ITU-APT Foundation of India
ITU's Association of India

To
Shri K Rajaraman (IAS),
Secretary DoT & Chairman DCC
Sanchar Bhawan
New Delhi-110001

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Sub: Need for 6 GHz Unlicensed Band in India to enhance export potential of telecom equipment and services from India

Dear Sir,

Ever since Covid-19 and increased work from home, there to an unprecedented increase in use of Wi-Fi by over 50 percent during the last two years. With Launch of 5G services, the demand for high speed Wi-Fi is expected to increase substantially. Presently regulations in India permit Wi-Fi only in 2.4 and 5 GHz frequency bands. These two bands have only about 600 MHz spectrum for all users as compared to over 2 GHz that is needed.

Even then, it is estimated that present use of Wi-Fi in India creates an economic value of about Rs. 1.6 Lakh crores every year. A new global study commissioned by the Wi-Fi Alliance predicts that the global economic value of Wi-Fi will rise to a staggering INR 362 Lakh Crores ($4.9 Trillion) by 2025, up from INR 232 lakh Crores in 2021. This economic value includes contributions from the use of Wi-Fi by consumers, businesses, service providers, and more.

In order to meet the severe shortage of Wi-Fi spectrum, many countries around the world have opened new Wi-Fi bands. The two main new Wi-Fi bands are Wi-Fi 6e in 6 GHz band and WiGig in 60 GHz (V Band). We are now proposing that India should urgently delicense 6 GHz band for Wi-Fi 6e. A separate proposal for V band delicensing has already been submitted by us last month. This delicensing of 6 GHz band is key to India's local manufacturing, innovation and exports, not just for telecom but the Industrial sector as a whole.

Internationally, over 35 countries have delicensed 6 GHz frequency band. These include the United States, UK, Canada, Korea, Brazil, UAE, Saudi Arabia and the countries in the EU. The rationale for delicensing has been to enhance benefits to citizens while reaping the benefits of economic growth in their economies. Enclosed table summarizes the regulatory actions by countries around the world (Europe, United Kingdom, United States, Canada, Brazil, etc.) towards delicensing of WI-FI 6e

With global delicensing of 6 GHz Wi-Fi, the technology and product development is going on in full swing. This will represent a huge new global market for Wi-Fi technology, software and equipment. As Wi-Fi-6e is still a niche technology, it is easier for the Indian telecom hardware and software companies to corner a large part of this futuristic global market, which we could not do in case of 5 GHz Wi-Fi as it was delicensed in India after more than 20 years from rest of the world.

Since the developed world has already decided to use this band for Wi-Fi, eventually India will have to do the same but by delicensing after 10 years, our young engineers and scientists will lose the edge in capturing a part of the global multibillion $ market opportunity.

The Government of India has recently launched the PM Public Wi-Fi Program (PM-WANI) to accelerate the reach of broadband to the masses through the proliferation of Public Wi-Fi. Due to the pandemic, dependence on Wi-Fi increased manifold for a number of applications including, Working from Home (WFH), health care, and education. Various studies have indicated that at least 2GHz Wi-Fi spectrum is needed to meet the need for increased home working.

Frequency band 5925-7025 MHz is allocated to Fixed, Mobile and Satellite Service in India's National Frequency Allocation Plan 2018. Wi-Fi using the 6 GHz radio band opens up over 1 GHz of extra bandwidth, a boon for high congestion. This bandwidth is split into 14 channels of 80 MHz each or seven channels of 160 MHz each. Unlike existing Wi-Fi channels that are currently crammed into around just 600 MHz of spectrum, Wi-F- 6e channels exist without overlap or interference.

Currently this band is used for Satellite uplink and Point to Point microwave and it has been proven that there is full sharing possibilities with the existing services without any loss of revenue from the current services. Use of this band for Wi-Fi will increase the efficiency of WLAN networks 4 times the throughput of 802.11ac. FSS studies indicate that allowing for up to 2% outdoor usage with max EIRPs up to 1W with satellites was feasible. We have had discussions with Department of Space as well as Private/Global satellite operators and they are comfortable with shared use of this band with low power Wi-Fi

We strongly recommend that DOT to urgently delicense the frequency band of 5925-6425 MHz as a first step, as proposed above, in line with what has been done by other developing and developed countries in order to support innovation by our own engineers and promote Atamnirbhar Bharat. We are also happy to make a detailed presentation on this proposal at your earliest convenience.

Bharat B Bhatia,

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The following table summarizes the regulatory actions by administrations of countries around the world (Europe, United Kingdom, United States, Canada, Brazil, etc.) towards delicensing of WI-FI 6e world-wide.

Country	Permissible operation	Frequency range	Maximum mean EIRP for in-band emissions	Maximum mean EIRP density for in band emissions	Maximum mean EIRP density for out-of-band emissions
EU/CEPT	LPI	5,945 – 6,425 MHz	23 dBm	10 dBm/MHz	-22 dBm/MHz (below 5,935MHz)
	VLP		14 dBm	1 dBm/MHz 10 dBm/MHz (for the narrowband usage)	-45 dBm/MHz (below 5,935MHz)
UK	LPI	5,945 – 6,425 MHz	24 dBm	11 dBm/MHz	In accordance with directive 2014/53/EC
	VLP		14 dBm		
US	SP	5,925 – 6,425 MHz 6,525 – 6,875 MHz	36 dBm (AP) 30 dBm (CL)	23dBm/MHz (AP) 17 dBm/MHz (CL)	-27 dBm/MHz (Outside operational range)
	LPI	5,925 – 7,125 MHz	30 dBm (AP) 24 dBm (CL)	5 dBm/MHz (AP) -1 dBm/MHz (CL)	
Canada	SP	5,925-6,875 MHz	36 dBm	23 dBm/MHz	
	LPI	5,925-7,125 MHz	30 dBm	5 dBm/MHz	
	VLP (proposed)		14 dBm	-8 dBm/MHz	
Brazil	LPI	5,925 – 7,125MHz	30 dBm (AP) 24 dBm (CL)	5 dBm/MHz (AP) -1 dBm/MHz	-27 dBm/MHz (Outside

				(CL)	operational range)
	VLP	5,925 – 7,125MHz	17 dBm	-5 dBm/MHz	
Korea	LPI	5,925 – 7,125MHz		2 dBm/MHz (AP) 2 dBm/MHz (CL)	-34 dBm/MHz at 5925 MHz -27 dBm/MHz at 5925 MHz
	VLP	5,925 – 6,425MHz		1 dBm/MHz	-34 dBm/MHz at 5925 MHz