

# **Office of the Adjudicator – Broadcast Transmission Services**

**Report for the period 1 July 2020 – 30 September 2020**

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## 1. Background

On 11 March 2008, the Competition Commission (CC) announced its decision to allow the merger of transmission companies Arqiva and National Grid Wireless (NGW) subject to the agreement of a package of measures (undertakings) to protect the interests of their customers.

Arqiva and NGW overlap in the provision of Managed Transmission Services (MTS) and Network Access (NA) to transmitter sites and associated facilities for terrestrial television and radio broadcasters. In its final report, the CC found that Arqiva and NGW were the only active providers of MTS/NA to the UK television broadcasters. The companies were also the most significant providers of national MTS/NA to UK radio broadcasters with a combined market share of more than 85%. In both cases, prior to merger, the companies had exercised a competitive constraint on each other.

**The CC concluded the merger of the two companies would lead to a “substantial lessening of competition” in broadcast transmission services**, specifically in the provision of MTS/NA to television and radio broadcasters.

After consultation by the CC with Arqiva, its customers and other stakeholders, the Commission accepted certain undertakings from Arqiva on 1 September 2008.

[http://webarchive.nationalarchives.gov.uk/20140402141250/http://competition-commission.org.uk/inquiries/ref2007/macquarie/pdf/notice\\_undertakings.pdf](http://webarchive.nationalarchives.gov.uk/20140402141250/http://competition-commission.org.uk/inquiries/ref2007/macquarie/pdf/notice_undertakings.pdf)

The Undertakings are intended to mitigate the substantial lessening of competition by protecting existing and new customers over the terms and conditions of supply, including protection against future price rises and protection against changes in non-price related areas (such as discrimination issues and service standards).

The Undertakings provide for the appointment of an Adjudicator, as described in Appendix 1 (Adjudication Scheme) and Appendix 2 (Adjudication Rules). The main role of the Adjudicator is to determine disputes arising out of the operation of the Undertakings.

Paragraph 35 of Appendix 1 to the Undertakings requires the Adjudicator to make periodic reports to the Office of Fair Trading (now the Competition and Markets Authority), copied to Ofcom, covering the following points:

- Any Guidance issued
- Determinations in relation to Disputes
- The views of the Adjudicator about the operation of the Undertakings, the Adjudication Scheme and Adjudication Rules as well as any recommendations for amendments
- The views of the Adjudicator on the performance of Arqiva in complying with the Undertakings

This report covers the operation of the Office of the Adjudicator over the period from 1 July 2020 to 30 September 2020. This report will be published on the website of the Adjudicator ([www.ota-bts.org.uk](http://www.ota-bts.org.uk)) with any information that the Adjudicator regards as confidential redacted.

## **2. Office of the Adjudicator**

### **2.1 Adjudicator**

The Office consists of Alan Watson as Adjudicator and Jon Butler as Deputy, both are part time. Megan Donald is Executive Assistant and Office Manager, also on a part time basis.

Legal advice is provided by Mr Paul Herbert of Goodman Derrick LLP.

The Adjudicator and Deputy have vacated the office at Ofcom but Megan remains there. IT is now directly provided with a resulting change in web and email addresses.

During the present Covid-19 crisis, the Office is continuing operation on a dispersed basis with contact being by telephone or video conference. Scheduled meetings with Arqiva and others have continued on this basis.

Website: [www.ota-bts.org.uk](http://www.ota-bts.org.uk)  
Adjudicator [alan.watson@ota-bts.org.uk](mailto:alan.watson@ota-bts.org.uk)  
Deputy [jon.butler@ota-bts.org.uk](mailto:jon.butler@ota-bts.org.uk)  
Exec asst [megan.donald@ota-bts.org.uk](mailto:megan.donald@ota-bts.org.uk)

### **2.2 Budget**

Expenditure from 1 April 2020 to 30 September 2020 was £203,995 against the annual budget of £475,600. The contingency of £470,000 has not been used.

### **2.3 Stakeholder Meetings**

During this period regular meetings and communication with stakeholders have continued (by phone and video conference) and include government departments, television broadcasters and radio broadcasters, both large and small:

Confidential information redacted

## **2.4 Arqiva**

Paragraph 35 of Appendix 1 of the Undertakings requires the Adjudicator to comment on the performance of Arqiva over this period, in relation to the Undertakings.

The performance of Arqiva continues to be generally satisfactory.

