

1 November 2022

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Jl. Medan Merdeka Barat no. 9, Jakarta 10110  
via email: [humas@mail.kominfo.go.id](mailto:humas@mail.kominfo.go.id)

**Re: Konsultasi Publik Rancangan PM Kominfo Penggunaan Spektrum Frekuensi Radio Berdasarkan Izin Kelas**

Dear Sir/Madam,

The Dynamic Spectrum Alliance (DSA) respectfully submits comments in response to the public consultation on the Draft Minister Regulation concerning Radio Spectrum Frequency based on Class License, which was published on 18 October 2022.

The DSA is a global, cross-industry, not for profit organization advocating for laws, regulations, and economic best practices that will lead to more efficient utilization of spectrum, fostering innovation and affordable connectivity for all. Our membership spans multinationals, small-and medium-sized enterprises, as well as academic, research and other organizations from around the world all working to create innovative solutions that will benefit consumers and businesses alike by making spectrum abundant through dynamic spectrum sharing.<sup>1</sup>

We appreciate the opportunity to participate in improving and developing wireless technology in Indonesia. The DSA applauds the Ministry of Communication and Information Technology (Kominfo) for taking the vital step toward enabling greater use of spectrum on a Class License basis including on RLAN, LPWAN, SRD, IMT based on class license, and PMR. Research has shown that most allocated radio frequency spectrum is actually unused or underused most of the time and spectrum sharing will be key in making wireless communications more affordable, efficient, and allowing the wireless ecosystem to flourish.<sup>2</sup>

Wi-Fi is probably the most prominent example of spectrum sharing and is a major on-ramp for much of the population to go online. RLAN use, including use for broadband access and backhaul, is expected to continue to surge in the next few years as it continues to drive communications, online commerce, entertainment, and government services. The COVID-19 pandemic has seen an acceleration in the

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<sup>1</sup> A full list of DSA members is available on the DSA's website at [www.dynamicspectrumalliance.org/members](http://www.dynamicspectrumalliance.org/members)

<sup>2</sup> Murti, Hidayat, Wibowo, 2021, "Spectrum Sensing Using Adaptive Threshold Based Energy Detection in Cognitive Radio System" <https://ieeexplore.ieee.org/abstract/document/9702818>

adoption in the use of digital technologies and rising demand for broadband, particularly wireless access.

However, currently, only the 2.4GHz and 5.8GHz bands have been allocated for public Wi-Fi use in Indonesia through official announcement number 250/KOMINFO/DJSDPPI/SP.04.03/03/ 2019. This severely limits the amount of bandwidth that can be made available for Wi-Fi use. In contrast, other countries include the 5.150-5.350 GHz and more recently the 5.925-7.125 GHz or what has been known as the 6 GHz band for Wi-Fi use. These include Brazil, Canada, South Korea, the US, Saudi Arabia, and others, with many also considering opening the entire 6 GHz band, with others opening initially the lower part of the band (5925-6425 MHz) as they consider how to open up the upper part as well.<sup>3</sup>

### 6 GHz band for license-exempt use

We believe it is imperative for Indonesian consumers and enterprises alike to be able to take advantage of the full 1200 MHz of the 6 GHz band for Wi-Fi use. Not only is the entire 1200 MHz spectrum necessary to meet the projected demand for RLAN use, it would also support more innovative use such as 5G NR-U, and also drive socioeconomic growth.

According to a recently published study by Telecom Advisory Services, commissioned by the DSA titled “Assessment of the economic value to be derived through opening the 6 GHz spectrum band to unlicensed use in Indonesia”, the estimated cumulative economic value between 2022 and 2031 associated with allocating the full 1200 MHz in the 6 GHz band in Indonesia would amount to US\$ 187.63 billion. This is comprised of US\$ 126.44 billion in GDP contribution, US\$ 37.73 billion in producer surplus to Indonesian enterprises, and US\$ 23.47 billion in consumer surplus to the Indonesian population.<sup>4</sup> (See the below table)

*Indonesia: Economic Value of Allocating 1200 MHz in 6 GHz Band (2022-2031) (in US\$ billions)*

