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# **Mangata Edge Ltd: Application for a non-geostationary Earth Station Network licence**

Decision

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**STATEMENT:**

Publication date: 9 February 2023

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# 1. Overview

**This document sets out our decision on an application by Mangata Edge Ltd (“Mangata”) for a UK wireless telegraphy Earth Station Network licence.**

The licence is to allow Mangata to operate user terminals in the UK - such as a customer’s satellite dish or mobile device - for links to its planned non-geostationary orbiting (NGSO) satellite system.

NGSO systems are a new way of delivering broadband services from space using a constellation of satellites, usually in a low or medium Earth orbit. These satellite services have the potential to deliver higher speeds and lower latency services to consumers and businesses.

On 20 September 2022 we published a [consultation](#) (“the Mangata consultation”) in which we set out our initial assessment of the licence application and our proposal to grant the application. In line with our [statement on non-geostationary satellite systems](#), we have considered all responses to the licence application before publishing this decision.

## **What we have decided – in brief**

This document sets out Ofcom’s decision to grant a non-geostationary Earth Station Network licence to Mangata Edge Ltd.

We believe Mangata’s system is capable of coexisting with both existing wireless telegraphy NGSO licence holders and future NGSO systems. We do not consider the application raises undue competition concerns.

This decision will enable Mangata to provide satellite connectivity services to people and businesses in the UK.

We will now proceed to issue Mangata with its new licence, subject to payment of the licence fee. A copy of the licence will also be made available under the “Existing licences” section of our [website](#).

## 2. Introduction and background

- 2.1 Our process for considering applications for NGSO spectrum licences is set out in our [statement on non-geostationary satellite systems](#). We consider applications for the following types of Earth station licence:
- **Satellite (Earth Station Network) licence:** this authorises an unlimited number of user terminals to connect to the NGSO system (subject to certain conditions). It also places certain conditions on the licence holder (typically a satellite operator) to coordinate with other licence-holders.
  - **Satellite (Non-Geostationary Earth Station) licence:** this authorises gateway Earth stations, which connect the NGSO system to the internet or to a private network.
- 2.2 This decision document relates to the first of these licences: Satellite (Earth Station Network) licence. We refer to this licence in the rest of this document as the “NGSO network licence”.
- 2.3 The licence covers the use of all user terminals for a range of different services: fixed or static terminals (e.g. for a home broadband service); land mobile (e.g. on a train or a road vehicle); or on an aircraft or a drone. The licence permits uplinks from user terminals to the satellite - in the case of this application, Mangata’s planned constellation. We require the holder of these licences to have control of the whole satellite network, so this licence is typically held by the satellite operator.
- 2.4 When considering applications for these licences, we conduct checks (amongst other things) on the impact that granting a licence may have on technical coexistence and on competition for existing and future NGSO systems. If necessary, we can request clarifications or additional information from the applicant. We then publish a consultation and invite comments on any applications we are considering for authorisation.
- 2.5 In reaching our decision on whether to grant the licence we take account of our technical coexistence check, our competition check, and our statutory duties and objectives. If further assessment is warranted, we may obtain further information from the applicant and/or other stakeholders. We also take account of all available relevant evidence, including responses to the invitation to comment.

### Mangata’s application

- 2.6 Ofcom received an [application](#) from Mangata dated 7 July 2022 for an NGSO network licence to operate ground-based user terminals. It intends to use the Ka band frequencies 27.5–27.8185 GHz, 28.4545–28.8265 GHz and 29.5–30 GHz.
- 2.7 Mangata is looking to provide high-speed satellite broadband services through its user terminals (i.e. receiver equipment) to consumers; businesses; aircraft for inflight connectivity; and ships/vessels from 2025. Mangata also plans to provide heterogeneous

network backhaul; IoT connectivity; and micro data centres, which will extend the cloud to the edge of the network.

- 2.8 The Mangata constellation will consist initially of the following (full details are set out in Mangata's application):
- 791 satellites distributed in 27 medium-Earth orbit (MEO) planes with inclinations between 45-52.5 degrees; and
  - 32 high elliptical orbit (HEO) planes with inclinations of 63.4 degrees, for global coverage.
- 2.9 Taking account of the arguments and evidence presented by Mangata, we published a [consultation](#) on 20 September 2022 setting out our preliminary view that Mangata's licence application should be granted.

