Cisco Systems, Inc. Comments
December 2021

Response to HKCA Consultation on 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

Introduction

Cisco Systems, Inc. hereby files comments in response to the Hong Kong Communications Authority (CA) Public Consultation Paper on *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* issued in November 2021. Cisco applauds the efforts of the CA to take steps to enable the latest generation of Wi-Fi in Hong Kong by opening up much needed spectrum in the 6 GHz range. In this submission, Cisco provides our views regarding the Creation of the Device Class Licence and the Variation to the Existing PWLAN Service Class Licence, urges the CA to consider making the entire 5925-7125 MHz band available to licence-exempt uses now to sustain and grow the economic activity that Wi-Fi has historically supported.

Cisco is a global provider of Internet Protocol (IP)-based networking solutions with a strong presence in Hong Kong. Among Cisco's many products are Wi-Fi network solutions for enterprise, enterprise networking solutions generally, and service provider networking solutions.

Enterprise networks are rapidly evolving to wireless as the edge technology of choice for reasons of networking efficiency, the expanded use of data in core business operations, and to supply new capabilities associated with digital transformation. Much of this data will never leave the enterprise's own network, or will be transmitted via dedicated connections to a private, public, hybrid or a multi-cloud environment.[1] The COVID-19 pandemic has accelerated and expanded this trend for business and government, as a variety of applications (including collaboration tools) must now operate on an employee's or student's home networks powered by Wi-Fi[2], or perhaps even support telehealth applications. Whether Wi-Fi is on the enterprise premises or relied upon by the enterprise to support remote working, telehealth or education, demands on the spectrum for licence-exempt technologies are rising quickly. While much of the public policy focus is on Wi-Fi at the edge of service provider networks (wired broadband, satellite, other), from Cisco's perspective, public policy should focus equally on whether business entities and governmental uses of licence-exempt spectrum are adequately supplied for the future.

[1] Cloud capability enables enterprises to quickly increase or modify computing power without the need to order and install servers or other network hardware on premises. If properly incorporated into an IT strategy, cloud enables IT management and integration of applications with user devices in a secure way.

[2] When working from home and communicating with enterprise networks, employees are generally utilizing Virtual Private Networks (VPNs) that securely "tunnel" through a public service provider network to connect with the enterprise. VPN usage has surged to new never-before-seen levels during the pandemic. See https://www.businesswire.com/news/home/20201127005318/en/Global-Virtual-Private-Network-VPN-Market-Report-2020-VPN-Adoption-Surges-as-COVID-19-Pandemic-Leads-to-a-Rise-in-Remote-Work-and-WFM-Culture---ResearchAndMarkets.com

Part A – Creation of the Device Class Licence

Frequency Band

Cisco welcomes the CA's proposal to make available 5925-6425 MHz for WLAN use in Hong Kong. Opening the band for licence-exempt WLANs enables customers throughout Hong Kong to take advantage of the latest innovations that Wi-Fi has to offer, and provide improvements in speed, the ability to deploy transmitters in dense configurations, and support an increasing range of use cases. However, we also believe there is a need for more spectrum to be made available for licence-exempt use, including for WLAN use, from 6425-7125 MHz. Having a single large contiguous block of spectrum in the 5925-7125 MHz range to support the current and coming generations of Wi-Fi is essential to support continued growth in connectivity needs of Hong Kong and the expanding uses that Wi-Fi supports within enterprises.

The proliferation of additional, ever more powerful WLAN devices, and higher bandwidth broadband networks, is enabling richer and more productive applications. Cisco's Annual Internet Report[3] highlights that for Asia Pacific, the devices and connections per capita will grow from 2.1 in 2018 to 3.1 in 2023. There will be 6.6 billion network devices in Asia Pacific by 2023, up from 4.7 million in 2018 (7.2% CAGR). There will be 6.9 billion wired and Wi-Fi connected devices by 2023, up from 4.0 billion in 2018 (11.7% CAGR), with 51% of all networked devices in Asia Pacific having a wired or Wi-Fi connection. Moreover, these are not just devices that connect people to the Internet, but include an increasingly broad array of "things" from consumer products (like connected appliances, television sets, security systems and gaming consoles) to vehicles and industrial machines.

