



DANGEROUS GOODS PANEL (DGP)

TWENTY-EIGHTH MEETING

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Agenda Item 6: Coordination with other panels
6.3: Safety Management Panel (SMP)

CONSOLIDATED AMENDMENT PROPOSALS FOR ANNEX 19 - SAFETY MANAGEMENT

(Presented by the Secretariat)

SUMMARY

This information paper presents latest preview of proposals for Amendment 2 to Annex 19 currently being finalized by the Safety Management Panel (SMP). The paper discusses a number of topics of relevance to the Dangerous Goods Panel (DGP).

REFERENCES

Annex 19 — *Safety Management*
Doc 9859, *Safety Management Manual*
SMP/WG/6 Action Summary Report

1. INTRODUCTION

1.1 From the beginning, the initial development of Annex 19 – *Safety Management*, was planned in two phases. The first phase, consolidated existing provisions found in several Annexes into one new Annex containing the overarching safety management provisions, was adopted in March 2013 and became applicable the same year in November. This was followed by the second phase which contained some upgraded provisions and addressed important issues (e.g. clarification of the relationship between safety oversight and the State safety programme) in Amendment 1 to Annex 19 which was adopted in March 2016, became effective July 2016 and applicable in November 2019. During the consultation process for Amendment 1 to Annex 19, feedback was received from the community stressing the importance of keeping the Safety Management provisions stable for some years to allow States to focus and make progress on the implementation. Since the delivery of the proposal for Amendment 1 to Annex 19, the SMP has been focusing its efforts in collecting, developing and validating examples for the Safety Management Implementation (SMI) website as well as identifying and developing proposals for Amendment 2 to Annex 19.

2. DISCUSSION

2.1 Amendment development strategy

2.1.1 The SMP Working Groups met twice in 2021 to progress the development of Amendment 2 to Annex 19 with proposed applicability of November 2026. The SMP Working Groups have been working to further develop and mature proposals and rationales based on feedback received; build consensus through teleconferences, meetings and task teams and continue working on improving the connection between Annex 19 Standards and Recommended Practices (SARPs) and ensure consistency across the entire amendment. A timeline with milestones for Annex 19 amendments is provided in Appendix A to this paper. Appendix B, consolidates the draft proposals in English from various sources, including high-level meetings, previous SMP meetings, the SMP Working Groups and task teams, the SMP members and the Secretariat. Proposals of relevance to the Dangerous Goods Panel are highlighted in yellow.

2.2 Enhancement of provisions related to State safety assurance

2.2.1 The proposed upgrade of Recommended Practice 3.4.1.2 to a Standard highlights the importance of State's establishing a data-driven, risk-based approach that supports the prioritization of surveillance activities to those areas that represent the highest risk. Consequently, the Note to 3.4.1.1 related to surveillance obligations is proposed for deletion with its elements reincorporated into the updated Note to standard 3.4.1.2, which outlines key aspects to be considered by the States when prioritizing surveillance activities. The proposed upgrade of Recommended Practice 3.4.1.3, is intended to address the role of the State in monitoring the SMS of individual service providers after the initial implementation in the context of State safety assurance, which should include not only the review of the safety performance but also the periodically assessment of the SMS. Initial Proposal 12 in Appendix B refers.

2.3 Safety Performance Management provisions

2.3.1 To address ANCONF/13 Recommendation 6.2.1/1c) regarding the concept of acceptable level of safety performance (ALoSP), the SMP collected and analysed feedback from SMP members which indicated a lack of consistency in interpreting and implementing ALoSP among States. Based on the findings, an amendment proposal has been developed to remove the concept of ALoSP by amending provisions relating to State safety performance measurement and monitoring throughout the Annex. Standard 3.1.1, the supporting Note and 3.1.2 are proposed to be consolidated to ensure alignment with the provisions under Chapter 3, 3.4.2 and the updated definitions of "safety performance". In addition, the proposed change reflects that some safety objectives may be qualitative in nature and not fully measurable through quantitative safety performance indicators. Under such circumstances, an overall view of the State's safety performance may require qualitative assessments in addition to SPIs. The proposals also aim to improve the link between State safety performance measurement and monitoring (see 3.4.2.1) and individual service providers safety performance measurement and monitoring. The reference to SPTs is also removed, as the use of SPTs is optional and could be counter-productive or drive undesirable behaviour just to achieve the SPT. Initial Proposal 13 and 45 in Appendix B refers.

2.4 Updates to Chapter 4 provisions

2.4.1 The implementation of an SMS is built on a foundation of compliance with safety regulations which serve as controls. To reflect this, Note 1 to Chapter 4 is proposed to be updated in order to highlight the connection between compliance with the respective safety regulations and the implementation of an SMS by service providers addressed in Chapter 4. Initial Proposal 18 in Appendix B refers.

2.5 **SMS discretionary applicability and voluntary implementation of SMS**

2.5.1 The nature and complexity of air cargo operations involves several organizations all of which are interacting to ensure a safe flight. This involves the provision of products and services by service providers with an SMS (e.g. operators), aviation organizations without an SMS (e.g. ground handling service providers), non-aviation organizations (e.g. freight forwarders, shippers, manufacturers) and individuals (e.g. passengers). Under a State Safety Programme (SSP), each State is responsible for identifying its top systemic cross-cutting safety risks which includes risks potentially introduced by organizations outside the scope of Annex 19. States should consider all the safety risk controls they have available to manage their safety risks, taking into consideration the resources required by the industry as well as the State and the potential benefits. As part of each State's evaluation process, a cost-benefit analysis should be carried out to support the justification of recommended safety risk control actions. By applying discretionary SMS for specific sectors of the aviation system, each State is able to tailor its approach to achieve the desired improvement in safety performance through consideration of various risk control options available: establishing compliance-based requirements, the implementation of alternative management systems (e.g. quality management systems etc.), promoting voluntary SMS implementation and, finally, the extension of SMS applicability. Proposal 11 in Appendix B refers.

2.5.2 States also have the option to promote the voluntary implementation of SMS for aviation organizations outside the scope of Annex 19, as noted in Chapter 1.2.2.1 in the 4th edition of the SMM. In instances where the State has not or is yet to mandate SMS for aviation organizations outside the scope of Annex 19, voluntary implementation provides a way forward for the State to proactively manage risks as part of its SSP. It also provides a way forward for the aviation organization to apply the SMS framework, prioritize actions to address safety risks and develop a positive safety culture that encourages personnel to identify and report hazards without the compliance costs commonly associated with civil aviation administration (CAA) oversight. Proposal 17 in Appendix B refers.

2.6 **Removal of “commensurate with size and complexity”**

2.6.1 The phrase “commensurate with size and complexity” has been used in ICAO provisions related to the determination of resource requirements. This concept was extended to the implementation of SMS to introduce flexibility and show that all service providers can implement SMS regardless of their size or complexity of their aviation products or services. However, the use of this phrase has led to the expectation that SMS can be scaled or, due to some interpretations of scalability, that framework elements can be implemented selectively. ICAO has continued to receive requests regardless of efforts made to explain “commensurate with size and complexity” through the Safety Management Manual (SMM) (Doc 9859), the SMI website, workshops and a Skytalk on the SMM conducted during the 40th ICAO Assembly.

2.6.2 The current standard in 4.1.1 sets out not only the obligation for service providers to implement an SMS, but also how this should be done (i.e., “commensurate with size and complexity”). The proposal separates what service providers shall do (establish and manage an SMS) from how the establishment and management should be done and what considerations should be taken into account while recognizing that aspects other than “size and complexity” can also influence the establishment and management of the SMS. Since the objective of using “commensurate with size and complexity” for flexibility was not accomplished, the phrase is removed from 4.1.1 b). Aspects that can influence the establishment and management are now reflected in a supporting Note. Initial Proposal 19 in Appendix B refers.

2.7 **Strengthening Safety Risk Management at service provider interfaces**

2.7.1 Service providers interact and share interfaces with many entities that have an impact on safety, including: other service providers with an SMS, aviation organizations without an SMS, non-aviation organizations and individuals. The proactive identification and management of interfaces by service providers presents opportunities to take action to reduce the impact of fragmentation and improve the management of safety risk. While Annex 19, Appendix 2 currently includes a Note to highlight the importance of interface management, the SMP supports further emphasizing the need for service providers to identify hazards associated with its aviation products or services, including those related to interfaces. Initial Proposal 43 in Appendix B refers.

2.8 **Raising awareness on an integrated approach to risk management**

2.9 Risk management in aviation is often conducted from an individual domain, which can result in a limited view of the collective risk under analysis. The individual assessment can also pose additional risks, as mitigations can produce unintended consequences. For example, the ban on the carriage of personal electronic devices in the passenger cabin imposed by some States to address a security threat, created a risk of fire in the cargo hold for which the fire suppression system could not contain. The proposed Note aims to create awareness of the impact risk mitigation measures implemented from one domain can have on another. Initial Proposal 44 in Appendix B refers.

3. **CONCLUSION**

3.1 Note the contents and draft proposals in this information paper are under review by the SMP. The plan is to have a draft package ready for endorsement by the SMP, at SMP/5, scheduled for 29th November to 10th December 2021.

3.2 The Dangerous Goods Panel is invited to note the contents in this information paper.

APPENDIX A

TIMELINE FOR ONGOING DEVELOPMENT OF ANNEX 19 PROVISIONS AND SUPPORTING GUIDANCE MATERIAL

Meeting Milestones	A39		A40		A41					A42													
	SMP/2	SMP/3	SMP/4	SMP/5	SMP/6	SMP/7	SMP/8	SMP/9	SMP/10	SMP/11	SMP/12	SMP/13	SMP/14	SMP/15	SMP/16								
	2016	2017	2018	2019	2020	2021-Q1	2021-Q2	2021-Q3	2021-Q4	2022-Q1	2022-Q2	2022-Q3	2022-Q4	2023-Q1	2023-Q2	2023-Q3	2023-Q4	2024-Q1	2024-Q2	2024-Q3	2025-Q3	2026-Q4	
Amendment 1 to Annex 19	Adoption and Effective			Applicable																			
4th Edition of SMM (Doc. 9859)			Publication																				
Annex 6, Part IV					Development and inter-panel coordination	Endorsement	ANC Preliminary Review	State letter and Consultation							ANC Final Review			Council Adoption	Effective Date		Applicable		
Amendment 2 to Annex 19					Development and inter-panel coordination	Endorsement	Secretariat internal coordination and finalization	ANC Preliminary Review	State letter and Consultation						ANC Final Review			Council Adoption	Effective Date		Applicable		
5th Edition of SMM (Doc. 9859)					Identify updates required	Development of draft proposals						Secretariat to compile and finalize draft	SMP endorses draft	ANB editorial review	Secretariat internal coordination	Post advanced unedited version	Formal editorial review and translation	Publication					
Specification for Safety Data Collection and Processing Systems (SDCPS) (Doc X000)					Review and development of draft proposals aligned with Amendment 2 to Annex 19						Secretariat internal coordination and finalization	ANB editorial review	SMP endorses draft	Post advanced unedited version	Formal editorial review and translation	Publication							

APPENDIX B

**PROPOSED AMENDMENT TO ANNEX 19
RELATING TO SAFETY MANAGEMENT**

NOTES ON THE PRESENTATION OF THE AMENDMENT

The text of the amendment is arranged to show deleted text with a line through it and new text highlighted with grey shading, as shown below:

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Text to be deleted

New text to be inserted is highlighted with grey shading.