Arqiva concluded the sale of some 7,000 telecommunications sites in July 2020. These are not used for broadcast and therefore fall outside of the Undertakings. However, there are some 112 sites that Arqiva has divested as part of this transaction that have a broadcast presence, mainly radio. The Adjudicator is reviewing the access agreements to ensure that the interests of the broadcast customers on these sites will enjoy equivalent protections.

## **3 Disputes and Guidance**

In this period there have been no disputes requiring the use of the formal dispute procedure. Further information on Guidance can be found in Paragraph 6.1 of this document.

## **4 Publication of Reference Offers.**

A new reference offer for Morecambe Bay, N & W Cumbria and SW Scotland was published on 11 July and can be found at the link below together with previous offers:

<https://www.arqiva.com/documentation/reference-offers/>

The 2020-21 radio rate card for site access can be found at:

[https://www.arqiva.com/documentation/reference-offers/broadcast-radio/Arqiva Radio Rate Card for Network Access 2020-21.pdf](https://www.arqiva.com/documentation/reference-offers/broadcast-radio/Arqiva%20Radio%20Rate%20Card%20for%20Network%20Access%202020-21.pdf)

## **5 Reporting and Audit**

### **5.1 Regulatory Accounts**

Arqiva is obliged to produce annual accounts in accordance with the requirements set out in Paragraph 15 and Appendix 14 of the Undertakings.

The Regulatory Accounting Principles and Methodologies (RAPAMS) which set out how the accounts are produced and are approved by the Adjudicator can be found at the link below, together with the regulated accounts for the period 1 July 2018 to 30 June 2019.

The accounts for 1 July 2019- 30 June 2020 are complete and are awaiting Arqiva board approval before publication November 2020

<https://www.arqiva.com/documentation/regulatory/>

## **5.2 Compliance Report**

Paragraph 18.1 of the Undertakings requires Arqiva to deliver an annual report to the Office of Fair Trading (now the Competition and Markets Authority) setting out steps taken to comply with the Undertakings and details of any breaches and including steps taken to remedy them.

The 2020 report has been delivered to the CMA, Ofcom and the Adjudicator. There were no instances of non-compliance.

## **5.3 The Undertakings**

The Adjudicator believes that the Undertakings, the Adjudication Scheme and Adjudication Rules are satisfactory at the present time and that no changes are needed. Any impact resulting from the divestments referred to above will be assessed by the CMA.

## **5.4 Information Security Strategy**

Paragraph 16.2 of the Undertakings requires Arqiva to produce an Information Security Strategy which defines the measures to be taken to ensure that confidential information held in one part of the company cannot be used by another for commercial advantage.

The Information Security Strategy can be found at:

<http://www.arqiva.com/documentation/corporate/arqiva-information-security-strategy-version-1.0.pdf>

The Adjudicator audits the Information Security Strategy from time to time. An audit was done earlier this year and the full report attached to the March 2019 Adjudicator's quarterly report. A further audit will be done following completion of Arqiva's internal reorganisation following the divestments. This is planned for early 2021.

# **6 Planned future activity**

## **6.1 Guidance**

The Adjudicator has previously issued guidance covering Paragraphs 6 and 9-12 of the Undertakings. The Adjudicator considers that no further guidance is currently required in relation to Paragraph 6 of the Undertakings.

At present the Adjudicator is of the opinion that no Guidance is required in relation to Paragraph 3 of the Undertakings. Application of, and compliance with, this paragraph will be monitored, and Guidance issued at a later date if necessary.

The Adjudicator holds a series of documents produced by Ofcom which cover detailed guidance for the production of reference offers. Some of this is specific to the now historic high power DTT reference offer and so the Adjudicator has now prepared and published a summary document which covers the aspects which constitute current guidance.

<http://www.adjudicator-bts.org.uk/guidance.htm>

## **6.2 Audits**

Arqiva use a database system called KEEP to maintain site infrastructure records. The KEEP database records a variety of site data which includes information relating to the height, type and location of antenna systems. Antenna information from KEEP is used to determine the loading which the antenna system places upon the site mast or tower. This loading (windloading) is used to calculate a part of the charges to the users of the antenna systems.

The first site audit was undertaken in March 2016 at six transmitter sites in the West Country and South Wales. This included the identification of 602 antennas, reviewing electricity usage of 26 transmitter systems and the accommodation allocated to four transmitter systems.

The second site audit was undertaken in June 2016 at six transmitter sites in the West Country and the South of England. This included the identification of 741 antennas across six sites (seven structures), reviewing electricity usage of 30 transmitter systems and the accommodation allocated to eight transmitter systems.

The third site audit was undertaken in September 2017 at six transmitter sites in the South of England, the Midlands and Wales. This included the identification of 743 antennas across six sites.

