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The activities related to Radio Altimeter/5G in the MID Region

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RO/CNS - ICAO MID Office



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01

Introduction



02

Radio Altimeter Action Group



03

**Safeguarding measures adopted by
MID states**



04

**Coordination between PIRG &
RASG**

- The radio altimeter, operates in the frequency band 4.2-4.4 GHz.
- It is a mandated critical aircraft safety system used to determine an aircraft's height above terrain and obstacles
- ICAO SL (25 March 2021) Potential safety concerns regarding interference to radio altimeters



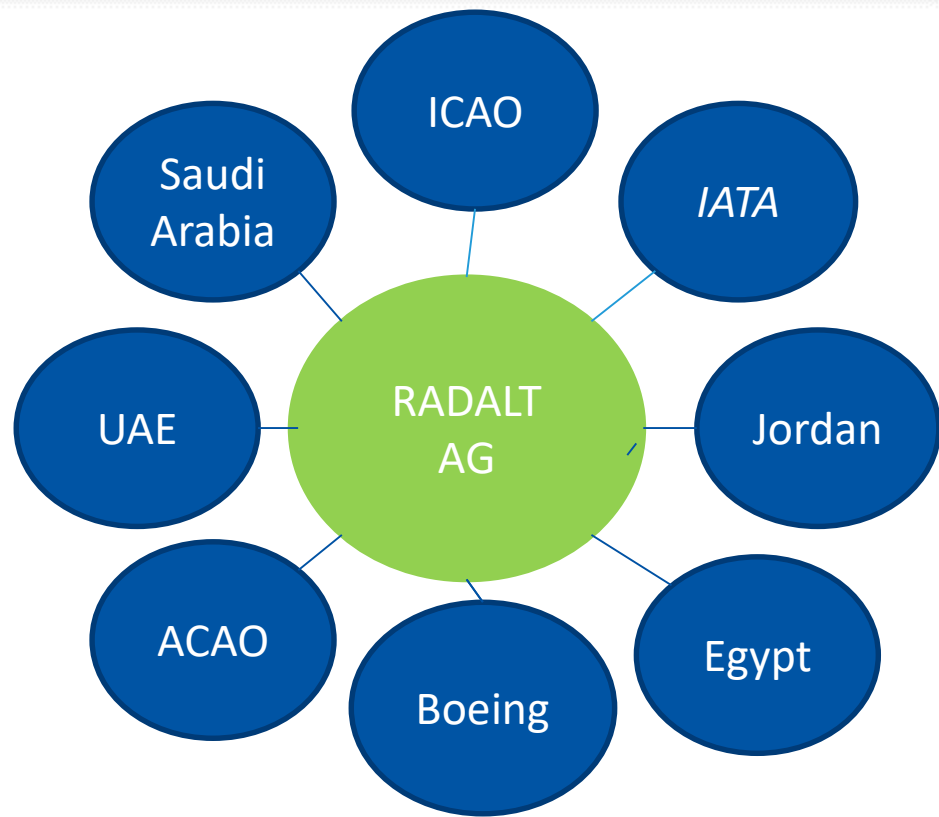


MIDANPIRG/19 meeting (14-17 February 2022, Saudi Arabia):

- acknowledged the safety concerns and potential operational impacts of the 5G & Radio Altimeter interferences;
- updated the Frequency Management Working Group Terms of Reference to include tasks related to the issue of 5G & Radio Altimeter interferences;
- agreed to establish Radio Altimeter (RADALT) Action Group to develop guidance material to protect the aircraft operations from potential Radio Altimeter interference



RADALT AG established to develop guidance material to protect the aircraft operations from potential Radio Altimeter interference associated with the deployment of cellular broadband/5G ground infrastructure near the bands used by RADALT



Chapter 1 – Background on 5G and Frequency band allocation



MID Dec XXX

INTERNATIONAL CIVIL AVIATION ORGANIZATION

Chapter 2 – Potential impact of 5G on Radio Altimeters during Aircraft operations

**Guidance on Safeguarding measures to protect
Radio Altimeter from potential harmful interference
from Cellular 5G Communications**

Chapter 3 – Short Term Safeguarding measures adopted at Regional and Global levels

Chapter 4 – Methodologies for defining safeguarding measures for Aerodromes and heliports

