

ATU Guidelines on Wi-Fi in 6 GHz Band (5 925 – 6 425 MHz)

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Wi-Fi 6E Expanding Wireless Opportunity



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Introduction

1 The African Telecommunications Union (ATU) is a specialised institution of the African Union (AU) in the field of telecommunications and ICTs

2 ATU developed recommendations on the implementation of emerging technologies in Africa including Wi-Fi in 6GHz and 5G NR-U.

3 To harness the potential of emerging technologies to improve peoples lives in Africa

4 Recommendation provides guidance on the implementation of WiFi in 6 GHz to administrations on technical issues harmonise implementation and use of the technology

5 enabling the most effective and efficient use of the spectrum to deliver broadband services in Africa – while minimizing impact to incumbent services – and facilitating growth of the emerging technologies.

Wi-Fi 6 Expanding Wireless Opportunity

Broadband Connectivity

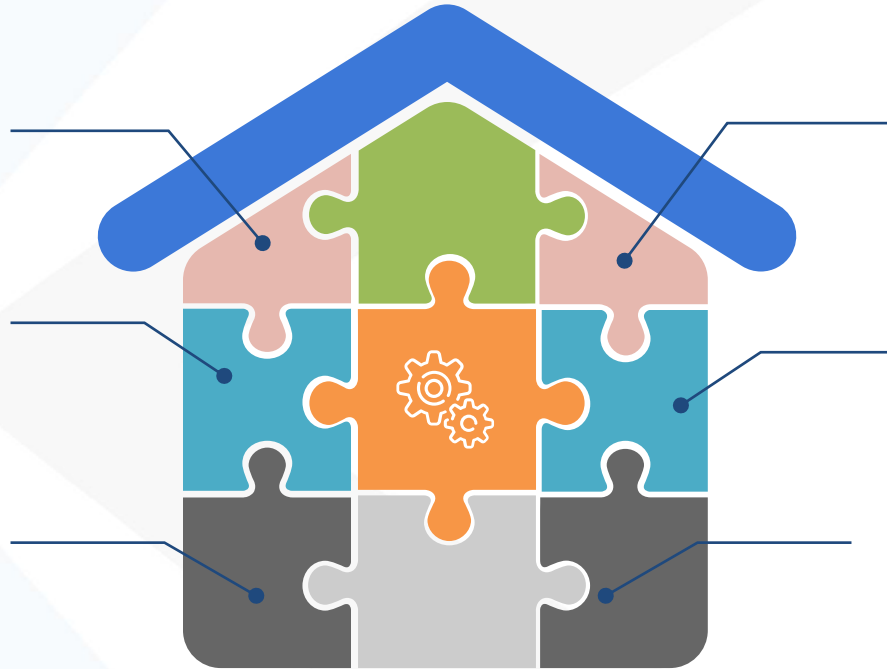
Half of the world's population is still not connected to the Internet

