

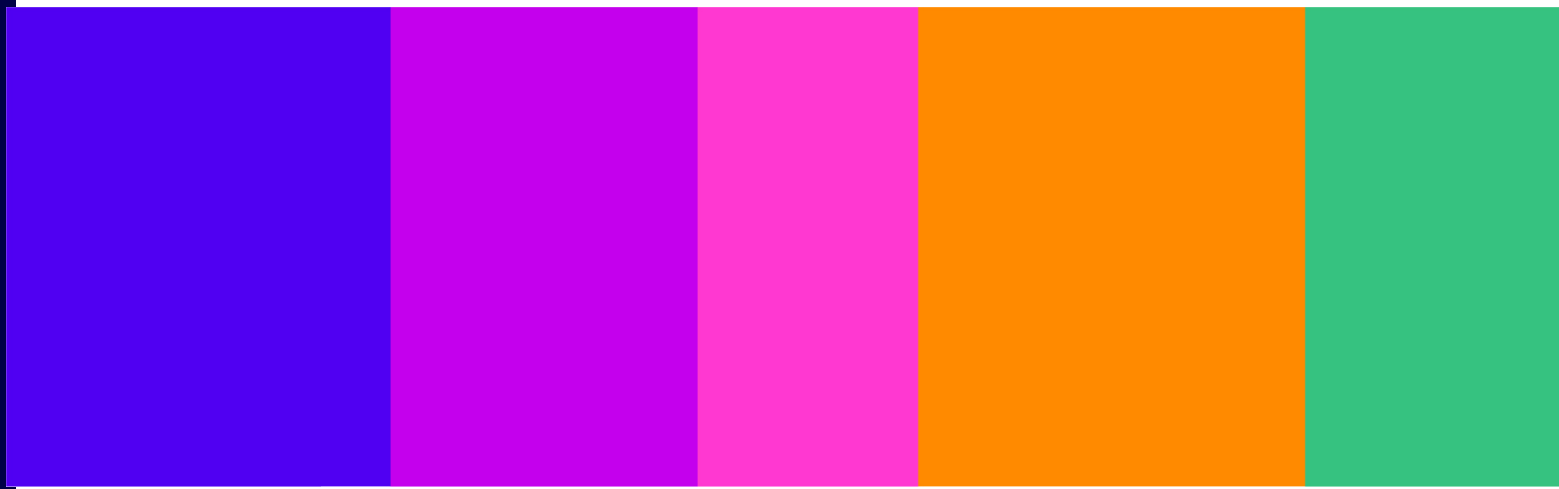
Optimal use of 3.9 GHz spectrum

UK Broadband's application for licence variation and proposals to promote efficient use of 3.9 GHz spectrum

Consultation

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1. Overview

We are proposing to make changes to UK Broadband Limited's 3.9 GHz licence which authorises use of the 3925–4009 MHz frequency range.

Hutchison 3G Limited ("H3G") owns UK Broadband Limited¹ and has requested minor technical changes to the licence to enable it to use 5G technology to improve and expand its 5G Fixed Wireless Access (FWA) offering.

We have reviewed H3G's request and considered it in light of our duties, which include securing the optimal use of spectrum. We are also proposing additional changes which we believe align with our duties and support our established policy for spectrum to be shared on a first-come-first-served basis in this frequency range.

What we are proposing – in brief

We are proposing to vary the technical terms in the 3.9 GHz licence in line with H3G's request to support 5G technology. We believe this can bring additional benefits to consumers without creating harmful interference for other spectrum users. It is also consistent with the approach we have taken in other licences.

In reviewing H3G's request, we also identified an opportunity to update the terms of access to 3.9 GHz spectrum to better align with our policy objectives for the 3.8–4.2 GHz band, in which the 3.9 GHz licence sits.

Our proposals are:

- To clarify how H3G can reserve spectrum under its 3.9 GHz licence, consistent with the first-come-first-served, shared framework for all users in the 3.8–4.2 GHz band. Specifically, we are proposing to introduce a requirement for H3G to use the spectrum 'assignments' that it requests (a 'use clause'). This is similar to the requirement already in place for Shared Access users in the band. We will phase in this requirement over 5 years.
- To change the technical assumptions used for coordinating H3G with Shared Access users. These changes will reduce the area sterilised by each of H3G's assignments.

We are not proposing to change the level or structure of fees for the 3.9 GHz licence at present but may review this in the future.

We are inviting stakeholder feedback on our proposals set out in Sections 3 and 4. We plan to publish our decision in Q4 2024.

¹ For simplicity we refer only to H3G in the rest of this document.

2. Introduction

- 2.1 Hutchison 3G Limited ("H3G") has requested technical changes to its 3.9 GHz licence which authorises it to use the 3925–4009 MHz frequency range ("3.9 GHz spectrum"). The licence can be used for fixed services, including Fixed Wireless Access (FWA). This consultation proposes technical changes to the licence conditions to implement the requested changes.
- 2.2 In addition to H3G's request, we are proposing other changes relating to the 3.9 GHz licence in line with our duties to secure optimal use and promote efficient use of spectrum.² Our proposals build on our policy and objectives for the wider 3.8–4.2 GHz band, where all users are subject to Ofcom coordination on a shared, first-come-first served basis; this includes requests from H3G to deploy base stations under its 3.9 GHz national licence.
- 2.3 This section sets out the background to our policy objectives in the wider 3.8–4.2 GHz band and the details of the 3.9 GHz licence held by H3G.

Background

3.8–4.2 GHz band

- 2.4 The 3.9 GHz licence sits within the 3.8–4.2 GHz band. Our established policy³ for the 3.8–4.2 GHz band is for it to be accessed on a shared and first-come-first-served basis. This means that different users with localised spectrum needs can geographically share spectrum with each other by requesting spectrum where and when they need it. When users no longer require spectrum at a particular location, they can relinquish their rights to use the spectrum so that it becomes available for others. This type of access can enable more efficient use of spectrum than a single user reserving spectrum access across the whole country.
- 2.5 The band was initially shared between H3G, satellite earth stations and point-to-point fixed links. Satellite earth station and fixed link use of the band has been relatively stable over recent years. In 2019 we opened the band to new users under the Shared Access Framework, with the aim of facilitating deployment of local networks in different sectors and promoting innovation.⁴ There are around 500 live Shared Access licences in the 3.8–4.2

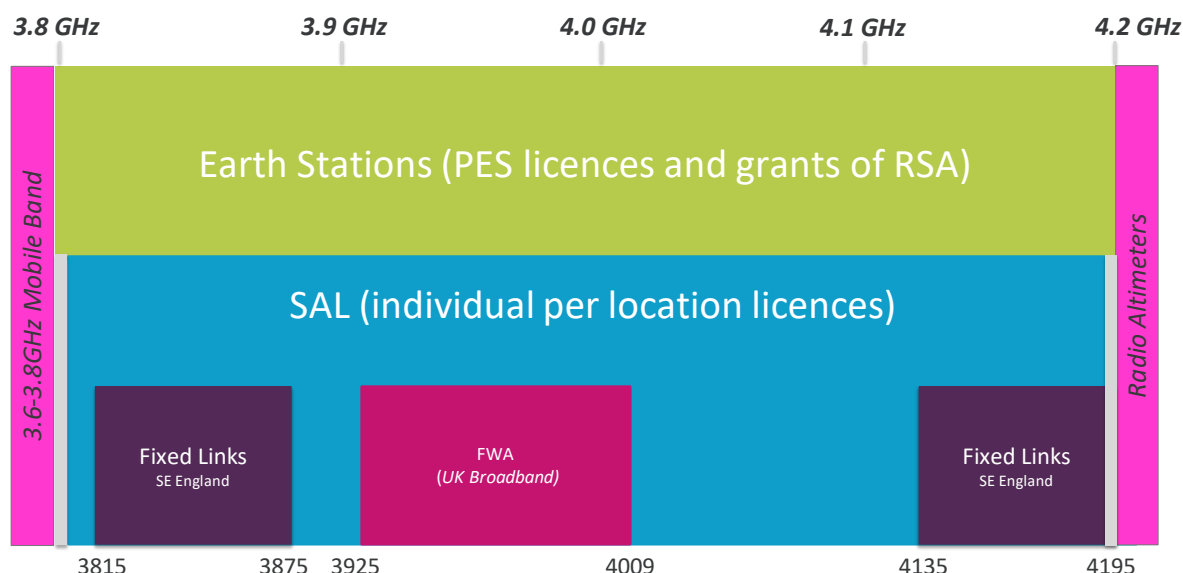
² See Annex 1 for further detail about our statutory duties.

