

Response to Ofcom's consultation:

Enabling mmWave spectrum for new uses - Making the 26GHz and 40GHz bands available for mobile technology

Prepared for

INCA

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1 Introduction

1. INCA is a trade association. Its members are supporting, planning, building and operating sustainable, independent and interconnected full fibre and wireless networks that advance the economic and social development of the communities they serve and permit the provision of applications and services through open competition, innovation and diversity.
2. INCA's aims are:
 - To support the development of the competitive digital infrastructure sector through collaborative activities
 - To facilitate networking and knowledge sharing between members, other organisations and public bodies
 - To encourage and facilitate joint projects between members that can benefit the sector as a whole
 - To represent the interests of members to government, Ofcom and other bodies
 - To support the development and adoption of common standards by INCA members to deliver the highest possible quality of services
 - To promote the advantages of competitive digital infrastructure provision and consumer choice
 - To promote the need for increased labour and skills capacity in the sector
3. INCA has more than 150 members, including: network owners, operators, and managers; access and middle mile networks; public sector organisations actively promoting the development of 21st century digital infrastructure; vendors, equipment suppliers, and providers of services that support the sector.

2 Ofcom's proposals

4. Ofcom proposes to make a large amount of millimetre wave (mmWave) spectrum available across the 26 GHz and 40 GHz bands for use on mobile technologies, including 5G. Ofcom considers that by addressing the use of these frequencies together and at an early stage of their commercial deployment, it will maximise benefits and reduce disruption to existing users of the relevant frequencies. Where licenses have already been issued in these bands, Ofcom proposes to revoke those licenses and replace them with other spectrum, giving a 5-year notice for that revocation.
5. For the 26GHz band, Ofcom has identified a number of 'high density areas' in which it proposes to assign low power local licences on a first come, first served (FCFS) basis in the lowest 850 MHz of the band, but with an antenna height restriction of 10 meters, using the Shared Access licensing framework; and to auction city-/town-wide exclusive licences for upper 2.4 GHz of the band with medium power and unrestricted antenna height conditions. Whereas in low density areas Ofcom proposes to assign local licences on a FCFS basis for all of the 26 GHz band, through the Shared Access licensing framework for both low & medium power licenses
6. For the 40GHz band, Ofcom proposes to either (a) vary existing licences to allow current licensees to deploy mobile services in the band, (b) revoke existing licences and re-allocating the spectrum alongside the 26 GHz band, or (c) combinations of variation and revocation. The existing licences have been H3G, MBNL, and MLL, but the licence terms prohibit mobile use.
7. Ofcom acknowledges that the benefits to be derived from mobile and hotspot use mmWave frequencies are as yet very uncertain.

3 INCA's views on Ofcom's proposals

8. INCA's members build networks using a mixture of technologies, including wireless and fibre. Wireless service provision is important to many of INCA's members, both as permanent and temporary connectivity solutions.
9. Ofcom's proposals for allocation of mmWave frequencies does not allow for any use of those frequencies for fixed wireless access (FWA) networks. This is despite the fact that 26GHz is the only existing means for providing FWA gigabit connectivity, and the substantial benefits that derive from FWA connections to customers - residential as well as business and urban as well as rural – where no gigabit capable networks are Available either for the time being or likely permanently.
10. Given that Ofcom is addressing the allocation of these mmWave bands together and at a relatively early stage of the scope for their commercial deployment, Ofcom can design the spectrum allocation rules to allow users continuous and (therefore) efficient spectrum packages. The combined 26GHz and 40GHz frequencies also allow ample spectrum for a variety of uses.
11. INCA is disappointed that Ofcom has not only not made provisions for FWA use of these mmWave frequencies but ¹has not even considered the benefits of such allocation before deciding to allocate the entirety of both bands to mobile and hotspot use. Ofcom mentions briefly that the allocation of 26GHz and 40GHz frequencies for mobile and hotspot use only could give rise to competition concerns with regards to the provision of FWA service but concludes that other frequencies could be used for FWA, including 28GHz, 32GHz, and 51-57GHz.

¹ Paragraph 11.14.

12. INCA disagrees with that assessment. Ofcom refers to 28GHz spectrum for FWA, but that spectrum is not available for shared access and therefore is not viable for FWA provision. 32GHz is used for Point-to-Point connections and the costing structure is not compatible with FWA provision, or it is auctioned, again not suitable for FWA. And, finally, the very short reach of 51-57GHz makes it unsuitable for FWA/BFWA wide area applications.

13. By excluding FWA providers from economically viable access to 26GHz frequencies, Ofcom is therefore preventing FWA providers from improving both speed and quality of their services.

3.1 Shared access

14. INCA believes that it could be viable for Ofcom to allow shared access to both low and medium power frequencies in a manner that allows co-existence of mobile/hotspot and FWA usage. The nature of the mmWave frequencies is such that interference between usage at different heights is likely to be minimal and Ofcom already operates other spectrum where some limited interference needs to be managed.² INCA therefore believes that a very efficient option for Ofcom would be to allow FWA access above a certain height and restrict mobile and hotspot to be low a certain height (as is currently proposed). Ofcom's current proposals would result in inefficient use of the 26GHz band as it would exclude safe and legitimate use of that band by FWA providers, despite this being possible within pre-specified usage parameters including that usage must be above a certain height.

² For example 5GHz.

3.2 Separate allocation for FWA usage

15. If Ofcom does not agree that it would be both safe and efficient to allow height-specified shared access to the entire 26GHz band, then INCA believes that it would be appropriate for Ofcom to allocate specific frequencies for shared access FWA use, without height restrictions. INCA believes that 400MHz in the low power spectrum and 400-600MHz in the medium power spectrum should be reserved for shared FWA use (i.e., not auctioned but shared between FWA providers).
16. Given the amount of spectrum remaining in the 26GHz and 40GHz bands, after allocation of frequencies for shared FWA access, there would still be sufficient frequencies for distribution between mobile and hotspot providers.

3.3 Balancing utility and benefits from spectrum allocation

17. INCA considers that Ofcom's current proposals favour mobile and hotspot providers, despite the high level of uncertainties as to the specific benefits that can be expected from the allocation of this very valuable spectrum solely for those use cases.
18. There are real tangible benefits to consumers and citizens from the provision of wireless broadband services where no highspeed/gigabit-capable wired connectivity is presently available and may never become available. These benefits are experienced by residential users as well as urban and rural business including Industry 4 applications.
19. Meanwhile, the benefits expected to result from mmWave use by mobile and hotspots are very uncertain and largely unspecified at present time. INCA does not dispute that there are likely to be real benefits from mobile and hotspot use of mmWave frequencies, but Ofcom needs to consider its primary duties to maximise benefits to consumer and citizens and in doing so it must consider the balance between real tangible (enduring) benefits from FWA deployment and much longer term and as yet unspecified and unquantified benefits from mobile and hotspot deployment.

20. Whether through managed shared access allocation or specific reservation of frequencies for FWA, accommodating FWA in the 26GHz band will not compromise the ability for mobile and hotspot providers to use mmWave frequencies. INCA simply cannot reconcile Ofcom's proposals with good spectrum management practice, nor with its primary duty to maximise benefits to consumers and citizen.