

Your response

Question	Your response
Question 1: Do you have any comments on this variation?	<p><i>Is this response confidential? – N</i></p> <p>Avanti thanks Ofcom for the opportunity to comment on the proposed variation of Arqiva’s national 28 GHz spectrum access licence, licence number 0307328.</p> <p>While we support Ofcom’s intention to free up unused 28 GHz band spectrum for satellite services, we also request that Ofcom’s takes this opportunity to bring the licences in line with the PES licence process in order to procure the technical analysis and measures needed to ensure a better protection from potential interference to enable satellite gateways.</p> <p>Protection of gateways</p> <p>Avanti is the leading Ka-band high-throughput satellite capacity provider, with extensive coverage over Africa, Middle East, and Europe. Our network enables important benefits for citizens and consumers in the UK, and in pursuit of the UK’s foreign policy goals with respect to the Sustainable Development Goals. For example, Avanti’s network enables:</p> <ul style="list-style-type: none">- Backhaul for the Emergency Services Network in rural parts of the UK;- Mobile carriers to extend their coverage in rural parts of Africa;- Rural schools in Africa to be connected to the Internet;- Secure communications for NATO militaries. <p>All of these benefits rely upon a low interference environment at our gateway sites, specifically our Goonhilly, Lands End, and Madley.</p> <p>Ofcom has assured this interference environment through the procedure that results on the issue of PES licences. PES licences are issued on the basis of specific technical information regarding each potential deployment or “path” between permanent earth stations and one or more geostationary licences. PES licences are only issued once</p>

specialised software has modelled the potential deployment(s) against current FSS deployments and other radio services, to ensure that current services continue to be protected against undue interference.

Ofcom has recently established Satellite (Non-Geostationary Earth Station) licences for NGSO gateways, six of which have recently been issued to Starlink into adjacent frequencies to the spectrum access licences. One of the conditions of the new licence is to prevent interference into GSO satellites, by including a licence condition that the gateways must comply with Article 22 limits¹. We understand from subsequent engagement that Ofcom is serious about monitoring potential interference and enforcing these limits.

The approach Ofcom has taken through enabling gateways through PES licences and Satellite (Non-Geostationary Earth Station) allows new entrants **as long as current services are protected**. This is in line with Ofcom's duties with respect to the Communications Act and Wireless Telegraphy Act.

In this spirit, we believe that responsible stakeholders should only be licensed for spectrum that is in use. This supports Ofcom's objective pursuant to Section 3 of the Communications Act 2003 to ensure spectrum is used in a way that maximises the benefits that people, businesses and other organisations derive from its use, including the wider social value of spectrum use.

In contrast to the licence products discussed above, it is not appropriate to use spectrum access licences for satellite Gateway Earth Stations. This is because they do not provide adequate protection for current spectrum users as they are not co-ordinated against current users and do not include conditions with respect to protecting satellite networks co-ordinated at the ITU level. Indeed, Interface Requirement 2048² does not include any limit

¹ See https://www.ofcom.org.uk/data/assets/pdf_file/0023/247181/statement-space-spectrum-strategy.pdf 4.31

² See https://www.ofcom.org.uk/data/assets/pdf_file/0025/84643/ir2048.pdf Section 3 5B

upon the maximum permitted EIRP level for satellite services. The licence itself only includes deployment requirements with respect to **adjacent** frequencies.

The permissive conditions associated with the licence are understandable in the context of the original intention of the licence to provide authorisation for mobile and/or fixed wireless access³ with one only provider that was responsible for the use in its service area. However, these are no longer appropriate when the licence is solely used as a potential authorisation for a gateway where that authorisation circumvents the requirements and application procedures that Ofcom requires in pursuit of its legal duties.

In summary, Avanti has reasonable expectations of protection against harmful interference implied by the ownership of PES licences for its gateway frequencies, and Ofcom's international obligations with respect to the Radio Regulations Article 22 limits that apply to Avanti's co-ordinated satellites. Avanti sees that these reasonable expectations are at risk if the licence is varied as proposed in this consultation.

