 19 second edition - structure

Foreword

Chapter 1 - Definitions

Chapter 2 - Applicability

Chapter 3 - State Safety Management Responsibilities

Chapter 4 - Safety Management System

Chapter 5 - Safety Data Collection, Analysis and Exchange

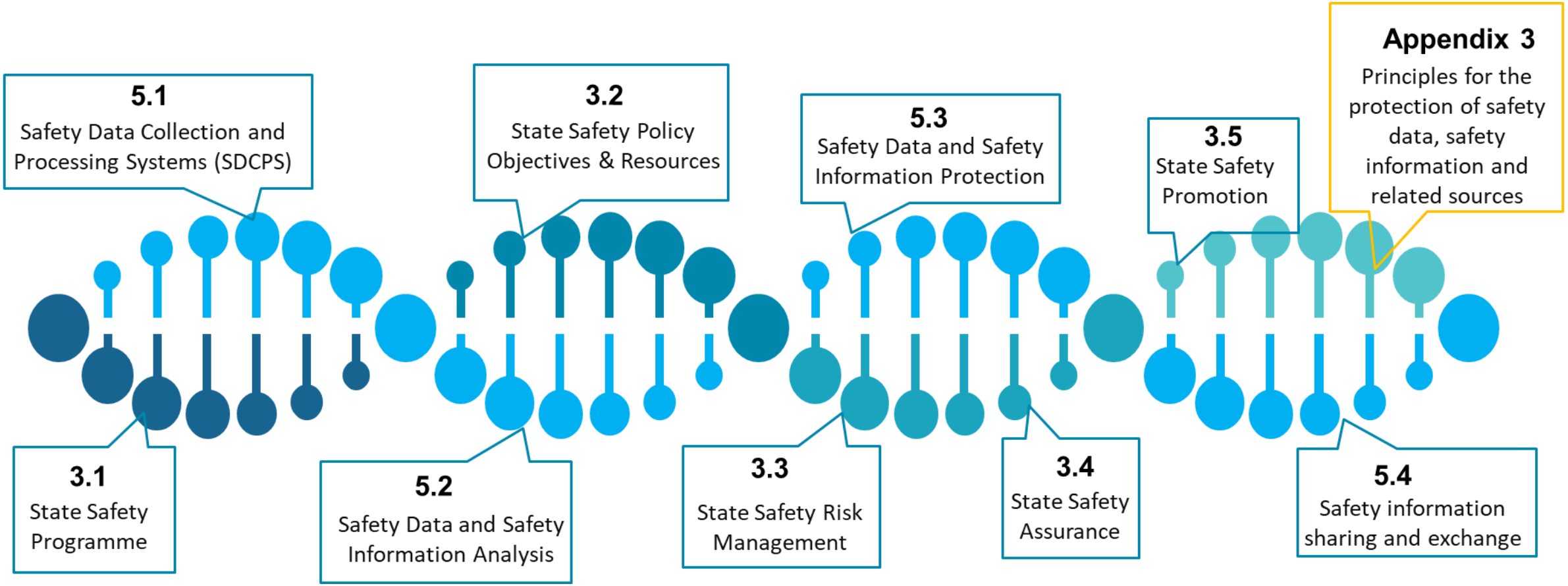
Focus: States

Appendix 1 - State Safety Oversight System (8 critical elements of oversight)

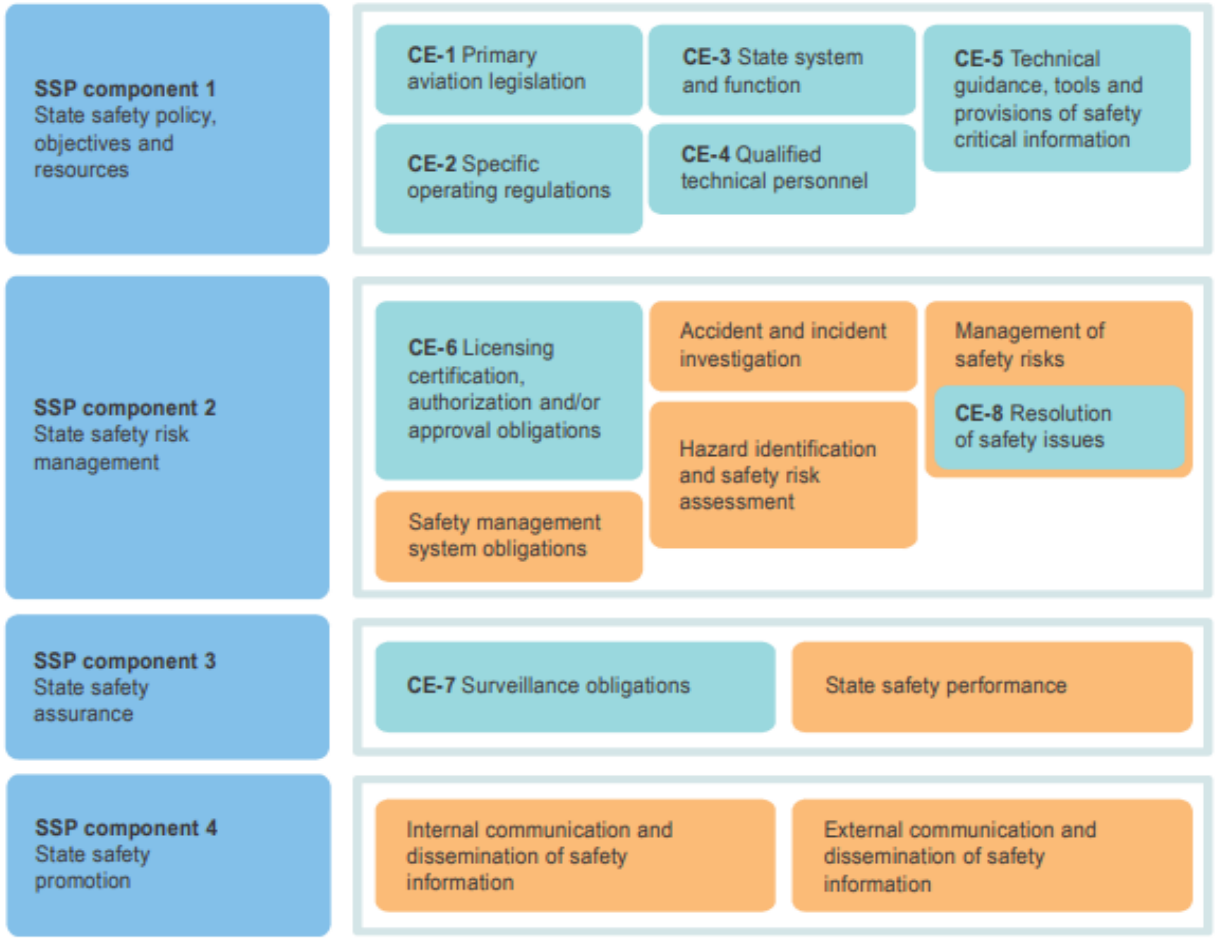
Appendix 2 - Framework for a Safety Management System (SMS): 4 components and 12 elements

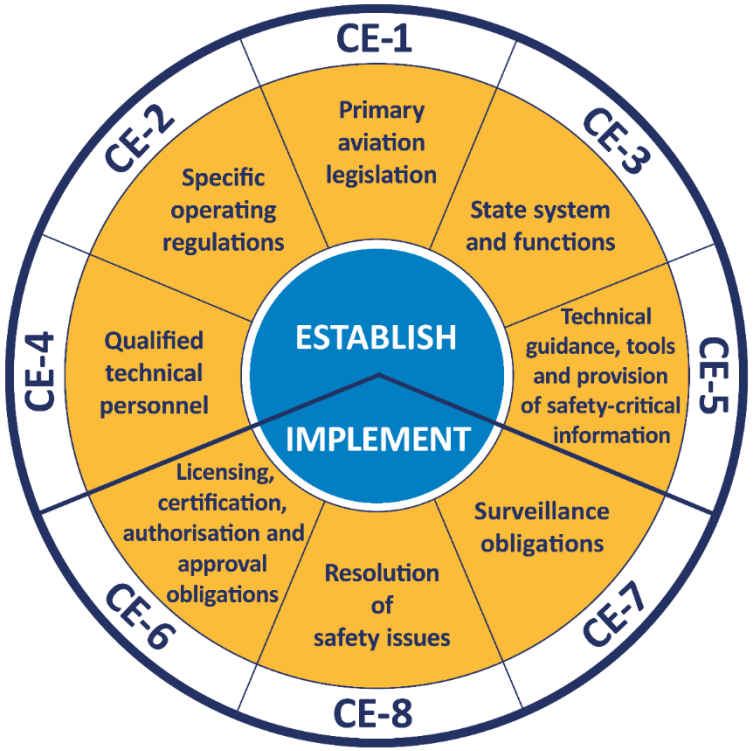
Appendix 3 - Principles for the Protection of Safety Data, Safety Information and related sources

SSP SARPs: Chapters 3, 5 and Appendix 3



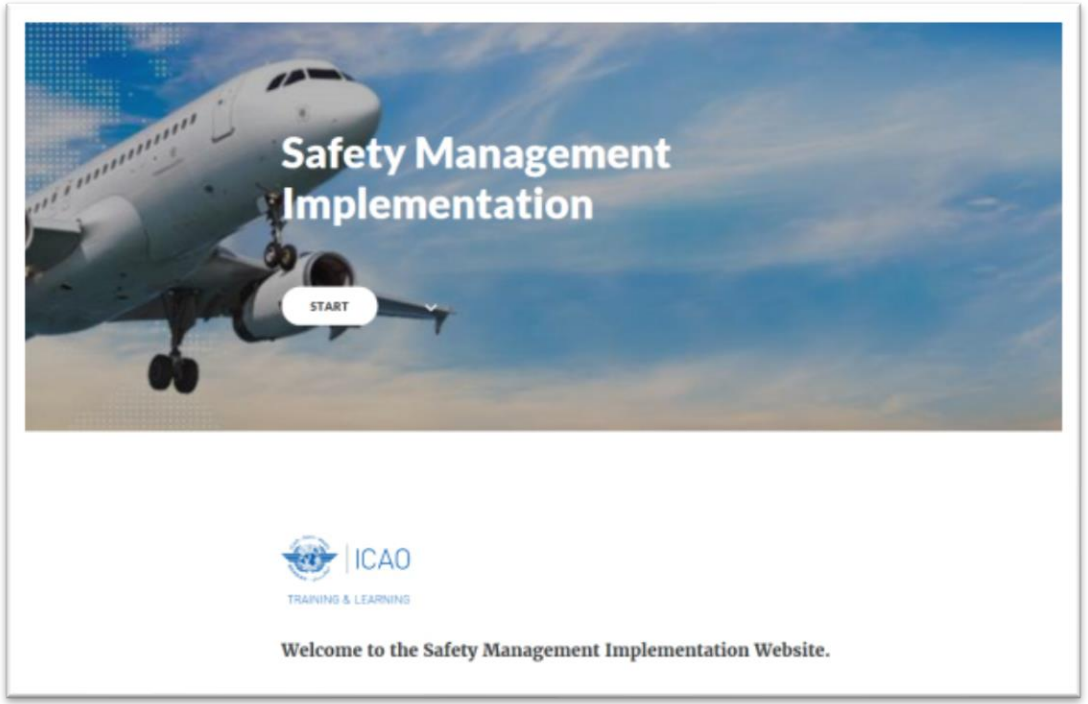
Integrated State Safety programme (SMM 4th edition)





- The elements of the SSP framework, previously contained in Attachment A of Annex 19, were elevated to SARPS.
- The streamlined provisions are expected to support States in achieving SSP implementation in a more efficient manner.

