INTERNATIONAL CIVIL AVIATION ORGANIZATION

Second Meeting of the Africa - Indian Ocean Aviation System Planning and Implementation Group (AASPG/2)

Livingstone, Zambia, 2 - 6 November 2026

Agenda Item 4: Implementation of air navigation goals, targets and indicators, including the priorities set in the regional air navigation plan

Resolution of a Significant Safety Concern (SSC) in Instrument Flight Procedure Design - The Zimbabwe experience and lessons learnt

(Presented by CAAZ)

SUMMARY	
This paper presents the experience of Zimbabwe in resolving a Significant Safety Concern (SSC) in the area of Instrument Flight Procedure (IFP) Design, which was issued in July 2023. It outlines the background of the SSC, the challenges faced, the resolution process, and key lessons learnt. The paper aims to share this experience to assist other States in the region in preventing and resolving similar safety concerns.	
Strategic Goals	➢ Every Flight is Safe and Secure ➢ Aviation Delivers Seamless, Accessible, and Reliable Mobility for All ➢ No Country Left Behind

1. INTRODUCTION

1.1 In July 2023, following an ICAO Coordinated Validation Mission (ICVM) conducted from 21 to 28 June 2023, a Significant Safety Concern (SSC) was issued to Zimbabwe in the area of Air Navigation Services (ANS), specifically concerning Instrument Flight Procedure (IFP) Design.

1.2 The resolution of an SSC is a critical and often complex undertaking for any State. This paper details Zimbabwe's journey from the issuance of the SSC to its successful closure in June 2026. It highlights the initial challenges, the pivotal role of technical assistance and ICAO guidance, and the systematic process required to restore compliance and, most importantly, safety.

1.3 The purpose of this paper is to share the lessons learnt during this three-year process. It is hoped that this candid account will provide valuable insights for other States in the AFI region, promoting a proactive and collaborative approach to safety oversight and the resolution of deficiencies.

2. DISCUSSION

2.1. Background of the SSC

2.1.1 The SSC (Reference SSC/ANS-01/07-2023/ZWE) was issued on 18 July 2023 following an ICAO USOAP ICVM. The ICVM identified deficiencies related to the periodic review of Instrument Flight Procedures (IFPs) for Zimbabwe's three international airports: Robert Gabriel Mugabe International (FVRG), Joshua Mqabuko Nkomo International (FVJN), and Victoria Falls International (FVFA). The protocol questions (PQs) concerned were 7.234, 7.247, 7.249, and 7.253, with the critical elements CE-6 and CE-7 being identified as deficient.

2.1.2 A significant contributing factor to the SSC was that during the window when the findings were still a potential SSC and the State was supposed to suspend the affected IFPs - this was not done. This omission directly led to the issuance of the SSC. The ICVM had found that:

a) Victoria Falls IFP charts had been reviewed, but the flight validation reports dated 2018 were considered invalid because they fell outside the five-year maximum interval for periodic review.
b) For R.G. Mugabe and J.M. Nkomo airports, there was no evidence of periodic reviews performed, no evidence of the initial approval process for the published IFPs, and no evidence of identifying and describing controlling obstacles. Consequently, there was no assurance that the obstacle clearance altitude/obstacle clearance height (OCA/OCH) had been properly established.

2.1.3 The SSC required Zimbabwe to immediately suspend all instrument approach procedures (IAPs) associated with international civil aviation operations.

2.2 The resolution process: A phased approach

2.2.1 Phase 1: Initial response and challenges (July 2023 – late 2024):

2.2.1.1 Following the issuance of the SSC, Zimbabwe developed and submitted Corrective Action Plan (CAP) to ICAO, which was accepted for implementation. The CAP was structured into activities and milestones for addressing the SSC findings. However, the initial response was slow, owing to a combination of factors including:

a) Lack of Previous Experience: Both the Regulator and the Air Navigation Service Provider (ANSP) lacked previous experience in resolving an SSC in IFPs.
b) Outsourcing of IFP Design Services: The ANSP was required to outsource an external Instrument Flight Procedure Design Organization (IFPDO) which further created significant delays.

2.2.1.2 Despite these challenges, several milestones were achieved during this phase. The WGS-84 surveys for all three airports were conducted, stakeholder consultation meetings held, fulfilling Step 4 of the 16-step quality assurance process for IFP design, where air operators met with the FPDO and the ANSP to discuss and agree on user requirements/specifications.

2.2.1.3 The FPDO provided User Requirements Specification and IFP Conceptual Designs to the ANSP on 11 October 2023. The Authority approved a Flight Validation Organization identified by the ANSP on 1 March 2024 who conducted flight validation of the IFPs for all three international airports from 12 to 23 March 2024.

2.2.1.4 However, during the stakeholders' endorsement meeting convened on 30 October 2024 the airline operators raised concerns that required the ANSP to redesign the procedures causing further delays.

