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Date: 19-March-2021

From: Ian Marshall

Re: RSPG21-014 Draft RSPG Opinion on a Radio Spectrum Policy Programme (RSPP).

Dear Sirs,

On behalf of CommScope, we are pleased to be able to contribute to your recent consultation on "RSPG21-014 Draft RSPG Opinion on a Radio Spectrum Policy Programme (RSPP)". The following are our answers to selected parts of this consultation that are of interest to CommScope. Please feel free to contact us for further information relating to either the answers below or further information on related topics should you require.

Section 2.1: CommScope supports the broad concept of "*use-it-or-share-it*" as a valuable policy in ensuring that spectrum is used to its maximum benefit. To promote this policy, we would encourage the Commission and Member States to include time related "build-out" and coverage requirements in spectrum licences. We would also note that this is not an issue solely related to block licences commonly used for wide area cellular networks, but is also seen in specific licences as used for point to point links in highly sought-after locations, where "paper licenses" have been used to block competitors from gaining access to spectrum. Furthermore, "paper licenses" will also impact the ability of database solutions to fully manage spectrum sharing as these may cause spectrum to be unused in areas of high demand through the application of erroneous data.

Whilst we would agree that geolocation has a part to play in spectrum sharing, it should be remembered that it also has its limitations, especially for indoor devices. We are concerned that too high a reliance on geolocation may be translated into a requirement for indoor devices (many of which are low cost) to be equipped with additional external antennas and/or external sensors in order to enable reception of GNSS signals. In our view such a solution would be disproportionate and other solutions should be preferred.

Additionally, for databases to be a successful tool, there must be a high level of confidence over the completeness, accuracy and security of the information contained. For example, a database with a large number of redacted entries ultimately will compromise the efficiency of the spectrum sharing regime for which it supports. Equally, users must have the confidence that details of a confidential nature are secure.

Finally, CommScope believes that the use of guard bands as a spectrum sharing tool should be actively discouraged except for exceptional circumstances, e.g. protection passive bands. Guard bands are wasteful of what is a valuable resource and are often indicative of poor network design and/or receiver specification on the “victim” side. One means of discouraging the use of guard bands would be for RSPG to encourage member states to place the monetary cost of the spectrum wasted by the use of guard bands upon the requester of the guard bands.

Section 2.2: Historically many member states have used auctions to award spectrum to operators. Whilst this process has been largely successful in providing national coverage in the sub 3 GHz bands, we do not believe the auction process is the ideal tool for higher frequency bands, such as mmWave, and local licensing (including private usage by verticals) scenarios. We also believe the award by auction process has produced questionable results in the 3.4-3.8 GHz bands where full national coverage is now seen by many as too expensive to achieve and may never happen in a number of member states. Propagation characteristics at higher frequencies mean that to provide large area blanket coverage, a large number of base stations are required, impacting the economics of network roll out especially in areas where only one operator has access to the spectrum, often in rural areas. Furthermore, the nature of the auction process sees the same small number of operators bidding for licences across the European Union, thus preventing new innovative entrants that are better placed to serve local and/or specific needs.

Section 3: CommScope welcomes the RSPG recognition that “wireless access systems (such as Wi-Fi)” are integral to moving forward in providing a comprehensive solution to the provision of innovative solutions and services to European citizens. Bearing this in mind, CommScope believes that it is of the utmost importance that the EC (and CEPT) do not support an IMT identification for the 6425-7125 MHz Band (a.k.a upper 6 GHz band) at WRC-23. IMT identification has always been the first step for spectrum to become the exclusive use of fully licensed IMT based cellular services to the exclusion of other, potentially more affordable, alternatives. On the other hand, licence exempt wireless access services (e.g. Wi-Fi) have proven themselves to be the solution of choice for many European citizens when they arrive at hotels, conference centres, airports, shopping malls etc in addition to in-home usage. However, this growing demand, both in numbers and new higher bandwidth services (e.g. High Definition real time video such as VR) mean that these licence exempt services also require more spectrum. As ITU Region 1 is the only region to be considering IMT for the 6425-7125MHz band we would encourage both the European Commission and member states not to support IMT identification in this band, but to align with other ITU Regions so that European citizens can benefit from the same services that their counterparts in the US, South Korea etc will soon be enjoying. Furthermore should the 6 GHz band be split between licence exempt below 6425 MHz and licenced IMT above 6425 MHz there will be a considerable risk to the potential within Europe for the deployment of future WLAN technologies such as 802.11be, which will support channel widths of 320 MHz.

