ASIA-PACIFIC REGIONAL AVIATION SAFETY PLAN
2020-2022 EDITION

FOREWORD

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Air transport is a key enabler for sustainable economic and social development of the Asia-Pacific (APAC) region. Furthermore, the APAC Region has become the world's largest aviation market and continues to grow rapidly in tandem with business and operating models. In particular, the APAC Region continues to see rapid growth in air traffic, and corresponding increased airspace and airport congestion.

A safe aviation system contributes to the economic development of the States/ Administrations and industries of the APAC region. To ensure the safe and sustainable of growth of aviation activities, there is a need to put in place adequate air navigation services and airport infrastructure, and sufficient trained manpower and resources to strengthen safety oversight capabilities which comply with International Civil Aviation Organisation (ICAO) requirements. To address these issues, the APAC region has taken steps to put in place several regional building blocks, including Safety Enhancement Initiatives (SEIs) and tools, in recent years. More needs to be done to refine and integrate the regional building blocks, and focus on implementing the initiatives.

The APAC Regional Aviation Safety Plan 2020-2022 Edition (hereinafter referred to as 'AP-RASP') charts the region's strategy to strengthen the management of aviation safety in the APAC region to continually reduce aviation fatalities and the risk thereof.

To facilitate communication to and understanding by all regional and external stakeholders, the AP-RASP has been organised in a simple, systematic and practical manner to cater to various levels of stakeholders: The Executive Summary provides a top-level narrative of the AP-RASP, while the Chapters and Appendices provide more details on implementation at the working-level.

By means of this AP-RASP, aviation stakeholders of the APAC region including States/ Administrations, industry partners, international organisations and regional groupings, affirm their commitment to aviation safety and to the resourcing of activities and to increasing collaboration at the regional level to enhance safety, and contribute to the continuous improvement of aviation at the global, regional and state levels.

EXECUTIVE SUMMARY

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(i)Broad but comprehensive narrative of the gist and key contents of the AP-RASP.

(ii)Targeted at high-level readers and regional stakeholders; also serves as a quick recap for readers already familiar with AP-RASP contents.

The Asia-Pacific Regional Aviation Safety Plan 2020-2022 Edition (hereinafter referred to as 'AP-RASP') provides a three-year plan for the APAC region to improve its safety oversight and management capability. This relates to the continuous reduction of regional operational risks and improvement in States'/ Administrations' safety oversight and management capabilities. The plan also supports APAC States/ Administrations in implementing the Global Aviation Safety Plan (GASP) 2020-2022 Edition, and meet respective targets of the GASP, the Asia-Pacific Regional Aviation Safety Priorities and Targets (AP-RASPAT) 2018 and the Declaration of the Asia Pacific Ministerial Conference on Civil Aviation 2018 (aka Beijing Declaration).

The AP-RASP document is organised into two Parts:

The first Part on Planning includes the purpose of the AP-RASP, the region's strategic approach to managing safety at the regional level, the regional operational safety risks identified up to 2018, and other regional safety issues and activities addressed in the AP-RASP.

Top operational safety risks were identified from the AP-RASPAT and APAC Annual Safety Report (ASR) 2019: runway safety (incursions and excursions), hard landings and tailstrikes on landing, and loss of control in-flight.

Weakest areas in terms of ICAO Univeral Safety Oversight Audit Programme (USOAP) Effective Implementation (EI) score were critical elements CE-8: Resolution of safety issues, CE-4: Technical personnel qualifications, and CE-7: Surveillance Obligations; and technical areas AIG, AGA and ANS.

Top regional organisational/ systemic challenges and issues were identified from meeting reports of ICAO APAC platforms:

a) Ensuring States' safety oversight and management capabilities and aviation (physical and institutional) infrastructure keep pace with the fast-growing air traffic volume in APAC region and associated airspace congestion risks;
b) Increasing changes and complexity of our aviation system and significant diversity of APAC States' operational, geographical and terrain contexts, regulatory systems and industry; and
c) Increased need for capability and capacity building especially among civil aviation authorities (CAAs) in the region.

The **APAC region's strategic approach** is to address varying standards and aviation environments in a timelier manner, as applicable. This comprises two Pillars:

First Pillar: Enhance the existing regional platforms/ mechanisms and establish effective safety oversight and management capabilities. This involves integrating and refining existing Regional Aviation Safety Group (RASG-APAC)/ Asia-Pacific Regional Aviation Safety Team (APRAST) building blocks and enhancing their links, coordination and communication with other regional mechanisms especially COSCAPs, and their respective RASTs, Regional Safety Oversight Organisations (RSOOs) such as the Pacific Aviation Safety Office (PASO) and the Asia/Pacific Air Navigation Planning and Implementation Regional Work Group (APANPIRG and its Subgroups), which should be leveraged to drive AP-RASP implementation at sub-regional level. Making training expertise and resources across Cooperative Development of Operational Safety and Continuing Airworthiness Programme (COSCAPs)/RSOOs more readily available to States/ Administrations will also facilitate their establishment of effective safety oversight capabilities;

Second Pillar: Address operational safety risks effectively and establish effective safety risk management. These SEIs are to be implemented by APAC States/ Administrations and their industry in a more targeted and customised manner.

The Five Priority Areas to focus the work of APAC Region to address the top regional organisational/ systemic risks and operation safety risks were adopted from the AP-RASPAT. These are:

I. Reduction in Operational Risks;

II. Improvements in Safety Oversight and Compliance;

III. Consistent and effective safety management system (SMS) and State Safety Programme (SSP);

IV. Data-driven regulatory oversight; and

V. Enhanced aviation infrastructure.

38 Actions are proposed to address APAC top regional risks and key safety challenges.

20 Organisational (ORG) Actions help implement AP-RASP and are aligned with and fulfil Safety Enhancement Initiatives (SEIs) and Actions in the GASP, AP-RASPAT and Beijing Declaration, as well as related key work items arising from Conference of Directors General of Civil Aviation, Asia and Pacific Regions (DGCA-APAC) and RASG-APAC/ APRAST meetings.

18 Operational (OPS) Actions are the outputs of the existing 17 RASG-APAC/ APRAST SEIs and APAC Standardised Capacity Building Programme (SCBP), which address the High Risk Categories of occurrences (HRCs) of controlled flight into terrain (CFIT), loss of control – inflight (LOC-I), runway safety (RS) including runway excursion (RE) and runway incursion (RI), and the USOAP fourth Critical Element (CE-4): Qualified technical personnel.

Stakeholders for implementation of AP-RASP are listed accordingly for each AP-RASP Action, and are expected to coordinate amongst themselves to implement the Actions. Custodian(s) may be appointed from among relevant stakeholders of each Action to lead its implementation. Where appropriate, regional platforms and mechanisms are to incorporate the relevant Actions in their respective annual workplans, as applicable, if not already existing.

The second Part on Implementation provides a description of how the implementation of initiatives listed in the AP-RASP will be monitored.

19 Targets, categorised and mapped accordingly to the ORG and OPS Roadmaps, are introduced to track implementation of AP-RASP Actions and safety improvement outcomes. These were carefully selected to ensure a balanced focus on organisational or systemic improvements and addressing operational safety risks, and to ensure alignment with Targets in the various key global and regional documents.

The region's overall progress in implementing and monitoring the effectiveness of the Actions and achieving the APAC Regional Aviation Safety Targets will be monitored and annually reported at RASG-APAC/ APRAST meetings, subject to the timely availability of the relevant data.

Guidance on National Aviation Safety Plans (NASPs) is provided on how States should identify which GASP and AP-RASP top risks and key challenges apply to national context, and add others which are unique to their operational context. Several AP-RASP Actions and Targets which require support and follow-up at the domestic level are also specified for inclusion in NASP roadmaps. States should demonstrate the links of their NASPs to the GASP and AP-RASP, through a template which maps the key NASP contents against the GASP and AP-RASP guidelines.

States should view the AP-RASP as a recommended guideline to customise their NASPs: States which are ready to develop their NASP should reference the AP-RASP, while States which are not ready are recommended to implement the relevant AP-RASP Actions that reflect their industry and operational context.

Key stakeholders, and their respective roles and responsibilities for the administration and implementation of AP-RASP, are identified.

Feedback arising from the development and implementation of AP-RASP and NASPs, or other issues e.g. implementation of SARPs for the APAC region, may be provided to ICAO for its consideration to update the GASP and its other guidance materials.

A summary of the AP-RASP Roadmaps of Actions and Targets, grouped according to the five Priority Areas, is provided below.

Action	Target [Deadline]
Asterisk (*) *denotes items for inclusion in NASPs* *Numbering system:* [*'A' - Action or 'T – Target*].[roman numeral *('I-V') - Priority Area*].[*Serial number*]	
OPS Roadmap	
Priority Area I. Reduction in Operational Risks	
A.I.1* CFIT 1: Model Regulation on Ground Proximity Warning System (GPWS)	**T.I.1*** Maintain a decreasing trend of fatal accidents per million departures, with a view to achieve an aspirational target of zero fatalities [Ongoing]
A.I.2* CFIT 1: Advisory Circular — Guidance for Operators to Ensure Effectiveness of GPWS Equipment	
A.I.3* CFIT 1: Advisory Circular — Guidance for Operators on Training Programme on the use of GPWS	**T.I.2*** All States/Administrations and industry to update the online monitoring mechanism on their status of implementation of all applicable priority RASG-APAC/ APRAST SEIs [2020]
A.I.4* CFIT 3: Model Advisory Circular — Instrument Approach Procedures Using Continuous Descent Final Approach Techniques	
A.I.5* CFIT 4: Guidance on the Establishment of a Flight Data Analysis Programme (FDAP)	**T.I.3*** All industry organisations and service providers to use globally harmonised SPIs as part of their safety management systems (SMS) [2020]
A.I.6* CFIT 5: Advisory Circular — Crew Resource Management Training Programme (CRM)	
A.I.7* CFIT 6: Advisory Circular — Controlled Flight into Terrain (CFIT) and Approach and Landing Accident Reduction (ALAR) Training Programme	**T.I.4** All States/ Administrations with effective safety oversight capabilities (one which has, or is expected to meet, GASP Goal 2 and have a full SSP), to actively lead RASG-APAC's safety risk management activities [2022]
A.I.8* CFIT 7: Guidance for Air Operators in Establishing a Flight Safety Documents System	
A.I.9 CFIT 8: Model Advisory Circular — Issuance of Terrain or Obstacle Alert Warning	
A.I.10 LOC 1, CFIT 2: Model Advisory Circular — Air Operators Standard Operating Procedures for Flight Deck Crewmembers	**T.I.5*** States/ Administrations to contribute information on safety risks, including SSP safety performance indicators (SPIs), to RASG-APAC [2022]
A.I.11* LOC 2, LOC 4: Guidance Material on Flight Crew Proficiency	
A.I.12* LOC 5: Advisory Circular — Mode Awareness and Energy State Management Aspects of Flight Deck Automation	
A.I.13* LOC 6: Guidance material on Upset Prevention and Recovery Training (UPRT) – ICAO Doc 10011 – ICAO Doc 9868 – Airplane UPRT Aid	
A.I.14* RS 1: Runway Safety Maturity Checklist	
A.I.15* Runway Excursion (RE) 2: Guidance material on	

Action	Target [Deadline]
Asterisk (*) *denotes items for inclusion in NASPs* *Numbering system:* [*'A' - Action or 'T – Target*].[roman numeral *('I-V') - Priority Area*].[*Serial number*]	
Unstabilised Approach	
A.I.16* RE 7: Guidance material and training program for runway pavement, maintenance and operations from aerodrome operator's perspective	
A.I.17* RI 2: Model Advisory Circular — Runway Incursion (RI) Prevention and Pilot Training	
A.I.18* GEN: Standardized Capacity Building Programme	
ORG Roadmap	
Priority Area I. Reduction in Operational Risks	
A.I.19* Review, implement (and update the status of) priority RASG-APAC/ APRAST SEIs	**T.I.1*** Maintain a decreasing trend of fatal accidents per million departures, with a view to achieve an aspirational target of zero fatalities [Ongoing] **T.I.2*** All States/Administrations and industry to update the online monitoring mechanism on their status of implementation of all applicable priority RASG-APAC/ APRAST SEIs [2020] **T.I.3*** All industry organisations and service providers to use globally harmonised metrics for the development and monitoring of service providers' SPIs as part of their safety management systems (SMS) [2020] **T.I.4** All States with effective safety oversight capabilities and a full SSP, to actively lead RASG-APAC's safety risk management activities [2022] **T.I.5*** States/ Administrations to contribute information on safety risks, including SSP safety performance indicators (SPIs), to RASG-APAC [2022]
A.I.20 Enhance the current methodology for tracking of RASG-APAC/ APRAST SEI implementation, and introduce indicators and targets to measure the implementation and effectiveness thereof; disseminate the results to Directors General	
A.I.21 Develop an inspector competency building framework, and any new RASG-APAC/ APRAST SEIs for urgent risks	
A.I.22* Develop a more precision/ targeted approach of prioritisation of existing RASG-APAC/ APRAST SEIs for implementation (by sub-region or common-issue/ -risk States/ Administrations)	
Priority Area II. Improvements in Safety Oversight and Compliance	
A.II.1 Conduct workshops and courses to promote effective implementation of SARPs, especially in the USOAP Audit Areas of ANS, AIG, AGA	**T.II.1*** Endeavour to have no Significant Safety Concerns (SSCs) under the USOAP Continuous Monitoring Approach (CMA), and to resolve any SSCs promptly within the time frame specified in the Corrective Action Plan and agreed to by ICAO [Ongoing] **T.II.2*** States that do not expect to meet GASP Goals 2 and 3, to use a safety oversight organisations' ICAO-recognised
A.II.2* Establish, enhance and populate COSCAP and RSOO technical experts databases	
A.II.3* Encourage IATA, IOSA and ISAGO registrations	

Action	Target [Deadline]
Asterisk (*) *denotes items for inclusion in NASPs* *Numbering system:* [*'A' - Action or 'T – Target*].[roman numeral *('I-V') - Priority Area*].[*Serial number*]	
	functions [2020] **T.II.3*** Increase the number of IOSA registered APAC airlines and ISAGO registrations by 50% over July 2016 figures (82 and 51 respectively) [2020] **T.II.4*** States to progressively enhance safety oversight capability to achieve at least 75% EI in USOAP CMA, and to achieve an APAC average overall USOAP EI score higher or equal to the global average [2022] **T.II.5*** All States to reach a safety oversight index greater than 1 in all categories [2022]
Priority Area III. Effective SMS and SSP	
A.III.1* Support the robust implementation and continuous improvement of SMS and SSP	**T.III.1*** All States to implement the full ICAO SSP [2025]
A.III.2 Improve the sharing of best practices in safety management, safety data and analyses among regional platforms including APANPIRG Sub-groups via RASG-APAC	**T.III.2*** All States to develop national aviation safety plans [2025]
A.III.3* Support development of NASPs	
Priority Area IV. Data-driven regulatory oversight	
A.IV.1* Establish a mechanism to collect and analyse SSP SPI data from APAC States and common industry indicators	**T.IV.1** Develop a regional mechanism for data collection, analysis and sharing [2020]
A.IV.2 Establish and populate a Regional Risk Register	
A.IV.3 Develop guidance on governance framework for cross-border aviation safety data sharing projects (including G2B/ third party involvement, funding, liability, info security/ protection)	**T.IV.2*** Pursue 50% increase in participation in flight data sharing initiatives by APAC air operators, with aircraft of mass 27,000kg above, over July 2016 figures (15) [2020]
A.IV.4* Establish a mechanism for regional aviation safety data collection and sharing and support States'/ Administrations' participation in regional aviation safety data-sharing projects	
A.IV.5* Develop a more data-driven, precision-/ targeted approach of identifying risks (by sub-region or common-issue/risk groups of States/ Administrations)	**T.IV.3*** States to achieve at least 75% EI in AIG of USOAP CMA, and an APAC average USOAP EI score in AIG higher or equal to the global average [2022]
Priority Area V. Enhanced aviation infrastructure	
A.V.1 Integrate the existing basic building blocks of RASG-APAC/ APRAST	**T.V.1** Promote runway safety through workshops and seminars at least yearly [Ongoing]
A.V.2 Enhance the terms of reference (TORs) of various regional bodies using a TOR framework	**T.V.2** Implement structures between RASG

Action	Target [Deadline]
Asterisk (*) *denotes items for inclusion in NASPs* *Numbering system:* [*'A' - Action or 'T – Target*].[roman numeral *('I-V') - Priority Area*].[*Serial number*]	
A.V.3* Improve the communication of activities and coordination of schedules among regional bodies and meetings, regional workshops/ courses, e.g. via a one-stop calendar of regional events	and APANPIRG to facilitate sharing and resolution of ATM-related safety issues [2020] **T.V.3*** States to achieve at least 75% EI in AGA of USOAP CMA, and an APAC average USOAP EI score in AGA higher or equal to the global average [2022]
A.V.4* Establish a means for States/ Administrations to informally share information and coordinate on operational issues in the USOAP Audit Areas of OPS, ANS and AGA	
A.V.5 Enhance the websites of various regional platforms, consolidate information on activities, and enhance related links among platforms	**T.V.4*** All States to establish an independent accident and incident investigation authority (AAIIA) as required by Annex 13, as well as related investigation system and procedures [2022]

CONTENTS

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PART I – PLANNING

1. INTRODUCTION

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(i)Purpose and structure of the AP-RASP, particularly how its Actions and Targets are aligned with the key global and regional documents;

(ii)existing key global and regional documents which form the basis upon which the AP-RASP was developed and to which it is aligned;

(iii)associated specific commitments of States and other stakeholders in the region towards improving safety

1.1 Purpose of the AP-RASP

1.1.1 The AP-RASP promotes the effective implementation of safety oversight systems of States/ Administrations in the APAC region, a risk-based approach to managing safety at the regional level, as well as a coordinated and collaborative approach between regional aviation stakeholders. All stakeholders are encouraged to support and implement the AP-RASP as the regional strategy for the continuous improvement of aviation safety.

1.1.2 This first Edition of the AP-RASP presents the regional strategy and roadmap of Actions for enhancing aviation safety in the APAC region for a period of three years, 2020 to 2022.