Source of Value	GDP contribution	Producer surplus	Consumer surplus
Enhanced coverage and improved affordability	\$ 5.16		\$ 0.05
Increased broadband speed by reducing Wi-Fi congestion	\$ 29.99		\$ 3.62
Wide deployment of Internet of Things	\$ 14.09	\$ 21.24	
Reduction of enterprise wireless costs		\$ 0.92	
Deployment of AR/VR solutions	\$ 36.57	\$ 7.24	
Enhanced deployment of municipal Wi-Fi	\$ 6.61		\$ 0.04
Deployment of Free Wi-Fi Hot Spots	\$ 34.03		\$ 1.88
Aligning spectrum decision with other advanced economies		\$0.38	
Enhancing the capability for cellular offloading		\$ 2.96	

<sup>3</sup> Wi-Fi Alliance, Countries Enabling Wi-Fi in 6GHz (Wi-Fi 6E), <https://www.wi-fi.org/countries-enabling-wi-fi-in-6-ghz-wi-fi-6e>

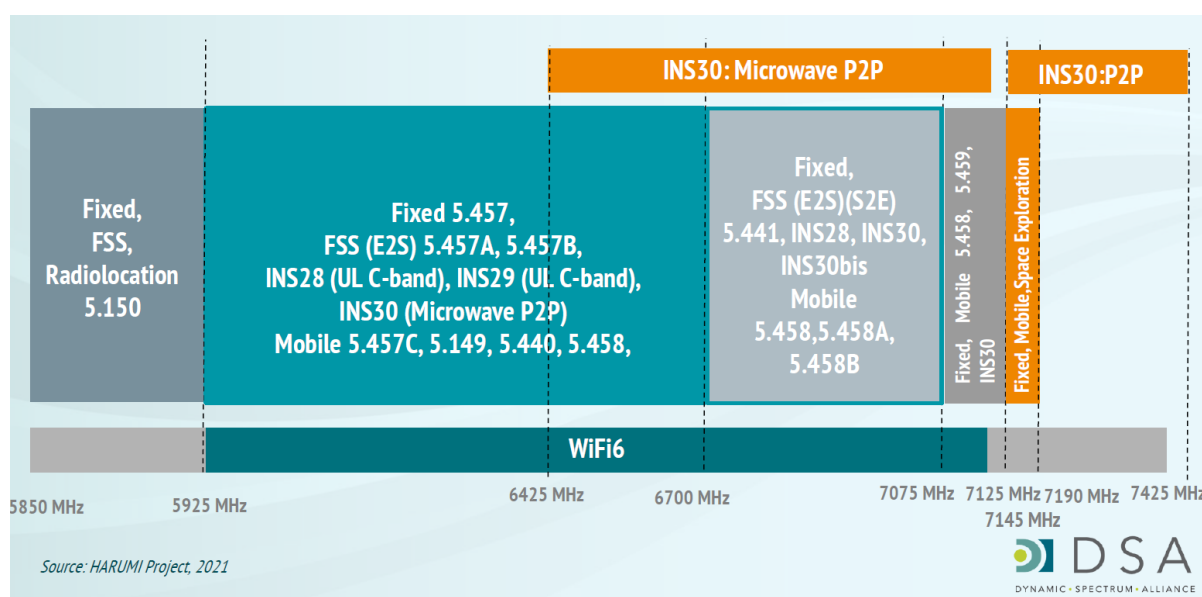
<sup>4</sup> Katz and Jung, 2022, “Assessing the Economic Value of Unlicensed Use of the 6 GHz Band in Indonesia.” <https://www.dynamicspectrumalliance.org/wp-content/uploads/2022/02/Assessing-the-economic-value-of-unlicensed-use-of-the-6GHz-band-in-Indonesia.pdf>

Increasing production of residential Wi-Fi devices and equipment		\$ 4.99	\$ 17.88
<b>TOTAL</b>	<b>\$ 126.44</b>	<b>\$ 37.73</b>	<b>\$ 23.47</b>

Additionally, the allocation of the entire band to licensed-exempt or class license use will significantly contribute to a reduction of Indonesia’s digital divide. This includes an incremental 1,145,834 Indonesians that were completely unconnected coming online by 2031 through affordable paid services and free access over municipal and free Wi-Fi hot spots.<sup>5</sup> According to DataReportal, about 73.7% of the total Indonesia population were Internet users in January 2022, implying that almost 30% of the population still did not have access to the Internet.<sup>6</sup>

### Managing interference with incumbents

The current allocation of the 6 GHz band in Indonesia is as below.



