

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

Chapter (1)

1.1 The role of ITU-R



ITU-D
Development

ITU-R
Radiocommunication

ITU-T
Standardization

- Ensuring efficient and economical use of the spectrum by all radio communication services.
- Develops and adopts the international spectrum allocations and associated regulations on the use of the RF spectrum.
- Issue Radio Regulation and revise it every 4 years (WRC) to enable the technology evolvement and changes in spectrum usage.

1.1 The role of ITU-R

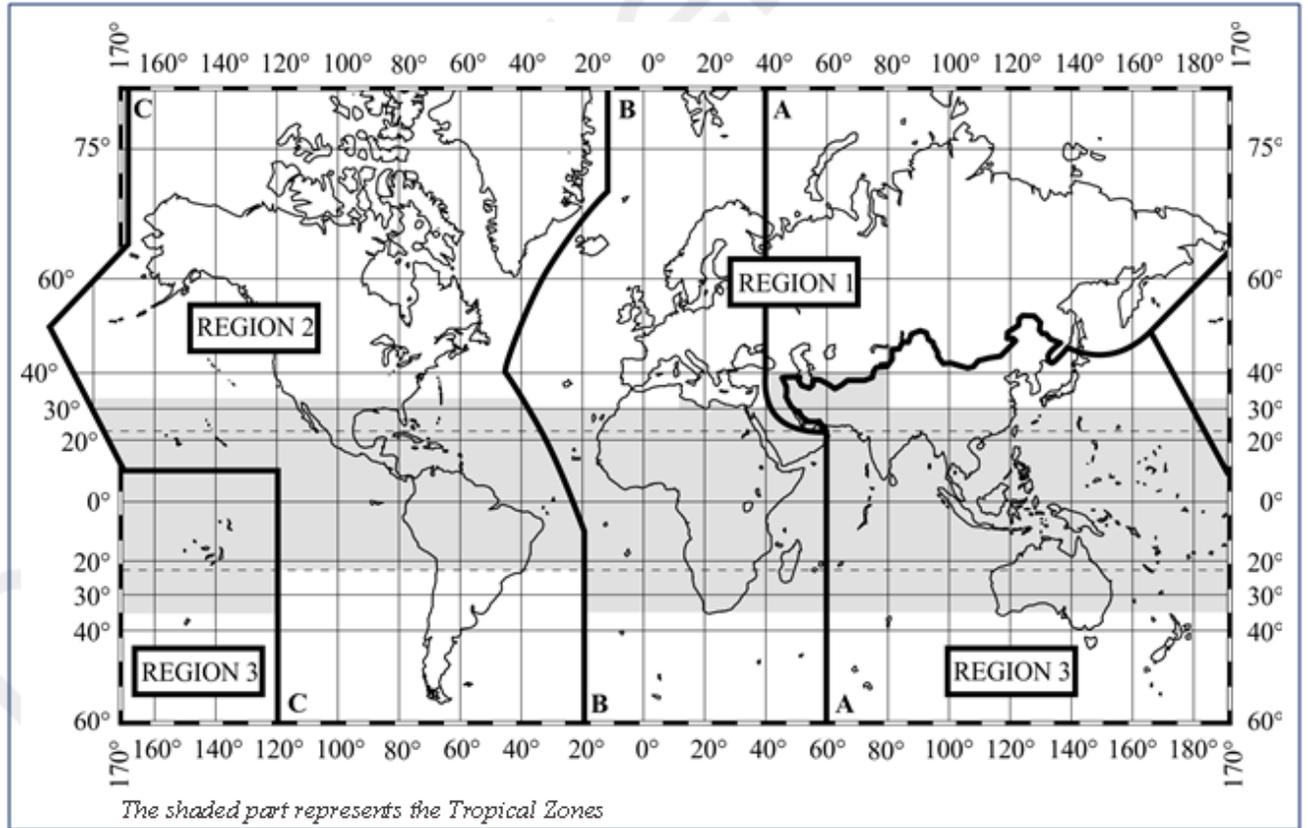
Radio Regulation allocates the following primary basis:

- 1) 3400 – 4200 to Mobile Service
- 2) 4200 – 4400 to Aeronautical Radio service



This identification does not preclude the use of this frequency band by any application of the services to which it is allocated; and does not establish priority in the Radio Regulations.

In ITU-R references the world is divided into 3 regions, MENA region is in ITU-R region (1).



1.2 Global Spectrum Situation for 5G



The growth in demand from mobile broadband requires access to regionally or globally harmonized spectrum to provide additional IMT services including higher data rates. The frequency ranges 3300–4200 MHz and 4400-4900 MHz provide good propagation and data rates and are of global interest to IMT proponents.

5G spectrum in MENA Region

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

1.2 Global Spectrum Situation for 5G



1. States and national spectrum regulators all over the world are considering 5G cellular systems to operate in parts of the frequency ranges 3.4-4.2 GHz and 4.4 -4.9 GHz.
2. These potential allocations are adjacent to the band used by RADALT and pose potential safety hazard if no mitigations are implemented. It is of paramount importance that, in support of safety of aircraft operations, member States and national regulators, note Article 4.10 of the ITU Radio Regulations which states, “ITU Member States recognize that the safety aspects of Radionavigation and other safety services require special measures to ensure their freedom from harmful interference.
3. It is necessary therefore to take this factor into account in the assignment and use of frequencies.”

THANK YOU