## Consultation and summary of responses

- 2.10 The Mangata consultation opened on 20 September 2022 and closed on 18 October 2022. We invited comments on the application and on our preliminary views. We said we would take into account all comments received, and that we were open to changing those views depending on responses and evidence submitted to us as part of this process.
- 2.11 We received four responses that were relevant to this consultation<sup>1</sup>, of which two were submitted confidentially. The non-confidential responses are published alongside the application and consultation on our [website](#). We have established through our routine industry engagement that other key stakeholders did not wish to raise particular issues over this application.
- 2.12 In response to some of the responses we received, we requested additional information from Mangata, including about its ability to coexist with Geostationary Orbit (GSO) satellite networks. Mangata's reply is published on our website alongside its original licence application. We have taken the reply into account in reaching our decision.
- 2.13 We have considered carefully all relevant consultation responses in finalising our decision on the licence application. This document summarises the main points made by stakeholders in their submissions, and sets out our assessment of those points.
- 2.14 We address the issues raised by respondents under headings prompted by the four questions we asked in the consultation. Answers are collated under the most appropriate heading. In some cases, this means comments are addressed under different headings to those used by respondents in making their comments.

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<sup>1</sup> We also received a further response which did not concern the subject matter of the consultation. We have not taken this input into account in the summaries of responses and our considerations.

## 3. Consultation responses on NGSO coexistence

### Coexistence with existing NGSO systems

- 3.1 When issuing new licences, one of Ofcom’s objectives is that all authorised systems are able to coexist in frequency bands they are using in common i.e. all operators can provide services to their users without experiencing harmful interference.
- 3.2 Our NGSO licensing process focuses on the mitigation of interference between different NGSO systems. This is because NGSO satellites are dynamic by nature, creating a complex spectrum management environment - both in space and on the ground - and thereby increasing the risk of interference. Details of all current NGSO licences can be found in the “Existing licences” section of our [website](#).
- 3.3 While there is also the potential for interference between NGSO and GSO services which use the same frequencies, international rules and our own licence conditions are intended to prevent this - and also address the management of any issues should they arise.
- 3.4 In the Mangata consultation we noted there were two other satellite operators holding UK NGSO network licences at the time of publication (September 2022):
- Network Access Associates Ltd (a subsidiary of OneWeb); and
  - Starlink Ltd (a subsidiary of SpaceX).
- 3.5 We have since granted a further NGSO network licence, to Telesat LEO Inc.
- 3.6 The Mangata consultation noted that the company had not yet reached coordination agreements with any of these other operators. However, its application set out proposals to deploy a technique known as ‘lookaside’ to mitigate the risk of interference. This is achieved by ensuring Earth stations (gateways or user terminals) do not point at satellites that are too close (in angular separation) to satellites of another system.
- 3.7 The consultation set out our preliminary view that Mangata’s network should be able to coexist with existing NGSO licence holders using the approach described in its application. However, we urged all parties to coordinate in good faith between now and the launch of Mangata’s constellation (around 2025). We asked the following consultation question:

### Consultation question 1

Do you anticipate this satellite network will pose coexistence challenges to existing services?

## Consultation responses

- 3.8 A respondent who wished its identity to remain confidential was concerned that coordination agreements had not yet been reached with other NGSO operators. It said there was a possibility of interference, and it was likely a separation distance would be needed between Mangata's user terminals and any Earth station operated by another network.
- 3.9 In a non-confidential response, Rivada said it was planning to launch its own satellite constellation in the future and sought further information about the lookaside coordination technique proposed by Mangata.
- 3.10 In light of consultation responses, we asked Mangata to provide additional information about its approach to coexistence and mitigation of interference for NGSO networks.
- 3.11 Mangata's reply said it would implement coordination procedures. In addition to 'lookaside' it said it would consider alternative mitigation methods such as avoiding overlapping frequencies and taking into account cross polarisation to provide further isolation.

## Ofcom assessment

- 3.12 As set out in our [Space Spectrum Strategy](#) we want to enable as many NGSO systems as possible, to provide services and increase choice for people and businesses in the UK. However, we recognise the importance of ensuring that different networks are able to operate alongside each other without undue interference.
- 3.13 Our NGSO licensing process does not require applicants to have reached a coordination agreement, as set out by the ITU, but we do want to see evidence of proactive engagement with other licensees; a plan to cooperate so that the risk of interference to services in the UK is minimised; and a willingness to reach coordination agreements.
- 3.14 Moreover, condition 7.2 of the NGSO ESN licence requires that:

*"The Licensee shall cooperate with all NGSO licensees such that each satellite system (comprising the satellites, Earth stations and user terminals) can co-exist and operate within the United Kingdom without causing harmful radio interference to each other, such that network services can be provided to end users".*

- 3.15 Having taken account of all consultation responses, we remain of the view that the approach to coexistence set out in the annexes to Mangata's licence application - and in the further details submitted in response to our request for additional information -

enables Mangata to coexist with existing NGSO licence holders. Furthermore, Mangata has confirmed that it will operate under UK filings. This means we can direct Mangata to change or cease transmissions under our Procedures for the Management of Satellite Filings, if necessary.

