

Opening unlicensed access to the 6 GHz band

The current situation

- Existing Wi-Fi spectrum is already overburdened in many locations, causing users to experience congestion at peak busy hours.
- With demand for wireless broadband growing, it is crucial to identify new mid-band spectrum for unlicensed access use.
- The entire 6 GHz band is critical to enable enhanced determinism, throughput, handover, QoS and latency in new generation Wi-Fi networks.
- In Europe, the WiFi4EU initiative aims to provide high-quality Internet access to citizens and visitors across the EU via free of charge Wi-Fi hotspots in public spaces such as parks, squares, administrations, libraries, and health centres. It has revealed a strong and local demand for the expansion of Wi-Fi services in order to foster the local e-commerce economy, support tourism, and increase the availability of local public services to citizens.
- Right now, Europe has the opportunity to enable unlicensed access to the 6 GHz band, improving connectivity in the home, at work, and in public spaces. This will drive productivity, economic growth and societal development and ensure that Wi-Fi networks will meet European citizens' requirements in the near future.

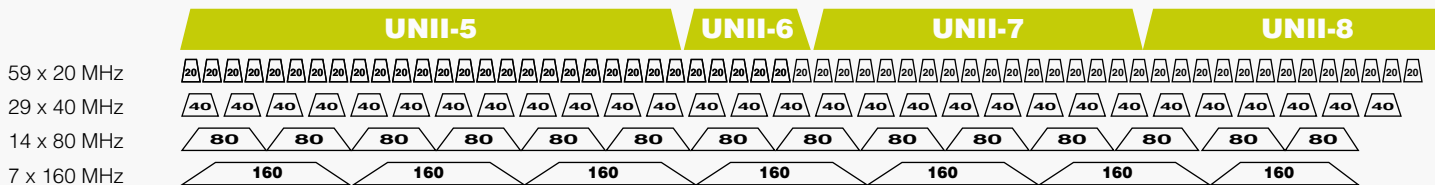


5 925 MHz

6425 MHz

6525 MHz

7 125 MHz

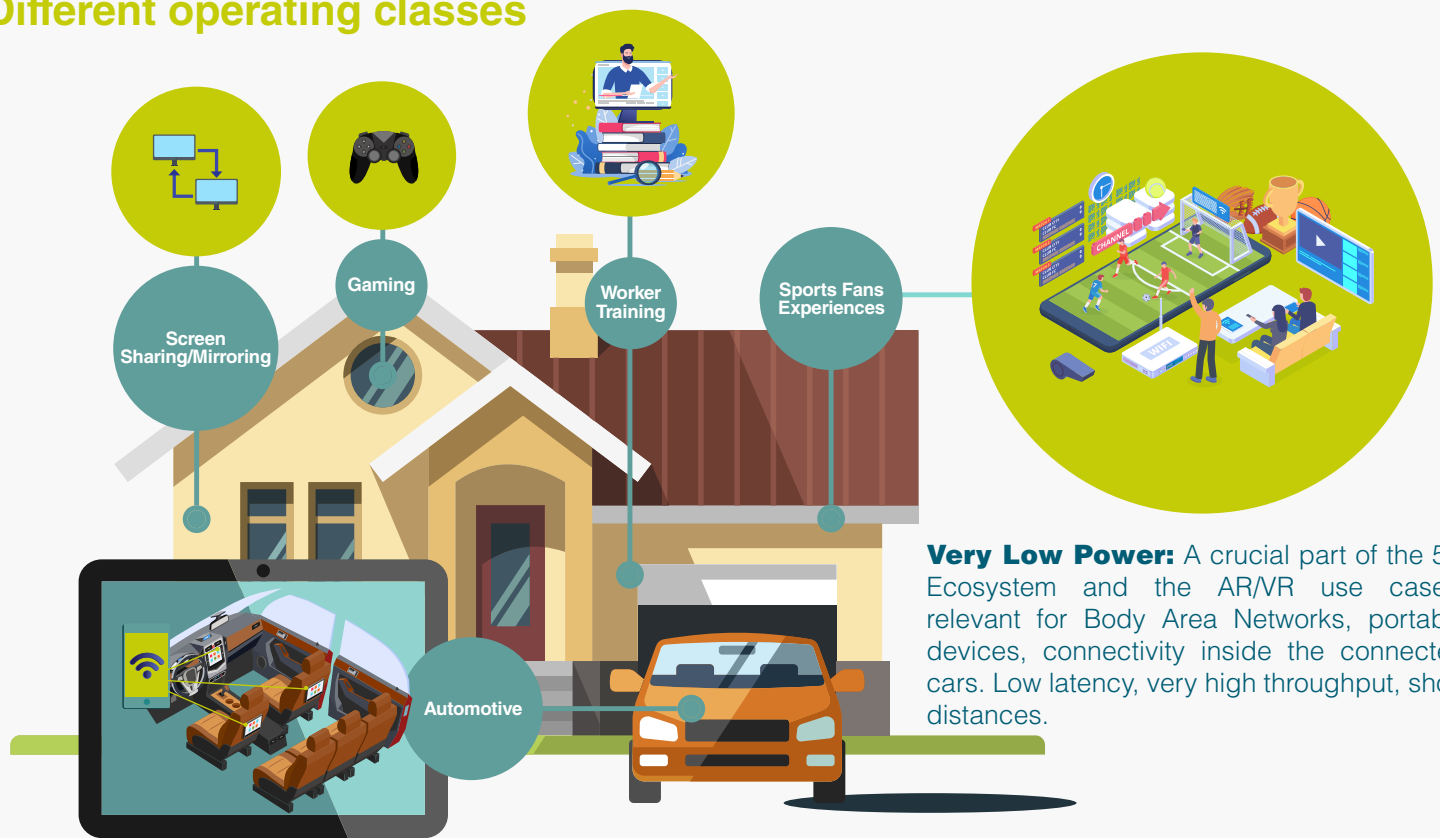


Main advantages of this band:

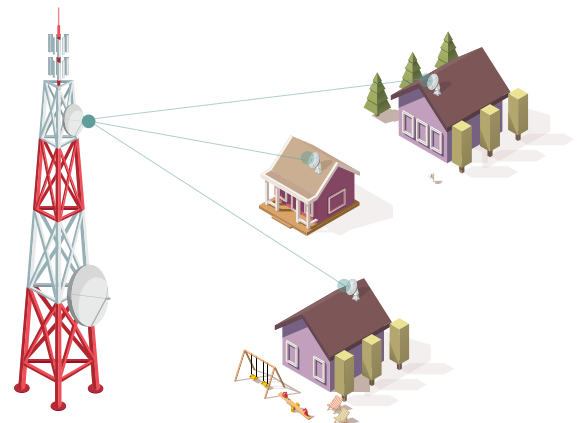
- The offer of significant new opportunities for unlicensed operations across the 6 GHz band, with an estimated economic global impact of €2.94 trillion euros in 2023. Smaller area networks - particularly Wi-Fi - have delivered nearly €1.7 trillion in global economic benefit in 2018. (Source: TAS, 2018)