New text to be inserted

~~Text to be deleted is shown with a line through it~~
followed by the replacement text which is highlighted
with grey shading.

New text to replace existing text

INITIAL PROPOSAL 1

TABLE OF CONTENTS

	<i>Page</i>
Abbreviations	(vii)
Publications	(viii)
FOREWORD	(ix)
CHAPTER 1. Definitions	1-1
CHAPTER 2. Applicability.....	2-1
CHAPTER 3. State safety programme (SSP) management responsibilities	3-1
3.1 State safety programme (SSP) General	3-1
3.2 State safety policy, objectives and resources (SSP Component 1)	3-1
3.3 State safety risk management (SSP Component 2).....	3-2
3.4 State safety assurance (SSP Component 3)	3-4
3.5 State safety promotion (SSP Component 4)	3-5
CHAPTER 4. Safety management system (SMS).....	4-1
4.1 General	4-1
4.2 International general aviation SMS acceptance	4-2
4.3 Alternative SMS regulatory approaches	4-3
CHAPTER 5. Development of Safety Intelligence data and safety information collection, analysis, protection, sharing and exchange	5-1
5.1 General	5-1
5.2 Safety data collection and processing systems	5-12
5.3 Safety data and safety information analysis	5-23
5.4 Safety data and safety information protection	5-24
5.5 Safety information sharing and exchange	5-35

APPENDIX 1. State safety oversight (SSO) system critical elements (CEs)..... APP 1-1

1. Primary aviation legislation (CE-1)..... APP 1-1
2. Specific operating regulations (CE-2) APP 1-1
3. State system and functions (CE-3)..... APP 1-2
4. Qualified technical personnel (CE-4) APP 1-2
5. Technical guidance, tools and provision of safety-critical information (CE-5)..... APP 1-2
6. Licensing, certification, authorization and approval obligations (CE-6)..... APP 1-2
7. Surveillance obligations (CE-7)..... APP 1-3
8. Resolution of safety issues (CE-8)..... APP 1-3

APPENDIX 2. Framework for a safety management system (SMS) APP 2-1

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

APPENDIX 3. Principles for the protection of safety data, safety information and related sources APP 3-1

1. General principles APP 3-1
2. Principles of protection APP 3-2
3. Principles of exception APP 3-2
4. Public disclosure APP 3-3
5. Responsibility of the custodian of safety data and safety information APP 3-3
6. Protection of recorded data APP 3-3

ATTACHMENT A. Guidance for the governance of safety data and safety information 4

1. Introduction ATT-4
2. Safety data management ATT-4
3. Safety data governance roles and responsibilities ATT-4
4. Approaches to implementing safety data governance..... ATT-4
5. Quick wins for safety data and safety information governance ATT-4



ABBREVIATIONS

(used in this Annex)

ADREP	Accident/incident data reporting
ATS	Air traffic services
CVR	Cockpit voice recorder
RAIO	Regional Accident and Incident Investigation Organization
RSOO	Regional Safety Oversight Organization
PANS	Procedures for Air Navigation
SARPS	Standards and Recommended Practices
SDCPS	Safety data collection and processing systems
SMM	Safety management manual
SMP	Safety management panel
SMS	Safety management system
SSO	State safety oversight
SSP	State safety programme

PUBLICATIONS*(referred to in this Annex)*

Convention on International Civil Aviation (Doc 7300)
Annexes to the Convention on International Civil Aviation

Annex 1 — *Personnel Licensing*

Annex 6 — *Operation of Aircraft*

Part I — *International Commercial Air Transport — Aeroplanes*

Part II — *International General Aviation — Aeroplanes*

Part III — *International Operations — Helicopters*

Annex 8 — *Airworthiness of Aircraft*

Annex 11 — *Air Traffic Services*

Annex 13 — *Aircraft Accident and Incident Investigation*

Annex 14 — *Aerodromes*

Volume I — *Aerodrome Design and Operations*

Manuals¹

Global Aviation Safety Plan (Doc 10004)

Manual of Civil Aviation Medicine (Doc 8984)

Manual of Procedures for Operations Inspection, Certification and Continued Surveillance (Doc 8335)

Manual on the Development of Regional and National Aviation Safety Plans (Doc 10131)

Manual on Human Performance (HP) for Regulators (Doc 10151)

Manual on the Development of Regional and National Aviation Safety Plans (Doc 101)

Manual on Regional Accident and Incident Investigation Organization (Doc 9946)

Manual on Remotely Piloted Aircraft Systems (RPAS) (Doc 10019)

Manual on the Implementation of Article 83 bis of the Convention on International Civil Aviation (Doc 10059)

Policy and Guidance Material on the Economic Regulation of International Air Transport (Doc 9587)

Safety Management Manual (SMM) (Doc 9859)

Safety Oversight Manual (Doc 9734)

Part A — *The Establishment and Management of a State's Safety Oversight System*

Safety Oversight Manual (Doc 9734)

Part B — *The Establishment and Management of a Regional Safety Oversight Organization*

Manual on Regional Accident and Incident Investigation Organization (Doc 9946)

Specifications for Safety Data Collection and Processing System (SDCPS) (Doc 101xx)

¹. The manuals referenced will be updated as necessary to harmonize the terminology with that used in this Annex.

FOREWORD

Historical background

The provisions in this Annex have been developed in response to recommendations provided by the Directors General of Civil Aviation Conference on a Global Strategy for Aviation Safety (Montréal, 20 to 22 March 2006) (DGCA/06) and the High-level Safety Conference (Montréal, 29 March to 1 April 2010) (HLSC/2010) regarding the need for an Annex dedicated to safety management. The Air Navigation Commission (186-8), having determined these issues to be of sufficient scope and importance, agreed to establish the Safety Management Panel (SMP) to provide recommendations for the development of this Annex.

The Standards and Recommended Practices (SARPs) in this Annex are intended to assist States in managing aviation safety risks. Given the increasing complexity of the global air transportation system and its interrelated aviation activities required to assure the safe operation of aircraft, this Annex supports the continued evolution of a proactive strategy to improve safety performance. The foundation of this proactive safety strategy is based on the implementation of a State safety programme (SSP) that systematically addresses safety risks.

Effective SSP implementation is a gradual process, requiring time to mature fully. Factors that affect the time required to establish an SSP include the complexity of the air transportation system as well as the maturity of the aviation safety oversight capabilities of the State.

This Annex consolidates material from existing Annexes regarding SSP and safety management systems (SMSs), as well as related elements including the collection and use of safety data and State safety oversight activities. The benefit of drawing together this material into a single Annex is to focus States' attention on the importance of integrating their safety management activities. It also facilitates the evolution of safety management provisions.

Certain State safety management functions required in Annex 19 may be delegated to a regional safety oversight organization or a regional accident and incident investigation organization on behalf of the State.

This Annex that contains SARPs related to responsibilities and processes underlying the safety management by States was first adopted by the Council on 25 February 2013 pursuant to the provisions of Article 37 of the Convention on International Civil Aviation (Chicago, 1944) and designated as Annex 19 to the Convention. The SARPs were based on provisions for safety management initially adopted by the Council in Annexes 1; 6, Parts I, II and III; 8; 11; 13 and 14, Volume I, and on recommendations of the first special meeting of the SMP (Montréal, 13 to 17 February 2012).

In its report to Council on the HLSC/2010 outcomes, the Air Navigation Commission had recommended that the development of the new Annex follow a two-phased process. The focus of the first phase was to establish the safety management Annex through the consolidation and reorganization of existing SARPs. Amendment 1 to Annex 19 includes substantive amendments to the safety management provisions as described below.

In recognition of the need to clarify the relationship between the eight critical elements (CEs) of a State safety oversight (SSO) system found in Appendix 1 and the detailed SSP framework elements previously found in Attachment A, Amendment 1 to Annex 19 consolidates, in Chapter 3, the provisions related to States' safety management responsibility. The CEs of an SSO system constitute the foundation of an SSP. Chapter 3 integrates the eight CEs of the SSO system with the SSP framework elements into a streamlined set of SARPs to facilitate implementation. The CEs remain visible in Appendix 1.

Furthermore, Amendment 1 provides new and amended SMS SARPs to facilitate implementation, including the addition of several explanatory notes. Amendment 1 also extends the applicability of an SMS to organizations responsible for the type design and manufacture of engines and propellers, which is facilitated by the recognition of these organizations in Annex 8.

Finally, Amendment 1 provides enhanced protections to safety data and safety information as well as their sources. One of the key elements of the amendment is that guidance material contained in the former Attachment B to Annex 19 has been upgraded to the status of SARPs, grouped within a new Appendix. The amendment enhances legal safeguards intended to assure the appropriate use and protection of safety information, thereby facilitating its continued availability to support proactive safety improvement strategies. Definitions for safety data and safety information have also been developed to provide clarity to the scope of the provisions, thereby facilitating consistent application.

As a result of the adoption of Amendment 1, the second edition of Annex 19 was published. This edition reflects the extensive nature of the amendment which completes the second phase of the development of the Annex. Amendment 1 was adopted by the Council on 2 March 2016, became effective on 11 July 2016 and applicable on 7 November 2019.

Text needed here to explain Amendment 2....

Table A shows the origin of subsequent amendments together with a list of the principal subjects involved and the dates on which the Annex and the amendments were adopted by the Council, when they became effective and when they became applicable.

