

Presentation to EACO WRC-23 Preparatory Meeting

Options for the 6 GHz band

28 February 2022



Agenda

The importance of Wi-Fi

The need for more spectrum

The regulatory process

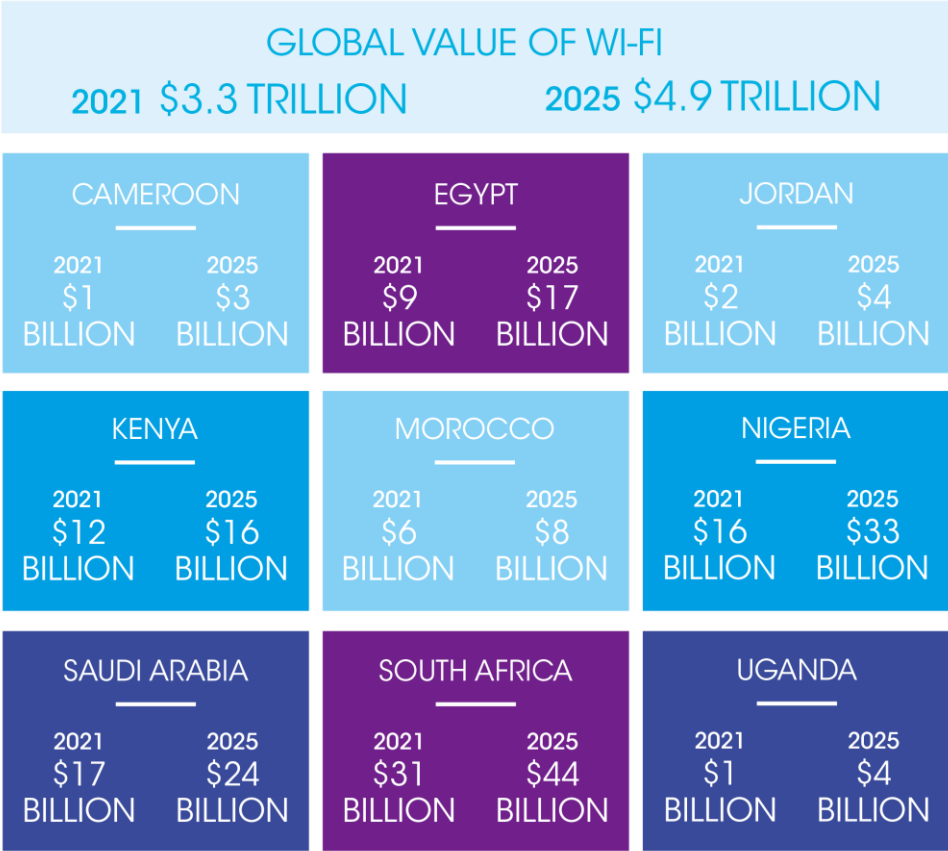
Conclusions and way forward

Who we are

- Policy Impact Partners (PIP) is a global consultancy focused on connectivity and digital policy issues that impact all sectors.
- We provide advocacy support as well as campaign design and implementation services
- Our clients include some of the large multinational technology players, trade associations and governments
- We have senior level local consultants in Europe, Africa, Middle East, Latin America and Asia.

Wi-Fi is key to economic growth and societal development

- As reliable broadband connectivity becomes more important than ever, high performance Wi-Fi is a vital driver of economic growth.
- In the wake of the COVID-19 pandemic, citizens, businesses and governments are relying on Wi-Fi to remain connected with colleagues, teachers, healthcare professionals and other vital services.
- In-home Wi-Fi is helping limit the economic and societal damage caused by the pandemic.