Annex 19 related guidance



9 chapters grouped under 3 themes:

- Safety management fundamentals (1-3)
- Developing safety intelligence (4-7)
- Safety management implementation (8-9)

SMI website

Examples and guidance material in support of SMM

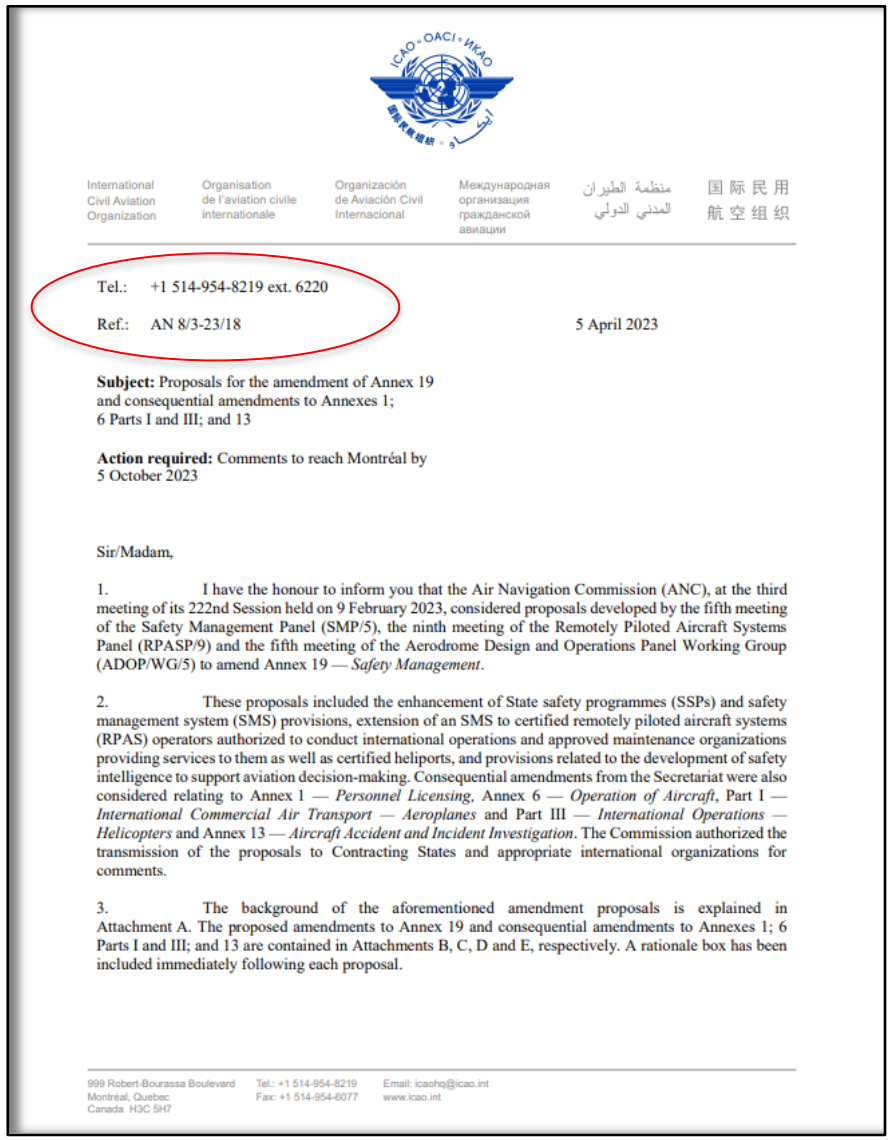
Annex 19 amendment 2 is coming ……

- 2022Q1: SMP endorsement
- 2023Q1: ANC preliminary review
- 2023Q2: **consultation by SL 23/18**
- 2024Q1: ANC final review
- 2024Q4: SMP recommendations
- 2025Q2: Council adoption
- 2026Q4: Applicability

A19 amdt. 2

5 batches of changes

- 1 – Enhanced provisions related to SSP
- 2 – Enhanced provisions related to SMS
- 3 – Provisions related to extending SMS applicability
- 4 - Enhanced provisions related to Safety Performance management
- 5 - Enhanced provisions related to Safety Intelligence



International Civil Aviation Organization | Organisation de l'aviation civile internationale | Organización de Aviación Civil Internacional | Международная организация гражданской авиации | منظمة الطيران المدني الدولي | 国际民用航空组织

Tel.: +1 514-954-8219 ext. 6220

Ref.: AN 8/3-23/18

5 April 2023

Subject: Proposals for the amendment of Annex 19 and consequential amendments to Annexes 1; 6 Parts I and III; and 13

Action required: Comments to reach Montréal by 5 October 2023

Sir/Madam,

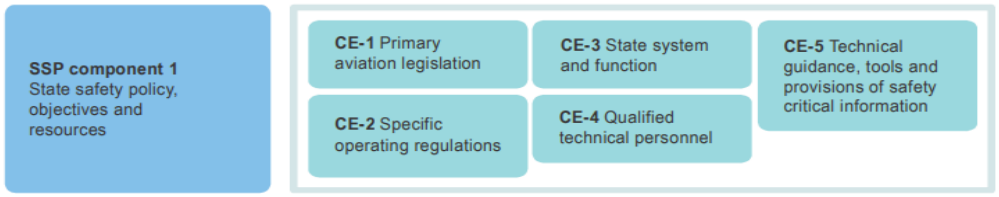
1. I have the honour to inform you that the Air Navigation Commission (ANC), at the third meeting of its 222nd Session held on 9 February 2023, considered proposals developed by the fifth meeting of the Safety Management Panel (SMP/5), the ninth meeting of the Remotely Piloted Aircraft Systems Panel (RPASP/9) and the fifth meeting of the Aerodrome Design and Operations Panel Working Group (ADOP/WG/5) to amend Annex 19 — *Safety Management*.

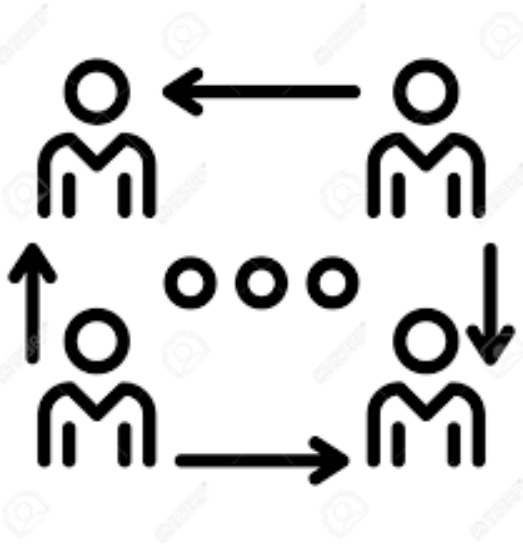
2. These proposals included the enhancement of State safety programmes (SSPs) and safety management system (SMS) provisions, extension of an SMS to certified remotely piloted aircraft systems (RPAS) operators authorized to conduct international operations and approved maintenance organizations providing services to them as well as certified heliports, and provisions related to the development of safety intelligence to support aviation decision-making. Consequential amendments from the Secretariat were also considered relating to Annex 1 — *Personnel Licensing*, Annex 6 — *Operation of Aircraft*, Part I — *International Commercial Air Transport — Aeroplanes* and Part III — *International Operations — Helicopters* and Annex 13 — *Aircraft Accident and Incident Investigation*. The Commission authorized the transmission of the proposals to Contracting States and appropriate international organizations for comments.

3. The background of the aforementioned amendment proposals is explained in Attachment A. The proposed amendments to Annex 19 and consequential amendments to Annexes 1; 6 Parts I and III; and 13 are contained in Attachments B, C, D and E, respectively. A rationale box has been included immediately following each proposal.

999 Robert-Bourassa Boulevard Montréal, Quebec Canada H3C 5H7 | Tel.: +1 514-954-8219 Fax: +1 514-954-6077 | Email: icaohq@icao.int www.icao.int

3.1 -> State Safety Programme





3.1 States shall establish and maintain an SSP that is commensurate with the size and complexity of the State's civil aviation system but may **delegate safety management-related functions and activities to another State**, Regional Safety Oversight Organization (RSOO) or Regional Accident and Incident Investigation Organization (RAIO).

Any examples of such delegation in the WACAF/ESAF Regions?

Regional organisations

- → Map
  - → Map showing the RSOOs and other cooperation mechanisms around the world

- → List
  - → List of RSOOs

3.1 General – Changes proposed with SL 23/18

A19 amdt. 2

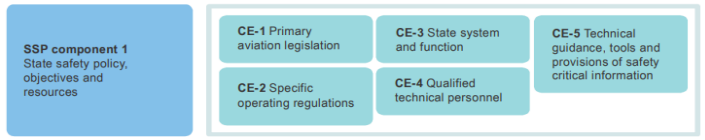
New Note 3: A national aviation safety plan (NASP), consistent with the Global Aviation Safety Plan (GASP, Doc 10004) and with the respective regional aviation safety plan, complements the SSP processes and activities listed in this chapter. Guidance on NASPs is contained in the Manual on the Development of Regional and National Aviation Safety Plans (Doc 10131)

New 3.1.2 Recommendation: In the establishment and management of an SSP, specific consideration should be given to human performance implications.

