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techUK response to Ofcom document

Fixed Wireless Spectrum Strategy

consultation on proposed next steps to enable future uses of fixed wireless links

31 January 2018

Introduction

About techUK

techUK represents the companies and technologies that are defining today the world that we will live in tomorrow. In a very real sense techUK represents the future.

At the heart of tech in the UK is an ecosystem of 270,000 companies producing digital technologies, products and services. From east to west, north and south, from enterprise class organisations to established medium-sized businesses, growing small businesses and an exciting generation of tech start-ups: the UK is a hotbed of tech talent and techUK exists to represent the sector in its entirety.

Our role as techUK is to ensure that we seize the potential for good and address the disruptive new challenges that change and innovation always present. We work to understand the opportunities that technology provides; to support the companies and innovators that can realise those opportunities.

This underpins our simple vision to ensure that tech is good for the UK, the UK is good for tech and that tech is good for people.

techUK has been facilitating the UK Spectrum Policy Forum (http://www.techuk.org/about/uk-spectrum-policy-forum) which has published a report on the 11th of July "Authorising 26 GHz and/or other millimetre-wave bands for 5G use" – July 2017.

techUK response to the consultation

Introduction

techUK members make extensive use of existing fixed links spectrum and are interested in how the regulation of bands in use today may change and in new spectrum bands that are not yet available.

Many of our members with interests in fixed wireless links have participated in recent relevant debates within UK Spectrum Policy Forum, including workshops where issues concerning bands above 50GHz have been debated, and where flexible spectrum access requirements have been. This techUK response reflects many of the views and some conclusions from the Spectrum Policy Forum discussions.

Our comments in response to the consultation questions are provided below.

techUK response to the consultation questions

Question 1:

Do you agree that we have identified the key drivers likely to have a significant impact on the spectrum demand for fixed wireless links? If not, please provide further detail and evidence to support your answer.
Do you have other comments to make/points to raise with us on these issues?

Yes, the consultation correctly identifies the main drivers for future demand for fixed links. The requirements of 5G backhaul including for dense networks of small cells have

been discussed in the UK Spectrum Policy Forum and are one important area that Ofcom should consider.

Question 2:
Do you agree with our conclusions on spectrum implications and our proposed strategy/next steps for each band?
Are there any other considerations of significance that you feel we should have included or do you have other comments to make/points to raise with us on these issues?
Please provide as much detail as possible to support your answer.

techUK is in agreement with Ofcom's analysis and conclusions for each of the fixed link spectrum bands as set out in the table within the consultation document.

However one further point we would like to highlight which is not mentioned in Ofcom's analysis, is that currently in the UK, there are approximately 121 registered FS links in the 14.25 - 14.5 GHz band. These numbers reflect the relatively low use of the band by FS stations. In addition, since the 14.25 - 14.5 GHz band is closed to new assignments for FS links, the absolute number of links will gradually decline over time. It should also be noted that the 14.25 – 14.5 GHz band is not used for the FS stations across the majority of European countries, where satellite earth stations are deployed on an uncoordinated and ubiquitous basis.

Ofcom could perhaps consider to what extent these links constrain satellite deployments and whether it is justifiable and feasible to organise migration of these limited FS links from this band.

Question 3:
Do you agree with the items we've identified for further consideration? Are there any other significant areas that you believe should be included? If so, please include all necessary evidence to support your view.

techUK agrees with the items that Ofcom has identified for further consideration. However as mentioned in Q2 above there was a survey conducted by CEPT in October 2016 indicates that from the 25 CEPT administrations that responded to the questionnaire on, only five (5) administrations have FS links deployed in the band 14.25 - 14.5 GHz. These administrations are:

Country	Number of FS deployments
UK	121 FS links
France	141 FS links
Germany	< 50 FS links
Russia	30 FS links
Italy	1089 FS links

In the countries listed above, the 14.25 - 14.5 GHz band is not opened for ubiquitous use of uncoordinated FSS and MSS earth stations, thus limiting the potential growth and use of this band by FSS and MSS operators.

Question 4:
Do you agree with our proposal to change the authorisation regime in the 64 – 66 GHz band to licence exempt to create a common authorisation approach across the 57 –

66 GHz band for fixed outdoor installation use and that this would be a benefit to UK citizens and consumers?

techUK emphasises the need to provide both licensed and licence exempt spectrum so that operators can select bands most suited to the requirements of particular applications. Recognising that other licensed bands are available in the higher mmWave range, and the potential to make available new bands above 100GHz, making the full range 57-66GHz licence-exempt with a common authorisation approach seems reasonable, especially given lack of use of 66-64GHz on a light-licensed basis to date.

