

IAB workshop on Barriers to Internet Access of Services (BIAS)

Position paper

Raquel Rennó, PhD

Digital Programme Officer, Article 19

Maximising Connectivity: The Spectrum's Vital Role in Technology Access

Wireless technology, whether in the form of amateur radio, broadband, or mobile internet, relies on airwaves - the spectrum, a finite and natural resource controlled by governments. The allocation of frequencies is a governmental prerogative, impacting regional and global technology distribution.

Different spectrum frequencies offer distinct characteristics suitable for various uses, ranging from satellite communications to Bluetooth systems. Frequencies like 2.4GHz, 5GHz, and 6GHz differ notably in range and bandwidth, influencing coverage and speed. The coveted 6GHz, part of the C-band, presents a desirable mix of coverage and capacity. It's a prime choice for International Mobile Telecommunication (IMT) companies for 5G technology in urban settings while extending reliable coverage to rural areas with scant internet access, making it essential for community networks and small Internet Service Providers.

Recognising its potential, 6GHz has been opened for unlicensed use, benefiting various technologies and industries, especially Wi-Fi. Wi-Fi's low-cost broadband access has flourished, enabling diverse internet-based applications without costly mobile rates.

The WiFi protocol, which is increasingly used by more devices and in more indoor settings such as schools or hospitals, has been one of the biggest beneficiaries of this.

Wi-Fi provides users with low-cost broadband access, enabling extensive use of internet-based applications and services without incurring the costs of mobile phone rates. The Federal Communications Commission in the US justified their choice of making the 6GHz band available for unlicensed use by stating that [“Wi-Fi has become indispensable for providing low-cost connectivity in countless products.”](#)

Previously crammed in the 5GHz frequency, which slowed down its speed, with expansion to 6GHz, WiFi was able to greatly expand its ability to offer reliable connectivity indoors.

Those advances are now in jeopardy. One of the [most disputed](#) agenda items in the World Radiocommunication Conference 2023 dealt with how memberstates will allocate parts of the [C-band](#) in Europe, Africa, the Commonwealth of Independent States, Mongolia, and the Middle East (including Iraq), but also if there will be a [future discussion](#) about IMT use of the C-band for other regions.

There was an [intense pressure](#) for some countries to even reverse their decision on making 6GHz available for unlicensed use and award at least in parts for the IMT.

The “identification” (term used by the ITU to describe a process by which a service is given a green light to be used in a certain frequency band) of 6GHz and Ultra High Frequency for

International Mobile Telecommunication (IMT) were disputed [until the very last minute of the Conference](#).

Some of the countries which previously supported keeping the upper part of 6GHz for unlicensed use, have shifted their positions, opening up a possibility that the frequency can eventually be used by IMTs. The discussions are set to continue during WRC 2027, but the demands of many Global Majority countries (including the majority of Southeast Asia and some sub-Saharan African countries) show that the consensus around unlicensed use of 6GHz no longer holds, and the mobile industry is likely to be granted part of the 6GHz band for its use. This could lead to further market concentration, reduce the technology diversity and lock poorer countries in a for-profit model that doesn't favour them.

IMT industries want 6GHz for 5G expansion – but the technology cannot share spectrum with other services without the risk of interference. Getting the 6GHz frequency protected for IMT use (usually via licences bought in auctions for sums of money only the biggest telecom companies can afford to pay), would eliminate a growing and agile competition from WiFi technology.

Wi-Fi connectivity is versatile and compatible with existing security and management standards, and importantly, can coexist together with different technologies. This is important to guarantee the diversity of applications and technologies used to transmit information.

In 2020, the Brazilian civil society coalition for Net Rights wrote an [open letter](#) to their national regulator supporting the unlicensed use of the 6GHz in the country. The letter highlighted how the Wi-Fi used on 6GHz band can be made easily compatible with previous Wi-Fi generations, allowing the immediate use by communities. Affordability is [one of the biggest obstacles](#) to connectivity – so finding cheap and reliable solutions that do not require expensive upgrades is a key advantage.

The balance of unlicensed and licenced spectrum is crucial to guarantee technology neutrality. States such as Kenya, in their [National Broadband Strategy](#), recognise that this neutrality is essential to avoid market concentration and abuse.

Currently, internet connectivity is concentrated in the hands of large telecom operators, making them a very powerful market player with leverage among countries and regions, especially in [developing countries](#). As profit-driven companies, they often lack commercial incentives to provide reliable services to certain areas and communities, including in the rural and remote parts of the Global South. In many contexts, the overreliance on big telecoms to provide connectivity contributes to the expansion, rather than closing, of the global digital divide.

Unlicensed spectrum, especially with the characteristics of the 6GHz frequency band, allows other kinds of wireless networks to exist, such as small internet service providers and [wireless community networks](#). Those alternative players are key to ensuring that the increased demand for internet connectivity can be handled [adequately and efficiently](#), avoiding high costs of deployment and harmful consequences of market concentration.

Currently, internet connectivity dominance by major telecom operators perpetuates global disparities, neglecting remote areas in developing countries. Unlicensed spectrum empowers smaller internet service providers and wireless community networks, fostering efficient connectivity deployment and countering market concentration's adverse effects.

The decisions made within ITU debates have substantial ramifications for millions' internet access. Engaging civil society in these discussions remains imperative to champion a more democratic and equitable spectrum usage, continuing the fight for universal connectivity.