The fourth audit was undertaken in September 2018 at four transmitter sites in the South of England and Scotland. This included the identification of 393 antennas on seven masts/structures across four sites. All sites had previously been surveyed to improve the quality of the KEEP records.

A fifth audit was undertaken between October 2019 and January 2020 at sites in South Wales, the Midlands and the Isle of Wight. This included the identification of 373 antennas across four sites. Two of the four sites had previously been surveyed by Arqiva's suppliers as a part of a study into improving the quality of the KEEP records.

The accommodation and electricity usage were found to be satisfactory in the first two audits and have not been undertaken since.

The results of this fifth audit and previous audit results are shown in the table below.

Audit	Year	antenna samples	reasonably consistent	not reasonably consistent	observations
Audit 1	Mar-16	602	421	128	53
Audit 2	Jun-16	734	520	128	66
Audit 3	Sep-17	743	537	136	70
Audit 4	Sep-18	393	339	12	42
Audit 5	Oct-19	373	297	30	46

We note that all sites selected for audit 4 were recently surveyed by Arqiva, for audit 5 only half the sites were recently surveyed and so a higher proportion of 'not reasonably consistent' results can be anticipated. We note continued improvement in the accuracy of Arqiva's KEEP records.

The 2018 KEEP audit showed significant improvement on previous audits. The full report was attached as an Annex to the Q4 2018 report. The 2019 audit has also been completed but the Covid19 crisis has delayed the completion of analysis of the results. The final report is attached to this report.

Due to the epidemic, all but essential site visits are unwise so a further KEEP audit this year will not take place. Arqiva are replacing the KEEP database and the next audit will take place mid 2021 to check both the transition of data and the accuracy by site visits.

### **6.3 700 MHz clearance.**

The Adjudicator has no formal role in the 700MHz clearance programme, but some aspects do come within the remit. This project is substantially complete.





# Audit of Arqiva site records undertaken between October 2019 and January 2020

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This redacted version of the report removes information which is commercially sensitive to Arqiva



Version No	Date	Modified by	Notes
0.1	5/8/20	J Butler	First draft for comment
1.0	15/9/20	J Butler	Addition of updated Arqiva actions
1.0r	15/9/20	J Butler	Non-confidential redacted version for publication

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## 1. Document Purpose

The purpose of this document is to;

- 1.1. Set out the findings from the fifth audit of a selection of Arqiva's sites undertaken between October 2019 and January 2020, for the purposes of;

- 1.1.1. To compare the antenna systems observed at four Arqiva sites to the information recorded in Arqiva's electronic database (the KEEP database), and

- 1.1.2. To select two sites which have been surveyed by 3<sup>rd</sup> parties for comparison with those which have not.

Prior to 2017, audits have included tests of electricity use and accommodation charges. In line with the 2017 and 2018 audits, this 2019/20 audit was limited to antennas. Findings from previous audits of electricity use and accommodation charges were reasonable and so have not been repeated.

The findings from this 2019/20 audit are summarised in section 9 of this document.

- 1.2. To show the impact of any discrepancies upon the charges to Arqiva's customers and to provide an update on previous actions undertaken by Arqiva.

## 2. Summary

- 1) Two of the four sites chosen for this audit have been surveyed by 3<sup>rd</sup> parties as part of an Arqiva trial for improving site records. The survey methodology was through use of a drone at one site and a physical climb down at the other. The remaining two sites have not been the subject of 3<sup>rd</sup> party surveys and none of the sites have previously been audited by OTS BTS or Arqiva.
- 2) The audit found better accuracy of the KEEP database for sites where 3<sup>rd</sup> party surveys had taken place when compared to sites where surveys had not taken place. All discrepancies at the surveyed sites related to SHF telecoms antennas with reserved status in KEEP but which were observed as installed during the site visits.
- 3) Four leg mounting inconsistencies were recorded at Icomb Hill, a drone surveyed site. There were no leg inconsistencies recorded at the climb down surveyed site, Kilvey Hill.
- 4) Over time, the improvements to Arqiva's record keeping processes are expected to result in continued improvement to the KEEP records. Examples of the current antenna works handover pack were presented for review by OTA-BTS. This included a comprehensive set of post-build technical parameters and photographs for updating KEEP records.
- 5) The transmitter site observations for surveyed sites showed fewer discrepancies with Arqiva's KEEP records when compared to un-surveyed sites. 373 site observations were compared to Arqiva's KEEP records. Of these 373 antennas, 297 were recorded as reasonably consistent with the Arqiva records, 30 were recorded as not reasonably consistent with Arqiva records and 46 were recorded as observations.
- 6) Of the 30 records which were not reasonably consistent with observations, 7 are from the two surveyed sites and relate to a recent change or a change of status of telecoms antennas. All 7 correlate to assets recorded in the KEEP database. There were no antennas at the surveyed sites which were not recorded in KEEP.
- 7) Following the audit, Arqiva undertook a detailed investigation to the causes of the 7 discrepancies noted above. They concluded that at Kilvey Hill, the 2 discrepancies were recent changes by the telecoms customer which were still to be processed. At Icomb Hill, the 5 discrepancies had been observed during the drone survey and were in the process of evaluation at the time of the OTA-BTS audit. Arqiva's full response is shown in section 11.
- 8) The causes of the inconsistencies were determined by Arqiva and categorised as shown in the table below. The surveyed sites are Icomb Hill and Kilvey Hill, the non-surveyed sites are Carmel and Rowridge. Antennas re-categorised as on-going projects are not shown in the table below but are shown in section 11 of this document.

