



GSMA Response to the Second Radio Spectrum Policy Group Opinion on 5G Networks

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About the GSMA

The GSMA represents the interests of mobile operators worldwide, uniting nearly 800 operators with almost 300 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 industry-leading events such as Mobile World Congress, Mobile World Congress Shanghai, Mobile World Congress Americas and the Mobile 360 Series conferences.

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Introduction

The GSMA welcomes the opportunity to comment on the RSPG's 2nd draft Opinion on 5G. 5G systems will be an essential enabler for Europe's Digital Single Market, and it is therefore critical that national regulators recognise the importance of taking a coherent and pro-investment approach to spectrum licensing across all Member States.

To be successful at the European level, 5G will require economies of scale across the full value chain, from network technology and devices to the networks themselves to end user services. The fragmented nature of the European markets makes it difficult to generate those economies of scale, and the RSPG opinion is an opportunity to build confidence and create the right expectations. We see in particular three main challenges related to 5G economies of scale that require a coordinated response from the European Institutions.

1. Consistent 5G licensing across Europe, prioritising security of tenure and improved services

Many of the vertical industries that seek to harness 5G will be doing so on a multi-national or even pan-European basis. For this reason, there's a need for consistent 5G licensing and investment across Member States. The GSMA is therefore concerned that diversity of licensing approaches at the national level may lead to fragmentation and a market that remains sub-scale.

Establishing a supportive regulatory environment for spectrum licences will be essential in attracting the necessary investment for 5G in all the EU – critically, addressing the risks of high spectrum costs and the uncertainty over licence tenure and therefore payback on ongoing investments. **The GSMA supports a minimum license term of 25 years with a strong presumption of renewal based on the effective and efficient use of the spectrum, and encourages Member States to prioritise the investment in improved mobile broadband services over revenue maximisation when awarding spectrum to support the digital economy.**

It is also important that roll-out investment is demand-led, and that regulators focus on reducing barriers to investment, both in cities and in more challenging locations.

2. Exclusive and national licensing of 5G priority bands

The business case for 5G can be depicted as a very intelligent, powerful and costly network that is used to provide services of different nature to a variety of heterogeneous users. To make this business case viable, economies of scale and scope are key. **The GSMA supports exclusive and national licensing of the priority 5G bands identified by RSPG. That is in our view the licensing scheme that provides operators with the largest expectation of a strong ecosystem based on economies of scale and the generation of business opportunities in a wide range of uses.**

Fragmenting the priority bands would actually stifle the development of 5G, by complicating interference management and reducing the amount of spectrum available to the mobile operators that are the most likely drivers of economies of scale. In our view, exclusive and national licensing of 5G pioneer bands still leaves viable options to all players, beyond taking part in the spectrum awards. The most efficient alternative, and the one we think will prevail and should not be artificially constrained, is to acquire a network slice from operators that compete for customers and are willing

to cooperate with verticals in the development of 5G use cases. Those that wish to have direct access to spectrum can conclude a commercial spectrum sharing or leasing agreement with one of the primary licensees, or use licence exempt spectrum, in existing unlicensed bands or in the 66 – 71 GHz band referenced by RSPG in the draft opinion. We note that, together with the 60 - 66 GHz already allocated for licence-exempt uses, there are 11 GHz of contiguous spectrum in that frequency range to develop innovative applications for localised uses.

The GSMA welcomes consideration of innovative forms of licensing and/or sharing with other users at the very highest millimetre-wave bands (i.e. above 50 GHz), while for lower bands, including the 26 GHz pioneer band, the GSMA believes the greatest levels of investment and 5G take-up will result where licences are exclusive and nationwide. Together with operators' voluntary sharing and leasing, network slicing will allow diverse users to benefit from underlying economies of scale, thus providing a combination of investment certainty, flexibility, cost-effectiveness and innovation.

3. Clear roadmap and appropriate amount of spectrum made available

Not all the European pioneer bands for 5G are globally identified for mobile. As a result, manufacturers will not support European bands in their devices and network equipment unless there is a clear expectation that they will be available and used.

