



**GSMA's response to the Draft RSPG Opinion on Additional spectrum needs and guidance on the fast rollout of future wireless broadband networks**

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## **About the GSMA**

The GSMA represents the interests of mobile operators worldwide, uniting more than 750 operators with over 350 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and internet companies, as well as organisations in adjacent industry sectors. The GSMA also produces the industry-leading MWC events held annually in Barcelona, Los Angeles and Shanghai, as well as the Mobile 360 Series of regional conferences.

For more information, please visit the GSMA corporate website at [www.gsma.com](http://www.gsma.com). Follow the GSMA on Twitter: @GSMA.

## Introduction

Mobile operators are partners with the governments to ensure good quality ICT infrastructure and are also trying to meet the demand from citizens and business for more data, speed, resilient networks, higher connectivity, flexibility, home connection and an overall improved customer experience.

According to the EC Communication “2030 Digital Compass: the European way for the Digital Decade<sup>1</sup>” excellent and secure connectivity for everybody and everywhere in Europe is a prerequisite for a society in which every business and citizen can fully participate. Achieving gigabit connectivity by 2030 is key and this ambition can only be reached with a focus on 5G roll out, respect the 5G security toolbox and with future technologies being developed in the years to come.

The introduction of 5G offers new opportunities that will provide significant benefits to citizens, businesses and the public sector. To fully realise this socio-economic potential, broad collaboration will be key.

To achieve this, Member States and Mobile operators must work together to find the best solutions based on an efficient spectrum policy: right amount of spectrum, at the right time, with the right conditions and at the right price.

In this respect, spectrum set-asides distort the level playing field and lead to artificial scarcity. 5G will require additional spectrum which should be made available without discrimination among all players and under the principle of technological neutrality.

Nationwide and exclusive licences have provided the certainty of access to spectrum, a critical component of mobile networks, to support huge investments in high quality, wide area mobile networks worldwide. This exclusive licensing approach has been central to connecting well over 5 billion people to mobile services worldwide. Where policymakers are looking to move away from this proven and successful approach, either in new licensing procedures or in licence renewals, they must provide an evidence-based explanation, which include a regulatory impact assessment/cost benefits analysis.

Mobile technologies continue to evolve to make the most efficient use of licensed spectrum to deliver better services to more people in more places. Licence obligations and conditions should be designed to minimise the cost of covering non-profitable areas and avoid distorting the award of spectrum. Regulators should avoid the inclusion of unreasonable obligations and conditions in spectrum licences to achieve certain objectives which in turn have an impact on the market and the value of the licences. The combination of public and private investments has proven to be an effective way to address the digital divide.

Low-bands (e.g. sub-1 GHz) support widespread coverage, including indoors, across urban, suburban and rural areas. Increased low-band capacity is required to create greater equality between urban and rural broadband connectivity and address the digital divide.

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<sup>1</sup> [https://ec.europa.eu/commission/presscorner/detail/en/IP\\_21\\_983](https://ec.europa.eu/commission/presscorner/detail/en/IP_21_983)

**The RSPG opinion that looks at 2025-2030 should be more ambitious in defining quantitative targets for 2025-2030 timeframe**, or at least clear next steps that will lead to the definition of such targets in the near future. Such clarity in the policy direction will be key for operators to define their longer-term network and business strategies.

**The RSPG: 1. Recognises that the current demand in the majority of MS for additional spectrum is mainly for the mid-bands.**

Mid-bands typically offer a good mixture of coverage and capacity benefits. The majority of commercial 5G networks are relying on spectrum within the 3.3-3.8 GHz range. Other bands which may be assigned to, or re-farmed by operators for 5G include 1500 MHz, 1800 MHz, 2100 MHz, 2300 MHz and 2600 MHz. More spectrum will be needed to maintain 5G quality of service and meet growing demand in the longer term (e.g. 3.3-4.2 GHz, 4.8-4.99 GHz and 6 GHz).

The 3.8-4.2 GHz, 6.425-7.125 MHz and the 2.3 GHz bands have very big potential to provide added capacity in the medium term and long-term if, of course, there is sufficient amount of spectrum per operator to deliver the 5G QoS. In this respect, it would be critical to increase the mid-range frequencies for the mobile industry within the RSPG beyond those that have been selected as Pioneer Bands for Europe.

In December 2020 the GSMA published a report with Coleago on spectrum needs in mid bands which shows that over the period 2025/2030 MNOs will require significant more spectrum in mid bands in Europe<sup>1</sup>.

In addition, GSMA recognizes the need for additional low-band spectrum. Mobile capacity demands are continuously increasing also in sparsely populated areas. Higher speed internet access is also required by travellers on road and rail networks, also outside populated areas. Additionally, in urban areas there are use cases calling for deeper in-building penetration, higher capacity and performance for indoor users. Additional low band spectrum would help addressing these demands effectively. It would enable providing consistent customer experience, and digital inclusion for citizens living in sparsely populated areas and outside fiber connectivity. Thus, possibilities for enabling sub-700 MHz spectrum for mobile use should be considered in Europe.