New Note: Guidance on human performance implications for SSP is contained in the Manual on Human Performance (HP) for Regulators (Doc 10151).

3.1 -> State Safety Programme (SL 23/18)

A19 amdt. 2

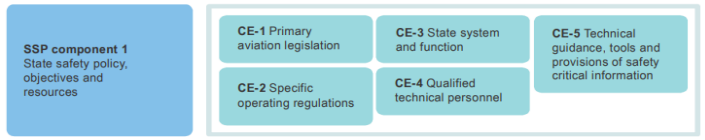


Former 3.1.1 elements on delegation proposed to be moved to 3.2.3.2:
States shall establish their SSP functions and activities but may delegate them to another State, Regional Safety Oversight Organization (RSOO) or Regional Accident and Incident Investigation Organization (RAIO), where appropriate.

Note.— **States retain responsibility for SSP functions and activities delegated to another State, RSOO or RAIO**. Guidance on the delegation of SSP functions and activities is contained in the Safety Management Manual (Doc 9859). Additional guidance on the establishment of RSOOs and RAIOs is contained in the Safety Oversight Manual (Doc 9734), Part B — The Establishment and Management of a Regional Safety Oversight Organization, and the Manual on Regional Accident and Incident Investigation Organization (Doc 9946), respectively.

3.1 -> State Safety Programme (following ANC review)

A19 amdt. 2

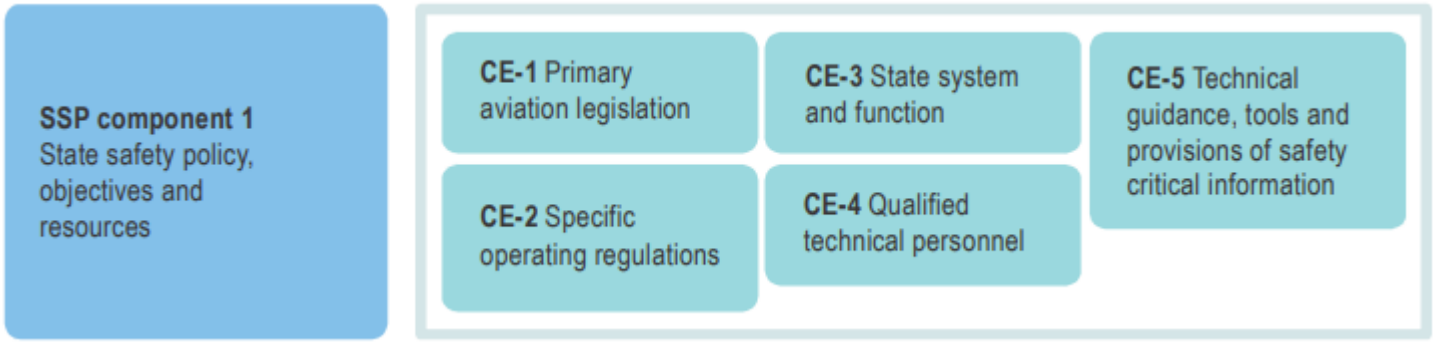


Former 3.1.1 elements on delegation proposed to be moved to 3.2.3.2:
States shall establish their SSP functions and activities but may delegate them to another State, Regional Safety Oversight Organization (RSOO) or Regional Accident and Incident Investigation Organization (RAIO), where appropriate.

Note.— Unless otherwise provided for in a regional regulatory framework, States **retain responsibility for SSP functions and activities delegated to another State, RSOO or RAIO**. Guidance on the delegation of SSP functions and activities is contained in the Safety Management Manual (Doc 9859). Additional guidance on the establishment of RSOOs and RAIOs is contained in the Safety Oversight Manual (Doc 9734), Part B — The Establishment and Management of a Regional Safety Oversight Organization, and the Manual on Regional Accident and Incident Investigation Organization (Doc 9946), respectively.

3.2 State safety policy, objectives and resources **(SSP Component 1)**

→ This component defines the enablers required for States to manage safety.



Primary aviation legislation

3.2.1.1 States shall establish primary aviation legislation in accordance with section 1 of Appendix 1.

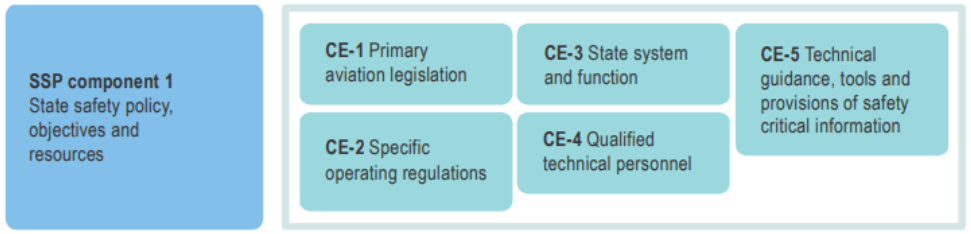
3.2.1.2 **Recommendation**. States should establish **an enforcement policy** that specifies the conditions and circumstances under which service providers with an SMS are allowed to deal with, and resolve, events involving certain safety issues, internally, within the context of their SMS and to the satisfaction of the appropriate State authority.

Proposal to rename it ‘Surveillance Policy’ for A19 amendment 2.

SSP and primary aviation legislation

- Does your primary aviation legislation adequately address SSP system and functions?
- If not, what changes did you make/are you making to your primary legislation?
  - For example, is there a decree or legal document that
    - empowers an entity with SSP implementation?
    - defines the respective roles and responsibilities?
    - ensures safety data protection & just culture?
    - defines your enforcement policy?
  - What other elements of the SSP framework did you address in your primary aviation legislation?

Enforcement policy



Enforcement policy -> Changes proposed for the next A19 amendment will be discussed

as part of

‘Oversight and Safety Promotion in a Safety Management environment’ (day 5).

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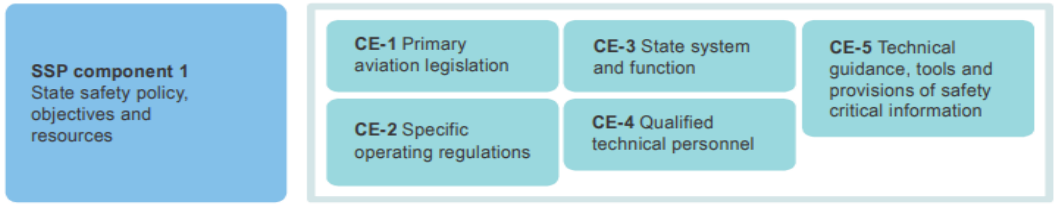
Specific operating regulations

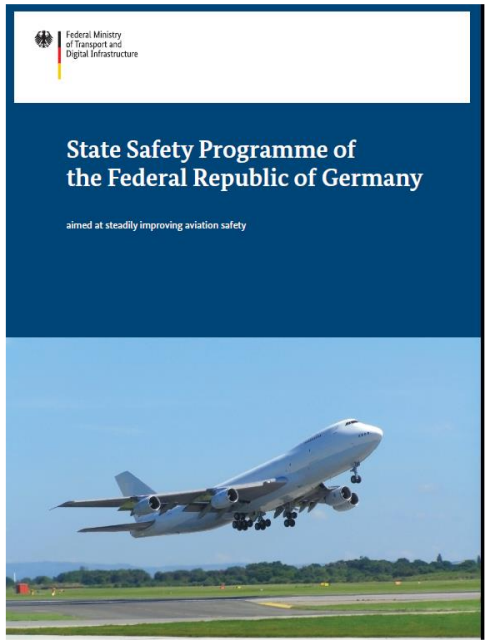
3.2.2.1 States shall establish specific operating regulations in accordance with section 2 of Appendix 1.

3.2.2.2 States shall periodically review specific operating regulations, guidance material and implementation policies to ensure they remain relevant and appropriate.

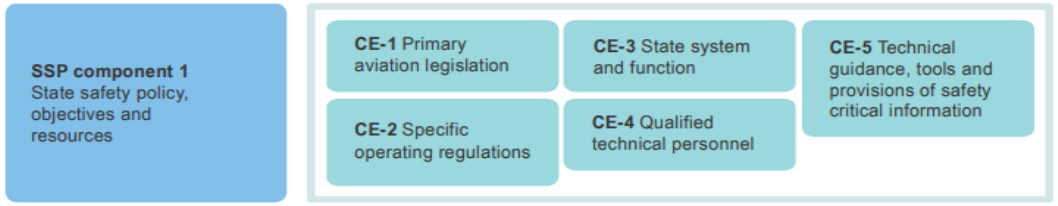
Documentation of the SSP



3.2.3.2. ***Recommendation.*** States should identify, define and **document the requirements, obligations, functions and activities regarding the establishment and maintenance of the SSP**, including the directives to plan, organize, develop, maintain, control and continuously improve the SSP in a manner that meets the State's safety objectives.



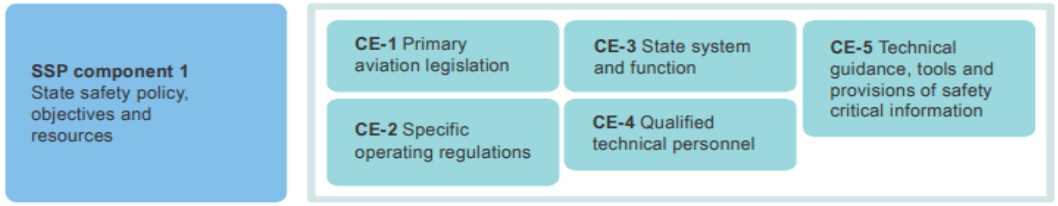
Safety Policy, Objectives and resources



3.2.3.3. ***Recommendation.*** States should establish a **safety policy and safety objectives** that reflect their commitment regarding safety and facilitate the promotion of **a positive safety culture** in the aviation community.

3.2.3.4 ***Recommendation.*** The safety policy and safety objectives should be published and periodically reviewed to ensure that they remain relevant and appropriate to the State.

