

# Amazon Kuiper Services Europe SARL application for a non-geostationary earth station network licence

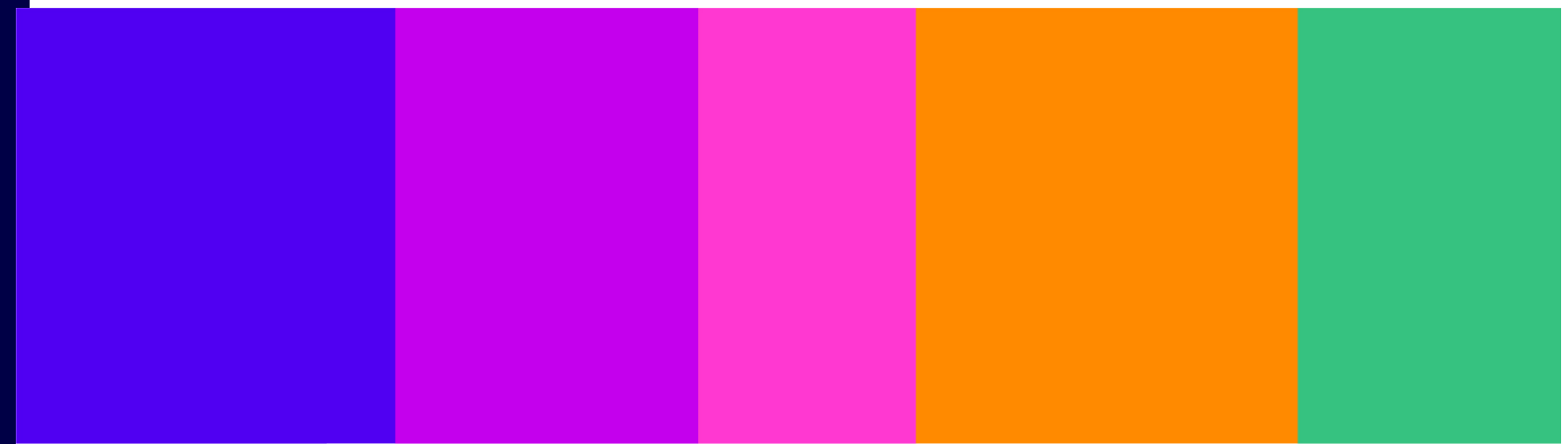
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Request for comments

## Consultation

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# 1. Overview

- 1.1 Non-geostationary orbit (NGSO) satellite systems are a way of delivering broadband services from space using a constellation of satellites, usually in a low or medium earth orbit. They have the potential to deliver higher speeds and lower latency services to consumers, governments, and businesses.
- 1.2 We received an application from Amazon Kuiper Services Europe SARL ('the Kuiper application') for a UK wireless telegraphy satellite earth station network licence (an NGSO network licence) in July 2024. This licence would authorise Kuiper to operate user terminals in the Ka band in the UK, by connecting to its planned NGSO system (also known as Kuiper), to provide secure, high speed, low latency broadband services to households, businesses and other potential customers, as well as backhaul connectivity services.

## What we have decided – in brief

This document sets out our initial assessment of Kuiper's application for an NGSO network licence for its Kuiper system using Ka band frequencies between 27.5-27.8185 GHz, 28.4545-28.8265 GHz, and 29.5-30 GHz. Kuiper plans to provide satellite connectivity services to households, businesses and other potential customers in the UK.

Our preliminary view is that we will grant an NGSO network licence to Kuiper, having considered the technical coexistence and competition impacts of its NGSO system on existing and future NGSO systems and other spectrum services operating in the same frequencies.

We invite comments on Kuiper's application and our preliminary views, as set out in this consultation, by 18 October 2024. Details of Kuiper's application can be found under the "Applications received" section of our [NGSO licensing webpage](#).

We will consider any responses to this consultation before reaching a final decision on whether to grant Kuiper an NGSO network licence to operate in Ka band frequencies 27.5-27.8185 GHz, 28.4545-28.8265 GHz, and 29.5-30 GHz.

The overview section in this document is a simplified high-level summary only. Our decision and reasoning are set out in the full document.