Edition 1.0-Rev.0 | November 2022

The document is under final review will be circulated next week



01

Introduction



02

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03

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04

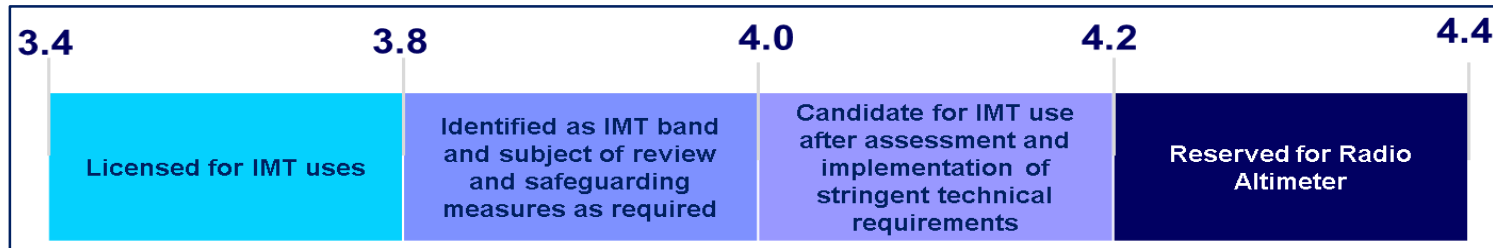
**Coordination between PIRG &
RASG**

1) Oman

- a) Established Ad-hoc committee
- b) Issued a safety circular Aeronautical Information Circular (AIC), the purpose of this Civil Aviation Safety Alert is to raise awareness of the potential risk of 5G interference and to recommend precautionary operational measures before confirmation of impact of 5G radio waves on radio altimeters.
- c) Conducted awareness campaign for industry
- d) Monitoring the industry report/complaint due to interference if any. q Joint work and cooperation between TRA and CAA in any relevant update in this regard.

2) Saudi Arabia

The Communications and Information Technology Commission (CITC) is responsible for managing radio spectrum for all users in the Kingdom of Saudi Arabia. CITC has planned allocation of 5G IMT in the band 3.4 – 4.0 GHz



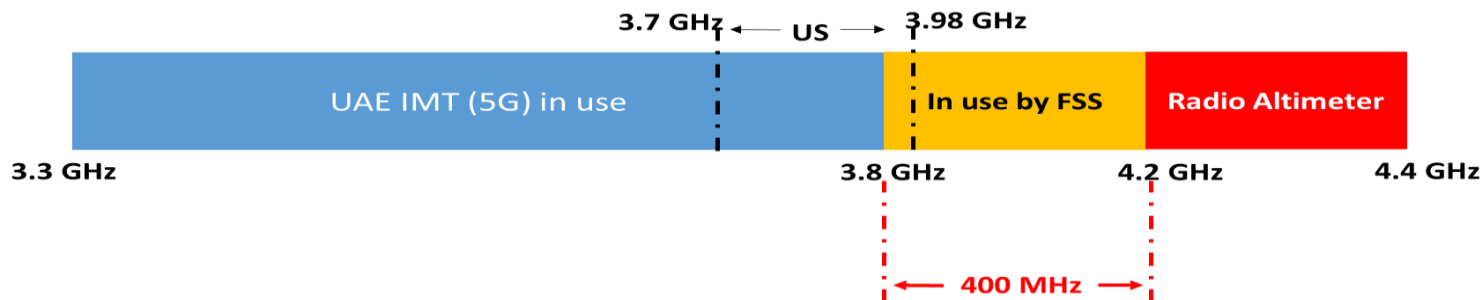
CITC conducted consultation with aircraft manufactures and operators to take views and comments on the impact of 5G deployment in 3.8 – 4.0 GHz band on the RADALT. The main recommendations can be summarized as follows:

- The allocation in the band 3.8-4.0 GHz must be subject to protection criteria, technical and operational requirements considering the performance of RADALT to avoid any harmful interferences, which may include but not limited to (separation distance, antenna height, tilt, and power).
- Consideration should be given to the protection of altimeters operating on-board helicopters using helipads in built-up areas where 5G deployment is likely to be high-density.
- These arrangements need to be reviewed once the aviation industry has developed new radio altimeter standards taking account of 5G deployments and developed a transition plan. Once new standards are deployed for RADALT, the allocation for 5G IMT may be extended in the band 4.0-4.2 GHz.

- Saudi CAA (GACA) and CITC established Spectrum Advisory Group to develop protection criteria for the altimeter systems to avoid harmful interference from the 5G networks. Interim measures using the French approach where exclusion and protection zones are established around major airports, are under consideration.
- GACA published an Advisory Circular to all operators of aircraft equipped with radio altimeters and air traffic service providers GACA Advisory Circular

3) UAE

Telecommunications and Digital Government Regulatory Authority is responsible for managing radio spectrum in UAE. 5G allocations in UAE are in the band 3.3 – 3.8 GHz



The UAE plans to use the band 3.8 – 4.0 GHz for IMT only after completion of technical studies to protect RADALT in 4.2- 4.4 GHz and in the future may extend this use up to 4.2 GHz.

The General Civil Aviation Authority (GCAA – UAE) published a Safety Alert at the attention of United Arab Emirates Aircraft Operator, informing them about the likelihood of 5G interferences on aircraft systems. This safety alert also recommends monitoring and reporting any 5G interference events.

<https://www.gcaa.gov.ae/en/epublication/admin/Library Pdf/Safety Alerts/SAFETY ALERT 2021-03 - REQUIREMENTS TO MITIGATE 5G INTERFERENCE OPERATIONAL RISKS - ISSUE 01.pdf>



01

Introduction



02

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03

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04

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MIDANPIRG DECISION 19/24: 5G SAFEGUARDING MEASURES

That, the CNS SG coordinate with the RASG-MID relevant subsidiary bodies the 5G Safeguarding measures around the aerodromes to protect RADALT from any interference

CNS SG/11 requested RASG relevant Subsidiary body to include the 5G interference with RADALT in the RASG ASRT report, edition 12 as one of the emerging risks that will require close coordination between regulators and providers of telecommunication services and adherence to recommendations set to ensure protection of radio altimeter equipment on board aircraft.”





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