Safety Policy, Objectives and resources –> changes proposed with SL 23/18



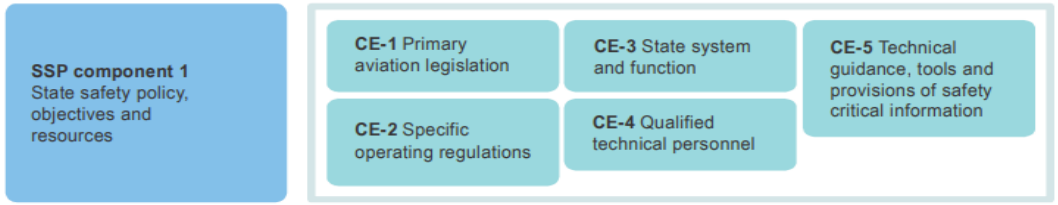
A19 amdt. 2

3.2.3.3 ~~**Recommendation.**~~ — States ~~should~~ **shall** establish a safety policy and safety objectives that reflect their commitment regarding safety and facilitate the promotion of a positive safety culture in the aviation community.

Rationale: *The proposed upgrade reinforces the importance of the State safety policy and objectives and is aligned with the proposal amending Standard 3.4.2.1, which highlights that State safety objectives are a key aspect of the State safety performance management process*

Safety Policy, Objectives and resources –> changes proposed with SL 23/18

A19 amdt. 2

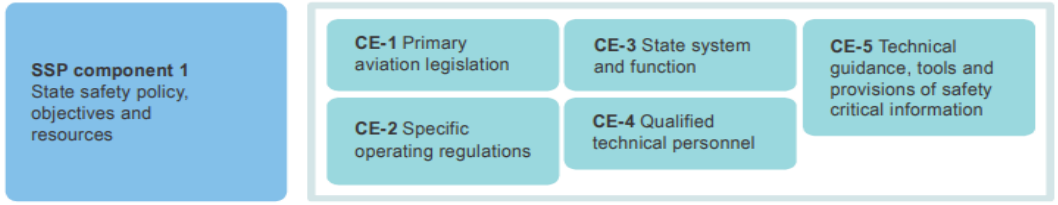


3.2.3.4 ~~**Recommendation.** —~~ The **SSP functions,** safety policy and safety objectives ~~should~~ **shall** be ~~published~~ **documented** and periodically reviewed to ensure that they remain relevant and appropriate to the State.

Rationale: *The Recommended Practice is proposed to be upgraded to a Standard as it is considered essential to document and periodically review the safety policy and safety objectives to support SSP Component 1.*

SSP functions have been added as it is necessary to provide relevant personnel with a common understanding of SSP roles and responsibilities to support SSP implementation. The use of 'published' was ambiguous as it was not clear whether the publication should be internal or external.

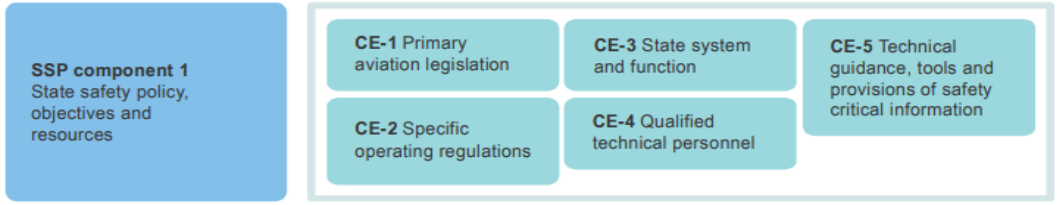
Safety Policy, Objectives and resources –> changes proposed with SL 23/18



New 3.2.3.5 States shall ensure that the role of Civil Aviation Authorities is appropriately reflected in Emergency Response Planning and Crisis Management at the State level, to effectively address the impacts on aviation.

Rationale: *The proposed Standard seeks to ensure CAAs specifically have the opportunity to be actively involved in the management or crisis events at the State level, and to prompt States to ensure that aviation and the role it plays are appropriately addressed in broader emergency response plans at the State level.*
This is considered something a State shall address in defining the SSP functions and related roles.

Safety Policy, Objectives and resources –> changes proposed following ANC review

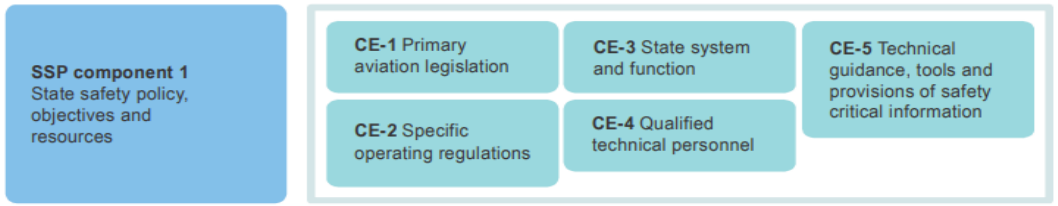


New 3.2.3.5 States shall ensure that the role of Civil Aviation Authorities is appropriately reflected in Emergency Response Planning and Crisis Management at the State level, ~~to effectively address the impacts on aviation.~~

Rationale: ???

To address the variability in how States may reflect the role of aviation in their emergency response planning and crisis management at the State level, the Secretariat is working to collect examples of how some States have achieved this for sharing on the SMI website.

SSP Policy, Objectives and Resources



- Where have you included your safety policy/safety policies?
- In which document have you included your safety objectives?
- Where do you describe how resources are allocated i.a.w. the safety policy & objectives?

Safety objectives -> basis for State SPIs and targets

Safety objectives are brief, high-level statements of safety achievements or desired outcomes to be accomplished. Safety objectives provide direction to the State safety management activities and should therefore be consistent with the safety policy that sets out the State's high-level safety commitments.

Examples of safety objectives		
process-oriented	State or service provider	Increase safety reporting levels.
outcome-oriented	service provider	Reduce rate of adverse apron safety events. (high-level) or Reduce the annual number of adverse apron safety events from the previous year.
outcome-oriented	State	Reduce the annual number of safety events in sector X.

S
M
A
R
T

SMART stands for

S - Specific.

- Objectives must be clear and state what needs to be achieved.

M - Measurable.

- Objectives must be measurable so that a business can determine whether they have met the objective.

A - Agreed (sometimes replaced by ‘ambitious’).

- Objectives must be agreed upon by all stakeholders.

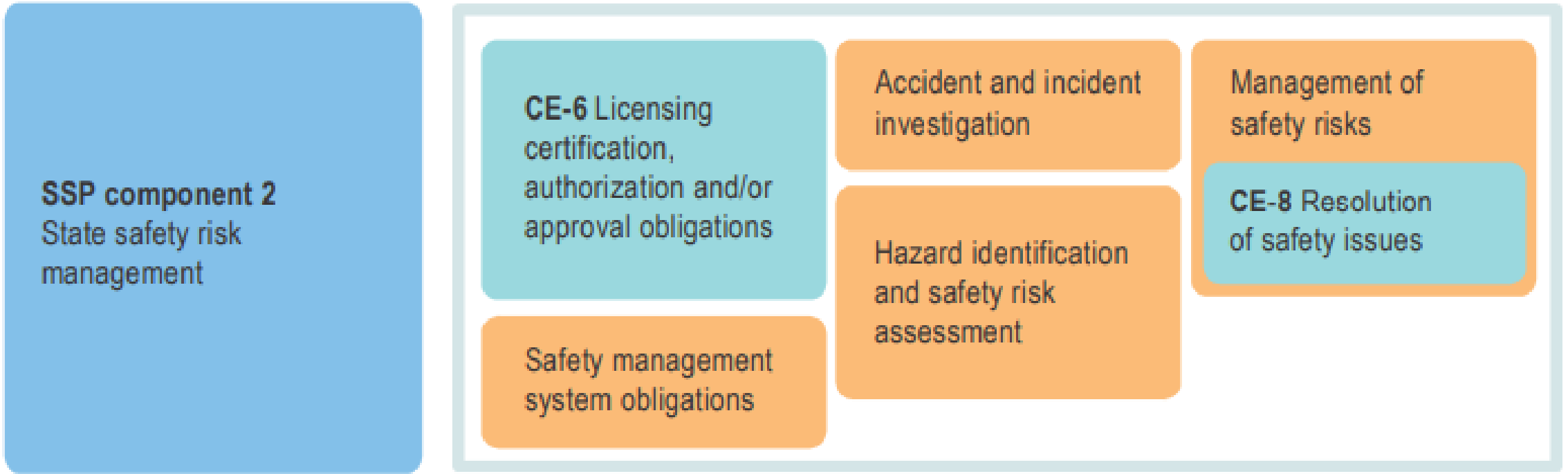
R - Realistic.

- Objectives must be realistic and achievable.

T - Time-bound.

- Objectives must have a deadline or time frame for completion.

3.3 State Safety Risk Management



3.3.1 Licensing, certification, authorization and approval obligations **(SSP Component 2)**

States shall meet the licensing, certification, authorization and approval obligations in accordance with section 6 of Appendix 1 (->> 8 CEs).

3.3.1 Licensing, certification, authorization and approval obligations **(SSP Component 2)**

- A progressive approach is recommended for initial SMS acceptance.
- Check that the enablers are in place (components and elements are 'present').
- Results (SMS outputs) may only materialise when all components and elements are fully implemented.

3.3.2 Safety management system obligations –> changes proposed with SL 23/18

3.3.2.1 States shall require that the following service providers under their authority implement an SMS

….

New: c) operators holding a remotely piloted aircraft system (RPAS) operator certificate and authorized to conduct international operations in accordance with Annex 6, Part IV;

New Note.— When maintenance activities are not conducted by an approved maintenance organization in accordance with Annex 6, Part IV, they are included in the scope of the operator's SMS.

Rationale: *The ICAO SMP endorsed extending SMS applicability to international instrument flight rules (IFR) RPAS operations in controlled airspace in accordance with Annex 6, Part IV, which constitute the most complex operations. These operations correspond to the third category "certified/regulated increased risk*

3.3.2 Safety management system obligations –> changes proposed with SL 23/18

3.3.2.1 States shall require that the following service providers under their authority implement an SMS:

….