## 2. Introduction and background

- 2.1 Our NGSO licensing process for considering applications for NGSO spectrum licences aims to enable citizen and consumer benefits such as improved connectivity. It was designed to encourage greater cooperation between NGSO licensees, enhance our ability to intervene if harmful interference arises, safeguard competition, and ensure greater transparency through a short consultation process. Our approach to NGSO licensing is set out in our [2021 statement on licensing NGSO satellite systems](#) (the 2021 NGSO statement), and [guidance for NGSO applicants on the licensing process](#).
- 2.2 Our NGSO licensing process covers two types of NGSO licences:
- *Satellite (earth station network) licence* – for NGSO use: authorises an unlimited number of user terminals, for example a satellite dish, to connect to the NGSO satellite system (the NGSO network licence).
  - *Satellite (non-geostationary earth station) licence*: authorises gateway earth stations connecting the NGSO satellite system to the internet or private network (the NGSO gateway licence).
- 2.3 This consultation relates to the first of these licences: an **NGSO network licence**.
- 2.4 The NGSO network licence covers the use of all user terminals for a range of different services in the UK: fixed or static terminals (for home broadband services); land mobile (on trains or roads); or on aircraft and drones in UK airspace, and offshore platforms and ships in UK waters.<sup>1</sup> It permits uplinks from UK user terminals to the NGSO satellite(s). We require the holder of NGSO network licences to have control of the whole satellite network, so it is typically held by the satellite operator. It also places other conditions on licensees (under condition 8 “Additional conditions for operation with non-geostationary satellites”), including to coordinate with other NGSO licensees to prevent harmful interference. All NGSO licences are listed in the “Existing licences” section of our [NGSO licensing webpage](#).

### Kuiper’s application and proposed NGSO system

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- 2.5 We received an application from Amazon Kuiper Services Europe SARL (an affiliate of Kuiper Systems LLC, referred to in this document as ‘Kuiper’) on 12 July 2024 for an NGSO network licence to operate ground-based user terminals (including maritime, aeronautical and land-mobile) that will connect to its NGSO constellation, also known as ‘Kuiper’. It requests to use Ka band frequencies 27.5-27.8185 GHz, 28.4545-28.8265 GHz and 29.5-30 GHz.
- 2.6 In its application, Kuiper states that it is proposing to provide secure, high speed, low latency broadband services to a variety of retail and wholesale customers in the UK<sup>2</sup> including households, government (schools, hospitals and offices), first responders and disaster relief

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<sup>1</sup> Use of the NGSO network licence also extends to the airspace and territorial seas of the Crown Dependencies (i.e. the Channel Islands and Isle of Man), as explained in paragraph 1.15 of the [NGSO licensing guidance](#) and condition 2.1 of the NGSO network licence.

<sup>2</sup> Kuiper states the coverage limit of its first-generation NGSO system is 56 degrees latitude north (which we note crosses Scotland at Falkirk and the Firth of Forth), and that it plans to cover latitudes above 56 degrees in future generations of its NGSO system.

operators and other businesses. It also intends to provide backhaul connectivity to telecommunications carriers. Its NGSO system will use either electronically steered phased array antennas or mechanically steered parabolic antennas.

- 2.7 Kuiper’s planned NGSO constellation, launching in Q4 2024, will consist of 3232 satellites operating at varying altitudes and orbital planes, as summarised in Appendix A to its application. Kuiper has not yet applied for any NGSO gateway licences in the UK at the time of writing. Further information about Kuiper’s NGSO constellation can be found in its [application on our website](#) (reference: KUIPER-NET-1)

## Other NGSO licensees in the UK

- 2.8 We expect applicants to show they are able to operate alongside existing NGSO licensees. At the time of writing, there are six NGSO network licensees in the UK, which permit satellite operators to transmit in the Ku band (14.0-14.5 GHz) and/or Ka band (27.5-27.8185 GHz, 28.4545-28.8265 GHz and 29.4625-30 GHz). Table 1 indicates which of these frequency bands licensees applied to use to connect user terminals to their NGSO constellations (licensees operating in Ka band are likely to be using the same frequencies as Kuiper and are therefore more relevant to assessing coexistence, and Kuiper’s system is unlikely to cause harmful interference to Ku band licensees because there is no frequency overlap).

**Table 1: Existing NGSO network licensees and terminal frequency bands**

NGSO network licensees	Terminal frequency band
Mangata Edge Ltd (Mangata)	Ka band
Telesat LEO Inc (Telesat)	Ka band
Rivada Space Networks GmbH (Rivada)	Ka band
NSLComm Ltd (NSLComm)	Ka band
Starlink Internet Services Limited (a subsidiary of SpaceX) (Starlink)	Ku band
Network Access Associates Ltd (a subsidiary of Eutelsat OneWeb) (OneWeb)	Ku band

- 2.9 Alongside the list of existing licensees, we are also considering an application for an NGSO network licence from Kepler Communications Inc. (Kepler). We published a [consultation](#) for Kepler’s NGSO licence application on 22 March 2024 (the closing date for responses was 29 April), and are considering responses to that consultation before making a decision on Kepler’s application. We note Kepler is planning to operate in a different band (Ku band) to Kuiper, so we do not examine coexistence with Kepler’s NGSO system in this consultation.
- 2.10 In addition, there are seven NGSO gateway earth stations in the UK which all connect to the Starlink NGSO constellation, as shown in table 2. Each NGSO gateway is individually licensed to operate in the Ka band, although some licences are held by teleport/site operators rather than Starlink itself. NGSO gateways are permitted to operate across a wider range of frequencies than user terminals in the UK. When assessing whether Kuiper’s NGSO system can coexist with NGSO gateways in this consultation, we only consider the frequencies shared by both gateways and user terminals (i.e. those listed in paragraph 2.8).