In addition, Wi-Fi is also part of the technology enabling today's smartphones, first introduced in 2007. Mobile devices are getting more powerful with every generation, consuming more data with increases in processing power, screen resolution, more use of video in applications, and the mobile networks themselves transitioning from 3G to 4G and now, 5G. "Offloading" of mobile traffic to Wi-Fi networks means that 60 to 70% of data utilizes a Wi-Fi/fixed broadband instead of a mobile connection, preventing congestion and enabling mobile operators to more easily adjust to demand spikes.

Every part of the broadband ecosystem is speeding up in response to changing consumer demand. Broadband networks, whether fibre or wireless, are becoming more powerful. Through the transition from 3G to 4G, the use of licence-exempt spectrum has continually grown, and will continue to grow as 4G transitions to 5G. In the same period, while Hong Kong transitions from 4G to 5G, WLAN demand continued to grow without provision for more licence-exempt spectrum capacity.

[3] https://www.cisco.com/c/en/us/solutions/executive-perspectives/annual-internet-report/air-highlights.html#

Regulators globally are seeing the benefits of opening 6 GHz to WLAN use. The economic value of doing so is estimated at US$4.8 trillion globally by 2025, assuming major economies open the 6 GHz band to WLAN.[4] The main reasons for Wi-Fi's ability to deliver economic value lie in its ability to provide easy and readily available Internet access at home and on the go, along with productivity increases in enterprises as they increasingly rely on WLAN in their business operations. From Cisco's perspective, enterprises (governmental, non-profit or for profit) are still early in the process of digitizing their operations with wireless connectivity. However, one of the outcomes of the global pandemic of the past year has been an acceleration of digital transformation initiatives. It is now recognised that what can be delivered digitally, now *must* be delivered digitally.

With these benefits and value in mind, Cisco believes the CA should quickly open the 5925-6425 MHz band as discussed in this consultation, and should then move to make the entire 1200 MHz band licence-exempt.

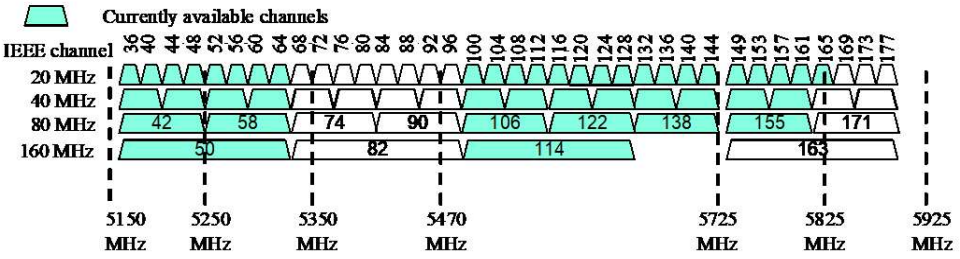
Today, the WLAN industry faces two fundamental challenges:

(1) The existing licence-exempt spectrum in the 2.4 and 5 GHz bands originally allocated 15 years ago to support Wi-Fi are reaching their capacity limits and becoming heavily congested, particularly in venues with larger number of users, such as enterprises, schools, transportation hubs and other public places; and
(2) WLAN technology itself needs an overhaul to address future networking challenges, and the new technology requires a wide swath of spectrum to achieve the benefits it was designed to create.

