SAFETY DECISION 2024-03

Issue 02
Date of Issue: 29 October 2025

SUBJECT:
GLOBAL NAVIGATION SATELLITE SYSTEM OUTAGE AND ALTERATIONS, CONSEQUENCES AND INCIDENT REPORTING

REFERENCE PUBLICATIONS:
CAR OCR OCCURRENCE REPORTING REGULATION

EASA SIB No. 2022-02R3 dated 05 July 2024.

APPLICABILITY:
This Safety Decision applies to:

(a) All UAE Air Operators operating within or outside the UAE territory.

(b) All Air Navigation Services Providers.

(c) All Non-UAE Air Operators operating UAE-registered aircraft.

(d) All Approved Training Organizations.

(e) Certified Light Sport Aviation Organisations, including Flying Clubs.

This issue is published to add requirements for notification of TDRA.

PURPOSE
This Safety Decision aims at addressing the significant operational risks faced by the international aviation community due to interference, jamming, and spoofing of the Global Navigation Satellite System. These disruptions can lead to complete or partial loss of onboard navigational capabilities.

Analysis of data indicates an increase in the severity, intensity and sophistication of GNSS jamming and spoofing events, particularly in regions near conflict zones.

The General Civil Aviation Authority recognises the possible hazard to Aircraft operations posed by GNSS outage and alterations.

BACKGROUND:
GNSS interference/jamming can lead to temporary loss and/or degradation of on-board navigational equipment which rely on GNSS during flight particularly when overflying or flying in vicinity of conflict areas.

Spoofing involves broadcasting counterfeit satellite signals to deceive GNSS receivers, causing them to compute incorrect position, navigation, and timing (PNT) data.

REQUIREMENTS:
(a) UAE Operators shall:

(1) Ensure that flight crews are aware, trained and prepared to recognize and adequately respond to an encounter of GNSS interferences during flight;

(2) Ensure that flight crews are aware of the importance of prompt reporting by means of a special air-report (AIREP) to air traffic services of any observed interruption, degradation or anomalous performance of GNSS equipment or related avionics (e.g., map shifts, suspected GNSS spoofing, lost or misleading position, time anomalies, etc., including their duration);

(3) Evaluate different possible scenarios based on the type of operations in order to provide the flight crew with timely information to increase awareness of jamming and spoofing;

(4) Ensure that GNSS jamming or spoofing topic is included in the flight crew ground recurrent training and training of other relevant operations personnel, especially when operating in or near areas of conflict, highlighting the identified operational scenarios to recognize and react in a timely manner to different jamming and spoofing cases;

(5) Assess operational risks and limitations linked to the loss of on-board GNSS capability, including any on-board systems requiring inputs from a reliable GNSS signal, e.g., impact on TAWS;

(6) Maintain contact with aircraft or equipment manufacturers for instructions and guidance on how to operate and maintain their products, when exposed to jamming or spoofing, and implement the recommendations in the standard operating and maintenance procedures;

(7) Ensure that systems used as a backup for an inoperative system according to the Minimum Equipment List are not reliant on GNSS before commencing a flight into affected areas, with the exception of one flight if necessary to reach a station where the repair can be done;

(8) Ensure, whenever possible (e.g., airspaces that are not oceanic or remote), in the flight planning for flights into affected areas, the availability of alternative non-GNSS-based procedures for the whole flight, regardless of the type of operation. This should be complemented with information regarding the ability to receive radar vectoring in the airspaces to be transited;

(9) If subject to Flight Data Monitoring (FDM) requirements and necessary data are available, use FDM program to identify and assess GNSS jamming and spoofing events.

(10) Provide information on GNSS-related incident as per the format specified in **Appendix A** to this Safety Decision on a **MONTHLY BASIS** instead of a daily basis through the ROSI system (applicable to UAE operators who have the capability within their Flight Data Monitoring (FDM) program). These incidents include, but are not limited to:

(i) GNSS Radio Frequency Interference (RFI), such as GPS System Loss/Unavailability or Erroneous Operation.

(ii) Spurious TAWS/EGPWS alerts.

(11) Whenever systems get affected by frequencies or GPS interference, jamming or spoofing, send the completed Interference Complaint Form in Appendix B as soon as possible to the TDRA via interference@tdra.gov.ae if the location of the interference is/was within the UAE borders.

(12) Continue to report via the ROSI submission process as documented in AMC 22, if they are unable to submit the information extracted from the FDM programme.