- 3.16 We encourage all licence holders to engage in coordination discussions in good faith, according to the terms of their licence, ahead of the launch of Mangata’s services.

## Coexistence with future NGSO systems

- 3.17 In the Mangata consultation, we noted that we cannot expect applicants to foresee the characteristics or the number of systems that will be subject to a future licence application. However, in line with our [statement on non-geostationary satellite systems](#), we require applicants to show that their system has the ability to coexist with future NGSO systems: *“applicants should state what flexibility their system has to coexist with future networks”*.

- 3.18 In its licence application, Mangata proposed to manage coexistence with future systems in the same way as with existing systems i.e. through the use of alternative satellites and avoidance angles to avoid in-line events (lookaside). It stated that the exact procedure for avoiding in-line events would be negotiated during coordination discussions and that, if the lookaside approach failed to offer the required coexistence, other mitigation techniques could be used - namely through the avoidance of overlapping frequency bands and the use of opposite polarisation.

- 3.19 After consideration of Mangata’s proposed approach, we set out our initial view in the consultation that the techniques described should be sufficient to enable coexistence with future systems. We asked the following question in the consultation to gather further input from stakeholders:

### Consultation question 2

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

## Consultation responses

- 3.20 One of the two respondents who wished their identities to remain confidential said it wanted to know more about Mangata's proposed lookaside coordination technique in respect to future systems. It said the proposed approach needed to be properly described and accounted for and subjected to further analysis. It proposed a licence condition requiring full coordination agreement with other NGSO operators prior to Mangata’s use of user terminals in the UK.
- 3.21 Rivada said it understood that Mangata cannot know details about future NGSO systems, but wanted to understand the scalability of the lookaside approach to coordination i.e. how many constellations can coexist using such a technique. It said it would “probably be



finite". It described Mangata's description of alternative approaches as "rather vague" and urged Ofcom to seek more information from the applicant.

## Ofcom assessment

- 3.22 Our process for considering NGSO 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. Nevertheless, an application should set out clear principles for appropriate mitigation of any issues and we expect licensed operators to discuss cooperation arrangements in detail prior to deploying services.
- 3.23 In line with our statement on NGSO satellite systems our intention is for licensees to:
- a) explain how their existing network design and operating model might facilitate coexistence with other NGSO satellite systems and any limits to that flexibility;
  - b) outline any additional measures which would allow improved coexistence with other systems (for example, planned roll out of ground equipment, future network designs); and
  - c) be aware that they may be expected to take reasonable measures to accommodate such future applicants, in order to avoid material degradation to services in the UK.
- 3.24 We assess that the proposed general approach to future coexistence set out by Mangata - including in the response to our request for additional information - means its system is capable of addressing potential issues. In particular, we note Mangata's statement in its submission of additional information that: *"When undertaking coordination, Mangata will consider mitigation measures such as: lookaside of Mangata terminals; avoiding overlapping frequencies; taking into account the cross polarisation to provide further isolation"*.
- 3.25 In response to the comments by Rivada that the number of constellations that can coexist using a lookaside approach may be finite, we acknowledge that *may* be the case - although it is not certain.
- 3.26 As noted above, the lookaside technique proposed by Mangata is only one possible approach to coexistence between two NGSO systems. Indeed, both [Telesat](#) and [SpaceX](#) outlined alternative techniques in their own NGSO licence applications, and Mangata too proposes a range of techniques in its application, and in the additional information it has supplied.
- 3.27 Given this is an emerging market, our aim is not to promote - or place constraints on - particular approaches to coexistence between satellite operators. Such constraints could inadvertently create barriers to entry or distort the market by favouring some operators. Rather, we wish to see applicants 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.

## Conclusion on NGSO coexistence

- 3.28 In conclusion, we continue to believe that Mangata has the technical ability to cooperate with existing and future NGSO licensees. We note the early stage of coordination discussions and urge all parties to engage proactively in these conversations. We also believe the conditions in our licence, and the fact that we are the responsible administration for Mangata's filings, will provide us with the necessary powers to intervene to resolve harmful interference if required.
- 3.29 In view of the above, our overall technical assessment is that granting the application is unlikely to impact on existing licensees or restrict future NGSO systems from entering the market.

