



*International Civil Aviation Organization*

**Eighth Meeting of the Performance Based Navigation Sub-Group  
(PBN SG/8)**

*(Doha, Qatar, 12 - 13 December 2023)*

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

**GNSS JAMMING/ SPOOFING IN BAGHDAD FIR ORBB**

(Presented by Iraqi Civil Aviation Authority)

**SUMMARY**

This paper presents the set of procedures and actions which was made by Iraqi Civil Aviation Authority (ICAA) and Iraq's ANSP General Company for Air Navigation Services (GCANS) to overcome the GNSS vulnerabilities and increase aviation safety in Baghdad FIR ORBB.

Action by the meeting is at paragraph 3.

**REFERENCES**

-ICAA letter to ICAOMID office on 16<sup>th</sup> October 2023

**1. INTRODUCTION**

1.1 Since August 2023, there has been a significant increase in GPS jamming reports received by the General Company for Air Navigation Services from the airlines and pilots over the frequency while flying over Baghdad FIR, in particular along the Iranian border on UM688 between the waypoints RATVO and SISIN.

1.2 The effect of GNSS jamming and/ or spoofing have been observed by the crews in various phases of flight -and in few cases it was observed by the air traffic controllers when an aircraft has been seen diverting from its intended route -, and in some cases this led to re-routing or diversions.

1.3 Few airlines' crews -in particular Turkish airlines- have reported a GPWS alarm during the final approach phase to Baghdad International Airport (ORBI) and Erbil International Airport (ORER).

**2. DISCUSSION**

2.1 After the significant increase in the reported GNSS vulnerabilities, a supreme committee was established by the Prime Minister consisting of all the concerned authorities including (ICAA, GCANS, CMC Communication and Media Commission, Iraqi Airforce, and other enforcement authorities) to conduct Surveys to locate and determine the sources of the interference.

2.2 The supreme committee has located some sources of interference by conducting an aerial and ground survey and working on eliminating them and establishing new contingency conventional navigation routes for northbound and southbound traffic.

2.3 The supreme committee ordered to install additional conventional navigation infrastructure and a contingency plan is under the process.

2.4 GNSS interference reporting form was sent by ICAA to all AOs in Iraq. A NOTAM (No. A0870/23) was issued by GCANS AIS office.

2.5 An internal process was established by GCANS to record the information of GNSS vulnerabilities electronically in Baghdad FIR ORBB which enables the controllers to file any reported GNSS related reports. All the reports are being forwarded to ICAA once updated.

2.6 The total reports received by GCANS since August 2023 till December are (205) including (34) GPWS warnings. Most of the GPWS warnings was received by Turkish Airlines and led to missed approach, and an email was sent to them to identify the root cause, their reply was “When we examine the incoming reports, we see that a "TERRAIN PULL UP" warning was received many times during the instrument approach, that is, while making the ILS approach to the square. In Airbus books, when a "TERRAIN PULL UP" warning is received inside the aircraft, this is defined as an abnormal situation and it is dictated to immediately climb and move away from the terrain, therefore, if it occurs during the approach, a go-around is required. The only exception to this is approaches made under visual conditions during the day. Airbus states that if daylight and runway/airfield visibility is available and no terrain/obstacle is actually seen despite the warning, the approach can continue.

“Since this is a situation dictated by the manufacturer in its checklist, there is no other option other than passing when this warning is received in night conditions. Other airlines may consider that they are familiar with the area and continue to operate even at night despite this warning, but this is against the rules.”

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

3.1 The meeting is invited to:

- a) review and discuss the contents of this Working Paper;
- b) discuss any other actions required;
- c) note the efforts made by the republic of Iraq to ensure the Aviation Safety; and
- d) other States are invited to show similar cases actions and share experience.