

**59<sup>th</sup> CONFERENCE OF  
DIRECTORS GENERAL OF CIVIL AVIATION  
ASIA AND PACIFIC REGIONS**

*Cebu, Philippines  
14 to 18 October 2024*

**AGENDA ITEM 4: AIR NAVIGATION**

**IMPLEMENTATION AND REPORTING OF GNSS RADIO  
FREQUENCY INTERFERENCE IN THE PHILIPPINES**

(Presented by Civil Aviation Authority of the Philippines)

**INFORMATION PAPER**

**SUMMARY**

This Information Paper aims to provide an update on the recent activities of the Civil Aviation Authority of the Philippines (CAAP) in implementing and improving the reporting of Global Navigation Satellite System (GNSS) Radio Frequency Interference incidents. This includes the adoption of the GNSS Reporting Form for the APAC region, extension of reporting requirements to domestic cases of significant impact on flight operations, and the current status of reporting GNSS RFI reports for the Philippines. It also details the expected benefits of the reporting system as well as exploration of advanced technologies for GNSS RFI detection, aiming to improve the safety and reliability of civil aviation operations.

## **IMPLEMENTATION AND REPORTING OF GNSS RADIO FREQUENCY INTERFERENCE IN THE PHILIPPINES**

### **1. INTRODUCTION**

1.1 Global Navigation Satellite Systems are at the forefront of modern civil aviation, providing accurate and reliable services in the area of navigation. GNSS enables aircraft to determine their position, velocity, and timing, which are essential for ensuring safe and efficient flight operations. As civil aviation has grown substantially over the years, reliance on GNSS has also increased, supporting various navigation operations such as Area Navigation, Required Navigation Performance, and Performance-Based Navigation.

1.2 The International Civil Aviation Organization (ICAO) has acknowledged the crucial role of GNSS in enhancing air traffic management, improving safety, and optimizing airspace. ICAO's Global Air Navigation Plan (GANP) emphasizes the importance of GNSS in achieving a seamless, global, and interoperable air navigation system. However, the growing dependence on GNSS also presents challenges, particularly due to Radio Frequency Interference (RFI), which can compromise the integrity and availability of GNSS signals, thus affecting the safety and efficiency of civil aviation operations.

1.3 To address these challenges, ICAO and regional aviation authorities have established policies and procedures to monitor, report, and mitigate RFI incidents. Implementing these measures is essential to maintain the reliability and safety of GNSS-based navigation systems in the aviation sector.

### **2. DISCUSSION**

2.1 The 8th Meeting of the Spectrum Review Working Group adopted the GNSS Reporting Form for the Asia and Pacific (APAC) region. This form allows systematic reporting of GNSS interference incidents across the region. Subsequently, the Civil Aviation Authority of the Philippines (CAAP) mandated the use of this form through a Memorandum Circular, in compliance with ICAO State Letter T 8/5.10 – AP052/24(CNS), highlighting the need for uniform and comprehensive reporting.

2.2 The CAAP extended these requirements beyond the APAC region's guidelines, which only require reporting in cases with cross-border impact. The Memorandum Circular now mandates the reporting of domestic GNSS RFI cases with significant impacts on flight operations. This extension aims to provide a more detailed understanding of GNSS RFI incidents within the Philippines, ensuring both domestic and cross-border safety and efficiency are addressed.

2.3 As of now, the CAAP has not received any reports of GNSS RFI cases with cross-border impact. However, there have been two reported cases of GNSS RFI within the country. These initial reports highlight the importance of the implemented reporting system and underscore the need for continued monitoring and response to GNSS interference incidents.

2.4 Although still in its early stages, the implementation of the GNSS RFI reporting system is anticipated to offer significant benefits. The documentation and analysis of GNSS RFI incidents will provide a clearer understanding of the challenges faced by pilots and air traffic controllers. This data-driven approach will support the development of strategies to mitigate RFI, enhancing the overall safety and reliability of GNSS-dependent operations in civil aviation.

2.5 Looking forward, CAAP is considering the exploration of technology for GNSS RFI detection. One promising approach involves the use of Automatic Dependent Surveillance-Broadcast (ADS-B) data, which is integrated with the GNSS Data Analysis System under the GNSS Implementation in the ASEAN Project. This initiative aims to leverage technology to detect and address GNSS RFI more effectively, thereby strengthening the resilience of aviation navigation systems.

**3. ACTION BY THE CONFERENCE**

- 3.1 The Conference is invited to note the information contained in this Paper.

— END —