- Unlicensed access ensures that existing incumbent services can continue to thrive in the 6 GHz band.
- The opportunity for larger bandwidth channels (160 MHz and 320 MHz) that will allow the full potential of next generation Wi-Fi to be realized, including Wi-Fi 6 and Wi-Fi 7, and deliver Gbps throughputs in a diverse range of connected devices.
- WLAN/RLAN carries offload from cellular 5G technologies, the total of which was expected to be 79% in 2022. This will lower the cost of network deployment for mobile operators and of edge investment by neutral host and third-party providers (e.g. cable companies and enterprises that want to build private 5G networks to run factories). Most importantly, it will also lower costs for consumers.
- It will allow gigabit class networks to be deployed in rural and suburban environments.
- More than 2000 6 GHz enabled Wi-Fi devices launched for all major smartphone and laptop operating systems.



Different operating classes



Low Power Indoor: Wi-Fi networks at home, at work and in public spaces. Manufacturing applications, libraries, schools, enterprises. Exclusively indoor applications.



Standard Power: High throughput capabilities for outdoors and indoors. Relevant for rural connectivity. Automated Frequency Control.

The 6425 – 7125 MHz band was identified for IMT in Region 1. However, the use of this band for Wi-Fi is perfectly aligned with the results of the Conference and the Radio Regulations. Notes 5.6A12 and 5.6C12, explicitly say that the 6 GHz frequency bands are also used for the implementation of WAS/RLANs (i.e. Wi-Fi).

The WRC-23's backing of the use of WAS/RLANs in the 6GHz band across the world is a significant win for the long-term prosperity of Wi-Fi as the industry prepares for the move to Wi-Fi 7.