

# Orange's response to Ofcom's Improving consumer access to mobile services at 3.6 to 3.8 GHz

Dated 1<sup>st</sup> of December 2016

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

Orange notes the limited use of the 3.6 to 3.8 GHz band, mostly by fixed satellite services (FSS). Orange believes that FSS can be serviced using other bands (e.g. Ku band) and that migration of the current users out of the band would be the most effective solution of enabling more efficient use of the band by mobile services.

*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?*

Orange agrees on the identification of a trend towards the use of mobile in the 3.6 to 3.8 GHz. Orange believes that both the 3.4-3.6GHz and 3.6-3.8GHz bands are essential for 5G deployment.

*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?*

Orange believes that the full 200MHz within the bands should be made available for mobile services .

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

Orange agrees on the general approach proposed regarding the spectrum holding licensed to UK broadband. Ideally, the band needs to allow sufficient contiguous spectrum so that services benefit from access to large bandwidths.

*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.*

We agree on the basic assumptions, methodology and conclusion with regards to potential coexistence between the different services occupying the band. However, Orange believes that the the band should be fully cleared in order to prioritize mobile services in order to maximise the potential that 5G could deliver using this spectrum and to fully remove any interference issue that might arise.

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

Orange sees Option B, removing the existing users, as a better solution in terms of spectrum management and to fully deliver the potential that 5G networks could offer. Retaining existing services in the band would limit the service experience that could be delivered by a 5G deployment.

*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.*

Orange believes that it would be possible to migrate existing services to different bands, e.g. FSS links can be migrated from the C-band to the Ku band. Orange believes that the costs of doing so would be fairly limited, for example at less than £500,000 for a large dish deployed. Based on the number of dishes in the UK, we believe the benefits that can be derived from 5G networks using all of this spectrum would far outweigh the total cost of migration.

*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 improving consumer access to mobile services at 3.6 to 3.8 GHz at least some existing users to continue to provide the benefits currently provided by use of the 3.6 to 3.8 GHz band?*

Orange believes that the most effective solution is a complete clearance of the band in order to make the full band available for mobile services across the whole of the UK. Orange believes if this is not undertaken and exclusion zones are used, it will significantly affect mobile operators' ability to deploy 5G services that match the expected customer requirements for network coverage and quality.

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

Orange believes that fully clearing the band for mobile services is the most effective option - it will allow for each mobile operator to have the potential to access the required quantity of contiguous spectrum on a national basis. Keeping existing users within the band will impact 5G deployments negatively with the consequent effects on the customer experience and the end customer and lower overall socio-economic value from the spectrum.