1.2 Structure of the AP-RASP

1.2.1 The key components of the AP-RASP are summarised in **Figure 1**.

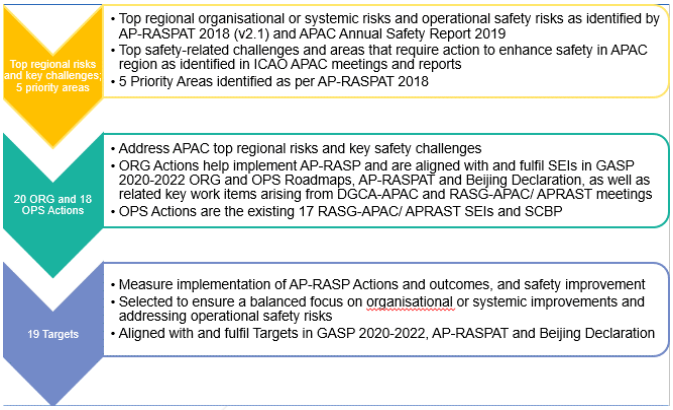

Figure 1. Summary of AP-RASP 2020-2022 Edition

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1.2.2 The AP-RASP document is structured into two Parts, 'Planning' and 'Implementation', which comprise four and two Chapters respectively:

a) Chapter 1 'Introduction' states the purpose and structure of the AP-RASP, particularly how its Actions and Targets are aligned with the key global and regional documents; existing key global and regional documents which form the basis upon which the AP-RASP was developed and to which it is aligned; and associated specific commitments of States/ Administrations and other stakeholders in the region towards improving safety;

b) Chapter 2 'APAC region's strategic approach to managing safety' explains the APAC region's diverse regulatory landscape and set of operating environments; the key approach and two-pillar strategy adopted by the region in managing aviation safety; and designing the AP-RASP for the 2020-2022 triennium; and achieving an envisioned safety data collection and processing system (SDCPS) for the APAC region, through integrating and refining the existing foundational building blocks;

c) Chapter 3 'Addressing regional operational safety risks (OPS)' details the top operational safety risks and related contributing factors identified for the APAC region for the 2020-2022 triennium; Actions under the OPS Roadmap developed to mitigate these risks and respective relevant stakeholders,

and how these are aligned with existing key global and regional documents;

d) Chapter 4 'Addressing other regional safety issues (ORG)' details the weakest areas of States' safety oversight capabilities and other safety issues and priorities identified for the region for the 2020-2022 triennium; Actions under the ORG Roadmap developed to address these deficiencies/ issues and respective relevant stakeholders, and how these are aligned with existing key global and regional documents;

e) Chapter 5 'Responsibilities' provides the assignment of roles and responsibilities to key stakeholders to govern, develop and implement the AP-RASP as well as monitor its implementation and outcomes in improving safety in the region; and guidance to APAC States to develop and implement NASP in alignment with GASP and AP-RASP; and

f) Chapter 6, 'Monitoring implementation' describes how the outcomes and effectiveness of AP-RASP Actions in improving operational safety risks and safety oversight capabilities in the region will be measured and monitored via a series of Targets; the respective stakeholders for the AP-RASP Targets, and how the Targets are aligned with existing key global and regional documents; how the progress of AP-RASP implementation will be communicated regularly to regional stakeholders; the process for amendment of the AP-RASP to ensure continued relevance to current context and effectiveness in addressing top regional operational safety risks, safety oversight capabilities and other safety issues; and suggested ways to mitigate project risks that may hinder AP-RASP implementation.

1.3 How the AP-RASP was developed

1.3.1 To ensure the timely development of the RASP and NASPs by States, RASG-APAC/8 directed APRAST to look into formulating a APAC RASP by APRAST/14 and present it at RASG-APAC/9 for approval (Decision RASG-APAC8/12 – Formulating a RASP and role of RASG – (WP/13)). To develop the AP-RASP, APRAST established an ad-hoc Working Group comprising 20 Members: 11 States/ Administrations, 9 Industry Partners and International Organisations including ICAO APAC Regional Office, APAC-AIG, all three APAC COSCAPs and PASO. **Appendix A** provides the list of members of the ad-hoc Working Group and a point of contact for enquiries pertaining to the AP-RASP. The Terms of Reference of the ad-hoc WG are at **Appendix B**.

1.3.2 In developing the AP-RASP, the ad-hoc Working Group coordinated closely with APRAST (SEI and SRG) WGs and the APAC-AIG, with support and inputs from COSCAPs and the ICAO APAC Regional Office/ APRAST Secretariat. APANPIRG was consulted for the ANS-related portions. Tasks relating to the development of AP-RASP were assigned by the ad-hoc WG to these groups as relevant.

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1.3.3 The key contents of the AP-RASP were developed using a seven-step process recommended by the GASP to develop RASPs and NASPs, similar to the Plan-Do-Check-Act (PDCA) continuous improvement cycle, as follows:

a) Step 1 – Conduct self-analysis;
b) Step 2 – Identify safety deficiencies;
c) Step 3 – Identify key stakeholders and enablers;
d) Step 4 – Perform gap analysis with roadmap to identify SEIs;
e) Step 5 – Develop a list of prioritised SEIs to be implemented;
f) Step 6 – Develop a national aviation safety plan; and
g) Step 7 – Monitor implementation.

1.4 Alignment with the GASP, Beijing Declaration and AP-RASPAT

1.4.1 The AP-RASP was developed in close adherence to the latest key global and regional reference documents, as well as those listed in **Figure 2**. For the full list of key reference sources, refer to **Appendix C**.

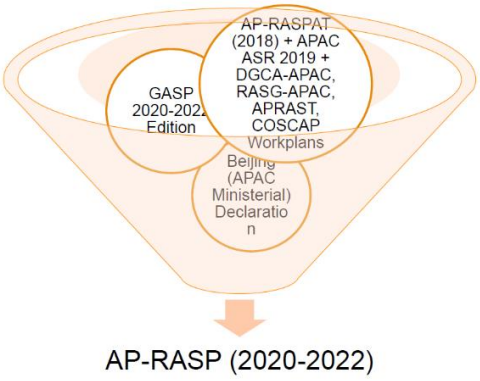

Figure 2. Key reference sources for the development of the AP-RASP 2020-2022 Edition

1.4.2 The AP-RASP has been developed in congruence with the GASP (ICAO Doc 10004), and supports the GASP aspirational goal of zero fatalities by 2030 and its objectives, goals, targets and indicators.

a) The AP-RASP and Roadmap structure adheres closely to GASP and ICAO Circular 3XX Appendix to Chapter 3 'RASP template'.
b) A comprehensive gap analysis was undertaken to identify the existing gaps between the existing work by RASG-APAC/ APRAST, and subsequently also compared with ICAO Circular 3XX Chapter 3 'Guidance for drafting the RASP'. Action items were proposed to address the gaps, to ensure that all the GASP requirements for RASPs were fulfilled.
c) For continuity, the five Priority Areas and targets of the AP-RASPAT 2018 (v2.1), as well as the safety-related targets in the Beijing Declaration, were retained.
d) AP-RASP Actions and Targets were selected taking into consideration relevant SEIs for Regions and Industry (applicable to regions) in the GASP (refer to **Appendix D**), goals, actions and targets of the Beijing Declaration and AP-RASPAT 2018, and relevant workplan items of DCGA-APAC, RASG-APAC, APRAST and APAC COSCAPs meetings. GASP SEIs for States and Industry (domestic) were not considered as these are more suitable to be included in the NASPs of the APAC States.

1.4.3 For better visualisation of alignment between the GASP and AP-RASP, the ORG Actions of the AP-RASP are laid out in a standardised "roadmap template" format as presented in **Figure 3** below, which is similar to the ORG roadmap of the GASP[1]. **Appendix E** also contains a mapping of the key contents of the AP-RASP to the guidelines in ICAO Circular 3XX Chapter 3 'on Guidance for drafting the RASP'.

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Commented [A8]: [*Editorial*] To update when the Number and Title of the Circular is confirmed.

[1] No AP-RASP Action is mapped against GASP SEI ORG2.1.1 SEI-2 regarding the establishment of an independent regional accident and incident investigation process in the APAC region, as there is currently no demand by States for this. However, an AP-RASP ORG Target T.V.4 encourages States/ Administrations to establish an independent accident investigation authority and related system and procedures.

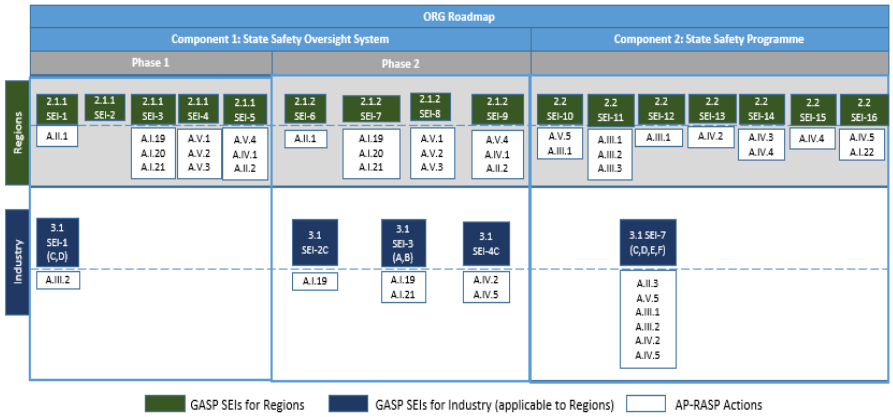

Figure 3. Mapping of AP-RASP ORG roadmap against GASP ORG roadmap

1.4.4 As stakeholders accomplish each Action, represented by a numbered box in the diagram, they advance through the roadmap thus achieving the different AP-RASP Priority Areas. Each AP-RASP Action is mapped onto a corresponding GASP SEI.

1.4.5 The contents of the AP-RASP are also closely aligned with the latest regional information pertaining to aviation safety in the APAC region, in particular the following two documents (refer to summary in **Appendix F**):

a) The AP-RASPAT was developed at APRAST/5 (September 2014), taking into account the discussions at APRAST/3 and the then-newly adopted GASP (2014-2016), and approved at RASG-APAC/4. It serves to step up the APAC region's commitment to improve its aviation safety oversight capability, which relates to the reduction of regional operational risks and improvement in safety oversight capabilities of States. The latest revision, approved by RASG-APAC/8 (August 2018), also supports GASP aspirational 2030 goal of zero fatalities on scheduled commercial flights.

b) The Beijing Declaration was the main outcome of the first APAC Ministerial Conference on Civil Aviation held in Beijing, China on 31 January-1 February 2018, It is the first demonstration, to the public, industry and investors, of commitment by high-level State authorities to improve aviation safety and ANS in the APAC region. Its targets serve as a benchmark for States to assess their progress in improving these areas at a regional level.

1.4.6 The AP-RASP rides on the previous work of the AP-RASPAT 2018 and Beijing Declaration to elevate the commitment of the APAC region to improve its safety oversight capability, which relates to the continuous reduction of regional operational risks and improvement in safety oversight and management capabilities of States. Its high-level regional objectives support APAC States/ Administrations, and commit them to assist one another, in implementing and meeting respective targets of the GASP, Beijing Declaration and AP-RASPAT. In particular, the AP-RASP serves to raise awareness of safety risks and consequences, to States/ Administrations, industry and relevant stakeholders to commit and provide resources including financial, staffing and technical expertise, to making improvements in safety management, oversight capability and operational safety performance. It also provides a basis to facilitate information sharing between relevant stakeholders who can take actions or provide support to address issues.

1.4.7 At the regional level, the AP-RASP commits RASG-APAC to continue the following efforts as described in the AP-RASPAT:

a) Focus on the development of the current regional SEIs to address the global High Risk Categories HRCs of LOC-I, CFIT, MAC, RI and RE, and other priorities as identified for the APAC region in a data-driven and strategic manner, which may include emerging risks such as mid-air collisions,

unmanned aircraft systems (UAS), dangerous goods, and space transportation;

b) Continue implementation support to States/ Administrations and industry, including the development of improved guidance materials as well as the organisation of workshops to provide assistance and guidance to APAC States/ Administrations e.g. on SEI implementation;
c) Assist States/ Administrations in the implementation of SMS and SSP, and in the development of NASPs;
d) Promote regional government and industry collaboration for sharing best practices in safety management;
e) Facilitate the use of standardised taxonomies for data collection in the region, for example in the description of safety occurrences, ramp inspection outcomes and definitions of audit findings, which in turn facilitates benchmarking and sharing of data among States/ Administrations;
f) Put in place a structure for the collection, analysis and sharing of safety and operational data in the region to support a comprehensive approach to risk management, and facilitate initiatives to develop regional data collection, analysis collaboration with existing data sharing systems ASIAS and IATA FDX programmes, with support from States/ Administrations and industry;
g) Encourage States/ Administrations to adopt safety information protection protocols; and
h) Promote the effective implementation of AGA, with a focus on runway safety programmes that support the establishment of Runway Safety Teams (RSTs) and implementation of inter-organisational SMS and Collaborative Safety Teams (CSTs).

1.4.8 States/ Administrations and industry are committed to the following efforts:

a) Implement, as appropriate, the GASP SEIs and AP-RASP Actions in a data-driven, strategic and timely manner;
b) [For any States with SSCs] Accord priority to the resolution of any SSCs identified by the ICAO USOAP CMA programme. These should draw on the necessary resources available, including technical assistance from other States/ Administrations and regional programmes such as COSCAPs and RSOOs to resolve the SSCs promptly;
c) Accord priority to the implementation of SMS and SSP;
d) Use data-driven methodologies to identify HRCs, and implement collaborative solutions to reduce accident rates and fatalities in the region, and likewise accord priority to the implementation of respective SEIs;
e) Implement the recommendations of the APAC-AIG; and
f) Consider various options to leverage ICAO-recognised industry assessment programmes such as IOSA, ISAGO and ISSA. These options range from recognition of such programmes to encouraging registration by all applicable operators as a means to strengthen their safety management and compliance.

2. APAC REGION'S STRATEGIC APPROACH TO MANAGING AVIATION SAFETY

Commented [A9]: Chapter Synopsis:

(i) Region's diverse operating and regulatory landscape;

(ii) Key approach and two-pillar strategy adopted by the region in managing aviation safety and designing the AP-RASP for the 2020-2022 triennium;

(iii) Achieving an envisioned safety data collection and processing system (SDCPS) for the APAC region, through integrating and refining the existing foundational building blocks

2.1 Operational context of the APAC region

2.1.1 Air transport is a key enabler for sustainable economic and social development. Currently, the Global Air Transport Industry supports almost 65.5 million jobs worldwide and contributes USD 2.7 trillion to Global Gross Domestic Product (GDP), equivalent to 3.6% of global GDP and USD704.4 billion aviation direct economic impact. The APAC region alone accounts for 30.2 million jobs (1.6% of all employment in APAC) and 2.7% (USD684 billion) of APAC GDP.

2.1.2 The APAC Region has become the world's largest aviation market in terms of available seat-kilometres with a global market share of 38.8% of passengers, and generates the world's largest share of international revenue passenger-kilometres, seeing a 9.5% growth in 2018 over 2017. Growth in aircraft departures and number of passengers carried in 2018 was also the highest among all regions, at 5.8% and 8.5% respectively. Airbus and Boeing Global Market Forecasts 2016-2035 expect that passenger traffic in the APAC region will double, and its share of global passenger traffic will increase to 48.7%, by 2035. As the growth continues, so will corresponding air traffic capacity, efficiency and safety challenges.

2.1.3 The APAC region is diverse with 39 States, 40 CAAs and 42 ANSPs, and an operating environment of 49 FIRs (or 40% of the world's FIRs). The region comprises vast oceanic airspace covering some 197.3 million square kilometres. For the list of APAC Contracting States, other Territories and International Organisations, refer to https://www.icao.int/APAC/Pages/about-apac-member-states.aspx.

2.1.4 The aviation safety regulatory landscape varies significantly in terms of capacity and civil aviation development, with USOAP Effective Implementation (EI) scores ranging from 5% to over 90%. As at February 2019, Thirteen (13) APAC States had an average EI score below the GASP target of 60%, and the regional average EI score saw 3 critical elements (CEs) and 1 Audit Area below 60%. Eight (8) States had a safety oversight index below 1, in all categories.

2.1.5 In 2018, the APAC Region had a regional accident rate of 1.6 accidents per million departures based on scheduled commercial operations involving fixed-wing aircraft with a maximum certificated take off mass greater than 5,700 kg.

2.1.6 There is also significant intrinsic diversity among APAC States/ Administrations and industry in terms of operational context, governance/ sovereignty, geography and terrain, culture, language, level of development and expertise.

2.2 Strategic direction for the management of aviation safety

2.2.1 The AP-RASP was developed with the aim to address the APAC region's diverse regulatory and operational landscape in a timely manner, and as applicable. It is expected that this approach will facilitate APAC States'/ Administrations' support and participation in the implementation of these Actions at both the regional and domestic levels. The three-year period of the AP-RASP, i.e. 2020 to 2022, was selected to coincide with the GASP review period of the same duration, to ensure continued alignment with the latest global plans.

2.2.2 As such, the AP-RASP adopts a 2-pillar approach. The **first Pillar** involves enhancing existing regional platforms/ mechanisms and establish effective safety oversight and management capabilities, in particular, to:

a) strengthen existing regional mechanisms which have been working well, and leverage these to implement at sub-regional level and making resources, expertise and training across COSCAPs and RSOOs more readily available to APAC States/ Administrations. Refer to **Appendix G** for a list of resources and tools to support AP-RASP implementation and description of APAC regional bodies, mechanisms and platforms and their roles/ functions in providing direction, expertise, training and technical assistance.

b) integrate and refine existing RASG-APAC/ APRAST building blocks already put in place by RASG-APAC/ APRAST, such as the Regional Aviation Safety Priorities and Targets (AP-RASPAT), RASG-APAC/ APRAST SEIs and their associated (Online) Monitoring Mechanism which tracks the status of SEI implementation by States/ Administrations; and the APAC Annual Safety Report (APAC ASR); and enhance links, coordination and communication with other regional mechanisms, especially particularly COSCAPs and PASO.

c) Improve the scheduling and streamline the number of regional safety-related events, especially those involving similar participants.

d) improve communication and sharing of data/ information between States/ Administrations with common issues, especially if quick action is warranted.

2.2.3 The **second Pillar** involves addressing operational safety risks effectively and establishing effective safety management, in particular, to focus on the implementation of existing 17 RASG-APAC/ APRAST SEIs and Standardised Capacity Building Programme, and the USOAP area of ORG. These SEIs and arising safety tools are to be implemented by APAC States/ Administrations and their industry in a more targeted and customised manner.