The DSA supports three categories of WLAN devices namely low power indoor (LPI) devices, very low power (VLP) devices, and standard power (SP) devices under control of automated frequency control (AFC) systems.

The DSA encourages Kominfo to adopt EIRP limit of 30 dBm for LPI access points, with a 11 dBm/MHz PSD limit. Such value will enable high throughput and low latency applications on the 80 and 160 MHz wide channels.

<sup>5</sup> Katz and Jung, 2022, “Assessing the Economic Value of Unlicensed Use of the 6 GHz Band in Indonesia.” <https://www.dynamicspectrumalliance.org/wp-content/uploads/2022/02/Assessing-the-economic-value-of-unlicensed-use-of-the-6GHz-band-in-Indonesia.pdf>

<sup>6</sup> Datareportal, 2022, Digital 2022: Indonesia, <https://datareportal.com/reports/digital-2022-indonesia>

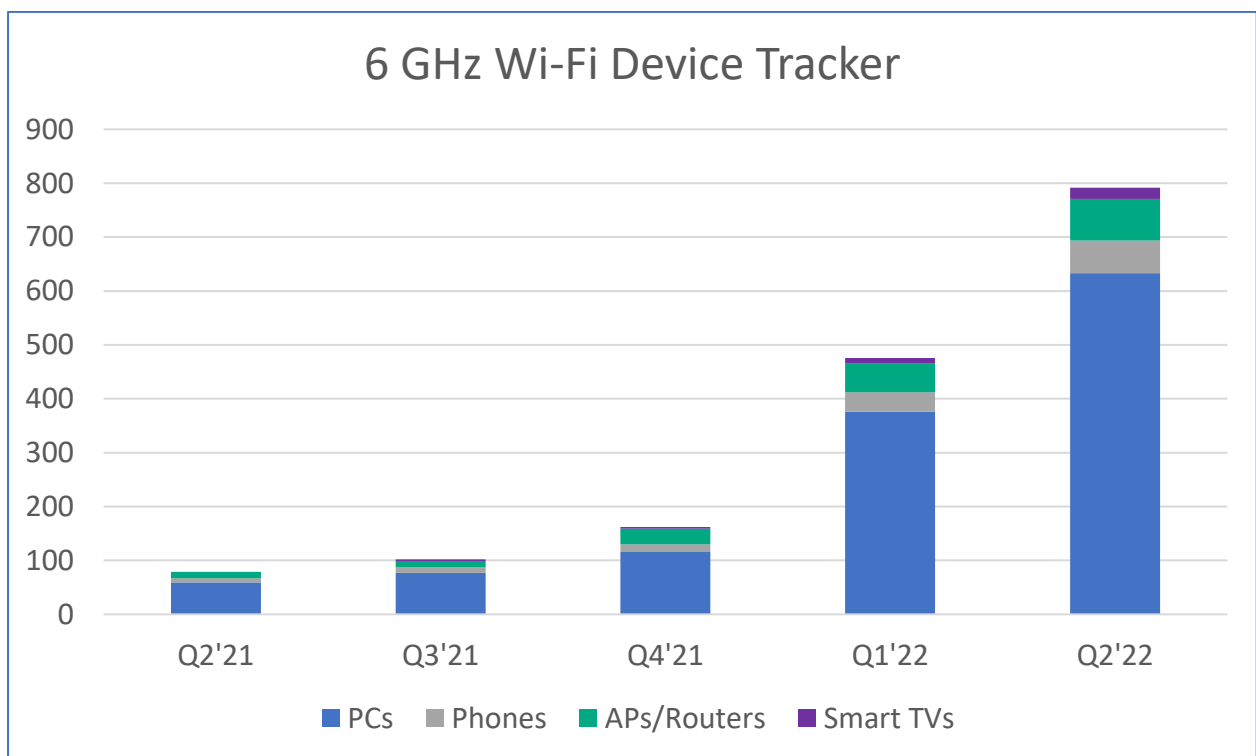
Additionally, we suggest that Kominfo adopt 17 dBm EIRP limit for VLP devices (indoor and outdoor) and 36 dBm EIRP limit for SP devices. For SP devices, Indonesia should consider adopting rules permitting SP operations under control of an AFC. There are unique high power indoor and outdoor RLAN operations that can benefit from this category of device.