³ See paragraph 3.7 in [Statement: Enabling wireless innovation through local licensing](#), July 2019 where we noted the band is used by three types of users (satellite earth stations, fixed links and FWA) in addition to shared access users, and how deployments in the band are technically coordinated by Ofcom on a first-come-first served basis. More detail was provided in paragraphs 3.6-3.9 of the corresponding 2018 [consultation document](#).

⁴ Ofcom, [Statement: Enabling wireless innovation through local licensing](#), July 2019.

GHz band.⁵ Shared Access licensees are subject to a requirement to use their licence within 6 months of it being granted, in line with the overall policy for this band.

Figure 1: Current spectrum authorisations in the 3.8–4.2 GHz band



- 2.6 Ofcom coordinates all users in the 3.8–4.2 GHz band to manage the risk of interference between them. This means that we check requests to use spectrum at particular locations against existing users registered in our coordination system, and only authorise that use if this satisfies our technical coordination criteria. Specifically:
- a) For users of the band, other than H3G, if their application passes our coordination check then we issue them a licence.
 - b) For the 3.9 GHz licence (see below) held by H3G, base stations that pass our coordination checks⁶ are recorded as ‘assignments’ in our coordination system.
- 2.7 In November 2023 we published proposals to enhance our Shared Access framework (Shared Access consultation⁷), which are expected to increase spectrum supply and support more sharing in the 3.8–4.2 GHz band.

3.9 GHz licence

- 2.8 In 1992 following a ministerial instruction, the Radiocommunications Agency (one of Ofcom’s predecessors) granted a licence (the “3.6 GHz licence”) to Millicom providing access

⁵ There were 512 Shared Access licences on issue as of October 2023 in the 3.8–4.2 GHz band as stated in the Shared Access Framework consultation: [Supporting increased use of shared spectrum, November 2023, Figure 2.1.](#)

⁶ [UK Spectrum Co-ordination document: Co-ordination of licensed services in the band 3605 to 3689 MHz paired with 3925 to 4009 MHz](#), January 2008. For coordination of new shared access licence applications see Annex 4 of [Enabling wireless innovation through local Licensing](#), July 2019.

⁷ Ofcom, [Supporting increased use of shared spectrum](#), November 2023.

to 3.6 GHz⁸ and 3.9 GHz spectrum. The 3.6 GHz licence was traded several times before being sold to UK Broadband in 2010. H3G acquired UK Broadband in 2017.

- 2.9 In 2022, following changes to the lower frequency block,⁹ we moved the 3.9 GHz spectrum out of the 3.6 GHz licence to a separate “Spectrum Access 3.9 GHz” licence (referred to as the “3.9 GHz licence” in this document).¹⁰

Table 1: Key features of the 3.9 GHz licence

Overview of the 3.9 GHz licence	
	<ul style="list-style-type: none"> • National licence subject to Ofcom coordination of base stations and shared on a first-come-first-served basis with other users of the spectrum (i.e. does not confer exclusive rights to use the spectrum). • Granted for an indefinite period, subject to revocation provisions¹¹. • The rights and obligations of the licence can be leased to third parties. • Can be used for high power (53dBm/MHz EIRP) fixed services. • Flat fee of £708,624 per annum (which does not increase in line with inflation).

- 2.10 H3G currently has around 26,000 assignments (at nearly 9,000 locations across the UK) in the 3.9 GHz spectrum. These assignments are currently not in use and prevent other users from accessing this spectrum.

Structure of the document

- 2.11 **Section 3** considers H3G’s variation request and our proposals to implement the requested changes. In developing our proposals, we have considered the potential impact on other spectrum users.
- 2.12 **Section 4** considers additional proposals in relation to the 3.9 GHz licence to support our policy objectives.
- 2.13 **Section 5** sets out our impact assessments and how we have met relevant legal tests.
- 2.14 The following annexes are provided:
- Annex 1 - Legal framework

⁸ 3605–3689 MHz.

⁹ In 2018 UKB’s ‘lower frequency block’ (3.6 GHz) of its ‘3.6 GHz licence’ was varied to align with the technical conditions of UKB’s 3.4 – 3.6 GHz licence and in 2022 the terms of the same spectrum block were aligned with other licences in the same bands (3.4–3.8 GHz).

¹⁰ Licence number: [1295901](#)

¹¹ These include Ofcom’s power to revoke the licence for reasons related to the management of the radio spectrum on at least five years’ notice.

- Annex 2 - Licence variation request
- Annex 3 - Draft licence
- Annex 4 - Responding to this consultation
- Annex 5 - Ofcom's consultation principles
- Annex 6 - Consultation coversheet
- Annex 7 - Consultation questions

3. Technical variation request

H3G's request

- 3.1 On 29 November 2023 we received an application from H3G for the variation of its 3.9 GHz licence. Its assessment suggested no adverse impact on other spectrum users in 3.8–4.2 GHz. If granted, this variation will facilitate H3G using 5G technology to deliver fixed wireless services.
- 3.2 H3G intends to offload Fixed Wireless Access (FWA) traffic from its 3.6 GHz spectrum onto the 3.9 GHz spectrum following the variation; this will support the expansion of its 5G FWA (Home Broadband) offering. The non-confidential version of the variation request that H3G sent to Ofcom can be found in Annex 2 and includes further details on how H3G plans to use the spectrum.
- 3.3 In summary, H3G request that we:
- Maintain the current “Maximum power within the permitted frequency blocks” (**in-block power level**) but expressed as per 5 MHz, in the same way as in H3G’s 3.6 GHz licence.¹²
 - Increase the “Maximum power of base stations outside the permitted frequency blocks” (**out-of-block emission limits**) in the same way as in H3G’s 3.6 GHz licence.
 - Introduce AAS (Active Antenna System) conditions expressed in TRP (Total Radiated Power) for base station maximum in-block and out-of-block power, again in the same way as those in its 3.6 GHz licence. It will maintain an in-block TRP limit equivalent to the 53dBm/ MHz EIRP condition in the current licence.
- 3.4 The rest of this section sets out proposals to implement H3G’s requested changes, our assessment of the potential impact of the changes, and our preliminary conclusion in light of our assessment. We also set out the resulting changes to our coordination with other users, if these proposals are implemented.

Proposed changes to implement H3G's request

- 3.5 Having reviewed H3G’s request, we recognise that the current technical conditions are not well suited to deploying 5G FWA in this spectrum and would be unlikely to lead to an efficient use of the 3.9 GHz spectrum by H3G.
- 3.6 Our proposals to implement H3G’s requested changes are outlined in the following paragraphs. The specific changes proposed to align technical conditions with the 3.6 GHz

¹² [Spectrum Access 3.6–3.8 GHz licence](#) (referred to in this document as the “3.6 GHz licence”).

licence are consistent with continued fixed use of the 3.9 GHz spectrum. Annex 3 provides a link to a marked-up version of the 3.9 GHz licence which shows the proposed changes.

In-block power level (non-AAS and AAS)

- 3.7 The current 3.9 GHz licence¹³ permits powers of 53dBm/MHz EIRP. Following H3G's request, we propose to:
- a) express power as 60dBm/5MHz in the licence, to be consistent with the 3.6 GHz licence and other H3G licences. This does not represent a change to the non-AAS power level.
 - b) add power limit conditions for AAS base stations, which are expressed in TRP, based on the non-AAS EIRP value minus 21dBi of antenna gain. This is the same approach as in the 3.6 GHz licence.
 - c) delete paragraph 6 of Schedule 1 of the existing 3.9 GHz licence and replace it with a version of paragraph 8 of Schedule 1 of the 3.6 GHz licence but with the power levels in dBm/ 5 MHz. This is shown below with the reference to mobile terminals removed, as the 3.9 GHz licence is for fixed service use only (Table 2).