2.3 Leveraging on existing platforms and enhance collaboration among relevant stakeholders

2.3.1 The RASG-APAC/APRAST has, through the years, put in place several foundational building blocks of strategic safety management, which include the following:

a) Regional Aviation Safety Priorities and Targets (AP-RASPAT) as approved at RASG-APAC/8. The AP-RASPAT defines APAC priorities, top safety risks and corresponding targets, and is aligned with the GASP and the Beijing Declaration;
b) RASG-APAC/ APRAST SEIs and the associated (Online) Monitoring Mechanism, which tracks the status of SEI implementation by States/ Administrations; and
c) APAC Annual Safety Report (APAC ASR), which contains several organisational and operational indicators and targets, regional USOAP EI scores, and identifies safety-related challenges and the prioritisation of areas that require action to enhance safety in the APAC region.

2.3.2 However, not all APAC States/ Administrations have fully implemented the existing SEIs, and there is need to refine and better integrate the existing building blocks to ensure that they successfully track and analyse safety performance towards identifying and addressing safety risks, while proactively identifying new or emerging safety risks. The conceptual architecture of the envisioned safety data collection and processing system (SDCPS) for the APAC region is presented in **Figure 4**. For more details on the workings of an SDCPS, refer to the 4th Edition of the ICAO Safety Management Manual (Doc 9859).

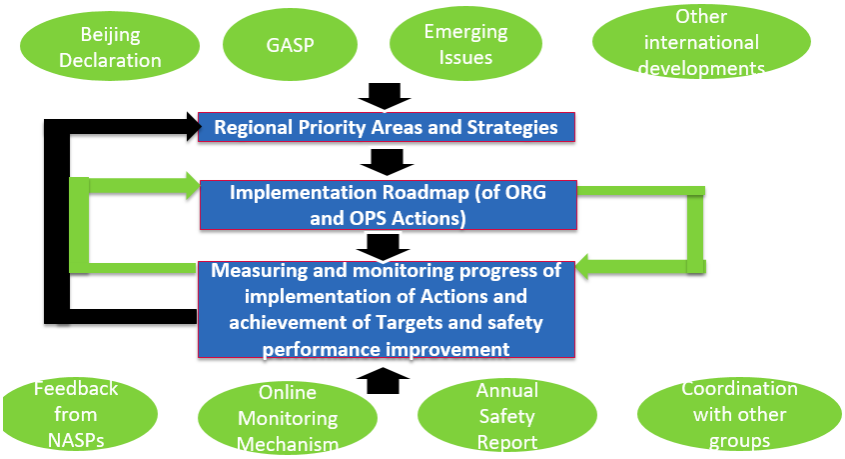

Figure 4. Conceptual architecture of the SDCPS for the APAC region

2.3.3 As a first step towards establishing this system and to facilitate AP-RASP implementation, it is necessary to enhance the communication and flow of safety data and information, as well as and coordination processes, among RASG-APAC, APRAST WGs, and regional platforms viz. the ICAO APAC Regional Office, States/ Administrations, COSCAPs and PASO. There is also the need to continue to enhance collaboration with APANPIRG through coordinated processes to sustain the collection and sharing of regional ATM data and the sharing and resolution of safety issues. This, in turn, will support the implementation of ASBUs and ensure that their implementation accounts for and properly manages existing and emerging risks, e.g. approaches with vertical guidance (APV) to mitigate risks associated with CFIT and runway excursions.

3. ADDRESSING REGIONAL OPERATIONAL SAFETY RISKS (OPS)

Commented [A10]: Chapter Synopsis:

(i)Top operational safety risks and related contributing factors identified for the region for the 2020-2022 triennium;

(ii)OPS Actions developed to mitigate these risks and respective relevant stakeholders, and how these are aligned with existing key global and regional documents.

3.1 Top operational risks in the APAC region

3.1.1 In 2018, the topmost frequent accidents for RASG-APAC region related to runway safety, which includes runway excursion (RE), runway incursion (RI), abnormal runway contact (ARC) specifically hard landings and tailstrikes on landing.

3.1.2 In terms of fatality risk, the three fatal accidents in 2018 were attributed to Runway Safety (RS), Loss of Control In-Flight (LOC-I) and RE. ICAO's accident data count also shows similar trends as accident rates with the number of non-fatal accidents. No clear trend is evident with the 2018 result of 3 fatal accidents in RASG-APAC, being comparable to the 10-year average.

3.1.3 From the analysis of the reactive safety information provided by ICAO, IATA and CAST, between 2009 and 2018, the most common fatal accident categories in the APAC region were:

a) LOC-I;
b) CFIT; and
c) RS.

3.1.4 Aircraft ground damage was also found to be a significant APAC issue that contributes to a global annual loss of nearly USD 4-billion in terms of damage and injury.

3.1.5 The APAC region should continue to focus its efforts on mitigating and minimising occurrences relating to these categories and phases.

3.1.6 Based on IATA's top contributing factors to accidents within the APAC region, flight crew errors accounted for a higher proportion of contributing factors for APAC accidents than almost any other factor. Similarly, undesired aircraft states accounted for a higher proportion of contributing factors than other types of contributing factor. Both Flight Crew Errors and Undesired aircraft states have likely played a role in the rate of runway/taxiway excursions being higher than other high-risk accident categories.

3.1.7 Regulatory oversight, meteorology, aircraft malfunction, manual handling/ flight controls, long/ floated/ bounced/ firm/ off-centre/ crabbed landings, and overall crew performance were top contributing factors in their respective categories, for accidents within the APAC region.

3.1.8 Refer to **Appendix H** for the detailed accident and serious incident data and trend analyses.

3.2 Roadmap of OPS Actions

3.2.1 In order to address the regional operational safety risks listed above, the AP-RASP includes a series of Actions related to a continuous reduction of operational safety risks, and regional and industry safety risk management activities to address the top APAC regional risks. These Actions include targeted safety activities, safety data analysis, safety risk assessments, and safety promotion.

3.2.2 The Actions are laid out in an operational safety risks (OPS) roadmap in **Table 1**, and address the top regional HRCs namely CFIT, LOC-I, RE & RI, which are essentially a subset of the global HRCs. As a new HRC, mid-air collision (MAC) has yet to be established as a top risk for the APAC region, thus no Actions have been developed for this HRC in the 2020-2022 Edition of the AP-RASP. The Actions also support Priority Area I of the AP-RASP, 'Reduction in Operational Risks'. Each Action covers the following points:

a) **Action**. A description of the specific SEI or initiative, and the tasks required for its implementation.
b) **Source/ fulfils**. Indicates key existing global or regional documents from which the Action is adopted or adapted, if applicable.

c) **Mapping to GASP**. Where the Actions stem from the SEIs in the GASP Roadmap, specific references are made for easier reference.
d) **Stakeholders**. The entities/ stakeholders in the APAC region, to which the Actions is addressed.
e) States should consider for inclusion in their NASPs the GASP SEIs applicable to States and Industry (domestic), as well as those in the AP-RASP Edition mentioned in Chapter 5.2, and also indicated with an asterisk (*).
f) The colour scheme for the AP-RASP Actions follows that of the Targets of the GASP, viz. Yellow for ORG related and Green for OPS related Targets.

Commented [A11]: [*Editorial*] Verify and update this and all similar references upon finalisation of document.

Action (**: For inclusion in NASPs*)	**Source/ Fulfils**	**Mapping to GASP 2020-2022 Edition**	**Stakeholders**
Priority Area I. Reduction in Operational Risks			
A.I.1* CFIT 1: Model Regulation on Ground Proximity Warning System (GPWS)	GASP	OPS1 (CFIT)	APRAST, SEI WG, SRP WG, COSCAPs, ICAO-APAC, other regional platforms/ bodies, States/ Administrations., Industry/ Associations, International Organisations, APANPIRG
A.I.2* CFIT 1: Advisory Circular — Guidance for Operators to Ensure Effectiveness of GPWS Equipment			
A.I.3* CFIT 1: Advisory Circular — Guidance for Operators on Training Programme on the use of GPWS			
A.I.4* CFIT 3: Model Advisory Circular — Instrument Approach Procedures Using Continuous Descent Final Approach Techniques			
A.I.5* CFIT 4: Guidance on the Establishment of a Flight Data Analysis Programme (FDAP)			
A.I.6* CFIT 5: Advisory Circular — Crew Resource Management Training Programme (CRM)			
A.I.7* CFIT 6: Advisory Circular — Controlled Flight into Terrain (CFIT) and Approach and Landing Accident Reduction (ALAR) Training Programme			
A.I.8* CFIT 7: Guidance for Air Operators in Establishing a Flight Safety Documents System			
A.I.9* CFIT 8: Model Advisory Circular — Issuance of Terrain or Obstacle Alert Warning			
A.I.10* LOC 1, CFIT 2: Model Advisory Circular — Air Operators Standard Operating Procedures for Flight Deck Crewmembers		OPS1 (CFIT), OPS2 (LOC-I)	

Action (*: For inclusion in NASPs*)	Source/ Fulfils	Mapping to GASP 2020-2022 Edition	Stakeholders
A.I.11* LOC 2, LOC 4: Guidance Material on Flight Crew Proficiency		OPS2 (LOC-I)	
A.I.12* LOC 5: Advisory Circular — Mode Awareness and Energy State Management Aspects of Flight Deck Automation			
A.I.13* LOC 6: Guidance material on Upset Prevention and Recovery Training (UPRT) – ICAO Doc 10011 – ICAO Doc 9868 – Airplane UPRT Aid			
A.I.14* RS 1: Runway Safety Maturity Checklist		OPS4 (RE), OPS5 (RI)	
A.I.15* Runway Excursion (RE) 2: Guidance material on Unstabilised Approach		OPS4 (RE)	
A.I.16* RE 7: Guidance material and training program for runway pavement, maintenance and operations from aerodrome operator's perspective			
A.I.17* RI 2: Model Advisory Circular — Runway Incursion (RI) Prevention and Pilot Training		OPS5(RI)	
A.I.18* GEN: Standardized Capacity Building Programme	Beijing Declaration	-	APRAST, SEI WG, SRP WG, COSCAPs, ICAO-APAC, other regional platforms/ bodies, States/ Administrations, Training Organisations

Table 1. Roadmap of OPS Actions of the AP-RASP 2020-2022 Edition

3.2.3 The OPS roadmap is not divided into components or steps, and Actions can be accomplished in parallel.

3.2.4 While APRAST has set its focus for the 2020-2022 period on implementation of existing SEIs, it will continue to develop and implement further SEIs to mitigate the risk of the identified contributing factors and conduct continuous evaluation of the performance of the SEIs.

4. ADDRESSING OTHER REGIONAL SAFETY ISSUES (ORG)

Commented [A12]: Chapter Synopsis:

(i)Weakest areas of States' safety oversight capabilities and other safety issues and priorities identified for the region for the 2020-2022 triennium;

(ii)ORG Actions developed to address these deficiencies/ issues and respective relevant stakeholders, and how these are aligned with existing key global and regional documents.

4.1 Overview of the APAC region's States' safety oversight capabilities

4.1.1 The APAC region is committed to the effective implementation of the ICAO eight critical elements (CEs) of a safety oversight system among all APAC States, as part of its overall safety oversight responsibilities, which emphasise its commitment to safety in respect of its aviation activity.

4.1.2 Deficiencies in a specific critical element of an effective safety oversight system may be common to the majority of APAC States and considered a top concern. In such cases, these deficiencies must be addressed as a safety issue in the AP-RASP because of their impact on the ability of States/ Administrations to fulfil their safety oversight responsibilities, which impacts the APAC region as a whole.

4.1.3 The RASG-APAC region had an overall USOAP Effective Implementation (EI) score of 63.37% in 2019, up from 61.96% in 2018. However, this result remains lower than the global level of 67.59%. Moreover, the USOAP EI scores (from almost 0% to slightly over 99%) and related Safety Oversight Index (SOI) (from almost 0 to slightly above 3) of APAC States are spread across a very wide range.

4.1.4 In terms of Critical Elements (CE), the APAC region had lower EI scores for all categories as compared to global average. CE-4 on Technical personnel qualifications and training and CE-8 on Resolution of safety concerns (CE-8) had the lowest EI scores within RASG-APAC, at 53.35% and 49.37% respectively. By Audit Area, Accident and Incident Investigation (AIG) and Aerodrome and Ground Aids (AGA) had the lowest EI scores of 49.19% and 58.31% respectively. Refer to **Appendix I** for details on the ICAO eight CEs and data analyses on the safety oversight capabilities in the APAC region.

4.1.5 In addition to the varying levels of safety oversight capabilities in the APAC region, other regional safety issues and activities have been identified and selected for inclusion in the AP-RASP. These were derived from analysis of USOAP data, accident and incident investigation reports, safety oversight activities over recent years from APAC States/ Administrations, as well as on the basis of regional analysis conducted by SRP WG and on the organisational challenges described in the GASP.

a) **Fast-growing air traffic volume**. While the APAC region is among the world's fastest-growing regions in terms of air traffic volume, its average USOAP EI score is currently below global average, and a significant proportion of APAC States have an overall EI score below the 60% GASP Target, especially in the AIG and AGA areas. USOAP EI scores also vary significantly among APAC States. Particular attention should be paid to ensuring adequate airport and ATM infrastructure, with a focus on runway safety. Most aerodromes in the region are not equipped with the appropriate infrastructure to support safe operations, and/or are not certified due to lack of capacity of their respective regulatory authorities. There are also increasing risks associated with airspace congestion, such as arising from a high density of holding patterns within the same portion of airspace.

b) **Increasing complexity of our aviation system**. The pace of SSP and RASG-APAC/ APRAST SEI implementation, as well as understanding of newer safety management and performance-based concepts, is slow. Effective implementation of SMS is essential for the industry to identify hazards and resolve safety concerns. The robust implementation of the SSP also enables States/ Administrations to focus their safety oversight resources where they are most needed. It is also difficult for the APAC States/ Administrations to focus their efforts and resources, and it is not realistic for them to adopt and implement standardised or one-size-fits-all solutions, owing to significant diversity among APAC States/ Administrations and industry in areas such as operational context, governance/ sovereignty, geography and terrain (e.g. airports at high altitude or in mountainous terrain or near water bodies), culture, language, level of development and expertise.

c) **Increased need for capability and capacity building**. In view of insufficient trained/ specialised safety oversight resources and expertise in many States/ Administrations in the APAC region. Sustainable growth of the international aviation system will require the introduction of advanced safety capabilities (e.g.

full trajectory-based operations) that increase capacity while maintaining or enhancing operational safety margins. The long-term safety objective is intended to support a collaborative decision making environment characterized by increased automation and the integration of advanced technologies on the ground and in the air, as contained in ICAO's ASBUs strategy. Many APAC States have yet to fully implement ICAO Annex 13 requirements for accident investigation. APAC-AIG recommendations offer guidance to States to at least meet the minimum requirements. Implementation of these recommendations would help to improve each State's capacity to effectively investigate accidents and serious incidents and should also enhance the level of reporting by States/ Administrations to assist in the identification of regional safety issues and trends.

d) **Limited collection of and use of safety data for decision-making**. The evolution from reactive to predictive safety management and data-driven regulatory oversight systems hinges on the availability of high quality safety data. Proper risk management and oversight is also reliant on the effective investigation of accidents and incidents in order to prevent recurrence. APAC States/ Administrations often lack the resources and expertise to manage and collect data on a State level and there are currently no formal mechanisms in place that allow for the sharing and benchmarking of information at the regional level. Furthermore, while many air operators in APAC have Flight Data Analysis Programmes, many have yet to fully incorporate the data into their risk management decision-making and few are leveraging the valuable information available from external data-sharing platforms such as the IATA FDX programmes.

4.1.6 It is crucial that States/ Administrations' safety oversight and management capabilities, and both physical and institutional aviation infrastructure should keep pace with these regional safety issues.

4.2 Roadmap of ORG Actions

4.2.1 In order to address the issues and activities listed above, the AP-RASP includes a series of Actions which address organisational and systemic challenges at the individual State level, such as States'/ Administrations' safety oversight capabilities and the implementation of SSPs, and the industry's implementation of SMS, and is aimed at enhancing the overall safety management capabilities within the region. These Actions enable civil aviation stakeholders to operate safely. Since most of these Actions, which support the achievement of regional safety goals and targets, are linked to overarching SEIs at the international level, they help to enhance safety at a regional and global levels to facilitate international operations. The AP-RASP Actions and Targets are also intended to be linked to APAC States' individual NASP SEIs, therefore harmonising the regional strategy with those of individual States.

4.2.2 The Actions are laid out in an organisational (ORG) Roadmap in **Table 2**. The roadmap contains two distinct components, namely a State Safety Oversight (SSO) System and an SSP. The component of the roadmap related to an SSO system is divided into two phases: Phase 1 focuses on the establishment of an effective safety oversight framework, as per CE-1 to CE-5; and Phase 2 focuses on the implementation of an effective safety oversight system, as per CE-6 to CE-8. States should have basic elements of Phases 1 and 2 in place to ensure effective safety oversight before pursuing the second component of safety management, which focus on SSP and SMS implementation. The ORG Roadmap is also divided into two horizontal streams, each with specific Actions aimed at the APAC region and industry (applicable to Regions).

4.2.3 The Actions address the five Priority Areas of the AP-RASP, namely I. Reduce operational risks; II. Improve States' safety oversight and compliance; III. Implement effective SMS and SSP; IV. Move towards data-driven regulatory oversight; and V. Enhance aviation infrastructure. Each Action covers the following points:

a) **Action**. A description of the specific SEI or initiative, and the tasks required for its implementation.
b) **Source/ fulfils**. Indicates key existing global or regional documents from which the Action is adopted or adapted, if applicable.
c) **Mapping to GASP**. Where the Actions stem from the SEIs in the GASP Roadmap, specific references are made for easier reference.
d) **Stakeholders**. The entities/ stakeholders in the APAC region, to which the Actions is addressed.
e) States should consider for inclusion in their NASPs the GASP SEIs applicable to States and Industry (domestic), as well as those in the AP-RASP mentioned in Chapter 5.2, and also indicated with an asterisk (*).

Commented [A13]: [*Editorial*] To update once paragraph numbers are finalised.

f) The colour scheme for the AP-RASP Actions follows that of the GASP Targets, viz. Yellow for ORG related and Green for OPS related Targets.