Amended: h) operators of certified aerodromes or **certified heliports** in accordance with Annex 14, Volume I **and Volume II, respectively.**

Rationale: *It is essential for heliport operators to demonstrate effective organization and management of the heliport by having a safety management system at the time of certification.*

3.3.2 Safety management system obligations –> changes proposed with SL 23/18

Deleted ~~3.3.2.2 Recommendation.— States should ensure that safety performance indicators and targets established by service providers and operators are acceptable to the State.~~

Deleted ~~Note.— Guidance on the identification of appropriate safety performance indicators and targets is contained in the Safety Management Manual (SMM) (Doc 9859).~~

Rationale: *Avoid duplication with the proposed new Standard 3.4.1.3 and new Recommendation 3.4.2.2.*

Accident and incident investigation is…….

No changes proposed with SL 23/18

3.3.3 States shall establish a **process to investigate accidents and incidents in accordance with Annex 13,** in support of the management of safety in the State.

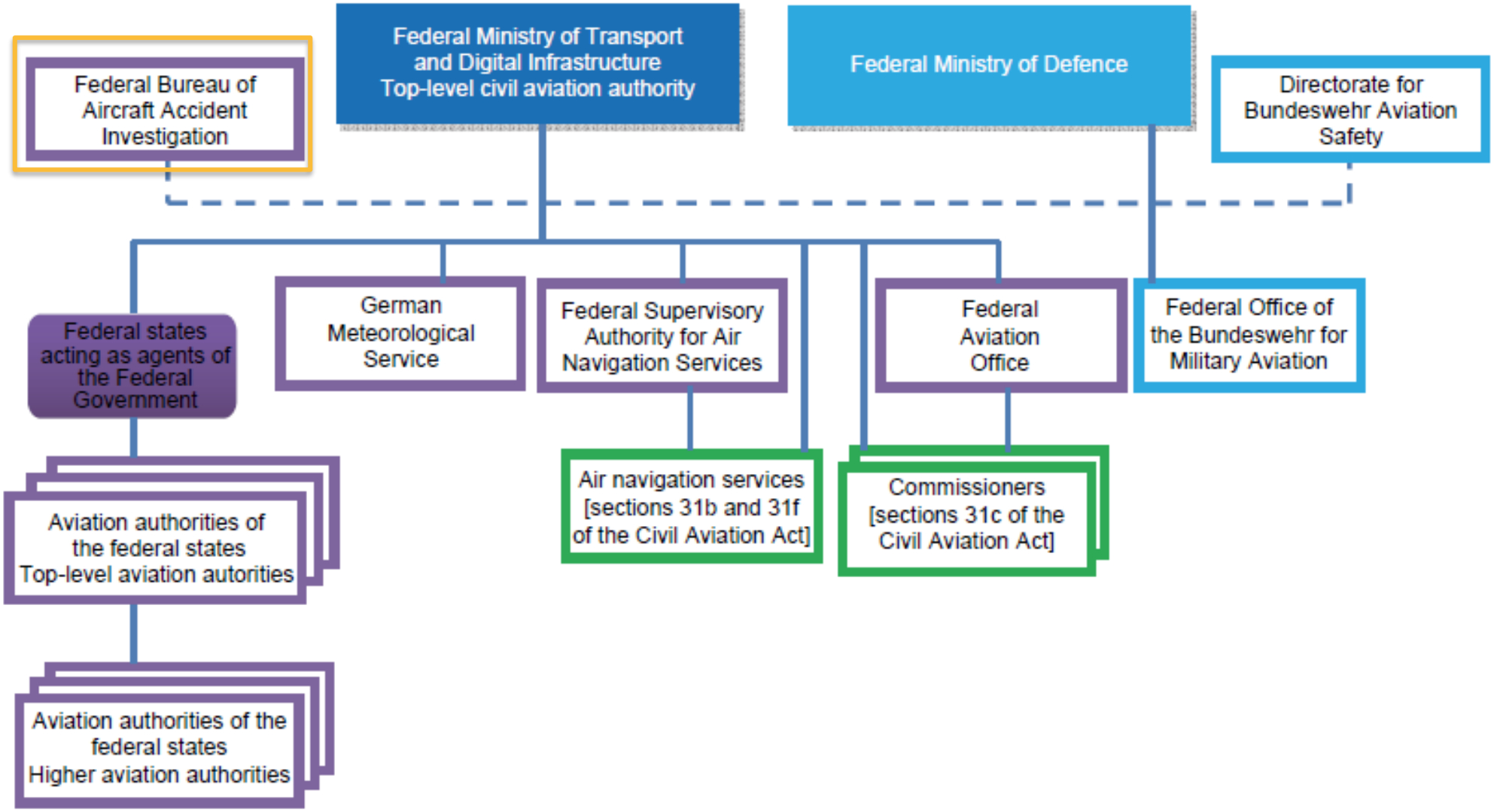
Accident and Incident investigation is an integral part of the SSP -> reactive SRM.

Annex 13 defines SARPs for the conduct of Accident and Incident investigations.

In the EU:

Regulation (EU) 996/2010 on Accident Investigations

…. an integral part of the SSP



Hazard Identification and Safety Risk Management

In Europe, for hazards related to occurrences reported this is addressed in Reg. (EU) 376/2014 & related IRs, in particular Reg. (EU) 2020/2034 on the common European risk classification scheme (ERCS)

3.3.4.1 States shall establish and maintain a process to **identify hazards** from collected safety data.

Note 1. Further information regarding safety data collection, analysis and the sharing and exchange of safety information can be found in **Chapter 5**.

Note 2. Additional information to identify hazards and safety issues on which to base preventive actions may be contained in the **Final Reports of accidents and incidents**.

Hazard Identification and Safety Risk Management

3.3.4.2 States **shall** develop and maintain a process that ensures the **assessment of safety risks** associated with identified hazards.

Hazard Identification and Safety Risk Management

3.3.5.1 States **shall** establish mechanisms for the resolution of safety issues in accordance with section 8 in Appendix 1. → **CE 8**

3.3.5.2 **Recommendation**. — States **should** develop and maintain a process to manage safety risks.

Note 1. — Actions taken to manage safety risks may include: acceptance, mitigation, avoidance or transfer.

Note 2. — Safety risks and safety issues often have underlying factors which need to be carefully assessed..

Hazard Identification and Safety Risk Management

Changes proposed for the next A19 amendment will be discussed

as part of

‘How to create a ‘State Risk Picture’ (day 4).

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Example of a Safety Risk Management process - > EASA

Annual Safety Review & SPIs being developed by the EU Network of Analysts

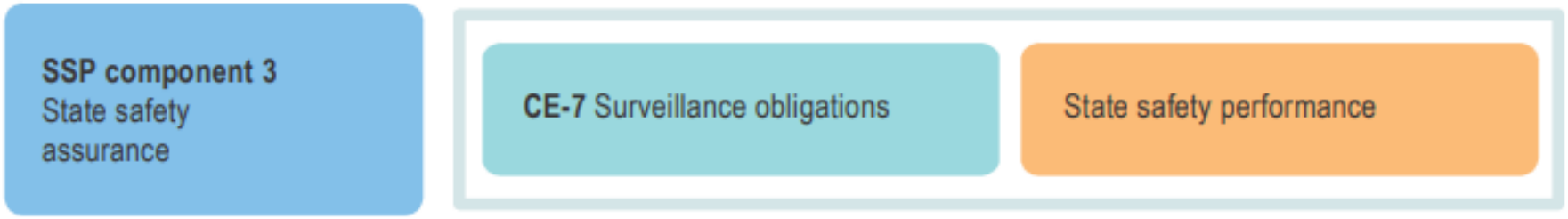
Data Portfolios & Safety Recommendations

Safety Risk Portfolio > EPAS Vol. III

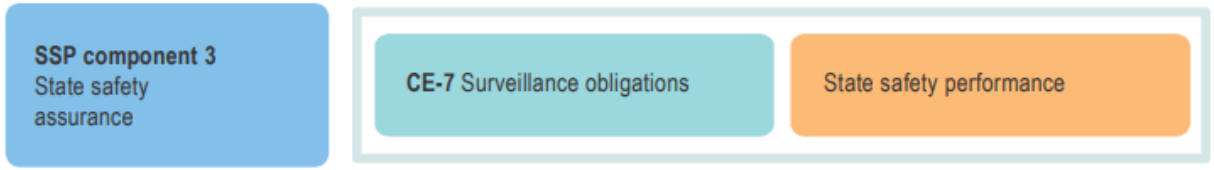
Actions
-> EPAS Vol. II
-> At national level: NASP (**SPAS)**

3.5 State Safety Assurance **(SSP Component 3)**

→ State safety assurance activities aim to ensure that State functions are achieving their intended safety objectives and goals.



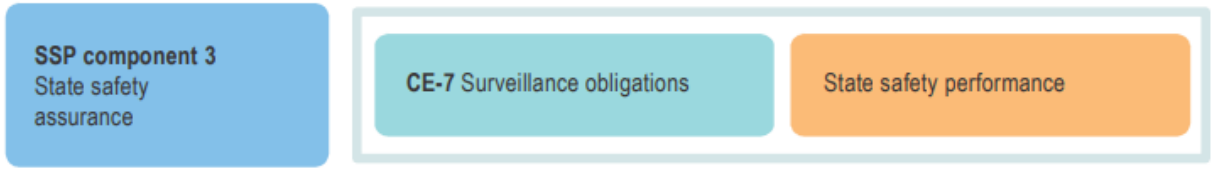
Surveillance obligations (Oversight in EASA terminology)



3.4.1.1 States **shall** meet the surveillance obligations in accordance with section 7 of Appendix 1

Note.— The surveillance of the service provider takes into consideration the safety performance as well as the size and complexity of its aviation products or services.

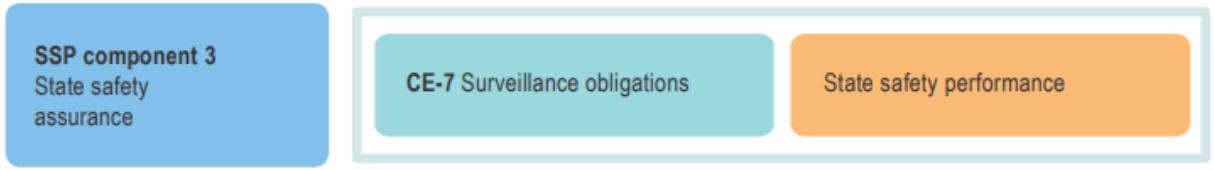
Surveillance obligations



3.4.1.2 **Recommendation.—** States **should** establish procedures to prioritize inspections, audits and surveys towards those areas of greater safety concern or need.

