# 61ST CONFERENCE OF DIRECTORS GENERAL OF CIVIL AVIATION ASIA AND PACIFIC REGION

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AGENDA ITEM 3: AVIATION SAFETY

# APAC REGIONAL RISK REGISTRY (AP-RR) FEASIBILITY STUDY

Presented by Flight Safety Foundation, co-sponsored by the Civil Aviation Authority of Singapore (CAAS), the Civil Aviation Authority of Thailand (CAAT), and supported by the Association of Asia Pacific Airlines(AAPA)

**SUMMARY**

Airlines and regulators across the Asia-Pacific routinely carry out Safety Management Systems (SMS) aligned with ICAO Annex 19, drawing on a wide range of operational "signals" from day-to-day flying—such as internal reporting systems, safety events, digital data, flight/maintenance/dispatch data, and reports from frontline personnel, especially pilots. Many of these "signals" are capturing current operations situation. Using these inputs, airlines and regulators identify hazards, assess risk, and document prioritized issues in their internal risk registries, then implement mitigations and monitor effectiveness over time. Therefore, the identified hazards and mitigations are highly relevant to airlines and regulators' immediate operations. The Flight Safety Foundation Asia Pacific Center for Aviation Safety (AP-CAS) plans to leverage this on-going process, with a feasibility study that will assess whether it can establish and steward a living, de-identified APAC Regional Risk Registry (AP-RR) that elevates common risks from participating operators' SMS risk registers into a timely, analytically robust regional risk picture. If successful, this approach will surface time-sensitive and system-wide hazards across APAC. The study will work with carriers and regulators to examine risks in their registries to determine whether any are shared—indicating potential system-level or regional drivers—and to test whether cross-airline and cross-regulator SMS inputs can reliably distinguish local issues from regional/systemic.

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## 1. INTRODUCTION

1.1 A State Safety Programme (SSP) is an integrated, regulatory framework established by a state to manage aviation safety, focusing on risk management, policy, assurance, and promotion. It mandates proactive safety management by identifying precursor events—close calls, hazards, and underlying risks—to prevent accidents. Precursor events are incidents or "close calls" that do not result in harm themselves but indicate underlying risks that, if left unaddressed, could lead to accidents. An integral part of Safety Risk Management requires that States retain a register of such as precursor events, to assess risk and determine necessary, data-driven safety improvements.

1.2 The Global Aviation Safety Plan (GASP) and Asia Pacific Regional Aviation Safety Plan (AP-RASP) present the global and regional strategies respectively for the prioritisation and continuous improvement of aviation safety. Key additions to the GASP 2026 - 2028 edition included the identification of abnormal runway contact, system/component failure or malfunction (non-powerplant) and turbulence encounter as global operational safety risks as they feature prominently in the most frequent accident and serious incident types across all ICAO regions, including the Asia Pacific region. The identification of these additional global safety risks reinforces the importance of adopting a data-driven approach in decision making and planning in aviation safety at both global and regional levels.

1.3 The limited availability of safety data has posed challenges in identifying and examining safety risks comprehensively at both global and regional levels. In order to accurately identify global and regional safety risks and measure the success of both the GASP and AP-RASP, there is a need to systematically collect, analyse and share data on precursor events related to the G-HRCs and the other global risk categories of occurrences across all regions, with particular focus on enhancing data sharing and analysis capabilities within the Asia Pacific region. To support the AP-RASP objectives of strengthening proactive safety management, the Asia-Pacific region needs to develop mechanisms to share precursor information across States/Administrations.

1.4 The Fifteenth Meeting of the Regional Aviation Safety Group – Asia and Pacific Regions (RASG-APAC/15), in order to strengthen the risk identification and mitigation capabilities in the APAC region, adopted the decision 15/11 for APRAST and its relevant Working Groups to trial a voluntary ‘Precursor Event Monitoring Mechanism’ for a fixed period of one to two years by identifying and collecting an initial selection of feasible indicators from volunteer States; and the ICAO APAC RO to support the trial.