**Table 2: Existing NGSO gateway licensees, their locations and frequency bands**

NGSO gateway licensees	Location	Gateway frequency band
Starlink Internet Services Limited	Fawley	Ka band
Starlink Internet Services Limited	Morn Hill	Ka band
Starlink Internet Services Limited	Wherstead	Ka band
Starlink Internet Services Limited	Woodwalton	Ka band
Starlink Internet Services UK Limited	Isle of Man	Ka band
Arqiva Ltd	Chalfont	Ka band
Goonhilly Earth Station Limited	Goonhilly	Ka band

2.11 These NGSO licences can be found on our [NGSO licensing webpage](#).

## Structure of this document

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2.12 The rest of this document is structured as follows:

- Section 3 assesses Kuiper’s application, including the capability of its proposed NGSO system to coexist with other (current and future) NGSO systems, and other services (GSO networks, radio astronomy and fixed links);
- Section 4 assesses the potential competition risks and benefits that may arise from Kuiper’s application;
- Section 5 covers any other comments, as well as summarising our equality and Welsh language impact assessments;
- Section 6 summarises our proposals and next steps;
- Annex 1 sets out our comprehensive impact assessments, including on equality and the Welsh language;
- Annexes 2 and 3 explain how to respond to this consultation, and set out our consultation principles respectively; and
- Annexes 4 and 5 set out the consultation coversheet and list of consultation questions.

# 3. Assessing the impact on NGSO coexistence

- 3.1 Our [2022 Space Spectrum Strategy](#) sets out our aspiration to enable as many NGSO systems as possible, to provide services and increase choice for citizens and consumers in the UK. NGSO satellites are dynamic by nature, creating a complex spectrum management environment, both in space and on the ground. We recognise the importance of ensuring that different NGSO systems are able to operate alongside each other without increasing the risk of harmful interference, and this is one of the aims of our NGSO licensing process.
- 3.2 The International Telecommunication Union (ITU) Radio Regulations mandate that NGSO satellite operators establish coordination agreements to prevent harmful interference. An order of precedence is assigned to satellite systems or networks based on its satellite filing submission date, and operators must seek an agreement with operators of earlier filed systems and networks. Ultimately, notifying administrations responsible for the satellite filing are responsible for ensuring that operators comply with these ITU obligations.

## Coexistence with existing NGSO systems

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- 3.3 When applying for an NGSO network licence, we ask applicants to demonstrate how coexistence is possible between their NGSO system and other NGSO systems or gateways already licensed in the UK (as well as any NGSO systems that are planning to operate in the same frequency bands and have applied for an NGSO licence). Applicants should also show how they are able to coexist with other specific co-frequency earth stations registered with the ITU<sup>3</sup>.
- 3.4 As explained in paragraph 2.9 of our [NGSO licensing guidance](#), we do not require applicants to have reached a coordination agreement as set out by the ITU. However, in order to minimise the risk of harmful interference to services in the UK, we do request evidence of:
- proactive engagement with other co-frequency NGSO network and gateway licensees (in accordance with licence condition 8.2); and
  - a willingness to reach coordination agreements (with an onus on licensees to ensure that their discussions and agreements comply with UK competition law), that:
    - > ideally result in an ITU coordination agreement;
    - > otherwise, a UK-based coordination agreement.
- 3.5 In summary, where coordination agreements are not reached, we request evidence (as we monitor the progress of discussions) that applicants have a plan, putting reasonable measures in place and demonstrating how it would be possible for their different systems to coexist.
- 3.6 We summarise the current NGSO licensees in tables 1 and 2 and discuss current applicants in paragraph 2.9.

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<sup>3</sup> These are listed at the bottom of our [NGSO licensing webpage](#).

- 3.7 An NGSO network licence should be held by someone who has control over the whole satellite network (including associated user terminals and gateway earth stations), as explained in our [NGSO licensing guidance](#). This is so that licensees are able to comply with the conditions in their licence, including the ability to act upon and mitigate against any interferer transmission/s at any time. Kuiper confirms in its application that it operates and controls the Kuiper NGSO system.
- 3.8 Kuiper states in its application that it has already completed coordination with the Telesat Lightspeed™ NGSO system under an ITU coordination agreement with Telesat<sup>4</sup>. In addition, Kuiper confirms that it will operate its NGSO system in accordance with agreed coordination terms to protect co-frequency earth stations registered with the ITU under provisions No. 9.7A and No. 9.7B of the ITU Radio Regulations.
- 3.9 Although coordination agreements have not yet been completed with other UK NGSO licensees in the Ka band, Kuiper provides technical coexistence analysis showing how its NGSO system will coexist with other Ka band NGSO network licensees as part of its licence application. This includes analysis showing average degraded throughput and increase in unavailability for each Ka band licensee - i.e. for Rivada, Mangata, and NSLComm's NGSO systems (as set out in table 1), as well as Starlink's Ka band NGSO gateways<sup>5</sup> (as set out in table 2). Kuiper states that it has made conservative assumptions to demonstrate coexistence will be possible in realistic operational scenarios. Based on its analysis, Kuiper considers that its NGSO system including its user terminals, would have a minimal impact on other NGSO licensees, in terms of reduction in throughput and increased unavailability. The full analysis of the impact of Kuiper's NGSO system on each of these NGSO systems or NGSO gateways can be found in the [annex of Kuiper's application](#) (see Appendix A).