Action by Contracting States

Notification of differences. The attention of Contracting States is drawn to the obligation imposed by Article 38 of the Convention by which Contracting States are required to notify the Organization of any differences between their national regulations and practices and the International Standards contained in this Annex and any amendments thereto. Contracting States are invited to extend such notification to any differences from the Recommended Practices contained in this Annex, and any amendments thereto when the notification of such differences is important for the safety of air navigation. Further, Contracting States are invited to keep the Organization currently informed of any differences which may subsequently occur or of the withdrawal of any differences previously notified. A specific request for notification of differences will be sent to Contracting States immediately after the adoption of each Amendment to this Annex.

Attention of States is also drawn to the provision of Annex 15 related to the publication of differences between their national regulations and practices and the related ICAO Standards and Recommended Practices through the Aeronautical Information Service, in addition to the obligation of States under Article 38 of the Convention.

Promulgation of information. The establishment and withdrawal of and changes to facilities, services and procedures affecting aircraft operations provided in accordance with the Standards and Recommended Practices specified in this Annex should be notified and take effect in accordance with the provisions of Annex 15.

Status of Annex components

An Annex is made up of the following component parts, not all of which, however, are necessarily found in every Annex; they have the status indicated.

1.— Material comprising the Annex proper

- a) *Standards and Recommended Practices* adopted by the Council under the provisions of the Convention. They are defined as follows:

Standard: Any specification for physical characteristics, configuration, matériel, performance, personnel or procedure, the uniform application of which is recognized as necessary for the safety or regularity of international air navigation and to which Contracting States will conform in accordance with the Convention; in the event of impossibility of compliance, notification to the Council is compulsory under Article 38.

Recommended Practice: Any specification for physical characteristics, configuration, matériel, performance, personnel or procedure, the uniform application of which is recognized as desirable in the interest of safety, regularity or efficiency of international air navigation, and to which Contracting States will endeavour to conform in accordance with the Convention.

- b) *Appendices* comprising material grouped separately for convenience but forming part of the Standards and Recommended Practices adopted by the Council.
- c) *Definitions* of terms used in the Standards and Recommended Practices which are not self-explanatory in that they do not have accepted dictionary meanings. A definition does not have an independent status but is an essential part of each Standard and Recommended Practice in which the term is used, since a change in the meaning of the term would affect the specification.
- d) *Tables* and *Figures* which add to or illustrate a Standard or Recommended Practice and which are referred to therein, form part of the associated Standard or Recommended Practice and have the same status.

It is to be noted that some Standards in this Annex incorporate, by reference, other specifications having the status of Recommended Practices. In such cases, the text of the Recommended Practice becomes part of the Standard.

2.— *Material approved by the Council for publication in association with the Standards and Recommended Practices*

- a) *Forewords* comprising historical and explanatory material based on the action of the Council and including an explanation of the obligations of States with regard to the application of the Standards and Recommended Practices ensuing from the Convention and the Resolution of Adoption;
- b) *Introductions* comprising explanatory material introduced at the beginning of parts, chapters or sections of the Annex to assist in the understanding of the application of the text;
- c) *Notes* included in the text, where appropriate, to give factual information or references bearing on the Standards or Recommended Practices in question but not constituting part of the Standards or Recommended Practices;
- d) *Attachments* comprising material supplementary to the Standards and Recommended Practices or included as a guide to their application.

Selection of language

This Annex has been adopted in six languages — English, Arabic, Chinese, French, Russian and Spanish. Each Contracting State is requested to select one of those texts for the purpose of national implementation and for other effects provided for in the Convention, either through direct use or through translation into its own national language, and to notify the Organization accordingly.

Editorial practices

The following practice has been adhered to in order to indicate at a glance the status of each statement: *Standards* have been printed in light face roman; *Recommended Practices* have been printed in light face italics, the status being

indicated by the prefix **Recommendation**; *Notes* have been printed in light face italics, the status being indicated by the prefix *Note*.

The following editorial practice has been followed in the writing of specifications: for Standards the operative verb “shall” is used, and for Recommended Practices the operative verb “should” is used.

Any reference to a portion of this document, which is identified by a number and/or title, includes all subdivisions of that portion.

Table A. Amendments to Annex 19

<i>Amendment</i>	<i>Source(s)</i>	<i>Subject(s)</i>	<i>Adopted Effective Applicable</i>
1st Edition	Secretariat; first special meeting of the Safety Management Panel (SMP/SM/1)		25 February 2013 15 July 2013 14 November 2013
1 (2nd Edition)	First meeting of the Safety Management Panel (SMP/1) together with the 14th meeting of Airworthiness Panel Working Group of the Whole (AIRP/WG/WHL/14) and the Safety Information Protection Task Force (SIP TF) relating to safety management	Further development of safety management provisions and extension of safety management system (SMS) provisions to organizations responsible for the type design and/or manufacture of engines and propellers.	2 March 2016 11 July 2016 7 November 2019
2	Fifth meeting of the Safety Management Panel (SMP/5) and the 18 th meeting of the Remotely-Piloted Aircraft Systems Panel (RPASP)	Enhancement of SSP and SMS provisions as well as the extension of safety management system (SMS) provisions to organizations responsible for the operation and maintenance of certified RPAS operator conducting international operations. In addition, the provisions related to the development of safety intelligence are further developed to support aviation decision-making.	xx March 2024 xx July 2024 xx November 2026

INITIAL PROPOSAL 2

**INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES**

CHAPTER 1. DEFINITIONS

When the following terms are used in the Standards and Recommended Practices for Safety Management, they have the following meanings:

Accident. An occurrence associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time as it comes to rest at the end of the flight and the primary propulsion system is shut down, in which:

- a) a person is fatally or seriously injured as a result of:
 - being in the aircraft, or
 - direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or
 - direct exposure to jet blast,

except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew; or

- b) the aircraft sustains damage or structural failure which:
 - adversely affects the structural strength, performance or flight characteristics of the aircraft, and
 - would normally require major repair or replacement of the affected component,

except for engine failure or damage, when the damage is limited to a single engine, (including its cowlings or accessories), to propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windscreens, the aircraft skin (such as small dents or puncture holes), or for minor damages to main rotor blades, tail rotor blades, landing gear, and those resulting from hail or bird strike (including holes in the radome); or

- c) the aircraft is missing or is completely inaccessible.

Note 1.— For statistical uniformity only, an injury resulting in death within thirty days of the date of the accident is classified, by ICAO, as a fatal injury.

Note 2.— An aircraft is considered to be missing when the official search has been terminated and the wreckage has not been located.

Note 3.— The type of unmanned aircraft system to be investigated is addressed in 5.1 of Annex 13.

Note 4.— Guidance for the determination of aircraft damage can be found in Attachment E of Annex 13.

Aeroplane. A power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight.

Aircraft. Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.

Hazard. A condition or an object with the potential to cause or contribute to an aircraft incident or accident.

Helicopter. A heavier-than-air aircraft supported in flight chiefly by the reactions of the air on one or more power-driven rotors on substantially vertical axes.

Note.— Some States use the term “rotorcraft” as an alternative to “helicopter”.

Incident. An occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation.

Note.— The types of incidents which are of interest for safety-related studies include the incidents listed in Annex 13, Attachment C.

~~**Industry codes of practice.** Guidance material developed by an industry body, for a particular sector of the aviation industry to comply with the requirements of the International Civil Aviation Organization's Standards and Recommended Practices, other aviation safety requirements and the best practices deemed appropriate.~~

~~*Note.— Some States accept and reference industry codes of practice in the development of regulations to meet the requirements of Annex 19, and make available, for the industry codes of practice, their sources and how they may be obtained.*~~

Operational personnel. Personnel involved in aviation activities who are in a position to report safety information.

Note.— Such personnel include, but are not limited to: flight crews; air traffic controllers; aeronautical station operators; maintenance technicians; personnel of aircraft design and manufacturing organizations; cabin crews; flight dispatchers, apron personnel and ground handling personnel.

Safety. The state in which risks associated with aviation activities, related to, or in direct support of the operation of aircraft, are reduced and controlled to an acceptable level.

Safety data. A defined set of facts or set of safety values collected from various aviation-related sources, which is used to maintain or improve safety.

~~*Note.— Such safety data is collected from Aviation related sources include proactive and reactive safety related activities, as well as automatic data capture systems or self-disclosure reporting system. Examples of sources of safety data can be found in the Safety Management Manual (SMM)(Doc 9859). including but not limited to:*~~

- ~~*a) accident or incident investigations;*~~
- ~~*b) safety reporting;*~~
- ~~*c) continuing airworthiness reporting;*~~
- ~~*d) operational performance monitoring;*~~
- ~~*e) inspections, audits, surveys; or*~~
- ~~*f) safety studies and reviews.*~~

Safety information. Safety data processed, organized or analysed in a given context so as to make it useful for safety management purposes.

Safety intelligence. The ability of an organization to apply knowledge and skills gained through safety data, safety information, experience and education.

Note.— Safety intelligence can also be considered an outcome of the process of analysing safety data and safety information to support decision making.

Safety management system (SMS). A systematic approach to managing safety, including the necessary organizational structures, accountability, responsibilities, policies and procedures.

Safety oversight. A function performed by a State to ensure that individuals and organizations performing an aviation activity comply with safety-related national laws and regulations.

Safety objective. A high-level statement of desired safety outcome.

Safety performance. A State or a service provider's safety achievement as defined by its safety performance targets and safety performance indicator assessed through quantitative and/or qualitative means.

Safety performance indicator. A data-based parameter used for monitoring and assessing safety performance measurable result that demonstrates how effectively a State or a service provider is achieving a safety objective.

Safety performance target. The State or service provider's planned or intended target for a safety performance indicator over a given period that aligns with the safety objectives.

Safety risk. The predicted probability and severity of the consequences or outcomes of a hazard.

Serious injury. An injury which is sustained by a person in an accident and which:

- a) requires hospitalization for more than 48 hours, commencing within seven days from the date the injury was received; or
- b) results in a fracture of any bone (except simple fractures of fingers, toes or nose); or
- c) involves lacerations which cause severe haemorrhage, nerve, muscle or tendon damage; or
- d) involves injury to any internal organ; or
- e) involves second or third degree burns, or any burns affecting more than 5 per cent of the body surface; or
- f) involves verified exposure to infectious substances or injurious radiation.

State of Design. The State having jurisdiction over the organization responsible for the type design.