Cause	No. on Surveyed Sites	No. on Non-Surveyed Sites	Impact on Broadcast customer charges?
A recent change had happened on site between the survey and the audit	2	0	No
The status of an antenna needed to be updated after telecoms customer works	5	8	No
An unknown antenna was identified	0	8	Yes
A customer has changed their antenna size within their charges	0	2	No
Customer had reported removal, but not carried it out	0	3	Yes
An antenna had been recorded historically with the wrong details and then not updated correctly in a clearance project.	0	2	Yes
<b>Total</b>	<b>7</b>	<b>23</b>	

9) Arqiva have analysed the antenna records discrepancies and have calculated the potential impact on customer charges through changes to the apportionment calculations. For the surveyed sites, the discrepancies do not result in any impact to broadcast customer charges. For the non-surveyed sites the discrepancies are similar to those observed in previous years and result in relatively small changes to charges. These changes will be implemented under the terms of the relevant customer contract.

10) Arqiva provided satisfactory responses to questions raised during the site audits.

### 3. Introduction

The first site audit was undertaken in March 2016 at six transmitter sites in the West Country and South Wales. This included the identification of 602 antennas, reviewing electricity usage of 26 transmitter systems and the accommodation allocated to four transmitter systems.

The second site audit was undertaken in June 2016 at six transmitter sites in the West Country and the South of England. This included the identification of 741 antennas across six sites (seven structures), reviewing electricity usage of 30 transmitter systems and the accommodation allocated to eight transmitter systems.

The third site audit was undertaken in September 2017 at six transmitter sites in the South of England, the Midlands and Wales. This included the identification of 743 antennas across six sites.

The fourth audit was undertaken in September 2018 at four transmitter sites in the South of England and Scotland. This included the identification of 393 antennas on seven masts/structures across four sites. All sites had previously been surveyed to improve the quality of the KEEP records.

This fifth audit was undertaken between October 2019 and January 2020 at sites in South Wales, the Midlands and the Isle of Wight. This included the identification of 373 antennas across four sites. Two of the four sites had previously been surveyed by Arqiva's suppliers as a part of a study into improving the quality of the KEEP records.

The accommodation and electricity usage were found to be satisfactory<sup>1</sup> in the first two audits and have not been undertaken since.

The results of this fifth audit and previous audit results are shown in the table below.

Audit	Year	antenna samples	reasonably consistent	not reasonably consistent	observations
Audit 1	Mar-16	602	421	128	53
Audit 2	Jun-16	734	520	128	66
Audit 3	Sep-17	743	537	136	70
Audit 4	Sep-18	393	339	12	42
Audit 5	Oct-19	373	297	30	46

We note that all sites selected for audit 4 were recently surveyed by Arqiva, for audit 5 only half the sites were recently surveyed and so a higher proportion of 'not reasonably consistent' results can be anticipated.

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<sup>1</sup> At the time of the 2016 audit, two systems were highlighted where the records showed higher electricity charges compared to similar systems in use by other customers. These differences were satisfactorily explained and were due to the averaging of electricity use across similar sites through agreements with customers.

### *3.1. Antenna Systems*

Arqiva use a database system called KEEP to maintain site infrastructure records. The KEEP database records a variety of site data which includes information relating to the height, type and location of antenna systems. Antenna information from KEEP is used to determine the loading which the antenna system places upon the site mast or tower. This loading (windloading) is used to calculate a part of the charges to the users of the antenna systems.

