

Future use of the 2 GHz MSS band

Call for inputs

BT's response to Ofcom's 'Call for
Inputs' issued on 21 July 2025

Issue: 1.0

19 September 2025

BT Group

Executive summary

1. BT welcomes the opportunity to contribute to the debate about the future use of the 2 GHz MSS band in the UK. This is an important and valuable spectrum band and a review of the regulatory conditions is timely to achieve efficient use beyond 2027 when the current EU level licensing arrangements end.
2. Whilst continued satellite use of the band may be the best option in the short-term, other options should be considered including alternative terrestrial use which, if harmonised across Europe, could offer considerable benefits and a more efficient use of the spectrum.
3. Ofcom should explore options that would enable new use cases, including the use of the band in conjunction with terrestrial networks as is currently being standardised, as band 256, in 3GPP specifications for combined terrestrial and non-terrestrial networks (NT-NTN). Satellite D2D and satellite IoT are use cases that are gaining interest.
4. It will be important to award access to the spectrum competitively and, given the limited bandwidth and the increasing traffic and bandwidth requirements, the option of a single satellite network with wholesale obligations should be included in the options considered.
5. The opportunity cost of satellite use of the spectrum is high when considering the alternative terrestrial use that could be possible in the longer term. It is important that Ofcom also addresses this aspect when preparing its consultation proposals.

1 Introduction

BT welcomes Ofcom's call for inputs¹ on the future use of the 2 GHz band and provides its views to assist Ofcom in preparing future proposals for the use of the band.

Our answers to the consultation questions are set out in section 2 below.

2 Response to consultation questions

Questions for stakeholders that are interested in using 2 GHz MSS

Question 1: Which service(s) do you wish to provide using 2 GHz MSS spectrum? When do you expect that you could provide these services, and what UK geography would these services cover? Where applicable, please provide evidence to support your response (including but not limited to): business plans, internal market forecasts, board papers, analyst reports, etc.

[X]

[X]

If satellite use remains the priority, the 2GHz MSS band could be used to deliver satellite broadband or IoT services, independently or as part of a converged TN-NTN solution as is being standardised in 3GPP (as band 256 in their specifications).

[X]

BT would like to see access to the spectrum in the UK awarded competitively rather than Ofcom just facilitating the continuation of the existing use by the two existing pan-European licensees because by doing so Ofcom is more likely to promote competition and secure optimal and efficient use of the spectrum.

Question 2: Please explain any barriers to your deployment of a service and your plans to address them.

The main barrier at present is uncertainty, including with regard to Ofcom's and the EU's approach to regulating the use of the 2GHz MSS band beyond 2027.

Question 3: What benefits might be realised by enabling the service(s) you wish to provide through to 2032 (the short term)? Similarly, through to 2045 (the long term)?

The potential benefits in satellite use for either the European Aviation Network, IoT or D2D applications, will depend in part on how the spectrum is made available and what different uses are enabled.

The greatest benefits might be realised by the complementary use of the band for satellite in conjunction with terrestrial networks in other bands.

¹ <https://www.ofcom.org.uk/siteassets/resources/documents/consultations/category-1-10-weeks/call-for-input-future-use-of-the-2-ghz-mss-band/responses/call-for-input---future-use-of-the-2-ghz-mss-band.pdf>

Resilience in terrestrial infrastructure could be another source of benefits.

Question 4: Please explain what you consider would be the appropriate licence period for the service(s) you wish to provide? Please explain why, including providing evidence, such as asset use life, where applicable.

As investments would need certainty of continued spectrum availability, we consider the appropriate licence period would be of around 15 – 20 years with an indefinite tradable licence. This would be the case for both terrestrial network or satellite use cases.

Question 5: What is the minimum amount of spectrum you would need to provide your service(s) to deliver a basic service to customers? What additional service features and/or customer numbers could you meet with a larger allocation (please specify the amount of spectrum)? Please include details of any guard bands that you would consider necessary within this spectrum for coexistence purposes.

If satellite use of the spectrum is enabled, the most efficient solution could be releasing it as one single block available to one satellite network. In that scenario, wholesale obligations would be appropriate. This full bandwidth would be important to cater for future growth in traffic and new bandwidth-hungry services.

Question 6: For each service, please explain why you wish to use 2 GHz MSS. Please explain why this is a more suitable frequency compared to alternatives.

For mobile satellite use, whilst existing bands, or new bands that may come out of the ITU WRC-27, may be an alternative to 2 GHz MSS, existing bands may be congested, and new bands may have limited bandwidth available.