Spectrum

All emerging technologies require access to spectrum

COVID-19 pandemic

Increased demand for home broadband internet access



Bringing digital connectivity

Require a mix of technologies licensed & unlicensed

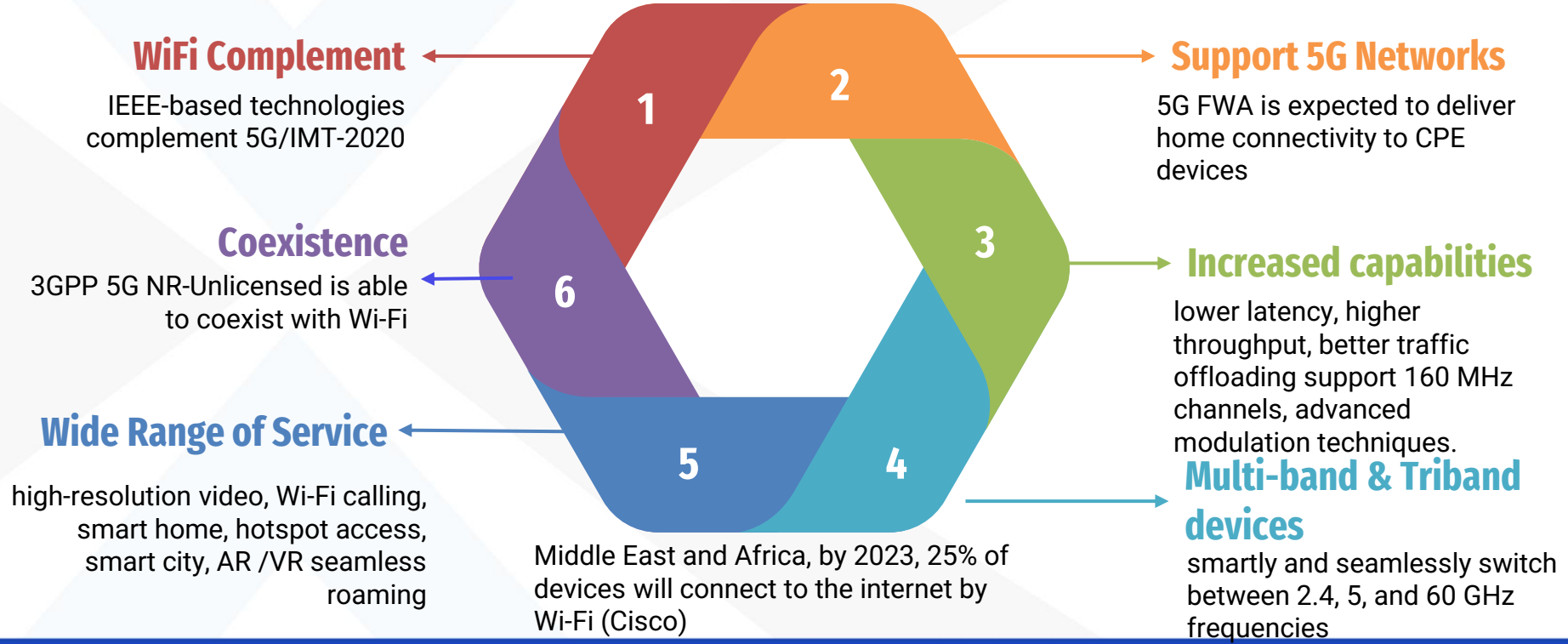
Policy harmonisation

Important to bringing innovative connectivity solutions to ATU member nations.

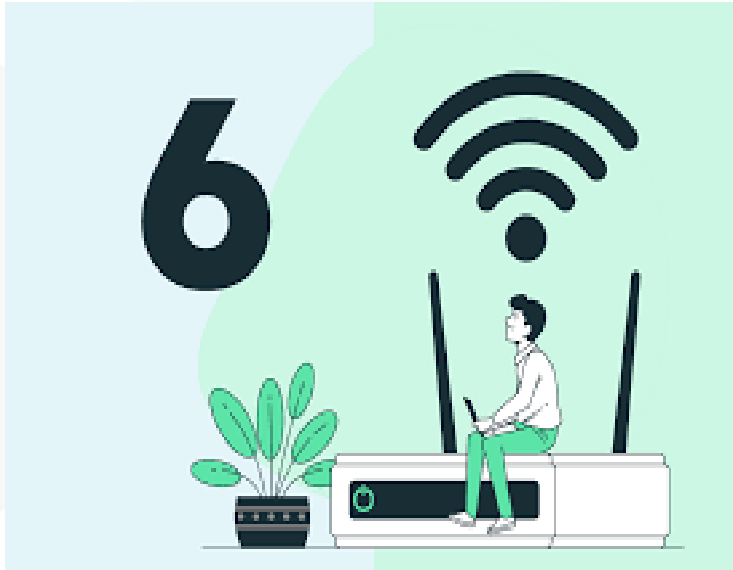
Radio LANs (RLANs)

