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Asia and Pacific Office

**Twenty-fifth Meeting of the Asia Pacific Regional Aviation Safety Team  
(APRAST/25)**

*(Bangkok, Thailand, 22 to 26 June 2026)*

**Agenda Item 4: Presentations -State/ Industry/ ICAO / Focused Discussion**

**ENHANCING IN-SERVICE SAFETY: A COLLABORATIVE  
REGULATOR–OEM APPROACH**

*(Presented by Indonesia & Boeing)*

**SUMMARY**

DGCA Indonesia and Boeing partnered to improve in-service safety by strengthening Service Difficulty Reporting (SDR) practices, enhancing root-cause analysis skills, and closing data-sharing gaps to address System Component Failures or Malfunctions (SCF-NP and SCF-PP), which are a regional risk and are prioritised in GASP/RASP 2026–2028; review of 2021–2024 SDRs showed about 73% of regulator-received reports were not available to the OEM and revealed inconsistent root-cause documentation, prompting tailored Root Cause Corrective Action (RCCA) and COSP workshops that participants found practical and applicable, and leading to recommendations for harmonised SDR standards, systematic SDR analysis to prioritise SCF risks, and strengthened, timely information exchange among regulators, operators, MROs and OEMs.

**1. INTRODUCTION**

1.1 System Component Failure or Malfunction – Non-Powerplant (SCF-NP) and Powerplant (SCF-PP) occurrence categories accounted for the largest share of non-fatal accidents and serious incidents in the region over the 2017–2023 analysis period, and they also ranked among the top emerging risk categories for non-fatal accidents and serious incidents in the global level according to the Airworthiness Needs Analysis Study conducted by the Flight Safety Foundation (FSF) in the Asia Pacific region, presented on multiple meetings, [APRAST/22–WP/10](#), [APRAST/23–WP/11](#), [A42-WP/280](#), [COSCAP-SEA SCM/22 DP-2](#). SCF-NP has been included in the [Global Aviation Safety Plan \(GASP\) 2026-2028](#) as other global risk categories of occurrences.

1.2 FSF's study also indicated that an accident or serious incident is about two times as likely to occur in relation to a SCF in Asia Pacific vs North/Central America & Caribbean. Aligning with GASP, the [Regional Aviation Safety Plan \(RASP\) 2026 – 2028](#) prioritises SCF-NP and PP for Safety Enhancement Initiatives (SEIs), addressed by the operational (OPS) roadmap.

1.3 While the Prioritized and Focused Regional SEIs of SCF will be developed within the triennium, the [Global Aviation Safety Roadmap 2026 – 2028](#) suggests implementing safety actions including to perform thorough root cause analysis to understand the underlying reasons and implement corrective actions (SEI Actions-17A (e)). This was supported by FSF's study as part of the recommendations generated based on the survey result. Training programs focused on Service Difficulty Reporting (SDR) completion and root cause analysis are essential to enhance the quality of

submissions. FSF also recommends Operators and MROs in collaboration with their regulators should adopt protocols to ensure consistency in reporting. Ensuring that data shared with regulators and OEMs is accurate, comprehensive, and actionable.

1.4 DGCA Indonesia and Boeing initiated a collaborative project to strengthen SDR practices, improve root-cause analysis capability, and promote consistent, high-quality data sharing between operators, MROs, regulators and OEMs. Through technical assistance, targeted training, and integration with COSP, DGCA Indonesia and Boeing aim to help build local capacity to detect emerging trends, implement effective corrective actions, and reduce SCF-related occurrences.

1.5 For DGCA Indonesia, SDRs are mandatory reports from aircraft operators and certified repair stations upon discovering the occurrence of a failure, malfunction, or defect. To continue to maintain aircraft at a safe level of airworthiness it is necessary that the DGCA Indonesia regularly receive all continuing airworthiness information relating to aircraft. It is a critical source of data to risk-based oversight under the State Safety Program (SSP) and the Continued Operational Safety Program (COSP).