Source: Telecom Advisory Services

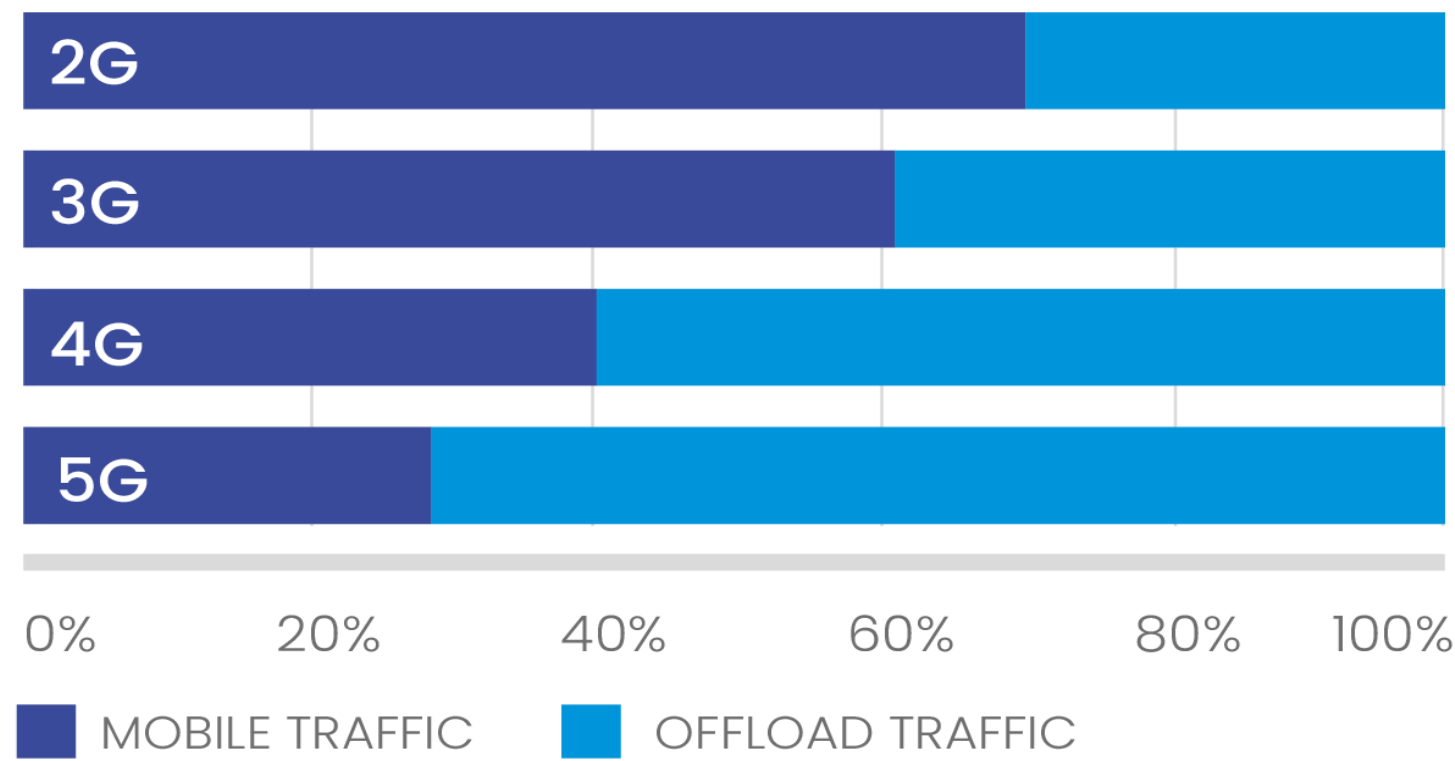
Wi-Fi is key to connectivity



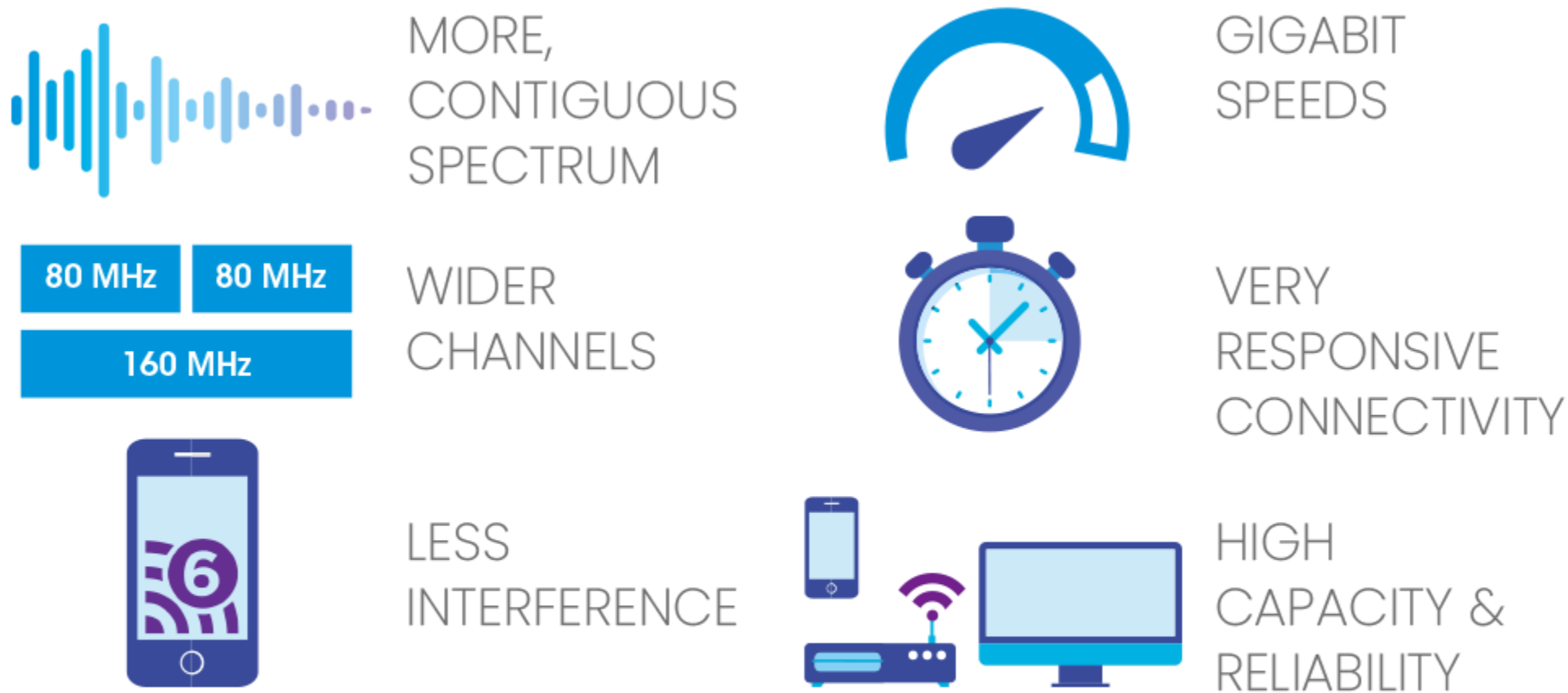
- The COVID-19 pandemic has shown the importance of good connectivity to social and economic wellbeing
- Wi-Fi can play a central role in helping governments to meet their connectivity goals.
- For individual citizens, Wi-Fi is often the most cost-effective way to get online, enabling them to make extensive use of Internet-based services without incurring hefty charges. As a result, citizens are happier and more productive.
- Wi-Fi is the distribution mechanism of choice for consumer broadband in most countries. If a Wi-Fi bottleneck means consumers experience low data speeds, there is not much point in having a fast broadband connection.

Wi-Fi works hand-in-hand with cellular

Today, Wi-Fi supports the offload of 54% of mobile data traffic and this is set to grow to about 70% with 5G (source: Cisco VNI).