Action (*: *For inclusion in NASPs*)	**Source/ Fulfils**	**Mapping to GASP 2020-2022 Edition**	**Stakeholders**
Priority Area I. Reduction in Operational Risks			
A.I.19* Review, implement (and update the status of) priority RASG-APAC/ APRAST SEIs	GASP; AP-RASPAT	2.1.1 SEI-3; 2.1.2 SEI-7; 3.1 SEI-2C; 3.1 SEI-3 (A,B)	APRAST, SEI WG, States/ Administrations, COSCAPs, Industry
A.I.20 Enhance the current methodology for the tracking of RASG-APAC/ APRAST SEI implementation, and introduce indicators and targets to measure the implementation and effectiveness thereof; disseminate the results to DGs	GASP	2.1.1 SEI-3; 2.1.2 SEI-7	APRAST, SEI WG, SRP WG
A.I.21 Develop an inspector competency building framework, and any new RASG-APAC/ APRAST SEIs for urgent risks	GASP, DGCA-APAC/55	2.1.1 SEI-3; 2.1.2 SEI-7; 3.1 SEI-3 (A,B)	APRAST, SEI WG, SRP WG, States/ Administrations
A.I.22* Develop a more precision/ targeted approach of prioritisation of existing RASG-APAC/ APRAST SEIs for implementation (by sub-region or common-issue/risk States/ Administrations)	GASP, APRAST/13	2.2 SEI-16	APRAST, SEI WG, COSCAPs, States/ Administrations, Industry
Priority Area II. Improvements in Safety Oversight and Compliance			
A.II.1 Conduct workshops and courses to promote effective implementation of SARPs, especially in USOAP Audit Areas of ANS, AIG, AGA	GASP	2.1.1 SEI-1; 2.1.2 SEI-6	APRAST, COSCAPs, PASO, ICAO-APAC, States/ Administrations
A.II.2* Establish, enhance and populate COSCAP and RSOO technical experts databases	GASP, APAC COSCAPs	2.1.1 SEI-5; 2.1.1 SEI-9	COSCAPs, PASO, States/ Administrations
A.II.3* Encourage IATA, IOSA and ISAGO registrations	GASP, AP-RASPAT	3.1 SEI-7 (C,D,E,F)	APRAST, Industry, States/ Administrations
Priority Area III. Effective SMS and SSP			
A.III.1* Support the robust implementation and continuous improvement of SMS and SSP	GASP, AP-RASPAT	3.1 SEI-7 (C,D,E,F); 2.2 SEI-10; 2.2 SEI-11; 2.2 SEI-12	DGCA-APAC, RASG-APAC, APRAST, SEI WG, SRP WG, APAC-AIG, COSCAPs, PASO, ICAO-APAC, other regional

Action (*: For inclusion in NASPs*)	Source/ Fulfils	Mapping to GASP 2020-2022 Edition	Stakeholders
			platforms/ bodies, States/ Administrations, Industry
A.III.2 Improve the sharing of best practices in safety management, safety data and analyses among regional platforms including APANPIRG Sub-groups via RASG-APAC	GASP, AP-RASPAT, Beijing Declaration	3.1 SEI-1 (C,D); 3.1 SEI-7 (C,D,E,F); 2.2 SEI-11	RASG-APAC, APRAST, APAC-AIG, COSCAPs, ICAO-APAC, other regional platforms/ bodies, APANPIRG
A.III.3* Support the development of NASP	GASP, AP-RASPAT, Beijing Declaration	2.2 SEI-11	ICAO HQ, ICAO-APAC, APRAST, States/ Administrations
Priority Area IV. Data-driven regulatory oversight			
A.IV.1* Establish a mechanism to collect and analyse SSP SPI data from APAC States and common industry indicators	GASP	2.1.1 SEI-5; 2.1.2 SEI-9	APRAST, SRP WG, COSCAPs, ICAO-APAC, States/ Administrations, Industry
A.IV.2 Establish and populate a Regional Risk Register	GASP, APRAST	3.1 SEI-4C; 3.1 SEI-7 (C,D,E,F); 2.2 SEI-13	APRAST, SRP WG, COSCAPs, States/ Administrations, Industry
A.IV.3 Develop guidance on governance framework for cross-border aviation safety data sharing projects (incl. G2B/ third party involvement, funding, liability, info security/ protection)	GASP	2.2 SEI-14	APRAST, COSCAPs, States/ Administrations
A.IV.4* Establish a mechanism for regional aviation safety data collection and sharing and support States'/ Administrations' participation in regional aviation safety data-sharing projects	GASP, AP-RASPAT	2.2 SEI-14; 2.2 SEI-15	APRAST, States/ Administrations, Industry
A.IV.5* Develop a more data-driven, precision-/ targeted approach of identifying risks (by sub-region or common-issue/ risk groups of States/ Administrations)	GASP, Beijing Declaration	3.1 SEI-4C; 3.1 SEI-7 (C,D,E,F); 2.2 SEI-16	APRAST, SEI WG, SRP WG, COSCAPs, States/ Administrations, Industry
Priority Area V. Enhanced aviation infrastructure			
A.V.1 Integrate the existing basic building blocks of RASG-APAC/ APRAST	GASP	2.1.1 SEI-4; 2.1.2 SEI-8	APRAST, SEI WG, SRP WG, APAC-AIG, COSCAPs, ICAO-APAC
A.V.2 Enhance the TORs of various regional bodies using a TOR framework	GASP, Regional Cooperation Mechanism Task	2.1.1 SEI-4; 2.1.2 SEI-8	APRAST, SEI WG, SRP WG, APAC-AIG, COSCAPs, ICAO-APAC

Action (*: For inclusion in NASPs)	Source/ Fulfils	Mapping to GASP 2020-2022 Edition	Stakeholders
	Force		
A.V.3* Improve the communication of activities and coordination of schedules among regional bodies and meetings, regional workshops/ courses, e.g. via a one-stop calendar of regional events	GASP	2.1.1 SEI-4; 2.1.2 SEI-8	DGCA-APAC, RASG-APAC, APRAST, SEI WG, SRP WG, APAC-AIG, COSCAPs, ICAO-APAC, other regional platforms/ bodies, States/ Administrations, Industry
A.V.4* Establish a means for States/ Administrations to informally share information and coordinate on operational issues in the USOAP Audit Areas of OPS, ANS and AGA	GASP	2.1.1 SEI-5; 2.1.2 SEI-9	APRAST, COSCAPs, ICAO-APAC, States/ Administrations
A.V.5 Enhance the websites of various regional platforms, consolidate information on activities, and enhance related links among platforms	GASP	3.1 SEI-7 (C,D,E,F); 2.2 SEI-10	ICAO-APAC, COSCAPs, other regional platforms/ bodies

Table 2. Roadmap of ORG Actions of the AP-RASP 2020-2022 Edition

4.2.4 It is recommended that the ORG Actions be accomplished in a specific order, i.e. starting from the left and moving towards the right (refer to Figure 1 in Appendix C). However, the Actions should not be viewed as stand-alone activities. In many cases, they are interrelated and serve to meet several goals simultaneously.

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PART II – IMPLEMENTATION

5. RESPONSIBILITIES

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(i) Assignment of roles and responsibilities to key stakeholders to govern, develop and implement the AP-RASP as well as monitor its implementation and outcomes in improving safety in the region.

(ii) Guidance to APAC States to develop and implement NASP in alignment with GASP and AP-RASP

5.1 Entities responsible for governance, development, implementation and monitoring of AP-RASP

5.1.1 To ensure successful implementation of the AP-RASP 2020-2020 Edition following its approval at RASG-APAC/9 in November 2019, practical and detailed arrangements are required to ensure tight coordination among the various identified stakeholders.

5.1.2 RASG-APAC is responsible for the overall development, implementation and monitoring of the AP-RASP, together with APAC States/ Administrations, Industry Partners, International Organisations, regional groupings including the three APAC COSCAPs and PASO, the ICAO APAC Regional Office, and APANPIRG. The AP-RASP is to be supported by NASPs developed by States in the APAC region as well as work plans of other stakeholders, such as regional and non-governmental organisations. The Custodians are the lead entities for the general aspects concerning the implementation of the AP-RASP and its Actions, and are responsible for the roles and responsibilities as summarised in **Table 3**.

Custodians	Roles and Responsibilities
ICAO APAC Regional Office (Administrator of AP-RASP)	• Oversee implementation of AP-RASP Actions and achievement of Targets • Include AP-RASP Actions in yearly Workplans of APRAST and other regional platforms and mechanisms, including APAC COSCAPs • Advise on available Mechanisms/ Tools to facilitate implementation of Actions
APRAST Co-Chairs	• Oversee that top APAC safety risks and challenges are addressed (especially emerging issues with high and widespread impact), and ensure achievement of objectives and Targets • Report progress status of AP-RASP implementation and achievement of Targets to RASG-APAC • Present proposed revisions to the AP-RASP, following endorsement by APRAST, to RASG-APAC for approval
SRP WG	• Develop second-order indicators, as appropriate, to measure and track progress of the achievement of Targets • Prepare AP-RASP progress reports customised for every RASG-APAC and APRAST meeting
SEI WG	• Develop clear guidelines for States/ Administrations to indicate their implementation status for each OPS Action • Develop indicators to track and analyse the relevance and effectiveness of ORG and OPS Actions, in close coordination with the SRG WG • Work with Custodians to track and analyse the progress of implementation of all AP-RASP Actions
COSCAPs and PASO	• Support their respective States/ Administrations and industry stakeholders with implementation of the AP-RASP and its Actions
AP-RASP Ad-hoc WG	• Formed to review and develop the AP-RASP for the next triennium • Present the updated AP-RASP to APRAST for endorsement
Action Custodians	• Appointed by APRAST to lead the group of stakeholders identified in the AP-RASP to further develop specific details and timeline for implementation of their respective Actions

	• Provide updates to SEI and SRP WGs and ICAO-APAC Office on the progress status of their Actions

Table 3. Custodians responsible for the administration of AP-RASP, and their roles

5.1.3 Action Custodians are to be appointed by APRAST for each ORG Action from among the group of stakeholders identified in the AP-RASP for that Action, while the rest of the group of stakeholders will support and contribute to the implementation work as assigned by the Custodian. ICAO APAC Regional Office will disseminate the ORG Actions, as appropriate, to relevant APAC regional platforms and mechanisms to follow up to include in their Workplans, and request the Custodians and their respective identified Stakeholder groups to further develop specific details and a timeline for implementation of their ORG Actions.

5.1.4 For OPS Actions which have already been developed, SEI WG is the overall Custodian. To develop new SEIs and/ or OPS Actions in future, Action Custodians may be assigned by APRAST.

5.2 Guidance to APAC States to develop NASP

5.2.1 APAC States need to prioritise aviation in their national plans, and are recommended to establish their National Aviation Safety Plans (NASPs), taking into account the AP-RASP and the GASP.

5.2.2 In developing their NASPs, States should follow the seven-step process described in paragraphs 3.5.1 to 3.5.8 of the GASP, and refer to the guidelines and appended NASP template in ICAO Circular 3XX Chapter 4 'on Guidance for drafting the NASP'. States should identify which top safety risks and key issues described in the GASP and AP-RASP apply to their national context, and add on other safety risks, issues and national priorities that are relevant to their industry and operational context. Based on the regional and national analyses, States/ Administrations and RASG-APAC/ APRAST should conduct an assessment of the number of operational safety risks that can be managed, and prioritise them according to the safety risk management process.

5.2.3 At a minimum, States should also include the AP-RASP Actions and Targets listed in **Table 4** in their NASP Roadmap. These Actions and Targets (refer to Chapters 3.2, 4.2 and 6.1 for the details) were deemed relevant for inclusion in NASPs as these are intended for implementation by States/ Administrations in their domestic context. States should also consider including SEIs in the GASP, which are applicable to individual States and Industry (domestic) and other national priorities.

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AP-RASP Actions		AP-RASP Targets
A.I.1-A.I.18 (as prioritised and customised to each States' unique operational context)	A.I.19, A.I.22, A.II.2-A.II.3, A.III.1, A.III.3, A.IV.1, A.IV.4-A.IV.5, A.V.3-A.V.4	T.I.1-T.I.3, T.I.5, T.II.1-T.II.5, T.III.1-T.III.2, T.IV.2-T.IV.3, T.V.3-T.V.4

Table 4. Actions and Targets of the AP-RASP 2020-2022 Edition to be included in APAC States' NASPs

5.2.4 The NASPs should detail OPS and ORG roadmaps to address operational challenges and mitigate operational and organisational safety risks respectively. In addition, States/ Administrations and RASG-APAC/ APRAST should develop a method of measuring the progress of any initiative taken in that given time period.

5.2.5 NASPs should include, wherever appropriate, specific references to the GASP and AP-RASP for any adopted or adapted content, especially safety risks, issues, Actions and Targets. For this purpose, States are recommended to use the mapping template at **Appendix K**. Future AP-RASP Editions may consider advocating closer structural alignment between AP-RASP and NASPs for better compatibility and cross-referencing.

5.2.6 Successful implementation of the NASP Actions will require the commitment of resources from stakeholders within States/ Administrations, availability of data to effectively monitor the achievement of NASP Targets, and proper project governance and coordination. **Table 5** lists some anticipated project risks and their respective proposed mitigation measures, which typically pertain to the aforementioned two areas.

Project Risks	Mitigation measures
Lack of understanding of the expectations of the Actions	APRAST/ ICAO-APAC Office and custodian of the NASP to provide additional clarification on the expectations of the Actions.
Limited manpower and financial resources to fully implement Actions or develop indicators to and keep track of implementation of Actions and achievement of Targets	Custodian of the NASP to provide support, either directly or through partial delegation of responsibility to other local agencies. Approach ICAO-APAC Office, PASO and COSCAPs for advice on technical assistance avenues. Attend NASP workshops.
Lack of relevant skills and knowledge to effectively implement and monitor targets and indicators at a regional level	Collate relevant documentation/ educational material to support development of skills and knowledge where these are inadequate.
Lack of timely, consistent, quality data and systems to support monitoring of targets and indicators	Relevant domestic agencies/ bodies to collate relevant documentation/ educational material to support development of quality data collection mechanisms and monitoring of targets and indicators. All stakeholders should contribute data and information as necessary for the monitoring of targets and indicators, or otherwise communicate reason(s) for not being able to do so, so that such reasons can be addressed.
Inefficient approval processes (for Actions which require swifter decision-making and actions	Regular meetings and/or correspondences may be required to expedite decisions where lack of such decisions impacts timely implementation of the NASP Actions.
Lack of coordination and cooperation between Administrator, Custodians and Stakeholders	Ensure formal communication mechanisms to ensure there is a coordinated effort to support information flow and encourage cooperation between stakeholders.

Table 5. Project risks and mitigation measures associated with NASP implementation

6. MONITORING IMPLEMENTATION AND EFFECTIVENESS

6.1 Monitoring of progress and effectiveness of AP-RASP Actions and Targets

6.1.1 The Actions in the AP-RASP are implemented through the working arrangements of RASG-APAC/ APRAST, activities conducted by APAC regional bodies such as COSCAPs and PASO, as well as the safety oversight entities of APAC States/ Administrations and service providers' SMS at the individual States'/ Administrations' level. The safety performance of the civil aviation system within the APAC region will be continuously monitored to ensure that the Actions listed in the AP-RASP, including those related to compliance monitoring and safety risk management, contribute to the enhancement of safety. Successful achievement of the roadmap implementation relies upon close collaboration and cooperation of all stakeholders, especially in contributing the relevant data and information for monitoring purposes in a timely manner.

6.1.2 In addition to the APAC ASR, the AP-RASP includes a series of Targets to monitor and measure implementation of AP-RASP Actions and the resulting outcomes and safety improvement. These were selected in alignment with GASP Targets applicable to Regions and respective Industry, since only such targets can be addressed at RASG-/ regional-level, Beijing Declaration and AP-RASPAT 2018, while supporting the five Priority Areas of the AP-RASP. The Targets have been selected to ensure a balanced focus on organisational or systemic improvements and addressing operational safety risks.

6.1.3 The Targets are presented in **Table 6**, and are linked to the Actions of the five Priority Areas of the AP-RASP. Each AP-RASP Target covers the following points:

a) **Target**. A description of the specific Target, and the indicators required for performance measurement.
b) **Deadline**. The year in which the respective Target is expected to be achieved.
c) **Source/ Fulfils**. Indicates key existing global or regional documents from which the Action is adopted, adapted, if applicable.
d) States should consider for inclusion in their NASPs the GASP Targets applicable to States and Industry (domestic), as well as those in the AP-RASP mentioned in Chapter 5.2, and also indicated with an asterisk (*).
e) The colour scheme for the AP-RASP Targets follows that of the GASP, viz. Yellow for ORG related and Green for OPS related targets.

Target (**: For inclusion in NASPs*)	**Deadline**	**Source/ Fulfils**
OPS Targets		
Priority Area I. Reduction of Operational Risks		
T.I.1* Maintain a decreasing trend of fatal accidents per million departures, with a view to achieve an aspirational target of zero fatalities	Ongoing	GASP, AP-RASPAT
T.I.2* All States/ Administrations and industry to update the online monitoring mechanism on their status of implementation of all applicable priority RASG-APAC/ APRAST SEIs	2020	AP-RASPAT
T.I.3* All industry organisations and service providers to use globally harmonised metrics for the development and monitoring of service providers' SPIs as part of their safety management	2020	GASP

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(i)How the outcomes/ effectiveness of AP-RASP Actions in improving operational safety risks and safety oversight capabilities in the region will be measured and monitored via a series of Targets;

(ii) Respective stakeholders for the AP-RASP Targets, and how the Targets are aligned with existing key global and regional documents;

(iii)How progress of AP-RASP implementation will be communicated regularly to regional stakeholders;

(iv)Process for amendment of the AP-RASP to ensure continued relevance to current context and effectiveness in addressing top regional operational safety risks, safety oversight capabilities and other safety issues; and

(v)Suggested ways to mitigate project risks that may hinder AP-RASP implementation.

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Target (*: For inclusion in NASPs*)	Deadline	Source/ Fulfils
systems (SMS)		
T.I.4 All States/ Administrations with effective safety oversight capabilities (one which has, or is expected to meet, GASP Goal 2[2] and have a full SSP), to actively lead RASG-APAC's safety risk management activities	2022	GASP
T.I.5* States/ Administrations to contribute information on safety risks, including SSP safety performance indicators (SPIs), to RASG-APAC	2022	GASP
ORG Targets		
Priority Area II. Improvements to safety oversight /Industry safety audits		
T.II.1* States to progressively enhance safety oversight capability to achieve at least 75% EI in USOAP CMA, and to achieve an APAC average overall USOAP EI score higher or equal to the global average	2022	GASP, AP-RASPAT, Beijing Declaration
T.II.2* All States to reach a safety oversight index greater than 1 in all categories	2022	GASP
T.II.3* Endeavour to have no Significant Safety Concerns (SSCs) under the USOAP Continuous Monitoring Approach (CMA), and to resolve any SSCs promptly within the time frame specified in the Corrective Action Plan and agreed to by ICAO	Ongoing	AP-RASPAT, Beijing Declaration
T.II.4* States/ Administrations that do not expect to meet GASP Goals 2 and 3[3], to use a safety oversight organisations' ICAO-recognised functions	2020	GASP
T.II.5* Increase the number of IOSA registered APAC airlines and ISAGO registrations by 50% over July 2016 figures (82 and 51 respectively)	2020	AP-RASPAT, GASP
Priority Area III. Effective Safety Management Systems (SMS) and State Safety Programmes (SSP)		
T.III.1* All States to implement the full ICAO SSP	2025	GASP, AP-RASPAT, Beijing Declaration
T.III.2* All States to develop NASPs	2025	GASP, AP-RASPAT, Beijing Declaration

[2] Goal 2 expects States to have EI scores of CEs as follows:

by 2022 – 75 per cent
by 2026 – 85 per cent
by 2030 – 95 per cent

as well as to have an SOI greater than 1 in all 3 categories by 2022.

