Brussels, 18 November 2022

ENSURING THE UPPER 6 GHZ SPECTRUM IS MADE AVAILABLE FOR NEW GENERATION Wi-Fi: MAJOR STEP TOWARDS THE ACCOMPLISHMENT OF THE EU's DIGITAL DECADE CONNECTIVITY OBJECTIVES

Dear National Regulatory Agencies,
Dear Members of the European Commission,
Dear Ambassador,
Dear Members of the European Parliament,

We, the signatories, representing a broad coalition (including industry associations, equipment manufacturers, chipset vendors, fiber operators, and content application services, entertainment, any remote applications based on Virtual Reality, Augmented Reality, Mixed Reality technologies, also called eXtended Reality), convinced of the power of Wi-Fi in conjunction with fibre, and satellite technology to support Europe's digital connectivity objectives, welcome the European Commission's commitment in establishing an EU common position ahead of the World Radiocommunication Conference 2023 (WRC-23).[1]

This conference, which will be held in Dubai from 20 November to 15 December 2023, represents a crucial point of decision for the digital future of Europe as members of the International Telecommunication Union (ITU) will review, and if necessary, revise, the Radio Regulations, the International Treaty governing – among other things – also the use of the radio-spectrum.

In our opinion, the current use of spectrum and the efforts to harmonise its technical conditions deserve the full attention of the EU policymakers. In particular, WRC-23 will consider whether to designate the 6.425-7.125 GHz frequency band "upper 6 GHz band" for International Mobile Telecommunications (IMT).[2] As described below, the upper 6 GHz band is uniquely suited to deliver Wi-Fi connectivity and the WRC-23 decision will have significant implications for European consumers and businesses.

In fact, over the next decade, the need for high-performance Wi-Fi connectivity will grow rapidly.[3] Without fast and reliable Wi-Fi, the fibre-based Very High-Capacity Networks (VHCN) that are being rolled out all across Europe risk not being efficient as the "in-building connectivity" will not follow. This scenario will seriously impact business-to-business (B2B) and business-to-consumer (B2C) digital usage as today the majority of end user traffic goes over Wi-Fi.

[1] For more information about the World Radiocommunication Conferences 2023 (WRC-23), please consult the following website.
[2] WRC-23, Agenda Item 1.2, see https://www.itu.int/en/ITU-R/study-groups/rcpm/Pages/wrc-23-studies.aspx .
[3] Please see the ASSIA 2021 report "State of Wi-Fi Reporting", available here: https://lp.assia-inc.com/hubfs/summit-v7.7.pdf

Next generations of digital services such as Augmented and Virtual Reality (AV/VR) will struggle to reach the market as the current broadband capacities are unable to carry the amount of data needed for these technologies.[4] This will hamper Europe's competitiveness since EU consumers and businesses will have a second-class quality experience, and worst, no access to the most advanced Wi-Fi products.

Industries that heavily rely on Wi-Fi technology to provide connectivity for a variety of use cases including industrial automation, logistics, and transportation, will not be able to make full use of them. For the same reasons, the urgently required expansion and modernization of education and health services will be hampered, if not severely degraded. Finally, EU consumers will be deprived of optimal wireless connectivity inside homes and offices, at public hotspots such as large public venues, hotels, cafes and restaurants, airports, and libraries.

In the Annex we provide more examples of enhanced Wi-Fi applications.

At the same time, Wi-Fi is a critical enabler for the green transition, as transferring data over Wi-Fi consumes less energy than doing so over IMT, particularly in combination with fibre.[5] Recent studies have shown that the energy consumption associated with mobile data usage is already 1.5 times that of fixed usage. Due to its affordability and extensive coverage, Wi-Fi continues to be the leading technology for inclusive connectivity and closing the digital divide.

If the EU wishes its EU citizens and its industries to truly benefit from a connected Europe, it has a choice to make between two alternatives:

- If, as a result of the WRC-23 proceedings, Region 1 (comprising also EU Member States) was to identify the upper 6 GHz band (6.425-7.125 GHz) for IMT, this band would effectively be blocked for Wi-Fi use. Europe would be left trailing behind compared to other parts of the world in terms of connectivity. Whereas the Wi-Fi ecosystem has already certified hundreds of devices that can operate across the full 6 GHz band and the market has already seen large Wi-Fi 6E deployments, the 6 GHz IMT would require considerable time and resources to develop and deploy compatible devices, following lengthy and complex licence assignment processes. Importantly, unlike Wi-Fi, the IMT deployments cannot coexist with the existing 6 GHz users such as fixed microwave links and fixed satellite systems. The IMT deployment in the 6 GHz band, therefore, would necessitate relocation of the incumbents to another frequency band, requiring further expenditures and extensive transition periods.