Most importantly, the question of clearance and/or relocation of existing services from the C-band requires urgent attention, particularly where assignments are under-used, so that all Member States can benefit from the competitive provision of full-speed 5G networks. Allowing market based mechanisms for the defragmentation and reallocation of existing licenses in C-band is critical to get large enough contiguous spectrum available for the provision of the high speeds expected from 5G. **Where existing uses in C-band were not allocated on an open award process, regulators may need to intervene to clear the band for 5G implementation, so that all Member States ensure that sufficient bandwidth (i.e. at least 100 MHz in 3.4 – 3.8 GHz) is made available per operator.**

Additionally, a target of at least 800 MHz should be made available per operator in the 26 GHz band, and regulators should progressively clear the band as quickly as practically possible. In order not to create artificial scarcity, awards should not be undertaken until there is clear visibility on the roadmap for the clearance of the full band.

Finally, consideration also needs to be given to existing use for microwave services, to ensure that operators can continue to operate backhaul links with the roll-out of 5G.

Report recommendations

Flexibility over authorisation of spectrum

The RSPG notes that for 5G the authorization framework should be flexible both in term of area (national vs. local) and scheme (exclusive rights vs. general authorization).

The GSMA is of the opinion that allowing such level of flexibility would undermine the Digital Single Market significantly, especially if there is no EU wide agreement on the need to have national and exclusive licenses for the RSPG identified priority bands at the very least. The GSMA does agree that there is a degree of flexibility which must be given to competent authorities to allow the catering of national specificities to ensure coexistence with the incumbent services. However, the RSPG must strike the right balance and ensure there is consistency among the EU Member States that would allow for the delivery, growth and development for 5G in the coming years. Short of such balance and harmonisation, the ambition would be stifled due to divergence across markets.

Coverage in rural areas

The recent joint report by BEREC and RSPG on coverage has tried to address this specific topic. The GSMA replied to that consultation in detail and would re-emphasise a few key points here. As an industry, we welcome policy objectives that aim at incentivising the coverage of rural areas and wide coverage more broadly. Indeed, there are several EU Member States that have taken approaches that the GSMA and its members consider best practice. One example is Sweden where part of the spectrum price was not paid but instead kept by the winner to fund the coverage of identified and underserved locations. Portugal is another example to follow where licenses were extended without extra cost in return for extending the coverage obligations to remote areas. These are just two of the many examples of pro-investment remedies that would also work elsewhere. Taking stock of such best practices and encouraging their EU wide adoption would help tackle coverage of the non-economically sustainable areas.

The GSMA also notes the reference to satellite systems within the Opinion and presumes this relates to the supporting role that satellites may provide in delivering mobile connectivity, given that their technical limitations may be incompatible with the requirements of 5G itself.

Cross border coordination

The GSMA shares and welcomes the opinion of the RSPG on defining and coordinating the approach for future services that would require service performance and availability across borders. An industry led initiative coupled with support from the RSPG to harmonise and coordinate would help solve future challenges.

Harmonisation of coverage obligations

The GSMA agrees in principle that coverage conditions cannot and should not be harmonised at EU level. We understand that cross border services will require a critical mass of population, roads and

railroads covered with 5G networks and suitable functionalities. However, the process should be demand-led. Governments should focus their policies on reducing barriers, and be conscious of the risk of imposing functionalities and coverage obligations that have proven to be disproportionate.

Authorisation of small cells and EMF harmonisation

The GSMA welcomes the opinion of the RSPG that Member States should act to ease the authorisation procedures for small cells. As previously outlined in the joint BEREC and RSPG report, the biggest bottle neck for 5G would be the licensing of base stations, site authorisation, installation and costs. Harmonisation in term of EMF levels and realistic EMF calculations are also needed for small cells as well as more generally for macro cells. Countries where the electro-magnetic field limits are imposed well below the ICNIRP levels would suffer of delayed development of 5G networks thus impeding the fulfilment of the 5G Digital Agenda goals.

The roll out process of small cells is complex because of the lack of harmonised national policies on rollout procedures. Often these procedures are handled at local level (for example municipalities). As a result, operators have to work with many different entities and processes, which increases complexity. Member States should consider developing national policies to harmonise rollout procedures of small cells.

Trading and leasing

The GSMA is fully supportive that all new licenses should be technology neutral and fully tradable and leasable. Regarding existing licenses, the RSPG opinion should clearly differentiate between existing licenses issued on a technology neutral basis (for which upgrading to 5G should not be banned or taxed) and other incumbent uses linked to specific technologies (in 700 MHz, 3.4 – 3.8 GHz and 26 GHz).