[3] Goal 3 expects States to implement the SSP Foundation by 2022, and fully implement SSP by 2025.

Target (*: For inclusion in NASPs)	Deadline	Source/ Fulfils
Priority Area IV. Data-driven regulatory oversight		
T.IV.1 Develop regional mechanism for data collection, analysis and sharing	2020	AP-RASPAT, Beijing Declaration
T.IV.2* Pursue 50% increase in participation in flight data sharing initiatives by APAC air operators, with aircraft of mass 27,000kg above, over July 2016 figures (15)	2020	AP-RASPAT
T.IV.3* States to achieve at least 75% EI in AIG of USOAP CMA, and an APAC average USOAP EI score in AIG higher or equal to the global average	2022	GASP, AP-RASPAT, Beijing Declaration
Priority Area V. Enhanced Aviation Infrastructure		
T.V.1 Promote runway safety through workshops and seminars at least yearly	Ongoing	AP-RASPAT
T.V.2 Implement structures between RASG and APANPIRG to facilitate sharing and resolution of ATM-related safety issues	2020	AP-RASPAT
T.V.3* States to achieve at least 75% EI in AGA of USOAP CMA, and an APAC average USOAP EI score in AGA higher or equal to the global average	2022	AP-RASPAT, Beijing Declaration
T.V.4* All States to establish an independent accident and incident investigation authority (AAIIA) as required by Annex 13, as well as related investigation system and procedures	2022	GASP, Beijing Declaration

Table 6. OPS and ORG Targets of the AP-RASP 2020-2022 Edition

6.1.4 To gauge the relevance and effectiveness of the AP-RASP Actions, second-order milestones or indicators should be developed, and updated in tandem with the status of progress of the implementation of Actions. Similarly, to measure and track progress of the achievement of the AP-RASP Targets, additional operational safety performance indicators, which are not already covered by the AP-RASP Targets, should be developed to measure and track the reduction of top APAC safety risks and resolution of challenges, as well as the overall improvement of aviation safety in the APAC region. To this end, a standardised approach should be developed and adopted to facilitate reporting of information from individual States/ Administrations and other stakeholders at the regional level, and improving the provision of information to RASG-APAC/ APRAST. This will allow the APAC region to receive information and better assess safety risks using common methodologies.

6.2 Communication of progress to RASG-APAC and regional stakeholders

6.2.1 The progress of implementation of the AP-RASP ORG Actions may be collated from meeting reports of respective regional platforms/ mechanisms, and/ or from the Custodians of the respective Actions. As for the OPS Actions, the Online Monitoring Mechanism will be made available to all APAC States/ Administrations, and clearer guidelines should be provided to assist States/ Administrations in indicating their implementation status for each OPS Action.

6.2.2 The abovementioned information will culminate in a report on progress of implementation of the AP-RASP Actions and achievement of Targets will be presented at every APRAST and RASG-APAC meeting. The progress report should cover minimally the following aspects:

a) Brief overview of the overall implementation of the AP-RASP
b) Analysis on delay/ challenges encountered in implementation of Actions
c) If regional safety goals and targets are not met, causes will be addressed and presented to relevant stakeholders.

6.3 Process for amendment to the AP-RASP

6.3.1 A review of the AP-RASP should be triggered under two circumstances:

a) **New Edition**. The ICAO APAC Regional Office should prompt RASG-APAC to task APRAST to review the AP-RASP and develop a new Edition for the next triennium. An ad-hoc WG should be formed for this purpose, and adhere to the recommended Modalities of AP-RASP ad-hoc WG at Annex A.

b) **Ad-hoc amendment**. If new critical regional issues are identified and reasonable measures are required to mitigate the safety risks as soon as practicable, RASG-APAC and/ or APRAST may make changes to the existing AP-RASP Edition on an ad-hoc basis, without forming an ad-hoc WG. The amended version of the AP-RASP should be indicated as a revised Edition.

6.3.2 Key aspects to be considered during the Review include the following:

a) Ensure continuity with the existing AP-RASP Edition
b) Causes for any Actions not implemented or Targets not met, and any mitigation actions to be taken.
c) Ensure alignment with new draft GASP Edition and revised APAC Ministerial Declaration, incl. conduct gap analysis to identify gaps between these documents and the existing AP-RASP
d) AP-RASPAT is integrated into AP-RASP and will be updated as part of the AP-RASP review
e) Address current regional safety risks and challenges identified by APRAST, COSCAPs, PASO and APAC-AIG
f) If any existing AP-RASR Actions and Targets need to be revised or new ones introduced

6.3.3 Prior to the endorsement of the revised AP-RASP by APRAST and approval by RASG-APAC respectively, adequate consultation of the proposed contents and amendments should be undertaken among APRAST WGs, APAC-AIG, COSCAPs and PASO, APAC States/ Administrations, Industry Partners, International Organisations and the ICAO APAC Regional Office. Especially where ATM issues are involved, other non-safety-centric regional entities such as APANPIRG and its Subgroups should also be consulted. The assistance of the ICAO APAC Regional Office can be sought in this respect.

6.3.4 The typical timeline for the review process of the AP-RASP is described in **Table 7**. In case of an exigency requiring swift major changes to particular Actions, it is recommended that deviations from this process, such as seeking approval in writing instead of at an RASG-APAC meeting, may be allowable depending on the circumstances and upon recommendation by ICAO-APAC and approval by RASG-APAC Co-Chairs.

Time	Task	Custodian
Minimally 2 APRAST meetings or 1 year before end of existing validity period (to coincide with GASP*), e.g. at the second APRAST meeting of 2021*, or if new critical regional issues are identified and reasonable	Trigger the formation of an ad-hoc WG to review AP-RASP in accordance with the above stated guidelines, and insert this as an agenda item in the upcoming APRAST meeting.	ICAO APAC Regional Office
	Ensure the formation of an ad-hoc WG to review AP-RASP and develop revised Edition.	APRAST Co-Chairs

measures are required to mitigate the safety risks as soon as practicable		
At the APRAST meeting preceding the last RASG-APAC meeting before the end of the existing validity period, *e.g. at APRAST meeting before RASG-APAC/12 in 2022*	Submit the revised AP-RASP for endorsement by APRAST.	Ad-hoc WG
At RASG-APAC meeting before end of existing validity period, *e.g. at RASG-APAC/12 in 2022*	Seek approval for the revised AP-RASP. Upon approval, AP-RASP to be put into implementation.	APRAST Co-Chairs
At every APRAST, RASG and DGCA meeting during validity period	Report achievement of AP-RASP milestones and targets as a routine agenda item.	SRP WG, ICAO APAC Regional Office
Within validity period, *e.g. 2020-2022*	Propose changes to the Actions and Targets if necessary for APRAST's endorsement and RASG-APAC's approval.	APRAST Co-Chairs

Table 7. Typical timeline for AP-RASP review process

6.4 Project risks and challenges associated with AP-RASP implementation

6.4.1 Successful implementation of the AP-RASP Actions will require the commitment of resources from stakeholders within the APAC region, availability of data to effectively monitor the achievement of AP-RASP Targets, and proper project governance and coordination. **Table 8** lists some anticipated project risks and their respective proposed mitigation measures, which typically pertain to the aforementioned two areas.

Project Risks	**Mitigation measures**
Lack of understanding of the expectations of the Actions	APRAST leadership team to provide additional clarification on the expectations of the Actions
Limited manpower and financial resources to fully implement Actions or develop indicators to keep track of implementation of Actions and achievement of Targets	APRAST leadership team and WGs to provide support, either directly or through the partial delegation of responsibility to other APRAST members
Lack of relevant skills and knowledge to effectively implement and monitor targets and indicators at a regional level	APRAST WGs to collate relevant documentation/ educational material to support the development of skills and knowledge where these are inadequate
Lack of timely, consistent, quality data and systems to support monitoring of targets and indicators	APRAST WGs to collate relevant documentation/ educational material to support the development of quality data collection mechanisms and monitoring of targets and indicators. To this end, all stakeholders should contribute data and information as and when required, or otherwise communicate the reason(s) for not being able to do so, so that such reasons can be addressed
Ineffective approval processes (given that there	All stakeholders should recognise that inter-session

are only 2 APRAST and 1 RASG-APAC meetings annually) for Actions which may require swifter decision-making and actions to be taken	meetings and/or correspondences may be required to expedite decisions where the lack of such decisions impacts timely implementation of the AP-RASP Actions
Lack of coordination and cooperation between Administrator, Custodians and Stakeholders, including States/ Administrations, Industry Partners and International Organisations	APRAST to establish formal communication mechanisms to ensure that there is a coordinated effort to support information flow and encourage cooperation between stakeholders

Table 8: Project risks associated with AP-RASP implementation and their mitigation measures

6.4.2 In addition to the above mitigation measures, information should be collected as to the extent and nature of the abovementioned project risks, as well as other risks that may be identified in the course of implementation of the AP-RASP.

APPENDIX A. AD-HOC WORKING GROUP MEMBERS AND CONTACT DETAILS FOR ENQUIRIES

Ad-hoc Working Group members for AP-RASP 2020-2022 Edition

States/ Administrations	**Industry Partners and International Organisations**
Drafting Group	
Singapore [*Co-Lead (States)*] China [*APRAST Co-Chair (States)*] Macao (China) [*SEI WG Co-Chair (States)*] Australia [*SRP WG Co-Chair (States)*] Thailand US	AAPA [*Co-Lead (Industry)*] IATA [*APRAST Co-Chair (Industry)*] Airbus [*SEI WG Co-Chair (Industry)*] Boeing [*SRP WG Co-Chair (Industry)*]
Review Group	
Bangladesh Cambodia Hong Kong (China) India Nepal	ACI IFALPA ICAO APAC Regional Office Chief Technical Advisors/ Programme Coordinators of COSCAP-SEA, COSCAP-NA and COSCAP-SA PASO APAC-AIG

Contact Points for enquiries

For enquiries on AP-RASP and development of NASPs, please contact the ICAO APAC Regional Office at apac@icao.int.

APPENDIX B. TERMS OF REFERENCE OF THE AP-RASP AD-HOC WORKING GROUP

Membership

- APAC States/ Administrations, International Organisations, Industry Partners; all APAC COSCAPs, PASO, APAC-AIG and ICAO-APAC Office
- Broad Geographical representation (e.g. minimally one State from each APAC Subregion, COSCAP-CTAs/ PCs, PASO to assist to seek inputs from their respective MSs).

Expectations

- Possess the necessary domain/ technical expertise and knowledge of APAC regional issues
- Committed to and punctual in completing assigned tasks

Structure and Roles

- Co-Leads: 1 each from State and Industry, APRAST-appointed
- Drafting Group (DG): Determine AP-RASP contents and draft AP-RASP
- Review Group (RG): Provide and/ or verify content, provide comments to enhance draft

Coordination

- Among APRAST (SEI, SRP) WGs and APAC-AIG; and with support from APAC COSCAPs and ICAO-APAC Office to obtain information useful for AP-RASP development
- Tasks may be assigned by Co-Leads to DG, RG, and abovementioned entities

Communication/ meetings

- Mainly intersessionally via teleconferencing and e-mail; and face-to-face meetings on APRAST sidelines
- Focussed: Agenda and objectives of meetings should be circulated in advance, with the aim to achieve specific outcomes/ deliverables at each meeting

Considerations for Review of AP-RASP

- Ensure continuity from the existing AP-RASP Edition
- If regional safety goals and targets are not met, address and present causes to relevant stakeholders
- Ensure alignment with new draft GASP Edition and revised APAC Ministerial Declaration, including conduct gap analysis to identify gaps between these and the existing AP-RASP
- Address current regional safety risks and challenges identified by APRAST, COSCAPs, PASO and APAC-AIG
- Revise AP-RASP Actions and Targets accordingly for the new validity period/ triennium

APPENDIX C. KEY REFERENCE DOCUMENTS USED TO DEVELOP THE AP-RASP 2020-2022 EDITION

1. Reports of RASG-APAC/8, APRAST/12, /13 and /14 meetings, and Working Papers RASG-APAC/8-WP/13, APRAST/13-WP/13, APRAST/14-WP/8 and WP/9
2. GASP 2020-2022 Edition (Doc 10004) (www.icao.int/gasp)
3. Beijing (APAC Ministerial) Declaration 2018 (www.icao.int/APAC/Meetings/Pages/2018-APACMC.aspx)
4. Asia-Pacific Regional Aviation Safety Priorities and Targets (AP-RASPAT 2018) (v2.1)
5. APAC Annual Safety Report 2019
6. RASG-APAC/ APRAST SEIs (as at May 2019)
7. TORs of RASG-APAC, APRAST and Sub-Groups
8. ICAO Circular 3XX Chapter 3 'Guidance for drafting the RASP' and Appendix 'RASP template'; Chapter 4 'Guidance for drafting the NASP' and Appendix 'NASP template' (link tbc)
9. CAST/ ICAO Common Taxonomy Team (CICTT) taxonomies for hazards and occurrences (www.intlaviationstandards.org)
10. Aviation Benefits Beyond Borders Report 2018 (https://aviationbenefits.org)

**Note: Items 1,4 ,5 6 and 7 are available at www.icao.int/APAC/RASG/Pages/default.aspx*

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APPENDIX D. GASP ORG SEIs CONSIDERED WHEN DEVELOPING THE AP-RASP

The following is a list of SEIs of the ORG Roadmap of the GASP, which were considered in the development of the AP-RASP. These were selected from the GASP SEIs for Regions and Industry (applicable to regions), since such GASP SEIs can only be addressed at RASG-/ regional-level. GASP SEIs for States and Industry (domestic) were deemed more appropriate to be included in NASPs.

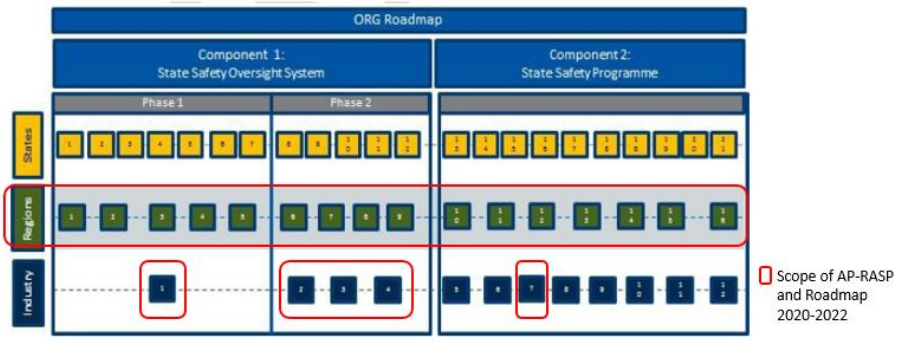

Figure 1: SEIs in GASP ORG Roadmap considered in developing AP-RASP

2.1 Component 1 — State safety oversight (SSO) system

2.1.1 Phase 1 — Establishment of a safety oversight framework (CE-1 to CE-5)

- SEI-1 — Consistent implementation of ICAO SARPs at regional-level
- SEI-2 — Establishment independent regional accident and incident investigation process, consistent with Annex 13
- SEI-3 — Regional safety enhancement initiatives to support consistent coordination of regional programmes in establishing adequate safety oversight capabilities
- SEI-4 — Strategic collaboration with key aviation stakeholders to enhance safety in a coordinated manner
- SEI-5 — Provision of the regional safety information to ICAO by asking States to complete, submit and update all relevant documents and records

2.1.2 Phase 2 — Implementation of a safety oversight system (CE-6 to CE-8)

- SEI-6 — Continued implementation of and compliance with ICAO SARPs at the regional level
- SEI-7 — Regional safety enhancement initiatives to support consistent coordination of regional programmes in implementing adequate safety oversight capabilities
- SEI-8 — Strategic collaboration with key aviation stakeholders to enhance safety in a coordinated manner
- SEI-9 — Continued provision of the primary source of regional safety information to ICAO by asking States to update all relevant documents and records as progress is made

2.2 Component 2 — State safety programme

- SEI-10 — Start of promotion of SSP implementation at the regional level
- SEI-11 — Regional safety enhancement initiatives to support consistent coordination of regional programmes for SSP implementation

- SEI-12 — Strategic collaboration with key aviation stakeholders to support SSP implementation
- SEI-13 — Establishment of safety risk management at the regional level
- SEI-14 — Regional allocation of resources to support continued development of the proactive use of risk modelling capabilities
- SEI-15 — Regional collaboration with key aviation stakeholders to support the proactive use of risk modelling
- SEI-16 — Advancement of safety risk management at the regional level

3.1 Component 1 — State safety oversight (SSO) system

3.1.1 Phase 1 — Establishment of a safety oversight framework (CE-1 to CE-5)

- SEI-1C — Participate in regional activities for sharing of best practices, mentoring and conducting follow-up actions
- SEI-1D — Address high risk categories of occurrences, as applicable, in coordination with States and Regions
- SEI-2C — Encourage active participation of industry in RASGs to assist with implementation of regional SEIs
- SEI-3A — Identify resources that are available to support roadmap safety enhancement initiatives for States and Regions
- SEI-3B — Participate in regional and international government/industry collaborative safety enhancement initiatives
- SEI-4C — Continue to work with regional groups to address high risk categories of occurrences
- SEI-7C — Support RASG and/or RSOO efforts to establish a mentoring system, including providing assistance to States/industry, as well as sharing of best practices to support SSP implementation
- SEI-7D — Provide input to process for sharing technical guidance, tools and safety-critical information related to SSP & SMS (e.g. advisory circulars, staff instructions, safety performance indicators), in collaboration with States, RASG, RSOO, ICAO and/or other stakeholders
- SEI-7E — Support continuous improvement of SSP, in collaboration with States, RASG, RSOO, ICAO and/or other stakeholders
- SEI-7F — Continue to work with regional groups to address high risk categories of occurrences

APPENDIX E. MAPPING OF KEY CONTENTS OF AP-RASP TO GASP GUIDELINES

Guidelines in ICAO Circular 3XX Chapter 3 'Guidance for drafting the RASP'	Location(s) in AP-RASP 2020-2022 Edition
3.3.1 Introduction	
a) Overview of the RASP, including its structure	Foreword, Executive Summary, Chap 1.1-1.3
b) Region's commitment to aviation safety and to the resourcing of activities to enhance safety	Foreword, Chap 1.4, 2.3
c) Entities responsible for the RASP's development, implementation and monitoring	Chap 5.1
d) Regional safety issues (brief description)	Executive Summary
e) RASP's goals and targets (brief description)	Executive Summary
f) Region's operational context, incl. i) traffic volume and anticipated growth/ decline ii) varying maturity levels of implementation of an effective safety oversight system iii) common hazards or challenges particular to region (grouped by categories e.g. environment, technology, organisational, human factors, etc.)	Chap 2.1
3.3.2 Purpose of RASP	
a) Purpose of the RASP, which contains the region's strategic direction for the management of aviation safety	Chap 1.1, 2.2
b) RASP's duration (refer to section 3.3.3(a)(1))	Chap 1.1, 2.2
c) Link between the GASP, RASP, and NASP	Chap 1.4, 5.2
d) Regional-level initiatives that will support safety improvement at State- and international-level	Chap 1.4, 2.3, 3.2, 4.2, Appendix G
e) Which other documents and plans have been considered in the development of the RASP	Chap 1.4, Appendix C
3.3.3 Region's strategic approach to managing aviation safety	
a) How the RASP is developed and endorsed, including stakeholder collaboration/ consultation i) Governance of RASP, frequency of review/ update (consider alignment with GASP revision cycle) ii) Collaborative approach in identifying issues and implementing SEIs iii) Process used to determine regional operational safety risk and other safety issues (e.g. organisational challenges)	Chap 1.3, 2.3, 5.1, 6.1, 6.3-6.4, Appendix H
b) Regional safety goals, targets and indicators i) How these are linked to GASP ii) Specific regional goals, targets and indicators over and above those in GASP	Chap 6.1
c) How SEIs help achieve regional safety goals i) Link between regional goals and targets and SEIs ii) Link between regional goals and targets and States' individual SEIs or overarching international initiatives	Executive Summary, Chap 1.4, 5.2, 6.1 Appendix D

Commented [A20]: [*Editorial*] To update once Circular is published. Note that it may be converted into a Manual instead.