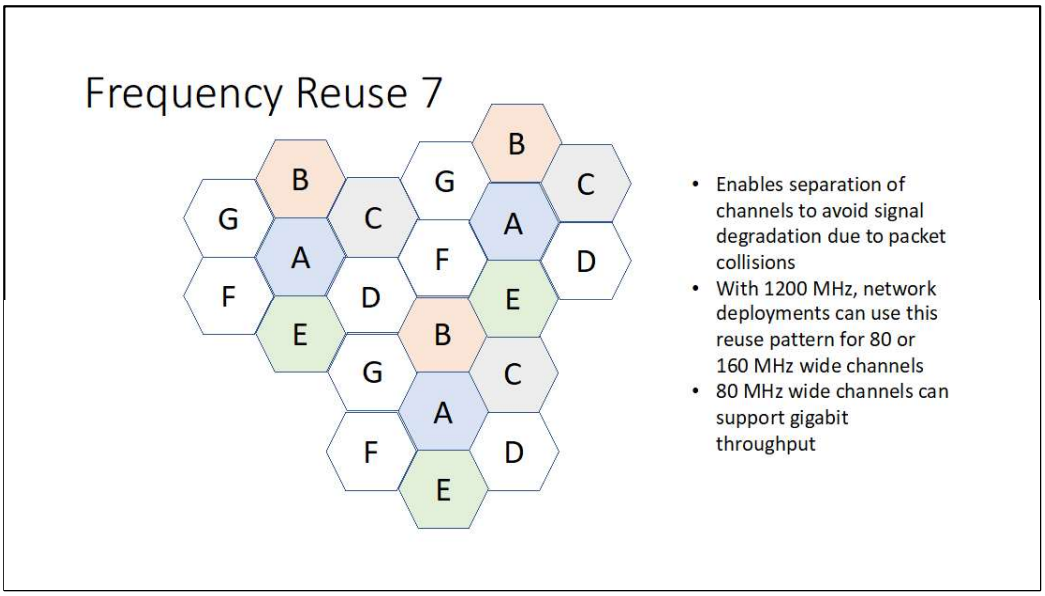
For a decade and a half, the Wi-Fi industry has been innovating new generations of technology on spectrum that was identified for licence-exempt use in the 5 GHz range by the World Radio Conference (WRC) of 2003. Over the years, numerous technological improvements – both standardized and vendor specific – were made to ensure that Wi-Fi networks could be relied upon to serve a variety of purposes in government and enterprise settings, even as the number of use cases and amount of data continued to increase. During this period, industry learned to deploy dense networks of the type found in convention centres, stadiums, college campuses, and transportation hubs. We learned, for example, that the minimum practical distance between access points in a network is 12m, because anything less does not contribute to the overall throughput needs, and in fact diminishes them. One way to boost throughput is to widen channels, which the industry set out to do in Wi-Fi 5. As customers migrated from Wi-Fi 4 to Wi-Fi 5, however, 40 MHz wide channels remained the norm for government and enterprise networks. While the Wi-Fi 5 generation could take advantage of 80 or 160 MHz wide channels, there simply are not enough of these wider channels to enable a networked

[4] "The Economic Value of Wi-Fi: A Global View (2021-2025)" by Telecom Advisory Services on behalf of the Wi-Fi Alliance (2021) available at https://www.wi-fi.org/download.php?file=/sites/default/files/private/Economic_Value_of_Wi-Fi_Highlights_202102_0.pdf

deployment, as is shown in the following 5 GHz channel plan. For that reason, enterprise networks have continued to operate using 40 MHz wide channels.

