Intellect response to the Ofcom Consultation:

Future demand for mobile broadband spectrum and consideration of potential candidate bands

Agenda Item 1.1 of the World Radiocommunication Conference 2015

About Intellect

Intellect is the voice of the UK's technology industry.

We believe that a vibrant and successful technology sector is vital to the long term economic well-being of the country. Our business services help companies of all sizes compete and innovate in a dynamic global market. We represent the views of industry to government and regulators and provide opportunities for government and regulators to interact with industry on key policy and market issues. As the trade association for the UK's technology sector which includes the IT, telecoms and electronics industries, Intellect has over 850 member companies ranging from major multinationals to SMEs, which together account for approximately 10% of UK GDP. About two thirds of Intellect members are SMEs, based on the European Union definition.

Our members' products and services enable hundreds of millions of phone calls and emails every day, allow the 60 million people in the UK to watch television and listen to the radio, power London's world leading financial services industry, save thousands of lives through accurate blood matching and screening technology, have made possible the Oyster system, which Londoners use to make 28 million journeys every week, and are pushing Formula One drivers closer to their World Championship goal.

In the past 12 months 14,500 people have visited Intellect's offices to participate in over 550 meetings and 3,900 delegates have attended the external conferences and events we organise.

Response

Intellect is pleased to have the opportunity to comment on Ofcom consultation on future demand for mobile broadband spectrum and consideration of potential candidate bands for mobile allocation and IMT identification by the World Radiocommunication Conference of 2015 under Agenda Item 1.1.

The past few years have witnessed significant increases in mobile data traffic. A number of industry forecasts suggest that this trend will continue in the future. This is based on their expectation that consumers will increasingly rely on mobile broadband for internet connectivity and social networking whether delivered using public mobile networks operating in licensed spectrum or via licence-exempt WiFi in public hot spots or WiFi access to fixed broadband networks at home. Additional demand on spectrum will be made as Internet of Things and Machine to Machine communication become more pervasive during the next decade. In addition to technology enhancements and more efficient spectrum use with smaller cells, the timely availability of spectrum for mobile broadband services will be key to keep pace with this mobile data growth. For any industry there are benefits from this spectrum being globally harmonised to achieve the scale required for affordable equipment, devices and access. The future decisions of the WRC-15 under agenda item 1.1 will thus be an important element in shaping the future of mobile broadband, but the potential impact on other services in the identified bands must also be considered. While not part of the remit of this agenda item, Intellect members believe that Ofcom should not lose focus on the future spectrum requirements for other wireless applications such as emergency services and satellites. In this response, Intellect focuses on providing its views on the candidate bands and their suitability for future use for mobile broadband services in the UK and more generally in Europe.

Frequency band	Intellect Views
470-694 MHz	The future use of this band is under strategic review by Ofcom and the RSPG. Intellect sees a clear linkage between freeing up 700MHz in the UK for mobile broadband in the longer term and the consolidation and rearrangement of DTT within the remainder of the TV band (470-694MHz) preserving the current capacity of 6 Multiplexes, supporting migration to HD and the adoption of more spectrally efficient technologies. Given our interests across digital TV and mobile communications markets, there is not a common view among Intellect members on the future co-primary allocation to the Mobile Service alongside the Broadcasting Service in this band in Region 1. For our members with significant DTT interests in the UK, policy and decisions are being made on the basis of Ofcom's November 2012 statement on UHF strategy that this band will be required until at least 2030 for the linear broadcast TV service provided by the DTT platform. They have serious reservations about a co-primary allocation for mobile services on the basis that this would increase the risk of future EC harmonisation measures conflicting with the above Ofcom policy and that it could introduce unwelcome complications in relation to international coordination of stations in a re-planned broadcasting network operating in reduced spectrum. For our members with mobile broadband interests, the additional UHF spectrum represents an important source of frequencies needed to address the coverage component of the future deployment of mobile networks involving large and small cells. They believe that a co-primary allocation aligning with the two other ITU Regions, would equip the UK and other European countries with the appropriate ITU rights and frameworks to implement the future decisions resulting from the strategic review of the UHF spectrum.
1300-1375 MHz	Intellect supports the future use of this band for mobile broadband. We recognise that there may be significant usage in the UK by radiolocation services in this band, and so we recommend careful investigation into the scope for a rearrangement of the existing frequency usage (at the upper part of the band). Any existing fixed service systems in the band should also, wherever possible be migrated to Fixed Service bands above 6 GHz which is increasingly feasible given the reduced presence of long hop fixed point to point links in the lower frequencies, due to the availability of fibre.
1375 – 1400 MHz	Intellect supports the investigation of the future use of this band for mobile broadband.
1400-1427 MHz	Intellect accepts that this band cannot be made available for mobile broadband due to existing passive services use.
1427-1452 MHz	Intellect supports the investigation of the future use of this band for mobile broadband as recommended by the RSPG in its draft Opinion on Wireless Broadband. However this is contingent on certain vital existing systems being found alternative spectrum.

