GSMA
12/F Suites 1207-10
Great Eagle Centre
23 Harbour Road
Wanchai
Hong Kong
Tel + 852 3960 5000
Fax +852 3960 5005
Web www.gsma.com

24 December 2021

Office of the Communications Authority
29/F Wu Chung House
213 Queen's Road East
Wanchai, Hong Kong

Attention: Senior Telecommunications Engineer (Spectrum Planning) 1

RE: GSMA's comments to the consultation paper on the "Creation of a Class Licence for Regulating the Use of and Trade in 6 GHz Devices for Wireless Local Area Network and Variation to the Class Licence for Provision of Public Wireless Local Area Network Services"

Dear Sir/Madam:

The GSMA would like to thank the Communications Authority (CA) for the opportunity to comment on the consultation for the *Creation of a Class Licence for Regulating the Use of and Trade in 6 GHz Devices for Wireless Local Area Network and Variation to the Class Licence for Provision of Public Wireless Local Area Network Services*.

In response to the proposal outlined in the consultation paper, we would like to provide the following comments for your kind consideration.

Mid-band spectrum, especially the 6 GHz band (5925-7125 MHz), is key to the affordability and success of 5G

Meeting mid-band spectrum needs is vital to 5G's future and requires forward-planning from policymakers. The speed, reach and quality of 5G services depend on mobile operators having timely access to the right amount and type of affordable spectrum. Mid-band spectrum is especially important as it offers a good mixture of coverage and capacity for 5G.

A report published by the GSMA[1] presents the industry's needs for how much mid-band spectrum mobile operators will require between 2025 and 2030 and provides some options for operators to meet this demand. It contains careful consideration of spectrum demand in the 2025-2030 time frame. This is crucial to meet growing demand, data consumption and the needs of all use cases. The research finds that, **in addition** to the amount of assigned spectrum by 2025, **regulators will need to make 2 GHz of mid-band spectrum** available in the 2025-2030 time frame **for the development of 5G**. This is the average value globally needed to guarantee the IMT- 2020 requirements for 5G. Offload to Wi-Fi and to mmWave were considered in the study.

The research considered a wide representation of global cities, which included Hong Kong. As the following table shows, Hong Kong has one of the highest requirements for mid-band spectrum across all scenarios

[1] https://www.gsma.com/spectrum/resources/5g-mid-band-spectrum-needs-vision-2030/

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of different activity factors[2]. **6 GHz band is therefore a critical band for Hong Kong to be able to meet the ever rising demands for 5G mobile broadband**.

DL and UL total (including baseline) mid-bands spectrum need [MHz]														
	Popn density	Dense Area	Activity factor 10%			Activity factor 15%			Activity factor 20%			Activity factor 25%		
			High bands offload			High bands offload			High bands offload			High bands offload		
City	per km^2	km^2	30%	20%	10%	35%	25%	15%	40%	30%	20%	45%	35%	25%
Tehran	8,000	1,704	730	810	890	910	1020	1140	1040	1200	1350	1140	1330	1530
Amsterdam	8,386	117	940	970	1010	1010	1130	1260	1150	1320	1480	1260	1460	1660
Munich	8,836	92	870	940	1030	1050	1180	1300	1200	1370	1540	1300	1520	1730
Marseille	9,035	43	950	990	1040	1060	1200	1330	1220	1390	1570	1330	1540	1760
Hamburg	9,289	69	890	970	1060	1080	1220	1350	1240	1420	1600	1350	1580	1800
Minsk	9,541	192	920	1010	1100	1120	1260	1400	1290	1470	1650	1400	1630	1860
Baku	9,636	115	920	1010	1110	1130	1270	1410	1290	1480	1670	1410	1640	1880
Makkah	10,070	434	1150	1190	1230	1240	1360	1510	1390	1580	1780	1510	1750	2000
Milan	10,162	141	980	1030	1130	1150	1300	1450	1330	1520	1720	1450	1690	1940
Lyon	10,595	73	990	1060	1160	1190	1340	1500	1370	1570	1780	1500	1750	2010
Rome	10,955	171	1000	1090	1190	1220	1380	1540	1400	1610	1830	1540	1800	2060
Berlin	11,859	163	1030	1150	1260	1290	1460	1630	1490	1720	1950	1630	1920	2210
Amman	11,930	109	1130	1230	1350	1380	1550	1720	1580	1810	2040	1720	2010	2300
Tashkent	14,088	164	1180	1320	1450	1490	1690	1900	1720	2000	2270	1900	2240	2580
Johannesburg	14,681	222	1160	1300	1440	1480	1690	1900	1730	2010	2300	1900	2260	2610
Bangkok	14,696	513	1240	1380	1530	1560	1780	1990	1810	2100	2380	1990	2340	2700
Riyadh	15,000	145	1290	1430	1580	1610	1830	2050	1870	2160	2450	2050	2410	2770
Barcelona	15,576	179	1250	1400	1550	1590	1810	2040	1850	2150	2450	2040	2410	2790
Madrid	15,773	303	1260	1410	1560	1600	1830	2060	1870	2170	2480	2060	2440	2820
Bogotá	16,240	584	1290	1450	1600	1640	1880	2110	1920	2230	2550	2110	2510	2900
Mexico City	16,640	864	1380	1540	1700	1740	1980	2220	2020	2340	2660	2220	2620	3030
Istanbul	17,316	698	1420	1590	1760	1800	2050	2300	2090	2430	2760	2300	2720	3140
Jakarta	17,439	515	1370	1540	1710	1750	2000	2260	2040	2380	2720	2260	2680	3100
Beijing	18,185	953	1470	1640	1820	1860	2130	2390	2170	2520	2880	2390	2830	3270
Paris	18,400	243	1410	1590	1770	1810	2080	2350	2120	2480	2830	2350	2790	3230
Nairobi	18,758	241	1370	1560	1740	1780	2050	2330	2100	2460	2820	2330	2780	3230
Cairo	18,934	961	1400	1580	1760	1810	2080	2360	2130	2500	2860	2360	2820	3270
Tokyo	19,440	176	1450	1620	1810	1850	2130	2420	2180	2560	2930	2420	2890	3360
Ho Chi Minh City	20,087	484	1520	1720	1910	1960	2250	2540	2300	2690	3080	2540	3030	3510
New York	20,770	348	1530	1730	1930	1980	2280	2580	2330	2730	3130	2580	3080	3590
Moscow	20,975	204	1580	1780	1990	2040	2340	2640	2390	2800	3200	2640	3150	3660
Sao Paulo	21,542	266	1620	1830	2040	2090	2410	2720	2460	2870	3290	2720	3240	3760
Mumbai	24,773	944	1610	1850	2090	2150	2510	2870	2570	3050	3530	2870	3470	4070
Hong Kong	25,327	291	1730	1980	2220	2280	2650	3020	2710	3200	3690	3020	3630	4240
Yangon	25,327	291	1900	2140	2390	2450	2810	3180	2870	3360	3850	3180	3790	4410
Lagos	30,968	215	2140	2440	2740	2810	3260	3710	3340	3940	4540	3710	4460	5210