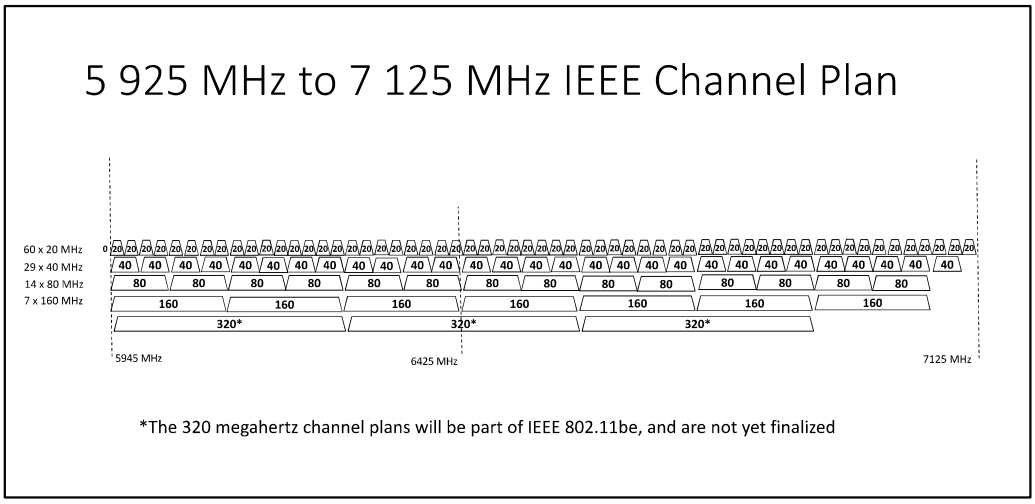


As industry began to evaluate what it would need for its sixth generation of product (known as Wi-Fi 6), it was clear that technological innovation by itself would no longer be sufficient to address the demands of the future – such as more intensive wireless networking with denser deployments, more end points due to the Internet of Things, increasingly data heavy applications such as Augmented or Virtual Reality (AR/VR), and more. Not only did we need a new set of technologies to address these issues, but we also needed the spectrum to enable them to run on wide channels in networked configurations. The concept of Wi-Fi 6 was not just to make a step change function in Wi-Fi capability, but also to create a technology that could take full advantage of a contiguous swath of spectrum supporting the use of wide channels. That contiguous swath of spectrum became 6 GHz – selected because it afforded manufacturing and operational synergies with 5 GHz but also because licence-exempt equipment is highly complementary to the incumbent licensed services in the band. In Cisco's view, the use of Wi-Fi 6 in the 6 GHz band enables networks to be designed with "frequency reuse 7" channel plans featuring 80 or 160 MHz wide channels, as follows:



The frequency reuse 7 methodology minimizes packet collisions that degrade throughput by keeping "like" channels separated. With the full 1200 MHz authorized,

government and enterprise deployments have access to up to fourteen 80 MHz wide channels and up to seven 160 MHz wide channels. This is important because the 80 MHz wide channels are what can deliver gigabit throughput, which will be a necessity soon and is desirable now.



Even today, these advanced networking capabilities can be needed in government and enterprise networks. This is particularly true when the use case is broadband access. While in some cases users and their devices might be uniformly distributed inside a facility – or at least predictably distributed – we find that most networks users will move around and cluster in meeting rooms, lecture halls, training rooms, at specific booths or event spaces inside convention halls, etc. We not only need better technology to deliver a good user experience, we need to rely on more than one access point that can reach these dense spaces. These problems only get more challenging as we look ahead to deployments of AR/VR or robotics where the pressures on the network become more extreme. With Wi-Fi 6 in the full 6 GHz band (i.e. Wi-Fi 6E), industry will finally have sufficient spectrum to meet the challenges we are already experiencing with technology and with spectrum that is future-proofed.

The alternative result – where administrations allocate just 500 MHz instead of 1200 MHz for licence-exempt WLAN – leaves licence-exempt users in a predicament. With just 500 MHz, deployments will be stuck at 40 MHz channels. While the lower 6 GHz spectrum is greenfield in that there are no prior generations of Wi-Fi operating in it,[5] there are not enough 80 MHz channels for an enterprise deployment using a frequency

[5] The existing technology supporting Wi-Fi spectrum at 2.4 GHz and 5 GHz currently allows every Wi-Fi protocol since its inception to operate. The additional requirement of interoperability and burden of backward compatibility results in further reductions in efficiency and determinism which further negatively impacts voice and video quality when using the existing 2.4 and 5 GHz bands for Wi-Fi. The 6 GHz band would, for the first time, eliminate outdated and inefficient radio access technology, permitting the far more spectrally efficient Wi-Fi 6 (and above) to operate without the burden of legacy radios. This will dramatically improve the user experience and efficient use of the spectrum. This much-improved experience can only further the adoption of Wi-Fi technologies.

reuse 7 model. As a result, the channel size cannot support the gigabit throughput needed.

