# GSMA's response to the Draft RSPG Opinion on Spectrum Sharing – Pioneer initiatives and bands

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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.

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**Introduction**

The Radio Spectrum Policy Programme is a mean to support key Union policy areas: the European Gigabit Society, the European Green Deal, New industrial strategy for Europe and Shaping Europe's digital future.

It is therefore paramount for this document to address how all these initiatives will be enabled by policy including spectrum policies.

The European Electronic Communications Code (EECC) redefines the regulation of electronic communications in Europe. As a priority, Member states have to transpose the EECC into national law by 21 December 2020, two years after entry into force.

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

To achieve this, Member States and Mobile operators must work together to find the best solutions (right amount of spectrum, at the right time, with the right conditions and at the right price). The global success of mobile services has been built on a foundation of exclusively licensed spectrum as it supports widespread services and the certainty needed for long-term heavy network investment and high-quality service.

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. 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 sometimes include 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.

Sharing is achievable in licence exempt bands where all users have equal rights with obligations not to interfere and no ability to claim against interference from legal users.

Spectrum sharing presents a complementary approach to exclusive licensing that, when well planned, could help gain access to more spectrum for future mobile services. It may enable access to spectrum where a band can't be cleared from incumbent services to provide nationwide licences. It can enable mobile access to additional bands in areas, and at times, when other services are not using them. While spectrum sharing holds potential, it cannot substitute the need for exclusively licensed mobile spectrum that allows for the deployment of nation-wide, reliable networks.

Spectrum is a scarce and valuable resource, should be assigned and managed in a way that maximises social benefit. That means that there is not a single solution but, rather, there should be appropriate conditions that incentivise the building of reliable and capable national networks while at the same time considering low (opportunity) cost alternative that could facilitate access for alternative users.

In all cases, a need for access to a band should be demonstrated and supported by coexistence studies. These studies would, and then drive the need for spectrum sharing framework.

The outcome should ensure that the proposed band could provide sufficient spectrum in areas where mobile operators are seeing growing demand. Secondly, the sharing framework should be clear, easily understandable, and functional and tailored to the needs of the users (e.g. clear property rights, priority of access, rights and obligations, etc.).

The success of 5G is heavily reliant on Member States supporting timely access to the right amount and type of affordable spectrum, and under the right conditions. 5G spectrum awards have already begun and the variation in the amount of spectrum assigned, and the prices paid, means the potential of 5G services will vary significantly amongst countries.

Spectrum set-asides for verticals in pioneer 5G bands (e.g. 3.5 GHz & 26/28 GHz) limit the spectrum available for commercial and nation-wide 5G services while also creating artificial scarcity, which drives up the cost of spectrum and leads to lower network capabilities and higher underlying mobile traffic costs for millions of consumers. Collectively, these factors lead to reduced 5G performance and potentially slower rollouts, worse coverage and possibly to higher consumer prices.

More widely there is also a risk that operators will start to limit long-term network investment in markets where there are signs mobile spectrum will be withheld from market-based awards and assigned directly to others as this introduces uncertainty.

Voluntarily sharing or leasing of spectrum on commercial terms to support faster services, improve coverage and drive innovation should be considered.

**1. Options for promoting Spectrum Sharing**

GSMA does not share the assumption that policymakers must impose leasing and sharing conditions to MNOs. Market mechanisms are successfully proving that MNOs are willing to share and lease spectrum. In fact, MVNOs are a perfect example of commercial agreements to access spectrum and infrastructure from an operator. According to GSMA Intelligence, as of February 2021, there were 1,597 active MVNOs operating in 93 countries.

Mobile operators should be permitted to voluntarily share spectrum on commercial terms to support faster services, improve coverage and drive innovation. Mobile operators often have voluntary infrastructure sharing arrangements to help lower the cost of extending and densifying their networks. Where there is demand for access to spectrum, mobile operators will be able to explore arrangements with the interested parties.

Currently, the opinion proposes that “the RSPG seeks to nudge a change of mind set: all considerations in the field of spectrum made by policy makers, spectrum managers, users and industry should be done by pursuing better spectrum efficiency through more spectrum sharing”. IMT bands are actually intensively shared by millions of users, many of them accessing the same band at the same time and at the same place. The increase of Spectrum efficiency is also achieved by enabling newer IMT technologies, densification of networks etc. The objective remains to answer to the need of proven spectrum requirements. Innovations in those fields are driven by flexible licences anchored in strong property rights. They could be put at risk by exogenous rules and protocols that aim to maximise the number of primary users but introduce constrains on what each of them can do, for example through power limits.

It is important that the RSPG opinion recognises that sharing should be introduced when it can be the enabler to an increase in welfare, and not as an objective on its own, after a cost-benefit analysis. This approach will ensure that all the resources required to make it possible are targeted and justified. As CEPT have previously explored LSA, capitalisation of the work done before investing in more complex sharing framework should be done. The opinion should encourage member states to consider implementing spectrum sharing at a manageable scale and increase it to match take up.

Complex sharing frameworks, such as those with three tiers, are likely to be less desirable to mobile operators, to the extent that they introduce restrictions on the second tier in order to maximise opportunistic access by the third tier. They may limit the amount of spectrum for prioritised licensed access, in order to provide a fall back for the third tier – which may make a band unsuitable for 5G. They can also introduce conditions (e.g. relatively low power limits, small licence areas and short licences) that restrict deployment options (e.g. for macrocells or fixed wireless access) and discourage significant long-term wide-area network investment. In this way, complex approaches may negatively impact public access to cutting-edge licensed mobile broadband services.

