Intellect response to the Ofcom Consultation:

Securing long term benefits from scarce spectrum resources

- A strategy for UHF bands IV and V

About Intellect

Intellect is the trade association for the UK technology industry. In 2007, the industries Intellect represents accounted for 8% of UK GDP, £92bn of Gross Added Value and employed 1.2m people.

Intellect provides a collective voice for its members and drives connections with government and business to create a commercial environment in which they can thrive. Intellect represents over 750 companies ranging from SMEs to multinationals. As the hub for this community, Intellect is able to draw upon a wealth of experience and expertise to ensure that its members are best placed to tackle challenges now and in the future.

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

Executive summary

Intellect has long urged Ofcom to take a long term strategic approach and roadmap on spectrum and so welcomes this timely consultation on the future strategy for bands IV and V. We are pleased to contribute the views of its members on the key issues that are of concern and interest. The position of intellect is summarised as follows:

1. Demand for mobile broadband is increasing at a fast pace. Without a suitable mix of spectrum in sufficient quantities, the associated economic benefits for the UK could be jeopardised. As a sub-1 GHz band, the 700 MHz band has very desirable coverage characteristics for new mobile services that allow it to complement other bands. We recognize that, as noted in the consultation, WRC 2012 agreed to the allocation of the band for mobile services (co-primary with Broadcasting) coming into force in ITU Region 1 in 2015.

2. At the same time, the DTT platform is highly valued by UK consumers with about three quarters of UK homes using DTT and 40% of UK homes relying on this platform as their main source of TV delivery. Any long term plan that ultimately facilitates access for mobile broadband services in 700 MHz band would need to preserve the existing DTT platform capability and enable its future evolution.

3. Intellect agrees that any long-term re-plan of the DTT platform must as a minimum preserve existing multiplexes to provide the benefits expected by viewer who continue to use this platform. The need to examine how a timely migration to more efficient technology (DVB-T2/MPEG 4) could be achieved with minimal impact on consumers as part of any re-planning exercise is also worthy of investigation. This could yield significant increase in spectral efficiency and programme capacity.

4. In this context, we also welcome the recognition by Ofcom that the 600 MHz band is crucial to the long term future of the DTT platform and we encourage Ofcom to allocate this spectrum to broadcast services as soon as practicable. To this end we believe that the 600 MHz spectrum has a critical role to play in the transition of the platform to DVB-T2 services. An early deployment of DTT services in the 600 MHz band may also result in some of the costs of clearing the 700 MHz band (eg. DTT network transition, household aerial upgrades, consumer device changes, co-ordination & communications plan) being reduced and make the transition more efficient and less disruptive.

5. Intellect sees TVWS spectrum use as a valuable complementary use to TV broadcasting that will significantly enhance the overall spectrum efficiency in the band. Intellect supports the introduction of TVWS systems via geolocation and a database system across the full band, providing they do not cause interference to DTT services, PMSE equipment, or mobile services in neighbouring bands. Ofcom should not however seek to introduce other alternative services in the 600 MHz band beyond these on a short term basis, as this will offer no tangible benefit and may actually compromise the 600 MHz spectrum for its long term licensed and co-ordinated use which is DTT.

6. It will be important to plan the release of 700MHz mobile spectrum in a timeframe that is timely and realistic in terms of demand for mobile services taking account of the release of other bands and in terms of how disruption and costs to DTT platform providers and DTT consumers can be minimised and efficiency gains via migration to new technology can be realized.

7. Additionally, there is an international effort underway to find spectrum for Public Protection and Disaster Relief spectrum below 1GHz, including study work in CEPT FM.49. A part of the UHF band IV and V would be suitable for this purpose. The timing of this release has important implications for the success of the Home Office led Emergency Services Mobile Communications Project.

8. Intellect brings together a diverse range of companies involved in digital communications including those with fixed and mobile telecommunications, DTT, and emergency services radio interests. While all agree that the planning for the change in allocation of the 700 MHz band should begin immediately, there is a diverse range of views on the desirable timeframe for the clearance and release of the band for mobile services. Depending on the business focus of our member companies, views vary from 2018 (or sooner) to 2025 for the release of the band. Also while, some feel that the cost / benefit case for the switch over of the band to mobile services is very clear, others feel that Ofcom should develop a more rigorous case.

Answers to the questions

Question 1: Do you agree that meeting the future growth in demand for mobile broadband capacity will deliver significant benefits to citizens and consumers?