Cisco notes that the CA indicated its intention to consider the use of 6425-7125 MHz band for 5G services in Hong Kong subject to the outcome of WRC-23 and other considerations including co-existence with incumbent services and frequency coordination with the neighbouring regions.

Cisco is a big supporter of 5G and we have in our offerings for mobile core and transport enabled the advancements that 3GPP has promulgated for the 5G era, and we fully support the need to ensure sufficient bandwidth is allocated for 5G. However, we also believe that with only 500 MHz, Wi-Fi 6E will not succeed in its efforts to address the networking needs of governmental entities and enterprises. While there are other bands suitable for 5G, the 6 GHz band represents the only viable solution for Wi-Fi. Further, numerous studies have proven the ability for Wi-Fi to successfully co-exist with other technologies. In our view, licence-exempt WLAN needs the full 1200 MHz by sharing that band with long-time incumbents who continue to have superior spectrum rights.

This approach was a key element in the decision by ISED Canada to open the full 1200 MHz, stating:

> ISED views the 6 GHz band as an opportunity to begin considering some of these new spectrum sharing techniques in order to provide access for new services in the band while maintaining access and protection for existing services … Conversely, if ISED were to consider making some of this spectrum available for commercial mobile services, sharing of the band with the existing users would likely no longer be possible, and displacement of some or all of existing users would be required."[6]

Moreover, the agenda question before WRC-23 that impacts Region 3 with respect to 6 GHz impacts 7025-7125 MHz only – the top 100 MHz of spectrum. Region 1 is the only region that has embarked on a technical evaluation of 6425-7215 MHz to determine if IMT can coexist with satellite uplink and fixed services terrestrial microwave. Nor is Region 1 united. Within Region 1, Saudi Arabia spoke clearly earlier in 2021 when it said it would not wait for 2023, and it would immediately authorize 5925-7125 MHz for licence-exempt uses.[7] In November, Europe's CEPT has authorized a technical study of

[6] ISED Canada, "Decision on the Technical and Policy Framework for Licence-Exempt Use in the 6 GHz Band", https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11698.html

[7] CITC, "Spectrum Outlook for Commercial and Innovative Use 2021-3023" (March 2021) at page 51 ("CITC is making the entire 5925 – 7125 MHz band license-exempt in 2021 for the following reasons: 1. Importance of WLAN use in the Kingdom and substantial amount of Wi-Fi traffic, which was exemplified during the COVID-19 lockdowns, and the emergence of a promising device ecosystem that can be taken advantage of starting from 2021

the 6425-7125 MHz band for licence-exempt use,[8] a study that – unlike the ITU study for IMT coexistence – has garnered a favourable response from the European Satellite Operators Association.[9]

Perhaps taking a cue from the Saudi's impatience to leverage more opportunity in the 6 GHZ band, Australia's ACMA recently said:

> We do not consider that WRC-23 agenda item 1.2 is a sufficient reason to delay a decision on the upper 6 GHz band – indeed, how other major international jurisdictions choose to use the band will provide a better gauge than studies under/outcomes of that agenda item. Although further consideration will be given before making any decisions on the upper band, we do not currently intend to wait for WRC-23 outcomes and any subsequent global adoption.[10]

Cisco strongly urges the CA to consider making the full 6 GHz band available for licence-exempt use as soon as possible.

Power Limits

Cisco prefers power limits for WLAN which are maximum equivalent isotropically radiated power of at least 30 dBm (and ideally 33 dBm) for indoor use and 17 dBm for outdoor use. The power levels proposed (24 dBm, 14 dBm) are minimal power levels that will not provide sufficient power for indoor devices to fully utilize the wide channelization that the new licence-exempt technology can accommodate. Moreover, we also believe that the CA should address the need for 36 dBm using Standard Power devices subject to automated frequency coordination (AFC). If not now, then in a subsequent consultation.