Table 2: Maximum power for base stations and terminals in the proposed varied 3.9 GHz licence.

Radio Equipment	Maximum Mean Power
Non-AAS base station	60 dBm / 5 MHz EIRP per cell
AAS base station	39 dBm / 5 MHz TRP per cell
Nomadic terminal station	28 dBm TRP
Fixed or installed terminal station	35 dBm/5 MHz EIRP

Out-of-block emission limits (non-AAS and AAS)

- 3.8 As per the H3G request, we propose to
- a) define the out-of-block emission limits for non-AAS base stations in the same way as in the 3.6 GHz licence.
 - b) delete paragraph 7 of Schedule 1 of the existing 3.9 GHz licence and replace it with a version of paragraphs 9 to 13 of the 3.6 GHz licence. These paragraphs set out a permissive mask that can be used when base station transmissions align with the requirements of frame structure A (a 3:1 frame structure) as well as a restrictive mask that must be used with transmissions compatible with frame structure B. H3G has told us it will be compatible with frame structure A.

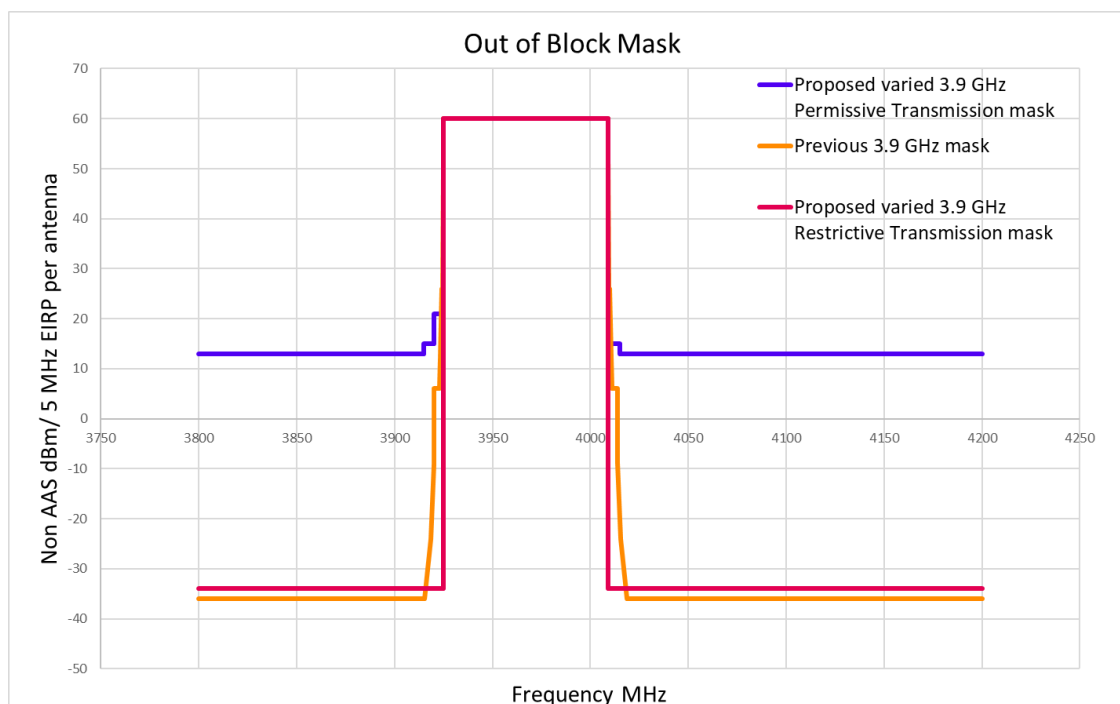
¹³ [H3G's 3.9 GHz licence](#)

Table 3: Out-of-block emission limits for proposed varied 3.9 GHz licence

	Non AAS dBm / 5MHz EIRP per antenna	AAS dBm / 5 MHz TRP per cell
Permissive Mask		
-5 to 0 MHz offset from lower block edge 0 to 5 MHz offset from upper block edge	Min(PMax – 40, 21)	Min(PMax' – 40, 16)
-10 to -5 MHz offset from lower block edge 5 to 10 MHz offset from upper block edge	Min(PMax – 43, 15)	Min(PMax' – 43, 12)
Out-of-block baseline power limit (BS) < -10 MHz offset from lower block edge > 10 MHz offset from upper block edge	Min(PMax – 43, 13)	Min(PMax' – 43, 1)
Restrictive Mask		
Out-of-block baseline power limit (BS)	-34	-43

3.9 Our proposed changes to the 3.9 GHz licence are marked up in Annex 3. Figure 2 shows the current and proposed out-of-block masks.

Figure 2: Out-of-block mask for the proposed varied 3.9 GHz licence and current 3.9 GHz licence.¹⁴



¹⁴ The “previous 3.9 GHz mask” has been normalised to dBm/ 5 MHz for comparison purposes.

Implementation in the licence

- 3.10 The above technical changes mean that the current Interface Requirement IR 2015 will no longer be applicable. The current licence refers to this Interface Requirement, which has the effect of limiting the licence to fixed services. To ensure this limitation remains, we propose to add a clause with this effect to the licence itself.
- 3.11 Our proposed changes to the 3.9 GHz licence are marked up in Annex 3.

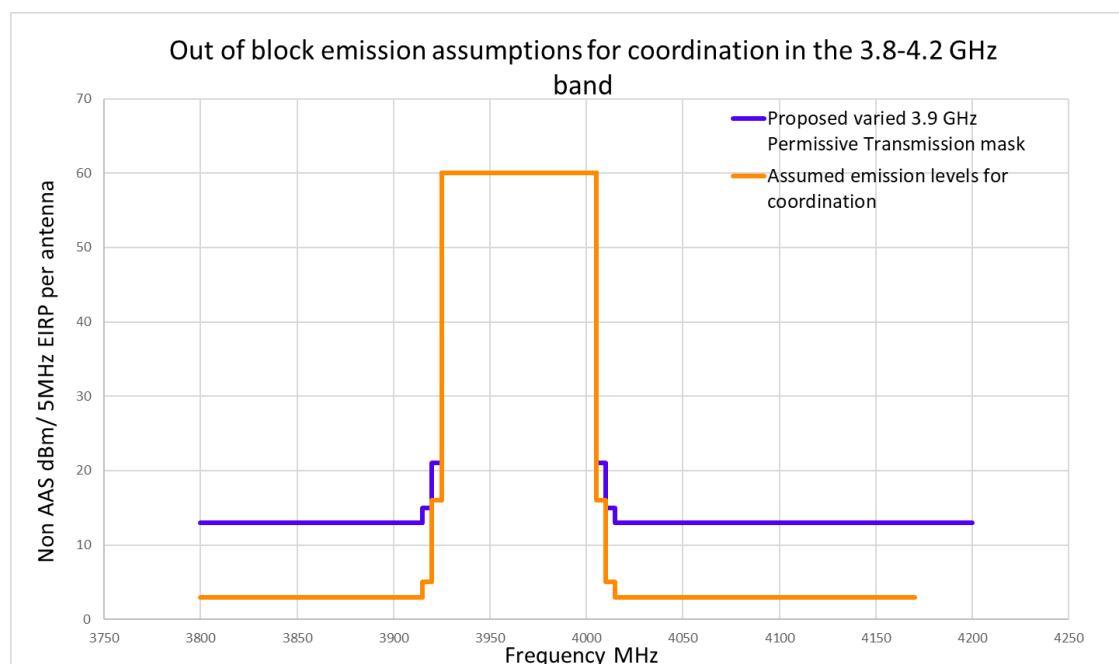
Impact on other spectrum users

- 3.12 H3G accesses the 3.9 GHz spectrum on a shared first-come-first-served basis. In reviewing the variation request, we have considered whether the new technical conditions will cause interference to other users: satellite earth stations, fixed links and Shared Access users.
- 3.13 The proposed in-block power is equivalent to the current 3.9 GHz licence. Therefore, there should be no increased risk of interference for any other services which operate co-channel with the 3.9 GHz licence. This includes any Shared Access users that are licensed in the 3.9 GHz spectrum.
- 3.14 For adjacent channel uses, any potential impact from H3G assignments is a combination of H3G's out-of-block emissions and the receiver performance of those adjacent users' radio equipment. As the proposed in-block power remains equivalent to the current 3.9 GHz licence, then any change in the risk of interference will be as a result of the increase in out-of-block emission limits shown in Figure 2.
- 3.15 We recognise, and as noted in ECC Report 249,¹⁵ that out-of-block emissions in practice are often lower than the regulatory masks that we set in our licences. We accounted for this in our coordination between Shared Access users and other users in our statement on "Enabling wireless innovation through local licensing" in 2019.¹⁶ Specifically, we assumed that emission levels are reduced by 5dB in the adjacent 5 MHz and 10dB thereafter in our coordination.
- 3.16 We propose to adopt a similar approach when coordinating H3G with other users in the band and will use the emission masks in Figure 3 for H3G transmissions. However, if H3G provide us with detailed emission measurements from its base stations then we will consider updating the levels when coordinating H3G with other users. We will co-ordinate all H3G assignments using the equivalent non-AAS emission masks as these also reflect the AAS base stations (based on TRP + 21dBi beam gain).

