


# Exploring future use of the unpaired 2100 MHz (1900 - 1920 MHz) spectrum

BT's response to Ofcom consultation  
document issued on 23 March 2023



Issue: v1.0

25 May 2023



# BT Group



## Contents

Page

	<b>Executive summary</b>	<b>2</b>
<b>1</b>	<b>Introduction</b>	<b>3</b>
<b>2</b>	<b>Current status of planned exploitation by EE for the ESN</b>	<b>3</b>
<b>3</b>	<b>Our assessment of the current situation and best way forward</b>	<b>4</b>
<b>4</b>	<b>Answers to consultation questions</b>	<b>4</b>

# Executive summary

1. BT<sup>1</sup> welcomes this consultation on the regulatory options for the future use of the 1900 – 1920 MHz band. The existing spectrum access licences contain outdated technical conditions that may impede the optimal and efficient use of this spectrum band, and may be a barrier to trading.
2. BT has plans to use its 1900-1910 MHz licence for delivery of an ad hoc enhanced mobile coverage solution for use by emergency services at incident locations where standard mobile coverage is insufficient. This forms an important component of the Emergency Services Network that is to be supplied to the Home Office. There is currently no proven alternative spectrum option available for this solution.
3. BT disagrees with Ofcom’s assessment that efficient and optimal use of the 1900 – 1920 MHz band would best be achieved by revoking existing licences. There is no evidence that changing the technical restrictions and awarding the spectrum for new use by railways or utilities, while potentially accommodating the existing ESN related requirements at the top of the band, is either technically viable or is the best solution to achieve Ofcom’s objectives and statutory duties.
4. BT is concerned about the adverse impact the proposals would have on the delivery of the ESN. We also disagree with the assessment Ofcom has made that concludes that regulatory intervention is more likely than market mechanisms to achieve optimal and efficient use of this spectrum band.
5. BT agrees that the current technical constraints are a barrier to trading if demand for alternative uses does in fact exist. We encourage Ofcom to focus on reviewing those constraints with a view to liberalising and relaxing the technical conditions to the extent possible where requested by licensees. This will enable market mechanisms to operate, and existing licence holders would have incentives to agree to changes if these underpinned commercial deals. The alternative of revoking licences and proposing to impose changes that could potentially affect adjacent band licensees is not in our view the appropriate approach.
6. We request that Ofcom works with licensees to explore what technical changes may be feasible to the existing licences, taking into account results of its ongoing studies, and allows a further period of time to see if any commercial interest in trading arises in light of possible liberalisation and relaxation of technical constraints in the current licences. Only if this market based approach fails should Ofcom reconsider moving to take some/all of the spectrum back for possible new authorisations / awards.
7. In view of the unclear opportunity cost of the current licensed use, if the licences are not revoked any spectrum fees that may be introduced should be cost based.

---

<sup>1</sup> BT, including our mobile subsidiary EE Ltd.

# 1 Introduction

BT welcomes this opportunity to provide its views on the future use of the 2100 MHz (1900 – 1920 MHz) spectrum<sup>2</sup>. As the current holder of a nationwide licence for use of half of this frequency band, and with advanced plans for its commercial exploitation, this consultation is clearly important to us. We welcome this opportunity to provide our views at this early stage in Ofcom’s work to explore future options for the band.

In section 2 we provide information on the current status of plans to use the EE spectrum licence at 1900-1910 MHz to deliver a component of the Emergency Services Network (ESN).

In section 3 we set out our views on the best way forward for the 1900 – 1920 MHz band.

Finally, in section 4, we provide answers to the specific questions that Ofcom has posed.

## 2 Current status of planned exploitation by EE for the ESN

### Importance of 1900 – 1910 MHz for ESN coverage extension

As Ofcom has noted in the consultation document, EE has worked with the Home Office to deliver a solution to provide enhanced local mobile coverage in locations where an incident may occur and where direct coverage from the EE mobile network is not available. The ESN Gateway (coverage extender) product that has been specifically developed for use on the 1900-1910 MHz band to provide local coverage to mobile devices and connects back to the EE mobile network using other cellular frequencies.

The 1900 – 1910 MHz band is the only band available to EE that is suitable for the ESN Gateway product.

### Planned deployments of ESN Gateway devices

{&lt; redacted

}

### Feasibility to move frequencies within the wider 1900 – 1920 MHz band

BT notes that Ofcom is conducting studies to understand from a technical point of view whether it could be feasible to move the ESN Gateway solution to the top of the 1900 – 1920 MHz band, i.e., in the spectrum assigned to Three.

In the timescales available, and whilst the technical modifications that would be necessary to achieve adjacent band compatibility are unknown, it is not possible to provide an indication of the costs involved in moving frequencies.

{&lt; redacted

}.  
}

---

<sup>2</sup> [https://www.ofcom.org.uk/data/assets/pdf\\_file/0028/255835/future-use-2100-MHz-spectrum-condoc.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0028/255835/future-use-2100-MHz-spectrum-condoc.pdf)

Aside from the costs of moving frequencies, there may be practical issues that makes this unfeasible. For example, if the additional filtering required is incompatible with the form factor of the gateway device, it may no longer fit in the very limited space in emergency vehicles alongside extensive other equipment that is typically deployed in the vehicles. A move of frequencies could also risk introducing delays to the ESN delivery that would conflict with the needs of the Home Office.