Standard Power Indoor and Outdoor Devices

Standard power devices (e.g., 36 dBm E.I.R.P.) are needed for a range of enterprise use cases, both indoors and outdoors, although the number of outdoor transmitters will be

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to enable a wide range of innovative digital services.") available at https://www.citc.gov.sa/en/mediacenter/pressreleases/PublishingImages/Pages/2021033001/Spectrum%20Outlook%20for%20Commercial%20and%20Innovative%20Use%202021-2023.pdf

[8] New Work Item on Wireless Access Systems including Radio Local Area Networks (WAS/RLAN) in the 6425-7125 MHz band, ECC(21)080 Annex 22, adopted November 2021 by the European Communications Commission.

[9] The European Satellite Operators Association has taken the view that license-exempt devices "look like a good sharing partner" with Fixed Satellite uplink. See "In Discussion with Aarti Holla-Maini, Secretary General, EMEA Satellite Operators Association (ESOA)", Wi-Fi Alliance "The Beacon" at https://www.wi-fi.org/beacon/aarti-holla-maini/in-discussion-with-aarti-holla-maini-secretary-general-emea-satellite

[10] ACMA, "Proposed updates to the LIPD Class Licence for 6 GHz RLANs – Consultation paper", October 2021 at 18. https://www.acma.gov.au/consultations/2021-10/radio-local-area-networks-rlans-6-ghz-band-consultation-372021

relatively small compared to indoor ones.[11] However, unfettered use of standard power transmitters can create interference issues for fixed link operations. For that reason, industry proposed a database mechanism that would ensure outdoor licence-exempt transmitters would not operate co-channel (or adjacent channel) in geographic proximity to fixed link receivers.[12] The AFC database system was needed in the US because the US has over 100,000 fixed links, with modifications to those links, and new links being established all the time. Moreover, the FCC has a searchable database of licence information that is available to inform an AFC on a regular basis of the existence of an incumbent link and the associated frequencies in use. Canada has also embraced this approach.

In the US, AFCs are now in the process of being established, with significant standards and forum work focusing on technical requirements. The FCC's rules on what AFCs must accomplish can be easily adopted by any administration.[13] The implementation of "how" to achieve the outcomes has been the topic of industry discussions and standards. The FCC has called for specific written proposals from prospective AFC operators. AFCs could become operational as early as late 2022.

Around the globe, there is significant variance between countries on the number of links that are licensed, and how often changes are made. For territories such as Hong Kong where link counts may not be large, and where fixed link licensing is relatively static, a database approach such as the AFC is not strictly necessary, although it has operational advantages. The chief advantage is that in the event of interference, the access points in the area of a link can be directed to frequencies that are further removed from the frequencies in use by microwave – testing whether the access point is in fact the cause of interference. Moreover, when AFCs are stood up in the US and in Canada, the software and protocols are universally applicable, and would result in a reasonably low cost to establish such a sharing mechanism in Hong Kong. Note that in the US and Canada, it is expected that both vendor-specific, carrier, and third-party AFCs will operate in the band.

Alternatively, the CA could consider a "light licensing" or registration system (not conferring any spectrum rights, but just for the purpose of creating a coordination requirement and a searchable record). Should a higher priority fixed operator wish to establish a link, it becomes possible to coordinate with the Standard Power registrant to

[11] Regulators generally estimate less than 5% of all license-exempt WLAN transmitters will be outside because the primary use of the technology is indoor networking, and even at 36 dBm, the signal has limited coverage. As a general rule of thumb, we expect outdoor networking to be mostly delivered by IMT and indoor networking to be delivered mostly by Wi-Fi.

[12] In addition to a database mechanism, industry also agreed that an emissions mask on standard power outdoor devices could help long term with coexistence with FSS uplink, limiting their maximum E.I.R.P. at any elevation angle above 30 degrees as measured from the horizon to 21 dBm (125 mW) to protect fixed satellite services.