- If, as a result of the WRC-23 proceedings, Region 1 (comprising also EU Member States) was to adopt a position that would provide administrations with freedom of choice, under the so-

[4] For more information, please see the Virtual Reality and Its Potential for Europe Report, prepared by Ecorys. Available here: https://ec.europa.eu/futurium/en/system/files/ged/vr_ecosystem_eu_report_0.pdf

[5] Please see The Shift Project – Forecast Model 2021 – 2013 to 2025 evolution of electric consumption of networks in the world , available here https://theshiftproject.org/wp-content/uploads/2021/03/Note-danalyse_Numerique-et-5G_30-mars-2021.pdf

called “no change” scenario, Europe would be in the best position to respond to its connectivity challenges. In practical terms, EU consumers and businesses would avoid a broadband connectivity “bottleneck” since enough licence-exempt spectrum could easily be made available to handle the current and future demand and enable innovative use cases that will require wider channels (like AR/VR, metaverse, etc.) and/or a larger diversity of channel widths to support multiple applications with different bandwidth, latency, and Quality of service (QoS) requirements within a single Wi-Fi deployment. The EU would adhere to the principle of technology neutrality, as all compliant licence-exempt technologies such as Wi-Fi and 5G New Radio Unlicensed (5G NR-U) would be able to operate in this band. This principle was a key component of the recently adopted Decision establishing the 2030 Policy Programme “Path to the Digital Decade” where it is affirmed that technology neutrality “should guide Union and national digital policies for digital connectivity infrastructure of the highest performance, resilience, security and sustainability to enjoy prosperity.”

Wi-Fi devices operating in the 5.925-7.125 GHz band are already operational in many countries (Brazil, Canada, Saudi Arabia, South Korea, US, and others). Regulatory harmonisation with Europe would reduce equipment costs, improve availability, and deliver the economic benefits described above. The European Union, alongside its Member States, should adopt this stance and firmly defend a “no change” position with regards to the radio regulations for the 6425-7125 GHz band at the upcoming WRC-23.

Deployment of Wi-Fi in the upper 6 GHz band will improve the quality of service for the vast majority of broadband users in Europe, amounting to a more efficient use of spectrum than mobile networks, also in terms of energy consumption and sustainability.

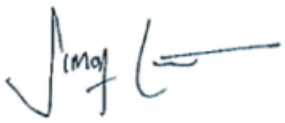
Therefore, we, the undersigned:

- **Strongly oppose an IMT identification of the upper 6 GHz band, as it will provide no recognizable benefit and will significantly impede key EU policy goals, like the Gigabit connectivity targets identified for the EU Digital Decade; as well as the sustainability targets, and in particular, the ability for the digital transition to be environmentally sustainable and to contribute to the larger green transition.**

- **Call on the EU policymakers to adopt a “no change” position for WRC-23 Agenda Item 1.2 (6.425-7.125 GHz) as this will preserve the necessary regulatory flexibility for administrations to implement the full 6 GHz band for licence-exempt use, for instance by Wi-Fi 6E, Wi-Fi 7, and future Wi-Fi generations.**

A digitally connected Gigabit Europe requires a functional Wi-Fi ecosystem, alongside fibre, satellite, 5G and other telecommunication infrastructure components.

SIGNATORIES (in alphabetical order)

Associazione Italiana INTERNET Provider (AIIP) Giovanni Zorzoni *President*	
Bundesverband Breitbandkommunikation e.V. / German Broadband Association (BREKO) Mr. Jan-Niklas Steinhauer *Head EU Policy and Regulatory Affairs*	
Deutsche GigaNetz GmbH Dr. Ulrich Hammerschmidt *Head of Legal and Regulatory Affairs*	
Deutsche Glasfaser Ruben Queimano Alonso *Chief Commercial Officer*	
Dynamic Spectrum Alliance (DSA) Martha Suarez *President*	
EuroXR Association Patrick Bourdot *President*	
Genexis Netherlands BV Gerlas van den Hoven *CEO*	
Inteno Group AB Conny Franzén *CEO*	
Interactive Software Federation of Europe (ISFE) Simon Little *CEO*	

LANCOM Systems Michael Müller *Vice President Wireless LAN and Switches*	
Wi-Fi Alliance Alex Roytblat *Vice President of Regulatory Affairs*	
Wireless Broadband Alliance (WBA)* Tiago Rodrigues *CEO* **The signature of this letter represents the view of the majority of the WBA members, nevertheless not all members support all stated positions in this letter*	

ABOUT THE SIGNATORIES

Associazione Italiana Internet Provider (AIIP) for twenty-five years has represented and given voice to the numerous small and medium operators who significantly contribute to the spread of the ultra-broadband and internet services in Italy, to the achievement and coverage of areas suffering from the digital divide, guaranteeing flexibility and real proximity to the customer.

