



*International Civil Aviation Organization*

**ELEVENTH MEETING OF THE MIDANPIRG AIM SUB-GROUP  
(AIM SG/11)**

*(Amman, Jordan, 22 – 23 January 2025)*

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**Agenda Item 4: AIM Planning and Implementation in the MID Region**

**NOTAM GNSS**

*(Presented by the secretariat)*

**SUMMARY**

This working paper presents the meeting with the revised NOTAM template to be used for GNSS Interference, to facilitate operators in filtering and searching through the NOTAMs.

Action by the meeting is at paragraph 3.

**REFERENCES**

- Fourteenth Air Navigation Conference Report
- ICAO Doc 9849-GNSS Manual-4th edition -2023
- Report of the MIDANPIRG/21 & RASG-MID/11 meetings
- Report of the MIDANPIRG PBN SG/9 meeting

**1. INTRODUCTION**

1.1 State ANS providers have the responsibility to report the status of air navigation services. If the status of a service changes or is predicted to change, users should be notified via a NOTAM or aeronautical information system and via direct communications from ATS (see Annex 15 and the Procedures for Air Navigation Services — Air Traffic Management (PANS-ATM, Doc 4444)).

1.2 ANS providers must be prepared to act when anomaly reports from aircraft or ground-based units suggest signal interference. If an analysis concludes that interference is present, ANS providers must identify the area affected and issue an appropriate NOTAM.

1.3 This working paper presents the meeting with the revised NOTAM template to be used for GNSS Interference, to facilitate operators in filtering and searching through the NOTAMs.

**2. DISCUSSION**

2.1 The meeting may wish to recall that the MIDANPIRG/20 endorsed through MIDANPIRG Conclusion 20/18 a NOTAM template for GNSS interference.

2.2 The meeting is advised to be aware that, in recent times, the Middle East region has experienced an uptick in GPS spoofing events, raising concerns about potential security threats and navigational disruptions.

2.3 These incidents involve the broadcast of GNSS-like signals that cause avionics to calculate erroneous positions and provide false guidance.

2.4 The meeting is invited to acknowledge that based on the recent new entry of GNSS Spoofing, the MIDANPIRG/21 meeting through Conclusion 21/30, invited :

- a) ICAO and IATA in coordination with AIM SG Chairpersons to develop revised NOTAM template for GNSS interference including jamming and spoofing considering the global and regional developments; by Q4 2024 and*
- b) ICAO MID Office circulate the revised NOTAM Template for GNSS interference through State Letter for implementation by States.*

2.5 The meeting may wish to note that the AN-Conf/14 requested ICAO to: continue assessing the impact of GNSS interference on aviation safety and continuity of civil aviation operations; define adequate mitigation measures while reminding States of their obligations; and to develop guidance material to facilitate the exchange of GNSS RFI information through a centralized repository, to the extent feasible, as well as the notification about GNSS harmful interference from military authorities to civil aviation, and additional NOTAM codes for GNSS interference events.

2.6 Pending the provision NOTAM codes for GNSS interference events, and to facilitate operators in filtering and searching through the NOTAM, the revised GNSS Radio Frequency Interference (RFI) NOTAM template, **at Appendix A**, is proposed. The Template describes the different fields and values, except the NOTAM codes, that shall be used in a GNSS NOTAM in compatibility with ICAO formatting rules.

2.7 The meeting may wish to note also that the PBN SG/9 meeting, held in Doha, Qatar 9-11 Dec 2024, reviewed and approved the proposed GNSS Radio Frequency Interference (RFI) NOTAM template, provided in **Appendix A**, pending the establishment of specific NOTAM codes for GNSS interference events. The template outlines the various fields and values, excluding NOTAM codes, to be used in GNSS NOTAMs in compliance with ICAO formatting rules. To further advance this initiative, the PBN SG/9 meeting requested the Secretariat to coordinate the template with the AIM Sub-Group for finalization and endorsement.

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

3.1 The meeting is invited to:

- a) acknowledge the content of this working paper; and
- b) review and endorse the draft NOTAM Template for GNSS RFI.

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## NOTAM TEMPLATE FOR GNSS INTERFERENCE

Item Q – Qualifier: the following qualifiers shall be mentioned in item Q:

Qualifier FIR: This Item shall contain the ICAO location indicator of the FIR within which the flights may be impacted by the RFI. If more than one FIR of the same country is impacted, the ICAO nationality letters of that country (e.g. OE) should be followed by 'XX'.

Qualifier NOTAM CODE: the following NOTAM code qualifiers (second and third letter) shall be used as appropriate for GNSS RFI event notification in the case of:

**TBD (additional NOTAM codes for GNSS interference events)**

Qualifier TRAFFIC: the « IV » should be used as a traffic qualifier, indicating that both IFR and VFR traffic may be impacted by the RFI

Qualifier PURPOSE: the code NBO should be used to notify RFI events:

Qualifier SCOPE: Depending on the impacted area, one of the following codes should be used:

- A = if the event only impacts aerodrome(s) operations (used **QGA**)
- E = if the event only impacts en-route traffic (used **QWA**)
- AE = if the event impacts both Aerodrome and En-route traffic (used **QWA**)

Qualifier LOWER/UPPER: Depending on the jamming range and the traffic in the impacted area.

Qualifier GEOGRAPHICAL REFERENCE – Coordinates: this qualifier indicates the coordinates of the interference source or weighted centre point of the impacted area. For NOTAM with 'Scope' 'A' the Aerodrome Reference Point (ARP) coordinates should be inserted. For NOTAM with 'Scope' 'AE' or 'E' the centre of a circle whose radius encompasses the whole area of interference should be inserted. Qualifier 'GEOGRAPHICAL REFERENCE' – Radius\*: The radius of the impacted area should be inserted in this field.

Item A – Location

All FIR location indicators affected by the information should be entered in Item A), each separated by a space. In the case of a single FIR, the Item A) entry must be identical to the 'FIR' qualifier entered in Item Q). When an aerodrome indicator is given in Item A), it must be an aerodrome/heliport situated in the FIR entered in Item Q).

Item B – Start of Activity

A ten-digit date-time group giving the year, month, day, hour and minutes, at which the NOTAM comes into force, should be mentioned in Item B).

Item C – End of Validity

A ten-digit date-time group giving the year, month, day, hour and minute, at which the NOTAM ceases to be in force and becomes invalid, should be mentioned in Item C). This date and time should be later than that given in Item B).

Item E – NOTAM Text

The following standard text should be used according to Q-code:

**JAMMING :**

**GNSS JAMMING REPORTED. GNSS MAY BE UNUSABLE WITHIN .... INSTANCES OF GNSS JAMMING SHOULD IMMEDIATELY BE REPORTED TO ATC.**

**SPOOFING :**

**GNSS SPOOFING REPORTED. GNSS MAY BE MISLEADING WITHIN... INSTANCES OF GNSS SPOOFING SHOULD IMMEDIATELY BE REPORTED TO ATC.**

**GNSS INTERFERENCE**

**GNSS INTERFERENCES REPORTED. GNSS MAY BE UNUSABLE WITHIN .... INSTANCES OF GNSS INTERFERENCES SHOULD IMMEDIATELY BE REPORTED TO ATC.**

***WITHIN: specify route / geographical area (coordinates / waypoints)***

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