[13] See generally 47 U.S.C. Section 15.407(k) available at: https://www.ecfr.gov/current/title-47/chapter-I/subchapter-A/part-15

ensure that there is no interference to the fixed service. This approach could also warn higher power device operators from co-channel operations near existing links. As with an AFC approach, some form of geolocational capability is needed. The drawback here is that only more sophisticated users would likely take advantage of such a system, and, due to its manual nature, the CA would carry more of the burden in administering the system.

Whether the CA chooses a registration or AFC approach, either approach ensures that outdoor unlicensed operations will not interfere with FS operations. The key benefit, of course, is enabling use cases to the benefit of Hong Kong residents and businesses, as standard power operations will have more power capability than low power indoor, and will be available for outdoor deployments across a range of enterprises from stadiums to ports or other industrialized settings.

Low Power Indoor

For Low Power Indoor devices, a power maximum of 30 dBm E.I.R.P. and power spectral density of 8 dBm/MHz are supported by interference studies globally, and best ensure that enterprises with existing Wi-Fi deployments can quickly transition to the 6 GHz band without the need to re-wire for new access points. In the multi-company filing, Cisco supports a maximum power of 30 dBm. Here, we note that there are two power-related rules that can come into play when setting power maximums for Low Power Indoor – one is the power limit, and the other is power spectral density (PSD). Regulators in Europe and North America have wielded these tools differently. For example, the United Kingdom[14] set 24 dBm conducted with a maximum power spectrum density of 11 dBm/MHz PSD for a 20 MHz channel (the PSD decreases as the channel size goes up). The UK approach puts more emphasis on narrower channels, with the 24 dBm conducted limit enabling an 8 dBm/MHz PSD at a 40 MHz channelization. Those power levels and channelizations easily support enterprise networking today. The North American approach emphasizes the use of wide channels – a 5 dBm/MHz PSD limit produces total power ranging from 18 dBm E.I.R.P. for a 20 MHz channel to 30 dBm E.I.R.P. for a 320 MHz wide channel. Moreover, there is concern among US interests that 5 dBm/MHz PSD does not provide sufficient power for many enterprise and residential settings, and for this reason, the US FCC has been asked to raise the PSD limit to 8 dBm/MHz.

Both approaches to setting power and PSD limits are predicated on the need to both protect fixed satellite services (FSS) uplink and fixed services (FS) receivers. UK's Ofcom reported in their decision that with respect to FSS, they reviewed the studies

[14] "Improving Spectrum Access for Wi-Fi," Statement, 24 July 2020 available at: https://www.ofcom.org.uk/consultations-and-statements/category-2/improving-spectrum-access-for-wi-fi

undertaken by the organization of European regulators, CEPT,[15] and determined that low power indoor use would not create interference issues for FSS uplink. For FS receivers, Ofcom conducted its own interference analysis, concluding that "…there may be some scenarios where the fixed link interference criteria could be exceeded, most likely, from a single high-power device located either indoors or outdoors close to the fixed link receiver. We believe these scenarios are very unlikely to arise in practice…." (at Section 4.11)[16]. Similarly, the US FCC decision also concludes that its power and power spectral density will protect incumbents.

Setting a power level or PSD limit is not an exercise that can be completed without reference to the broader regulatory framework for licence-exempt devices in the band. For example, the US FCC and Canada took a highly conservative approach to power – even in reference to their own record which supported much higher power levels – but that approach was tolerable in that the regulators simultaneously created a path forward to higher "Standard Power" devices (for the US, to 36 dBm E.I.R.P.) using an AFC mechanism. The AFC will ensure that licence-exempt devices will not operate co-channel (or adjacent channel) to fixed links in geospatial proximity to them. Access to higher power is important, and the use of licence-exempt will not thrive if conservative power choices for Low Power Indoor are simply borrowed from other nations' decisions without consideration for how to achieve whole home networking or networking for large enterprise spaces. Standard Power devices subject to AFC are necessary to meet many different use cases. Finally, the US outcome of up to 30 dBm for LPI can be contrasted with that of South Korea, which imposed a Low Power Indoor maximum of just 2 dBm – a level that does not as a practical matter support licence-exempt indoor networking.