State of Manufacture. The State having jurisdiction over the organization responsible for the final assembly of the aircraft, engine or propeller.

State of Registry. The State on whose register the aircraft is entered.

Note.— In the case of the registration of aircraft of an international operating agency on other than a national basis, the States constituting the agency are jointly and severally bound to assume the obligations which, under the Chicago Convention, attach to a State of Registry. See, in this regard, the Council Resolution of 14 December 1967

on Nationality and Registration of Aircraft Operated by International Operating Agencies which can be found in Policy and Guidance Material on the Economic Regulation of International Air Transport (Doc 9587).

State of the Operator. The State in which the operator's principal place of business is located or, if there is no such place of business, the operator's permanent residence.

State safety programme (SSP). An integrated set of laws, regulations, policies, objectives, processes and activities carried out by the relevant State authorities or agencies aimed at proactively ~~improving~~ managing safety at the State level.

Surveillance. The State activities through which the State proactively verifies through inspections and audits that aviation licence, certificate, authorization or approval holders continue to meet the established requirements and function at the level of competency and safety required by the State.

INITIAL PROPOSAL 3

CHAPTER 2. APPLICABILITY

The Standards and Recommended Practices contained in this Annex shall be applicable to safety management functions related to, or in direct support of, the safe operation of aircraft.

Note 1.— Safety management provisions for States are contained in Chapter 3 and relate to a State safety programme.

~~*Note 2.— Within the context of this Annex, the term “service provider” refers to those organizations listed in Chapter 3, 3.3.2.1 and does not include international general aviation operators.*~~

~~*Note 3.— Safety management provisions for specified aviation service providers and operators addressed under 3.3.2 are in Chapter 4 and relate to safety management systems (SMSs).*~~

~~*Note 4.— No provision of this Annex is intended to transfer to the State the responsibilities of the aviation service provider or operator addressed under 3.3.2. This includes functions related to, or in direct support of, the safe operation of aircraft.*~~

~~*Note 5.— In the context of this Annex, “responsibility” (singular) refers to “State responsibility” with respect to international obligations under the Convention on International Civil Aviation, while “responsibilities” (plural) should be given its ordinary meaning (i.e., when referring to functions and activities that may be delegated).*~~

INITIAL PROPOSAL 4

CHAPTER 3. STATE SAFETY PROGRAMME (SSP) MANAGEMENT RESPONSIBILITIES

Note 1.— The State safety oversight (SSO) system critical elements (CEs) found in Appendix 1 constitute the foundation of an SSP.

Note 2.— Safety management provisions pertaining to specific types of aviation activities are addressed in the relevant Annexes.

Note 3.— Basic safety management principles applicable to the medical assessment process of licence holders are contained in Annex 1. Guidance is available in the Manual of Civil Aviation Medicine (Doc 8984).

Note 4. — Human performance considerations are implicit in the establishment and management of a State Safety Programme (SSP) and in the oversight of a Safety Management System (SMS). Guidance is available in the Manual on Human Performance (HP) for Regulators (Doc 10151).

Note 5.— The objective of this chapter is to ensure States implement an SSP that supports the continued evolution of a proactive strategy to manage safety risks and improve safety performance.

3.1 State safety programme (SSP) General

States shall establish and manage ~~maintain~~ an SSP in accordance with the components detailed in 3.2, 3.3, 3.4 and 3.5, supported by a system description ~~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).~~

Note 1.— States retain responsibility for safety management related functions and activities delegated to another State, RSOO or RAIO.

Note 2.— Guidance on an SSP and the delegation of safety management related functions and activities are contained in the Safety Management Manual (SMM) (Doc 9859).

Note 1.— The specific way in which the SSP is established and managed will differ from one State to another due to a number of aspects including, but not limited to: the complexity of the State's civil aviation system as captured in the system description, the State's legal system and State's civil aviation priorities.

Note 2.— A system description, including the identification of interfaces, supports the implementation of an effective SSP. Guidance on the development of a system description is contained in the Safety Management Manual (SMM) (Doc 9859).

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 the NASP is contained in the Manual on the Development of Regional and National Aviation Safety Plans (Doc 10131).

INITIAL PROPOSAL 5

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

3.2.1 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.~~

3.2.1.2 States shall 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.

3.2.2 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.

INITIAL PROPOSAL 6

3.2.3 State system and functions

3.2.3.1 States shall establish State system and functions in accordance with section 3 of Appendix 1.

~~3.2.3.2 **Recommendation.**— States should identify, define and document their requirements, SSP obligations, functions, processes 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.~~

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 are contained in the Safety Management Manual (SMM) (Doc 9859). Additional guidance on the establishment of RSOOs and RAIOs is contained in Doc 9734 Part B — The Establishment and Management of a Regional Safety Oversight Organization and Doc 9946 — Manual on Regional Accident and Incident Investigation Organization, respectively.

~~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.~~

3.2.3.3 States 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.

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

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 to and from aviation.

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.*

3.2.5 Technical guidance, tools and provision of safety-critical information

States shall establish technical guidance and tools and provide safety-critical information in accordance with section 5 of Appendix 1.

3.3 State safety risk management (SSP Component 2)

3.3.1 Licensing, certification, authorization and approval obligations

States shall meet the licensing, certification, authorization and approval obligations in accordance with section 6 of Appendix 1.

INITIAL PROPOSAL 7

3.3.2 Safety management system obligations

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

- a) approved training organizations in accordance with Annex 1 that are exposed to safety risks related to aircraft operations during the provision of their services;
- b) operators of aeroplanes or helicopters authorized to conduct international commercial air transport, in accordance with Annex 6, Part I or Part III, Section II, respectively;

Note.— *When maintenance activities are not conducted by an approved maintenance organization in accordance with Annex 6, Part I, 8.7, but under an equivalent system as in Annex 6, Part I, 8.1.2, or Part III, Section II, 6.1.2, they are included in the scope of the operator’s SMS.*

- c) operators holding an Remotely Piloted Aircraft Systems (RPAS) Operator Certificate and authorized to conduct international operations in accordance with Annex 6, Part IV;

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.

- ed) approved maintenance organizations providing services to operators of aeroplanes or helicopters engaged in international commercial air transport, in accordance with Annex 6, Part I or Part III, Section II, respectively;
- e) approved maintenance organizations providing services to operators authorized to conduct international RPAS operations in accordance with Annex 6, Part IV;

INITIAL PROPOSAL 8

- ef) organizations responsible for the type design or manufacture of aircraft, engines or propellers in accordance with Annex 8;
- eg) air traffic services (ATS) providers in accordance with Annex 11; and
- fh) operators of certified aerodromes or certified heliports in accordance with Annex 14, Volume I & Volume II, respectively.

Note. — Further provisions related to the implementation of SMS by service providers can be found in Chapter 4.

INITIAL PROPOSAL 9

~~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.~~

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

~~3.3.2.3 The State of Registry shall establish criteria for international general aviation operators of large or turbojet aeroplanes in accordance with Annex 6, Part II, Section 3, to implement an SMS.~~

~~*Note.* — Further provisions related to the implementation of SMS by international general aviation operators can be found in Chapter 4.~~

~~3.3.2.4 The criteria established by the State of Registry in accordance with 3.3.2.3 shall address the SMS framework and elements contained in Appendix 2.~~

~~*Note.* — Guidance on establishing the criteria to implement an SMS for international general aviation operators is contained in the Safety Management Manual (SMM) (Doc 9859).~~

INITIAL PROPOSAL 10

3.3.3 Accident and incident investigation

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.

3.3.4 Hazard identification and safety risk assessment

3.3.4.1 States shall establish and maintain a process to identify systemic 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.

Note 3.— Hazard identification is based on a combination of reactive and proactive methods. Further guidance is contained in the Safety Management Manual (SMM) (Doc 9859).

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

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

3.3.4.3 **Recommendation.**— States should prioritize and periodically review hazards and safety risks to verify emerging risks across the aviation system, including systemic hazards.

INITIAL PROPOSAL 11

3.3.5 Management of safety risks

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

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

3.3.5.2 States shall develop, maintain and document the processes to manage safety risks.

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

Note 1.— Guidance on the process for managing safety risks is contained in the Safety Management Manual (SMM) (Doc 9859).

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

Note 2.— In order to reduce the overall risk in the aviation system, when managing safety risks it is beneficial to consider the impact to aviation safety from risk management strategies implemented by other domains (e.g. security, facilitation, economics, environment) and vice-versa.

3.3.5.3 Recommendation.— States should periodically review extending the SMS applicability to additional aviation sectors beyond the ones covered under 3.3.2, in accordance with the SMS framework contained in Appendix 2, as a safety risk control to manage identified and emerging safety risks.

INITIAL PROPOSAL 12

3.4 State safety assurance (SSP Component 3)

3.4.1 Surveillance obligations

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.

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

3.4.1.2 States shall establish procedures to prioritize surveillance activities towards those areas of greater safety concern or need.

Note.— Organizational risk profiles, including outcomes of hazard identification and risk assessment, and surveillance activities outcomes, SMS assessments and safety performance monitoring, may provide information for the planning, prioritization and preparation of surveillance activities., inspections, audits and surveys.

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

3.4.1.3 States shall implement mechanisms to:

- a) periodically assess the SMS of service providers addressed under 3.3.2.1; and
- b) monitor the safety performance of service providers addressed under 3.3.2.

INITIAL PROPOSAL 13

3.4.2 State safety performance measurement and monitoring

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.— 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— 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 (SMM) (Doc 9859).

INITIAL PROPOSAL 14

~~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.~~

3.4.2.2 Recommendation.— States should ensure that the means of safety performance measurement established by service providers addressed in 3.3.2.1 support the safety performance measurement and monitoring at the State level.

Note.— 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.

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

INITIAL PROPOSAL 15

3.4.3 Management of change

Recommendation.— States should develop and maintain a process to proactively manage changes at the State level, to ensure the desired outcomes are achieved without compromising safety performance.

Note.— Guidance on the management of change is contained in the Safety Management Manual (SMM) (Doc 9859).

INITIAL PROPOSAL 16

3.4.4 Continuous improvement of the SSP

3.4.4.1 States shall develop and maintain a process to evaluate the effectiveness of actions taken to manage safety risks and resolve safety issues.

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

~~3.4.2.3.2 **Recommendation.**— States should periodically assess evaluate the effectiveness of their SSP processes and activities individual SSPs to maintain or continuously improve their level of safety performance.~~ overall effectiveness of the SSP.