Question 7: To what extent are there economies of scale across the UK and the EU for each service you wish to provide? What is the minimum number of users/devices you would need for each service to be economically viable?

Satellite systems are inherently global/regional in nature and to be economically viable they would likely require to also provide services outside of the UK. The systems would also likely support multiple service providers. We don't have at present an estimate of the minimum number of users/devices that BT would need to make satellite use economically viable.

Question 8: For the service(s) you wish to provide in the UK, what is the extent and nature of potential technical coexistence issues with other jurisdictions, particularly the EU? What are minimum satellite beam footprint sizes that you consider feasible, and what cross-border sharing conditions do these facilitate?

BT's interest is mainly as a potential service provider and we do not have information in response to this question, which may be more relevant for satellite system providers.

Questions for stakeholders not interested in providing a service using 2 GHz MSS

Questions 9: What service(s) do you think could use 2 GHz MSS in the UK? What benefits do you think these services could provide, and how much spectrum do you consider these services require to (i) deliver basic services, and (ii) to deliver more advanced services?

Given this question is addressed to Stakeholders “not interested in providing a service using 2GHz MSS”, we interpret it as asking what services could use the 2 GHz MSS band in the UK.

An alternative to satellite use of the 2 GHz MSS band would be terrestrial network use, [X]. We consider that even though terrestrial mobile network use of the 2GHz MSS band may not be viable in the short term due to the band not being implemented in smartphones, this could be resolved over time – indeed the satellite D2D system proponents have argued for the band to be used with standard smartphones. In the terrestrial use scenario, the potential interference with satellites would need to be considered, including where satellites are not serving the UK.

The benefits of alternative terrestrial mobile use would depend on whether this is a UK only opportunity, or EU wide. If the band were harmonised across Europe for terrestrial mobile, benefits could be similar to those enabled by similar mobile bands today, e.g. 5G use in 3GPP Band 1 1920-1980 / 2110-2170 MHz. Given existing uses and number of countries involved, we expect alternative terrestrial use could be harmonised in the medium-term.

If terrestrial use of the spectrum is enabled, a minimum assignment of [X] would be required.

For terrestrial use there are few if any spectrum alternatives: 1.4GHz is a limited bandwidth constrained in power and geographic locations where it can be deployed; and U6 GHz has higher propagation losses leading to less range and is at risk from interference with WiFi (depending on what Ofcom decides in its ongoing consultation for that band). The 2 GHz band offers a good balance in terms of coverage and capacity and would be a useful supplement to the adjacent 2 GHz mobile band.

Other potential uses of the 2GHz MSS band could be for satellite backhaul of terrestrial networks .

It could also be used for mission critical use cases and for mobile network resilience (if assigned as a single 2x30MHz package that could support large bandwidths).

Questions for all stakeholders

Question 10: Overall, to what extent does demand for 2 GHz MSS spectrum to provide services in the UK relate to demand for spectrum to provide 2 GHz MSS services in the EU (and vice versa)?

The satellite network capabilities are inherently international in nature and are unlikely to be economically viable if serving only the UK. Thus, networks would ideally have similar bandwidths and frequency blocks available in each country. In terms of services, there could be different and multiple service providers in each country.

Question 11: Do you consider there would be any benefits or risks from aligning with the EU regarding the types of 2 GHz MSS services being authorised, as well as the specific operators licensed to operate?

Benefits of aligning with the EU (for satellite or terrestrial) are standardised, harmonised use and consequent scale.

It is important to reflect whether the current model where the EU selected two licensees, has been a success, and if a more efficient use of the spectrum might have been achieved if individual countries had scope to authorise use and users in a more flexible way.

It is worth exploring flexible options as well as working with the EU to determine the most optimal future regulatory environment for the band, including whether terrestrial or satellite use of the band is likely to generate greatest benefits.

Question 12: Do you have any other points that we should consider for our consultation on future proposals?

The opportunity cost of the use of the spectrum that Ofcom enables should be considered when deciding on the use that will be enabled and when setting fees for the use. Satellite MSS terminals are typically licence-exempt and this does not allow the opportunity cost to be captured in fees to incentivise optimal and efficient use. Assigning spectrum competitively to terrestrial operators, who might then commercially reach agreements to share use with satellite operators, could be an appropriate solution similar to the approach Ofcom is considering for other mobile bands where satellite D2D use may in future be enabled.