Widely used to connect tablets and TVs, cameras and speakers

Main Elements For Consideration - Highlights



The case for enabling licence-exempt access to the 6 GHz band



1

Economic value of Wi-Fi

2

Wi-Fi complements 4G and 5G

3

Support for innovation

4

COVID-19 pandemic resilience and recovery

5

Enables evolution of Wi-Fi (Wi-Fi 6E)

6

Additional Licence-exempt spectrum in 6 GHz band

Best Practices - growing momentum

Country/Region	Range	Use	Power Limits
Europe (CEPT)	5945 - 6425 MHz	Low Power Indoor	23 dBm - 200mW
	5945 - 6425 MHz	Very Low Power portable	14 dBm - 25mW
USA	5925 - 6425 MHz	Database connected	36dBm - 4W
	6525 - 6875 MHz		
	5925 - 7125 MHz	Low Power Indoor	30dBm - 1W
Korea	5925 - 7125 MHz	Low Power Indoor	24dBm - 250mW
Chile	5925 - 7125 MHz	Indoor, no external antennas	30dBm - 1W
UK	5925 - 6425 MHz	Indoor low power	24dBm - 250mW
		Outdoor very low power	14 dBm - 25mW
UAE	5925 - 6425 MHz	Indoor	24dBm - 250mW
Brazil	5925 - 7125 MHz	Low Power Indoor	AP:30 dBm – 1W

ATU Recommendations

Recommendations

Designate

5925 - 6425 MHz for WAS/RLAN restricted to very low power (VLP) (both outdoor and indoor) and low power indoor (LPI) on non-exclusive, non-interference and non-protected basis

Adopt

Technical and operating conditions and allow all compliant technologies when implementing WAS/RLAN in the frequency band 5925 - 6425 MHz

Exempt

WAS/RLAN equipment that comply with the technical details from individual licensing.

Consider

authorizing any WAS/RLAN systems that operate in the frequency band 5925 - 6425 MHz and comply with operating conditions

Ensure

that WAS/RLAN equipment and devices comply with the technical and operating conditions

Allow

free (seamless) cross border circulation and use of WAS/RLAN equipment/devices that comply with technical and operational conditions

Technical And Operating Conditions (WAS/RLAN) 5925 – 6425

Frequency band	Application	Maximum radiated power or field strength limits	Technical conditions	Additional Information
5925-6425	WAS RLAN	dBm (200 mW) mean e.i.r.p.	<ul style="list-style-type: none"> • Restricted to indoor use only • Low Power Indoor (LPI) use only (including trains where metal coated windows (Note 1) are fitted and aircraft • Outdoor use (including in road vehicles) is not permitted. • An adequate spectrum sharing mechanism shall be implemented for channel access and occupation • Mean e.i.r.p. density for in-band emissions – 10 dBm/MHz 	<ul style="list-style-type: none"> • Low Power Indoor (LPI) devices <ul style="list-style-type: none"> • An LPI access point or bridge is a device that is supplied power from a wired connection, has an integrated antenna and is not battery powered. • An LPI client device is a device that is connected to an LPI access point or another LPI client device and may or may not be battery powered.
5925-6425	WAS RLAN	dBm (25 mW) e.i.r.p.	<ul style="list-style-type: none"> • Very Low Power (VLP) Indoor and outdoor use • Use on drones is prohibited • An adequate spectrum sharing mechanism shall be implemented for channel access and occupation • Maximum mean e.i.r.p. for in-band emissions (Note 2) • Mean e.i.r.p. density for in-band emissions – 1 dBm/MHz (note 2) 	<ul style="list-style-type: none"> • Very Low Power (VLP) device is a portable device
Note 1: Or similar structures made of material with comparable attenuation characteristics.				
Note 2: The “mean e.i.r.p.” refers to the e.i.r.p. during the transmission burst, which corresponds to the highest power, if power control is implemented				

Regulatory Best Practices

1

Regulations should keep up with rapidly changing technology

2

Develop policies, strategies and plans

3

Stakeholder Consultation & involvement

4

Collaboration & Partnerships

5

Citizen & Consumer Interests

6

Harmonization & efficient use of spectrum

*Thank
you*