INITIAL PROPOSAL 17

3.5 State safety promotion (SSP Component 4)

~~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.~~

~~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.~~

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

3.5.1 Safety awareness

States shall establish means to promote safety in support of the achievement of its safety objectives and the development of a positive safety culture within the State aviation organizations, across the aviation community and with other stakeholders impacting aviation safety.

Note.— Means for promoting safety may include but not be limited to: a safety communication plan, stakeholder engagement maps, social media campaigns, annual safety reports, collaborative forums with industry, targeted initiatives).

3.5.2 Promotion of voluntary SMS implementation

Recommendation.— States should promote the voluntary implementation of SMS for the aviation sectors beyond the ones covered under 3.3.2, in accordance with the framework contained in Appendix 2, to support the management of safety risks.

INITIAL PROPOSAL 18

CHAPTER 4. SAFETY MANAGEMENT SYSTEM (SMS)

Note 1.— Compliance with safety regulations to obtain a licence, certificate, authorization or approval provides the foundation for the implementation of an SMS. Guidance on implementation of an SMS is contained in the Safety Management Manual (SMM) (Doc 9859).

~~Note 2.~~— ~~An organization may elect to extend one SMS across multiple service provider activities. Some organisations' activities extend across more than one service provider role. Such organisations may elect to cover the different service provider roles with a common SMS.~~

Note 3.— The integration of SMS with other management systems (e.g. quality management systems, occupational health, financial management systems) is used by some organizations to improve effectiveness and efficiency of organizational resources.

Note 4.— Human performance considerations are implicit in the establishment and management of a Safety Management System (SMS). Guidance on the implications for the oversight of an SMS is provided in the Manual on Human Performance (HP) for Regulators (Doc 10151).

INITIAL PROPOSAL 19

4.1 General

4.1.1 The SMS of each service provider addressed under 3.3.2.1 of this Annex shall:

a) be established and managed in accordance with the framework elements contained in Appendix 2; and

~~b) be commensurate with the size of the service provider and the complexity of its aviation products or services.~~

b) cover a defined scope of products and services including those necessary to support the delivery of those products and services but contracted to other organisations by the service provider; and

c) include the identification of organizational interfaces that are necessary for managing the safety of the service provider's products and services.

Note 1.— The SMS is established and managed to meet the safety objectives of the service provider and tailored to its products and services and applicable regulatory requirements.

Note 2.— Interfaces can either be internal (e.g. between departments) or external (e.g. between other service providers or organizations). The development of a system description can facilitate the identification of interfaces. Guidance on interface management and system descriptions is provided in the Safety Management Manual (SMM) (Doc 9859).

4.1.2 The State shall ensure that each service provider addressed under 3.3.2.1 of this Annex develops a plan to facilitate SMS implementation.

INITIAL PROPOSAL 20

4.2 International general aviation— aeroplanes SMS acceptance

Note.— States are encouraged to reduce oversight duplication that increases the administrative and financial burden for service providers without adding demonstrable safety value.

4.1.32.1 The SMS of an approved training organization, in accordance with Annex 1, that is exposed to safety risks related to aircraft operations during the provision of its services shall be made acceptable to the State(s) responsible for the organization's approval.

4.1.42.2 The SMS of a certified operator of aeroplanes or helicopters authorized to conduct international commercial air transport, in accordance with Annex 6, Part I or Part III, Section II, respectively, shall be made acceptable to the State of the Operator.

Note.— When maintenance activities are not conducted by an approved maintenance organization in accordance with Annex 6, Part I, 8.7, but under an equivalent system as in Annex 6, Part I, 8.1.2, or Part III, Section II, 6.1.2, they are included in the scope of the operator's SMS.

INITIAL PROPOSAL 21

4.2.3 The SMS of a certified RPAS operator authorized to conduct international operations, in accordance with Annex 6, Part IV, shall be made acceptable to the State of the Operator.

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.

4.1.52.4 The SMS of an approved maintenance organization providing services to operators of aeroplanes or helicopters engaged in international commercial air transport, in accordance with Annex 6, Part I or Part III, Section II, respectively, shall be made acceptable to the State(s) responsible for the organization's approval.

4.2.5 The SMS of an approved maintenance organization providing services to operators authorised to conduct international RPAS operations in accordance with Annex 6, Part IV, shall be made acceptable to the State(s) responsible for the organization's approval.

4.12.6 The SMS of an organization responsible for the type design of aircraft, engines or propellers, in accordance with Annex 8, shall be made acceptable to the State of Design.

4.12.7 The SMS of an organization responsible for the manufacture of aircraft, engines or propellers, in accordance with Annex 8, shall be made acceptable to the State of Manufacture.

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

INITIAL PROPOSAL 22

4.42.9 The SMS of an operator of a certified aerodrome or a certified heliport, in accordance with Annex 14, Volume I & II, shall be made acceptable to the State responsible for the aerodrome's or heliport's certification.

INITIAL PROPOSAL 23**4.3 Alternative SMS regulatory approaches**

Note.— Guidance on the implementation of an SMS for international general aviation is contained in the Safety Management Manual (SMM) (Doc 9859) and industry codes of practice.

4.3.1 In establishing criteria to enable alternative regulatory approaches in support of SMS implementation, the State shall ensure the SMS framework and elements contained in Appendix 2 are addressed.

Note.— Guidance on establishing the criteria to implement an SMS is contained in the Safety Management Manual (SMM) (Doc 9859).

4.3.2 The SMS of an international general aviation operator, conducting operations of large or turbojet aeroplanes in accordance with Annex 6, Part II, Section 3, shall be established and managed commensurate with the size and complexity of the operation and to meet the criteria established by the State of Registry.

Note 1.— Further provisions related to the criteria to be established by the State of Registry can be found in Chapter 3.

Note 2.— Guidance concerning the responsibilities of the State of Registry in connection with lease, charter and interchange operations is contained in the Manual of Procedures for Operations Inspection, Certification and Continued Surveillance (Doc 8335). Guidance concerning the transfer of State of Registry responsibilities to the State where the aircraft operator has its principal place of business or, if it has no such place of business, its permanent address in accordance with Article 83 bis is contained in the Manual on the Implementation of Article 83 bis of the Convention on International Civil Aviation (Doc 10059).

INITIAL PROPOSAL 24

CHAPTER 5. DEVELOPMENT OF SAFETY INTELLIGENCE DATA AND SAFETY INFORMATION COLLECTION, ANALYSIS, PROTECTION, SHARING AND EXCHANGE

Note.— *The objective of this chapter is to support States in the development of safety intelligence to maintain and continuously improve the effectiveness of their SSP ensure the continued availability of safety data and safety information to support the safety management activities.*

INITIAL PROPOSAL 25

5.1 General

5.1.1 Recommendation. *States should establish a strategy for the development of safety intelligence that supports the management of safety and aviation decision-making.*

Note.— *Guidance related to the strategy for developing safety intelligence is contained in the Safety Management Manual (SMM) (Doc 9859).*

INITIAL PROPOSAL 26

5.12 Safety data collection and processing systems

5.1.2.1 States shall establish a safety data collection and processing systems (SDCPS) comprised of a series of integrated processes and schemes to capture, store, process aggregate and enable the analysis of safety data and safety information.

Note 1.— *SDCPS refers to processing and reporting systems, safety databases, schemes for exchange of information and recorded information including but not limited to:*

- a) — data and information pertaining to accident and incident investigations;*
- b) — data and information related to safety investigations by State authorities or aviation service providers;*
- c) — mandatory safety reporting systems as indicated in 5.1.2;*
- d) — voluntary safety reporting systems as indicated in 5.1.3; and*

~~e) — self disclosure reporting systems, including automatic data capture systems, as described in Annex 6, Part I, Chapter 3, as well as manual data capture systems.~~

Note 1.— Safety data and safety information analysis may also be integrated into the SDCPS.

Note 2.— Guidance related to SDCPS is contained in the Safety Management Manual (SMM) (Doc 9859) and the Specifications for Safety Data Collection and Processing System (SDCPS) (Doc 101xx).

Note 3.— The term “safety database” may refer to a single or multiple database(s).

Note 4.— SDCPS may include inputs from State, industry and public sources, and may be based on reactive and proactive methods of safety data and safety information collection.

Note 5.— Sector specific safety reporting provisions are contained in other Annexes, PANS and SUPPs. There is a recognized benefit to the effective implementation of an SSP in having an integrated approach for the collection and analysis of the safety data and safety information from all sources.

INITIAL PROPOSAL 27

~~5.1.2 States shall establish a mandatory safety reporting system that includes the reporting of incidents.~~

5.2.2 States shall ensure that the SDCPS is based on proactive as well as reactive methods of safety data and safety information collection.

Note .— SDCPS may include inputs from State, industry and public sources.

INITIAL PROPOSAL 28

5.2.3 States shall ensure that the safety data and safety information collected through mandatory safety reporting systems, including those established in accordance with sector-specific provisions contained in other Annexes, PANS and guidance material, is incorporated into the SDCPS.

Note. — Mandatory safety reporting systems include the reporting of incidents and specific hazards which are known to contribute to them. Examples of sector-specific mandatory safety reporting systems are contained in the Safety Management Manual (SMM) (Doc 9859).

5.4.32.4 States shall establish a voluntary safety reporting system to collect safety data and safety information not captured by mandatory safety reporting systems.

INITIAL PROPOSAL 29

~~5.1.4 **Recommendation.**— State authorities responsible for the implementation of the SSP should have access to the SDCPS as referenced in 5.1.1 to support their safety responsibilities, in accordance with the principles in Appendix 3.~~

5.1.4.2.5 State authorities responsible for the implementation of the SSP shall contribute and have access to safety data and safety information in the SDCPS to support their safety responsibilities.

Note. — State authorities responsible for the implementation of the SSP include accident investigation authorities.

INITIAL PROPOSAL 30

5.2.6 Access to and use of safety data and safety information collected from voluntary and mandatory safety reporting systems shall be subject to 5.4.1 and 5.4.2 respectively.

INITIAL PROPOSAL 31

~~5.1.5 **Recommendation.**— The safety database should use standardized taxonomy to facilitate safety information sharing and exchange.~~

5.1.5.2.7 States shall establish and use a taxonomy for safety reporting that:

- a) is based on an international standardized taxonomy;
- b) captures potential hazards specific to the State;
- c) facilitates consistent comparison, sharing and exchange of safety data and safety information.

