Europe

GSMA Europe Response to the RSPG Draft Opinion for Public Consultation on: Strategic Roadmap Towards 5G for Europe

31 July 2016

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About the GSMA

The GSMA represents the interests of mobile operators worldwide, uniting nearly 800 operators with more than 250 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 and the Mobile 360 Series conferences.

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1. The RSPG considers the 3400-3800 MHz band to be the primary band suitable for the introduction of 5G use in Europe even before 2020, noting that this band is already harmonised for mobile networks, and consists of up to 400 MHz of continuous spectrum enabling wide channel bandwidth. This band has the possibility to put Europe at the forefront of the 5G deployment.

The GSMA agrees that the 3400-3800 MHz band is the strongest candidate band for the introduction of 5G in Europe. However, urgent work is required across Member States to relocate other users currently operating in the band, re-plan the band from FDD to TDD, and assign the full 400MHz band for mobile use, creating the possibility of licensees operating high speed 5G services over carriers of up to 100MHz. Consideration should also be given to explore the possible extension of the band to 4.2GHz (Ofcom, for one, has consulted on this).

The harmonisation of 3400-3800 MHz in Europe and the strong support for global harmonisation of 3400-3600 GHz are both steps in the right direction. Now the spectrum also needs to be licensed to mobile operators in a timely and fair manner. The first 5G networks will likely use spectrum below 6 GHz, so this is very important. Moreover, it is key to remember that a successful roll-out of 5G in Europe can't depend on just one band. For Europe to keep up with the progress already made in Asia and the U.S a mixture of spectrum will be needed to provide the right coverage and capacity in Europe.

2. The RSPG is of the opinion that 5G will need to be deployed also in bands already harmonised below 1 GHz, including particularly the 700 MHz band, in order to enable nationwide and indoor 5G coverage.

The GSMA would like to note that new high-frequency spectrum will supplement, not replace, the continued evolution of mobile networks in lower frequencies. 5G will also require coverage spectrum to provide nationwide services. Much like current networks, sub-1GHz spectrum will be vital for wide area coverage, digital inclusion, in-building penetration and also Internet of Things applications.

The 5G standard is being designed as an evolution from 4G, and operators are likely to operate a combination of 4G/5G network layers for many years following the launch of 5G. It is vital that operators have control over how they manage the migration of customers, traffic and spectrum resources between 4G and 5G, and therefore that new spectrum is able to be used at launch for either 4G or 5G.

The progress made on the 700MHz band is encouraging, in particular for Member States like France and Germany who have licensed 700 MHz well ahead of the European Commission's 2020 deadline. The GSMA understands that there will be some variation between EU members regarding the release of the band to mobile operators. However, we urge governments to align to the 2020 date and avoid delays. Doing so will boost the economies of scale and help Europe to regain its leadership by providing ubiquitous mobile broadband for its citizens.

The GSMA also encourages policies to be future-proof especially given the rapid evolution in mobile broadband and broadcast services. To that end, the GSMA thinks that Europe needs to keep all options open for how the UHF spectrum band will be used, in particular the sub-700MHz bands. The GSMA considers the "flexibility option" initially proposed by the European Commission for sub-700MHz bands as a small step in the right direction. Allowing for genuine regulatory flexibility in a timely manner can allow Europe to keep pace with spectrum allocations in other regions.

3. The RSPG considers that there will be a need to ensure that technical and regulatory conditions for all bands already harmonised for mobile networks are fit for 5G use.

The GSMA agrees that operators should have the flexibility to choose what existing and new bands to use to roll out a wide variety of 5G services. Furthermore GSMA is of the view that progressive re-farming of existing mobile bands should be both possible and permitted to accommodate future 5G usages, as to

maximize spectrum usage efficiency; that balance between low(below 6 GHz) and high frequencies (above 6 GHz) should be explored. This "smooth transition" of the existing harmonized bands, favored by the technology neutral approach in place in Europe since May 2016, will allow to get the most benefits out of it and should be allowed without any undue regulatory burdens or fees.

30 years since the first mobile licenses were issued in Europe, it is clear that customer demand for mobile services will only continue to grow and within the limits of their investment capability, mobile operators will continue to upgrade their mobile network, to 5G and beyond, to maximise the speed, capacity and quality of services offered. The original approach of offering typically 15 years licenses was a reasonable approach while the industry was in its infancy, but now that mobile services are critical to our economy, and a pattern of constant upgrade and investment has been established and perpetuated by competition, it is time to adopt a more pro-investment approach to licensing – no less than 20 years with a strong presumption of renewal, that allow operators to optimise their investment cycles over the long term, reduce unnecessary costs and investment risk, and maximize benefits to customers over that period.

