

ESOA response to RSPG Consultation on “Additional spectrum needs and guidance on the fast rollout of future wireless broadband networks”

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1. Introduction

ESOA welcomes the opportunity to provide comments to the RSPG opinion in the context of its additional spectrum needs of future wireless broadband networks.

ESOA appreciate that the commercial launch of 5G in Europe has started and the RSPG is seeking further information before it investigates if there is a need for additional spectrum, taking due account of the WRC-19 results.

The response below from ESOA aims to address this question as well as other issues that have come out from the recent RSPG survey on additional spectrum needs, 5G Rollout, Authorization and EMF related Issues.

ESOA is aware that the role of the Radio Spectrum Policy Group (RSPG) is to assist and advise the European Commission on radio spectrum policy issues. This includes advice on the coordination of policy approaches, on the preparation of multiannual radio spectrum policy programmes and, where appropriate, on harmonised conditions with regard to the availability and efficient use of radio spectrum necessary for the establishment and functioning of the internal market. In particular, the RSPG “[...] shall assist the Commission in its preparatory work on proposals to the Council for the adoption of decisions in accordance with Article 218(9) of the Treaty on the Functioning of the European Union establishing the positions to be adopted on the Union's behalf in international organisations competent in radio spectrum matters.”¹

We fully understand that the mobile industry has expressed great interest in displacing satellite users from the C-band spectrum in 3400-3800 MHz within Europe. With terrestrial 5G and with the latest technological advancements in mobile technology finally here, this interest in C-band has only intensified. However, we believe that the RSPG now has to make difficult decisions about how additional spectrum should be allocated, caught between the lure of 5G and its promises, and the importance of satellite services. The RSPG must balance all these technical and economic factors before making any decisions to share and open spectrum above 3800 MHz.

2. RSPG opinion / report

Point 1: Recognises that the current demand in the majority of MS for additional spectrum is mainly for the mid-bands

ESOA is generally supportive of the leadership from EU policy makers on 5G policy, and our primary concern is to ensure measures taken to release spectrum for 5G technology in Europe do not in any

¹ Art. 2 (4) of Commission Decision 2019/196/EC on setting up the Radio Spectrum Policy Group and repealing Decision 2002/622/EC

way prejudice existing frequency users or impact current and future service offerings in the mid band (i.e. C Band). In particular, ESOA wishes to underline the fact that European satellite operators have invested large sums of money in developing Fixed-Satellite Service (FSS) communications platforms and networks, including launching additional satellites, in the conventional C Band (3.8-4.2 GHz) band. Such investments have been a prerequisite to maintaining the same level of quality and availability of satellite services throughout Europe with reduced amount of spectrum caused by 5G rollout in the 3.4-3.8 GHz band.

Therefore, ESOA is concerned that decisions at this stage – when 5G auctions have not yet been completed in the entire 3.4-3.8 GHz and full deployment is not done – to consider any additional spectrum for Mobile Service above 3.8 GHz would be premature and reduce significantly the regulatory certainty for the entire satellite industry. ESOA members would like to see a clear and concrete commitment from the RSPG not to jeopardize satellite use in the conventional C Band in order to “free up” spectrum for terrestrial 5G applications. Such commitment would help ensure regulatory certainty and return of investments made by satellite operators and service providers in this band to cope with reduced amount of satellite spectrum available, and avoid negative impact on European industry and consumers relying on C-band FSS services.

ESOA requests that more emphasis be placed by the RSPG on the role that satellite technology plays in helping to deliver on EU policy objectives around broadband coverage, particularly in rural and hard to reach areas. In addition, ESOA requests that the RSPG does more to spell out the need to protect existing satellite users in the conventional C Band (3.8-4.2 GHz) from interference from 5G networks operating in the lower part of C Band (3.4-3.8 GHz).²

Point 4: Recognises that there is no need for a dedicated designation for FWA in the mmWave bands, although operators should also have the possibility to address this application within their spectrum

ESOA agrees that there is no need for a dedicated designation for FWA in the mmWave bands. Any mobile technology used for FWA should be compliant with technical and regulatory framework of the Fixed Service (FS) and operate under existing compatibility and sharing conditions of the relevant frequency bands. This is a key prerequisite to ensure protection of other services operating in those bands and in adjacent bands. Any FWA deployment which is not compliant with existing FS framework would therefore require a thorough sharing and co-existence analysis, with studies at regional or international level to ensure that there is no adverse impact to other services.