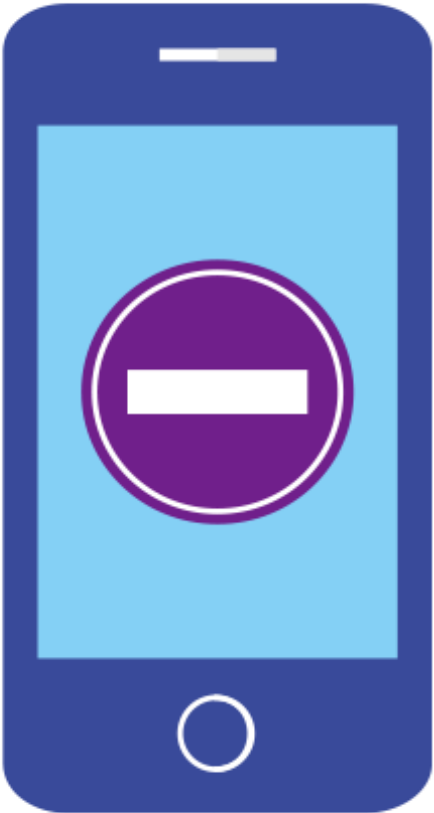
Wi-Fi 6 offers a step change in performance



7 Note: Wi-Fi 6E is Wi-Fi 6 in the 6 GHz band

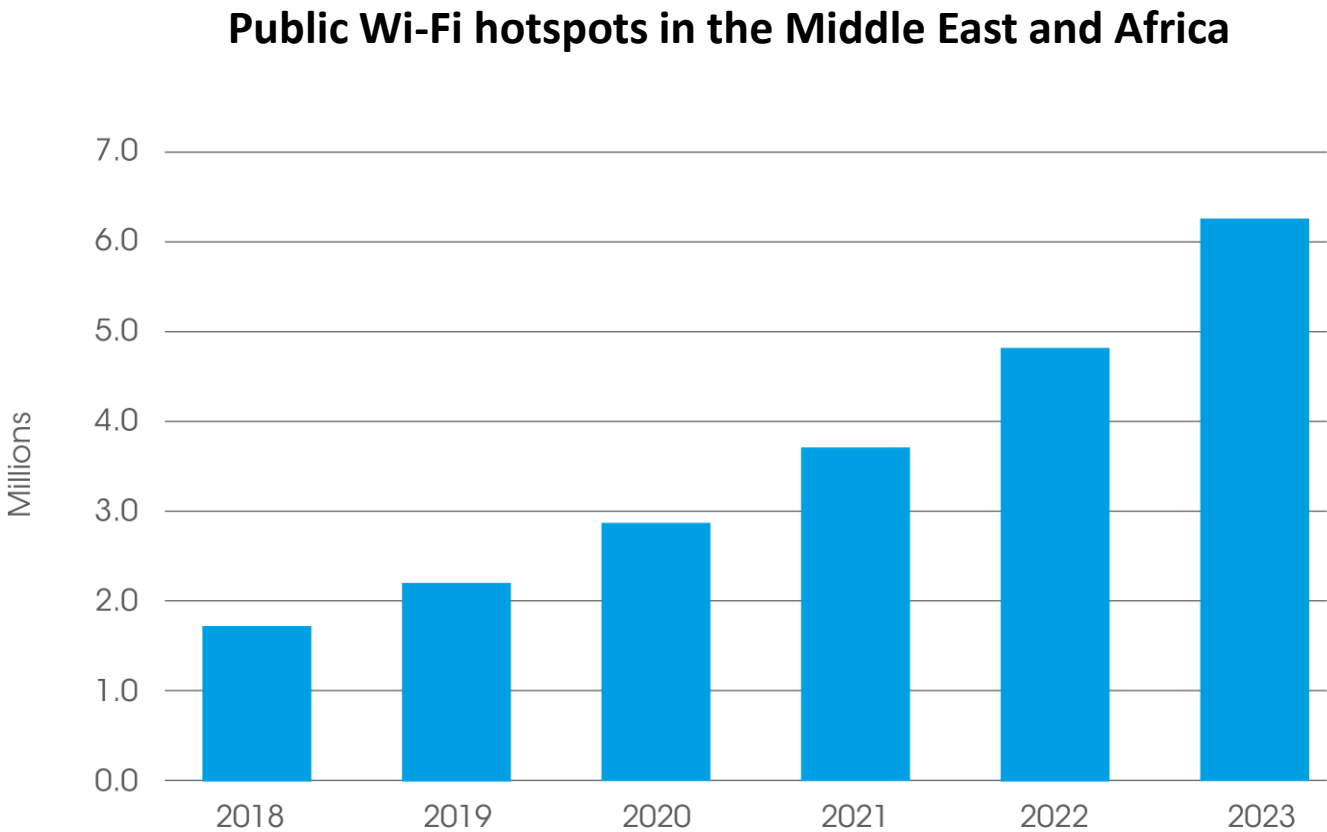
The shortage of licence-exempt spectrum

- Telecoms operators are rolling out high-speed broadband networks, but the wireless interface is a bottleneck affecting the user experience.
- There is only 455 MHz of mid-band spectrum available for licence-exempt use in ITU Region 1. In some countries, including the US and Canada, there is an additional 125 MHz available in the 5 GHz band (5725-5850 MHz).
- Since WRC-03, no new mid-band spectrum has been made available for Wi-Fi despite the exponential growth in the data traffic supported by the technology.



Growing demand for Wi-Fi in Africa and the Middle East

- The number of Internet users in Africa is growing rapidly and will continue to do so.
- Telecoms operators will need to use Wi-Fi to provide many of these new users with a high-quality experience.
- Cisco forecasts that the number of public Wi-Fi hotspots in the Middle East and Africa will grow by 30% per year between 2018 and 2023.
- Unless action is taken, Africa faces a Wi-Fi mid-band spectrum shortfall.



Source: Cisco

The 6 GHz band can bridge the Wi-Fi spectrum gap

- The 6 GHz band (5925-7125 MHz) is well suited to bridging the Wi-Fi spectrum gap.
- Under ITU Radio Regulations (RRs), the 6 GHz band has a co-primary mobile allocation – it could be used for all mobile service applications, including on a licence-exempt basis.
- Wi-Fi service providers can use existing 5 GHz infrastructure to extend coverage at 6 GHz.
- Having access to additional spectrum allows for wide 160 MHz channels and therefore exciting new services.



Global momentum to open the 6 GHz band to Wi-Fi

- Brazil, Canada, Chile, Saudi Arabia, South Korea and the US are making the entire 1200 MHz in the 6 GHz band available for licence-exempt Wi-Fi use.
- The EU, the UK, the UAE and Morocco are opening the lower 6 GHz band (5925-6425 MHz) to Wi-Fi and other RLAN technologies.
- The ATU has recommended African admins enable licence-exempt technologies to operate in the lower 6 GHz band.
- Other jurisdictions, such as Taiwan, Singapore, Mexico, Japan and Australia, are also working towards making parts of the 6 GHz band available for Wi-Fi use.
- As a result, more than one billion people will soon be able to take advantage of Wi-Fi 6E.