## Our initial view

- 3.10 We welcome the ITU coordination agreement Kuiper already has in place with another UK NGSO licensee (Telesat). We have also reviewed the technical coexistence analysis Kuiper provided for Rivada, Mangata, and NSLComm's NGSO systems (i.e. user terminals) and Starlink's NGSO gateways. From the evidence provided, our preliminary assessment is that these NGSO systems and gateway earth stations should be able to coexist. This is because even under the conservative assumptions adopted by Kuiper in its coexistence analysis, its NGSO system will have a minimal impact on existing NGSO network and NGSO gateway licensees. We also note Kuiper believes any impact could potentially be further reduced under real world conditions compared with the modelling assumptions (i.e. as a result of actual operational power levels, dynamic demand based bandwidth usage, and larger distances between earth stations in practice).
- 3.11 We reiterate that all parties should continue coordinating in good faith before the launch of Kuiper's NGSO constellation, noting that our licence conditions require licensees to cooperate with each other so they can coexist.

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<sup>4</sup> Kuiper also notes it has reached an ITU coordination agreement with Space Norway, though Space Norway is not currently an NGSO licensee in the UK.

<sup>5</sup> We note that Kuiper assesses eight NGSO gateways in its analysis, though Starlink currently uses only seven gateways in the UK.



3.12 We invite stakeholders to respond to the following question:

**Consultation question 1:**

Do you anticipate this NGSO system will pose coexistence challenges to existing NGSO systems?

## Coexistence with future NGSO systems

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3.13 Our process for considering NGSO network licence applications recognises that it is not possible for an applicant to know the future plans of other operators. An applicant's proposed approach to coexistence cannot therefore be detailed and specific at this stage.

3.14 In summary, we request applicants to set out clear principles for appropriately mitigating interference issues, to demonstrate that their system has the flexibility to accommodate new entrants, if required. This will ensure they can meet the terms of their licence if and when additional NGSO operators apply to operate services in the UK. We therefore require applicants to:

- explain how their existing network design and operating model might facilitate coexistence with future NGSO systems, as well as any limitations;
- outline any additional measures for improving coexistence with future NGSO systems; and
- take reasonable measures to accommodate future NGSO systems, in order to avoid material degradation to services in the UK.

3.15 Kuiper states in its application that it will coordinate with any future NGSO system, but to demonstrate it will also be able to achieve compatibility, it explains it has designed its NGSO system with a number of flexible techniques, including:

- sophisticated frequency and beam planning algorithms;
- adaptive coding and modulation techniques; and
- use of redundant communication paths for unforeseen outages or interference.

3.16 Kuiper notes that its' NGSO system uses narrow beamwidths to ensure that energy transmitted is only received in areas near the intended receiver. As a result, other unintended receivers observe significantly reduced levels of interference, allowing other NGSO systems to use co-frequency spectrum in the same locations. Further, Kuiper's planning software has been designed so that it can target specific areas to implement:

- frequency stay-out zones<sup>6</sup>;
- satellite avoidance angles; or
- power reductions.

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<sup>6</sup> We understand Kuiper's frequency stay out zones refer to its capability to impose frequency constraints at a planning cell level of resolution, and could be created in a localised area (over a selected number of planning cells) to avoid potential interference in specific frequency channels. Kuiper also states it will have geofencing capabilities to restrict the availability of service offerings to terminals based on their reported position.

## Our initial view

- 3.17 Our initial view is that the techniques described in Kuiper’s application should be sufficient to ensure that its NGSO system will be capable of coexisting with future NGSO systems (including gateways and terminal operators).
- 3.18 We invite comments from stakeholders on the following question:

### Consultation question 2

Are the measures set out by the applicant to enable coexistence with future NGSO systems reasonable?