## 4. Assessment of competition issues

- 4.1 In the Mangata consultation, we noted that competition concerns can arise from the constraints that systems operating under an NGSO network licence might impose on subsequent entrants, due to the technical barriers to coexistence between systems (e.g. due to a lack of flexibility in the design of systems).
- 4.2 If there was a limited prospect of the applicant's system and future systems being able to technically coexist, then this could form a barrier to future entry into the market. This would be a particular concern if it resulted in market power.<sup>2</sup>
- 4.3 We identified three potential and general risks to competition that could be relevant to the Mangata licence application:
- **Potential risk 1:** User terminals create interference concerns for existing NGSO user terminals and/or gateways, resulting in weakened competition and worse outcomes for consumers.
  - **Potential risk 2:** User terminals are unable to coexist with future NGSO systems, creating a barrier to entry to the market and in turn restricting competition.
  - **Potential risk 3:** Operators not coordinating in good faith could hinder the ability of current and future operators to provide their service.
- 4.4 Our initial assessment of potential risks 1 and 2 was that coexistence was possible between Mangata's proposed system and both existing and future NGSO systems operated by other companies. Therefore, these risks were unlikely to develop.
- 4.5 In respect to potential risk 3, our initial assessment was that Ofcom was equipped through its enforcement powers to remedy situations in which one or more operators failed to coordinate in good faith. This should alleviate any concerns over the potential for competition risk 3 to materialise.
- 4.6 Our competition check also assessed the benefits to UK consumers and business arising from the potential future services which Mangata plans to offer, as outlined in Mangata's licence application. As already noted, this includes high-speed satellite broadband services to consumers and businesses, and connectivity for aircraft and ships/vessels.
- 4.7 Our preliminary view was that the Mangata NGSO system had the potential to provide services that would supply more connectivity options to consumers in the UK, in addition to those of the existing NGSO licence holders.
- 4.8 In summary, we considered there would not be a material risk to competition and that the proposed services would benefit UK consumers and business. We asked the following consultation question:

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<sup>2</sup> Market power refers to the ability to raise and maintain prices above the level that would prevail under competition.

### Consultation question 3

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

## Consultation responses

- 4.9 Only two of the four consultation respondents submitted comments about competition issues.
- 4.10 Rivada said it supported competition between operators but said this can only be achieved if coexistence is properly addressed. It said Mangata’s methodology to mitigate harmful interference needed to maximise the number of systems that can coexist. It referred back to its answer to consultation question 2, and again called for more information to be made available about Mangata’s proposals.
- 4.11 A respondent who wished its identity to remain confidential also said a competitive market was to be welcomed. It said it supported Mangata’s entry into the market “in principle” but said this must not be at the expense of existing services. It said there was a risk to competition because an NGSO network licence could be used to enter the UK market but could then be used under technical parameters not set out in the application.
- 4.12 It noted that Ofcom’s guidance for NGSO licensing anticipates that modifications to networks can change the interference environment, thereby threatening coexistence. It further noted that NGSO licensees are subject to an ongoing obligation to cooperate and coexist with other NGSO licensees - but no such obligations apply to the prevention of interference to GSO operators from NGSO systems in key parts of the Ka-band.
- 4.13 It said this presented a consequent risk that new GSO competitors would not enter the market or that the rollout of services by current operators could be inhibited, causing them to withdraw from the market. This would reduce competition and raise prices for consumers.

## Ofcom assessment

- 4.14 We note that the comments of the two respondents who addressed competition concerns were related to technical coexistence and coordination to avoid harmful interference.
- 4.15 As already stated above - in our assessment of coexistence issues for both existing and future NGSO systems - we believe Mangata’s system is capable of coexisting with both existing NGSO licence holders and future NGSO systems.
- 4.16 Since we believe the proposed arrangements for coexistence and coordination to be appropriate in this case, we continue to consider there is no material risk to competition relating to NGSO systems, and that the proposed services would benefit UK consumers and business.

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- 4.17 We have also considered the concern raised about potential risks to competition which might arise should an NGSO system cause interference to GSO operators.
- 4.18 As we set out in the next section (section 4) under ‘Protection of GSO services’, all NGSO operators are required to comply with the limits set out in Article 22 of the ITU Radio Regulations to protect GSO services. In addition, Mangata has set out in its additional submission the steps it is taking to protect GSO services. Therefore, we assess it unlikely that the grant of this licence would inhibit future or existing GSO services in the UK.