**Wi-Fi Ecosystem in the 6 GHz band is diverse and growing rapidly**

As of the beginning of July 2022, there were **792 license-exempt devices** capable of operating across the entire 6 GHz band.<sup>7</sup> These included **633** PC device models, **61** mobile phone models, **77** routers / access points / gateways, and **21** Wi-Fi enabled television receivers.

Additional devices in each category are expected to be introduced during the second half of 2022. Once an administrator puts in place rules to authorize license-exempt use across the entire 6 GHz band and updates its homologation process accordingly, its residents and businesses can take advantage of the increasing economies of scale.

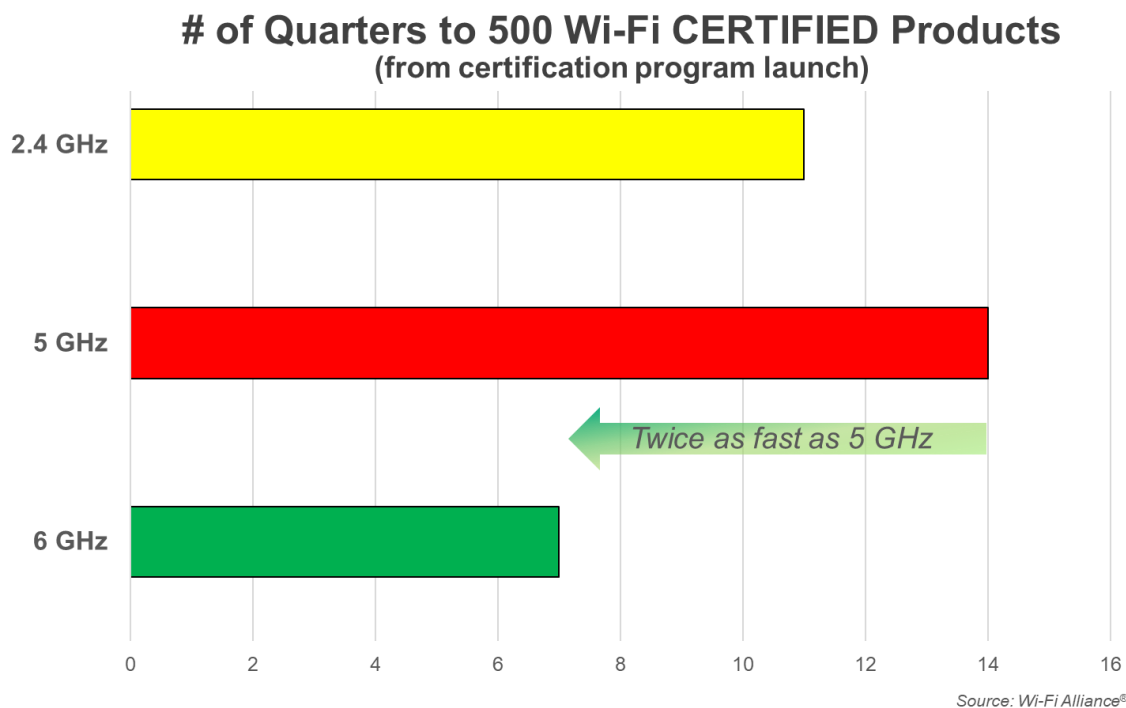
The image below shows that the Wi-Fi Ecosystem in the 6 GHz band is diverse and is growing rapidly.<sup>8</sup>



<sup>7</sup> Source: Intel. Wi-Fi 6E device tracking summary is public information compiled by Intel from vendor websites, press releases, and third-party device reviews. Intel provides this assessment for informational purposes only, does not guarantee its accuracy, and it is subject to change without notice.

<sup>8</sup> Courtesy of HPE Aruba.

The next figure illustrates the Wi-Fi unprecedented ecosystem development in the 6 GHz band, comparing the time it took to reach the limit of 500 Wi-Fi Certified products in the 2.4 and 5 GHz bands.<sup>9</sup>



### IMT Identification does not apply to Indonesia

The upcoming WRC-23 is considering IMT identification for 6425-7025 MHz in ITU Region 1 only and 7025-7125 MHz globally. However, Indonesia is in ITU Region 3, and the studies are still ongoing now, with no way of knowing in advance whether these bands will be eventually identified for IMT.