Note - Organizational risk profiles, outcomes of hazard identification and risk assessment, and surveillance outcomes may provide information for the prioritization of inspections, audits and surveys.

Surveillance obligations



3.4.1.3 ***Recommendation.—*** *States should periodically review the safety performance of an individual service provider*.

Enforcement policy -> changes proposed with SL 23/018

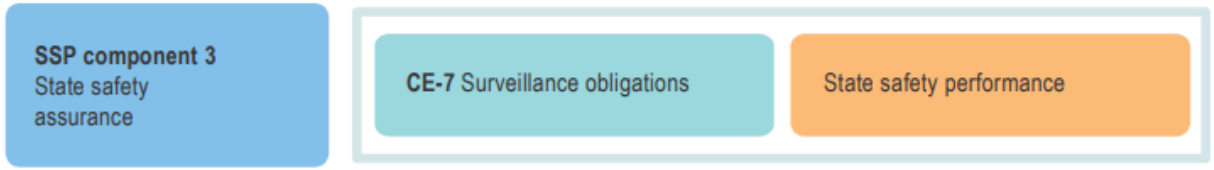
A19 amdt. 2

Moved from 1st to 3rd SSP component and Recommendation upgraded to a Standard

Amended ~~3.2.1.2~~ **3.4.1.4** ~~Recommendation.— —~~States ~~should~~ **shall** establish ~~an enforcement~~ **a surveillance** policy that specifies the conditions and circumstances under which service providers with an SMS are allowed to deal with, and resolve, events involving certain safety issues, internally, within the context of their SMS and to the satisfaction of the appropriate State authority.

Rationale: The service provider must develop the capacity to manage, internally, and, where required, in cooperation with other service providers, the resolution of safety issues, operational safety deficiencies, incl. noncompliance with/non-existence of established standard operating procedures. This capacity is an important feature of an SMS maturity process. These safety issues must be managed and resolved to the satisfaction of the State authority. Conditions and limitations must be established and explained in the surveillance policy.

Surveillance obligations



Changes proposed for the next A19 amendment will be discussed

as part of

‘Oversight and Safety Promotion in a Safety Management environment’ (day 5).

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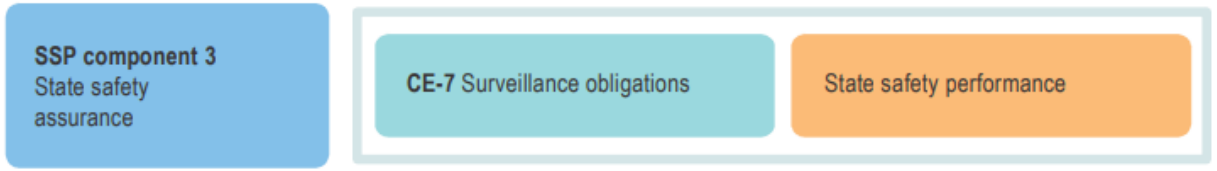
State safety performance

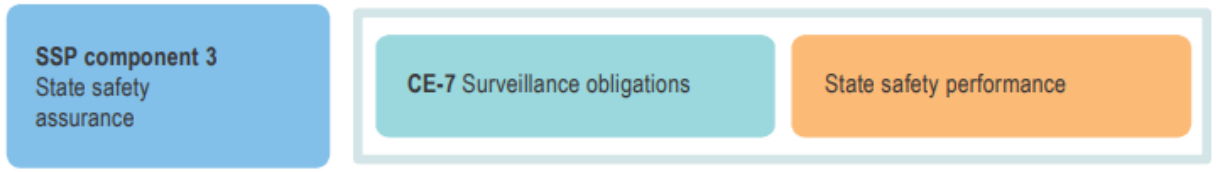


3.4.2.1 States shall establish the **acceptable level of safety performance** to be achieved through their SSP.

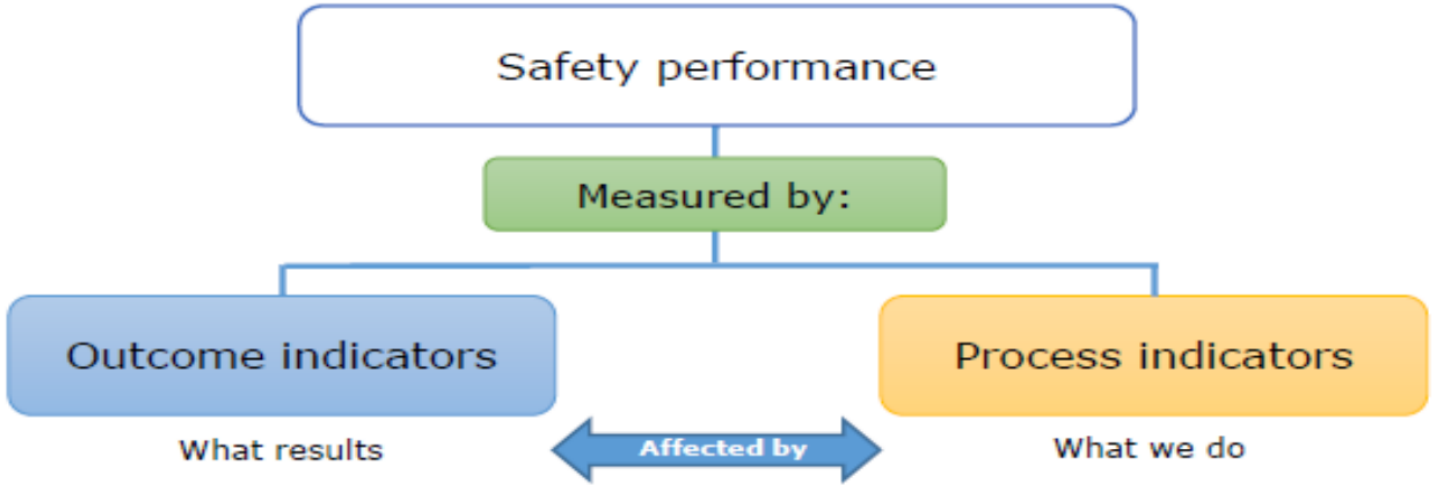
Note 1. An acceptable level of safety performance for the State can be achieved through the implementation and maintenance of the SSP as well as safety performance indicators and targets showing that safety is effectively managed and built on the foundation of implementation of existing safety-related SARPs.

Note 2. Guidance on establishing safety performance indicators and targets, as well as an acceptable level of safety performance, is contained in the Safety Management Manual (SMM - Doc 9859).

Current edition: Safety Performance Indicators and Targets



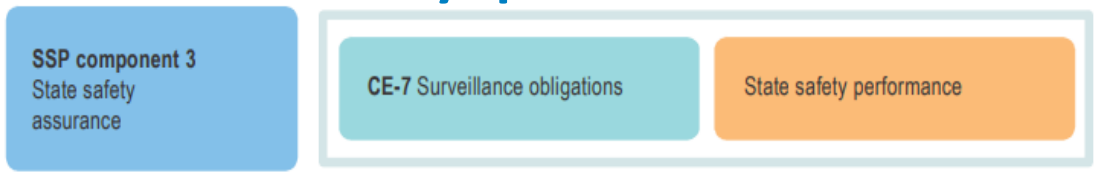
- → The **SPIs and SPTs** are reflecting the State safety objectives.
- → These objectives should address the State's risk picture.
- → **SPIs:** Two different types of indicators:



SMICG Guidance on Safety Performance

- Guidance for Comprehensive Safety Performance Management in an SSP (PDF)
- Guidance for Comprehensive Safety Performance Management in an SSP (editable version)

State safety performance – changes proposed with SL 23/18



Amended: State safety performance **measurement and monitoring**

A19 amdt. 2

Amended 3.4.2.1 States shall establish ~~the acceptable level of~~ safety performance **indicators, supported by qualitative means as needed, to measure and monitor the safety performance** ~~to be achieved through their SSP~~ **of the State's civil aviation system and the progress towards achieving its safety objectives.**

Note 1 **Deleted**

Amended Note 2 now **Note 1**. Guidance on establishing safety performance indicators and qualitative means ~~targets, as well as an acceptable level of safety performance~~, **to measure and monitor the State's safety performance** is contained in the Safety Management Manual (Doc 9859).

New **Note 2:** Additional provisions related to safety intelligence that support the establishment of safety performance indicators for State safety performance measurement and monitoring can be found in 5.3.1.

State safety performance – changes proposed with SL 23/18

Rationale:

This proposal has been developed per AN-Conf/13 Recommendation 6.2.1/1 c) requesting ICAO to review the acceptable level of safety performance (ALoSP) concept taking into consideration the experience of States.

The lack of consistency in interpreting and implementing the concept of ALoSP among States is partly due to the difficulty arising from translating the word “acceptable” into practical implementation.

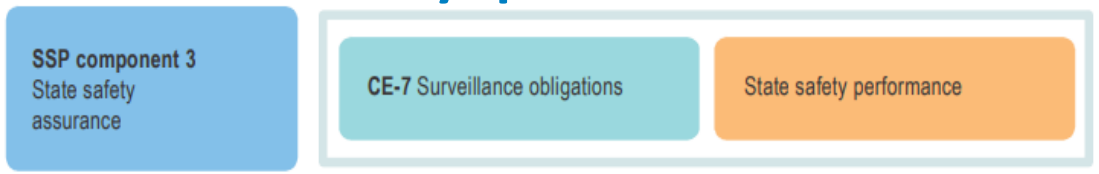
…

The mention of an SSP is removed, as State safety performance is not only achieved through an SSP but also through SMSs implemented by service providers of the civil aviation system.

As the use of SPTs may be counter-productive or drive undesirable behaviour, the reference to SPTs has been removed from the Standard.

A new Note 2 is added under 3.4.2.1 to build a link to 5.3.1 a).