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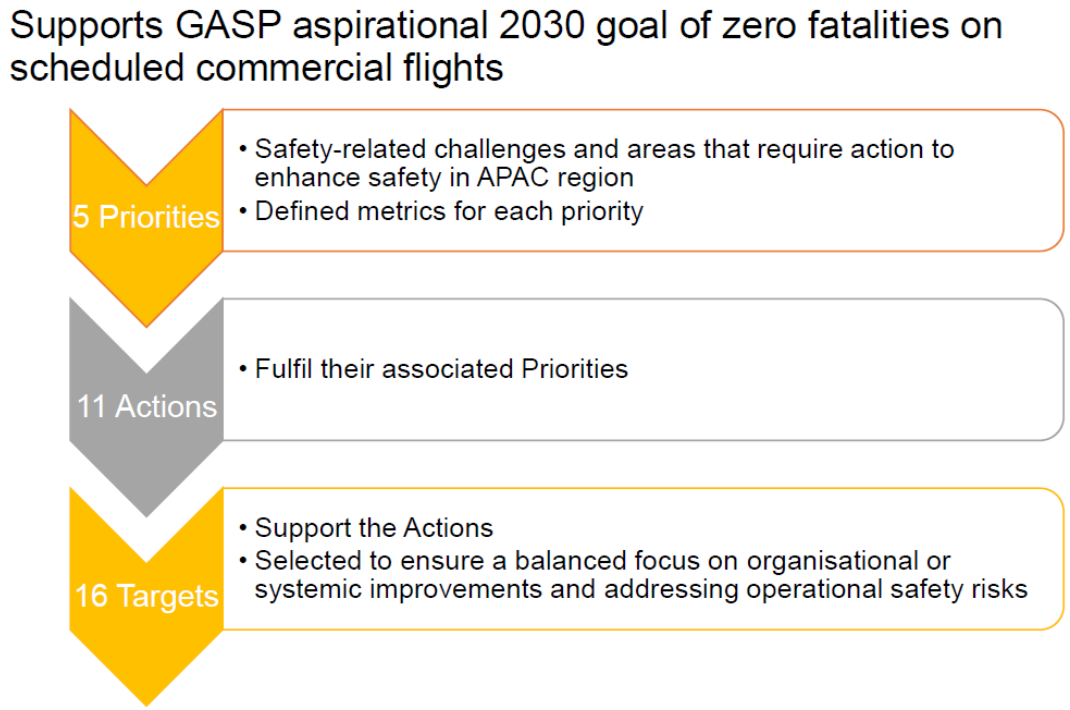
d)	List emerging issues that may require further analysis	Chap 1.4, 2.3
3.3.4 Regional operational safety risks		
a)	Summary of accidents and serious incidents of region's States' CAT and GA aircraft in set time period	Chap 3.1 Appendix I
b)	Regional HRCs of occurrences in RASP, and why these were given priority i) GASP HRCs ii) Additional categories of operational safety risks	Chap 3.1-3.2
c)	How regional operational safety risks were identified and prioritised i) Done by individual States in region; or ii) Derived from regional analysis; or iii) Additional categories in GASP	Chap 3.1, Appendix H
d)	Main contributing factors leading to region's HRCs	Chap 3.1
e)	Set of SEIs to mitigate HRC risks and additional risks i) Regional SEIs to address regional HRCs ii) SEIs derived from GASP OPS roadmap	Chap 3.2
f)	Taxonomy for determining ops safety risks (use of ICAO CICTT taxonomy recommended)	Appendix H
3.3.5 Other regional safety issues		
a)	Summary of region's States' effective safety oversight capabilities e.g. USOAP results/ SOIs	Chap 4.1, Appendix J
b)	Other safety issues (e.g. organisational challenges) and why these were prioritised	Chap 4.1
c)	How they were identified, including via data-driven approach, e.g. i) done by States in region ii) derived via regional analysis (RASG-APAC, COSCAPs, etc.) iii) through organisational challenges in GASP iv) through regional overview of USOAP and States' data	Chap 4.1, Appendix I
d)	Set of SEIs to address other safety issues i) SEIs developed to address these ii) SEIs derived from GASP ORG roadmap	Chap 4.2, Appendix D
3.3.6 Monitoring implementation		
a)	How region will monitor implementation of RASP SEIs and how it will measure safety performance to ensure achievement of intended results	Chap 6.1
b)	How corrections and adjustments to RASP and SEIs are made and reported	Chap 6.2-6.3
c)	How regional safety targets are monitored/ tracked i) Indicators should be consistent with/ linked to GASP's	Chap 6.1
d)	Means to update stakeholders on progress in achieving goals and targets, and SEI implementation	Chap 5.1, 6.2
e)	Explanatory text on: i) Root causes for not meeting goals and targets ii) Measures taken asap to mitigate any critical safety risks identified, that may lead to unscheduled revision of RASP	Chap 6.2-6.4
f)	State's standardised approach to provide/ report information to RASG-APAC to assess safety risks via common methodologies	Chap 6.2
g)	Contact details for any inquiries	Appendix A

APPENDIX F. PRIORITIES AND TARGETS OF THE AP-RASPAT 2018 AND BEIJING DECLARATION

AP-RASPAT (v2.1) 2018



APRAST to focus on implementation of AP-RASPAT targets and SEIs over next 3 years

Priority	Action(s)	Targets
Reduction of operational risks ***Metric(s):*** *Number of fatal accidents irrespective of the volume of air traffic in the APAC region, and number of fatal accidents per million departures.*	Implement priority Safety Enhancement Initiatives (SEIs)	• All States/Administrations and industry to update the online monitoring mechanism on their status of implementation of all applicable priority SEIs in RASG-APAC work programme by end-2019. • Maintain a decreasing trend of fatal accidents per million departures, with a view to achieve an aspirational target of zero fatalities by 2030.

Priority	Action(s)	Targets
Improvements to safety oversight /Industry safety audits ***Metric(s):*** *APAC States' ICAO USOAP CMA effective implementation rate.* *Number of service providers participating in the corresponding, ICAO-recognized industry assessment programmes.*	• Resolve Significant Safety Concerns (SSCs) • Use of IATA Operational Safety Audit (IOSA) and the IATA Standard Safety Assessment (ISSA) • Use of IATA Safety Audit for Ground Operations (ISAGO) to improve ground safety	• States to progressively enhance safety oversight capability to achieve at least 75% EI in USOAP CMA, and to achieve an APAC average overall USOAP EI score higher or equal to the global average by 2022. • States to resolve any SSCs identified by the ICAO USOAP CMA programme promptly within the timeline specified in the corrective action plan and agreed to by ICAO. • Endeavour to have no SSCs under USOAP CMA, and to resolve any future SSCs within the time frame agreed with ICAO. • By 2020, increase no. of IOSA registered APAC airlines by 50% over end-2016 figures; • By 2020, pursue 50% increase in ISAGO registrations over end-2016 figures. 55

Priority	Action(s)	Targets
Consistent and effective Safety Management Systems (SMS) and State Safety Programmes (SSP) ***Metric(s):*** *Number of States having achieved Level 4 progress in SSP Implementation.* *Number of States having developed a national aviation safety plan.*	Support robust implementation of SMS and SSP	• All States to implement the full ICAO SSP by 2025. • All States to develop national aviation safety plans by 2025.

Priority	Action(s)	Targets
Data-driven regulatory oversight ***Metrics***: *States' ICAO USOAP CMA EI rate for AIG module.*	• Implementation of APAC AIG recommendations to address Annex 13 requirements • Establish a structure for safety data collection, analysis and sharing • Establish a mechanism for regional data collection and sharing • Enhance the protection of aviation safety data information	• States to achieve at least 75% EI in AIG of USOAP CMA,and an APAC average USOAP EI score in AIG higher or equal to the global average by 2022. • To develop regional mechanism for data collection, analysis and sharing by 2020. • By 2020, pursue 50% increase in participation in flight data sharing initiatives by APAC air operators, with aircraft of mass 27,000kg above, over end-2016 figures.

Priority	Action(s)	Targets
Enhanced Aviation Infrastructure (Air Traffic Services and Aerodrome Facilities) ***Metrics***: *Structures in place to collect and share regional ATM data.* *States' ICAO USOAP CMA EI rate for AGA module.* *Number of runway safety seminars, workshops or other events at APRAST or RASG-APAC.* *Number of certified aerodromes in APAC region that are used for international operations.*	• Coordination with APANPIRG • Promotion of Effective Implementation of AGA	• Implement structures between RASG and APANPIRG to facilitate sharing and resolution of ATM-related safety issues by mid-2017~~9~~. • [*RPD*] States to achieve at least 75% EI in AGA of USOAP CMA, and an APAC average USOAP EI score in AGA higher or equal to the global average by 2022. • Promote runway safety through workshops and seminars at least yearly. • Certify all aerodromes in APAC region that are used for international operations by 2020.

2018 APAC Ministerial Conference on Civil Aviation declared their commitment to several aviation safety-related actions

1.0 Aviation Safety
1.1 Commit to:
(a) Progressively enhance safety oversight capability to achieve a USOAP EI score higher or equal to the global average by 2022. (b) Implement an effective SSP by 2025. (c) Endeavour not to have any Significant Safety Concerns (SSCs) under the USOAP Continuous Monitoring Approach (CMA), and to resolve any future SSCs within the time frame agreed with ICAO. (d) Certify all aerodromes used for international operations by 2020. (e) Use data driven methodologies to identify high risk categories of occurrences e.g. runway safety, loss of control in flight and controlled flight into terrain, and implement collaborative solutions to reduce accident rates and fatalities in the region. (f) include aviation safety in national planning frameworks such as National Development Plans (NDPs) supported by robust Civil Aviation Master Plans.
1.2 Promote regional government and industry collaboration for sharing of best practices in safety management through the Regional Aviation Safety Group (RASG).

3.0 Accident Investigation

3.1 In accordance with the Chicago Convention, commit to establish an accident investigation authority that is independent from State aviation authorities and other entities that could interfere with the conduct or objectivity of an investigation or where appropriate develop a bilateral, sub-regional or regional partnership to support the establishment of accident investigation capabilities to serve the region or sub-region.

4.0 Human Resource Development

4.1 In line with the ICAO initiative on "Next Generation of Aviation Professionals (NGAP)", accord priority to human capital development to provide sufficient qualified and competent aviation professionals to support the Region's growing needs, including where appropriate:

(a) Establish access to quality training
(b) Encourage sharing of resources bilaterally and/or multilaterally as well as with industry partners.

APPENDIX G. RESOURCES, TOOLS AND PLATFORMS TO SUPPORT AP-RASP IMPLEMENTATION

The following is a non-exhaustive list of available ICAO resources and tools to support the implementation of GASP, RASP and NASP, in addition to the ICAO publications referenced in the GASP.

- **Programmes** including No Country Left Behind (NCLB) and iMPLEMENT, Next Generation of Aviation Professionals (NGAP), Technical Assistance Programme, Runway Safety Progamme, Cabin Safety Initiative, GADSS, and GASP and Safety Management Implementation websites;
- **Electronic tools** including iSTARS, USOAP CMA Online Framework (OLF), SSP Foundation Tool, Aviation Safety Implementation Assistance Partnership (ASIAP); and
- **Products and services** including Safety Fund (SAFE), Global Aviation Safety Oversight System (GASOS), Civil Aviation Safety Inspectors (CASI) and cross-border transferability (XBT), Competency-based Training and Assessment Task Force (CBTA).

Relevant APAC regional bodies and mechanisms to discuss the implementation of Actions of the AP-RASP, include the following:

- **APAC regional bodies and mechanisms** including. ICAO APAC Regional Office and website and CAT Missions, APAC Ministerial Conference, DGCA-APAC, RASG-APAC, APRAST including SEI WG and SRP WG/ IAT, APAC-AIG, APAC COSCAPs and e-CCBM, PASO, APANPIRG and its Subgroups including RASMAG and AOPSG, ICAO RTCOs in APAC, APEC Aviation Safety Experts Subgroup Meeting, ASEAN, SARI, AAPA, EU ARISE+, EU-SEA and EU-SA APPs, FAA/APAC Bilateral Partnership, US CAST.

Refer to the below table for more information on the key APAC regional bodies, mechanisms and platforms.

Name	Function
ICAO APAC Regional Office	The APAC Office is accredited to 39 contracting States, and maintains liaison with 1 Non-Contracting State, two Special Administrative Regions of China and 13 other Territories. The Asia/Pacific Region covers vast airspace, with 50 Flight Information Regions. The primary role of the APAC Office is to foster the planning and implementation by the States of the ICAO provisions: International Standards and Recommended Practices (SARPs), Procedures for Air Navigation Services (PANS) and Regional Air Navigation Planning, for the safety, security and efficiency of air transport.
Directors General of Civil Aviation (DGCA) Conference	The Annual Conference of Directors General of Civil Aviation is a major event in the Asia/Pacific Region. The Conference is hosted by States within the Asia/Pacific Region on a rotation basis. The Conference is strictly with the Directors General, but because of the association of the Regional Office right from the beginning, ICAO is considered an integral and a key partner of this event. ICAO serves the Conference as the Secretary and is involved in its planning, conduct and follow-up. It also provides guidance and follows up on preparations as well as provision of facilities and services by the Host State. The Conference is unique in the retention of its informal nature, which allows the Directors General to discuss any issue openly and frankly. The forum also provides the essential linkage for all the Aeronautical Authorities of the Region to establish a

	very close and personal rapport which contributes greatly to the co-ordination on Civil Aviation matters in the Region. The aims and objectives of the Annual Conference of the Directors General of Civil Aviation in the Asia/Pacific Region are to: a) Review and exchange information on matters of interest in civil aviation. b) Enhance co-ordination of civil aviation activities in the Region. c) Allow in-depth deliberations on one or two items of crucial importance to the Region as Theme Topic(s). d) Develop specific *Action Items* that are of common interest and importance to the Region. e) Provide overall guidance, harmonization and co-ordinated application of standards and procedures in the Region. f) Follow up and co-ordinate, by the Secretariat, on issues of importance in a timely and orderly manner.
Aerodromes Operations and Planning Sub-Group (AOP SG)	The AOPSG is a sub-group of ATM/SG. It is tasked with identifying and addressing aerodrome deficiencies. The working group also looks at areas and developments where improvements can be made to enable a more efficient aerodrome operation.
Regional Airspace Safety Monitoring Advisory Group (RASMAG)	RASMAG is a sub group of APANPIRG. It is tasked with facilitating the safe implementation of reduced separation minima and CNS/ATM applications within the Asia and Pacific Regions with regard to airspace safety monitoring; and to assist States to achieve the established levels of airspace safety for international airspace within the Asia and Pacific Regions.
Regional Aviation Safety Group APAC (RASG-APAC)	The Regional Aviation Safety Group for the Asia and Pacific Regions comprised all States/Administrations in Asia and Pacific Region, appropriate International Organizations and other Partners who could provide support to enhance safety in the Asia and Pacific Region. The RASG-APAC, similar to Planning and Implementation Regional Groups (PIRGs), allows the reports of RASGs to be reviewed by the Air Navigation Commission on a regular basis, and by Council as deemed necessary, thus providing interregional harmonization related to flight safety issues and a means to monitor implementation of the Global Aviation Safety Plan /Global Aviation Safety Roadmap (GASP/GASR).
Asia Pacific Regional Safety Team (APRAST)	APRAST is a sub-group under RASG-APAC providing support in the implementation of safety initiatives. APRAST works closely with industry and other organisations to coordinate implementation efforts. APRAST assists RASG-APAC in the monitoring and implementing of the APAC regional aviation safety priorities and targets in line with the ICAO Global Aviation Safety Plan. Also develops Work Programme for RASG-APAC. APRAST reviews regional trends on accidents, incidents and other areas of concern which may warrant interventions. The focus and priority for APRAST will be to introduce, support, and develop actions, which have the potential to effectively and economically reduce the regional aviation risk. APRAST also supports and implements the sharing of best practices and information.
Accident Investigation Group (APAC AIG)	APAC AIG is currently a sub-group of APRAST. APAC-AIG assists States/ Administrations to achieve a high level of compliance with ICAO SARPs in the area of AIG. It enhances capabilities among AIG bodies, through organising workshops, seminars, forums and training, and through cooperation.