2.2.2 Phase 2: A Collaborative Turnaround (December 2024 – March 2026):

2.2.2.1 A critical turning point was the realization that an SSC is a State problem, not solely a Regulator or ANSP problem. It required a "whole-of-state" approach. This led to:

a) Technical Assistance from AFCAC and SASO (From March 2024): The African Civil Aviation Commission (AFCAC) and the Southern African Development Community (SADC) Aviation Safety Organization (SASO) provided critical technical expertise. AFCAC deployed PANS-OPS experts to assist with the evaluation and approval of the Flight Validation Organization. SASO technical experts assisted with the review and evaluation of the initial IFPD package.
b) Technical Assistance from Zambia: In December 2025, Zambia graciously accepted Zimbabwe's request for technical assistance. Zambia designated its PANS-OPS Inspector who provided invaluable expertise to assist with the resolution process.
c) Enhanced Coordination: The State established weekly coordination meetings involving the CAAZ, the ANSP, and the Aerodrome Operator, focusing on CAP implementation. This fostered a shared understanding and accountability.
d) ICAO ROST Mission: In March 2026, an ICAO Regional Office Safety Team (ROST) mission visited Zimbabwe. This mission was pivotal in identifying specific gaps in the State's CAP implementation. The mission provided clear, actionable guidance that refined the CAP and set the path for effective resolution. The ICAO ESAF Regional Office has continuously supported the monitoring of CAP implementation progress including maintaining close liaison and coordination with the ICAO Safety and Air Navigation Oversight Audit Section (OAS) under the Air Navigation Bureau (ANB).

2.2.3 Phase 3: Intensive Implementation and Evidence Gathering (March 2026 – June 2026):

2.2.3.1 With a revised and robust CAP, efforts were focused on implementation. All charts had been initially suspended to ensure safety, and the priority was to reinstate IFPs at the three international airports.

2.2.3.2 Full Process Implementation: New WGS-84 surveys were conducted, and instrument flight procedures were designed from scratch. The quality management processes required by Doc 8168 (PANS-OPS) and Doc 9906 (Quality Assurance Manual for Flight Procedure Design) were rigorously applied at every stage of the 16-step quality assurance process.

2.2.3.3 Intensive Interaction with ICAO: The Validation team at ICAO was exceptionally thorough. The process involved extensive back-and-forth correspondence where ICAO sought clarity on even the most minute details. This demonstrated that a well-crafted CAP with no evidence of full implementation is insufficient; consistency between published information and on-the-ground reality is paramount.

2.3 Lessons Learnt

2.3.1 Due Process is Non-Negotiable: The SSC was a stark reminder that compliance with ICAO standards is fundamentally a safety issue. The failure to suspend the affected

IFPs during the window when the findings were still a potential SSC directly contributed to the issuance of the SSC. Due process must be followed, particularly because ICAO recognises that this is more than a compliance issue but a safety issue.

2.3.2 A State Problem Requires a State Solution: The resolution effort only gained traction when it was elevated to a State-level priority, with all entities (CAAZ, ANSP, ACZ) working collaboratively as a single system. The realisation that the SSC was a State problem—not a regulator nor an ANSP problem—was a critical turning point.

2.3.3 The Value of Collaboration and Early Assistance: Enlisting the assistance of ICAO, AFCAC, SASO, and other Member States as early as possible is crucial. Their expertise can save valuable time and prevent missteps. The technical assistance from Zambia, AFCAC, ICAO, and SASO was instrumental in the resolution process.

2.3.4 Capacitating Personnel Locally: A key lesson learnt was the importance of capacitating personnel locally in Instrument Flight Procedure Design. Building local capacity would reduce dependence on external providers and ensure continuity.

2.3.5 Stakeholder Consultation is Key: All users and relevant stakeholders—from general aviation and scheduled operators to the aerodrome operator and the military—must be consulted during the IFP design process to ensure buy-in, safety, and operational efficiency. The issues raised by operators during the stakeholder endorsement meeting, while causing delays, were essential to ensure the procedures were operationally feasible.

2.3.6 Data Accuracy, Consistency and Integrity are Paramount: The safety of air navigation depends on the accuracy and integrity of published information. This requires modernized Aeronautical Information Management (AIM) systems, such as an electronic AIP (eAIP), to ensure data is easily accessible and reliable.

2.3.7 Clarity in Roles and Responsibilities: In a hybrid setup where the CAA and ANSP are in the same organisation, a clear functional separation of regulatory and service provider responsibilities is essential to avoid conflicts of interest and ensure effective oversight.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information presented in this paper on Zimbabwe's experience in resolving an SSC related to Instrument Flight Procedure Design.

b) Encourage States to consider the lessons learnt, particularly:

- The importance of a collaborative, State-wide approach to SSC resolution;
- Early engagement with ICAO, AFCAC, SASO, and partner States;
- The critical need to capacitate local personnel in Instrument Flight Procedure Design;

c) Request the ICAO to continue providing technical assistance and guidance to States facing similar challenges, facilitating the sharing of best practices within the AFI region.