Spectrum need	< 10 MHz	10 to 500 MHz	500 - 1000 MHz	1000-2000 MHz	> 2000 MHz

The World Radiocommunication Conference (WRC-23) will play an important role in determining the future IMT services in the upper 6 GHz range (6425 – 7125 MHz), which provides an opportunity to harmonise the spectrum across large parts of the global economy. At the same time, economies such as Mainland China are also considering making the lower part of the 6 GHz band (5925 – 6425 MHz) to licensed IMT services, as can be seen in the slide below from the Ministry of Industry and Information Technology of China (MIIT).

[2] The activity factor is an assumption surrounding what percentage of the concurrent human and machine connections require the 100 Mbps download and 50 Mbps upload connection at any one time during the busiest hours.

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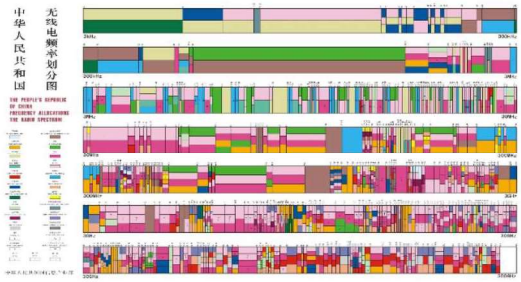
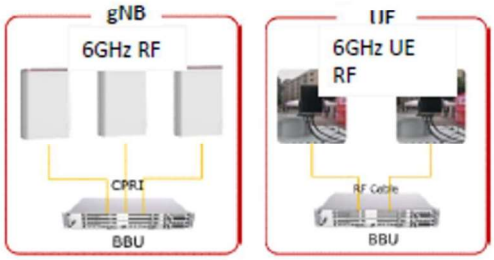
Ministry of Industry and Information Technology of the People's Republic of China

Consideration of 6GHz band for the future

- Domestic Level
  - Considering to revise the National Frequency Allocation Table (to identify 6GHz band for IMT).
  - Considering of promoting industry chain mature by lanching 5G trial in 6GHz band





At the GSMA the interest in the 6 GHz band is clear: it is high priority for use with 5G systems on a global basis. We surveyed our global operator members on this band and 90% of MNOs' responses placed it as a high priority for IMT, whether in a new IMT identification at WRC-23 or making use of the existing global mobile allocation.

Considering the developing situation for the planning of the 6 GHz band globally, geographical and economic connections to the Greater Bay Area and rest of Mainland, economies of scale in China, **the GSMA would urge the CA to delay the decision on the lower 6 GHz band (5925 – 6425 MHz) and consider development in the sectors between now and WRC-23 to strive for the most optimal arrangement for the 6 GHz band after WRC-23. In particular, the GSMA would recommend:**

- **Make at least 6425 – 7125 MHz available for licensed 5G; and**
- **Depending on the extent of practical needs, open the lower half of the 6 GHz band (5925 – 6425 MHz), or parts thereof, on licence-exempt and technology neutral basis.**

Once again, the GSMA appreciates the opportunity to comment on this consultation, and look forward to continuing the close dialogue with the CA on the above matters.

Yours sincerely,

[redacted]