(13) Liaise with the GCAA on any potential developments of such a capability, if they are unable to currently identify events from their FDM programme.

(14) Submit a separate report with all pertinent details through the ROSI AOAW, if any GNSS interference has led to an ANP exceeding RNP (Unable RNAV/RNP); Complete Loss of Required System Redundancy (e.g. WX Radar 1&2 Fault) or Diversion, return to departure aerodrome or flight safety compromised due to a serious failure of navigation equipment.

(15) Send monthly reports to Safety management (SS&P@gcaa.gov.ae) by the 10th of each month for every preceding month.

(b) Air Navigation Service Providers (ANSPs) shall:

(1) Establish a process to collect information on GNSS degradations, in coordination with the relevant ANSPs, Telecommunications and Digital Government Regulatory Authority (TDRA), and promptly notify the related outcomes to air operators and other airspace users.

(2) Assess the impact of loss or anomalies of GNSS-based timing on CNS systems.

(3) Adhere to the procedures on the provision of information to airspace users as appropriate, e.g., through ATIS, issuing NOTAMs, AIP, etc.

(4) Consider keeping a ground navigation infrastructure operational, such as ILS, DME, and/or VOR in support of conventional and performance-based navigation procedures.

(5) Make sure that the surveillance coverage is resilient to GNSS interference.

(6) For areas where surveillance remains exclusively based on ADS-B, ensure that appropriate contingency procedures are available when GNSS jamming or spoofing is detected.

(7) In areas affected by GNSS jamming and/or spoofing, promote the use of conventional navigation flight procedures or performance-based flight procedures using VOR/DME.

(8) Be prepared to provide navigation assistance to aircraft (using radar vectoring) as long as needed.

(9) Ensure that the communications coverage and performance meet the needs for radar vectoring provision in case of GNSS jamming or spoofing.

(10) Ensure that contingency plans include procedures to be followed in case of large-scale GNSS short-term and long-term jamming and/or spoofing events.

(11) Consider implementing local GNSS RFI detection and GNSS status monitoring systems in addition to network-level capabilities, as needed.

(12) Reinforce the monitoring of the traffic closely to prevent any deviation from ATC clearances (e.g., navigation track and altitude).

(13) Assess whether sector capacities and applicable separation minima remain appropriate.

(14) Ensure that the GNSS jamming or spoofing topic is included in the ATCO training, highlighting the identified operational scenarios to recognise, react promptly to different jamming and spoofing cases.

(15) Provide information on GNSS-related incident as per the format attached as **Appendix A** to this safety decision on a MONTHLY BASIS instead of a daily basis through the ROSI system. The list of incidents includes, but not limited to:

(i) GNSS Radio Frequency Interference (RFI), such as GPS System Loss/Unavailability or Erroneous Operation.

(ii) Spurious TAWS/EGPWS alerts.

(16) Whenever systems get affected by frequencies or GPS interference, jamming or spoofing, send the completed Interference Complaint Form in Appendix B as soon as possible to the TDRA via interference@tdra.gov.ae if the location of the interference is/was within the UAE borders.

(17) Submit a separate report with all pertinent details through the ROSI AOAW, if any GNSS interference has led to an ANP exceeding RNP (Unable RNAV/RNP); Complete Loss of Required System Redundancy (e.g. WX Radar 1&2 Fault) or Diversion, return to departure aerodrome or flight safety compromised due to a serious failure of navigation equipment.

(18) Send monthly reports to Safety management (SS&P@gcaa.gov.ae) by the 10th of each month for every preceding month.

CONTACTS:

For Aircraft operators: fops@gcaa.gov.ae
For Training Organisations: aircrewlicensing@gcaa.gov.ae
For Air Navigation Service Providers: ana@gcaa.gov.ae
For any further clarification contact SS&P@gcaa.gov.ae

APPENDIX A

UAE OPERATORS & AIR NAVIGATION SERVICE PROVIDERS

GNSS RADIO FREQUENT INTERFERENCE (RFI)

Date of Occurrence	Operator	Flight No.	Aircraft Type	Aircraft Registration	Departure	Destination	Phase of Flight	Exact Location (GPS Coordinates)	Area/State of Occurrence	Flight Information Region (FIR)
01 AUG 2024	*ABC*	*ABC123*	*B77W*	*A6ZZZ*	*ZZZZ*	*ZZZZ*	*Cruise*	*35.91136299 43.91552693*	*Iraq*	*Baghdad*