**2. Recognises that spectrum demand for verticals has been addressed in the mid-bands in a dissimilar way in MS, due to different national circumstances (eg. priorities for efficient spectrum use).**

**AND**

**3. Recognises that there is a demand for vertical use in the mmWaves<sup>2</sup>.**

The critical nature of communications networks is being widely recognised by governments around the world in their fight against COVID-19. 5G, therefore, will play an important role in economic recovery from the crisis even after the impending wave of post-pandemic austerity.

5G can spur innovation in sectors at the frontline of fighting the pandemic, such as healthcare, as well as enabling businesses to innovate and reshape their operations to

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<sup>1</sup> <http://www.coleago.com/app/uploads/2021/01/Demand-for-IMT-spectrum-Coleago-14-Dec-2020.pdf>

<sup>2</sup> <https://www.gsma.com/spectrum/wp-content/uploads/2020/05/Mobile-Networks-for-Industry-Verticals.pdf>

lead to quicker recovery. By enabling new wireless broadband services at very high speeds, 5G technology will also be essential to industrial transformation.

As attention is given to supporting high speed network rollouts, there is a challenge of deciding who gets access to spectrum. In the 5G era, we are seeing more competition for access, with some relative newcomers, like manufacturing, wanting in on bands the mobile industry uses (and plans to use) for 4G and 5G, but reserving 4G/5G spectrum for private networks only is not an efficient use of this valuable and limited resource.

Spectrum set-asides mean mobile operators – and their vast number of consumer and business customers – will have access to less 5G spectrum. That means slower 5G. The ITU has a minimum requirement of 100 MHz per operator in the mid-bands to provide 5G. Set-asides can make this impossible, especially given the main 5G mid-band (3.5 GHz) has proved difficult to clear of existing users. Interestingly, many of the existing users that regulators are trying to clear are vestiges from previous unsuccessful efforts to experiment with improving access to wireless broadband.

When less spectrum is available in 5G awards, spectrum scarcity causes prices to increase, which takes capital away from deployment and has been shown to lead to reduced coverage, slower mobile data speeds and slower adoption of new technologies. Obviously, this is not ideal when launching 5G. This has been borne out in Italian and German 3.5 GHz 5G auctions where there are many press reports about how the limited spectrum supply forced up prices.

Setting aside spectrum for verticals has a very high opportunity cost. There is no certainty on how widely and intensively will these verticals use these set-asides. It is unlikely the spectrum will be used outside of the relatively small number of locations where verticals would want networks (e.g. factories, airports etc). This means valuable 5G spectrum could be underused in areas where it is in great demand for mobile services. Trying to mix lots of independent mobile networks in close proximity (and adjacent to commercial mobile networks) also raises a range of serious interference issues, related or not to TDD synchronisation.

Mobile operators already support verticals and can deliver private networks with dedicated spectrum where needed. Regulators can also tailor their normal award approach to meet the needs of verticals without undermining 5G more widely.

It is important to note that in many countries with little spectrum available for 5G in mid-bands, the risks of set-asides are especially grave. Mobile operators could quite simply be left without enough spectrum to meet 5G expectations, both in mmWaves and mid-bands.

**4. Recognises that there is no need for a dedicated designation for FWA in the mmWave bands, although operators should also have the possibility to address this application within their spectrum.**

The GSMA shares this view, as FWA is one of the 5G use cases and technology neutral licences allow for different use cases to be catered for.

## **5. Recognises that different types of authorisation methods facilitate innovation and different technologies.**

Different authorisation methods spur or prevent different types of innovation. For example, an unlicensed regime would spur innovation in unlicensed technologies, whereas national flexible licences would spur innovation aimed at trying to accommodate more diverse uses in the same network (for example DSS, massive MIMO, or slicing). It is important to recognise that identifying a band to promote one type of innovation reduces the spectrum available for the other, and not forget that the objective of spectrum policy is not to maximise the number of technologies or diversify innovation. It is to allocate spectrum to the those that can innovate and invest to create the greatest value.

Authorising both commercial mobile networks and independent vertical networks in a single mobile band can create coexistence issues. This can result in harmful interference, limit the use cases that mobile operators and verticals can support in the band, and create additional burdens on equipment design that can impact efficiency and affordability.

Member states should plan to award all 3.25 GHz of spectrum in the 26 GHz band, with a clear roadmap for making it available, in order to allow up to 800 MHz contiguous spectrum per operator and the competitive provision of a meaningful 5G experience.