Question 5:

a) Do you agree with the proposed new technical conditions in Table 6 to facilitate equipment intended for fixed outdoor installation in the 57 – 66 GHz band? Please provide evidenced views /alternatives if you disagree with our proposal. Do you consider any additional conditions should be mandated as part of a licence exemption to manage the interference environment?

techUK has no comments to raise on the proposed new technical conditions.

b) Do you agree with our assessment that the proposed changes in technical conditions will have minimal impact on existing use and are appropriate to manage the future outdoor interference environment?

techUK has no comments to raise on Ofcom's assessment.

c) Are there likely to be any fixed outdoor installation use cases that will require operation at eirp levels above 55 dBm? If so, please provide evidence of how the coexistence with the different outdoor users could be ensured?

techUK has not identified any such requirements.

Question 6:

a) What are the use cases and technical parameters envisaged for the 66 - 71 GHz band? Are they likely to be similar to those in the 57 – 66 GHz band? If so, what are your views on extending the same or similar technical conditions as described above for the 57 - 66 GHz band (both existing wideband data transmission (SRD) and new fixed outdoor technical conditions) to the 66 – 71 GHz band to facilitate both fixed and mobile use cases.

b) Please provide your view on whether the technical parameters of wideband data transmission (SRD) as shown in Figure 4 are suitable to facilitate mobile/portable equipment including use outdoor? If you do not consider they are suitable, what alternative technical parameters do you think should be considered?

Please provide as much detail to your answer as possible and your considerations on the co-existence aspects.

techUK recognises the interest in the 66 – 71 GHz band for future 5G and agree that it is likely to be suitable for licence-exempt use. techUK agrees that the technical parameters could be similar to those of the adjacent licence-exempt bands.

The 66 GHz band, in particular, is considered very good prospects for international harmonization for 5G terrestrial mobile services, given the limited existing and planned use of this band by other radio services.

Question 7:
Do you agree that there is a continued need for future low capacity fixed link applications?
If so, please provide information to support your view and what alternatives you would consider appropriate should the upper 1.4 GHz band no longer be available.
Please provide clear evidence to support the reasons for your views.

techUK has not come to a view on this matter, but notes some members operate existing links within the 1.4GHz band and have an interest in continued access to spectrum suitable for such narrow band longer range links.

Question 8:
Do you consider there is merit in considering making the bands 52 GHz and 55 GHz available under alternative authorisation approach(es)such as block assignment? If so, what would you consider to be the best approach(es)? Please provide detailed views to support your response.

techUK has no position on this question.

Question 9:

Do you think we should review our authorisation approach to any other band used for fixed wireless links?

techUK has not identified any changes to the authorisation approach of any other existing fixed link bands. One issue that has been discussed in the UK Spectrum Policy Forum is the desirability of significantly reducing the time taken to authorise fixed links (issue licences). The statutory target of 42 days is quite long compared with the requirements to rapidly roll out networks and is arguably more relevant to the past than the present era of modern spectrum management with sophisticated computer tools for interference coordination and licencing. techUK members (and the UK Spectrum Policy Forum) see benefits in online licensing with rapid decisions and would encourage Ofcom to explore what may be possible, both for existing fixed links bands as well as future bands under consideration. Rapid authorisation of spectrum use will be increasingly important as 5G networks are rolled out, with potentially large numbers of cells being deployed in the future as network densification occurs.

Question 10:
a) How do you envisage W band and D band will be used for mobile backhaul provision and the likely timescales? Please provide as much detail as possible on deployment scenarios and whether this would include indoor use. Are there any other types of applications (other than mobile backhaul) that could be suited for these bands?

Within the UK Spectrum Policy Forum discussions as well as other groups (such as ETSI), the importance of W band and D band for future networks has been identified. These very high mmWave bands could support extremely high capacity transmission and could be important for future mobile network infrastructure. It is important that the authorisation regime is devised at an early stage and innovation and exploitation of these bands is encouraged. The timescales will to some extent depend on how soon the bands are available and the authorisation arrangements.

b) What are your views on the most appropriate authorisation approach for the W and D bands? Please provide as much detail and technical evidence as possible in your answer.

techUK considers that for W-band assignments need to be confirmed rapidly so that the spectrum could support rapid deployment of networks. This suggests that licences should be granted with an online application system with licences agreed in principle instantly and confirmed/issued within a few days. This would support rapid planning and deployment of systems.

techUK considers that for D-band, where very large bandwidths are available and multiple operators can easily be accommodated, block allocations should be made available if requested as this would encourage innovation and facilitate rapid deployment of networks.

Question 11:

Which capacity enhancing technique(s) are you using or planning to use? Please provide detail / evidence and clearly explain why and how each technique is planned to be used and if you consider there are any other aspects that should be considered.

techUK has no evidence to provide on this question.