## Assessing the impact on other services

- 3.19 There is also the potential for harmful interference between NGSO systems and other services using the same frequencies. It is reasonable for us to expect satellite operators to comply with international regulations, specifically the ITU’s Radio Regulations which set out how different services may coexist.
- 3.20 In addition, conditions in our NGSO network licence are intended to prevent harmful interference into co-channel and adjacent band spectrum users and give us powers to address any coexistence issues should they arise. In particular, we [updated our NGSO network licences](#) to better protect existing services, with an explicit licence condition requiring compliance with Article 22 of the ITU Radio Regulations.<sup>7</sup> For this reason, we ask applicants for NGSO network licences to demonstrate, where relevant, how their NGSO system will protect the following users of spectrum in the UK:
- GSO networks;
  - radio astronomy in 10.6-10.7 GHz and 14.47-14.5 GHz; and
  - fixed links in the 17.7-19.7 GHz band.
- 3.21 Kuiper outlines in its application how its NGSO system will protect these other services:
- **GSO networks** – Kuiper states that its NGSO system meets the equivalent power flux density (EPFD) limits in the 17.7-18.6 GHz and 19.7-20.2 GHz bands to protect GSO services operating in those bands. In the 18.8-19.3 GHz band, Kuiper is coordinating with GSO systems to determine how each satellite system will operate.
  - **Radio astronomy** – Kuiper notes its NGSO system will not operate in frequency bands that are allocated, or adjacent, to the radio astronomy service, ensuring coexistence with UK radio astronomy services.
  - **Fixed links** – Kuiper confirms that its NGSO system complies with the PFD limits in Article 21 of the ITU Radio Regulations, ensuring that fixed links in the 17.7-19.7 GHz band will be protected.

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<sup>7</sup> We updated our [NGSO network licences in September 2023](#) to include condition 3.7(p) which requires NGSO satellites and gateway earth stations to comply with the relevant EPFD limits in Article 22 of the ITU Radio Regulations. A similar condition was included in NGSO gateway licences (condition 3.1(d)).

## Our initial view

- 3.22 Our initial view is that the information set out in Kuiper’s application provides sufficient comfort that its NGSO system will be capable of protecting GSO services and fixed links, and will not operate in bands within or adjacent to radio astronomy. In addition, should any harmful interference occur, conditions in the NGSO network licence enable us to intervene to protect these services.
- 3.23 We invite comments on Kuiper’s plans for protecting other services:

**Consultation question 3:**

Do you assess that the measures put forward will allow this NGSO system to coexist with other services?

# 4. Assessing the impact on competition

- 4.1 Our NGSO licensing process explains that our starting position for assessing competition is to authorise applications where possible. We take the following four factors into account:
- the extent of the likely risks to competition;
  - the potential benefits from granting NGSO licence applications;
  - ensuring that time and resources devoted to the licensing process are proportionate to the risks and benefits; and
  - that NGSO services are currently in their infancy.

## Risks to competition

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- 4.2 Competition concerns can arise where an NGSO applicant's system imposes technical constraints on current and future NGSO licensees (e.g., due to a lack of flexibility in the design of the applicant's systems to respond to, or avoid altogether, potential harmful interference). If the applicant's NGSO system is less able to technically coexist with current and future NGSO systems, then this could lead to weakened competition and worse outcomes for consumers, such as higher prices or lower quality of services.
- 4.3 We have identified three potential risks to competition that could be relevant to our assessment of Kuiper's application for an NGSO network licence, and give our preliminary view on each<sup>8</sup>:

**Potential risk 1:** User terminals create harmful interference into existing NGSO user terminals and/or gateway earth stations, resulting in weakened competition and worse outcomes for consumers

- 4.4 An NGSO network licence allows the licensee to deploy user terminals anywhere in the UK (see paragraph 2.4). This creates a risk that a user terminal placed close to existing user terminals and/or gateways of current NGSO operators would increase the likelihood of harmful interference.<sup>9</sup> This could lead to worse outcomes for consumers in terms of reduced quality of service by one or more NGSO operators. If the quality of service of one or more satellite operators deteriorated to the point that they became ineffective competitors, this

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<sup>8</sup> There is a potential fourth risk to competition, which could materialise in future. Since Kuiper has not begun services in the UK yet, we do not conclude on this risk, and mention it in the interests of transparency for stakeholders. The risk relates to the possibility of Kuiper – through its presence in other products and services – bundling (or tying) satellite broadband with products such as Amazon Prime and/or Amazon Web Services. While these are normal commercial practices which often benefit customers, depending on the conditions in the relevant markets they can give rise to competition concerns. Since Kuiper has not yet commenced services in the UK there is no current competition concern and we do not consider this risk further as part of this licence application. Should this risk crystallise in future we consider there are more suitable policy tools than a network licence to address the concern.

<sup>9</sup> Since terminals can be mobile, this may lead to a greater risk of interference.

could lead to reduced choice and worse quality of service and/or higher prices for consumers.

- 4.5 As set out in section 3, our preliminary view is that coexistence between Kuiper’s proposed NGSO system and existing NGSO systems is possible. We are reassured by the ITU coordination agreement Kuiper has reached with Telesat and by the technical coexistence analysis demonstrating minimal impact for other NGSO licensees. Since the competition concerns outlined above would be caused by harmful interference, our preliminary view is that potential competition risk 1 is unlikely.