Notwithstanding this, a proposal from IMT interested parties is that countries that are not part of Region 1 could join an eventual decision for the 6425-7025 MHz band by adding their name to the resulting footnote of Article 5 of the Radio Regulations concerning this band and Region 1 countries.

This proposal can be analyzed considering the *further resolves of Resolution 26 (Rev. WRC-19) "Footnotes to the Table of Frequency Allocations in Article 5 of the Radio Regulations"* Volume 3 of the Radio Regulations Resolutions and Recommendations:

*"1 that any **addition of a new footnote or modification** of an existing footnote should be considered by a WRC only when:*

- a. The **agenda of the WRC explicitly includes the frequency band** to which the proposed additional or modified footnote relates; or*

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<sup>9</sup> Source: HPE Aruba analysis.

- b. *the frequency bands to which the desired additions or modifications of the footnote belong are considered during WRC and WRC decides to make a change in those frequency bands; or*
- c. *the addition or modification of footnotes is specifically included in the agenda of WRC as a result of the consideration of proposals submitted by one or more interested administration(s); ...”*

2 that recommended agendas for future WRCs should include **a standing agenda item** which would **allow for the consideration of proposals by administrations for deletion** of country footnotes, or country names in footnotes, if no longer required;

3 that in cases **not covered** by further resolves 1 and 2, proposals for new footnotes or modification of existing footnotes **could exceptionally be considered by a WRC if they concern corrections of obvious omissions, inconsistencies, ambiguities or editorial errors** and have been submitted to ITU as stipulated in No. 40 of the General Rules of conferences, assemblies and meetings of the Union,”

The reviewed text at WRC-19 for Resolution 26 also added a *noting* section establishing previous WRC decisions on the addition of country names to existing footnotes as well as the addition of **new country footnotes not related to any agenda items**, clearly establishing that the **latter were not accepted**.

Considering Resolution 26 and as established in Resolution 811 (WRC-19) and Resolution 245 (WRC-19) of the Radio Regulations, **the band 6425-7025 MHz is not part of any agenda item that concerns Region 3**. The existing footnotes of Article 5 of the Radio Regulations that include the **6425-7025 MHz** band (5.149, 5.458, 5.458A, 5.458B) do not refer explicitly to this band, neither to mobile services nor IMT services. Furthermore, there is **no existing footnote on this band** that could be modified regarding IMT services.

Therefore, in accordance with Resolution 26, a proposal to the WRC-23 from a Member State that is not part of Region 1 concerning the possibility of being added to an eventual new note for the band 6425-7025 MHz **will not be accepted**.

Indonesia will thus **not be impacted** by the IMT identification in the 6425-7025 MHz but would instead face a high opportunity cost if it chooses not to immediately open the band to market-ready, license-exempt RLAN technologies which are currently available for Wi-Fi 6E use. For operators, in addition to opportunities for mobile offload to Wi-Fi networks, opening the 6 GHz band for license-exempt use will also allow them to deploy 3GPP license-exempt technology – 5G NR-U – to extend their networks into license-exempt spectrum. This allows them to use a 3GPP platform to take advantage of the 6 GHz band to deliver 5G services to their subscribers. NR-U was standardized in 3GPP Release 16 for 5925-7125 MHz and is available today. Technology-neutral rules would allow both technologies in the band.

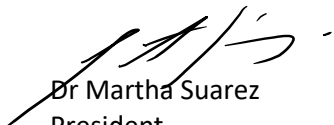
## Conclusion

The DSA appreciates the opportunity to provide input on this consultation. We believe spectrum sharing will continue to play a key role to address emerging demands and foster more innovative use of spectrum. We strongly suggest Kominfo considers opening the entire 1200 MHz (5925-7125 MHz)

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of the 6 GHz band for license-exempt use to allow Indonesia to take advantage of the full potential of the band. Lastly, we would be happy to discuss any of these issues we have raised further including elaborating on the methodology of our economic study or technical explanations and demonstrations of the AFC system.

Respectfully submitted,



Dr Martha Suarez  
President  
Dynamic Spectrum Alliance