¹⁵ ECC REPORT 249 https://docdb.cept.org/document/category/ECC_Reports?status=ACTIVE&sort=titleASC

¹⁶ See Annex 4 of [Enabling wireless innovation through local licensing](#), July 2019.

Figure 3: Out-of-block emission assumptions for coordination of H3G base stations with other users in the 3.8–4.2 GHz band



Satellite Earth Stations

- 3.17 Satellite earth stations in this band receive data from satellites in space. Satellite earth stations are both co-channel and adjacent channel to H3G use in the 3.9 GHz spectrum and are technically coordinated by us.
- 3.18 We propose to amend our coordination process to use the assumed emission levels in Figure 3. We will re-coordinate any relevant H3G assignments which are not co-channel with each satellite earth station assignment (including the MOD locations at Bude and Menwith Hill) to ensure that protection is maintained and that current and new satellite earth stations are not subject to undue interference as a result of the changes that H3G requested.¹⁷ Any existing H3G assignments that fail the re-coordination would need to be removed.

¹⁷ This is in line with our statutory duties, which include having regard to the extent to which spectrum is available for use.

Fixed Links

- 3.19 Fixed links are terrestrial based wireless systems that operate between two or more fixed points. There is fixed link use in nearby frequency channels (3815–3875 MHz paired with 4135–4195 MHz) and we technically coordinate these with H3G assignments.
- 3.20 There is 50 MHz of frequency separation to fixed links below the 3.9 GHz spectrum and 126 MHz separation above the 3.9 GHz spectrum. As with coordination with satellite earth stations, we propose to amend our coordination process to use the assumed emission levels in Figure 3. We will re-coordinate relevant H3G assignments with existing fixed links to ensure that protection is maintained, and that current and new fixed links are not subject to undue interference. We will remove any existing H3G assignments that fail the re-coordination.

Shared Access base stations

- 3.21 Currently we coordinate H3G assignments with any Shared Access users (in both directions) that are within 2.5 times the channel bandwidth either side of the channel centre. As part of Ofcom’s Shared Access consultation, we proposed to only consider coordination with H3G’s 3.9 GHz assignments in the first 5 MHz either side of the 3.9 GHz spectrum.^{18, 19} At the time we made that proposal, we were aware of the likely H3G request to vary its 3.9 GHz licence.
- 3.22 As with coordination with the other users, we propose to amend our coordination process to use the assumed emission levels in Figure 3. If we were to proceed with our Shared Access consultation proposal to limit adjacent channel coordination between H3G and Shared Access to the first 5 MHz, there may be an increase in the risk of interference to a Shared Access user that has more than a 5 MHz frequency separation from H3G assignments.²⁰ However, we do not think that this is a disproportionate risk of interference, or a higher risk than is managed from mobile use below 3.8 GHz for similar frequency separations.²¹ If any interference did occur then this would continue to be addressed under the Shared Access Framework, which may include moving Shared Access users further away in frequency.

¹⁸ Ofcom, [Supporting increased use of shared spectrum](#), November 2023, paragraph 4.3.

¹⁹ This is consistent with the approach taken at the 3.8 GHz boundary where Shared Access users above 3805 MHz are not coordinated with base stations below 3800 MHz.

²⁰ Channel edge to channel edge separation.

²¹ This is because the 3.9 GHz licence conditions have a slightly lower in-block power limit than those for the band below 3.8 GHz.

Other impacts

Impact on consumers and citizens

- 3.23 We consider that agreeing with the technical variations put forward by H3G would benefit consumers and citizens. Currently, H3G uses 5G technology in parts of 3.4–3.8 GHz for FWA and mobile services and this could mean congestion in that band at peak times. If H3G carries out its planned deployments and offloads FWA traffic onto 3.9 GHz spectrum, it would likely be able to offer consumers an improved FWA service with increased capacity.²² We expect this may also benefit H3G’s mobile customers if H3G’s mobile service capacity improves as FWA traffic is offloaded from 3.4–3.8 GHz to 3.9 GHz.

Impact on competition, investment and innovation

- 3.24 We do not consider that granting the technical variations set out above would have a detrimental impact on competition.
- 3.25 As noted above, the technical variations requested by H3G would facilitate the use of 5G technology to deliver FWA services. In its variation request H3G argued that this would bring “*new network competition in many areas of the UK that currently have little or no choice of fixed broadband provider.*”²³ We recognise this may offer consumers greater choice of broadband services. However, at present it is unclear to what extent this will occur. Given, as set out above, that we expect the changes to have very little or no impact on other Shared Access users, we do not expect it to have an impact on competition in the markets that they operate in.
- 3.26 In relation to mobile competition, we do not consider that the proposed technical variations raise competition concerns. We note that the variations will not enable H3G to use its 3.9 GHz licence to provide public mobile services.
- 3.27 Granting the technical variations would be in line with similar changes we have made to other bands to accommodate newer technologies, provided that they do not significantly impact the interference environment. We consider that this would have a positive impact on investment, with H3G investing in the rollout and expansion of its proposed FWA service.

²² Based on us facilitating the use of 5G equipment and Massive MIMO technology through this variation. This approach would be consistent with our objective of promoting the efficient use of this spectrum.

²³ See Annex 2 – Licence variation request, pages 5-6.

Impact on Ofcom

- 3.28 We do not consider that there are significant implementation costs for Ofcom to implement the new technical conditions.

Our provisional conclusions

- 3.29 In light of our considerations and analysis above, we are minded to agree to H3G's request to vary the technical conditions of its licence with the changes set out above and marked up in Annex 3.

Question 1: Do you agree with our proposed technical changes to the licence?

Question 2: Do you agree with our assessment of the impacts of our proposed technical changes to the licence?

Please provide evidence in support of your views.

4. Proposed changes to promote efficient use of the spectrum

- 4.1 This section sets out our proposals to promote efficient use of the 3.9 GHz spectrum.
- 4.2 The changes we are proposing are:
 - a) To update the terms of H3G's 3.9 GHz licence to align with our first-come-first-served sharing policy by introducing a requirement to use assignments (a 'use clause').
 - b) To introduce technical changes to how we coordinate H3G's use of this spectrum with Shared Access users in the band, to enable us to authorise different users more closely together.
- 4.3 We also note other potential changes – to fees and the frequency range of operation – that we have considered but are not proposing to introduce at present.

Introduction of a requirement to use assignments

- 4.4 As noted in section 2, our established policy for the 3.8–4.2 GHz band (in which the 3.9 GHz licence sits) is to enable all spectrum users to access it on a shared, first-come-first-served basis. Under first-come-first-served access users can request access to spectrum at locations where they intend to use it, and we anticipate they will release spectrum if no longer needed. First-come-first-served access is not meant to be used for reserving spectrum indefinitely without use as this can prevent others from accessing spectrum where and when they need it and is inconsistent with our sharing and innovation objectives.
- 4.5 We note that H3G currently has around 26,000 assignments at approximately 9,000 locations which are preventing other users from accessing the 3.9 GHz spectrum across most of the UK. At present the assignments are unused but H3G has said it intends to offload FWA traffic from its 3.6 GHz spectrum onto 3.9 GHz spectrum once Ofcom has granted its requested technical variation.²⁴
- 4.6 To better align H3G's access with the overall first-come-first-served policy for the 3.8–4.2 GHz band, and to promote efficient use of spectrum, we are clarifying how H3G's assignments may be used to reserve spectrum. To give effect to our objectives we are introducing a requirement for it to use assignments within a given timeframe (a 'use clause'). This will allow H3G to deploy FWA where it intends to offer a service, whilst enabling others to access the spectrum on a first-come-first-served basis in areas where H3G does not intend to deploy.