Yes, this is an important application that is valued by consumers and demand is growing rapidly. There are many options to deal with this including: more spectrum across many potential (and preferably harmonised) bands; use of more efficient technologies; offload of traffic to WiFi; and network architectures with smaller cells. However, spectrum below 1GHz will be important to provide the ubiquitous broadband coverage increasingly expected by consumers. In addition to consumer use of spectrum directly, the professional use of broadband technologies by government and emergency services will enhance their operational efficiencies, and this in turn brings benefits to society and to the economy.

Question 2: Do you agree that additional harmonised mobile broadband spectrum will play an important role in meeting the future growth in demand for mobile broadband capacity? What are your views on the overall quantity of harmonised spectrum that will be required to meet future demand? How does this compare with the expected increase in spectrum for mobile use discussed in this section?

ITU forecasts suggest that more spectrum is needed to meet foreseen demand in mobile network capacity and the EU Radio Spectrum Policy Programme has recognised the need to find more spectrum both for mobile networks and for PPDR use. Intellect agrees that additional harmonised spectrum is an important part of the solution but has not performed any independent assessment to quantify this requirement (which inevitably comes down in part to the costs of more spectrum relative to other applications listed in our response to Q1). Harmonised allocations across many countries are especially important as this provides the necessary market sizes to generate the economies of scale, and roaming.

Question 3: Do you agree that additional harmonised spectrum provided by the 700 MHz band could play an important role in meeting the future growth in mobile broadband capacity?

We agree that the 700 MHz band, with its sub 1 GHz coverage characteristics, would play an important role in meeting the future growth in mobile broadband capacity and the increasing expectations of consumers for ubiquitous broadband coverage . Intellect sees the band as one of a number of candidate additional bands for mobile (e.g. 800MHz, 2600MHz, 2300-2400MHz, 3400-3600MHz) with differing characteristics depending on frequency, and notes that licence-exempt spectrum (2.4GHz, 5GHz, TVWS) are also relevant.

Question 4: Do you agree that the value of the role played by the 700 MHz band in meeting the future growth in mobile broadband capacity would be greater if it becomes available before other capacity enhancing techniques have been exhausted at existing mobile sites?

Intellect believes that in order to meet the capacity and coverage demands, both this band and other capacity enhancing techniques need to be brought into play as soon as possible.

Question 5: What timing of 700MHz release would maximise the benefits associated with its use for mobile broadband?

It is likely that the timing will be driven by EU harmonisation measures, as was the case for the 800MHz band. Views among our member companies on the preferred timescales for release vary from ‘as close to 2018 as possible’ to a 2025 timeframe.

Question 6: Do you agree that DTT will continue to play an important role in providing universal low cost access to PSB content over at least the next decade?

Yes, Intellect sees the continuing availability of an attractive DTT platform as critical for UK consumers, as long as it provides significant and distinct benefits. This includes the 40% of homes that currently use DTT as their main means of TV delivery and the three quarters of UK homes that make use of the DTT platform.

Intellect also notes that in figure 9 of the consultation the figures for 2011 do not sum to 100% and it would be helpful if the reason for this could be clarified.

Question 7: Do you agree that, absent major changes in available spectrum, DTT would continue to remain attractive to viewers and deliver important benefits to citizens and consumers over at least the next decade?

Yes, UK consumers have made considerable investment in DTT technology and they will expect this platform to remain attractive over the lifetime of this equipment. The introduction of HD programmes on DTT illustrates how the platform has evolved to bring additional benefits to consumers and there is scope to further enhance the DTT platform over the next decade.

Question 8: What are your views on the future technical evolution of the DTT platform? Are there other relevant factors affecting future DTT spectrum requirements that we should consider as we develop an approach to secure benefits from UHF band IV and V over the long term?

Ofcom should consider how introduction of new more efficient DTT technologies can be introduced in a timely manner as part of the plans for the band and the re-planning exercise if 700MHz is cleared for mobile. This must be done in a way that does not lead to significant additional costs and disruption to consumers.

Question 9: Do you agree that a longer term approach to secure benefits from UHF band IV and V should consider how to safeguard benefits delivered by the DTT platform?

Yes, it will be important to safeguard availability of the DTT platform, particularly in the short and medium term. However, the timeframe of this consultation is very long and it is impossible to predict reliably the pace of the developments in DTT described in the consultation document and the related ZetaCast report. Ofcom therefore needs to monitor the progress of developments. Ultimately Intellect agrees that programmes may be satisfactorily delivered over superfast broadband in the timescales that Ofcom has indicated.

Intellect notes that the growth of in-home multi-media communications may reduce the usage of DTT for 'second sets' in households that use a different platform for their main set.

Other uses of UHF bands IV and V

Question 10: Are there other material factors affecting the future requirements of PMSE that we should consider as we develop an approach to secure long term benefits from UHF band IV and V?