Some of the elements of the charges to broadcasters are based on the percentage wind load on the structure of the antennas delivering the broadcaster's service. The relevant elements of the charges to Arqiva's broadcast customers are influenced by all antennas on a structure irrespective of whether the antenna is for a broadcast service or something else. As such, the accuracy of all antenna records are considered in this audit.

The accuracy of the KEEP records in regard of antenna type and antenna height is the subject of this report for all antennas at a selection of sites. The accuracy of the KEEP records is established through visual site inspection and from analysis of photographs taken at the time.

#### 4. Analysis methodology

The transmitter site observations in the 2016 and 2017 audits showed similar discrepancies and in 2018 we decided to change the site selection criteria as a similar selection criterion would likely yield similar results. The four sites chosen for the September 2018 audit had all been recently surveyed by Arqiva's external site survey supplier and KEEP records updated. By selecting these sites, we assessed the effectiveness of these surveys and the effectiveness of Arqiva's change control procedures relating to any subsequent antenna changes.

In 2019 Arqiva trialled 3<sup>rd</sup> party drone surveys of transmitter masts including software algorithms to identify and categorise antenna assets. Arqiva also undertook 3<sup>rd</sup> party climb down surveys with different suppliers. For the 2019/20 audit we decided to select a drone surveyed site, a climb down surveyed site and two non-surveyed sites.

In advance of the site surveys Arqiva provided the following information;

- 4.1. **Antennas:** A full set of KEEP records for each of the sample sites. The KEEP records are compared to site observations and photographs taken from the ground.
- 4.2. **Active Project list:** A list of antennas which are part of an active project.
- 4.3. **Information:** Arqiva have previously provided a glossary of terms used in the KEEP database.

Each site was visited by Jon Butler (Deputy Adjudicator) accompanied by Adrian Giblin as the representative from Arqiva. Each structure was photographed at various locations distant from the mast to aid identification and to provide an audit record. A hand bearing compass was used on the ground to confirm the orientation of the structure and to give an approximate bearing relative to the structure of any antennas.

During the 2017 KEEP audit we noted that *'the KEEP database reflects the commercial status of each antenna rather than the physical status and if an antenna is part of an active project the commercial status may differ from the physical status. For example, an antenna classified as 'Reserved' in KEEP may or may not be present on the structure if it is part of an active project and while updates to the KEEP database are in progress. Irrespective of the antenna's physical presence, it is included in the windloading and cost sharing calculations'*. To separate these observations, Arqiva provided details of which antennas are part of an active project. Discrepancies relating to active projects were classed as observations.

#### 5. Audit Question

At each transmitter site the following question was addressed;

- 5.1. Do the KEEP records from 4.1 show an antenna system at a location on the mast or tower which is reasonably consistent with site observation?

The audit question is addressed through reasonable estimation rather than precise measurement. Antennas are observed from ground level and heights are estimated relative to the structure and other antennas.



## **6. Schedule of site visits**

Each site was visited according to the schedule set out below. In addition, follow up sessions were held at Arqiva's offices at Crawley Court in Hampshire and on video conferencing.

- 10 October 2019: Rowridge
- 10 December 2019: Kilvey Hill and Carmel
- 21 January 2020: Icomb Hill

The site visit to Carmel was hampered by heavy rain and mist. After several hours spent on site it was still not possible to observe some antennas on the upper sections of the mast and consequently seven antennas on the KEEP schedule were excluded from Analysis.

Carmel and Rowridge are non-surveyed sites, Icomb Hill was surveyed by drone and Kilvey Hill was a climb down survey.

## **7. Identification method**

Antennas were identified at ground level using the Arqiva KEEP schedule of height, type and orientation to aid identification. Exact measurements were not possible, but heights and orientation were considered relative to other antennas on the structure. Photographs were taken using an interchangeable lens camera with a telephoto lens. Annex 1 contains a sample of photographs. All photographs and records were supplied to Arqiva.

Arqiva previously supplied a glossary of terms to aid antenna identification from the schedules. This is attached as Annex 2.

## **8. Summary of findings – Report versions**

The Deputy Adjudicator has initially produced this report in draft form (version 0.xx) summarising the findings and noting any discrepancies or observations regarding the accuracy of the Arqiva records compared to site observations. The draft report is shared with Arqiva who may comment upon factual accuracy prior to final issue. The final version has document reference 1.xx and includes Arqiva's response to the findings. The Adjudicator will be responsible for any actions following production of this report.

## 9. Summary of findings – Results

Tables showing results are contained in Annex 3 to this document. There were 373 antenna observations and only those where the observation was inconsistent with Arqiva's records are contained in Annex 3. The full list with comments was provided to Arqiva.