4. The RSPG stresses that there are many frequency bands above 24 GHz which are of potential interest for 5G in Europe:

- **To give sufficient guidance to industry, the RSPG will aim to identify at the earliest opportunity a suitable band to be made available in Europe. In order to do this RSPG members will prioritize the necessary work to assess what would be involved in enabling access to each candidate band in their country.**

- **In this regard the RSPG believes that global harmonisation will be essential for developing 5G.**

- **The RSPG will define the timeline for availability of other bands taking into account sharing and transition challenges, for example for mobile access and fixed services (including backhauling).**

The GSMA thinks that some direction is needed when it comes to providing clarity regarding what bands will be available for 5G above 24 GHz. An indication on the matter will be important for the industry and the creation of economies of scale. Vendors have the challenging task of integrating the technology into the attractive devices needed for 5G to take off.

GSMA is of the opinion that enhanced coordination and cooperation in Europe is key for 5G success. Global harmonization of the frequency bands, or grouping of regional frequency bands in "tuning ranges" is also key element to be taken into account.

5. The RSPG believes that considerations of bands above 6 GHz for 5G shall be limited to the bands listed by WRC-15 in order to strengthen the global harmonisation opportunities. This work should focus on the frequency bands proposed by Europe, in particular the bands 24.5-27.5 GHz, 31.8-33.4 GHz and 40.5-43.5 GHz. The RSPG intends to identify which one of these could be harmonised in Europe for early implementation.

For now, bands above 6 GHz under study for WRC-19 should be given first priority to strengthen global harmonisation opportunities. Above 24 GHz, 24.5-27.5 GHz and the 31,8-33,4 GHz are good options. These bands will have better propagation qualities as well as the possibility of synergies with the 28 GHz band, which is being considered outside Europe by countries such as the US, Korea and Japan. That may provide an opportunity for earlier 5G rollouts.

Other bands, such as 40 GHz and higher are also needed. Here we note the importance of the sharing framework being developed under ITU's TG 5/1.

The GSMA would like to note that all the mentioned bands are used, or planned to be used, for wireless backhaul in areas which do not yet benefit from fibre optics to the base station. As the 18 GHz, 23 GHz and 38 GHz bands are already heavily used for fixed links, the 26 GHz and 32 GHz bands are providing in some countries the necessary capacity to upgrade those networks to 56 MHz and 112 MHz channels; at the same time some administrations have also started the use of the 40 GHz band for point to point backhauling links. The GSMA therefore invites administrations to work out geographical sharing scenarios where these bands can remain available for wireless backhaul while being used for mobile access in very densely populated areas.

6. The RSPG will keep under review whether there is any requirement for European harmonisation measures in bands above 24 GHz before WRC-19.

Again, there is need for ambition and direction from legislators if Europe wants to be at the forefront of 5G development. The RSPG as well as regulators should work to prepare the policy environment for mobile operators and equipment manufacturers.

7. The RSPG will prepare a supplementary opinion elaborating on the implementation of this opinion taking also into account the wider RSPG work programme, in particular the working groups on IoT and ITS.

The GSMA supports the work RSPG is doing on the Internet of Things (IoT). It is an important and rapidly growing market with the potential to transform the digital economy. Mobile services play an important role in the wide area IoT market and are rapidly evolving to meet a growing array of different requirements – from smart meters to connected cars. As a result, cellular IoT is ideally placed to compete effectively with other IoT solutions and drive innovation.

However, the viability of cellular IoT is contingent on governments adopting a positive regulatory framework especially as it pertains to mobile spectrum. The GSMA's position is that:

- Regulators should adopt a service/technology neutral framework to support cellular IoT.
- Licensed spectrum is vital in order to deliver the most reliable, high quality IoT services.
- Licensed spectrum has the capacity and coverage capabilities to support IoT growth.
- International spectrum harmonisation is vital for a global, affordable cellular IoT market.
- Regulators should work with the mobile industry to support IoT in 5G spectrum planning.

ITS will require additional deployment of LTE in the 5.9 GHz license-exempt band for V2V.