1.6 COSP utilizes data from multiple data sources, including, SDRs, in-service events or maintenance tasks/challenges, and other safety related feedback from global fleet. COSP is an official agreement between the Federal Aviation Administration (FAA) and Boeing Commercial Airplanes (Boeing) establishing the principles and practices to be followed in reporting, analysing, and resolving safety events and issues related to the Boeing transport airplane fleet. It enables systematic identification, assessment and mitigation of in-service safety risks. These inputs are analysed to not only detect emerging trends and but also to determine whether further safety actions are required including inspections and design updates.

## **2. DISCUSSION**

2.1 DGCA Indonesia utilized Service Difficulty Reports (SDRs) to enable risk-based approach to safety oversight under its SSP. This data serves as valuable leading indicators for identifying emerging safety risks and trends within the system. Civil Aviation Safety Regulations (CASR) 121 Amendment 12, states 17 failures/malfunctions/defects that need to be reported by a certificate holder, in writing, to its regulator within 72 hours of occurrence.

2.2 Consistent with this approach, DGCA Indonesia and Boeing signed a memorandum of understanding to jointly examine and address potential systemic maintenance-related issues.

2.3 The project commenced with DGCA Indonesia providing a selected dataset to Boeing, covering the SDR data from 2021 to 2024. This dataset was first reviewed against Boeing's internal database to identify any corresponding reports submitted by airlines. Subsequently, the data was assessed against the COSP criteria to determine its reportability and to classify each occurrence into the appropriate COSP category.

2.4 At the initial stages of the project, it was observed that while operators were consistently submitting reports to DGCA Indonesia in accordance with regulatory requirements as specified in 2.1, this information was not always concurrently available to the OEM. Analysis indicated that approximately 73% of the reports submitted during this timeframe were not available to Boeing. This highlighted an opportunity to further strengthen information sharing in support of improved safety outcomes.

2.5 As part of the SDR reporting, operators are required to provide root cause analysis and associated recommendations. Based on the review of the SDR reports received, variability was observed in the depth and consistency of the root cause analysis elements. This aligned with the GASP/ RASP OPS Roadmap/ FSF study's recommendation.

2.6 In response to the findings, with the collaboration between DGCA Indonesia and Boeing, a Root Cause Corrective Action (RCCA) workshop was implemented to support a more structured, consistent, and aligned approach among stakeholders. The workshop was specifically designed to strengthen root cause analysis capabilities, moving beyond surface-level or symptomatic fixes toward identifying underlying systemic issues. The RCCA workshop tailored for Indonesia incorporated components aligned with local aviation safety practices and regulatory expectations, ensuring relevance and applicability for participating stakeholders. A key focus of the workshop was to promote “deep thinking” in root cause identification encouraging participants to critically examine contributing factors such as human performance, organizational processes, and operational conditions, rather than attributing occurrences to immediate or obvious causes.

2.7 In addition to the RCCA workshop a COSP workshop was conducted to the stakeholders to further support a shared understanding of how SDR reports are utilized beyond the initial reporting. the RCCA workshop was intentionally structured as a foundational step for the subsequent COSP workshop. By strengthening the quality of root cause identification and corrective actions undertaken by airlines, it enables more meaningful and data-driven contributions to COSP reporting. The COSP workshop, on the other hand, illustrated the consideration of these data within the continued operational safety processes, their potential to inform design consideration, where appropriate, and their contribution to ongoing efforts to enhance in-service safety performance.

2.8 In the post-workshop survey, the majority of participants from DGCA Indonesia and the operator community reported that the workshops were practical and directly applicable to their day-to-day responsibilities, improving understanding of SDR quality expectations, root-cause identification, and corrective-action development. DGCA Indonesia and Boeing will be continued to support ongoing efforts to address the emerging SCF risk.

### **3. ACTION BY THE MEETING**

3.1 The Meeting is invited to:

- a) Note the information presented in this Working Paper;
- b) Encourage States to review and, where necessary, harmonize their SDR reporting standards to improve consistency and completeness;
- c) Encourage States to analyse received SDRs systematically to identify and prioritize SCF risks;
- d) Recommend States review and strengthen data-sharing arrangements among regulators, operators, MROs, and OEMs to ensure timely, accurate, and actionable information exchange.

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