

Your response

The GSMA welcomes Ofcom's consultation on making more spectrum in the 1.4 GHz band available for mobile services as well as the opportunity to provide input in this regard.

The 1500 MHz band is expected to form a vital part of mobile broadband networks and provides an ideal mix of coverage and capacity. The mobile broadband spectrum available in this band could help operators deploy faster broadband services over wide areas, boosting the social and economic development of all countries that decide to take advantage of it.

As a general comment, we note that the consultation has only requested input specifically on Ofcom's coexistence analysis and in relation to the awards process, while limiting any consideration of potential alternative approaches or indeed the overall appropriateness of the outlined measures to protect aeronautical and maritime mobile satellite earth stations (MESs). The GSMA is of the view that more weight should be given to the proportionality and 'shared burden' of the measures, given that any interference has no direct impact on flight and ship safety.

Discussions of interference between IMT and the mobile satellite service (MSS) in the adjacent band have formed a crucial part of the development of the 1427-1518 MHz band for IMT services. However, existing regulatory approaches can give countries confidence that they are able to fully use the band without harmful interference to other services. In this regard, it is important to note that CEPT has developed a regulatory framework, including solutions for coexistence with MSS above 1518 MHz, through ECC Decision (17)06¹, ECC Report 263² and ECC Report 299.³ This framework establishes balanced requirements for both IMT and MSS.

In this context, it is also useful to consider the experience of other administrations in finding pragmatic solutions to the use of this band, while adequately ensuring the protection of satellite receivers. One such example is Denmark, where the administration has implemented the protection measures suggested in ECC Report 299 and decided to have PFD limits for airports with traffic involving MSS use (e.g. transatlantic). However, there are no PFD limits for ports, as this would have disproportionately impacted the whole country and given that marine vessels have alternative procedures in case of MSS terminal failure upon port inspection.

In reaching this decision, the main factors taken into consideration were as follows:

- The intended use is in accordance with the pan-European, harmonised application, which is established with a view to ensuring long-term coexistence with services in neighbouring bands (including MSS).
- In spectrum management, all services are expected to carry an equal burden⁴ in respect of ensuring coexistence. As a starting point therefore, any burden is on the party that has not

¹ The harmonised use of the frequency bands 1427-1452 MHz and 1492-1518 MHz for Mobile/Fixed Communications Networks Supplemental Downlink (MFCN SDL), ECC, November 2017

² Adjacent band compatibility studies between IMT operating in the frequency band 1492-1518 MHz and the MSS operating in the frequency band 1518-1525 MHz, ECC, March 2017

³ Measures to address potential blocking of MES operating in bands adjacent to 1518 MHz (including 1525-1559 MHz) at sea ports and airports, ECC, March 2019

⁴ The relevant spectrum policy framework (Directive (EU) 2018/1972 and previously Directive 2002/21/EC) mandates that the allocation of, the issuing of general authorisations in respect of, and the granting of individual rights of use for radio spectrum for electronic communications networks and services by competent authorities are based on objective, transparent, pro-competitive, non-discriminatory and proportionate criteria.

fulfilled the obligation in its service implementation to ensure coexistence, unless, for example, safety or significant societal conditions dictate otherwise.⁵

- Despite the fact that MSS is used for emergency and safety purposes, there are no situations identified in the international work where the proposed use of the 1492-1517 MHz frequency band for mobile purposes poses a direct threat to safety in aviation or at sea. Rather, the potential disruption scenarios that have been identified, only have the potential to cause possible delays and increased costs for the MSS user if they have not switched to newer equipment.

Denmark has therefore only chosen to impose special restrictions on the use of the 1492-1517 MHz frequency band in relation to airports which have regular transoceanic flights and where delays and resulting costs are of such potential magnitude that a five-year transition period is appropriate. The Danish administration does not consider that there is reason to refrain from offering the 1492- 1517 MHz frequency band at auction with the proposed license conditions for the 1492-1517 MHz frequency band as outlined above.

The GSMA considers that the implementation of a similar balanced approach in the UK would be both appropriate and proportionate, while addressing coexistence issues and ensuring adequate protection for satellite receivers.

We hope that these broader comments, as well as some detailed comments on the consultation questions below, can serve as a constructive contribution to Ofcom’s deliberations on the development of any future proposals for how the 1492-1517 MHz band should be made available.

| Question | Your response |
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| <p>Question 1: Do you have any comments on the coexistence analysis we have carried out?</p> | <p>Confidential? – N</p> <p>Whilst we are unable to comment directly on the details of the interference analysis, not having access to the same terrain models, we welcome the use of ECC Report 263 and 299 as the basis of this analysis. However, we have concerns that some of the conclusions may be overly and disproportionately restrictive.</p> |
| <p>Question 2: Do you have any comments on the proposed sizes and implementation methods for the PFD limited and coordination zones, both individually and as hybrid options?</p> | <p>Confidential? – N</p> <p>See our overall comments above for general comments regarding the appropriateness of the PFD limited and coordination zones that are being proposed, in particular those around ports.</p> <p>Notwithstanding this, Ofcom’s results indicate that interference between mobile base station transmissions and the most vulnerable current satellite receivers could occur when the base stations are up to 8 km away from aircraft at UK</p> |