It is important that the permitted in-band EIRP limit is sufficient to provide the coverage required by the emergency services. The present ESN Gateway equipment uses an in-band EIRP of {< redacted } and is compatible with the EIRP limit of 43dBm/(5MHz) in 1899.9 - 1904.9 MHz specified in the EE licence. If, as previous analysis suggests, a significantly lower power limit is required in the 1910-1920 MHz range to achieve compatibility with mobile uplinks in the band above 1920 MHz, because there is less guard band, this would make 1910-1920 MHz unsuitable for delivering the coverage that the ESN Gateway requires.

## 3 Our assessment of the current situation and best way forward

### Existing technical limitations of existing licences are a barrier to trading

The VMO2 and Three licences are restricted to 3G technology and as such are unlikely to be attractive to MNOs or other parties. At the same time to achieve compatibility with the adjacent mobile uplink band above 1920 MHz some power restrictions will be needed. Fortunately, since Three holds the licences at the TDD/FDD boundary they might have incentive to agree technical parameters in a trading scenario, more so than if Ofcom revokes the TDD licences and seeks to impose a solution. In that sense, at least in this scenario, we disagree with Ofcom's assessment on leasing that it has regulatory leavers that could lead to more efficient spectrum use than if it were left to the market.

Although BT wants to retain the ability to use the existing EE spectrum in 1900-1910 MHz for ESN, if the technical conditions can be made less restrictive than at present it would make sense to review these to give maximum flexibility for any commercial trading, for example perhaps in a specific location, in future.

In summary we think that rather than moving to revoke licences and disrupting the ESN plans, it would be better to focus on review of technical licence conditions, or at least commit to supporting such review if requested to facilitate trading proposals that may arise in future.

### Evidence of alternative demand is unclear

The evidence of alternative demand that may represent a higher value use of the spectrum than BT's intended ESN use is at best very unclear. According to the consultation document the front runner seems to be potential use by utilities. However, given the technical restrictions on this band and the fact that there are better options, such as a private network as part of a public network, this demand seems doubtful. Even if the demand did exist, it's not clear that it would have greater value than the emergency services use, or the cost of moving the emergency services use to make way for such use.

## 4 Answers to consultation questions

*Question 1: Do you agree with our provisional view that the current non-use of the unpaired 2100 MHz spectrum for high power mobile services and potential future use of the 1900 - 1910 MHz spectrum for the ESN Gateway, may not be optimal given the possible alternative uses of the spectrum?*

We believe the use of 1900 - 1910 MHz for the ESN Gateway will be an optimal use of the spectrum, at least given the present technical constraints on how the band can be used. For the 1910 - 1920 MHz portion of the band it is unclear whether the

present non-use is optimal or not given the technical limitations on the band, and whether it could become more efficiently used if the technical restrictions were varied.

*Question 2: Do you agree with our provisional view that of the alternative high power uses of the unpaired 2100 MHz spectrum, national infrastructure uses such as rail and utilities are likely to be the most optimal?*

No, we do not agree. Such applications could most efficiently be provided over existing public mobile networks in a similar way to how the ESN services are provided. This technical solution would achieve the best coverage and fastest implementation. Dedicated spectrum for utilities is unlikely to represent an optimum technical or commercial solution, particularly in this band where it is not clear that alternative high power uses of the band could be made compatible with adjacent services.

*Question 3: Do you agree with our assessment that liberalising the spectrum and relying on trading is unlikely to be effective in securing optimal use of this spectrum?*

No, we do not agree. In our view the reason why trading between MNOs or between MNOs and other parties has not taken place to date is primarily the lack of demand for such spectrum, which may itself stem from the fact that the technical licence conditions are very restrictive and mobile equipment is not available.

The focus should be on working with licensees to explore how the technical conditions might be relaxed and then allow the market to operate to explore more optimal uses in future.

Both the UK Government and Ofcom have published guidance on what a good impact assessment looks like. A good impact assessment should have a bias against intervention and consider a range of options for intervention including lighter touch approaches. For example:

*“One of our key regulatory principles is that we have a bias against intervention. This means that a high hurdle must be overcome before we regulate. If intervention is justified, we aim to choose the least intrusive means of achieving our objectives, recognising the potential for regulation to reduce competition.”<sup>3</sup>*

*“[An impact assessment] summarises the rationale for government intervention, the different policy options (including non-regulatory options) and the impacts of the intervention, as well as quantifying expected costs and benefits.”<sup>4</sup>*

We query whether Ofcom has followed its or own or the UK Government guidance on impact assessments in this consultation. Ofcom appears to have materially overstated the risk that market mechanisms, e.g., trading, will not work while at the same time understates the risk of regulatory failure arising from revocation of licences (and where demand in alternative utility use is highly uncertain and business models unproven). Moreover, non-regulatory options such as leasing have not been duly considered (and where these could successfully complement trading).

*Question 4: Do you agree that revocation of the licences to enable reallocation may therefore be necessary to secure optimal use of the spectrum and that this is objectively justified and proportionate?*

No, BT does not agree. The ESN use has clear demand and substantial investments have been made to prepare for launch of the product that uses these frequencies to meet the requirements of the Home Office.

See also our response to Question 3 above.

*Question 5: Do you have further views / comments that you wish to make in respect of this consultation?*

No further comments.

---

<sup>3</sup> Ofcom (2015) Better Policy Making - Ofcom's approach to Impact Assessment

<sup>4</sup> BIES (March 2020) The Better Regulation Framework



25 May 2023

Find out more at [bt.com](https://www.bt.com)

Offices worldwide



© British Telecommunications plc 2023

Any services described in this publication are subject to availability and may be modified from time to time. Services and equipment are provided subject to British Telecommunications plc's respective standard conditions of contract. Nothing in this publication forms any part of any contract.

Registered office: 1 Braham Street, London E1 8EE

Registered in England No. 1800000

**BT Group**