Section 3.1: CommScope agrees that mmWave spectrum will be needed for verticals. However, this should not be at the expense of granting access in other bands where capacity allows. It is worth noting that current vertical needs have largely relied upon existing equipment ecosystems using 4G LTE (and 5G emerging) -e.g. local licensing in France, Germany, Netherlands, and CBRS in the US. Growth in both the take-up of local licensing in Germany and the Netherlands, and CBRS is assisted by an existing equipment ecosystem as the spectrum in use is shared with the wider 3.4 – 3.8 GHz bands used globally by 4G LTE and 5G NR. Unfortunately, in bands where this isn’t the case it will take time for an equivalent equipment ecosystem to emerge especially if the allocated spectrum is not a widely (ideally globally) harmonised frequency range. Growth in IoT (Industrial, Enterprise, and

Agricultural) applications is also expected to be a major driver especially in high security applications where existing licence exempt spectrum used by short range devices may not provide sufficient security for some applications/users.

Section 3.3: CommScope agrees that the transport sector will see a major growth in the use of radio technology and thus spectrum, but growth in the use of radio technologies with this sector also brings with it unique considerations that impact spectrum sharing. One such consideration is the relative life cycles of the various components of the transport infrastructure. In terms of major public transport (i.e. excluding private motor vehicles) it will become increasingly important to consider the lifespan of the radio equipment separately to the host, e.g. a train/ship/aircraft may have a life of 40+ years determined by such considerations as metal fatigue etc, but it would be very inappropriate to regard any radio equipment installed as having a similar 40+ years life, especially taking into account the pace of evolution of radio technology and thus its ability to effectively and efficiently share spectrum many years after its original design. In this situation, CommScope would encourage both the Commission and member states to move to a situation where the radio equipment is regarded as a regularly upgradable and/or replaceable item and treated accordingly. This may also mean a change in the approach to certification regimes within the transport sector when dealing with radio equipment. More importantly it would mean that spectrum sharing and adjacent band considerations for such applications keeps pace with technology evolution in other sectors.

Section 4.4: CommScope welcomes RSPG view that the time gap until ETSI Harmonised Standards are available should be shortened. However, we note that despite a reduction in the public enquiry time period, the overall time taken for the approval process (i.e. time between end of drafting and citation in the OJ EU) to be completed has lengthened considerably owing to extra process steps introduced at the behest of the DG GROW. These additional process steps include the HASTAC Consultant comment phases, of which there are up to three, with each taking 35 days, and a final assessment by the RED desk officer which takes place after the standard has been published by ETSI. It is this final review that is of greatest concern as it is increasingly negating decisions taken during the HASTAC review process, itself undertaken by individuals trained by and appointed on behalf of DG GROW. It is becoming apparent to many involved in the standards drafting process that time could be saved by dispensing with the HASTAC reviews as they appear to have little value if decisions taken as a result of such reviews are to be regularly over-ridden. Furthermore, whilst we accept that DG GROW may have opinions on the draft standard, the most appropriate time for the submission to ETSI of these opinions is during the public enquiry phase of the approval process as this would enable a full and thorough review of these opinions along with those from the NSO's leading to the potential revision of the draft as part of the recognised approval process without adding to delays in citation.

CommScope also agrees that receiver specifications are a part of ongoing spectrum management. However, care must be taken that they remain proportionate to the envisaged equipment and services under review. If such specifications are too onerous then innovation may be restricted, and the introduction of new services may in the future be restricted to high cost applications and a restricted number of users as opposed to empowering the ordinary citizen/consumer. This is an inherent danger of a "one-size fits all approach" to specifying receiver parameters and in reality, does not work. The idea that because "system X" specified a particular parameter as essential and set a particular value for that parameter, so should "system Y" is too a simplistic approach. What is needed is an approach that judges every product group, and thus standard, on its merits and is dependant only upon the specific consideration of both shared (in-band) and neighbouring (adjacent

band) services (current and known future) in the particular spectrum under consideration. It is also worth remembering the principle of proportionality that underpins European regulation and that over specifying any technical parameter(s) in regulation or Harmonised Standards will negatively impact innovation and thus the availability of new services and equipment for European citizens compared with other regions.

Section 6.2: CommScope notes with interest the inclusion of the “Green New Deal” principles in this opinion. However, we notice the lack of consideration to the impact of the sourcing of raw materials (mining spoil and pollution etc) for the components used in the equipment impacted by this opinion, and also the impact of increased electrical waste caused by the phasing out of legacy services and equipment in cases where they continue to provide a valuable and necessary service to the users and thus still have a useful life.

Section 6.5: Across the European Union, the pandemic saw a massive increase in teleworking, home schooling, remote medical consultations etc. All of this was only possible due the infrastructure already in place and the ability of ordinary citizens to access reliable broadband services. However, it should be remembered that the vast majority of this was enabled by a combination of high bandwidth “wired” infrastructure to the home/office supported by licence exempt wireless LANs infrastructure within the home/office. CommScope believes that the continuing roll-out of high capacity fibre to the home, or as an interim step fibre to the kerb supplemented by short distance high capacity xDSL services is paramount along with the allocation of the 6425-7125MHz band to licence exempt wireless access services is key to building a more resilient and connected European society better able to withstand any such future similar events.

Sincerely,

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CommScope

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