²⁴ See Annex 2 "Licence variation request".

4.7 **In summary our specific proposal is to introduce a clause that will require assignments to be brought into use within 18-months of coordination. This would apply from 3.5 years after the licence variation thus effectively phasing in this requirement over a five year period.** The provision we propose to insert in the 3.9 GHz licence is:

The Licensee must commence regular wireless telegraphy transmissions from each Co-ordinated base station within 18 months of whichever of the following dates is later:

- *[the date 3.5 years after variation]; or*
- *the date on which Ofcom notified the Licensee that the base station is Co-ordinated;*
and maintain regular transmissions thereafter.

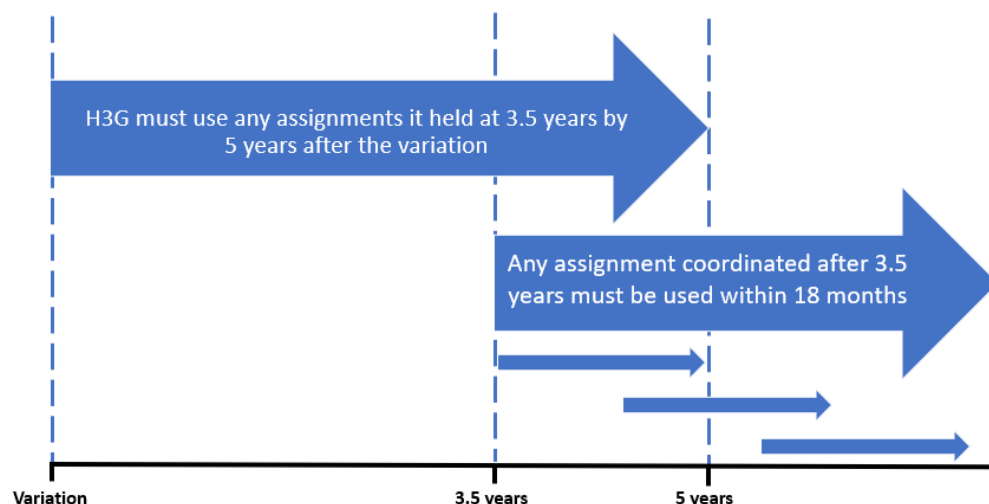
4.8 In practice, the key steps would be:

- During the first 3.5 years, we expect H3G to start its FWA service rollout, adding (subject to coordination) or removing assignments as its plans develop. H3G is not required to use assignments within this period.
- After 3.5 years, we expect H3G to have reasonably well-developed plans about the assignments it intends to use within the following 18 months. If H3G does not intend to use an assignment within that timeframe (3.5 to 5 years subsequent to variation), it should ask Ofcom to remove the assignment from our coordination system.
- By the 5 year point, H3G must have brought into use any coordinated assignment held at the 3.5 year point. We expect to gather information from H3G to check compliance with this requirement. If H3G contravenes this requirement, we may remove that assignment from our coordination system. This may allow other users, like Shared Access users, to apply for a licence that would otherwise have been blocked by H3G's assignment, and (subject to coordination) make use of the spectrum.
- Any new assignments that H3G applies for after the 3.5 year point will be subject to the 18-month use clause.²⁵ As above, we may gather information to determine compliance with this requirement and may remove assignments that H3G has not used within the required timeframe from our coordination system.
- Where we propose to remove an assignment from our coordination system we will give H3G an opportunity to make representations beforehand. The clauses we propose to insert into the licence, which appear in markup in Annex 3, reflect this.

4.9 We expect H3G to only apply for and maintain an assignment if it intends to use it within the required timeframe. We would be concerned if H3G applied for and maintained assignments that it did not intend to use by the required timeframe. This would be inconsistent with our objective to enable others to access the spectrum in areas where H3G does not intend to deploy in a timely manner.

²⁵ This time period will start running from the date Ofcom notifies H3G that the assignment has passed coordination.

Figure 4 – Timeline of use clause



4.10 Below we discuss in more detail some specific aspects of this proposal: the timescale for its introduction; the timescale for use; and the definition of use.

Timescale for introduction

- 4.11 Under our proposal, the earliest date that H3G will be required to use an assignment without risking removal will be the date 5 years after the variation. We judge this period to be proportionate as it will allow sufficient time for H3G to develop and start to carry out its FWA rollout plans, including procuring equipment, obtaining necessary permits, negotiating with landlords and deploying base stations. [3<].²⁶
- 4.12 We also considered whether H3G should be subject to a requirement to use assignments earlier than 5 years after the variation. However, having taken account of H3G's plans for the spectrum, as well as the nature of a widespread rollout (which needs planning and deployment over multiple years), we consider that this is less likely to be proportionate.

Timescale for use – subsequently granted assignments

- 4.13 Where an assignment has passed coordination after the 3.5 year point, H3G will need to bring that assignment into use within 18 months.
- 4.14 For example, if an assignment passes coordination on a date 4.5 years after the variation, H3G will need to bring that assignment into use by the date 6 years from the variation.
- 4.15 We judge this 18-month period to be proportionate, taking account of:
- a) the practical considerations of rolling out a base station or number of base stations; and
 - b) that H3G will have reasonably well-developed rollout plans within 3.5 years of variation.

²⁶ Confidential version of H3G's variation request dated 29 November 2023, p 10.

- 4.16 We considered whether it would be consistent with our policy aims to allow a timeframe that is longer than 18 months. However, we considered that this would not strike an appropriate balance between H3G's interests and those of other potential users of the bands. We also considered whether H3G should be required to transmit within 6 months, as in Shared Access licences. However, accounting for the practical challenges of planning and implementing a large-scale network, we considered that this may not allow H3G sufficient time between having a base station coordinated and bringing that base station into use.

Definition of “use”

- 4.17 We have based the definition of ‘use’ of an assignment on the definition that appears in Shared Access licences. That is, we will view use as the licensee commencing regular wireless telegraphy transmissions from a base station within the specified timeframe and maintaining regular transmissions thereafter.

Updating the clause on the provision of information to Ofcom

- 4.18 Lastly, we are proposing to update the clause in the licence which requires H3G to provide certain information to Ofcom on request (Schedule 1, para 2(d)). We propose to update this clause to reflect the wording used in more recent licences.²⁷

Impact of our proposals

Impact on H3G

- 4.19 We do not consider the use clause will prevent H3G from deploying assignments it intends to use because our proposals will give it sufficient time to bring assignments into use before they could be removed for non-use (see paragraphs 4.11 to 4.16 above).
- 4.20 H3G may face a small increase in administration costs where we request information about its spectrum use to monitor compliance with the use clause. We consider this impact to be minor as H3G should already hold this information.

Impact on potential future users

- 4.21 The use clause could benefit potential future users of the band, because it may result in H3G assignments being removed and so free up spectrum for future Shared Access users. This in turn could bring benefits to citizens and consumers.

Impact on Ofcom

- 4.22 We would need to undertake some compliance activity, including gathering information from H3G on its use. We do not expect this to require significant resources from Ofcom.

Impact on competition, investment and innovation

²⁷ For example, see [EE Limited's Spectrum Access 700 MHz licence](#) issued on 18 May 2021, schedule 1 paragraph 3(e).

- 4.23 We do not envisage the use clause will prevent H3G deploying the assignments it intends to use. Therefore, we do not consider that our proposals will have a negative impact on H3G's investment or will have any detrimental impact on competition.
- 4.24 Our Shared Access licence products are intended to support innovation. Our proposed use clause could therefore support further innovation if it leads to additional spectrum being made available for Shared Access users.