Note.— States are encouraged to use an ADREP-compatible system. More information on ADREP can be found in Annex 13, Chapter 7.

INITIAL PROPOSAL 32

5.2.8 **Recommendation.**— States should establish a means for the governance of safety data and safety information to ensure its integrity, availability, usability and security.

Note.— Further guidance on safety data governance is contained in Attachment A and the Safety Management Manual (SMM) (Doc 9859).

INITIAL PROPOSAL 33

5.23 Safety data and safety information analysis

5.2.3.1 States shall establish and maintain processes to analyse the safety data and safety information from the SDCPS and associated safety databases. The processes shall include a variety of analysis methods to support the identification of:

- a) safety performance indicators, as referenced in 3.4.2.1;
- b) systemic hazards, as referenced in 3.3.4, that might not otherwise be identified by the individual service providers;
- c) emerging risks across the State civil aviation system; and
- d) existing practices and operational strategies that resulted in positive safety outcomes.

Note 1.— Specific State provisions for the identification of hazards as part of their safety risk management and safety assurance processes can be found in Chapter 3.

Note 2.— The purpose of the safety data and safety information analysis performed by the State is to identify systemic and cross-cutting hazards that might not otherwise be identified by the safety data analysis processes of individual service providers and operators.

Note 3.— The process may include predictive methods of safety data analysis.

Note 1.— Data and information from non-safety sources (e.g. weather, terrain, security) may be included in the processes to support a more integrated analysis at the State level.

Note 2.— Guidance on different types of analyses that can be conducted and the competencies required to do so are contained in the Safety Management Manual (SMM) (Doc 9859).

INITIAL PROPOSAL 34

5.34 Safety data and safety information protection

5.3.4.1 States shall accord protection to safety data captured by, and safety information derived from, voluntary safety reporting systems and related sources in accordance with Appendix 3.

Note.— For the purposes of Chapter 5 and Appendix 3, sources include individuals and organizations.

5.3.4.2 **Recommendation.**— States should extend the protection referred to in 5.3.4.1 to safety data captured by, and safety information derived from, mandatory safety reporting systems and related sources.

Note 1.— A reporting environment where employees and operational personnel may trust that their actions or omissions that are commensurate with their training and experience will not be punished is fundamental to safety reporting.

Note 2.— Guidance related to both mandatory and voluntary safety reporting systems is contained in the Safety Management Manual (SMM) (Doc 9859).

5.3 4.3 Subject to 5.3 4.1 and 5.3 4.2, States shall not make available or use safety data or safety information collected, stored or analysed in accordance with 5.12 or 5.23 for purposes other than maintaining or improving safety, unless the competent authority determines, in accordance with Appendix 3, that a principle of exception applies.

5.3 4.4 Notwithstanding 5.3 4.3, States shall not be prevented from using safety data or safety information to take any preventive, corrective or remedial action that is necessary to maintain or improve aviation safety.

Note.— Specific provision aimed at ensuring that there is no overlap with the protection of investigation records in Annex 13 is contained in Appendix 3, 1.2.

5.3 4.5 States shall take necessary measures, including the promotion of a positive safety culture, to encourage safety reporting through the systems referred to in 5.1-2 2.3 and 5.1-3 2.4.

Note.— Guidance related to positive safety culture is contained in the Safety Management Manual (SMM) (Doc 9859).

5.3 4.6 **Recommendation.**— *States should facilitate and promote safety reporting by adjusting their applicable laws, regulations and policies, as necessary.*

5.3 4.7 **Recommendation.**— *In support of the determination referred to in 5.3 4.3, States should institute and make use of appropriate advance arrangements between their authorities and State bodies entrusted with aviation safety and those entrusted with the administration of justice. Such arrangements should take into account the principles specified in Appendix 3.*

Note.— These arrangements may be formalized through legislation, protocols, agreements or memoranda of understanding.

INITIAL PROPOSAL 35

5.4-5 Safety information sharing and exchange

Note.— Sharing refers to giving, while exchange refers to giving and receiving in return.

5.4-5.1 If a State, in the analysis of the information contained in its SDCPS, identifies safety matters considered to be of interest to other States, that State shall forward such safety information to them as soon as possible. Prior to sharing such information, States shall agree on the level of protection and conditions on which safety information will be shared. The level of protection and conditions shall be in line with Appendix 3.

5.4-5.2 States shall ~~promote~~ facilitate the establishment of means for timely safety information sharing or exchange networks among users of the aviation system to promote collaboration within the aviation community, and facilitate the sharing and exchange of safety information, unless national law provides otherwise—provided that the proper measures are taken to ensure it is only used for maintaining and improving safety.

Note.— Means for timely safety information sharing or exchange may include agreements, partnerships, collaborative safety teams, forums and digital/physical platforms.

Note.— Information on the sharing of safety information can be found in the ICAO Code of Conduct on the Sharing and Use of Safety Information in the Global Aviation Safety Plan (Doc 10004).

INITIAL PROPOSAL 36

5.5.3 Recommendation.— *States should promote the sharing and exchange of relevant safety information and safety intelligence amongst service providers provided the proper measures are taken to ensure it is only used for maintaining and improving safety.*

APPENDIX 1. STATE SAFETY OVERSIGHT (SSO) SYSTEM CRITICAL ELEMENTS (CEs)

(See Chapter 3)

Note 1.— 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).

Note 2.— The term “relevant authorities or agencies” is used in a generic sense to include all authorities with aviation safety management and oversight responsibility which may be established by States as separate entities, such as: Civil Aviation Authorities, Airport Authorities, ATS Authorities, Accident Investigation Authority, and Meteorological Authority.

Note 3.— The SSO system CEs are applied, as appropriate, to authorities performing safety oversight functions as well as authorities performing investigation of accidents and incidents or other State safety management activities.

Note 4.— See Appendix 5 to Annex 6, Part I, and Appendix 1 to Annex 6, Part III, for provisions specific to the safety oversight of air operators.

INITIAL PROPOSAL 37

1. Primary aviation legislation (CE-1)

1.1 States shall promulgate a comprehensive and effective aviation law, ~~commensurate with the size and complexity of their aviation activity and~~ consistent with the requirements contained in the Convention on International Civil Aviation, to enable the oversight and management of civil aviation safety and the enforcement of regulations through the relevant authorities or agencies established for that purpose.

Note.— This includes ensuring that the aviation law remains relevant and appropriate to the State.

1.2 The aviation law shall provide personnel performing safety oversight functions access to the aircraft, operations, facilities, personnel and associated records, as applicable, of individuals and organizations performing an aviation activity.

2. Specific operating regulations (CE-2)

States shall promulgate regulations to address, at a minimum, national requirements emanating from the primary aviation legislation, for standardized operational procedures, products, services, equipment and infrastructures in conformity with the Annexes to the Convention on International Civil Aviation.

Note.— The term “regulations” is used in a generic sense and includes but is not limited to instructions, rules, edicts, directives, sets of laws, requirements, policies and orders.

3. State system and functions (CE-3)

3.1 States shall establish relevant authorities or agencies, as appropriate, supported by sufficient and qualified personnel and provided with adequate financial resources for the management of safety.

3.2 States authorities or agencies shall have stated safety functions and objectives to fulfil their safety management responsibility.

Note.— This includes the participation of the State aviation organizations in specific activities related to the management of safety in the State, and the establishment of the roles, responsibilities and relationships of such organizations.

3.3 **Recommendation.**— *States should take necessary measures, such as remuneration and conditions of service, to ensure that qualified personnel performing safety oversight functions are recruited and retained.*

3.4 States shall ensure that personnel performing safety oversight functions are provided with guidance that addresses ethics, personal conduct and the avoidance of actual or perceived conflicts of interest in the performance of official duties.

INITIAL PROPOSAL 38

3.5 **Recommendation.**— *States should use a methodology to determine their staffing requirements for personnel performing safety oversight functions, taking into account the size and complexity of the aviation activities in their State.*

Note.— In addition, Appendix 5 to Annex 6, Part I, and Appendix 1 to Annex 6, Part III, require the State of the Operator to use such a methodology to determine its inspector staffing requirements. Inspectors are a subset of personnel performing safety oversight functions.

4. Qualified technical personnel (CE-4)

4.1 States shall establish minimum qualification requirements for the technical personnel performing safety-related functions and provide for appropriate initial and recurrent training to maintain and enhance their competence at the desired level.

4.2 States shall implement a system for the maintenance of training records for technical personnel.

5. Technical guidance, tools and provision of safety-critical information (CE-5)

5.1 States shall provide appropriate facilities, comprehensive and up-to-date technical guidance material and procedures, safety-critical information, tools and equipment, and transportation means, as applicable, to the technical personnel to enable them to perform their safety oversight functions effectively and in accordance with established procedures in a standardized manner.

5.2 States shall provide technical guidance to the aviation industry on the implementation of relevant regulations.

6. Licensing, certification, authorization and approval obligations (CE-6)

States shall implement documented processes and procedures to ensure that individuals and organizations performing an aviation activity meet the established requirements before they are allowed to exercise the privileges of a licence, certificate, authorization or approval to conduct the relevant aviation activity.

7. Surveillance obligations (CE-7)

States shall implement documented surveillance processes, by defining and planning inspections, audits and monitoring activities on a continuous basis, to proactively assure that aviation licence, certificate, authorization and approval holders continue to meet the established requirements. This includes the surveillance of personnel designated by the Authority to perform safety oversight functions on its behalf.

8. Resolution of safety issues (CE-8)

8.1 States shall use a documented process to take appropriate actions, up to and including enforcement measures, to resolve identified safety issues.

8.2 States shall ensure that identified safety issues are resolved in a timely manner through a system which monitors and records progress, including actions taken by individuals and organizations performing an aviation activity in resolving such issues.

INITIAL PROPOSAL 39

APPENDIX 2. FRAMEWORK FOR A SAFETY MANAGEMENT SYSTEM (SMS)

(See Chapter 4, 4.1.1)

Note 1.— Guidance on the implementation of the framework for an SMS is contained in the Safety Management Manual (SMM) (Doc 9859).

