



Protecting Aviation from potential harmful operation of the 5G

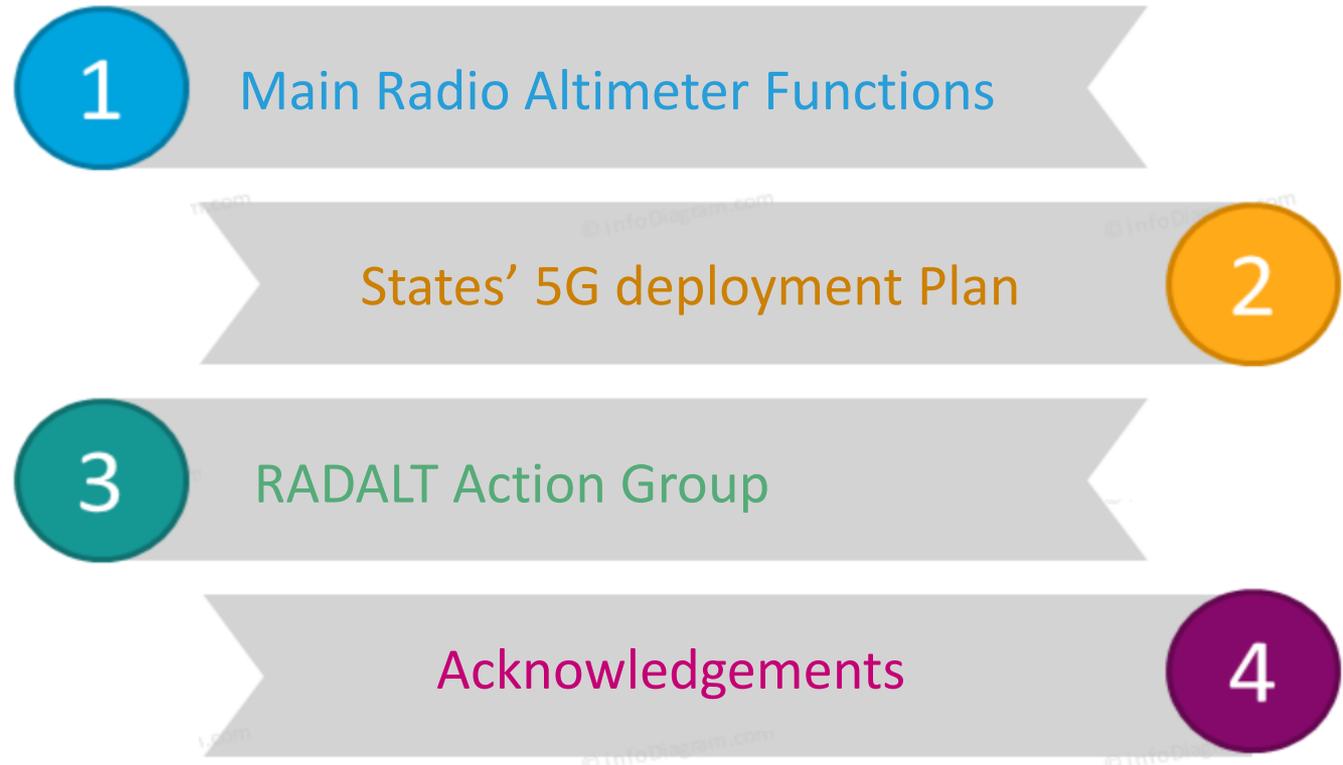
Presented by Secretariat





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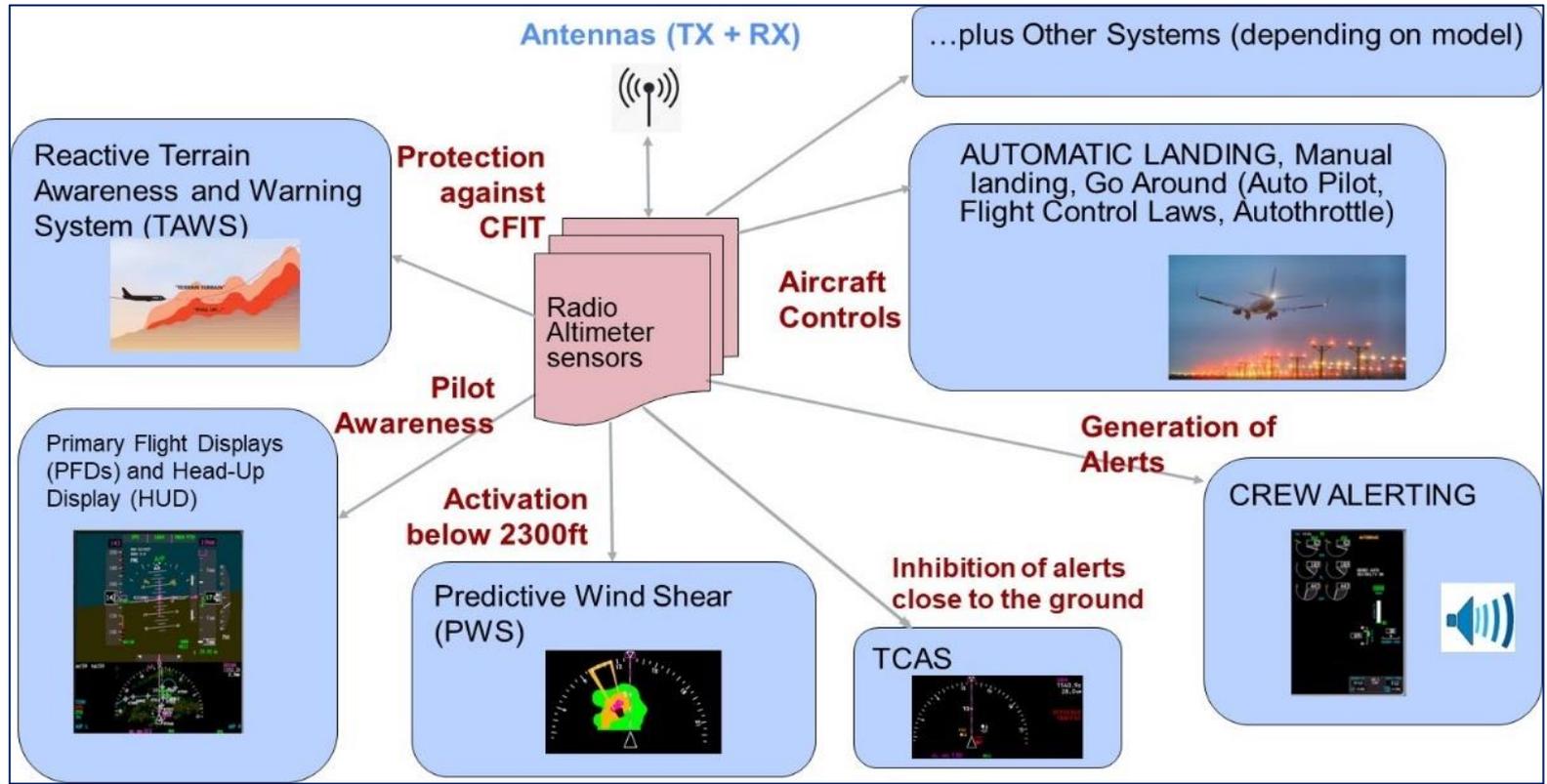
MIDANPIRG/20 & RASG-MID/10