Proposed licence changes

- 4.25 Our proposed changes to the 3.9 GHz licence to implement the 'use clause' are set out in markup at Annex 3 (see schedule 1). We have also updated an erroneous cross-reference in paragraph 17 of the licence.

Technical changes to update coordination with Shared Access users

Assuming synchronisation

- 4.26 Currently our coordination assumes unsynchronised use between different Shared Access users and between H3G and Shared Access users. This ensures a high level of protection between neighbouring users as it protects uplink transmissions at one user's base stations from downlink transmissions (from base stations) of other users. However, this can lead to very conservative and large separation distances. It also limits opportunities for other users to access spectrum, which may be unnecessary when users are using the same frame structure.²⁸
- 4.27 In our Shared Access Consultation,²⁹ we published proposals to take a less conservative approach to coordination of Shared Access deployments in the band. We proposed to coordinate Shared Access on the basis that users are synchronised. This means we will consider interference from one user's base stations to another user's terminals, rather than to its base stations. However, the frame structure to be used would not be mandated.
- 4.28 H3G's licence variation request (see section 3) means that H3G will deploy a frame structure compatible with a 3 down and 1 up (as defined in its 3.6 GHz licence). Shared Access users that are aligned with this frame structure may benefit from reduced separation distances between H3G assignments and Shared Access deployments. However, we recognise that where frame structures are not aligned there are some risks of interference.

²⁸ A frame structure describes the mix of uplink and downlink transmissions over a time in TDD (Time Division Duplex) spectrum. Synchronising these transmissions between users means that they all transmit in the downlink at the same time and in the uplink at the same time. This means that the potential interference between users is from one base station to another's terminals and vice versa rather than between base stations. This effectively reduces the separation needed between base stations.

²⁹ Ofcom, [Supporting increased use of shared spectrum](#), November 2023.

- 4.29 On balance, we propose to modify the current approach when coordinating H3G with Shared Access users, to assume that co-channel Shared Access users are also compatible with this 3:1 frame structure. We propose to assess interference from H3G's base stations to Shared Access user terminals. This would align our approach for coordinating H3G with Shared Access users with our proposals for coordinating Shared Access users with each other in the Shared Access consultation.
- 4.30 To implement this, we propose to protect those Shared Access user terminals at a height of 3m and a signal level of -91dBm/20 MHz (which is one of the options we proposed in the Shared Access Framework consultation). However, we do not propose to mandate the frame structure for Shared Access users in the 3.9 GHz spectrum. This will provide Shared Access users with flexibility over the frame structures and technology that they use.

Impact of our proposals

Impact on H3G and Shared Access users

- 4.31 Assuming synchronisation between H3G and Shared Access users reduces the co-channel sterilisation around each of H3G's assignments to a few kilometres, from several tens of kilometres. However, the number and geographical spread of H3G's current assignments mean that currently there will only be a limited increase in access for Shared Access users, likely in rural areas. Nonetheless, where our 'use clause' proposals above reduce the number of H3G assignments, this may increase the geographic availability of spectrum for Shared Access users.
- 4.32 Any Shared Access user that is using 3GPP³⁰ technology is unlikely to cause interference to H3G base stations, although there remains a small possibility of this where a Shared Access user has a different frame structure. But there is a risk that a co-channel Shared Access user on a more uplink heavy frame structure could suffer some interference from H3G on the additional Shared Access uplink timeslots, limiting its uplink capacity.³¹
- 4.33 We currently do not think it would be proportionate to introduce the additional complexity of requiring Shared Access users to provide information on their technology and frame structure and to allocate spectrum based on this.
- 4.34 Instead, we are proposing to manage this risk of interference by allocating Shared Access users to other parts of the band in preference to allocating in 3.9 GHz spectrum. We intend to make this clear in the Shared Access guidance document, so that a Shared Access user who is allocated a channel in the 3.9 GHz spectrum and is not synchronised with H3G can

³⁰ The 3rd Generation Partnership Project (3GPP) is an umbrella term for a number of standards organisations that develop protocols for mobile telecommunications.

³¹ For example, where a SAL user was using a 2:2 frame structure then one of its uplink slots could suffer some interference from the H3G base station, the extent of the impact would depend on the separation distance between the two base stations, the local geography around each base station and the expected uplink signal level received at the SAL base station. Where the impact was significant then the SAL user could see a reduction in its uplink throughput of up to 50%.

make its own judgement over whether to accept the assignment (as the alternative would be no spectrum access at all as other parts of the band would be unavailable).

- 4.35 We therefore consider that this risk of interference to unsynchronised users is low.

Impact on Ofcom

- 4.36 Assuming that we proceed with our Shared Access proposals to update the coordination approach in 3.8–4.2 GHz band, then we do not consider there to be significant costs to Ofcom (either initial or ongoing) to implement the proposed changes to the coordination in the 3.9 GHz spectrum.

Removing adjacent channel protections of H3G assignments from Shared Access users.

- 4.37 Due to the lower power of low and medium power shared access relative to H3G's high power FWA, we already consider coordination between Shared Access users on a co-channel basis only (i.e. we do not consider adjacent channels).
- 4.38 However, in the case of H3G assignments we currently coordinate with all users within 2.5x of the assignment bandwidth either side of the centre frequency. We now propose that we will coordinate shared access base stations to H3G assignments on a co-channel basis only. Given the lower power nature of the Shared Access users and the 3:1 frame structure that will be used by H3G we consider that the risk of interference to H3G assignments from Shared Access users will be low.

Other policies considered

- 4.39 We considered other policy options to enable and promote efficient use but have decided not to propose these in this consultation for the reasons summarised below.

Pricing

- 4.40 We considered whether now was a good time to review the fee for the 3.9 GHz licence, recognising that pricing can play an important role in promoting the efficient use of spectrum and noting that we last reviewed, but did not change, the fee in 2005.
- 4.41 Our view is that the use clause proposed above is the most appropriate policy tool to achieve our policy objective at this time, and therefore we are not proposing to revisit the licence fee at present. However, we may review our approach to the fee, for example the level and/or structure, in the future.

Frequency move

- 4.42 We considered whether moving H3G's licence in frequency to start at 3.8 GHz could be proportionate to promote more efficient use of the wider 3.8–4.2 GHz band. This move would result in only one boundary with higher power base stations rather than three boundaries. This could increase the amount of usable spectrum and would remove possible

fragmentation in the band for Shared Access users, particularly for those with higher bandwidths.

- 4.43 However, this move would be incompatible with ten existing fixed links in SE England and a significant number of Shared Access users (with nearly 150 Shared Access licences) would end up co-channel with H3G and would therefore need to retune their equipment. Some of these users are likely to be in this frequency range because their equipment has a limited tuning range.
- 4.44 Therefore, we are not proposing this move as we do not consider it would be proportionate to the benefits.

Question 3: Do you agree with our proposal to introduce a use clause, including the specific timeframes proposed?

Question 4: Do you agree with our assessment of the impacts of our proposed use clause?

Question 5: Do you have any other comments on our proposed use clause?

Question 6: Do you agree with our proposal to update coordination with Shared Access users to assume synchronisation?

Question 7: Do you agree with our proposal to remove adjacent channel protections of H3G assignments from Shared Access users?

Please provide evidence in support of your views.

5. Impact assessments and legal tests

Impact assessment

- 5.1 Section 7 of the Communications Act 2003 requires us to carry out and publish an assessment of the likely impact of implementing a proposal which would be likely to have a significant impact on businesses or the general public, or when there is a major change in Ofcom's activities.
- 5.2 Impact assessments provide a valuable way of assessing different policy options and considering the potential effects of our proposals. They form part of best practice policy making.
- 5.3 We have assessed how our proposals may affect the relevant stakeholders which include existing users of the 3.9 GHz spectrum, possible future users, citizens and consumers, and Ofcom. We have also considered how our proposals may impact competition, investment and innovation (in line with our statutory duties, which are set out in Annex 1).
- 5.4 Overall, we consider that the technical variations H3G requested would have very little or no impact on existing users, while enabling H3G to provide an improved FWA service to its customers. We believe it would have a positive impact on investment, with H3G investing in the rollout and expansion of its proposed FWA service.
- 5.5 We also consider that our proposals to promote efficient use of spectrum would allow H3G to carry out planned deployments while enabling more access to spectrum for other users where H3G does not deploy.
- 5.6 We therefore consider that our proposals are consistent with our statutory duties and are objectively justified, proportionate, non-discriminatory and transparent.
- 5.7 We have set out in more detail our assessment of the impact of:
 - a) the technical variations in Section 3, paragraphs 3.13 to 3.29;
 - b) the impact of the use clause for H3G's assignments in the 3.9 GHz licence in Section 4, paragraphs 4.19 to 4.24; and
 - c) the impact of the updated technical co-ordinations in Section 4, paragraphs 4.31 to 4.36 and 4.38.