## **6. Recommends to investigate the possible use of the band 3.8-4.2 GHz for local vertical applications while protecting receiving earth stations and other existing applications and services.**

The RSPG Report on Strategic Sectoral Spectrum Needs<sup>1</sup> reminds us the process for all sectors to raise their spectrum needs. The first step of this process will always be a definition of the requirement followed by a selection of candidate bands to be studied. This ensures that the band will meet the requirement of the sector, ensure coexistence between users in the band and adjacent bands.

All frequency ranges, including the 3.8-4.2GHz, should therefore be options to meet a demand. This demand needs to be clarified via the ETSI-CEPT mandate process also confirmed in the RSPG opinion on spectrum sharing. Additional spectrum in mid-band will be required to address 5G consumer take up and usage (see the already mentioned Coleago report). The RSPG and spectrum needs opinion should plan for exploring how to meet this growing demand from citizens.

Therefore, the RSPG should recommend that the future use of the 3.8-4.2GHz is defined through the usual ETSI-CEPT mandate process and not assumed to be authorised only for local vertical applications by default as proposed in the spectrum need opinion.

Spectrum awards should also follow the proven and confirmed process of ETSI-CEPT collaboration, starting from the definition of the requirements, followed by a fair assessment of the different options including by accessing coexistence between the different systems and services. The regulation should only define the least intrusive technical and regulatory conditions for use and not discriminate the applicants. By default, national licences should be explored. Where quasi national licences are not

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<sup>1</sup> [RSPG13-540rev2\\_RSPG Report on Sectoral needs.pdf \(europa.eu\)](#)

possible, exclusions zones can be defined in an LSA approach. Ultimately localised licenses open to all spectrum users can be awarded on a level playfield basis.

Verticals/sectorial spectrum set-aside will be fragmented because the needs aren't the same in every Country and their ability to provide 5G spectrum to MNOs will obviously drive what is possible for verticals also taking into account coexistence requirements (between different verticals services, adjacent services as well as cross border).

For sharing to be successfully introduced in the same or adjacent band, high-performance transmitter and receiver specifications and the inclusion of appropriate essential requirements and test specifications for all equipment in harmonised standards are required. Technologies must be able to be adapted to increase protections from other services but also ensure spectrum efficiency. The review of these performances may need to reflect the usage and therefore be longer than others but timescales for review be automatic.

**7. Recommends that options should be developed for addressing vertical needs in the mmWaves, in order to facilitate consistent approaches.**

**REPLIED BY 2. AND 3. ABOVE**

**8. Recommends that MS publish for transparency any available results of EMF exposure measurements.**

In its RSPP, The RSPG recommends continuing and increasing collaboration, sharing of information and learning from each other on a European level. This collaboration should include different policy areas involved in EMF issues. RSPG invites Member States to take into consideration citizens' concerns and exchange information and best practices in order to contribute to a better understanding by the public of these issues and to promote transparency with regard to 5G technology.

We welcome the recommendation from RSPG and supports full transparency on the subject. We also wish to work towards harmonisation of the EMF assessment methods defined by CENELEC based on the international technical standard (IEC 62232) so that information can be shared and pooled in a consistent way.

**9. Recommends that MS publish for transparency any available results of equipment SAR measurements.**

Variations in SAR among phone models do not mean that there are variations in safety. Users can have confidence in their safety due to the existence of science-based guidelines recognised by authorities around the world.

Although the SAR is determined at the highest certified power level in laboratory conditions, the actual SAR level of the phone while operating can be well below this value. This is because of the adaptive power control mentioned previously and other factors, including how the phone is used.

**10. Proposes to the European Commission to update EU Council Recommendation 1999/519/EC in order to take into account the revision of the ICNIRP guidelines.**

The International Commission for Non-Ionizing Radiation Protection (ICNIRP) completed a sweeping review of two decades of research and made small adjustments to its exposure guidelines. Importantly, the health risk assessment is unchanged. The review found no established health risks to anyone, including children, using mobile phones or living near base stations. The safety guidelines retain a high level of protection with limits set well below the thresholds for established hazards for all radio frequencies from 2G to 5G. The updated ICNIRP guidelines for mobile networks and mobile phones recognise the importance of higher frequencies above 6 GHz to 5G and provide more detailed guidance for this range. It is important to note that the exposures in publicly accessible areas from 5G networks are well below these new thresholds.

Based on this the GSMA supports to update EU Council Recommendation 1999/519/EC in order to take into account the revision of the ICNIRP guidelines. In addition, each Member State should apply this recommendation and not allow municipalities to require more stringent limits than recommended by ICNIRP. More stringent limits, not based on scientific evidence, lead to worse network capacity, and adds pressure for much denser network, which may be challenging due deployment restrictions. Stricter limits lead also to higher power consumption contrasting the green objectives of the future networks.