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Country	Operator	5G network status	Commercial launch	Frequency bands
Bahrain	Batelco	5G deployed in network (2019)	Yes, 2019	2496-2690 MHz
	STC ¹³	5G deployed in network (2019)	Yes, 2019	2496-2690 MHz
	Zain	5G deployed in network (2019)	Yes, 2020	2496-2690 MHz
Kuwait	Ooredoo	5G deployed in network (2018)	Yes, 2019	4400-5000 MHz
	STC ¹⁴	5G deployed in network (2019)	Yes, 2019	3300-3800 MHz
	Zain	5G deployed in network (2018)	Yes, 2019	3300-4200 MHz
Oman	Omantel	5G deployed in network (2019)	Yes, 2020	3300-3800 MHz
	Ooredoo	Licensed (2018)	Yes	3300-3800 MHz
Qatar	Ooredoo	5G deployed in network (2018)	Yes, 2019	3300-3800 MHz
	Vodafone	5G deployed in network (2018)	Yes, 2019	3300-3800 MHz
Saudi Arabia	Mobily	5G deployed in network (2019)	Yes, 2019	2496-2690 MHz 3300-3800 MHz
	STC	5G deployed in network (2018)	Yes, 2019	2300-2400 MHz 3300-3800 MHz
	Zain	5G deployed in network (2019)	Yes, 2019	2496-2690 MHz 3300-3800 MHz
UAE	Du	5G deployed in network (2019)	Yes, 2019	3300-3800 MHz
	Etisalat	5G deployed in network (2018)	Yes, 2019	3300-3800 MHz ¹⁵

Source: Roadmaps for awarding 5G spectrum in the MENA region – GSMA Document, January 2022



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- ICAO has received studies from several States and organizations regarding the interference potential to radio altimeters;
- The MIDANPIRG/19 & RASG-MID/9 meetings (14-17 February 2022, Riyadh, Saudi Arabia) acknowledged the safety concerns and potential operational impacts of 5G operation on Radio Altimeter.
- Three (3) actions emanated:
 - a) updated the ToRs of the Frequency Management Working Group to include tasks related to the issue of 5G & Radio Altimeter interferences;*
 - b) established RADALT AG to develop guidance material to protect aircraft operations from potential Radio Altimeter interference; and*
 - c) tasked the CNS SG to coordinate with the RASG-MID relevant subsidiary bodies the 5G Safeguarding measures around the aerodromes to protect RADALT from any interference.*



MIDANPIRG DECISION 19/23: RADALT ACTION GROUP

That, the Radio Altimeter (RADALT) Action Group be:

a) 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; and

a) composed of:

Ridha Dridi, (Saudi Arabia, Rapporteur);

Fares A. Alzahrani (Saudi Arabia)

Abdullaziz Hussain (Saudi Arabia)

Nevin Askar (Jordan);

Saleh Al Masebi (UAE);

Jehad Faqir (IATA);

Hicham Bennani (ACAO);

Gerlof E Osinga (Boeing)

ICAO MID RO/CNS



- *The RADALT AG held several virtual meetings and developed Draft Guidance material on safeguarding measures to protect Radio Altimeter from potential harmful interference from Cellular 5G Communications*
- *The Guidance material was reviewed by ICAO frequency Spectrum Management Panel (FSMP) and an ICAO circular will be issued based on the Guidance material developed by the RADALT Action Group.*



The Draft Regional Guidance Material Document consists of four (4) chapters:

- a) Background on 5G and Frequency Band allocation
- b) Potential impact of 5G on Radio Altimeter during Aircraft operation
- c) Short term safeguarding measures adopted at Regional and Global Levels/ Long term planning
- d) Methodology for defining safeguarding measures for Aerodrome and Heliport



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.

The CNS SG/12 meeting proposed to request 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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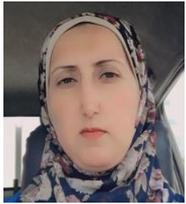
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Thank you for your Attention