	Note: APAC-AIG will separate from APRAST and report directly to RASG-APAC only after RASG-APAC/8 in Sep 2018.
Safety Reporting and Programme WG (SRP WG)	SRP WG is a sub-group of APRAST. It determines aviation safety risks and key contributors to accidents in APAC. It also develops the APAC Regional Annual Safety Report.
SEI WG	SEI WG is a sub-group of APRAST. It develops, implements and reviews SEIs to address contributing factors to operational risks, i.e. Loss of Control In-flight (LOC-I), Controlled Flight into Terrain (CFIT), Runway Safety (RS).
Information Analysis Team (IAT)	IAT is a sub group of APRAST. It supports the development of SEIs and APAC Regional Annual Safety Reports through processing significant volume of data and information.
APRAST Capacity Building Task Force	The TF was formed on a once-off ad hoc basis for a specific purpose to resolve a specific issue identified by APRAST. In this instance, it was on "developing a Standardised Capacity Building Progrmme". This programme was subsequently proposed to RASG for acceptance, supported by APRAST. With RASG's acceptance, the programme was disseminated to all APAC States/ Administrations by the ICAO APAC Regional Office. Note: The member selection of the TF is similar to that of the WGs, on volunteer basis. The TF was resolved once it has completed its mission.
APAC Regional Aviation Safety Priorities and Targets (AP-RASPAT) ad-hoc WG	The ad-hoc WG was formed on a once-off ad hoc basis for a specific purpose to resolve a specific issue identified by APRAST. In this instance, it was to facilitate and conduct the review and revision of the AP-RASPAT, to progress improvement of aviation safety in the region, and to recommend a more long-term mechanism of ensuring alignment and relevance of Regional Priorities and Targets. The review was completed prior to APRAST/12, for discussion and finalisation at APRAST/12 and approval at RASG-APAC/8. Note: The ad-hoc WG has been dissolved and the AP-RASPAT subsumed under the AP-RASP.
Cooperative Development of Operational Safety and Continuing Airworthiness Programmes (COSCAP)	The COSCAP Programmes support and strengthen aviation safety among participating Civil Aviation Administrations through: a) advancing safety oversight policies, procedures and regulations; b) supporting harmonization and standardization; c) efficient and cost-effective method for the training safety oversight personnel; and, d) Supporting Regional Aviation Safety Teams (RASTs) to assist in identifying hazards and implementing safety enhancement actions to reduce safety risks There are three COSCAPs in Asia: a) **COSCAP South Asia** (1998): Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka b) **COSCAP South East Asia** (2001): Brunei Darussalam, Cambodia, , Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, Timor-Leste and Viet Nam c) **COSCAP North Asia** (2003): China (including Hong Kong and Macau SARs), the Democratic People's Republic of Korea, Mongolia, and the Republic of Korea. There is a **Regional Aviation Safety Team under each COSCAP (NARAST, SARAST and SEARAST**).

	The COSCAP Programmes in Asia Pacific closely coordinate their efforts to support Member States/ Administrations in six primary areas: 1. Supporting Member States/ Administrations to strengthen their safety oversight programme, including preparation for activities related to the **ICAO USOAP** Continuous Monitoring Approach (CMA) such as the development and implementation of Corrective Action Plans and preparation for an ICAO Audits and Coordinated Validation Missions (ICVM). 2. Supporting Member States/ Administrations in establishing an effective oversight of Safety Management Systems 3. Supporting Member States/ Administrations in establishing an integrated State Safety Programme 4. Supporting Member States/ Administrations in Developing **regulations, standards and guidance material**; 5. Coordinating the provision of **training courses, seminars, and workshops**; and, 6. Coordinating COSCAP **Regional Aviation Safety Teams** to develop and recommend to their respective Steering Committee safety enhancement actions to reduce safety risk in the APAC Region and to support the implementation of the GASP.
PASO	The Pacific Aviation Safety Office is a Regional Safety Oversight Organization (RSOO) overseeing aviation safety and security in the pacific islands using guidelines provided by ICAO. PASO was established on 11 June 2005 as a result of the Pacific Islands Civil Aviation Safety and security Treaty (PICASST). Cook Islands, Kiribati, Niue, Nauru, PNG, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu are currently parties to PICASST. Non Parties to PICASST, but contributors to PASO are Australia, New Zealand and Fiji.
ICAO Training Platforms - Trainair Plus - Next Generation of Aviation Professionals Programme (NGAP) - ICAO Regional Training Centre of Excellence (RTC) in Asia Pacific (e.g. Singapore Aviation Academy)	TrainAir Plus – A cooperative network of training organizations and industry partners working together to develop and deliver ICAO-harmonised training packages. NGAP – ICAO Programme to develop strategies, best practices tools, standards and guidelines as applicable and to facilitate information sharing that assist the global aviation community in attracting, educating and retaining the next general of aviation professionals. RTC – To lead in the development and delivery of competency-based ICAO training courses.
APACDGCA.com	Virtual platform previously known as the Asia Pacific Consultative Link that can be used to exchange views among APAC ICAO Member States.
ICAO Global and ICAO APAC Regional Office website	Virtual ICAO platforms for ICAO Member States to share information globally.
DGCA Conference websites by individual host States/Administrations	Virtual platforms set up by hosts of the DGCA Conference to share information on the conference, including serving as a repository of Conference Discussion and Information papers.
Asia Pacific Ministerial Conference for Civil Aviation	The inaugural Conference endorsed a declaration formalising their shared commitments on high-priority aviation safety and efficiency objectives, recognizing the objectives under the various ICAO global plans GANP, GASP, and NCLB initiative. The Conference is expected to next meet in 2020.

APPENDIX H. PROCESS USED TO DETERMINE AND PRIORITISE TOP REGIONAL SAFETY OPERATIONAL RISKS AND OTHER SAFETY ISSUES

To mitigate the risk of fatalities, RASG-APAC, States/ Administrations, and industry address the HRCs. The selection of types of occurrences which are deemed global HRCs (previously referred to as "global safety priorities" in the 2017-2019 Edition of the GASP) is based on actual fatalities from past accidents, high fatality risk per accident or the number of accidents and incidents. The following global HRCs, in no particular order, have been identified for the 2020-2022 Edition of the GASP: CFIT; LOC-I; MAC; RE; and RI.

The APAC region and its industry conduct regular national and regional risk analyses, taking into consideration the global HRCs presented in the GASP. RASG-APAC/ APRAST utilises available data to determine the region's operational safety risks, which include global HRCs and additional regional operational safety risks.

The objectives of the APRAST include recommending interventions to the RASG-APAC which will reduce aviation risks. To do so, the various Subgroups under RASG-APAC perform the following roles and functions:

a) **SRP WG** will gather safety information from various sources to determine the main aviation safety risks in the APAC region. The Information Analysis Team (IAT) formed within the SRP WG will analyse the available safety information to identify risk areas. Recommendations for SEIs will be made by the SRP WG to the RASG-APAC, through the APRAST, based on the identified risk areas and monitor the effectiveness of deployed mitigations.

b) The **Asia Pacific – Accident Investigation Working Group (APAC–AIG)** will support the work of APRAST, and review regional accidents, significant incident trends and other areas of local concern to determine unique issues that may warrant locally developed policies and procedures to effectively capture information for study and for the development of recommendations. The focus and priority for AIG WG will be to introduce, support, and develop actions that have the potential to effectively and economically reduce regional aviation accident risks.

c) **SEI WG** will assist APRAST in the development, implementation and review of SEIs for effectiveness, from which the priority SEIs will be adopted as AP-RASP OPS Actions, to reduce aviation risks. These SEIs could be established based on the analysis of regional data, ICAO initiatives or the initiatives of other relevant organisations or regions. ORG Actions can be developed to address safety oversight deficiencies identified through the USOAP CMA process. The identified AP-RASP OPS Actions and SEIs should be prioritised to ensure that those that have the greatest potential for reducing safety risk are examined first, so as to effectively and economically mitigate the top regional safety risks identified by the SRP WG.

d) **APRAST** will review regional accidents, significant incident trends and other areas of local concern to determine unique issues that may warrant locally developed interventions. In particular, common, frequent, high-severity impact and cross-cutting issues will be considered priority risks for the APAC region. The focus and priority for APRAST will be to introduce, support, and develop actions that have the potential to effectively and economically reduce regional aviation risks. APRAST will also review, for application within the Asia Pacific region, existing safety interventions which have already been developed through the efforts of well-established, multinational safety initiatives.

e) **Other regional entities** viz. ICAO APAC Regional Office, States/ Administrations, COSCAPs, PASO and APANPIRG will also highlight safety trends and challenges, especially at the sub-regional level, from time to time at their respective meetings. Key outcomes of these discussions may be raised to the attention of APRAST and its Working Groups for further analysis.

The primary tool used by RASG-APAC and APRAST to monitor safety performance and determine operational regional safety risks is the APAC Annual Safety Report (ASR) developed by the SRP WG and published by APRAST. It is developed from gathering safety information from various stakeholders, analysing the main aviation safety risks in the Asia Pacific region, and identifying possible actions for enhancing aviation safety in a coordinated manner. The report focuses on reactive information relating to hull loss and fatal accidents (both on the ground and in flight) involving commercial aeroplanes operated by (or registered with) the member States/ Administrations of the RASG-APAC i.e. States/ Administrations associated with the ICAO PAC Regional Office. It also includes

proactive information for the Asia Pacific region based on USOAP Continuous Monitoring Approach (CMA). The full report is accessible at https://www.icao.int/APAC/RASG/Pages/APAC-Safety-Report.aspx.

The approach taken by the SRP WG is to process the accident information, provided by ICAO, IATA and CAST, involving commercial aircraft of MTOW greater than 5700kg operated by (or registered with) the members States/ Administrations of RASG-APAC. All reported information is for aircraft involved in scheduled commercial activities which are either validated or under validation. The analysis initially focuses on accident rates, numbers and categories from a global versus APAC perspective, then on the sub-regions of North Asia, South Asia, South East Asia and the Pacific. The process is illustrated in **Figure 1**.

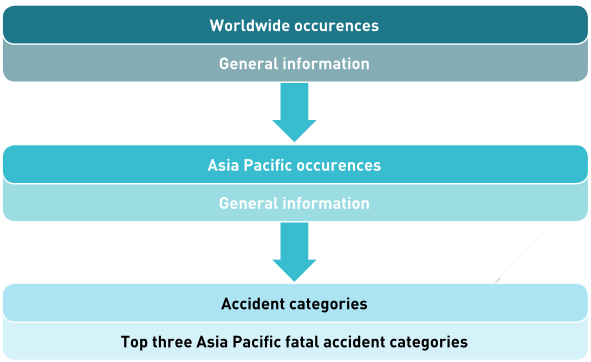


Figure 1. Approach for analysis

The 2019 version of the APAC ASR was used as the key reference source to determine the top regional risks in the 2020-2022 Edition of the AP-RASP. In the context of this report, all the reactive safety information analysed relates to accidents involving aircraft operated by (or registered with) the member States/ Administrations within the RASG-APAC region. Global accident rates, APAC accident rates and the accident rates for the four RASG-APAC sub-regions are compiled, based on information extracted from the ICAO data, including the iSTARS database. The aviation occurrence categories from the CAST/ICAO Common Taxonomy Team (CICTT) were used to assess risk categories in the process of identifying national operational safety risks.

APPENDIX I. ACCIDENTS AND SERIOUS INCIDENTS IN THE APAC REGION

The summary of accidents for aircraft registered in States/ Administrations located in the APAC region involved in commercial air transport and aircraft involved in general aviation is shown in **Figure 1**.

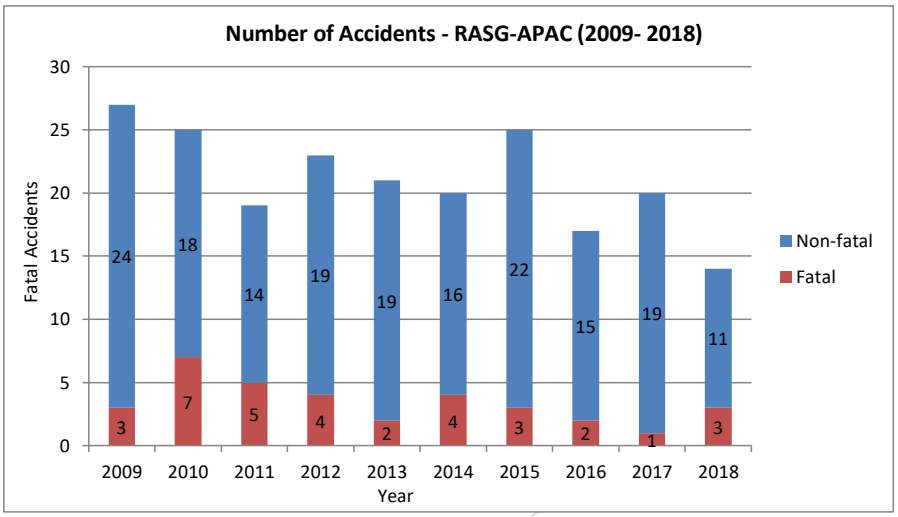


Figure 1. Number of accidents in the APAC region over a 10-year period of 2009 to 2018 [source: ICAO]

The number of accidents attributable to States/administrations in the RASG-APAC region in 2018 was 14, a reduction of 6 accidents from 2017. In terms of fatalities, there were three fatal accidents in 2018, up from one in 2017. The fatal accidents resulted in 241 fatalities, up from 2 in 2017. For 2018, the RASG-APAC's five-year moving average accident rate remains lower than the global average rate of 2.6 per million departures. The lower number of accidents, accompanied by growing APAC's air traffic volume (from 10.95 to 11.61 mil departures), led to the decrease in RASG-APAC region's accident rate from 1.82 in 2017 to 1.6 accidents per million departures in 2018. This was better than the global accident rate of 2.6 accidents per million departures in 2018. Refer to **Figure 2** for more details.

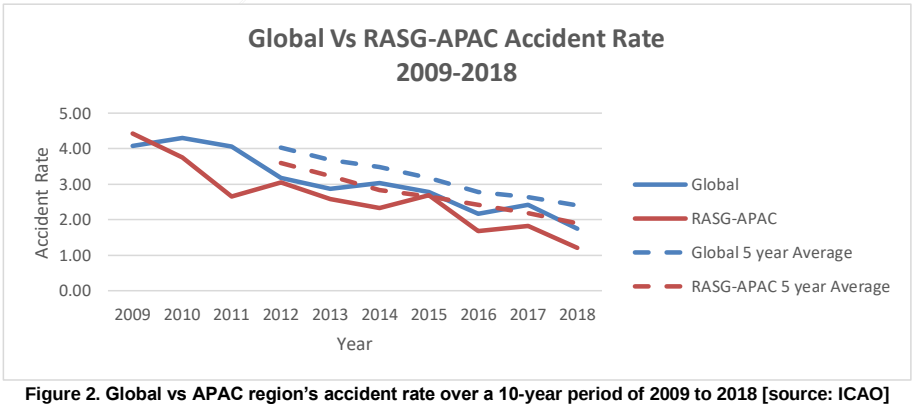


Figure 2. Global vs APAC region's accident rate over a 10-year period of 2009 to 2018 [source: ICAO]

Data from CAST, as shown in **Figure 3**, identified CFIT and LOC-I as the leading causes for fatality risk for APAC operator domiciled countries, while Runway Excursion on Landing has been the leading cause for hull losses in the last 10 years.

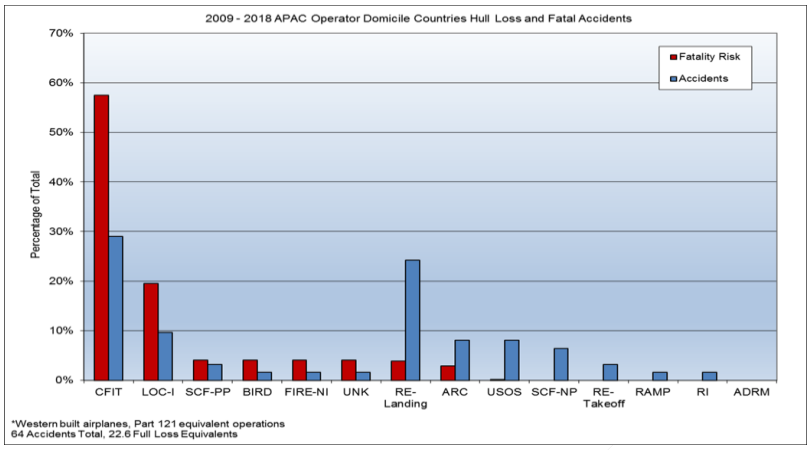


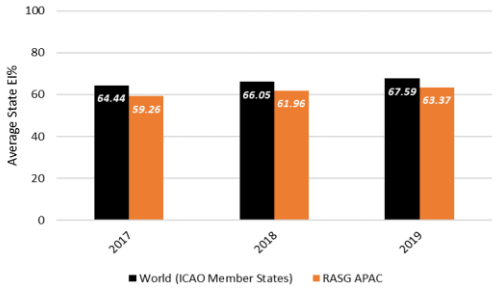
Figure 3. Hull loss and fatal accidents of APAC States over a 10-year period of 2009 to 2018 [IATA data]

a) There were no accidents attributable to CFIT in 2018 continuing a trend over the past 3 years for APAC
b) Accidents attributable to LOC-I also recorded a decrease in 2018 as compared with 2017. The rate of occurrence in 2018 was 0.07 accidents per million sectors, down from 0.08 accidents per million sectors in 2017.
c) RE/ Taxiway Excursion recorded a slight increase in 2018 as compared with 2017. In 2018, there were 0.43 accidents per million sectors, up from 0.42 accidents per million sectors in 2017.

Safety information from IATA and CAST safety information also revealed that CFIT and LOC-I are the accident categories with the highest fatality risks in the APAC region while runway/taxiway excursions (RE), abnormal runway contact (ARC) specifically hard landing, and in-flight damage accounted for the highest number of accidents. It should also be noted that landing-related accidents continues to be the flight phase with the most number of accidents.

RS-related accidents, which include RE, RI, and ARC specifically tailstrikes and hard landings were the most frequently occurring accident category in the APAC region over the last three years (2016-2018). This is followed by MED accident category which recorded 4 occurrences, along with 4 occurrences for the SCF categories over the same timeframe.