The **German Broadband Association eV (BREKO)** represents the majority of German fixed network competitors. As a leading fibre optic association with over 440 member companies, the German Broadband Association (BREKO) successfully promotes competition in the German telecommunications market. Its members are clearly committed to future-proof fibre optics and are currently responsible for 80 percent of the competitive expansion of fibre optic connections right into buildings and apartments. The more than 235 telecommunications network operators organised in the association supply both metropolitan areas and rural areas with future-proof fibre optic connections.

Deutsche GigaNetz GmbH, headquartered in Hamburg, operates the predominantly self-financed and quality-oriented fibre-optic network expansion to the home (FTTH - Fibre to the Home) throughout Germany. Deutsche GigaNetz is thus making a significant contribution to the digitalisation of Germany by enabling all citizens to have access to the necessary infrastructure. With a focus on self-financed expansion, the company's goal is to build 100% fibre in the municipalities, and to use existing infrastructures and complementary subsidy projects. Deutsche GigaNetz is creating a sustainable quality network for the next generations through high-quality laying techniques and conventional laying depths, which will be an open-access, non-discriminatory solution.

Deutsche Glasfaser is a leading fibre broadband provider for rural and suburban areas in Germany. As a FTTH pioneer and industry leader, Deutsche Glasfaser plans, builds and operates open-access fibre networks for private households, businesses, and public institutions. The company aims to roll out fibre networks across the nation, thereby contributing significantly to Germany's digital transformation. With innovative planning and construction methods, Deutsche Glasfaser is the technology leader for fast and cost-efficient FTTH deployment. Backed by experienced digital infrastructure investors EQT and

OMERS, Deutsche Glasfaser is one of the financially strongest operators in the German market, with a planned total private-sector investment volume of EUR 7 billion.

Dynamic Spectrum Alliance (DSA) is the leading global spectrum organisation promoting and showcasing the value of spectrum sharing, and specifically the benefits of Wi-Fi connectivity in the 27 European Union countries.

EuroXR Association is an umbrella organisation gathering not only individuals, but also national chapters, and associations, large companies, small-to-medium enterprises (SMEs), as well as research institutions, universities, and laboratories. All of them with a keen interest in eXtended Reality (XR), the term that covers Virtual Reality, Augmented Reality, and Mixed Reality (VR/AR/MR) technology field.

Genexis designs, develops, and delivers end-to-end fibre to the home solutions for service providers, operators, and installers. We are a leading European supplier of CPE products and solutions for the fibre-connected home. At Genexis we believe that people deserve fibre, but what do we mean when we say that? Everyone deserves to be connected to fibre broadband at their home to get access to the best quality internet. We want to enable people to fully participate in the rising digital era where online services and applications have become essential. We deliver a complete portfolio of products for fibre broadband in the home, including DIY fibre terminators, optical network units, full service network devices, and WiFi enabled residential gateways and access points. All these products are manageable, support industry standards and are designed for sustainability.

The Swedish rooted **Inteno Group** develops companies for the fast-growing broadband market. Its subsidiaries are among the market leaders within the customer premises equipment (CPE) segment. They develop fibre-speed CPE products and hardware independent software platforms, all enabling added value for operators, network owners and service providers. Our vision is obvious: Realising the digital home.

Interactive Software Federation of Europe (ISFE) represents the interests of the video game sector towards the EU and international institutions, ISFE ensures the voice of a responsible videogame ecosystem is heard and understood, that its creative and economic potential is supported and celebrated, and that players around the world continue to enjoy great video game playing experiences.

LANCOM Systems is the leading European manufacturer of secure, reliable, and future-proof networking (WAN, LAN, WLAN) and firewall solutions for the public and private sectors.

Wi-Fi Alliance is the worldwide network of over 900 companies that brings you Wi-Fi®, one of the world's most valued communications technologies. Our vision is to connect everyone and everything, everywhere. Wi-Fi Alliance drives global Wi-Fi adoption and evolution through thought leadership, spectrum advocacy, and industry-wide collaboration. Our work includes the development of innovative technologies, requirements, and test programs that help ensure Wi-Fi provides users the interoperability, security, and reliability they have come to expect.