State safety performance – following ANC review



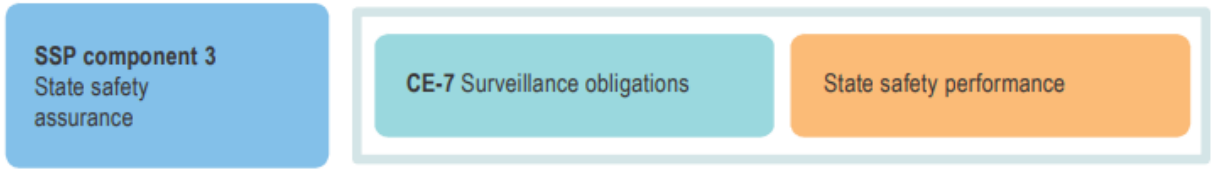
Amended: State safety performance **measurement and monitoring**

A19 amdt. 2

Amended 3.4.2.1 States shall establish ~~the acceptable level of~~ safety performance **indicators, supported by qualitative means as needed, and safety performance targets where appropriate, to measure and monitor the safety performance** ~~to be achieved through their SSP~~ **of the State's civil aviation system and the progress towards achieving its safety objectives.**

Amended Note 2 now Note 1. Guidance on establishing safety performance indicators ~~and~~ qualitative means ~~targets, as well as an acceptable level of safety performance~~, and the appropriate use of safety performance targets **to measure and monitor the State's safety performance** is contained in the Safety Management Manual (Doc 9859).

State safety performance

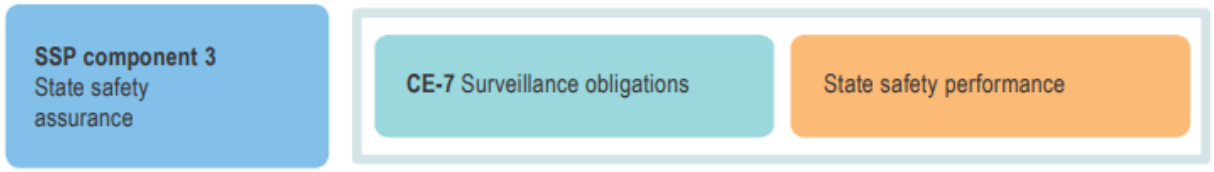


3.4.2.2 **Recommendation**.— States should develop and maintain a process to evaluate the effectiveness of actions taken to manage safety risks and resolve safety issues.

Note.— Safety assessment results may be used to support the prioritization of actions to manage safety risks

3.4.2.3 **Recommendation.—** States should evaluate the effectiveness of their individual SSPs to maintain or continuously improve their overall level of safety performance.

State safety performance – changes proposed with SL 23/18



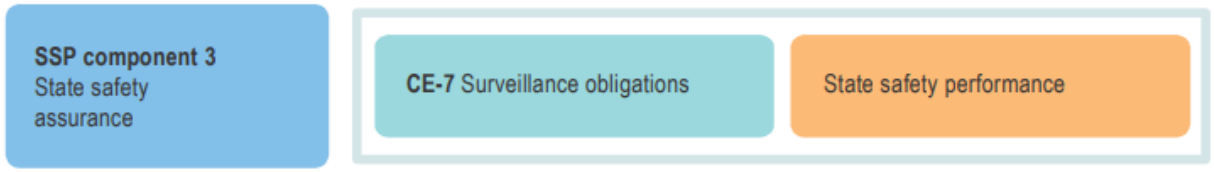
A19 amdt. 2

3.4.2.2 Original text moved to 3.4.4 & amended: Recommendation.— States should ~~develop and maintain a process to evaluate the effectiveness of actions taken to manage safety risks and resolve safety issues~~ **ensure that the means of safety performance measurement established by service providers addressed in 3.3.2.1 consider, and support where appropriate, the safety performance measurement and monitoring at the State level.**

Amended Note.— Safe~~ty assessment results may be used to support the prioritization of actions to manage safety risks~~ **Collaboration between the State and service providers, and RSOOs where applicable, facilitates the development of effective safety performance measurement and monitoring across the State's civil aviation system.**

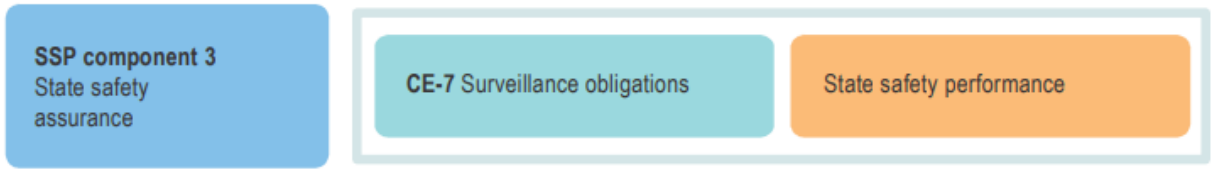
Original text moved to 3.4.4 – deleted from 3.4.2

State safety performance – changes following ANC review



3.4.2.2 Original text moved to 3.4.4 & amended: Recommendation.— States should ~~develop and maintain a process to evaluate the effectiveness of actions taken to manage safety risks and resolve safety issues~~ **ensure that the means of safety performance measurement established by service providers addressed in 3.3.2.1 consider, ~~and support where appropriate~~, the safety performance measurement and monitoring at the State level, where appropriate.**

State safety performance – changes proposed with SL 23/18



A19 amdt. 2

3.4.2.3 Original text moved to 3.4.4 & amended: Recommendation.— States should **periodically assess** the effectiveness of their SSPs **processes and activities** to maintain or continuously improve their **SSP.**

Original text moved to 3.4.4 – deleted from 3.4.2

State safety performance – changes proposed with SL 23/18

Rationale:

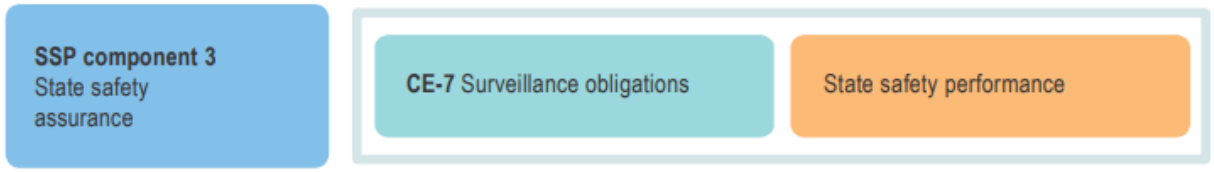
As a Recommendation, the proposed new 3.4.2.2 does not force the relevant service providers to take only those means that are in line with those established at the State level.

The intention is to build a link between the means of State safety performance measurement and monitoring and individual service providers' safety performance measurement and monitoring and RSOOs where applicable, facilitating the implementation of the amended 3.4.2.1.

The origin of this new Recommendation is 3.3.2.2, with text reworded to align with the other safety performance management-related initial proposals.

The original 3.4.2.2 and 3.4.2.3 are proposed to be moved under the new sub-section 3.4.4 "Continuous improvement of the SSP" with relevant changes.

State safety performance – changes following ANC review



A19 amdt. 2

3.4.2.3 Original text moved to 3.4.4 & amended:

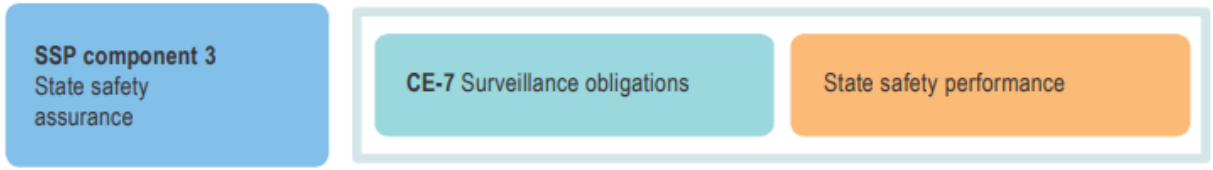
3.4.4 ~~Continuous~~ Continual improvement of the SSP

Recommendation.— States should **periodically assess** the effectiveness of their SSPs **processes and activities** to ~~maintain or~~ support the ~~continuously improve their **SSP**~~ **continual improvement of their SSP.**

Clean text:

States should periodically assess the effectiveness of their SSP processes and activities to support the continual improvement of their SSP.

Current edition - 3.4 State Safety Assurance



3.4.2.3 **Recommendation.—** States should evaluate the effectiveness of their individual SSPs to maintain or continuously improve their overall level of safety performance.

How to evaluate SSP effectiveness?

- SMICG SSP evaluation tool (last updated in June 2023)
  - based on a series of questions or expectations that can be used by a State to assess the effectiveness of its SSP.
  - requires interaction with all SSP stakeholders including face-to-face discussions and interviews with a cross-section of people as part of the assessment.
  - Link: https://skybrary.aero/articles/ssp-assessment-tool

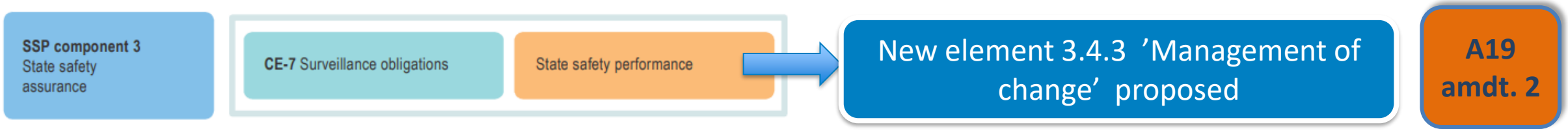
- How to perform the assessment:
  - State self-assessment
  - States assessing each other (sort of peer review)

How to evaluate SSP effectiveness using SSPIA PQs?

→ ICAO SSPIA PQs and maturity markers in level 3

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.

Management of change – changes proposed with SL 23/18

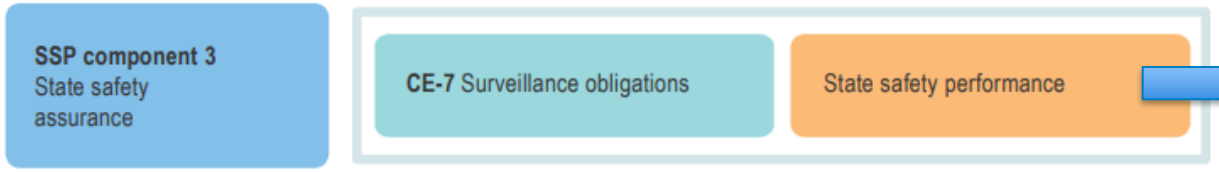


New 3.4.3.1 **Recommendation**.— States should develop and maintain a process to proactively manage changes at the State level, to ensure that the safety risks incurred by the changes are properly controlled while the desired outcomes are achieved.

New Note. Guidance on the management of change is contained in the SMM (Doc 9859).