~~*Note 2.— The service provider's interfaces with other organizations can make a significant contribution to the safety of its products or services. Guidance on interface management as it relates to SMS is provided in the Safety Management Manual (SMM) (Doc 9859).*~~

~~*Note 3.— In the context of this appendix as it relates to service providers, an “accountability” refers to an “obligation” that may not be delegated, and “responsibilities” refers to functions and activities that may be delegated.*~~

INITIAL PROPOSAL 40

This appendix specifies the framework for the implementation and maintenance of an SMS. The framework comprises four components and twelve elements as the minimum requirements for SMS implementation:

1. Safety policy, ~~and objectives and resources~~
 - 1.1 Management commitment
 - 1.2 Safety accountability and responsibilities
 - 1.3 Appointment of key safety personnel
 - 1.4 Coordination of emergency response planning
 - 1.5 SMS documentation
2. Safety risk management
 - 2.1 Hazard identification
 - 2.2 Safety risk assessment and mitigation
3. Safety assurance
 - 3.1 Safety performance monitoring and measurement
 - 3.2 The management of change
 - 3.3 Continuous improvement of the SMS
4. Safety promotion
 - 4.1 Training and education
 - 4.2 Safety communication

1. Safety policy, ~~and objectives~~ and resources

1.1 Management commitment

1.1.1 The service provider shall define its safety policy in accordance with international and national requirements. The safety policy shall:

- a) reflect organizational commitment regarding safety, including the promotion of a positive safety culture;
- b) include a clear statement about the provision of the necessary resources for the implementation of the safety policy;
- c) include safety reporting procedures;
- d) clearly indicate which types of behaviours are unacceptable related to the service provider's aviation activities and include the circumstances under which disciplinary action would not apply;
- e) be signed by the accountable executive of the organization;
- f) be communicated, with visible endorsement, throughout the organization; and
- g) be periodically reviewed to ensure it remains relevant and appropriate to the service provider.

1.1.2 Taking due account of its safety policy, the service provider shall define safety objectives. The safety objectives shall:

- a) form the basis for safety performance monitoring and measurement as required by 3.1.2;
- b) reflect the service provider's commitment to maintain or continuously improve the overall effectiveness of the SMS;
- c) be communicated throughout the organization; and
- d) be periodically reviewed to ensure they remain relevant and appropriate to the service provider.

Note.— Guidance on setting safety objectives is provided in the Safety Management Manual (SMM) (Doc 9859).

1.2 Safety accountability and responsibilities

The service provider shall:

- a) identify the accountable executive who, irrespective of other functions, is accountable on behalf of the organization for the implementation and maintenance of an effective SMS;
- b) clearly define lines of safety accountability throughout the organization, including a direct accountability for safety on the part of senior management;
- c) identify the responsibilities of all members of management, irrespective of other functions, as well as of employees, with respect to the safety performance of the organization;
- d) document and communicate safety accountability, responsibilities and authorities throughout the organization; and

- a) define the levels of management with authority to make decisions regarding safety risk tolerability.

INITIAL PROPOSAL 41

1.3 Appointment of key safety personnel

The service provider shall appoint a safety manager who is responsible for the implementation and maintenance of the SMS.

Note. — ~~Depending on the size of the service provider and the complexity of its aviation products or services, the responsibilities for the implementation and maintenance of the SMS may be assigned to one or more persons, fulfilling the of safety manager role may be performed, as their sole function or combined with other duties, provided these do not result in any conflicts of interest.~~

1.4 Coordination of emergency response planning

The service provider required to establish and maintain an emergency response plan for accidents and incidents in aircraft operations and other aviation emergencies shall ensure that the emergency response plan is properly coordinated with the emergency response plans of those organizations it must interface with during the provision of its products and services.

INITIAL PROPOSAL 42

1.5 SMS documentation

1.5.1 The service provider shall develop and maintain an SMS manual that describes its:

- a) safety policy, ~~and objectives~~ and resources;
- b) SMS requirements;
- c) SMS processes and procedures; and
- d) accountability, responsibilities and authorities for SMS processes and procedures.

1.5.2 The service provider shall develop and maintain SMS operational records as part of its SMS documentation.

Note. — ~~Depending on the size of the service provider and the complexity of its aviation products or services, the SMS manual and SMS operational records may be in the form of stand-alone documents or may be integrated with other organizational documents (or documentation) maintained by the service provider.~~

INITIAL PROPOSAL 43

2. Safety risk management

2.1 Hazard identification

2.1.1 The service provider shall develop and maintain a process to identify hazards, including hazards related to interfaces, associated with its aviation products or services.

Note.— Interfaces can either be internal (e.g. between departments) or external (e.g. other service providers, external organizations or contracted services). Guidance on interface management as it related to SMS is provided in the Safety Management Manual (SMM) (Doc 9859).

2.1.2 Hazard identification shall be based on a combination of reactive and proactive methods.

INITIAL PROPOSAL 44

2.2 Safety risk assessment and mitigation

The service provider shall develop and maintain a process that ensures analysis, assessment and control of the safety risks associated with identified hazards.

Note 1.— The process may include predictive methods of safety data analysis.

Note 2.— In order to reduce the overall risk in the aviation system, when managing safety risks it is beneficial to consider the impact to aviation safety from risk management strategies implemented by other domains (e.g. security, facilitation, economics, environment.) and vice-versa.

INITIAL PROPOSAL 45

3. Safety assurance

3.1 Safety performance ~~monitoring and~~ measurement and monitoring

~~3.1.1 The service provider shall develop and maintain the means to verify the safety performance of the organization and to validate the effectiveness of safety risk controls.~~

~~*Note.— An internal audit process is one means to monitor compliance with safety regulations, the foundation upon which SMS is built, and assess the effectiveness of these safety risk controls and the SMS. Guidance on the scope of the internal audit process is contained in the Safety Management Manual (SMM) (Doc 9859).*~~

~~3.1.2 The service provider's safety performance shall be verified in reference to the safety performance indicators and safety performance targets of the SMS in support of the organization's safety objectives.~~

The service provider shall establish safety performance indicators supported by qualitative means as needed to:

- a) monitor the compliance with safety regulations;
- b) measure and monitor the safety performance of the organization;
- c) measure and monitor the progress toward achieving its safety objectives; and
- d) validate the effectiveness of safety risk controls.

Note 1.— An internal audit process is one means to monitor compliance with safety regulations.

Note 2.— Guidance on establishing SPIs and qualitative means for safety performance measurement and monitoring is contained in the Safety Management Manual (SMM) (Doc 9859).

3.2 The management of change

The service provider shall develop and maintain a process to identify changes which may affect the level of safety risk associated with its aviation products or services and to identify and manage the safety risks that may arise from those changes.

3.3 Continuous improvement of the SMS

The service provider shall monitor and assess its SMS processes to maintain or continuously improve the overall effectiveness of the SMS.

4. Safety promotion

4.1 Training and education

4.1.1 The service provider shall develop and maintain a safety training programme that ensures that personnel are trained and competent to perform their SMS duties.

4.1.2 The scope of the safety training programme shall be appropriate to each individual's involvement in the SMS.

4.2 Safety communication

The service provider shall develop and maintain a formal means for safety communication that:

- a) ensures personnel are aware of the SMS to a degree commensurate with their positions;
 - b) conveys safety-critical information;
 - c) explains why particular actions are taken to improve safety; and
 - d) explains why safety procedures are introduced or changed.
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INITIAL PROPOSAL 46

APPENDIX 3. PRINCIPLES FOR THE PROTECTION OF SAFETY DATA, SAFETY INFORMATION AND RELATED SOURCES

(See Chapter 5, 5.3)

Note 1.— The protection of safety data, safety information and related sources is essential to ensure their continued availability, since the use of safety data and safety information for purposes other than maintaining or improving safety may inhibit the future availability of such data and information, with a significant adverse effect on safety.

Note 2.— In view of their different legal systems, States have the flexibility to draft their laws and regulations in accordance with their policies and practices.

Note 3.— The principles contained in this appendix are aimed at assisting States to enact and adopt national laws, regulations and policies to protect safety data and safety information gathered from safety data collection and processing systems (SDCPS), as well as related sources, while allowing for the proper administration of justice and necessary actions for maintaining or improving aviation safety.

Note 4.— The objective is to ensure the continued availability of safety data and safety information by restricting their use for purposes other than maintaining or improving aviation safety.

1. General principles

1.1 States shall, through national laws, regulations and policies protecting safety data, safety information and related sources, ensure that:

- a) a balance is struck between the need for the protection of safety data, safety information and related sources to maintain or improve aviation safety, and the need for the proper administration of justice;
- b) safety data, safety information and related sources are protected in accordance with this appendix;
- c) the conditions under which safety data, safety information and related sources qualify for protection are specified;
and
- d) safety data and safety information remain available for the purpose of maintaining or improving aviation safety.

Note.— The protection of safety data, safety information and related sources is not intended to interfere with the proper administration of justice or with maintaining or improving safety.

1.2 When an investigation under Annex 13 has been instituted, accident and incident investigation records listed in 5.12 of Annex 13 shall be subject to the protections accorded therein instead of the protections accorded by this Annex.

2. Principles of protection

2.1 States shall ensure that safety data or safety information is not used for:

- a) disciplinary, civil, administrative and criminal proceedings against employees, operational personnel or organizations;
- b) disclosure to the public; or
- c) any purposes other than maintaining or improving safety;

unless a principle of exception applies.

2.2 States shall accord protection to safety data, safety information and related sources by ensuring that:

- a) the protection is specified based on the nature of safety data and safety information;
- b) a formal procedure to provide protection to safety data, safety information and related sources is established;
- c) safety data and safety information will not be used in a way different from the purposes for which they were collected, unless a principle of exception applies; and
- d) to the extent that a principle of exception applies, the use of safety data and safety information in disciplinary, civil, administrative and criminal proceedings will be carried out only under authoritative safeguards.

Note 1.— The formal procedure may include that any person seeking disclosure of safety data or safety information will provide the justification for its release.

Note 2.— Authoritative safeguards include legal limitations or restrictions such as protective orders, closed proceedings, in-camera review, and de-identification of data for the use or disclosure of safety information in judicial or administrative proceedings.

3. Principles of exception

Exceptions to the protection of safety data, safety information and related sources shall only be granted when the competent authority:

- a) determines that there are facts and circumstances reasonably indicating that the occurrence may have been caused by an act or omission considered, in accordance with national laws, to be conduct constituting gross negligence, wilful misconduct or criminal activity;
- b) after reviewing the safety data or safety information, determines that its release is necessary for the proper administration of justice, and that the benefits of its release outweigh the adverse domestic and international impact such release is likely to have on the future collection and availability of safety data and safety information; or
- c) after reviewing the safety data or safety information, determines that its release is necessary for maintaining or improving safety, and that the benefits of its release outweigh the adverse domestic and international impact such release is likely to have on the future collection and availability of safety data and safety information.