Equality impact assessment

- 5.8 We have given careful consideration to whether our proposals will have a particular impact on persons sharing protected characteristics (broadly including race, age, disability, sex, sexual orientation, gender reassignment, pregnancy and maternity, marriage and civil partnership, and religion or belief in the UK, and in Northern Ireland also dependents and

political opinion), and in particular whether they may discriminate against such persons or impact on equality of opportunity or good relations. This assessment helps us comply with our duties under the Equality Act 2010 and the Northern Ireland Act 1998.³² We do not consider that our proposals have equality implications under the 2010 Act or the 1998 Act.

Welsh language impact assessment

- 5.9 Ofcom is required to take Welsh language considerations into account when creating, revising and consulting on policies which are relevant to Wales (including proposals which are not targeted at Wales specifically but are of interest across the UK).
- 5.10 We do not consider our proposals impact the ability to use the Welsh language or treat the Welsh language no less favourably than the English language. We also do not think there are ways in which our proposal could be formulated to have, or increase, a positive impact, or not have adverse effects or decrease any adverse effects on the use of the Welsh language. This is because our proposals relate to a nationwide licence.
- 5.11 We note that Ofcom's current practice is to offer to produce spectrum licences in Welsh, and when requested does provide licences in Welsh, in accordance with its obligations set by the Welsh Language Commissioner.³³ Ofcom will continue to take this approach in relation to this licence.

Question 8: Do you have any comments on our impact assessment (to the extent not covered by previous questions)?

Question 9: Do you have any comments on our Equality impact assessment?

Question 10: Do you have any comments on our Welsh Language impact assessment?

Question 11: Do you have any other comments on our proposals?

Please provide evidence in support of your views.

³² Further detail is given in section 149 of the Equality Act 2010 and section 75 of the Northern Ireland Act 1998.

³³ Compliance Notice – Section 44 Welsh Language (Wales) Measure 2011, The Office of Communications, 25 July 2016, paragraph 38. https://www.ofcom.org.uk/_data/assets/pdf_file/0034/96919/Hysbysiad-Cydymffurfio44-Y-Swyddfa-Gyfathrebiadau-en.pdf

6. Next steps

- 6.1 We will consider responses to this consultation once the window for receiving responses closes on 15 July 2024 and plan to publish a Statement setting out our policy decisions in Q4 2024.
- 6.2 We will then follow the process set out in Schedule 1 of the Wireless Telegraphy Act 2006 before varying the licence (see paragraph A1.12 below). This will normally involve notifying H3G of the reasons for the proposed variation, allowing 30 days for representations, making a final decision within one month of the end of the period for representations and issuing a notification of our final decision.
- 6.3 If we proceed with our proposals, we intend to update our coordination procedures in the 3.8–4.2 GHz band. In so doing we will take account of any changes implemented as part of our review of the Shared Access Framework.
- 6.4 We will also need to re-coordinate or remove some H3G assignments where relevant (as discussed in paragraphs 3.19 and 3.21).

A1. Legal framework

A1.1 This section provides an overview of the main legislative provisions relevant to spectrum licensing and to our proposed variation of the licence. The legal framework derives from Ofcom's duties and powers under the [Communications Act 2003](#) (the "2003 Act") and the [Wireless Telegraphy Act 2006](#) (the "2006 Act").

Ofcom's general duties

A1.2 Section 3 of the 2003 Act sets out Ofcom's general duties. Under section 3(1) it is the principal duty of Ofcom in carrying out its functions:

- to further the interests of citizens in relation to communications matters; and
- to further the interests of consumers in relevant markets, where appropriate by promoting competition.

A1.3 In doing so, Ofcom is required to secure, amongst other things (under section 3(2)):

- the optimal use for wireless telegraphy of the electro-magnetic spectrum; and
- the availability throughout the UK of a wide range of services.

A1.4 In performing its duties, Ofcom must have regard to, amongst others, the following matters:

- the desirability of promoting competition (section 3(4)(b));
- the desirability of encouraging investment and innovation (section 3(4)(d));
- the desirability of encouraging availability and use of high speed data transfer services throughout the UK (section 3(4)(e));
- the different needs and interests, so far as the use of the electro-magnetic spectrum for wireless telegraphy is concerned, of all persons who may wish to make use of it (section 3(4)(f)); and
- the different interests of persons in different parts of the UK (section 3(4)(l)).

A1.5 In performing its duties, Ofcom is required under section 3(3) of the 2003 Act to have regard in all cases to the principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed, and to any other principles appearing to Ofcom to represent the best regulatory practice.

Ofcom's duties when carrying out spectrum functions

A1.6 Additionally, in carrying out its spectrum functions Ofcom has a duty under section 3 of the 2006 Act to have regard in particular to:

- the extent to which the spectrum is available for use, or further use, for wireless telegraphy;
- the demand for use of that spectrum for wireless telegraphy; and
- the demand that is likely to arise in future for such use.

- A1.7 Ofcom also has a duty to have regard, in particular, to the desirability of promoting:
- the efficient management and use of the spectrum for wireless telegraphy;
 - the economic and other benefits that may arise from the use of wireless telegraphy;
 - the development of innovative services; and
 - competition in the provision of electronic communications services.
- A1.8 We have had regard to our duties when formulating our proposals to vary the 3.9 GHz licence.

Licence variation

Ofcom's spectrum management functions and licensing powers

- A1.9 Parliament has conferred on Ofcom spectrum management functions in the UK, which are set out in the 2006 Act. These powers include (under sections 9 and 10) the general power to grant wireless telegraphy licences subject to such terms, provisions and limitations as Ofcom thinks fit, and to revoke or vary such licences, subject to any restrictions Ofcom has written into the relevant licences. Schedule 1 of the 2006 Act sets out a process for the variation of wireless telegraphy licences.
- A1.10 Ofcom has a duty pursuant to section 9(7) of the 2006 Act to ensure that wireless telegraphy licence conditions are objectively justifiable in relation to the networks and services to which they relate, non-discriminatory, proportionate and transparent.
- A1.11 Ofcom has a broad discretion under paragraph 6 of Schedule 1 of the 2006 Act to vary licences, subject to certain limitations:
- pursuant to paragraph 6A of Schedule 1 of the 2006 Act, any variation of a wireless telegraphy licence must be objectively justifiable;
 - Ofcom has a general duty not to discriminate unduly between operators and to ensure that its interventions are proportionate, consistent and targeted only at cases in which action is needed (section 3(3) of the 2003 Act);
 - Ofcom must act in accordance with its other statutory duties and general legal principles, including the duties to act reasonably and rationally when making decisions and to take account of any legitimate expectations.

The licence variation process

- A1.12 Schedule 1 of the 2006 Act sets out a process for the variation of wireless telegraphy licences. In summary, Ofcom is required to take the following steps (paragraphs 6 and 7 of Schedule 1):
- a) notify the licensee of the reasons for the proposed variation;
 - b) specify a period of at least 30 days in which the licensee may make representations about the proposal;

- c) decide whether or not to vary the licence within one month of the end of that period; and
- d) give the licensee a notification of its decision.

A1.13 In cases where a variation is proposed by the licensee, Ofcom is under no obligation (under the 2006 Act) to consult on the proposal. Notwithstanding this, we consider that the variation requested by H3G is important for the purposes of section 7 of the 2003 Act. On that basis, we are publishing for consultation our proposal to vary this licence in accordance with H3G's request and our assessment of the likely impact of doing so, to give interested third parties an opportunity to make representations. We are also consulting on changes to the licence that have not been requested by H3G. We have developed these proposals in light of our statutory duties, which are summarised above.