**Potential risk 2:** User terminals are unable to coexist with future NGSO systems, creating a barrier to entry and in turn restricting competition

- 4.6 Similar to the above, there is a risk that a new NGSO system – and in particular its deployment of user terminals around the UK – imposes constraints on subsequent NGSO entrants due to technical barriers to coexistence between that NGSO system and future systems. This could form a barrier to entry, reducing competition and consumer choice, leading to worse outcomes for consumers.

- 4.7 As set out in section 3, our preliminary view is that coexistence with future NGSO systems by Kuiper’s NGSO system is possible. Since the competition concern outlined above would be created by an inability to coexist with future systems, we consider that potential competition risk 2 is unlikely.

**Potential risk 3:** Operators not coordinating in good faith could hinder the ability of current and future satellite operators to provide their services

- 4.8 As a general point, satellite operators not coordinating in good faith could hinder the ability of current satellite operators to provide their services. This could also create uncertainty for potential entrants and thereby act as a barrier to entry, leading to a lessening of competition.

- 4.9 Our [2021 NGSO licensing statement](#) highlights the importance of all NGSO operators, regardless of their filing date, working in good faith to reach coordination agreements. NGSO licence conditions are designed to achieve coordination in good faith, and we are prepared to use our enforcement powers to remedy any issues. In addition, Kuiper has already demonstrated that it is able to reach agreements with other operators as noted in section 3.

- 4.10 On this basis, our preliminary view is that we are equipped to address this competition concern through our licencing conditions and enforcement powers. Taken together, we consider these alleviate any concerns over the potential for competition risk 3 to materialise in relation to Kuiper’s application.

## Benefits

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- 4.11 Granting NGSO network licences allows market entry for new connectivity options and is likely to benefit UK customers, consumers and citizens, supporting Ofcom’s strategic priority to get everyone connected. If a service is deployed this can also promote greater competition (assuming that the NGSO system can coexist with other authorised systems).
- 4.12 Kuiper plans to provide secure, high speed, low latency broadband services to households, businesses and other potential customers in the UK, as well as backhaul connectivity

services. A fuller explanation is summarised in paragraph 2.6 above or can be found in the [annex of Kuiper's application](#).

## Our initial view

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- 4.13 Our preliminary view is that potential competition risks 1 and 2 are unlikely since the competition concerns outlined above would be caused by harmful interference. In relation to potential competition risk 3, our preliminary view is that our NGSO licence conditions are designed to achieve coordination in good faith and we are able use our enforcement powers to remedy any issues. In addition, Kuiper has already demonstrated that it is able to reach agreements with other operators. Overall, our initial view is that there would not be a material risk to competition.
- 4.14 In relation to benefits, Kuiper's NGSO system will improve connectivity options for UK customers, consumers and citizens.
- 4.15 We invite stakeholder views on the potential impact of Kuiper's licence application on competition.

### **Consultation question 4**

Do you believe the NGSO system in the application would benefit or harm future competition between NGSO services in the UK? Please provide details.

# 5. Additional comments and impact assessments

## Additional comments

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- 5.1 We invite comments from stakeholders on any other issues regarding Kuiper's application for an NGSO network licence.

**Consultation question 5**

Do you have any additional concerns or comments regarding the application?

## Equality and Welsh language impact assessments

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- 5.2 We have assessed the likely impacts and benefits of granting Kuiper's NGSO network licence on persons sharing protected characteristics, and on the Welsh language, as set out in Annex 1 of this consultation. We have not identified any adverse impacts on persons sharing protected characteristics that mean they are likely to be affected in a different way to the general population, nor did we consider that our proposals have any impact on our Welsh language obligations.
- 5.3 We also consider that a proposal to grant the NGSO network licence and thereby facilitate further access to broadband and backhaul connectivity via satellite, is likely to have positive impacts on households, businesses and other potential customers in the UK, improving equality of opportunity in more rural or remote areas, and improving access to Welsh language opportunities in Wales.
- 5.4 We invite stakeholders to provide their views on the following questions:

**Consultation question 6**

Do you agree with our assessment of the potential impact of our proposal on specific groups of persons?

**Consultation question 7**

Do you agree with our assessment of the potential impact of our proposal on the Welsh language?

# 6. Our proposals and next steps

## How we decide whether to grant an NGSO network licence

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- 6.1 Our [2021 NGSO statement](#) explains the considerations we would take into account when deciding whether to grant an NGSO licence:
- a) our technical coexistence checks;
  - b) our competition check;
  - c) our impact assessments<sup>10</sup>;
  - d) our statutory duties, as set out in section 3 of the Wireless Telegraphy Act 2006 and section 3 of the Communications Act 2003, with our principal duty being to further the interests of citizens and consumers in relation to communications matters;
  - e) our NGSO licensing objectives, including to enable citizen and consumer benefits arising from innovative satellite services, such as improved connectivity; and
  - f) any other available relevant evidence, including the application, consultation responses and any further information provided by the applicant.

