



## **Huawei response to the Ofcom consultation: “Improving consumer access to mobile services at 3.6 to 3.8 GHz”**

Huawei welcomes the opportunity to comment on this important consultation on improving consumer access to mobile services at 3.6 to 3.8 GHz.

### **Consultation questions and our responses**

*Question 1: Do you have any comments on the use of the 3.6 to 3.8 GHz band by existing services?*

No comment.

*Question 2: Do you agree with our identification of a trend towards the use of mobile in the 3.6 to 3.8 GHz band?*

We agree with the trends identified by Ofcom.

We consider the band 3400-3800 MHz to be a key element in the development of 5G<sup>1</sup>, either in the form of evolutions of LTE or as 5G New Radio, for the support of enhanced mobile broadband, massive machine connectivity and real time communications for high reliability or extremely low latency applications.

We consider the availability of 400 MHz of contiguous spectrum in the C-Band to be an important element for the establishment of the highest performing 5G networks globally, both in terms of the development of a vibrant device eco-system, and in terms of facilitating the evolution of mobile networks from existing 4G technologies to new air interfaces, with the possibility of making these widely available to UK citizens and consumers cost effectively.

We also welcome the RSPG’s recent Opinion which identifies the 3400-3800 MHz band as the “primary band suitable for the introduction of 5G use in Europe even before 2020”.

*Question 3: Do you agree with our high level proposal to make 116 MHz within the 3.6 to 3.8 GHz band available for mobile and 5G services, bearing in mind our statutory duties and the high level trends we have identified?*

We agree with Ofcom’s proposal to make the 3600-3800 MHz band available for use for mobile and 5G services. The 3600-3800 MHz and 3400-3600 MHz bands have a great potential for global harmonisation for use by mobile communications networks, and have been identified by the RSPG as the primary pioneer 5G bands in Europe.

We note that 5G is expected to drive industrial and societal transformation and economic growth in Europe from 2020, with first trials in various cities across Europe from 2018 or even earlier. As such, it is critical that UK citizens and consumers can reap the greatest

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<sup>1</sup> 3GPP submission to IMT-2020 (also known as 5G) will include “New Radio of 5G” (NR), and LTE.



benefits – and as early as possible – from 5G deployments subject to minimum regulatory restrictions.

While 5G bandwidth requirements will largely depend on the specific use case and application, a key target for 5G networks will be their ability to support all 5G use cases flexibly via the same network infrastructure in an end to end manner (including air interface, transmission and core network).

We believe that European regulators should consider the great potential across the whole 3400-3800 MHz range.

It is of utmost importance that the regulatory framework for the 3400-3800 MHz range incentivizes investments from operators to deliver consistent gigabit services. In this respect, we foresee considerable investments in massive MIMO technologies whose business case will largely depend on the availability of large amounts of contiguous bandwidth per sector.

In developing the future plans for 3400-3600 MHz and 3600-3800 MHz, Huawei recommends that the minimum amount of spectrum to be available to each operator should be of the order of 80 to 100 MHz. This should be seen as an end target which could be reached in steps depending on national circumstances. We propose that this begins with the award of the 3400-3600 MHz band at the earliest opportunity.

The assignment of 80 to 100 MHz of spectrum per operator would adequately and effectively support the industrial transformations which could be achieved through wireless broadband services delivered at gigabit speeds, while minimizing the technical complexities.

As a further step, larger bandwidths can be achieved by considering the adjacent 3800-4200 MHz range.

Finally, we consider that technology and service neutrality are important cornerstones of progressive spectrum regulation; the market is best placed to decide on the most appropriate technology and service. As such, we consider that the band 3600-3800 MHz should be available for use by all 4G and 5G applications, including large-cell and small-cell network deployments, and subject to technical conditions that are least restrictive.

*Question 4: Do you agree with our general approach regarding spectrum currently licensed to UK Broadband?*

No comment.

*Question 5: Do you agree with our assumptions, methodology, and conclusions with regards to potential coexistence between mobile and existing fixed links and satellite earth stations? Please refer to annex 5 for further details.*

No comment.



*Question 6: Do you have a view on any of the two options we identified?*

We support Ofcom's "remove" option. As highlighted elsewhere, the band 3600-3800 MHz will be a critically important band for the development of 5G services in Europe, which are expected to drive industrial and societal transformation and economic growth.

As such, it is important that UK citizens and consumers can derive benefits to the greatest extent possible from 5G networks and devices whose operation is not degraded by restrictive (in geographic or frequency terms) technical conditions. We consider that this is best achieved via the proposed "remove" option.

Furthermore, when considering the options in clearing the 3600-3800 MHz band from existing users, the possibility to shift some users to the adjacent 3800-4200 MHz range should be carefully assessed, accounting for the potential social and economic benefits that 3800-4200 MHz could have for 5G in the future.

*Question 7: Do you have any quantitative evidence on the costs and benefits associated with the options? This include costs for existing users and/or consumers of existing services associated with potential changes, and benefits to UK consumers in gaining access to mobile services in this band.*

No comment.

*Question 8: Do you have any other suggestions that would allow widespread 5G availability using the 3.6 to 3.8 GHz band across the UK while allowing certainty for at least some existing users to continue to provide the benefits currently provided by use of the 3.6 to 3.8 GHz band?*

No comment.

*Question 9: Do you have any comments in relation to these proposals?*

While Ofcom considers the options for maximizing the social and economic benefits from the future use of the 3600-3800 MHz and 3400-3600 MHz bands, it might be beneficial to also consider future options for 5G in the 3800-4200 MHz range, based on sharing with existing users. We are encouraged by Ofcom's recent CFI on this topic.

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