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# STATE OF LIBYA MINISTRY OF TRANSPORTATION

دولة ليبيا وزارة المواصلات

> AIC Series A A 1/25 05 JAN 2025

CIVIL AVIATION AUTHORITY AIR NAVIGATION SERVICES DEPARTMENT AERONAUTICAL INFORMATION SERVICE (AIS)

## Effective Date 06 JAN 2025 0000 UTC

 Purpose : The purpose of this AIC is to remind aircrews to report GNSS jamming and spoofing within Tripoli FIR.

## Overview of GNSS interference

There has been a notable increase in GNSS jamming and spoofing, particularly in regions surrounding conflict zones and other sensitive areas such as the Mediterranean, Black Sea, Middle East, Baltic Sea, and the Arctic. These interferences disrupt the accurate reception of GNSS signals, leading to various operational challenges for aircraft and ground systems.

### • Types of interference

- 1. Jamming: This intentional radio frequency interference prevents GNSS receivers from locking onto satellite signals, rendering the system ineffective or degraded.
- 2. Spoofing: This involves broadcasting counterfeit satellite signals to deceive GNSS receivers, causing incorrect position, navigation, and timing data.

# • Effects and symptoms of GNSS interference

Interference can occur during any phase of flight, leading to re-routing or diversions to ensure safety. Common symptoms of GNSS spoofing include:

- 1. Discrepancies in navigation positions;
- 2. differences between ground speed and true airspeed;
- 3. Time shifts;
- 4. Spurious terrain awareness and warning system (TAWS) alerts; and
- 5. Potential deviations in hybrid positions (inertial reference system (IRS) / GNSS).

#### • Recommendations

- 1. For jamming: Verify aircraft position using non-GNSS means; Check critical navigation aids;
- For spoofing: Monitor aircraft position using non-GNSS navaids; Closely follow air traffic control (ATC) frequencies; Apply manufacturer instructions on detecting and dealing with suspected GNSS spoofing;
- **Remark**: Pilots should immediately report to ATC any jamming or spoofing of GNSS signals within Tripoli FIR.

These reports should include full details of the event including time, Date, location of the start and end of occurrence and, a detailed Narrative of the GNSS interference.

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