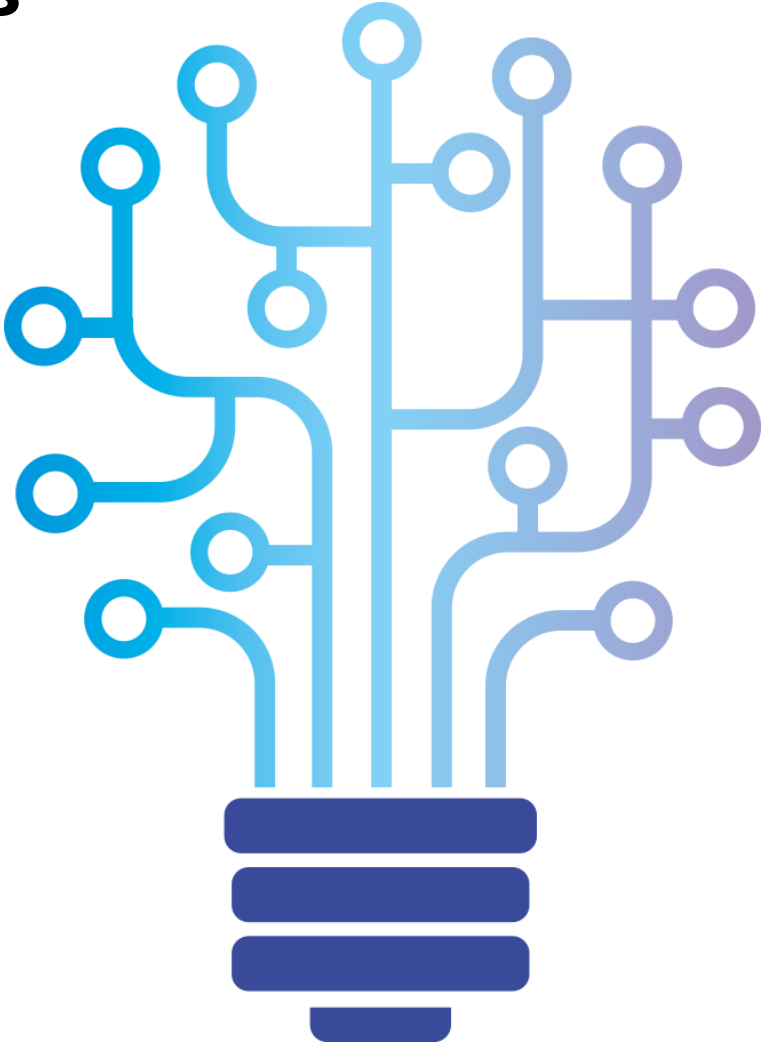
GLOBAL PROGRESS TOWARDS LICENCE-EXEMPT ACCESS TO 6 GHZ BAND

In many countries, the entire band (5925-7125 MHz) is now available for Wi-Fi



More spectrum for Wi-Fi would lower costs

- If the 6 GHz band were widely available on a licence-exempt basis, vendors would be able to deliver the same equipment to multiple regions.
- As a result, Wi-Fi users would benefit from greater economies of scale, lower prices and a more diverse supplier base.
- Widespread access to high-speed Wi-Fi – enabled by the availability of more spectrum – would bolster digital ecosystems and help drive innovation.



Wi-Fi 6E devices already available

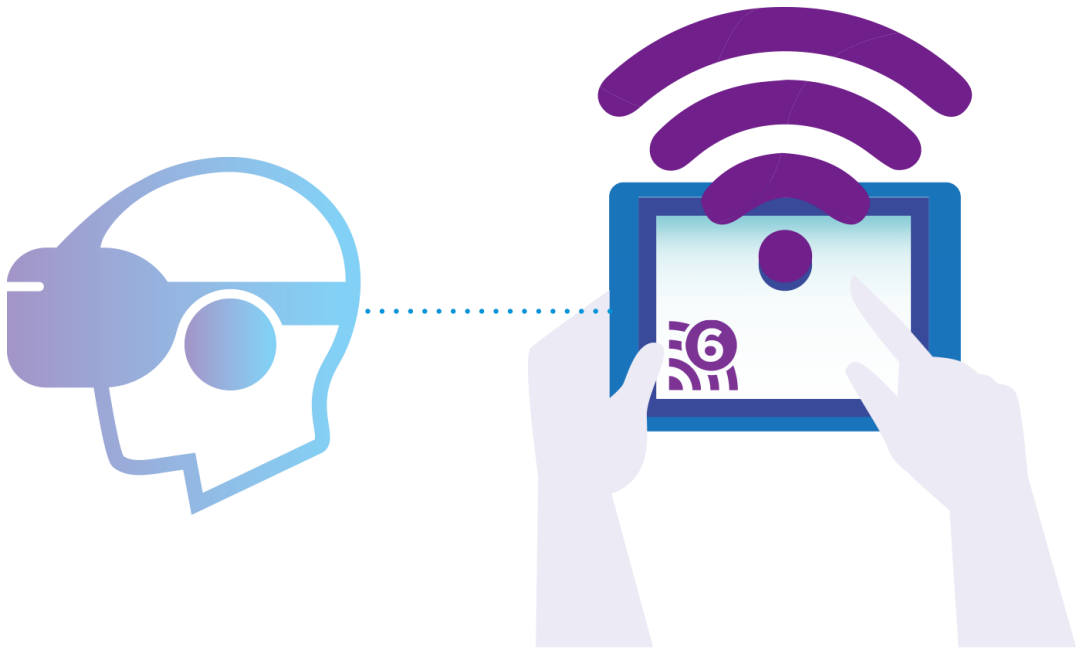
- The first Wi-Fi 6E products, which can be used in the 6 GHz band and are certified by the Wi-Fi Alliance, are now being rolled out.
- Research firm IDC has forecast* that 338 million Wi-Fi 6E devices entered the market in 2021.
- Phil Solis, research director at IDC*: “We expect Wi-Fi 6E will gain momentum and see rapid 2021 adoption with more chipsets targeting flagship smartphones, PCs, TVs, and even VR devices.”