**9.1 Antennas:** Do the KEEP records from 4.1 show an antenna system at a location on the mast or tower which is reasonably consistent with site observation?

Arqiva provided a schedule of antennas across the four sites. The schedule included 50 antennas which were either miscellaneous, wall mounted or at 0m and not on the structure. These were excluded from the audit observations. Site observations showed an additional 14 antennas which were not recorded in the schedules, one of these was later identified as works relating to an on-going project and so was reclassified as an 'observation'. 7 antennas at Carmel were excluded from the audit due to inconclusive observations caused by heavy rain and mist. These are recorded as 'observations' in the results.

The results by site are shown in the table below

### **Of the 373 antennas in total:**

- 297** results were recorded as reasonably consistent with the Arqiva records
- 30** results were recorded as not reasonably consistent with Arqiva records
- 46** results were recorded as observations

### **Of the 297 'reasonably consistent' results**

Antennas were observed on the structure at a height and location which was reasonably consistent with the KEEP records.

### **Of the 30 'not reasonably consistent' results:**

- 7<sup>2</sup>** antennas are recorded against the surveyed sites and all relate to telecoms antennas which were observed on the structure and are recorded in the schedule as reserved.
- 23** antennas are recorded against the non-surveyed sites and relate to installed telecoms antennas with an incorrect status (10) and those where they are missing from the schedule or the mast (13).

### **Of the 46 observations:**

These were generally observations where the antenna may or may not have been observed on the structure and where it is described as redundant, remove or an on-going project. Inconclusive observations due to rain and some mast leg mounting inconsistencies were also included in this category. Four leg mounting inconsistencies were recorded at Icomb Hill, a drone surveyed site. There were no leg inconsistencies recorded at the climb down surveyed site, Kilvey Hill.

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<sup>2</sup> Subsequent analysis by Arqiva showed that 2 of the 7 related to recent customer changes in the process of being updated on KEEP. The remaining 5 were discrepancies observed during the drone survey at Icomb Hill but had not been processed in time for the OTA BTS audit.

A breakdown of the antennas by site including a summary of non-surveyed and surveyed sites is shown below:

2019 2020 KEEP data tests and site observations		Total	Kilvey Hill	Carmel	Rowridge	Icomb Hill		total non surveyed	total surveyed
	Reasonable observation	297	105	98	63	31		161	136
A	Antenna not observed, recorded as installed in schedule	2	0	1	1	0		2	0
B	Antenna observed, not recorded in schedule	28	2	10	11	5		21	7
	Observation inconsistent with schedule	7	0	2	1	4		3	4
	Observation	39	11	13	4	11		17	22
C	<b>Total</b>	373	118	124	80	51		204	169
(A+B)/C	% of antennas either missing or present and not recorded as such in schedule	8%	2%	9%	15%	10%		11%	4%
	Not included due to wall mount or other reasons	50	13	15	19	3		34	16

## 9.2 Comparison to previous findings:

The findings from 2019/20 are compared to the findings from 2018 and 2017 in the table below;

2019/20 vs 2018 and 2017 KEEP audit results		2019/20 surveyed	2018 surveyed	2019/20 non-surveyed	2017 non-surveyed
	Reasonable observation	136	339	161	537
A	Antenna not observed, recorded as installed in schedule	0	5	2	43
B	Antenna observed, not recorded in schedule	7	6	21	53
	Observation inconsistent with schedule	4	1	3	40
	Observation	22	42	17	70
C	<b>Total</b>	169	393	204	743
(A+B)/C	% of antennas either missing or present and not recorded as such in schedule	4%	3%	11%	13%
	Not included due to wall mount or other	16	53	34	67

The sites audited in 2018 were all sites which were previously surveyed by Arqiva. The sites audited in 2017 were all non-surveyed sites. When compared with the surveyed site findings from 2018, those from 2019/20 are broadly similar. When compared with the non-surveyed site findings from 2017, those from 2019/20 are broadly similar.

Arqiva have provided further analysis in their responses contained in section 11 of this report.

## **10. Responses from Arqiva following the 2019 2020 audit**

### **10.1. Update on actions**

Arqiva provided the following response on 9 September 2020.



## **10.2. Analysis of the discrepancies in the KEEP records and the impact on broadcast customer charges**

Arqiva were asked to analyse the discrepancies between site observations and the antenna KEEP records to understand any impact on customer charges. In July 2020 Arqiva provided analysis of how the data discrepancies impact rent and rates apportionment (pass through charges) and Network Access charges.