## Our proposal

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- 6.2 Taking the evidence presented by Kuiper, our initial assessment of the potential impacts on coexistence and competition, and other risks and benefits of granting this NGSO network licence application, we propose to grant Kuiper's application for an NGSO network licence operating in Ka band frequencies 27.5-27.8185 GHz, 28.4545-28.8265 GHz and 29.5-30 GHz.

## Next steps

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- 6.3 We welcome comments on Kuiper's application by 5pm on Friday 18 October 2024. Responses should be submitted electronically to [NGSO.licensing@ofcom.org.uk](mailto:NGSO.licensing@ofcom.org.uk) using the response form set out in Annex 4.
- 6.4 Where stakeholders wish to submit confidential views, we request that a non-confidential version of the response also be provided where possible, to improve the transparency of our NGSO licensing process.
- 6.5 We will consider all responses carefully before making our NGSO licensing decision. We may seek additional information from Kuiper to resolve queries raised in consultation responses.
- 6.6 Our decision will be published on our website in due course. Where we decide to grant Kuiper an NGSO network licence to operate in the Ka band in the UK, subject to payment of the licence fee, this will also be published on the "Existing NGSO network licences" section of our [NGSO licensing webpage](#).

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<sup>10</sup> See Annex 1 for full details of the impact assessments carried out.



# A1. Impact assessments

## Impact assessment

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- A1.1 Section 7 of the Communications Act 2003 (the Act) 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.
- A1.2 Impact assessments form part of good policy making and we therefore expect to carry them out in relation to a large majority of our proposals. We use impact assessments to help us understand and assess the potential impact of our policy decisions before we make them. They also help us explain the policy decisions we have decided to take and why we consider those decisions best fulfil our applicable duties and objectives in the least intrusive way. Our [impact assessment guidance](#) sets out our general approach to how we assess and present the impact of our proposed decisions and section 4 of our [2021 NGSO statement](#) sets out how we assess the impact of applications for NGSO network licences.
- A1.3 Having carefully considered the potential impact of granting an NGSO network licence to Kuiper in this consultation, our preliminary view is that it has the potential to improve UK broadband and backhaul connectivity, thereby providing more choice and resulting in an overall positive impact for UK consumers, customers and citizens. We assess the potential impact of granting the NGSO network licence on coexistence and competition more fully in sections 3 and 4 above. Our initial view is that Kuiper is unlikely to cause harmful interference to other services in the frequencies it intends to use. Further, our NGSO licence conditions are designed to achieve coordination in good faith, and we are able use our enforcement powers to remedy any issues that arise.

## Equality impact assessment

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- A1.4 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 also dependents and political opinion in Northern Ireland), and in particular if 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.
- A1.5 When thinking about equality we think more broadly than persons that share protected characteristics identified in equalities legislation and think about potential impacts on various groups of persons (see paragraph 4.7 of our [impact assessment guidance](#)).
- A1.6 In particular, section 3(4) of the Act requires us to have regard to the needs and interests of specific groups of persons when performing our duties, as appear to us to be relevant in the circumstances. These include:
- the vulnerability of children and of others whose circumstances appear to us to put them in need of special protection;

- the needs of persons with disabilities, older persons and persons on low incomes; and
  - the different interests of persons in the different parts of the UK, of the different ethnic communities within the UK and of persons living in rural and in urban areas.
- A1.7 We also examine the potential impact our policy is likely to have on people, depending on their personal circumstances. This assists us in making sure that we are meeting our principal duty of furthering the interests of citizens and consumers, regardless of their background and identity.
- A1.8 We consider our proposal to grant the NGSO network licence and thereby facilitate further access to Kuiper’s secure, high speed, low latency broadband and backhaul connectivity services, is likely to have positive impacts on households, businesses and other potential customers in the UK. This includes improved connectivity in more rural and remote areas of the UK which will help to improve equality of opportunity in those areas (though we note UK coverage will only extend to the 56 parallel north (i.e. Falkirk) under Kuiper’s first generation NGSO system, as explained in paragraph 2.6). We have not identified any adverse impacts on specific groups of persons, including those sharing protected characteristics, that are likely to be affected in a different way to the general population through the granting of this NGSO network licence.

## Welsh language impact assessment

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- A1.9 We are required to take Welsh language considerations into account when formulating, reviewing, or revising policies which are relevant to Wales (including proposals which are not targeted at Wales specifically but are of interest across the UK).<sup>11</sup>
- A1.10 Where the Welsh Language Standards are engaged, we consider the potential impact of a policy proposal on (i) opportunities for persons to use the Welsh language; and (ii) treating the Welsh language no less favourably than the English language. We also consider how a proposal could be formulated to have or to increase, a positive impact, or not to have or to decrease any adverse effects.
- A1.11 We consider our proposal to grant Kuiper an NGSO network licence will not have any negative impacts on our Welsh language obligations, as it relates to a nationwide licensing regime and the relevant licence products are available for anyone within the UK to apply. We consider our proposal also has the potential to increase Welsh language opportunities resulting from improved connectivity in Wales.
- A1.12 We note that our current practice is to produce spectrum licences in Welsh when requested, in accordance with our obligations set by the Welsh Language Commissioner. We will continue to take this approach in relation to NGSO licences.