With the increase in complexity of programme productions, there will be even more demand for access to interleaved spectrum. We agree that digital systems can provide spectrum efficiency gains for multichannel systems and are less susceptible to adjacent channel interference. The PMSE industry may be concerned about more dense use of the remaining 470 – 694MHz spectrum. Ofcom should look into the possibility of additional spectrum above 1 GHz for use by the PMSE community. This needs to be made available soon, so that PMSE users can migrate to the new spectrum over the natural replacement cycle of their equipment.

Question 11: Are there other material factors affecting the future requirements of Local TV that we should consider as we develop an approach to secure long term benefits from UHF band IV and V?

The interest in local TV seems very uncertain at this point and Intellect sees no need to make any special provisions.

Question 12: Are there other material factors affecting the future requirements of WSD applications that we should consider as we develop an approach to secure long term benefits from UHF band IV and V?

Intellect supports Ofcom's plans to introduce TV White Space systems (TVWS) based on geolocation and a database system, recognising that this is a secondary use and therefore needs to be done in a way that fully protects licensed services. Plans for TVWS should be made taking due account of what might be needed by DTT to preserve and enhance the service as a result of release of 700MHz.

Question 13: Aside from WSDs, are there other innovative ways in which to use UHF bands IV and V to deliver services and, therefore, material benefits to users

Mobile networks provide substantial benefits to users through innovation in services and applications, as well as innovation in the network itself.

Question 14: Are there other material factors affecting the future requirements of emergency services applications that we should be aware of as we develop an approach to secure long term benefits from UHF band IV and V?

There is a proven need for additional spectrum to support broadband communications for use by the Emergency Services, Government and Critical National Infrastructure providers. A harmonised allocation below 1GHz is necessary to provide an economic network solution, and the 700MHz spectrum seems suitable as discussed in previous responses. The Home Office-led Emergency Services Mobile Communications Project is examining possible new technologies for deployment in the 2016-2020 timeframe, and timely availability of suitable spectrum would allow this project to be successful.

Question 15: Do you agree that the approach that is most likely to secure significant benefits from UHF band IV and V over the long term is one that enables the release of the 700 MHz band for mobile broadband whilst also ensuring the role of the DTT platform is safeguarded?

Yes, a solution based on option 3 seems the best approach.

Question 16: Do you believe there is a material risk that the DTT platform will have insufficient spectrum to continue to deliver important benefits (including providing universal low cost access to PSB content) if the 600MHz band is not used for DTT after clearance of the 700 MHz band?

Yes, it is important that 600MHz is made available for DTT as part of the re-planning of DTT in the event that 700MHz is to be cleared in the longer term.

Question 17: Do you believe that using the 600 MHz band for DTT after clearing the 700 MHz band would reduce the risk that the DTT platform will not be able to continue to provide important citizen and consumer benefits?

Yes. It will be important to maintain and preferably improve the capability of the DTT platform to provide the benefits expected by viewers using this platform.

Question 18: Do you agree that the future benefits for citizens and consumers of enabling the release of the 700 MHz band whilst maintaining the role of DTT are likely to outweigh the loss in benefits of the 600 MHz band not being able to be used for other services in the long term?

Please see Para 8 of Executive Summary.

Question 19: Have we identified correctly the possible short-term uses of the 600 MHz spectrum? Are there other short-term uses we should consider?

Yes. Intellect members are not aware of any short-term uses that have not been considered.

Question 20: Which option(s) for releasing 600 MHz in the short term would maximise its value whilst supporting our proposed longer term objectives?

We support the view that the UK should considersome access to the 550 – 606 MHz for PMSE and should enable the deployment of TVWS on an interleaved basis in the 600 MHz band. This is on the basis that the eventual use of the band for DTT is not compromised.

Question 21: Do you agree that the wider impacts of a future change of use of the 700MHz band could be managed to prevent them having a detrimental impact on consumers and the services operating in this band?

A long-term plan to release 700MHz would enable the problems encountered in clearing 800MHz for mobile to be mitigated as DTT receivers could be developed with better receiver performance, in the knowledge that the change is coming when the band is harmonised on a European basis.

Question 22: Do you agree that the approach set out in this consultation is likely to secure significant benefits for citizens and consumers over the long term?

Yes, the approach of Option 3 seems sensible but timescales need further consideration in order to maximise the overall benefits to citizens and consumers using the DTT platform and mobile broadband, with minimum disruption and costs to DTT viewers.

Question 23: Have we correctly identified the main areas of future work that could follow this consultation process subject to its outcome?

Yes

End