## 5. Additional concerns and comments raised in consultation responses

- 5.1 The Mangata consultation invited respondents to comment on any other aspects of the licence application that raised concerns. We asked the following consultation question:

### Consultation question 4

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

### Consultation responses

#### Protection of GSO services

- 5.2 A respondent, who wished its identity to remain confidential, was concerned about potential interference to GSO systems. In its response, it said more information should be provided before a licence was granted, so that other operators could conduct their own dynamic interference analysis. It said any decision on the current licence application should be deferred until after the forthcoming World Radiocommunications Conference (WRC-23) and any European regulatory follow up.
- 5.3 Its response noted that international rules said NGSO networks cannot claim protection from GSO networks, and that NGSO systems should be operated in a way that unacceptable interference to others should be eliminated rapidly.
- 5.4 It said Mangata's licence application raised similar issues to those that were addressed in its response to an earlier licence application (by [Telesat](#)), and called for detailed information about Mangata's own interference calculations. It added that Ofcom had not explained how NGSO to GSO interference limits will be monitored and enforced.
- 5.5 It suggested that Mangata's proposed approach would not work because it would not have the necessary information about its own or other systems with which it sought coexistence. It noted that Earth station terminals are licensed to operate at any location in the UK, making proper coordination impossible. It identified this as "the hidden receiver problem" and said this could present issues for operators over quality of service.
- 5.6 The same respondent raised two further issues it said should be resolved before Mangata was issued with an NGSO network licence:
- the need for Ofcom to establish a monitoring capability to reassure GSO users of the Ka-band; and
  - uncertainty regarding relevant international regulations.
- 5.7 On **monitoring**, the respondent noted the plans set out in our [spectrum management strategy](#) to adopt a new approach to assessing potential interference based on "real-

world” measurements. It said it supported this approach and said it was important that Ofcom only authorises networks that “demonstrably comply” with Article 22 of the ITU regulations. However, it noted this capability was not yet in place.

5.8 On **international regulations** more generally, it noted that “complex, technical, and global” discussions were already underway about NGSO coexistence issues. It said it expected meaningful agreements to be reached at WRC-23 and for Ofcom “*to be able to rise to the challenge of implementing independent interference monitoring so that it can ensure that undue interference is not caused to other spectrum users in the UK*”.

5.9 In the absence of conclusions on these twin issues of monitoring and international regulations, it concluded that in its view Ofcom should defer any decision on the Mangata licence application until after WRC-23 - particularly since the proposed services would not be available until 2025 at the earliest.

### Concerns relating to the potential impact of NGSO services on space environment

5.10 An individual respondent, Robert Thomson, said there were already 5,000 satellites orbiting the earth and there could be 10,000 by 2030. He described this as ludicrous and very dangerous and said regulation was needed.

### Ofcom assessment

5.11 We have considered the suggestion that a decision on the Mangata licence application should be deferred until after WRC-23. However, in view of the assessment set out in this statement, and the fact there is no current WRC-23 agenda item looking at a revision to the Radio Regulations Article 22 limits, we do not think such a delay is necessary. It would also be inconsistent with our strategy of encouraging and enabling innovation and a competitive market for NGSO services.

5.12 We are actively engaged in international spectrum discussions relating to satellite services. Should we wish to propose changes to UK regulations or licence conditions in future we would consult as necessary.

5.13 With respect to the potential for harmful interference from Mangata’s operations to current GSO systems, the confidential respondent noted that the concerns it was raising were largely the same as we considered in respect to the earlier Telesat application. Our assessment and conclusions with regard to this application are similar to those set out in our [decision](#) to grant the Telesat licence application. In particular:

- There are already conditions in our NGSO licences requiring earth stations to comply with the equivalent power flux-density limitations specified in Article 22 of the International Telecommunications Union (ITU) Radio Regulations, which are intended to protect GSO satellites. These conditions apply to the transmissions (uplinks) from earth stations located in the UK. The [Wireless Telegraphy Licence Conditions Booklet](#) outlines some of the enforcement actions we may take in the

event that conditions in our licences are not met. This includes the power to access and inspect sites (condition 5); modify, restrict and closedown services (condition 6); and revoke a licence (condition 1). In addition, we have the legal power to take enforcement action through criminal law prosecution. Similarly, section 42 of the Wireless Telegraphy Act 2006 gives us the power to fine companies which are in breach of the conditions in wireless telegraphy licences.