⁵ The main issues in relation to coexistence between IMT and MSS in L-band are due to the poor performance of MSS earth station (MES) receivers

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| | <p>airports or up to 55 km away from shipborne receivers in UK ports. However, while the new and improved MESs are approximately 18 dB and 40 dB better for aeronautical MESs and maritime MESs respectively, this only leads to a modest reduction in coordination distance of 3 km for aeronautical and 25 km for maritime. In this regard, we would welcome some additional clarity and validation as to why the reduction is so modest.</p> <p>In addition, and whilst acknowledging that there may be some impact of the radio horizon on the maritime coordination distance, we believe that the results of the calculations are such that further analysis is warranted to test the interference distances, in particular due to their pivotal nature in the outcome of the overall analysis.</p> |
| <p>Question 3: Do you consider that PDF limited/coordination zones defined using complex polygons would make deployment of this spectrum for mobile more complex than zones which are defined by simple shapes?</p> | <p>Confidential? – N</p> <p>We consider that it could also be useful to have the complex interference picture in addition to PFD coordination zones per area of interest. This could be expanded by concentric circles inside the coordination zone, with each denoting the probability of interference occurring within these. This would be of use to MNOs when they consider what value the spectrum may have for their business.</p> |
| <p>Question 4: Do you have any other suggestions for how we might make the 1492-1517 MHz block available for mobile while protecting satellite use of the adjacent band?</p> | <p>Confidential? – N</p> <p>As per our main response above, the GSMA is of the view that for international airports, the PFD levels are justified but of such impact that a transition to new MSS should happen within 5 years. We are also of the view that using the PFD levels for maritime would be disproportionate when considering the impact on MFCN compared to the impact on ships from not using the PFD levels.</p> |
| <p>Question 5: What are your views on the timescales for relaxing the PFD limits and coordination restrictions?</p> | <p>Confidential? – N</p> <p>Due to the impact of the area of the coordination zones around airports on prospective mobile deployments, we consider that a 5 year transition to new MESs would be appropriate.</p> |

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| <p>Question 6: Do you have any initial views on how the coordination we are proposing should be carried out? In particular, do you consider this should be conducted by Ofcom or the licensee?</p> | <p>Confidential? – N</p> <p>Assuming that all data is made available, it would be appropriate to allow the licensees to undertake their own planning, taking into account an agreed terrain data base for the calculations.</p> |
| <p>Question 7: Do you have any views on the potential impact of our proposed options, including impacts on specific groups of persons or more general impacts?</p> | <p>Confidential? – N</p> <p>The GSMA considers that the proposed options in their current form, with PFD levels around all airports and all maritime ports, would result in the spectrum being essentially of little or no use for MNOs that wish to add downlink capacity. This is because the areas affected, to a large extent, overlap with the areas where more capacity is actually required.</p> |
| <p>Question 8: Do you consider an auction would be an appropriate way to make the upper 1.4 GHz spectrum available for mobile use? If not, what other methods do you think Ofcom should consider for making this spectrum available for mobile use?</p> | <p>Confidential? – N</p> <p>As a general comment any approach chosen should consider the following core principles⁶:</p> <ul style="list-style-type: none"> • Predictable and timely spectrum licensing encourages long-term network investment. • Auctions deliver social benefits, but must be properly designed. • A presumption of licence renewal encourages long-term network investment. • High spectrum prices jeopardise the effective delivery of wireless services. • Where spectrum is auctioned, ongoing charges should be limited to recovering the cost of spectrum management. • Spectrum licences should be technology and service neutral. • Licence conditions should be used with caution. • A licence duration of at least 20 years will incentivise network investment. • Competition can be supported by licencing as much spectrum as possible, |

⁶ See also [Best Practice in Mobile Spectrum Licensing](#), GSMA, February 2022

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| | <p>while limiting charges and other barriers to service.</p> <ul style="list-style-type: none"> • Voluntary spectrum sharing, leasing and trading promote efficient spectrum use. |
| <p>Question 9: If you consider an auction is appropriate, do you have any initial views on whether a single round auction or a multiple round auction would be more appropriate?</p> | <p>Confidential? – N No comment</p> |
| <p>Question 10: Do you have any views on the appropriate lot sizes for making this spectrum available?</p> | <p>Confidential? – N No comment</p> |
| <p>Question 11: Do you have any views on the potential impact on consumers, citizens and/or other stakeholders of auctioning the spectrum or the different auction formats?</p> | <p>Confidential? – N No comment</p> |

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