1.5 The Asia-Pacific Regional Aviation Safety Plan (AP-RASP) 2026-2028, identifies systemic organizational issues, the AP-RASP development team conducted an analysis guided by the Standardized Framework for the Identification of ORG Challenges (refer to Doc 10131). In relation to the NASP, the Safety Plan mentions that Several States/Administrations cited a low SSP/SMS maturity, evidenced by limited collection, analysis, and sharing of safety data, as well as weak safety culture and insufficient just-culture practices hindering proactive risk management. The Safety Plan includes APAC goals, targets and indicators aligned with GASP, the Goal 4.3 set a target for 2027, in the APAC region to establish and implement a mechanism within APAC to make use of the information on operational safety risks and emerging issues for the purpose of aviation safety planning. The APAC Regional Risk Registry (AP-RR) will be aligned with the Asia-Pacific Regional Aviation Safety Plan (AP-RASP) 2026-2028 and will contribute to the implementation of the Plan.

## 2. DISCUSSION

2.1 The overall objective of the Flight Safety Foundation project is to develop a Regional Register of Precursor Events by gathering data from existing State Safety Programmes and normalizing the data to: Supports regional safety initiatives and planning, inform the work of the Asia- Pacific Regional Aviation Safety Groups (AP-RASG), and guide the Asia-Pacific Regional Aviation Safety Teams (APRAST).

2.2 The Association of Asia Pacific Airlines (AAPA) is supporting this initiative and, working jointly with the Foundation, developed an initial survey to gather de-identified datasets from airlines. The survey received a strong response, providing a useful starting point for understanding regional priorities and shaping the next phase of the work. Analysis of the de-identified data is currently underway and will help inform the methodology, governance framework and long-term implementation of a sustainable APAC Regional Risk Registry (AP-RR).

2.3 The expected outcome of the feasibility study will be a proof of concept on a process to normalize, gather, aggregate and analyse a composite of risk-based information provided by States and airline operators into an overall regional risk register.

2.4 The overall objective of this project is to develop a Regional Register of Precursor Events by gathering data from existing State Safety Programmes and normalizing the data to: Supports regional safety initiatives and planning, inform the work of Regional Aviation Safety Groups (RASGs), guide Regional Aviation Safety Teams (RASTs), and provide data for Planning and Implementation Regional Groups (PIRGs). The Asia Pacific Centre for Aviation Safety (AP-CAS) of the Flight Safety Foundation, would become a trusted agent to collect and normalize the information and assemble the information into actionable recommendations for consideration by regional aviation safety bodies.

2.5 The Risk Register will improve the picture of common operational risks in the Region that will allow the regional safety planning mechanism to better target and plan regional safety initiatives in the future, establish methodologies for gathering and aggregating risk-based information from airlines in the Asia Pacific and in addition to validate regional safety data/information governance guidance and amend as required, establish a sustainable system for updating regional risks.

2.6 The project aims to examine risks in the States and Operators risk registries to determine whether any are shared, indicating potential system-level or regional drivers, and to test whether cross-regional SMS inputs can reliably distinguish local issues from regional/systemic risks. It will also design the governance model, confidentiality guardrails, intake schema, cadence, and operating model needed.

2.7 The Asia-Pacific Regional Aviation Safety Plan (AP-RASP) 2026-2028, describes in Section 6.5 several critical success factors that could limit the region’s ability to meet its safety targets, including as a primary constraint in the region the limited manpower and financial resources, and the availability of information., requesting States/Administrations and industry to commit to provide the necessary data and information when requested to enable objective tracking of targets. The Asia Pacific Center for Aviation Safety (AP-CAS) of the Flight Safety Foundation (FSF) can contribute to the Regional Safety Plan targets with the Regional Risk Registry (AP-RR) project for the collection and dissemination of risk-based information.

## 3. ACTION BY THE CONFERENCE

3.1 The Conference is invited to:

a) note the information presented in this Discussion Paper;

b) encourage States and Industry partners to establish methodologies for gathering and aggregating risk-based information from States and Operators in the Asia Pacific aligned with ICAO/ADREP taxonomies and APRAST/AP-RASP structures to support interoperability and “lift” into SEIs/SSPs and operator SMS actions without translation;

c) support regional cooperation on risk information sharing, to improve the picture of common operational risks that will allow the regional safety planning mechanism to better target and plan regional safety initiatives in the future;

d) recommend States and industry partners to gather risk register information in a centric regional risk register. by regional safety planning mechanisms and the study's consideration by APRAST/26 and RASG-APAC; and

e) agree to invite the Flight Safety Foundation and AAPA to present the AP-RR feasibility study to APRAST/26, for further consideration by RASG-APAC, with the outcome reported to DGCA/62.

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