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<sup>11</sup> See Standards 84-89 of [Hysbysiad cydymffurfio](#) (in Welsh) and [compliance notice](#) (in English). Section 7 of the Welsh Language Commissioner’s [Good Practice Advice Document](#) provides further advice and information on how bodies must comply with the Welsh Language Standards.

# A2. Responding to this consultation

## How to respond

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- A2.1 We invite views and comments on the issues discussed in this document by 5pm on 18 October 2024.
- A2.2 You can download a response form from <https://www.ofcom.org.uk/spectrum/space-and-satellites/kuiper-application-for-an-ngso-earth-station-network-licence/>. You can return this by email or post to the address provided in the response form.
- A2.3 If your response is a large file, or has supporting charts, tables or other data, please email it to [NGSO.licensing@ofcom.org.uk](mailto:NGSO.licensing@ofcom.org.uk), as an attachment in Microsoft Word format, together with the cover sheet at Annex 4.
- A2.4 To ensure we can receive and assess all comments in a timely manner, we will not accept responses via post.
- A2.5 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.
- A2.6 We will publish a transcript of any audio or video responses we receive (unless your response is confidential)
- A2.7 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.
- A2.8 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.
- A2.9 It would be helpful if your response could include direct answers to the questions asked in the consultation document. The consultation questions are listed at Annex 5. It would also help if you could explain why you hold your views, and what you think the effect of our proposals would be.
- A2.10 If you want to discuss the issues and questions raised in this consultation, please email the NGSO Licensing Team at [NGSO.licensing@ofcom.org.uk](mailto:NGSO.licensing@ofcom.org.uk).

## Confidentiality

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- A2.11 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 our website at regular intervals during and after the consultation period.
- A2.12 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.
- A2.13 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.
- A2.14 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.
- A2.15 Please also note that copyright and all other intellectual property in responses will be assumed to be licensed to Ofcom to use. Our intellectual property rights are explained further in our [Terms of Use](#).

## Next steps

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- A2.16 Following this consultation period, we plan to publish a statement setting out our NGSO licensing decision, as soon as practicable.
- A2.17 If you wish, you can [register to receive mail updates](#) alerting you to new Ofcom publications.

## Our consultation processes

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- A2.18 We aim to make responding to a consultation as easy as possible. For more information, please see our consultation principles in Annex 3.
- A2.19 If you have any comments or suggestions on how we manage our consultations, please email us at [consult@ofcom.org.uk](mailto:consult@ofcom.org.uk). We particularly welcome ideas on how we 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.
- A2.20 If you would like to discuss these issues, or our consultation processes more generally, please contact the corporation secretary:
- A2.21 Corporation Secretary  
Ofcom  
Riverside House  
2a Southwark Bridge Road  
London SE1 9HA  
Email: [corporationsecretary@ofcom.org.uk](mailto:corporationsecretary@ofcom.org.uk)

# A3. Ofcom's consultation principles

A3.1 We have seven principles that we follow for every public written consultation:

## Before the consultation

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A3.2 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

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A3.3 We will be clear about whom we are consulting, why, on what questions and for how long.

A3.4 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.

A3.5 We will consult for up to ten weeks, depending on the potential impact of our proposals.

A3.6 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. Our Consultation Champion is the main person to contact if you have views on the way we run our consultations.

A3.7 If we are not able to follow any of these seven principles, we will explain why.

## After the consultation

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A3.8 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.

# A4. Consultation coversheet

## Basic details

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Consultation title:

To (Ofcom contact):

Name of respondent:

Representing (self or organisation/s):

Address (if not received by email):

## Confidentiality

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

- Nothing
- Name/contact details/job title
- Whole response
- Organisation
- Part of the response

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

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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

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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)

# A5. Consultation questions

A5.1 We invite comments from stakeholders on Kuiper’s application for an NGSO network licence in relation to the following questions:

Question 1: Do you anticipate this NGSO system will pose coexistence challenges to existing NGSO systems?

Question 2: Are the measures set out by the applicant to enable coexistence with future NGSO systems reasonable?

Question 3: Do you assess that the measures put forward will allow this NGSO system to coexist with other services?

Question 4: Do you believe the NGSO system in the application would benefit or harm future competition between NGSO services in the UK? Please provide details.

Question 5: Do you have any additional concerns or comments regarding the application?

Question 6: Do you agree with our assessment of the potential impact of our proposal on specific groups of persons?

Question 7: Do you agree with our assessment of the potential impact of our proposal on the Welsh language?