A1.14 Following consideration of stakeholders' responses, we will publish our final decision, which we are currently aiming to make in Q4 2024.

Analytical framework

A1.15 In formulating our proposals we have taken account of our duties as set out above. In doing so, the factors we have considered include:

- b) securing optimal spectrum use;
- c) benefits for consumers and citizens;
- d) the impact on spectrum users;
- e) encouraging innovation and investment; and
- f) promoting competition.

A2. Licence variation request

A2.1 A non-confidential version of the licence variation request from UK Broadband can be found [here](#).

A3. Draft licence

A3.1 A marked-up version of the 3.9 GHz licence which shows the proposed changes can be found [here](#).

A4. Responding to this consultation

How to respond

- A4.1 Ofcom would like to receive views and comments on the issues raised in this document, by 5pm on 15 July 2024.
- A4.2 You can download a response form from <https://www.ofcom.org.uk/consultations-and-statements/category-2/consultation-optimal-use-of-3.9-ghz-spectrum>. You can return this by email or post to the address provided in the response form.
- A4.3 If your response is a large file, or has supporting charts, tables or other data, please email it to liz.hall@ofcom.org.uk, as an attachment in Microsoft Word format, together with the cover sheet.
- A4.4 Responses may alternatively be posted to the address below, marked with the title of the consultation:
- Liz Hall
Ofcom
Riverside House
2A Southwark Bridge Road
London SE1 9HA
- A4.5 We welcome responses in formats other than print, for example an audio recording or a British Sign Language video. To respond in BSL:
- send us a recording of you signing your response. This should be no longer than 5 minutes. Suitable file formats are DVDs, wmv or QuickTime files; or
 - upload a video of you signing your response directly to YouTube (or another hosting site) and send us the link.
- A4.6 We will publish a transcript of any audio or video responses we receive (unless your response is confidential)
- A4.7 We do not need a paper copy of your response as well as an electronic version. We will acknowledge receipt of a response submitted to us by email.
- A4.8 You do not have to answer all the questions in the consultation if you do not have a view; a short response on just one point is fine. We also welcome joint responses.
- A4.9 It would be helpful if your response could include direct answers to the questions asked in the consultation document. The questions are listed at Annex 7. It would also help if you could explain why you hold your views, and what you think the effect of Ofcom's proposals would be.

A4.10 If you want to discuss the issues and questions raised in this consultation, please contact liz.hall@ofcom.org.uk

Confidentiality

- A4.11 Consultations are more effective if we publish the responses before the consultation period closes. This can help people and organisations with limited resources or familiarity with the issues to respond in a more informed way. So, in the interests of transparency and good regulatory practice, and because we believe it is important that everyone who is interested in an issue can see other respondents' views, we usually publish responses on the Ofcom website at regular intervals during and after the consultation period.
- A4.12 If you think your response should be kept confidential, please specify which part(s) this applies to and explain why. Please send any confidential sections as a separate annex. If you want your name, address, other contact details or job title to remain confidential, please provide them only in the cover sheet, so that we don't have to edit your response.
- A4.13 If someone asks us to keep part or all of a response confidential, we will treat this request seriously and try to respect it. But sometimes we will need to publish all responses, including those that are marked as confidential, in order to meet legal obligations.
- A4.14 To fulfil our pre-disclosure duty, we may share a copy of your response with the relevant government department before we publish it on our website.
- A4.15 Please also note that copyright and all other intellectual property in responses will be assumed to be licensed to Ofcom to use. Ofcom's intellectual property rights are explained further in our Terms of Use.

Next steps

- A4.16 Following this consultation period, Ofcom plans to publish a statement in Q4 2024.
- A4.17 If you wish, you can register to receive mail updates alerting you to new Ofcom publications.

Ofcom's consultation processes

- A4.18 Ofcom aims to make responding to a consultation as easy as possible. For more information, please see our consultation principles in Annex 5.
- A4.19 If you have any comments or suggestions on how we manage our consultations, please email us at consult@ofcom.org.uk. We particularly welcome ideas on how Ofcom could more effectively seek the views of groups or individuals, such as small businesses and residential consumers, who are less likely to give their opinions through a formal consultation.
- A4.20 If you would like to discuss these issues, or Ofcom's consultation processes more generally, please contact the corporation secretary:

A4.21 Corporation Secretary
Ofcom
Riverside House
2a Southwark Bridge Road
London SE1 9HA
Email: corporationsecretary@ofcom.org.uk

A5. Ofcom's consultation principles

A5.1 Ofcom has seven principles that it follows for every public written consultation:

Before the consultation

A5.2 Wherever possible, we will hold informal talks with people and organisations before announcing a big consultation, to find out whether we are thinking along the right lines. If we do not have enough time to do this, we will hold an open meeting to explain our proposals, shortly after announcing the consultation.

During the consultation

A5.3 We will be clear about whom we are consulting, why, on what questions and for how long.

A5.4 We will make the consultation document as short and simple as possible, with an overview of no more than two pages. We will try to make it as easy as possible for people to give us a written response.

A5.5 When setting the length of the consultation period, we will consider the nature of our proposals and their potential impact. We will always make clear the closing date for responses.

A5.6 A person within Ofcom will be in charge of making sure we follow our own guidelines and aim to reach the largest possible number of people and organisations who may be interested in the outcome of our decisions. Ofcom's Consultation Champion is the main person to contact if you have views on the way we run our consultations.

A5.7 If we are not able to follow any of these seven principles, we will explain why.

After the consultation

A5.8 We think it is important that everyone who is interested in an issue can see other people's views, so we usually publish the responses on our website at regular intervals during and after the consultation period. After the consultation we will make our decisions and publish a statement explaining what we are going to do, and why, showing how respondents' views helped to shape these decisions.

A6. Consultation coversheet

Basic details

Consultation title:

To (Ofcom contact):

Name of respondent:

Representing (self or organisation/s):

Address (if not received by email):

Confidentiality

Please tick below what part of your response you consider is confidential, giving your reasons why

- | | |
|----------------------------------|--------------------------|
| > Nothing | <input type="checkbox"/> |
| > Name/contact details/job title | <input type="checkbox"/> |
| > Whole response | <input type="checkbox"/> |
| > Organisation | <input type="checkbox"/> |
| > Part of the response | <input type="checkbox"/> |

If you selected 'Part of the response', please specify which parts:

If you want part of your response, your name or your organisation not to be published, can Ofcom still publish a reference to the contents of your response (including, for any confidential parts, a general summary that does not disclose the specific information or enable you to be identified)?

Yes ☐ No ☐

Declaration

I confirm that the correspondence supplied with this cover sheet is a formal consultation response that Ofcom can publish. However, in supplying this response, I understand that Ofcom may need to publish all responses, including those which are marked as confidential, in order to meet legal obligations. If I have sent my response by email, Ofcom can disregard any standard e-mail text about not disclosing email contents and attachments.

Ofcom aims to publish responses at regular intervals during and after the consultation period. If your response is non-confidential (in whole or in part), and you would prefer us to publish your response only once the consultation has ended, please tick here.

Name

Signed (if hard copy)

A7. Consultation questions

Question 1: Do you agree with our proposed technical changes to the licence?

Question 2: Do you agree with our assessment of the impacts of our proposed technical changes to the licence?

Question 3: Do you agree with our proposal to introduce a use clause, including the specific timeframes proposed?

Question 4: Do you agree with our assessment of the impacts of our proposed use clause?

Question 5: Do you have any other comments on our proposed use clause?

Question 6: Do you agree with our proposal to update coordination with Shared Access users to assume synchronisation?

Question 7: Do you agree with our proposal to remove adjacent channel protections of H3G assignments from Shared Access users?

Question 8: Do you have any comments on our impact assessment (to the extent not covered by previous questions)?

Question 9: Do you have any comments on our Equality impact assessment?

Question 10: Do you have any comments on our Welsh Language impact assessment?

Question 11: Do you have any other comments on our proposals?

Please provide evidence in support of your views.

The overview section in this document is a simplified high-level summary only. The proposals we are consulting on and our reasoning are set out in the full document.