Allowing a spectrum access licence to be used for a gateway in the same location as other gateways that have passed the strenuous technical conditions to guarantee that they operate without causing any harmful interference to other services, will risk causing interference to Avanti's satellites, which would jeopardize communications in the UK and overseas.

We therefore ask that Ofcom either adds relevant conditions to the spectrum access licence, or asks that Arqiva or the holder of the spectrum access licence lease, to apply for a licence product specifically designed for gateways.

³ See

<https://webarchive.nationalarchives.gov.uk/ukgwa/20160706003739/http://stakeholders.ofcom.org.uk/spectrum/spectrum-awards/awards-archive/completed-awards/1040award/key/award/> page 5 "Chapter 2 – Potential applications and demand assessment"

Future policy with respect to the 28 GHz band

As mentioned above, and according to Ofcom's policy to implement administered incentive pricing, since the spectrum was first made available for auction, many stakeholders have assumed that the future of this spectrum would be for mobile broadband services.

However, there is no empirical evidence for this assumption. On the contrary, Arqiva's application to vary the licence to only cover the three gateway sites is evidence that the strongest future demand for this spectrum is for satellite services.

This is not surprising as the band is globally harmonised for Fixed Satellite Services. As noted above, Avanti relies on global access to this band to provide its electronic communication network services in the UK and overseas.

Recent regulatory developments from Ofcom have enabled more intensive use of this spectrum for satellite services. For example, Ofcom recently decided to licence Telesat and Mangata to use the Ka-Band for User Terminals operating on their new non-geostationary satellite networks.

At the European level, regulators have developed a framework allowing the spectrum to be used by Earth Stations in Motion communicating with both geostationary and non-geostationary satellites.⁴


Recent WRCs have also enabled the use of the Ka-Band for Earth Stations in Motion globally.⁵⁶ WRC-23 will also consider allowing non-geostationary networks to use more of the Ka-band to communicate with ESIMs.⁷ These regulatory frameworks are already enabling connectivity services globally.

⁴ See https://docdb.cept.org/document/category/ECC_Decisions?status=ACTIVE ECC Decisions (13)01 and ECC Decision (15)04

⁵ See https://www.itu.int/dms_pub/itu-r/oth/OC/OA/ROC0A00000F0047PDFE.pdf WRC-15 Resolution 156

⁶ See https://www.itu.int/dms_pub/itu-r/oth/OC/OA/ROC0A00000F0056PDFE.pdf WRC-19 Resolution 169

⁷ See https://www.itu.int/dms_pub/itu-r/oth/OC/Oa/ROC0A00000D0041PDFE.pdf Agenda Item 1.16

	<p>By contrast, efforts to use the Ka-Band for terrestrial mobile broadband have been disappointing. For example, South Korean operators recently failed to deploy 5G networks in the 28 GHz band so have had their licences rescinded.⁸</p>
	<p>In short, the evidence suggests that the greatest demand for the 28 GHz band going forwards is for Fixed Satellite Services. Ofcom can take advantage of this by extending its current licence exemptions or licence products into the 27.8285 - 28.0525 GHz and 28.8365 - 29.0605 GHz,⁹ thus working towards the creation of a contiguous block of FSS spectrum from 27.5 – 30 GHz.</p>
	<p>There would be no loss of benefits for UK citizens and consumers as Arqiva or its lessee could provide its services under that framework.</p>

Please provide evidence in support of your views.

⁸ See <https://www.rcrwireless.com/20230103/5g/south-korea-officially-cancels-28-ghz-licenses-report>

⁹ Specifically Satellite (Permanent Earth Station), Satellite (Transportable Earth Station), Satellite (Earth Station Network), or licence exempt services that comply with Interface Requirement 2066.