Mobile Operators favour a simple, stable sharing framework that is investment-friendly and supports reliable, high quality mobile services. Most obviously, a two-tier model could be introduced in bands where legacy uses and technologies can coexist with new flexible licences. Restrictions on the second tier should be the minimum necessary to protect the first tier from interference, and the sharing framework should create scope for incumbents and new entrants to find complementarities and agree on usage conditions.

When it comes to voluntary sharing in licenced bands, the decision on how to share will be assessed and defined by its related risk and obligations. Annual spectrum fees could be used to create financial incentives to sharing, so sharing should be reflected in lower annual fees or in the commercial arrangements between the operator and the sharer. In addition, the introduction of a sharing framework should not impose a new relevant operational burden on the licensees.

This includes both forms of spectrum sharing, first between mobile network operators for the same service, but second also spectrum sharing between different services. This could happen, for example, where regionally non-utilized spectrum can be used for other services until needed by the holder of the primary allocation. Another example which also deserves consideration is when using spectrum temporarily in remote areas for local applications as long as it is not needed there.

### 1.1 Sharing conditions

Regulators can enable faster speeds for consumers through wider channel sizes and/ or improved carrier aggregation by permitting voluntary spectrum sharing. Mobile operators should be permitted to voluntarily share spectrum to support faster services, improve coverage and drive innovation.

Spectrum sharing will not succeed unless incumbent users are encouraged to share their spectrum in areas where it is underused and there is clear, and commercially viable, demand from other users.

Member states need to carefully balance the current and future requirements of licence holders and sharers. Constant consultation with stakeholders – both licence holders and potential new users – encouraging their coming together, will provide visibility that proposals are technically and commercially feasible and attractive.

Sharing conditions, for Mobile operators, should be predictable and have clear rules with the objective to provide sufficient spectrum. The focus should be to provide protection from interference, including clear and enforceable rules. Hence licenses should:

- Cover sufficiently long-time periods (e.g. a minimum of 20 years licence duration with an expectation of renewal) to justify long-term network investment;
- Cover reasonably wide areas to facilitate rollouts because small licence areas risk patchy coverage and create challenges such as synchronising and coordinating networks to avoid interference; and
- Contain technical conditions (e.g. power emission levels) that maximise the usefulness of the band for various deployments (e.g. wide area macrocells, indoor and outdoor hotspots, fixed wireless and potentially backhaul); and - Minimises administrative and technical burdens, by closely replicating existing licensing procedures so the approach can easily be integrated with minimal additional effort and cost.

The RSPG opinion invites Member States to assess whether sharing conditions can be applied in a multi-tier sharing approach where one or more incumbent users for services other than Electronic Communication Service occupy the band. By doing this, Member States should avoid introducing conditions (e.g. relatively low power limits, small licence areas and short licences) that restrict deployment options (e.g. for macrocells or fixed wireless access) and discourage significant long-term wide-area network investment.

### 1.2 Strengthening trust and confidence

In November 2013, in its Report on Strategic Sectoral Spectrum Needs[1], RSPG considers that many of the sectors can put forward their spectrum needs via the ETSI-CEPT process.

The ETSI-CEPT process was described as: The sector can raise a request for spectrum via the ETSI-CEPT cooperation process. A system reference document (SRdoc) generated within ETSI would then be raised within CEPT where an expert team would address the needs.

Where a sector raises a request for spectrum via their national authority, the Authority would then raise the need within CEPT/ECC.

We welcome the confirmation, in this RSPG opinion on sharing that the ETSI-CEPT process remains the best approach. We believe that having clearly documented the needs of all the sectors requesting spectrum (ETSI SRdoc) will ensure that the right amount of spectrum is met and any coexistence issues are resolved. This will also guarantee that sectors with different needs and different nature of deployment in the same or adjacent bands are not offered a solution which may not meet their needs, i.e a set aside in TDD bands where they may need to

[1] RSPG13-540rev2_RSPG Report on Sectoral needs.pdf (europa.eu)

synchronise their network to avoid interference. A clearly documented spectrum need study is required prior to exploring any solutions.

For sharing to be successfully 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.

**2. Identification of key pioneer initiatives and bands**

Operators have already and are still deeply investing in the so-called primary mobile bands that should not therefore be considered for any enhanced sharing scenario.

**3. Roadmap for increased Spectrum Sharing**

The roadmap should consider the technology changes and reflect also the timescales to drive receiver performance.

**3.1 Investigation of more dynamic spectrum sharing options**

The requirement behind how dynamic a sharing scheme must be is not clear. For example, Programme Making and Special Events are often considered dynamic to respond to a localised and time limited event.

However, when it comes to other users, the deployment of infrastructure and the use of the network will require the spectrum to be available for a much longer period of time or repeatedly regularly. Like for all mobile operators, certainty of access to spectrum for a given period is required to secure the investment and ensure a given quality of service. There are dynamic spectrum allocation systems like RLAN which will call on sensing or other technologies to keep selecting the channel which makes most sense at the time. Often, these technologies would prefer licence exempt bands, as they would not require complex network planning.