Wireless Broadband Alliance (WBA) wants to drive the seamless and interoperable services experience via Wi-Fi within the global wireless ecosystem. WBA's mission is to enable collaboration between service providers, technology companies and organizations to achieve that vision. WBA undertakes programs and activities to address business and technical issues, as well as opportunities, for member companies. WBA work areas include advocacy, industry guidelines, trials, and certification. Its key programs include NextGen Wi-Fi, 5G, IoT, Testing & Interoperability, Roaming and Policy & Regulatory Affairs, with member-led Work Groups dedicated to resolving standards and technical issues to promote end-to-end services and accelerate business opportunities.

Please note that the signature of this letter represents the view of the majority of the WBA members, nevertheless not all members support all stated positions in this letter.

Annex
The potential of enhanced Wi-Fi (Wi-Fi 6E[6] and Wi-Fi 7[7]) for:

The digital transformation of SMEs 	• The digital transformation of the whole society (including SMEs and start-ups) relies on the availability of pervasive very high-capacity connectivity. • Thanks to their low cost and easy deployment, Wi-Fi 6E and Wi-Fi 7 will support the widespread adoption of new digital applications and services.
Innovation and European start-ups 	• As the primary wireless interface to the Internet, Wi-Fi is the platform of Internet innovation. The technology of the future requires enhanced W-Fi connectivity. • Thanks to their advanced features (very high bandwidth and very low latency), Wi-Fi 6E and Wi-Fi 7 will unlock a future generation of data intensive and low latency immersive applications such as AR/VR, holographic or haptic systems.
Virtual Reality (VR), Augmented reality (AR), Mixed Reality (MR), all together called: eXtended reality (XR) 	• Wi-Fi 6E/7 will unlock a range of new applications, based on VR/AR/MR technologies, especially for remote collaborations of users within the advanced XR applications. • Additional spectrum in the full 6GHz is critical for VR/AR/MR as this technology will rely on the larger channels the full 6GHz provides. • XR will play a key role in Europe's green transition (Ecorys report). As for other companies, XR companies can benefit from the improved efficiency and reduced carbon footprint of new Wi-Fi technologies.
Helping Europe's green transition 	• A combination of fibre and Wi-Fi 6E (and Wi-Fi 7) is the greenest solution for indoor connectivity. • The enhanced Wi-Fi generation will also enable reduction of CO2 emissions in other sectors (e.g., remote working and learning, and telemedicine can drastically reduce traffic and greenhouse gas emissions).

[6] Wi-Fi 6E is the sixth generation of the Wi-Fi standard, designed to operate in the full 6 GHz band. It is already available in the market. More than 2.3 billion Wi-Fi 6 products and 350 million Wi-Fi 6E products are expected to enter the market in 2022, and more than 15 percent of all Wi-Fi 6 shipments will also be Wi-Fi 6E in 2022.

[7] Wi-Fi 7 is the next and seventh generation of the Wi-Fi standard. It is also referred to as Wi-Fi Extremely High Throughput as a result of its projected ability to support up to 30GBps throughput, roughly three times faster than Wi-Fi 6E.

Supporting Europe's farmers 	• Broadband connectivity powered by satellite and enabled locally via Wi-Fi enables farmers to transmit crop management data from mobile devices in real time, without having to travel to far-away areas to access the Internet.
Rural connectivity gap 	• As demonstrated by the WiFi4EU initiative, Wi-Fi has the power to reduce the digital decade. • While relevant in urban areas, the role of Wi-Fi in public spaces is especially critical in rural areas, given the more limited coverage of broadband networks. With Wi-Fi, the connectivity needs of several users can be served with one single fibre broadband connection. • The presence of Wi-Fi at the edge of fixed broadband networks also makes the broadband offer much more compelling, driving demand for gigabit broadband.
Supporting Europe's education system 	• By increasing access to information and educational resources, broadband connectivity helps equip learners with many of the skills they need to thrive in the digital era.
Internet of Things (IoT) - Smart homes and factories 	• Advanced technologies such as IoT and robotics rely on Wi-Fi. Additional Wi-Fi spectrum will lead to broader acceptance of IoT-enabled applications and services and will accelerate and expand the deployment of IoT devices. • Most home IoT devices rely on Wi-Fi as the most cost-effective and least complex connectivity solution. Wi-Fi 6E and Wi-Fi 7 will enable new use cases for smart homes and support high-density deployments. • Wi-Fi is heavily used by industries to provide connectivity for IoT devices in e.g., smart factories.