



Variation of the Spectrum Access Licence for 1452-1492MHz and changes for fixed link use in the paired bands 1350-1375 MHz and 1492-1517 MHz

About Arqiva

Arqiva is a communications infrastructure and media services company operating at the heart of the broadcast and mobile communications industry and at the forefront of network solutions and services in an increasingly digital world. Arqiva provides much of the infrastructure behind television, radio and wireless communications in the UK and has a growing presence in Europe, Asia and the USA.

We offer cellular, wireless broadband, video, voice and data solutions for public and private sector customers.

Arqiva operates around 8,000 shared radio sites throughout the UK, including masts from under 30 to over 300 metres tall. We have worked with the mobile industry over two decades to deliver mobile services to consumers with a significant presence in suburban and rural areas. Our success can be demonstrated through high levels of sharing on our infrastructure. In Arqiva WiFi we own one of the UK's largest Wi-Fi hotspot providers that enables us to build a unique proposition for public Wi-Fi and small cell mobile network solutions in the UK.

Arqiva is a founder member and shareholder of Freeview. We broadcast all six Freeview multiplexes, are the licensed operator of two of them and we own Connect TV, the first company to launch a live IP streaming channel on Freeview. Arqiva was also a key launch technology partner for Freesat and is the licensed operator of the Digital One – the national commercial DAB digital radio multiplex.

We are building and running a national Internet of Things ("IoT") network, starting with 10 of the UK's largest cities. In addition our smart metering communications service, connecting 10 million homes using long-range radio technology, will be one of the UK's largest machine-to-machine deployments.

Our major customers include EE, H3G/Three, Telefonica/O₂, Vodafone, BBC, ITV, Channel 4, Five, BSkyB, Classic FM, the Metropolitan Police, Airwave and the RNLI.

Arqiva is owned by a consortium of long-term investors and has its headquarters in Hampshire, with major UK offices in London, Buckinghamshire and Yorkshire.

Variation of the Spectrum Access Licence for 1452-1492 MHz and changes for fixed link use in the paired bands 1350-1375 MHz and 1492-1517 MHz

1. Summary

Arqiva operates 28 fixed links in the 1350-1375 MHz and 1492-1517 MHz paired spectrum. These links are integral to the broadcast service that Arqiva's customers deliver to their radio listeners providing DAB and FM transmitter feeds for the BBC and Commercial Radio. Interference into these links will degrade the service and significantly impact those listeners. The critical nature of these links to the quality of the service provided to its broadcast customers is emphasised by the contractual commitments in place and these links are operated to 99.99% availability. As with all cases of harmful interference hence Arqiva expects Ofcom to take the risk of interference to these links seriously and for it to implement appropriate interference mitigation measures.

Arqiva have been operating these links for many years in full compliance with the terms of our licences and contractual commitments. Therefore as a result of this intervention we expect Ofcom to impose appropriate interference mitigation obligations on the licensed operator to ensure that our fixed links and more importantly the radio listeners served by these links do not suffer. In addition it should be incumbent on the licensee to advise Arqiva prior to the roll out of their service in close proximity to our existing links. This will allow any impact on consumers to be monitored.

2. Detailed answers

Question 1: *Do you agree with:*

a) *the technical analysis prepared by Qualcomm?*

Arqiva has reviewed the technical analysis produced by Qualcomm and sees no issue with it. Qualcomm have been thorough in their analysis and we are aware of their depth of experience in considering the uses of this band as we have previously worked closely with Qualcomm in considering other services in the 1452 to 1492 MHz band. Furthermore, Arqiva has been involved in a significant number of co-existence studies both practically and theoretically over many years. This case is relatively straightforward as the potential source of interference and the systems being interfered with are static and their technical characteristics are well understood.

Question 1: *Do you agree with:*

b) *our assessment of the Qualcomm study and our resulting conclusions?*

Arqiva agrees with Ofcom's assessment of the Qualcomm study and resulting conclusions.

Arqiva supports the adoption of scenario 1 of closing 1492 – 1498.5 MHz for new fixed links but allowing existing links to continue to use the band. Arqiva has been deploying new links over the last 5 years in other fixed link bands for example 6 GHz.

Over the years Arqiva has had extensive experience of tracking down interference issues and the significant costs that can accrue. Moreover, the reputational and commercial impact from harmful interference should not be overlooked. To this end, Arqiva notes that in

paragraph 5.7.1 the 1452 to 1492 licensee has to mitigate interference to the legacy fixed links in place at the time of licence variation to the 1452 to 1492 MHz Spectrum Access Licence. We welcome this commitment from Ofcom and encourage Ofcom to make it clear that Arqiva and any other incumbent operators should not be liable for any of the costs associated with interference mitigation.

Question 2:

a) Do you agree with our proposal to grant the variation request as set out in this consultation?

If Ofcom make the licence variation proposed then it should ensure that the variation provides for all appropriate mitigations to ensure that there is no detrimental impact to the services supported by the incumbent fixed links.

Question 2:

b) Do you agree with our proposal to continue the use of the adjacent 1492-1517 MHz and 1350-1375 MHz for legacy fixed links and retain 1356.5-1375 MHz and 1498.5 -1517 MHz for new fixed links from the date of the licence variation?

Arqiva operates 28 fixed links in the 1350-1375 MHz and 1492-1517 MHz paired spectrum. The links operate in both suburban and rural areas. As they carry mission critical traffic in particular programme feeds to transmitter sites for Arqiva's broadcast customers we are concerned about any risk to service to these links as the impact to the radio services enjoyed by radio listeners would be significant.

Arqiva suggests that the 1452 to 1492 MHz licensee should give Arqiva 30 days notice of any Supplemental Downlink base station intending to operate within the 1452 to 1492 MHz band and going into test within 1 km of the end of an Arqiva licenced fixed link receiving on 1492-1517 MHz spectrum. This notification should be in addition to the steps that should be undertaken by the licensee to avoid loss or service degradation.

Arqiva supports the use of 1356.5-1375 MHz and 1498.5 -1517 MHz for new fixed links from the date of the licence variation. This reduces the risk of interference going forward and is the correct approach.

Question 2:

c) Are the technical parameters listed in Annex 9 sufficient to enable the 1452-1492 MHz licensee to assess and manage the interference potential from base stations operating in the 1452-1492 MHz band to fixed point to point links? Should Ofcom consider presenting additional parameters? If so, which parameters and why?

Arqiva has reviewed the specified list of technical parameters in Annex 9 and suggest that the NGR field should be specified to 10m accuracy to allow the specific site to be identified more accurately.