HKCA Specification for 6 GHz Device

With the exception of the power levels issue noted above, Cisco supports the CA's proposal for 6 GHz devices to comply with the proposed HKCA 1081 performance specification. Harmonizing with the ETSI standard is a good approach, ensuring that Hong Kong can take advantage of the economies of scale generated when many countries utilize the same technical standards.

[15] See www.cept.org. The studies were performed by the Electronic Communications Committee, which in turn delegated the technical study to "Systems Engineering 45" or "SE 45." SE 45 produced two reports of note – Report 302 "Sharing and compatibility studies related to Wireless Access Systems including Radio Local Area Networks (WAS/RLAN) in the frequency band 5925-6425 MHz" and Report 316 "Sharing studies assessing short-term interference from Wireless Access Systems including Radio Local Area Networks (WAS/RLAN) into Fixed Service in the frequency band 5925-6425 MHz," available at: https://cept.org/ecc/groups/ecc/wg-se/se-45/client/introduction/

[16] UK Ofcom, "Improving Spectrum Access for Wi-Fi," Statement, 24 July 2020 at section 4.11. https://www.ofcom.org.uk/__data/assets/pdf_file/0036/198927/6ghz-statement.pdf

Certification Requirement

The CA suggests that it is interested in deviating from the current approach to certifying devices – relying on those who sell devices to have such devices tested to Hong Kong technical requirements, but not to further require regulatory intervention to place the devices on the market. In the consultation, the CA suggests that an agency approval would be needed to place equipment on the market. Cisco believes that the current system has, for the most part, worked well. Moreover, because the CA will be pointing to European technical requirements, and expressly limiting access points to 5925-6425 MHz, manufacturers and third parties selling access points are incentivized to bring European stock keeping units (SKUs) to the Hong Kong market, thereby eliminating the concern about unauthorized operations in the upper 6 GHz. In addition, by avoiding the need to get agency approval before sales and marketing can begin, the CA will reduce manufacturer cost and complexity and best ensure that the full range of devices capable of supporting 5925-6425 MHz are available to Hong Kong consumers. Finally, we agree that the certification requirement should not apply to client devices.

Cisco also recommends that Hong Kong continue to leverage the test reports from accredited international test laboratories supporting 6 GHz band product certification, and do not require separate in-country testing. The use of accredited laboratories has resulted in the ease of access to advanced devices for consumers around the globe, including in Hong Kong. Discontinuing this long-standing practice would also raise the bar to consumer devices entering the market, thereby defeating the purpose of opening the spectrum in the first place.

Labelling Requirement

The CA also has proposed a labelling requirement for 6 GHz equipment. As articulated above regarding the certification requirement, Cisco believes that a compulsory labelling requirement on access points covered by the WLAN Device Licence is not necessary, and adds cost and complexity. Any country-specific requirement associated with shipping products into Hong Kong creates logistical hurdles for manufacturers who sell globally or regionally – both for the initial sale as well as for maintenance of parts inventories. This is particularly true where the requirement is associated with a manual intervention.

Trading of 6 GHz Devices and WLAN Device Class Licence Provisions

The CA proposes that "…the WLAN Device Class Licence should cover various trading activities, including the related sale and demonstration activities, which would otherwise be subject to individual licensing requirements under the radio dealers licensing regime." The CA further proposes conditions on the Class Licence to ensure operational compliance with its rules. We support these proposals.

Part B – Variation to the Existing PWLAN Service Class Licence

PWLAN Service Class Licence

The CA proposes that public licensees be able to amend their current licence to allow operations in the 6 GHz band, and provides a path for new public operators to register their services with the CA. Cisco's understanding is that these proposals are consistent with current practice in the 5 GHz range, and we therefore support them.

Conclusion

Cisco appreciates the opportunity to provide the above input to the CA's consultation. This topic is important for the future of Hong Kong, for connecting residents and accelerating the industry digitalisation of your economy. We would be happy to discuss further on any further questions or follow up that you may have.

Contact Information