



SAFE SKIES.
**SUSTAINABLE
FUTURE.**



| ICAO



GPS interference in Baghdad FIR

- The increasing reliance on Global Positioning System (GPS) technology in modern aviation, has made its disruption a significant concern, particularly in sensitive airspaces like IRAQ.
- GPS interference—intentional or unintentional—can disrupt navigation, surveillance, and communication systems, posing challenges for safe and efficient air traffic management.
- In Baghdad FIR, instances of GPS jamming and spoofing have been reported, attributed to both military activities and regional geopolitical tensions. These disruptions can compromise critical aviation operations, including En-route navigation, approach procedures

Mitigation measures for GPS interference in Baghdad FIR

- Publish a notam for stakeholders
- create a reporting form and database
- Attend the ICAO meetings (symposium)
- conduct an aerial and ground site survey
- identify the GNSS waypoints from ground navaids
- Coordinate with airlines for new waypoints accuracy

NOTAM

- We have issued a NOTAM to inform operators and pilots about the GPS interference inside Baghdad FIR.
- The NOTAM content is(GPS JAMMING OR SPOOFING INTERFERENCE WITHIN THE NORTHERN PART OF IRAQ OPERATORS SHOULD INFORM ATC IMMEDIATELY AND EXPECT RADAR VECTORING.)

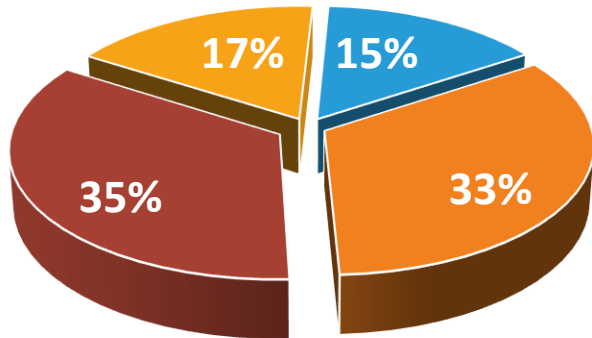
Reporting form

- We published a reporting form for ATCOs using QR Code and daily position log Contains:
 - Time of report
 - Position (Location)
 - Callsign
 - Date
 - Nature of outage

Database

- This reporting form provided us a database contain:

TYPE OF GPS Failure

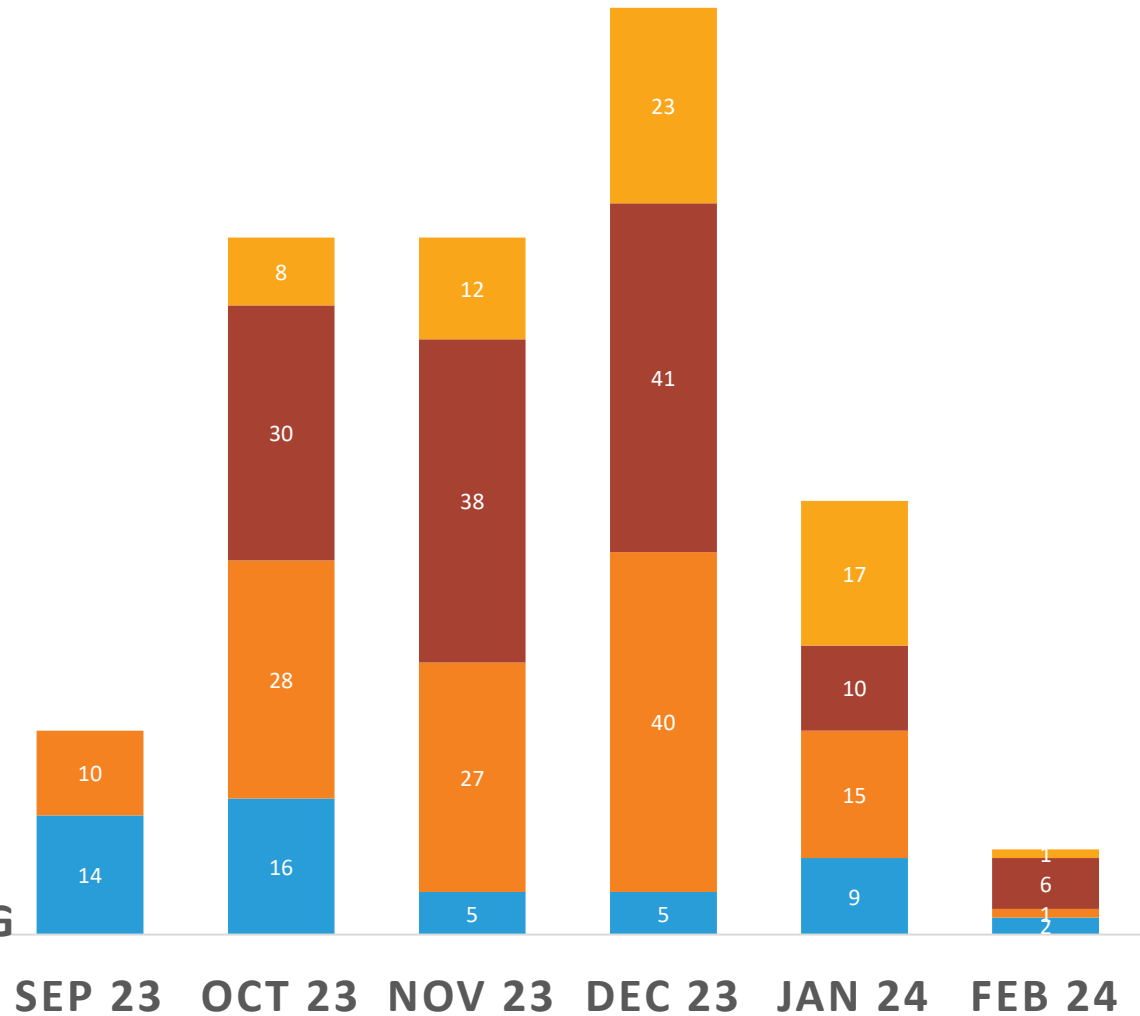


■ GPS SPOOFING

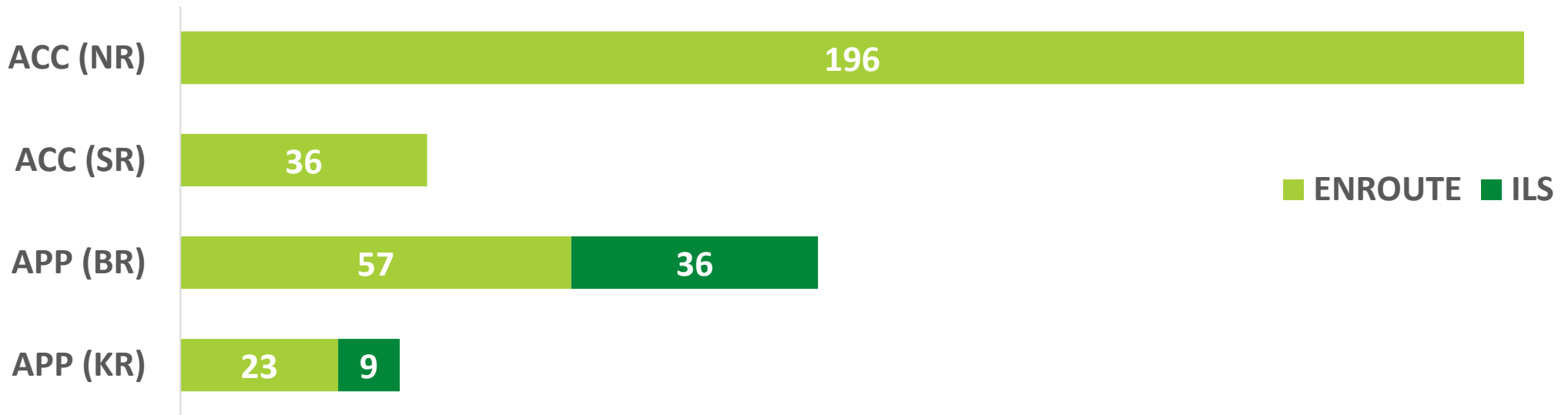
■ GPS LOSS

■ GPS JAMMING

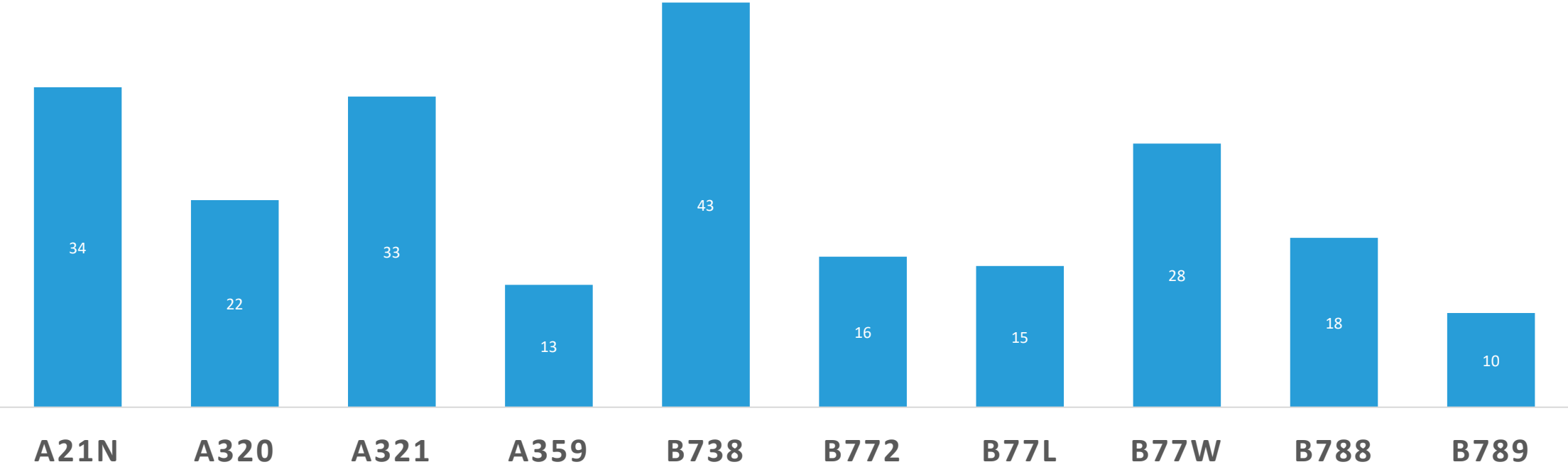
■ EGPWS WARNING



Sector Report



Database



Database



ICAO meetings

- Iraq actively participates in ICAO-led Symposium and collaborates with neighboring FIRs to develop best practices for managing GPS interference. This cooperation includes joint response plans and the sharing of mitigation strategies.

Aerial and ground scanning

- Iraq prime minister has instructed the key part of Iraq's mitigation strategy for GPS interference includes aerial and ground scanning operations. These methods help detect, locate, and address the sources of interference, whether intentional (jamming or spoofing) or unintentional.
 - Aerial scanning involves equipping aircraft with specialized detection systems to monitor and locate GPS interference sources.
 - Ground scanning is another critical approach, relying on fixed and mobile monitoring stations to detect and analyze GPS interference.
 - Source Identification: Once interference sources are located, Iraqi authorities work to determine whether the cause is local (e.g., malfunctioning equipment, uncoordinated jamming) or external.
 - Neutralization of Threats: For unintentional interference, technical teams resolve issues on-site. For intentional interference, such as jamming or spoofing, the matter is now transferred to security agencies and Iraqi Communications and Media Commission for further action.

Using ground AID

- In response to GPS interference challenges, the Iraqi Air Traffic Services (ATS) department has prioritized the publication and dissemination of waypoints based on ground-based navigation aids such as VORs and DMEs. This initiative ensures pilots have reliable backup navigation data, especially in areas prone to GPS jamming or spoofing. By clearly defining and updating these waypoints in aeronautical charts and publications, the ATS department enhances situational awareness and supports safe navigation during GPS disruptions. This also aligns with international aviation safety standards.
- AIS department is working now on the publication of waypoints reference to ground nav aids in the AIP.

—
The end