APPENDIX J. SAFETY OVERSIGHT CAPABILITIES IN THE APAC REGION



The RASG-APAC region had an overall USOAP Effective Implementation (EI) score of 63.37% in 2019, up from 61.96% in 2018 (see **Figure 1**).

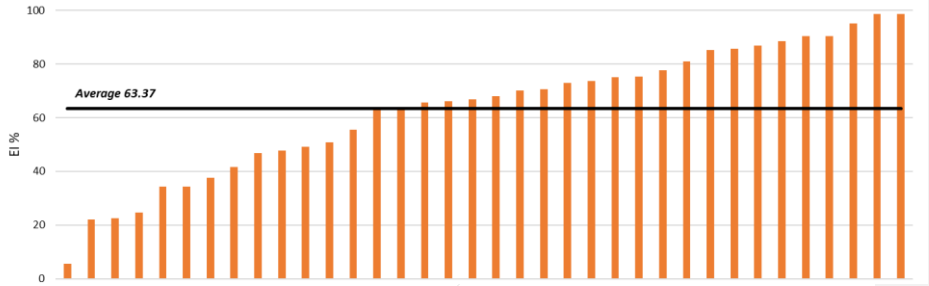


Figure 1. Average EI score of RASG-APAC States vs Global

Figure 2 shows the EI scores of all RASG-APAC States.

Figure 2. EI scores of all RASG-APAC States vs global average

The eight critical elements (CEs) of a safety oversight system are defined by ICAO in **Figure 3**.

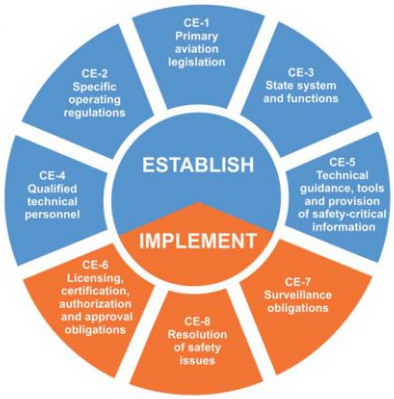


Figure 3. Critical elements of a State's safety oversight system

In terms of Critical Elements (CE), the APAC region had lower EI scores for all categories as compared to the global average. By CE, CE-4 on Technical personnel qualifications and training and CE-8 on Resolution of safety concerns (CE-8) had the lowest EI scores within RASG-APAC, at 53.35% and 49.37% respectively (see **Figure 4**). Both of these critical elements also contain the lowest scores across global averages, suggesting that they appear to be a consistent issue across the world.

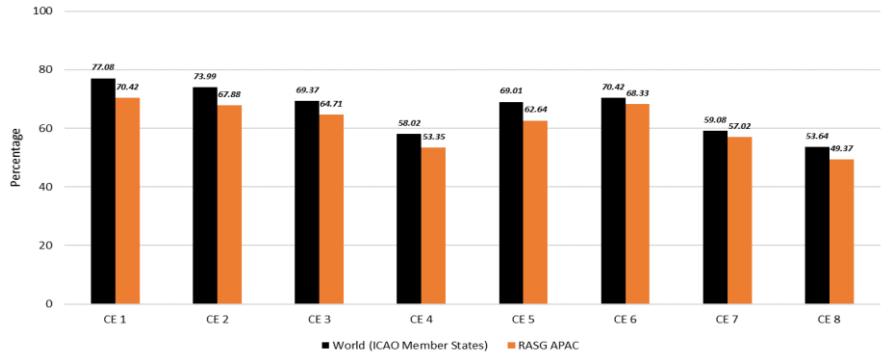


Figure 4. Average EI scores of RASG-APAC States vs global average by Critical Elements

By Audit Area, Accident and Incident Investigation (AIG) and Aerodrome and Ground Aids (AGA) had the lowest EI scores of 49.19% and 58.31% respectively (see **Figure 5)**.

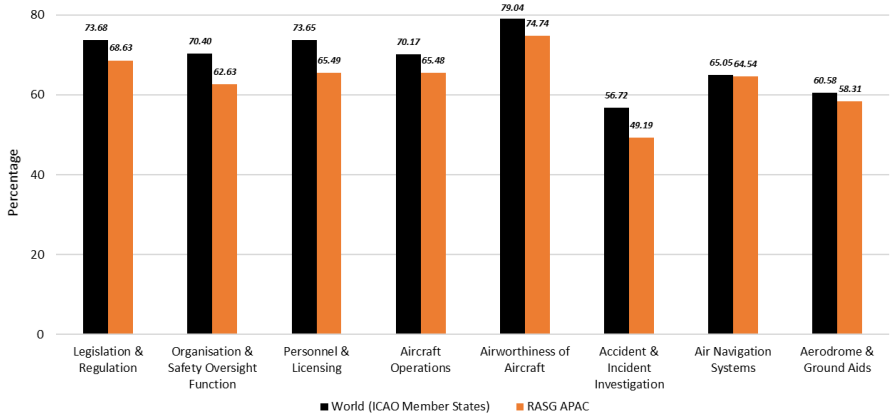


Figure 5. Average EI scores of RASG-APAC States vs global average by Audit Areas

The safety oversight index of a State is an ICAO indicator of its safety oversight capabilities. Every audited State has a safety oversight index. It is a number greater than zero, where the number one represents a level at which the safety oversight capabilities of a State would indicate the minimum expected capabilities considering the number of departures as a proxy to the size of that State's aviation system. **Figure 6** shows the individual safety oversight index (SOI) of APAC States as calculated by ICAO.

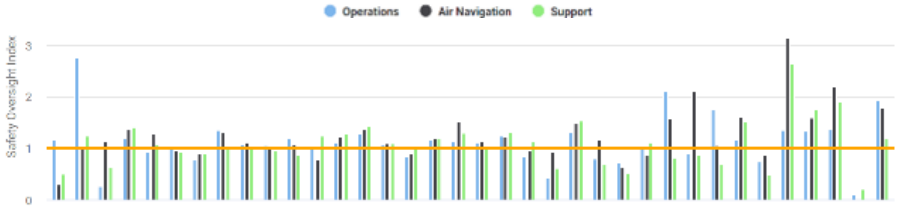


Figure 6. Safety Oversight Index of APAC States

APPENDIX K. TEMPLATE FOR MAPPING OF KEY CONTENTS OF NASP TO GASP AND AP-RASP GUIDELINES

[*For each guideline in the left column, indicate in the right column all relevant references whether Chapter/ Sub-Chapter numbers, or page numbers, or and paragraph numbers, of the NASP*]

Guidelines in ICAO Circular 3XX Chapter 4 'Guidance for drafting the NASP'	**Location(s) in [*Title of NASP*]**
4.3.1 Introduction	
a) Overview of the NASP, including its structure	
b) State's commitment to aviation safety and to the resourcing of activities to enhance safety through a statement signed by a senior aviation representative	
c) Links between NASP and SSP or safety oversight (if no SSP); expected date for full implementation of SSP	
d) Entities responsible for the NASP's development, implementation and monitoring	
e) National safety issues (brief description; may reference another document)	
f) NASP's goals and targets (brief description)	
g) State's operational context, incl. i) traffic volume and anticipated growth/ decline ii) maturity of different sectors of aviation e.g. aerodromes, CAT, GA, helicopter operations iii) common hazards or challenges particular to region (grouped by categories e.g. environmental, technical, organisational, human, etc)	
4.3.2 Purpose of NASP	
a) Purpose of the NASP, which contains the State's strategic direction for the management of aviation safety	
b) NASP's duration (refer section 4.3.3.(a)(1))	
c) Link between NASP, AP-RASP and GASP (latest edition)	
d) Which other documents and plans have been considered in the development of the NASP	
4.4.3 State's strategic approach to managing safety	
a) How the NASP is developed and endorsed, including stakeholder collaboration/ consultation i) Governance of NASP, frequency of review/ update ii) Collaborative approach in identifying issues and implementing SEIs iii) Process used to determine national operational safety risks and other safety issues (e.g. organisational challenges)	
b) National safety goals, targets and indicators i) How these are linked to GASP and AP-RASP ii) Specific regional goals, targets and indicators over and above those in GASP	
c) How SEIs help achieve regional safety goals i) Link between national goals and targets and SEIs ii) Link between national goals and targets to overarching international and regional initiatives	
d) List emerging issues that may require further analysis	
4.3.4 National Operational Safety Risks	

Commented [A22]: [*Editorial*] To update once Circular is published. Note that it may be converted into a Manual instead.

a) Summary of accidents and serious incidents for State-registered aircraft (CAT and GA)	
b) National HRCs of occurrences in NASP i) GASP and AP-RASP HRCs ii) Additional categories of operational safety risks	
c) How national operational safety risks were identified and prioritised as national i) Done as part of State's analysis; or ii) Derived from regional analysis; or iii) Additional categories in GASP	
d) Main contributing factors leading to national HRCs	
e) Set of SEIs to mitigate national HRC risks and additional risks and emerging issues i) SEIs to address national HRCs ii) SEIs derived from GASP OPS roadmap iii) References to corresponding SEIs in AP-RASP (namely OPS Actions A.I.1 to A.I.18, as prioritised and customised to each States' unique operational context)	
f) Taxonomy for determining operational safety risks (use of ICAO CICTT taxonomy recommended)	
4.3.5 Other Safety Issues	
a) Summary of State's safety oversight capabilities e.g. USOAP EI and SOI	
b) Other safety issues (e.g. organisational challenges) for NASP and why these were prioritised	
c) How they were identified, including via data-driven approach, e.g. i) done as part of State's analysis ii) derived via regional analysis (e.g. RASG-APAC, COSCAPs, etc.) iii) through organisational challenges in GASP iv) through USOAP and States' own data	
d) Set of SEIs to address other safety issues i) SEIs developed to address these ii) SEIs derived from GASP ORG roadmap iii) References to corresponding SEIs in AP-RASP (namely ORG Actions A.I.19, A.I.22, A.II.2-A.II.3, A.III.1, A.III.3, A.IV.1, A.IV.4-A.IV.5, A.V.3-A.V.4)	
4.3.6 Monitoring Implementation	
a) How State will monitor implementation of NASP SEIs and how it will measure safety performance to ensure achievement of intended results	
b) How corrections and adjustments to NASP and its activities are made and reported	
c) How national safety targets are monitored/ tracked i) Indicators should be consistent with/ linked to GASP's and RASP's (namely AP-RASP OPS and ORG Targets T.I.1-T.I.3, T.I.5, T.II.1-T.II.5, T.III.1-T.III.2, T.IV.2-T.IV.3, T.V.3-T.V.4)	
d) Means to update stakeholders on progress in achieving goals and targets, and SEI implementation	
e) Explanatory text on: i) Root causes for not meeting goals and targets ii) Measures taken asap to mitigate any critical issues identified, that may lead to ad-hoc revision of NASP	
f) State's standardised approach to provide/ report information to RASG-APAC to assess safety risks via common methodologies	
g) Contact information for enquiries	

GLOSSARY

DEFINITIONS

Commented [A23]: [*Editorial*] To update the list upon finalisation of document.

Adequate. The state of fulfilling minimal requirements; satisfactory; acceptable; sufficient.

Audit. A systematic, independent and documented process for obtaining evidence and evaluating it objectively to determine the extent to which requirements and audit criteria are fulfilled.

Audit area. One of eight audit areas pertaining to the Universal Safety Oversight Audit Programme (USOAP), i.e. primary aviation legislation and civil aviation regulations (LEG), civil aviation organization (ORG); personnel licensing and training (PEL); aircraft operations (OPS); airworthiness of aircraft (AIR); aircraft accident and incident investigation (AIG); air navigation services (ANS); and aerodromes and ground aids (AGA).

Critical elements (CEs). The critical elements of a safety oversight system encompass the whole spectrum of civil aviation activities. They are the building blocks upon which an effective safety oversight system is based. The level of effective implementation of the CEs is an indication of a State's capability for safety oversight.

Effective implementation (EI). A measure of the State's safety oversight capability, calculated for each critical element, each audit area or as an overall measure. The EI is expressed as a percentage.

Operator. The person, organisation or enterprise engaged in or offering to engage in an aircraft operation.

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 audit. A USOAP CMA audit that a State requests and pays for (on a cost recovery basis). The State determines the scope and date of a safety audit. Also see definition of *audit*.

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 proactive or reactive safety-related activities, 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 enhancement: initiative (SEI). One or more actions to eliminate or mitigate risks associated with contributing factors to a safety occurrence or to address an identified safety deficiency. There are two main types of SEIs to address safety risks and issues at the regional level. The first are SEIs developed by RASG-APAC/ APRAST in response to specific regional risks which are typically of an operational/ technical nature; the second are SEIs applicable to Regions contained in the GASR, which are more focused on the five global High Risk Categories (HRCs) and generic organisational issues

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

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 performance. A State or a service provider's safety achievement as defined by its safety performance targets and safety performance indicators.

Safety performance indicator. A data-based parameter used for monitoring and assessing safety performance.

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.

Significant safety concern (SSC). Occurs when the State allows the holder of an authorization or approval to exercise the privileges attached to it, although the minimum requirements established by the State and by the Standards set forth in the Annexes to the Convention are not met, resulting in an immediate safety risk to international civil aviation.

State safety programme (SSP). An integrated set of regulations and activities aimed at improving safety.

ABBREVIATIONS AND ACRONYMS

Commented [A24]: [*Editorial*] To update the list upon finalisation of document.

AAIIIA	Accident and incident investigation authority
AAPA	Association of Asia-Pacific Airlines
ACI	Airports Council International
ADRM	Aerodrome
AGA	Aerodrome and ground aids
AIG	Aircraft accident and incident investigation
ALAR	Approach and landing reduction
ANS	Air navigation services
ANSP	Air navigation service provider
AOPSG	Aerodromes Operations and Planning Working Sub-Group
APAC	Asia-Pacific region
APAC-AIG	Asia Pacific – Accident Investigation Working Group
APANPIRG	Asia-Pacific Air Navigation Planning and Implementation Regional Group
APEC	Asia-Pacific Economic Cooperation
APRAST	Asia-Pacific Regional Aviation Safety Team
AP-RASP	Asia-Pacific Regional Aviation Safety Plan
AP-RASPAT	Asia-Pacific Regional Aviation Safety Priorities and Targets
AP-SHARE	Asia-Pacific regional data collection, analysis and information sharing
APV	Approaches with vertical guidance
ARC	Abnormal Runway Contact
ASBU	Aviation System Block Upgrade
ASEAN	Association of South East Asian Nations
ASIAP	Aviation Safety Implementation Assistance Partnership
ASIAS	Aviation Safety Information Analysis and Sharing program
ASR	Annual Safety Report
ATM	Air traffic management
ATS	Air traffic services
BIRD	Birdstrike
CAA	Civil aviation authority
CASI	Civil Aviation Safety Inspectors

CAST	Commercial Aviation Safety Team
CAT	Combined Action Team
CBTA	Asia-Pacific Competency-based Training and Assessment Task Force
CE	Critical element
CFIT	Controlled flight into terrain
CICTT	CAST/ICAO Common Taxonomy Team
CMA	Continuous Monitoring Approach
COSCAP	Cooperative Development of Operational Safety and Continuing Airworthiness Programme
CRM	Crew resource management
CST	Collaborative Safety Team
CTA	Chief Technical Advisor
DG	Drafting Group (sub-group of Asia-Pacific Regional Aviation Safety Plan ad-hoc Working Group)
DGCA	Conference of Directors General of Civil Aviation
e-CCBM	electronic COSCAPs Capacity Building Matrix (e-CCBM)
EI	Effective implementation
EU ARISE+	ASEAN Regional Integration Support by the European Union Plus Programme
EU-SA APP	European Union-South Asia Aviation Partnership Programme
EU-SEA APP	European Union-South East Asia Aviation Partnership Programme
FDAP	Flight data analysis programme
FDX	Flight Data Exchange
FIR	Flight Information Region
F-NI	Fire/ Smoke (Non-Impact)
G2B	Government-to-business
GADSS	Global aeronautical distress and safety system
GANP	Global Air Navigation Plan
GASOS	Global Aviation Safety Oversight System
GASP	Global Aviation Safety Plan
GASP-SG	Global Aviation Safety Plan Study Group
GDP	Gross Domestic Product
GEN	General aspects
GPWS	Ground Proximity Warning System
HRC	High risk categories of occurrences

IAOPA	International Council of Aircraft Owner and Pilot Associations
IAT	Information Analysis Team
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IFALPA	International Federation of Airline Pilots' Associations
IOSA	IATA Operational Safety Audit
ISAGO	IATA Safety Audit for Ground Operations
iSTARS	integrated Safety Trend Analysis and Reporting System
LOC-I	Loss of control in-flight
MAC	AIRPROX/ TCAS alert/ loss of separation/ near miss collisions/ mid-air collisions
MED	Medical-related
MTOW	Maximum take-off weight
NA	North Asia region
NASP	National Aviation Safety Plan
NCLB	No Country Left Behind
NDP	National development plan
OPS	Operational Safety
ORG	Organisational/ Systemic
PASO	Pacific Aviation Safety Office
PC	Project Coordinator
PDCA	Plan-Do-Check-Act methodology
RAMP	Ground handling
RASG	Regional Aviation Safety Group
RASMAG	Regional Airspace Safety Monitoring Advisory Group
RASP	Regional Aviation Safety Plan
RAST	Regional Aviation Safety Team
RE	Runway excursion (departure or landing)
RG	Review Group (sub-group of Asia-Pacific Regional Aviation Safety Plan ad-hoc Working Group)
RI	Runway incursion
RS	Runway safety
RSOO	Regional safety oversight organization
RST	Runway safety team

RTC	ICAO Regional Training Centre of Excellence
SA	South Asia region
SAFE	ICAO Safety Fund
SARI	South Asian Regional Initiative
SARPs	Standards and Recommended Practices
SCBP	APAC Standardised Capacity Building Programme
SCF-NP	System/component failure or malfunction – Non-powerplant
SCF-PP	System/component failure or malfunction - Powerplant
SDCPS	Safety data collection and processing system
SEA	South East Asia region
SEI	Safety enhancement initiatives
SMS	Safety Management Systems
SPI	Safety performance indicator
SSC	Significant Safety Concern
SSO	State Safety Oversight
SSP	State Safety Programme
SRP	Safety Reporting and Programme
TCAS	Traffic collision and avoidance system
TOR	Terms of Reference
UAS	Unmanned aircraft systems
UNK	Unknown or undetermined
UPRT	Upset Prevention and Recovery Training
USD	US Dollar
USOAP	Universal Safety Oversight Audit Programme
USOS	Undershoot/ overshoot
WG	Working Group
XBT	Cross-border transferability