Note 1.— In administering the decision, the competent authority takes into account the consent of the source of the safety data and safety information.

Note 2.— Different competent authorities may be designated for different circumstances. The competent authority could include, but is not limited to, judicial authorities or those otherwise entrusted with aviation responsibilities designated in accordance with national law.

4. Public disclosure

4.1 States that have right-to-know laws shall, in the context of requests made for public disclosure, create exceptions from public disclosure to ensure the continued confidentiality of voluntarily supplied safety data and safety information.

Note.— Laws, regulations and policies commonly referred to as right-to-know laws (freedom-of-information, open records, or sunshine laws) allow for public access to information held by the State.

4.2 Where disclosure is made in accordance with section 3, States shall ensure that:

- a) public disclosure of relevant personal information included in the safety data or safety information complies with applicable privacy laws; or
- b) public disclosure of the safety data or safety information is made in a de-identified, summarized or aggregate form.

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

States shall ensure that each SDCPS has a designated custodian to apply the protection to safety data and safety information in accordance with applicable provisions of this appendix.

Note.— The “custodian” may refer to an individual or organization.

6. Protection of recorded data

Note 1.— Ambient workplace recordings required by national laws, for example, cockpit voice recorders (CVRs) or recordings of background communication and the aural environment at air traffic controller work stations, may be perceived as constituting an invasion of privacy for operational personnel that other professions are not exposed to.

Note 2.— Provisions on the protection of flight recorder recordings and recordings from air traffic control units during investigations instituted under Annex 13 are contained therein. Provisions on the protection of flight recorder recordings during normal operations are contained in Annex 6.

6.1 States shall, through national laws and regulations, provide specific measures of protection regarding the confidentiality and access by the public to ambient workplace recordings.

6.2 States shall, through national laws and regulations, treat ambient workplace recordings required by national laws and regulations as privileged protected data subject to the principles of protection and exception as provided for in this appendix.

INITIAL PROPOSAL 47

ATTACHMENT A

GUIDANCE FOR THE GOVERNANCE OF SAFETY DATA AND SAFETY INFORMATION

1. Introduction

This Attachment A provides high-level guidance for the governance of safety data and safety information to ICAO Member States and relevant stakeholders. In addition, the Attachment complements the provision on governance of safety data and safety information under 5.2.8 of this Annex.

While data governance is applicable at an enterprise or organizational level, this guidance is scoped to safety data a safety information. Nevertheless, this guidance on governance of safety data and safety information could be used as an example, to connect to the organizational wide data governance.

1.1 What data governance is and what it is not;

Data governance is a sub-component of data management that can be defined in several ways as it pertains to an organization's mission need. It refers to the organizational bodies, rules, decision rights, and accountabilities of people and information systems as they perform data/information related work processes. Depending on specific needs, organizations can choose different management structures to implement data governance. Despite the particular organizational chart chosen, it is important to ensure that data governance makes data more reliable, consistent, and readily available. Data governance facilitates the steps for an organization to become data centric by considering data as a true asset and the foundation for safety management.

Although various relational areas of data management might be inputs, outputs, or underlying resources to data governance, data governance is not change management, data cleansing or extraction, data design or warehousing. Data governance applies to each of these disciplines but it is not included in any of them.

1.2 The need for and importance of data governance

Historically, data has been collected and managed at the individual organization level and for an organization's general needs. Most organizations have developed procedures, data formats, and terminology that fit their unique situation and operating preferences. As long as there was no need to integrate, share, or exchange data, inconsistencies in data format and terminology were acceptable. Presently, mission goals, mandates, and orders call for organizations to share data or information to report on analytics that shape activities at various organizational levels. As a result, this means that there is a greater need to migrate data from legacy systems into new systems and formats. Data from systems that use different formats, field names, and data characteristics must be integrated and synchronized. Safety data reporting can be processed and generated in standard formats. This enables the internal exchange of safety data and external sharing and exchange of safety information.

Data governance, as one of the components/domains of data management, provides the vital policies, standards, people, processes and accountability that ensure that data across the organization is consistent, accurate, reliable, available and secure.

The holistic management of an organization's data influences and supports its vision/direction, strategies, decisions and operations by breaking down data silos and ensuring the accuracy, trustworthiness and reliability of organizational data.

In the absence of data management or data governance, the probability or likelihood of reporting or deriving incorrect information and safety intelligence increases. Therefore, it is crucial to have a governance or management of all the

organization’s data, which supports data-driven decisions and fosters capabilities or core competencies such as safety data analytics, machine learning, and artificial intelligence.

2. Safety Data Management

The following components, which comprise data management, should also be considered and addressed:

Data Architecture	Data Development	Database Operations
Data Security Management	Master Data Management	Data Warehousing
Data Integration	Metadata Management	Data Quality Management
Data Governance		

To effectively govern and manage safety data, organizations should adhere to the following:

- a) Manage the glossary of safety related terms
- b) Provide metadata management
- c) Manage its master data
- d) Manage the database layer and safety data integration; and
- e) Provision of safety data or safety information for those that need it in the manner required.

Note.— Additional guidance for the components is provided in the Specifications for SDCPS (Doc XXXXX).

2.1 Safety Data Security Management

Safety data security management is the provision of robust authentication, authorization, and auditing of safety data and safety information assets via the planning, development and execution of controls, policies and procedures.

The objective of safety data security management is to protect safety data and safety information in accordance with applicable [national] laws, regulations and policies. Effective safety data security policies and procedures mitigate unauthenticated and unauthorized access and provide that only authenticated and authorized personnel can use and update data in accordance with applicable policies.

3. Safety Data Governance Roles and Responsibilities

Governance of safety data and safety information should fit the organizational needs and capacities. The roles and responsibilities within the governance program, are necessary for an effective data management, and should be part of the policies and processes. The most common roles and responsibilities are provided hereafter, with the first three being the minimum roles required for a functional data management.

3.1 Data Owner

The Data Owner is the individual or organization that has statutory rights to the data, no matter who collects the data or who manages it. The rights can include proprietary and intellectual rights as well as the rights to exploit and/or destroy the data. The rights of the data owner apply even when the data is collected by a third party and/or combined with data owned by others.

3.2 Data Steward

The Data Steward is the individual identified as the point of contact for questions about the definition and use of data collected or maintained within its functional areas and for the documentation of that data in a metadata registry. A data steward follows and/or implements policies, procedures, and guidelines that pertain to the data during the lifecycle of that data entrusted to his or her stewardship. The Data steward is accountable for the day-to-day management of data.

3.3 Data Custodian

A Data Custodian is the individual or organization authorized to possess, use, and/or maintain data in accordance with requirements defined by its Data Steward. A data custodian is responsible to protect the rights of the data owner for the access, processing, maintenance, storage, protection, and/or destruction of data and electronic records.

Note – *The responsibility of the custodian of safety data and safety information can be found in Appendix 3.*

3.4 Data Governance Office

The Data Governance Office is responsible for executing data governance policies.

3.5 Knowledge Worker

The Knowledge Worker is an individual that supports organizational data-driven making, measure effectiveness or develop policy. Knowledge Workers assist in identifying the types of reporting and analytic solutions that are required.

Note - *The role of the knowledge worker may also be assumed by a Data Analyst/Scientist within an organization.*

3.6 Data Stakeholder

The Data Stakeholder is an individual or organization that is entitled to make use of data collected or maintained within a system or to derive benefits from its collection and/or publication.

3.7 Data Consumer

The Data Consumer is an individual or organization that receives data on a regular basis, either in the form of a report or as a data extract file. Typically, this report or data is in support of a predefined, standardized process. A Data Consumer does not typically make ad hoc one-time requests for data. A Data Consumer may be a Knowledge Worker but does not have to be.

4. Approaches to Implementing Safety Data Governance

There are two standard approaches to implementing data governance:

Top-Down Approach (Organizational). Safety data governance is implemented and enforced by a governing body at the organizational level, and may include entities such as a Chief Data Office and Safety Data Governance Control Board. A team of data/information stewards assists with enforcing agreed-upon safety data policies.

Bottom-Up Approach (Operational). Conversely, another common practice of data governance implementation is to employ automated data profiling tools to survey existing databases and collect structural metadata. This approach becomes the foundation for data governance standards and rules.

4.1 Linking Top-Down and Bottom-Up Approaches

A practical strategy is to combine best practices of the Top-Down and Bottom-Up approaches by augmenting them with “middle-out” processes that connect business-oriented actions to the results of the Top-Down directives or outcomes of the Bottom-Up techniques. For example, a Top-Down approach would include soliciting information about fundamental organizational objectives and their related business policies. A Bottom-Up approach will look at all the data sets and survey all the data elements and try to identify the core data domains that are touched by multiple business processes. Blend these with a “middle-out” process that determines how business-oriented data policies that are directly linked to the business policies impact the touchpoints for data domains and their data elements.

The fundamental theme is to find the intersection between the results of the Bottom-Up processes and the directives issued from the Top-Down processes. This will integrate data controls and data directives into the application development process. It will also implement continuous measurement, monitoring, and notifications when noncompliant data is found. These techniques effectively operationalize data policy compliance.

5. Quick Wins for Safety Data and Safety Information Governance

The data governance initiatives, even when scoped to safety data and safety information, can be complex and need to be planned for implementation. While it differs from organization to organization, the following quick wins can support data management and data governance journey:

- a) Become familiar with best practices on data management. International organizations such as DAMA International (www.dama.org) can be referenced.
- b) Develop a roadmap. Assess current state of data management, the roles and responsibilities as well any data-related issues within the organization.
- c) Identify stakeholders and vital roles for early engagement.
- d) Discover and document where and how data is stored and who has access to what.
- e) Define and agree to policies, processes, standards, and rules that govern all aspects of the data lifecycle, covering the scope, purpose and structure of your data.
- f) Develop the procedures for operationalizing compliance with policies and standards and put those procedures into production.
- g) Determine applicable data management components. Ensure to include safety information quality and security requirements.
- h) Determine the approach to implement governance for safety data and safety information.
- i) Adapt data governance and make adjustments as necessary. Data governance is an ongoing process and not a one-time project.
- j) Monitor compliance and act when policies are not observed.

— END —