"SPURIOUS" TAWS/EGPWS ALERT

Date of Occurrence	Operator	Flight No.	Aircraft Type	Aircraft Registration	Departure	Destination	Phase of Flight	Exact Location (GPS Coordinates)	Area/State of Occurrence	Flight Information Region (FIR)
01 AUG 2024	*XYZ*	*XYZ786*	*A388*	*A6ZZZ*	*ZZZZ*	*ZZZZ*	*Approach*	*35.91136299 43.91552693*	*Iraq*	*Baghdad*

Note:

- *Separate submission to be made for GNSS Radio Frequency Interference (RFI) events and spurious TAWS/EGPWS events.*

Specifics for the table format are given below:

Column Title	Description
Date of Occurrence	Date on which GNSS interference/failure occurred.
Operator	Name of the operator reporting the incidents (Emirates, Flydubai, Etihad Airways, Abu Dhabi Aviation, etc.).
Flight No./Call sign	Flight number and/or call Sign of the flight encountering GNSS interference/failure (UAE234, FDB173, ETD787, etc.).
Aircraft Type	The aircraft make and model reported in the incident. Use ICAO code for aircraft types. For Example (B737, B772, B77W, A388, A321, etc).
Aircraft Registration	Registration of the aircraft reported in the incident.

Column Title	Description
Departure	Aerodrome of departure, entered using ICAO 4-letter code (OMDB, EGLL, WSSS, OPIS, etc.).
Destination	Aerodrome of destination, entered using ICAO 4-letter code (OMDB, EGLL, WSSS, OPIS, etc.).
Phase of flight	The phase of flight at the time of GNSS interference/failure. Enter the appropriate value: Parked, Taxi, Take-off, Climb, Cruise, Descent, Approach, Landing.
Exact Location	The exact location of encountering GNSS interference/failure is to be entered in terms of Latitude and Longitude as per GPS coordinates. For example, (35.403847, 44.073636), (43.06267276, 27.87887503), etc.
Area/State of Occurrence	The area or state of occurrence where the GNSS interference/failure occurred.
Flight Information Region (FIR)	The Flight Information Region within whose airspace the GNSS interference/failure was encountered.

APPENDIX B

TDRA | هيئة تنظيم الاتصالات والحكومة الرقمية
TELECOMMUNICATIONS AND DIGITAL GOVERNMENT REGULATORY AUTHORITY

INTERFERENCE COMPLAINT FORM

1. Enter your Spectrum Authorization Details

Authorization Number * : ..... Authorization Expiry Date * : .....

Company or Person Name * : .....

2. Interfered Station Data (For more than one station, attach this information for all stations)

Name of site: ..... Site Address * : .....

Site coordinates * : ..... North: ..... East: .....

Date of interference * : DD/MM/YYYY Time of interference * : Hrs Local time To: Hrs Local time

3. System affected by interference

Name of System: ..... Affected frequency * : .....

Occupied Bandwidth * : ..... Antenna type * : .....

Antenna Gain (dBi): ..... Antenna height * : .....

4. Impact of interference

Impact on system: .....

5. Description of interference

Type * : Hrs LocNoise, pulse, tone, voice, etcal time Max Signal level: e.g.: Strength in dBuV/m

Bandwidth: Of interfering signal Repetition: e.g: Continuous, intermittent

Bearing of suspected interference: ..... Distance to source (km): .....

Suspected source of interference * : .....

Federal Authority | هيئة اتحادية
TOLL FREE 800 12 الرقم المجاني • FAX +971 2 7772229 فاكس • ABU DHABI, UNITED ARAB EMIRATES أبو ظبي، الإمارات العربية المتحدة • P.O. BOX 26662 ص.ب.
www.tdra.gov.ae

6. Steps taken to minimize interference effects:

.....

.....

7. Type of assistance required:

.....

.....

8. Technical Coordinator Information * :

Name: ..... Email: .....

Office Phone: ..... Mobile phone: .....

4. Impact of interference

I declare that the information provided by me in this application and accompanying documents is correct.

أقر انا الموقع أدناه بصحة المعلومات المزودة من قبلي أعلاه والوثائق المرفقة بهذا الطلب.

Name: ..... Designation: .....

Signature: ..... Date: .....

Documentation Required for Processing this Application

1. Copy of the TRA Authorization for the station.
2. Spectrum Analyzer plots or any other technical data that can be useful for interference resolution (Mandatory for Mobile phone operators).

Fax this form and attached documents to TDRA on: +971 2 6118484
Or Email to: interference@tdra.gov.ae