SAFETY ALERT 2021- 03

Issue 01
Date of Issue: February 03rd 2021

SUBJECT:

REQUIREMENTS TO MITIGATE 5G INTERFERENCE OPERATIONAL RISKS

REFERENCE PUBLICATIONS:
(RCTA Paper No.274-20/PMC-2073)

APPLICABILITY:

- UAE Airport Operators
- AIRCRAFT OPERATORS (INCLUDING APPROVED TRAINING ORGANISATIONS OPERATING AIRCRAFT)
- AIR TRAFFIC CONTROL UNITS

PURPOSE:

This Safety Alert is issued to address major operational risks raised by the international aviation community that interference from 5G technology has the potential to affect the safety and operation of airborne radio altimeters and wireless avionics intra-communications (WAIC) Radio. 5G runs on dedicated bands of radio frequency spectrum.

As we currently have one critical aviation safety technology called the radio altimeter, which indicates the airplane's height and supports safe landing, operates in the 4.2 – 4.4 GHz spectrum band; cell phones are currently not permitted to operate in that band or any nearby band to prevent interference. However, if the worldwide Telecommunication Authorities reallocates the 3.7-4.2 GHz band for 5G, the risk of interference could increase.

It is important for the aviation world to assess the 5G Telecommunications Interference Impact on Low-Range Radio Altimeter (LRRA) Operations and assess the potential for interference to radar altimeter operations due to 5G telecommunication signals transmitted on frequencies near to the 4.2-4.4 GHz band.

Potential Safety and Operational impact (Anywhere close to terrain):

- Could inhibit some functionalities of the TAWS (Terrain Alerting Warning System) reactive modes which would remove a safety net in case against CFIT (Controlled Flight in to Terrain).

Impact if 5G base stations are located too close to Airports:

- Could jeopardize flare manoeuvre (manual or auto).
- Risk of Go Around as landing laws may be affected.
- Diversion as there is no possibility to land in low visibility conditions.
- Spurious fault messages or Audio in the cockpit.

RECOMMENDATIONS:

RECOMMENDATION 1:

a) Considering the high likelihood of 5G Interferences on aircraft system, UAE Aircraft Operators should be aware of the concern described in this Safety Alert, and collect, analyse and monitor hazard and its consequences posed by 5G interferences[1].

b) UAE Aircraft Operators should identify measures to early detect and address the risk of loss of critical aircraft system affected by 5G band through SOP and training.

c) All UAE Aircraft Operators may consider adapting their Flight Data Monitoring to identify 5G inference events, if found practical.

RECOMMENDATION 2:

a) UAE Aircraft Operators or their flight crews should notify the appropriate Air Navigation Service Provider providing Air Traffic Services of any confirmed as due to 5G Interference, as and when appropriate.

b) UAE Aircraft Operators must report to the GCAA, in a manner prescribed by AMC-22, any event due to 5G interference[2].

CONTACTS:

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[1] *Such assessments should not be limited to operation areas known with 5G interferences.*
[2] The data will be reported to ICAO to drive future study on 5G.