Rationale: *The aviation industry is faced with continuous and often rapid changes including emerging technologies and innovative business practices that will have a significant impact on the way that States, CAAs, RSOOs and Industry manage risks. While the SMM has guidance on the management of change, upgrading this to the level of a Recommended Practice reflects best practice and places importance on the* ***need to have a documented process.***

Management of change – changes proposed with SL 23/18



New element 3.4.4 'Continuous improvement of the SSP' proposed

A19 amdt. 2

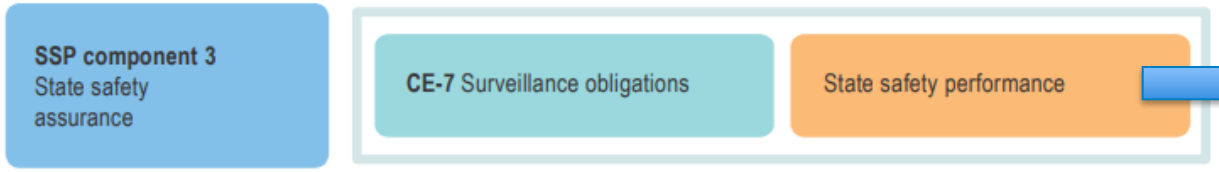
New 3.4.4.1. (ex-Rec. 3.4.2.2) States **shall** develop and maintain a process to evaluate the effectiveness of actions taken to manage safety risks and resolve safety issues.

New Note.— Safety risk assessment results may be used to support the prioritization of actions to manage safety risks.).

Rationale:

The proposed sub-chapter aims to consolidate the provisions related to continuous improvement of the SSP which are currently scattered in various sections of the Annex. This is also consistent with the SMS framework found in Appendix 2 which has a specific element related to continuous improvement of the SMS under Component 3 Safety Assurance.

Management of change – changes following ANC review



New element 3.4.4 'Continuous improvement of the SSP' proposed

A19 amdt. 2

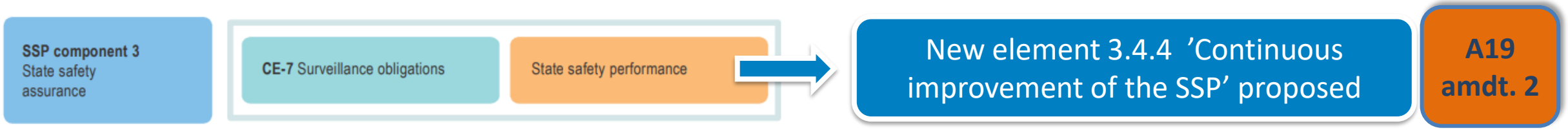
New 3.4.4.1. (ex-Rec. 3.4.2.2) States **shall** develop and maintain a process to evaluate the effectiveness of actions taken to manage safety risks and resolve safety issues.

~~**New** Note.— Safety risk assessment results may be used to support the prioritization of actions to manage safety risks.).~~

Rationale (cf. AN-WP/9709):

The text from this note will be included as Note 1 to 3,3,5,2 because as this pertains more to the management of safety risks than it does to the continual improvement of the SSP.

Management of change – changes proposed with SL 23/18

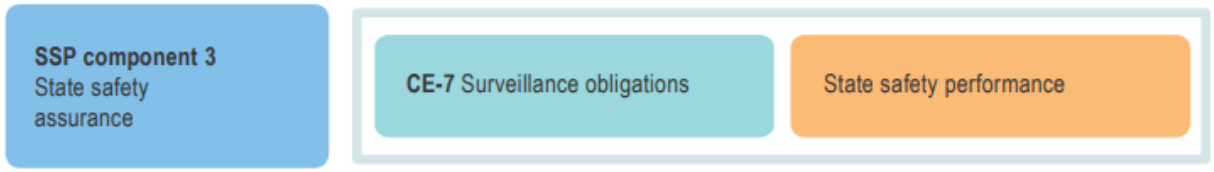


New 3.4.4.2. (ex-Rec. 3.4.2.3) **Recommendation** - States should **periodically assess** ~~evaluate~~ the effectiveness of their ~~individual~~ SSPs **processes and activities** to maintain or continuously improve their ~~overall level of safety performance~~ **SSP.**

Rationale:

Recommendation 3.4.2.3 is modified for clarification to indicate that the effectiveness should be assessed versus evaluation for consistency, with the notion of this being done periodically and the language is clarified to mention the effectiveness of the SSP processes and activities and its impact on the overall effectiveness of the SSP

State safety performance – changes following ANC review



A19 amdt. 2

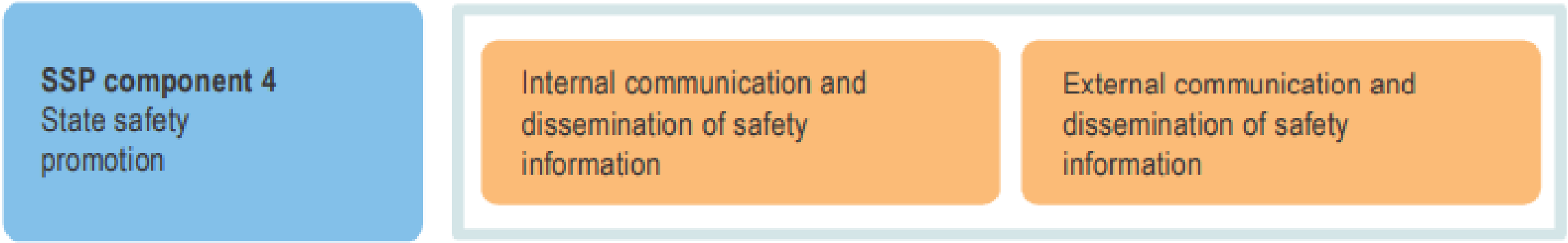
3.4.2.3 Original text moved to 3.4.4 & amended:

3.4.4 ~~Continuous~~ Continual improvement of the SSP

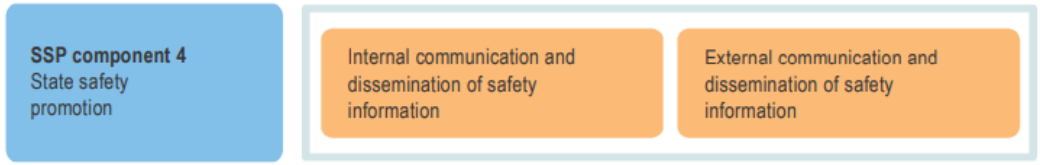
3.4.4.2 Recommendation.— States should **periodically assess** the effectiveness of their SSPs **processes and activities** to ~~maintain or~~ support the ~~continuously improve their SSP~~ **continual improvement of their SSP.**

Clean text:
States should periodically assess the effectiveness of their SSP processes and activities to support the continual improvement of their SSP.

3.5 State safety promotion



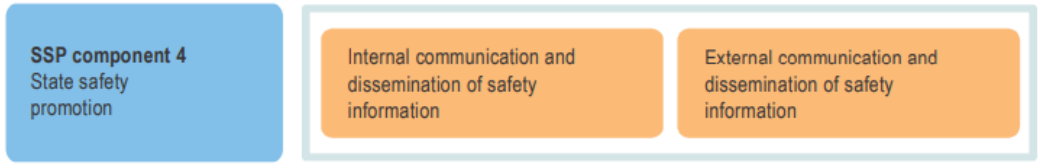
Safety Promotion



3.5.1 Internal communication and dissemination of safety information

Recommendation.—States should promote safety awareness and the sharing and exchange of safety information to support, within the State aviation organizations, the development of a positive safety culture that fosters an effective SSP.

Safety Promotion



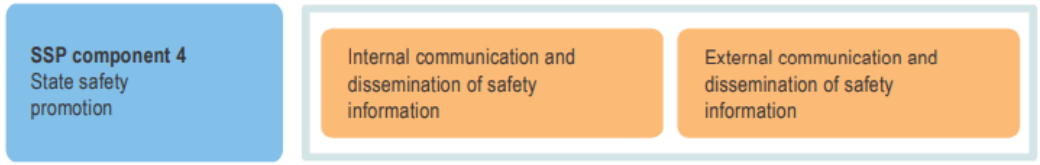
3.5.2 External communication and dissemination of safety information

Recommendation.— States should promote safety awareness and the sharing and exchange of safety information with the aviation community to foster the maintenance and improvement of safety and to support the development of a positive safety culture

Note 1. Refer to Chapter 5, 5.4, for further details regarding safety information sharing and exchange **-> in the EU covered to a large extent in R(EU) 376/2014 and EASA BR.**

Note 2. Promoting safety awareness could include identifying accessible safety training for the aviation community.

Safety Promotion



Changes proposed for the next A19 amendment will be discussed

as part of

‘Oversight and Safety Promotion in a Safety Management environment’ (day 5).

Recap of most important changes proposed with SL 23/18

- **Enforcement policy** –> surveillance policy – will become a standard
- Need to address **Emergency Response Planning** at State level
- **Safety policy and objectives** – will become a standard
- Development, maintenance and documentation of **processes to manage safety risks** – will become a standard.
- New Recommendation proposed: **3.3.4.3** States should periodically review hazards and associated safety risks **related to emerging issues** across the State civil aviation system

Recap of most important changes proposed with SL 23/18

- **SMS applicability extended to**
  - operators holding a remotely piloted aircraft system **(RPAS) operator certificate and authorized to conduct international operations** in accordance with Annex 6, Part IV;
  - operators of **certified heliports**
- **New Recommendation 3.3.5.3 proposed for discretionary SMS applicability:**
  - **States** should periodically review the need to extend the SMS applicability to additional aviation sectors beyond those covered under 3.3.2, in accordance with the SMS framework contained in Appendix 2, as a safety risk control

Recap of most important changes proposed with SL 23/18

- **No more reference to ALOsP** but
  - need for indicators, supported by qualitative means as needed, to measure and monitor
    - safety performance to be achieved and
    - progress towards achieving the State's safety objectives.
- **Two new SSP elements proposed:**
  - 3.4.3 'Management of change'
  - 3.4.4 'Continuous improvement of the SSP'
- **Component 4 'Safety promotion'**
    - Existing two elements proposed to be deleted
    - Proposed to be replaced by a single element 3.5.1 'Safety Awareness'

EASA
European Union Aviation Safety Agency

end of presentation

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