*As cited by the Wi-Fi Alliance



More spectrum for Wi-Fi would drive innovation

- Recent research in Africa* shows allowing Wi-Fi devices in the 6 GHz band will generate significant economic value by:
 - Improving connectivity indoors and outdoors
 - Extending the Internet of Things
 - Boosting productivity
 - Enabling development of richer applications and services
- With access to the 6 GHz band, low power indoor and very low power portable Wi-Fi can support demanding personal area network applications, such as transferring data between a smartphone and an AR/VR headset.
- Adoption of AR/VR by businesses will enhance productivity by improving training, accelerating product design and enabling new business models.



WRC-23 and the upper 6 GHz band

- The upper part of the 6 GHz band (6425-7125 MHz) is being considered for IMT identification under WRC-23 agenda item 1.2
- If IMT networks were deployed in the upper 6 GHz band, there is a risk that they would interfere with fixed links and fixed satellite links currently operating in that band due to their high power usage.
- Important to participate in the WRC-23 preparatory process in ITU-R WP5D and contribute to the sharing and compatibility studies.
- Administrations should retain flexibility to allow licence-exempt technologies, including Wi-Fi and 5G NR-U, in the upper 6 GHz band.



The ATU moves to harness the 6 GHz band

- The African Telecommunications Union (ATU) has approved the recommendation by its Emerging Technologies Task Group (ATU-R Recommendation 005-0*) to enable licence-exempt 5G NR-U and WAS/RLANs to operate in the lower 6 GHz (5925-6425 MHz) band. WAS/RLANs can operate at low power indoors (LPI) and very low power (VLP) indoors and outdoors
- The African Spectrum Allocation Plan (AfriSAP) recommends that the lower 6 GHz (5925-6425 MHz) band should be made available for licence-exempt WAS/RLAN in line with ATU-R Recommendation 005-0
- Adoption of the Recommendation by each East African country will be a crucial step in addressing the licence-exempt spectrum shortfall and bringing major socio-economic benefits to each country.



Summary – now is the time to release more licence-exempt spectrum

- There is an urgent need for more Wi-Fi spectrum for consumers and industry.
- We are at a pivotal moment for the future of Wi-Fi.
- Policymakers should consider opening up the lower 6 GHz band for use by licence-exempt technologies in the short term.
- Administrations should maintain the flexibility to enable licence-exempt technologies to use the upper 6 GHz band (subject to the outcome of sharing and compatibility studies).
- PIP and its associates are willing to support EACO Member States to perform sharing studies between licence exempt WAS/RLAN and incumbent services in the upper 6 GHz (6425-7125 MHz) band.



Recommendations

- EACO Member States should implement ATU-R Recommendation 005-0 to allow licence-exempt WAS/RLAN in the lower 6 GHz (5925-6425 MHz) band
- Consider conducting sharing study between licence exempt WAS/RLAN and incumbent services in the upper 6 GHz (6425-7125 MHz) band. PIP and its associates have offered to provide technical assistance in conducting this study.