1452-1492 MHz	Intellect supports the future use of this band for mobile broadband the analysis for which is recommended by the RSPG in its draft Opinion on Wireless Broadband.
1492-1518 MHz	Intellect supports the future use of this band for mobile broadband. Any existing fixed service systems in the band should, wherever possible, be migrated to Fixed Service bands above 6 GHz which is increasingly feasible given the reduced presence of long hop fixed point to point links in the lower frequencies, due to the availability of fibre.
1518-1559 MHz	Intellect does not support the use of this band for mobile broadband due to extensive and planned MSS use.
1626.5-1660.5 MHz	Intellect does not support the use of this band for mobile broadband due to extensive MSS use.
1668-1675 MHz	Intellect does not support the use of this band for mobile broadband due to planned MSS use.
1695-1700 MHz	Intellect supports further studies into the use of this band for mobile broadband, subject to coordination and protection of the meteorological services, and, noting that 1700 - 1710 MHz is already allocated on a co-primary basis to the mobile service.
2025-2110 MHz 2200-2290 MHz	Intellect supports the use of these bands for mobile broadband, in particular 2090 - 2110MHz and 2200 - 2215MHz.
2700-2900 MHz	Intellect would support further investment and re-planning of current radars in the band in order to achieve greater spectrum efficiency and release. This approach is likely to yield better and faster results for all stakeholders than any coexistence/sharing strategy. The position of this spectrum adjacent to 2500-2690 band offers particular synergies for the mobile sector scope lower part
3400-3600 MHz	Intellect supports the use of this band for mobile broadband on a shared basis with the FSS in line with the Commission Decision 2008/411/EC and without prejudice to the protection and the continued operation of existing FSS use in the band or to continued operation of radiolocation and other services in 3400-3410.
3600-3800 MHz	Intellect supports the use of this band for mobile broadband on a shared basis with the FSS in line with Commission Decision 2008/411/EC and without prejudice to the protection and the continued operation of existing FSS use in the band.
3800-4200 MHz	Intellect members have conflicting views on this band, with some supporting the future use of this band for mobile broadband on a shared basis with FSS the analysis of the scope for which is recommended by the RSPG in its draft Opinion on Wireless Broadband. Others oppose the use of this band for IMT services due to the criticality and extensive use for FSS applications in Europe and throughout the world in this band (as explained in the draft RSPG Opinion on Wireless Broadband),and the technical incompatibility revealed in studies between FSS and MS operation in the same geographical area,
4400-4500 MHz	Intellect supports studies for the use of this band for mobile broadband.

4500 – 4800 MHz	Intellect members have conflicting views on this band, with some supporting studies for mobile broadband and others opposing the use of this band for IMT services due to its use by FSS networks subject to the RR Appendix 30B plan.
4800 – 4900 MHz	Intellect supports studies for the use of this band for mobile broadband.
5350-5470 MHz	Intellect supports the future use of this band for RLAN.
5850-5925 MHz	Intellect supports studies into the future use of this band for RLAN. Its use for FSS uplinks must be protected. This band is a candidate harmonised band for DA2GC systems under study in CEPT.
13.4 – 39.5GHz bands	Intellect is aware that mobile broadband market expectations are driving intensive well-funded research programmes that are increasing the pace of technological innovation in services, applications and devices. These developments will continue to place unrelenting pressure on the radio spectrum resources required to deliver the wireless broadband services that will drive the social and economic benefits for UK consumers and businesses in 2020 and beyond. There is growing interest in the possibility of using higher frequency bands to accommodate wider mobile system bandwidths that can efficiently deliver very high data rates. Considering the long lead time involved in preparing the radio spectrum framework to realise these developments, it is proposed that Ofcom carefully considers a roadmap towards mobile applications in the higher frequency bands including the implications in the context of the WRC, but ensuring that existing and future use of the band by existing applications is safeguarded.