- For the surveyed sites, the discrepancies do not result in any impact to broadcast customer charges.
- For the non-surveyed sites:
  - a) The changes lead to both potential small increases and small decreases to charges per site per service.
  - b) The analysis of the discrepancies is site specific and does not result in common changes that can be implemented more widely across further sites.
  - c) Arqiva will implement the corrections for the specific sites already identified and will also follow up other on-going initiatives that will review and update the KEEP data.
  - d) For the services on the sample sites the changes to charges for the customers will be implemented under the terms of the relevant customer contract.
  - e) Across all four sites the change in charges due to antenna discrepancies are limited and similar to those observed in previous years at non-surveyed sites.

Arqiva's full analysis is attached to this document as Annex 4.

## 11. Arqiva's response to the audit findings

Arqiva provided the following responses during July and August 2020:

### Keep Audit 2019 – Discrepancies Analysis

Following the Keep audit for the Office of the Adjudicator at a sample of four sites, Arqiva has carried out analysis of any reasons for the discrepancies that were identified in the audit.

It has been possible to allocate the discrepancies into groups based on the cause identified.

The groups and the numbers in each are as follows:

Cause	Number of Sites	Surveyed Sites Number	Non-Surveyed Site Number	Impact on Broadcast customer charges
Recategorised as part of an ongoing project	7	5	2	No
A recent change had happened on site between the survey and the audit	2	2	0	No
The status of an antenna needed to be updated after telecoms customer works	13	5	8	No
An unknown antenna was identified	8	0	8	Yes
A customer has changed their antenna size within their charges	2	0	2	No
Customer had reported removal, but not carried it out	3	0	3	Yes
An antenna had been recorded historically with the wrong details and then not updated correctly in a clearance project.	2	0	2	Yes
<b>Total</b>	<b>37</b>	<b>12</b>	<b>25</b>	

For each of these causes, the analysis by Arqiva has also addressed how these discrepancies will be prevented in future, where possible. Whether the group will have any impact on broadcast customer charges was also reviewed. This is as follows:

#### Recategorised as part of an ongoing project

In the preparation for the audit, a few antennas were identified as being part of an ongoing project. This might result in differences between the installed status on a structure and when feedback is received from a customer on their works and the status then being updated in Keep. Seven antennas were not identified as such before the audit, but were still part of an ongoing project. Future developments in reporting from Keep will look to capture all ongoing projects for a future audit report.

These discrepancies do not have any impact on the broadcast customer charges.

### **Recent change between survey and audit visits**

Two dish antennas were identified in the audit as being installed on the structure and were recorded with reserved status. These were confirmed as having been installed by the customer in the period immediately between the site survey and the audit.

These discrepancies do not have an impact on the broadcast customer charges.

### **The status of an antenna needed to be updated after telecoms customer site works**

For a number of telecoms antennas that were observed as being present on the structure, but with a reserved status, we were able to confirm that the status should be updated to being installed. This was primarily due to updates being needed from the customers on their work to make the reserved antenna live. This has been addressed for new antenna installations with the more prompt provision of handover packs for future telecoms customer installation works including photos from site of the completed works.

These discrepancies do not have an impact on the broadcast customer charges.

### **An unknown antenna was identified**

For eight antennas these were identified in the site audit, but they were not in the Keep records. These were on sites where the structure had not had a survey carried out in the recent survey programme. These were mostly microwave link antennas. It is only by surveying the sites that these antennas will be identified. It was encouraging that this was not the case on those sites where a survey had been carried out.

These discrepancies do have an impact on the broadcast customer charges.

### **A customer has changed their antenna size within their charges**

Some customers are permitted to modify their own use of their antennas, once they have agreed to the payment to Arqiva to use the structure. For two antennas, the customer had chosen to remove the antenna or reduce the antenna size, but had not notified Arqiva to cease paying for it. This is at the customer's choice.

These discrepancies do not have any impact on the broadcast customer charges.

### **Customer had reported removal, but not carried it out**

For three antennas that were part of one customer antenna group, the customer had previously installed the three antennas and after some time subsequently given notice that they would be removed. At a later point, the removal works were cancelled by the customer, but the Keep record did not match this, leaving them with the status installed.

These discrepancies do have an impact on the broadcast customer charges.

### **An antenna had been recorded historically with the wrong details and then not updated correctly in a clearance project**

Two antennas were recorded as having discrepancies, but on investigation they related to one use of the structure for a particular customer. From when Keep was set up, an antenna had been recorded incorrectly and then when a subsequent change to the antenna use by the customer was implemented, this did not recognise the first error. This type of long-term discrepancy will be picked up only in surveys of the structure. The structure involved was not one of those recently surveyed.