Point 6: Recommends investigating the possible use of the band 3.8-4.2 GHz for local vertical applications while protecting receiving earth stations and other existing applications and services.

ESOA fully agrees with the RSPG that the protection of receiving earth stations and other existing applications and services should be investigated in the use of the 3.8-4.2 GHz band. However, ESOA does not agree that there needs to be a recommendation in the first place to investigate the use of this band for local vertical applications.

For example, Germany has provided the 3.4-3.7 GHz spectrum band for nationwide assignments to deploy 5G terrestrial services, while allowing the use of the 3.7-3.8 GHz band by local players, including small and medium-sized enterprises to realise local and regional business models. This distribution of

² As set out in ECC Decision (11)06 Harmonised frequency arrangements and least restrictive technical conditions (LRTC) for mobile/fixed communications networks (MFCN) operating in the bands 3400-3800 MHz

spectrum has provided both nationwide mobile operators and local institutions and enterprises, such as industry stakeholders, adequate spectrum to realise their business models.³

Therefore, ESOA is quite concerned how the implementation of licenses for local vertical applications will still allow for the future growth of FSS in the 3.8-4.2 GHz band. It is emphasised that the 3.8-4.2 GHz band is now accommodating increased FSS traffic as an effect of migration of FSS usage in 3.4-3.8 GHz that has been severely limited, if not stopped (no more licensing). As restrictions for licensing in 3.4-3.8 GHz gradually take effect, new C-band satellite sites in conventional C band may need to be deployed across Europe.

In addition to ongoing turmoil to clear spectrum for 5G deployment in 3.4-3.8 GHz, the satellite industry is making continuous efforts to renew its offering and ensure that satellite connectivity is an integral part of a variety of new use cases for 5G and, in the future, 6G. If such an approach for local licenses in the 3.8-4.2 GHz band is chosen by EU Member States, then local licenses should ideally be concentrated on urban areas with high population density; but due to the diversity of envisaged vertical 5G use cases, this may not be the case. In particular, if the usage within the licensed area can consist of multiple base stations, massive deployment and aggregated power of terrestrial transmitters may create the conditions of a serious increase in interference levels. Due to risks of in band and adjacent band interference, local licensing might severely limit the opportunities for the FSS industry by preventing new sites above 3.8 GHz.

Furthermore, as has been outlined in many occasions, the earth station receivers are designed to receive signals from satellites located far away in space – 36,000 kilometres above the equator – which are order of magnitude weaker than terrestrially based signals. As a reminder, satellite LNAs and LNBs are designed for reception of very low satellite signals, and the dynamic range is set accordingly. BWA or IMT signals can produce much higher power than the satellite signals at the LNA/LNB input and can thus overdrive or bring it into non-linear operation. This can block reception of signals anywhere in the entire 3.8-4.2 GHz band, even if the terrestrial signal is not overlapping with the FSS signal. That fact makes satellite earth stations highly sensitive to interference even when introducing next generation LNBs which are designed to be more resilient.

Due to the important difference in signal strength levels, sharing the band between terrestrial mobile stations and satellite receive earth stations is very inefficient, as has been shown by a variety of studies at international and European levels. Already a small amount of transmitting mobile stations will make satellite reception in the band impossible. Therefore ESOA would ask the RSPG to first and foremost focus on the protection solution of existing services and requests that the RSPG add a specific statement to their opinion on this point, in order to provide the regulatory certainty that is necessary for continued safe operation and growth of critical satellite services, before any recommendation is made on additional use in the 3.8-4.2 GHz band.

It is also worth noting that from the questionnaire survey conducted last year with Member States, there was not a strong desire to seek more spectrum to be shared within the 3.8-4.2 GHz range.

³ The updated list of vertical players using the 3.7-3.8 GHz band in Germany is available from: https://www.bundesnetzagentur.de/SharedDocs/Downloads/DE/Sachgebiete/Telekommunikation/Unternehmen_Institutionen/Frequenzen/OffentlicheNetze/LokaleNetze/Zuteilungsinhaber.pdf?__blob=publicationFile&v=5