- Harmful interference occurring on the downlink, i.e. from an NGSO satellite transmitting into the UK, can be dealt with by contacting the administration responsible for the filing under which the satellite is operating. In this case Mangata has confirmed in its application that it will operate under satellite filings held by the UK. This means we could take direct action under our satellite filing procedures to mitigate any harmful interference from the Mangata network. In particular, we would have powers in line with our Procedures for the Management of Satellite Filings to direct Mangata to alter or cease transmissions if they are causing interference into another service.

5.14 In our [Space Spectrum Strategy](#), we said we would consider building on our existing approach by introducing a new licence condition (into the Earth Station Network Licence) in relation to the downlink. This would enable us to enforce more quickly and directly against a UK NGSO licensee if there was harmful interference to GSO receivers in the UK.

5.15 The Space Spectrum Strategy also set out our intention to develop our ability to investigate and verify any complaints of harmful interference to GSO receiving Earth stations from transmissions of NGSO systems, whether caused by a single satellite or by the aggregate effect of multiple satellites of a single NGSO system.

5.16 We are developing our capabilities so that, for any suspected cases of interference arising from NGSO satellites, we could:

- seek evidence of measurements conducted at the Earth stations operated by the complainant (i.e. at the user or operator's site), and/or
- use our satellite monitoring facility at Baldock.

5.17 In answer to our request for further information, Mangata confirmed it would comply with Article 22 of the ITU Radio Regulations in both the uplink and downlink through a combination of arc avoidance (three degrees), minimum elevation angle (15 degrees) and EIRP masks to demonstrate compliance with PFD and EPFD limits given in RR No.22.5D / Table 22-2. Its full answer is published alongside its licence application.

5.18 We assess that its approach is robust, and that the additional evidence should reassure GSO operators regarding their UK services.

### Concerns relating to the potential impact of NGSO services on space environment

5.19 In the UK, policy on safe and sustainable use of space is determined by UK Space Agency and the Department for Business Energy and Industrial Strategy. Further, the UK regulator



with responsibility for issues concerning the safety of space, including space launch and space debris is the Civil Aviation Authority, as outlined in the Space Industry Act 2018. As outlined in section 2, our duties and powers come from separate legislation.

- 5.20 In our Space Spectrum Strategy, we recognise the role spectrum will play in enabling safe and sustainable use of space. We have stated that we will consider appropriate access to spectrum for radars to track the movements of objects in space. We will also seek to understand whether changes to international spectrum allocations are needed to support in-orbit servicing and other safe space initiatives.
- 5.21 We have shared the concerns raised in the consultation with our responsible counterparts in the CAA and the UK Space Agency for their consideration.

## 6. Decision

### How we decide whether to grant a licence

6.1 In our NGSO statement we set out how we would decide whether to grant a licence. In this, we referred to our statutory duties, with our principal duty being to further the interests of citizens and consumers in relation to communications matters. In accordance with these statutory duties, when deciding whether to grant a licence application, we said we would be mindful that our objective is to enable citizen and consumer benefits arising from innovative satellite services, such as improved connectivity, and would take all relevant factors into account including in particular:

- (in the case of gateway licence applications) the availability of gateway sites within the UK;
- any risks to competition for UK consumers; and
- the ability of networks to coexist in terms of radio interference management.

6.2 We confirmed that in reaching our decision we would take account of both our technical check, our competition check, and our statutory duties and objectives. In achieving our aim, we would also take account of the available relevant evidence, including responses to the Invitation to Comment.

### Our decision

6.3 In light of the evidence presented in Mangata’s application - and our careful consideration of potential coexistence issues, competition, and consultation responses - we have decided to grant Mangata an NGSO network licence.

6.4 The licence will authorise Mangata user terminals in the UK to connect with its planned NGSO constellation. This will enable Mangata to provide satellite services in the UK in future, improving connectivity for UK citizens and consumers. Mangata has indicated that it plans to launch satellites from 2025.

### Next steps

6.5 We will now proceed to issue Mangata with its new licence, subject to payment of the licence fee.<sup>3</sup> A copy of the licence will also be made available under the “Existing licences” section of our website.

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<sup>3</sup> An example NGSO Earth Station Network licence can be found at Annex 1 of our earlier decision on an application by Telesat: [Decision: Telesat LEO Inc. NGSO ESN licence application \(ofcom.org.uk\)](#)