Defragmentation of the 3400 – 3800 MHz band

The defragmentation of the C-Band is one of the key issues that should be addressed to ensure the industry has access to the band in a way that makes its use efficient and effective to 5G performance requirements (e.g. in terms of available bandwidth to ensure high capacity). For these reasons Member States should clear from existing services and authorise the entire 400 MHz for broadband wireless access services. Larger blocks would create bigger efficiencies and greater service performances. It is worth mentioning that already existing assignments with lower bandwidth will require a longer transition period in order to achieve such bigger band availability. In particular, maintaining existing FDD band plans would mean only a maximum of 80MHz contiguous spectrum would be available in some parts of the band. Member States should encourage and facilitate, but not impose, all possible aggregation methods (regulatory, technical and commercial).

One of the ways to clear the band from the existing fixed service links would be to plan their relocation to other bands like the 5.925 – 6.425 GHz and 6.425 – 7.125 GHz. The compatibility with the FSS service is a smaller issue, as, in Europe, the earth stations are confined to a small number of sites where the coordination could be achieved more easily.

The 26 GHz band

The GSMA would like to stress the need for the 26 GHz band (24.25 – 27.5 GHz), one of the 5G pioneer bands, to be licensed on an open award procedure for mobile usage on a national exclusive basis. Although the industry supports voluntary sharing in the very highest millimetre-wave bands, it is essential for the fulfilment of the 5G European goals that all the identified 5G priority bands in Europe are strictly authorised on an exclusive basis.

In addition to that, the entire 26 GHz band should be made available, in due course and subject to relocation of the fixed service links and of the defence applications authorised for defence use in some countries. This migration process would allow a smooth clearing of the entire band guaranteeing, at the same time, an alternative relocation of the existing microwave mobile backhaul services operated in the band.

Moreover, awards should focus on national licenses with large spectrum blocks, towards an ultimate target of 800 MHz per operator to spur the development and roll out of 5G cross Europe, with awards taking place only when there is visibility on the roadmap for the availability of the full band for 5G services.

The RSPG also allows for the future authorisation of Earth Stations in a transparent and objective manner. Indeed, the industry does not object such authorisation provided that the new stations do not negatively impact the terrestrial networks.

Other bands being studied under WRC-19 agenda item 1.13

In addition to the 26 GHz band, the GSMA supports studies for other bands that are being considered under WRC-19 Agenda Item 1.13. This includes, in particular, the 40.5 – 43.5 GHz band, as part of the ‘tuning range’ going from 37 to 43.5 GHz. The ‘tuning range’ will allow countries in different Regions to identify and make available the most appropriate frequencies from within this range to be used for 5G.

The GSMA also supports the sentiment that “WRC-19 will be an opportunity to gather (complete) information about sharing opportunities as well as about global availability of all frequency bands studied by ITU for 5G above 24 GHz including the 32 GHz and 42 GHz bands”, and the proposal to “review the situation after WRC-19 in order to provide a roadmap for European harmonisation of further bands for 5G above 24 GHz.

The 32 GHz band

The draft Opinion specifically invites input on the 32 GHz band that had been identified as a priority in the first RSPG Opinion, citing the negative conclusion of some compatibility studies in ITU and lack of industry interest. Whilst the GSMA confirms that the clear priority should remain on 26 GHz, as this is likely to be supported in initial 3GPP standards and devices, the GSMA is aware of some industry interest in the 32 GHz and considers it may be relevant for 5G deployments, for example at a later stage, and should remain on the table for consideration in accordance with the WRC-19 Agenda Item

1.13. The GSMA invites the RSPG to identify the actual extent of use of the 32 GHz allocation to aeronautical radars before final policy decisions are taken.

General Authorisation and the 66 – 71 GHz band

The industry has consistently advocated a balanced approach to spectrum authorisation, in previous consultations but also for the European Electronic Communications Code. In this regard, the GSMA supports the RSPG proposal for a license exempt use of the 66 – 71 GHz band that would allow the deployment of new technologies thus creating very good complementarity with the abovementioned pioneer bands licensed with exclusive usage rights.

The 28 GHz band

The report does not mention one band that is currently being discussed among some key countries internationally. The 28 GHz band has not been included by the ITU in the agenda of the upcoming WRC-19. However, it is important to underline that this band has already attracted major interest among 5G leading countries outside Europe. Therefore, an ecosystem will grow and develop internationally, independent of the WRCs outcomes. In some European countries this band or part of this band has been also dedicated to point to multipoint services (FWA and backhaul services) that are deemed compatible with existing and future satellite services. These services are part of what 5G technologies would be supporting and are planned to be used for. The GSMA would therefore urge the RSPG to consider the economies of scale and synergies that Europe would benefit should the band be also made available on the continent.