This discrepancy does have an impact on the broadcast customer charges.

**Arqiva were asked to investigate the reasons for the 7 antenna discrepancies at the two surveyed sites. Their analysis is shown below;**

**1) Kilvey Hill**

Antenna ID 324096  
Antenna ID 397906

For these two antennas there had been recent changes on the site by the customer that were still to be processed.

**2) Icomb Hill**

Antenna ID 11483  
Antenna ID 464473  
Antenna ID 392389  
Antenna ID 410064  
Antenna ID 464474

For these antennas there were changes noted as required from the drone survey results for the site that were still to be updated in the Keep records when the site audit was undertaken.

This was partly due to the new processes being developed for the capture and update of survey data and partly due to recent team changes.

We acknowledge that with the use of drone surveys there are a number of stages required to enable effective Keep updates. After the survey itself these involve making the images from the survey accessible, building a model of the position of the surveyed antennas, matching known antennas to existing detail and status records, identifying antennas recorded in Keep, but not present in the photographs and also those present in the survey and not recorded in Keep. Only then can checking of installation and site access details be reviewed to aim to resolve each anomaly. This will involve both customer and their contractors' installation documentation and the site share licence records and related charging.

Although this had no impact on broadcast customer charges, we are disappointed that this had not been completed for this site at the time of the audit.



**Annex 1: Sample of site photographs**

From the left; Carmel, Icomb Hill, Kilvey Hill and Rowridge



## Annex 2: Glossary of related terms used in the Arqiva schedule

<b>4L Cardioid</b>	Four Lambda Cardioid where lambda relates to the wavelength of the services being transmitted.
<b>8L Cardioid</b>	Eight Lambda Cardioid
<b>16L Cardioid</b>	Sixteen Lambda Cardioid
<b>DR</b>	Digital Radio
<b>GPRS</b>	General Packet Radio Service
<b>MHA</b>	Mast Head Amplifier
<b>ODU</b>	Outdoor Unit
<b>PCN</b>	Personal Communications Network
<b>RCU</b>	Remote Control Unit
<b>TETRA</b>	Terrestrial Trunked Radio

### Latest Antenna Status Explanation

<b>Installed</b>	Antenna in use – included in Site Apportionment
<b>Planned</b>	Antenna expected to be installed – not included in Site Apportionment
<b>Redundant</b>	Antenna not in use – not included in Site Apportionment
<b>Reserved</b>	Antenna expected to be installed – included in Site Apportionment
<b>Remove</b>	Used to highlight antennas for removal and may be used with an Installed or a Redundant antenna.

### Feeders

A feeder is usually associated with an antenna.

Where a broadcast antenna is constructed from a number of separate dipoles, panels or other discrete elements, the group of antennas that comprise the whole antenna system will be captured within Keep as a number of elements.

Each antenna entry may have multiple tiers in the Keep antenna entry.

A five-around antenna system of eight tiers will have five antenna entries, (usually one per bearing), and eight panels in the individual entry on that bearing stacked above each other.

For such an antenna system, there will be only one or two feeders. These are associated with the antenna entry for one bearing and no feeders are associated with the remaining antennas in the system on other bearings.

An example of this is:

Mendip S1 DTT antenna, (DT\_MEN\_01), - 10 tiers of panels on 5 faces

<b>Antenna ID</b>	<b>Antenna Type</b>	<b>Antenna Quantity</b>	<b>Feeder Quantity</b>
258319	UHF DTT Panel	10	2
258321	UHF DTT Panel	10	0
258322	UHF DTT Panel	10	0
258326	UHF DTT Panel	10	0
258327	UHF DTT Panel	10	0

### **Antenna Leg Designation**

Each structure will have each leg of the structure designated with a letter starting from A. Any face of the structure may be defined as being between two adjacent legs such as AB and CA.

There are additional designations used, either where the antenna is at the top of the structure or for structures that do not have legs such as steel or concrete cylinders.

The following description is used in Keep:

Antenna Leg denotes the mounting position of the antenna on the structure. Codes referencing the structure legs are used for towers (i.e. A, B and C for triangular towers - A, B, C and D for square towers - leg A is always the first leg east of True North).

Examples:

- A (antenna located on leg A),
- AB (antenna located at the centre of face AB),
- ABR (antenna located along the right half of face AB),
- ABL (antenna located along the left half of face AB).
- A number of other codes identify alternative mounting locations:
- AXI (antenna on top of the tower located centrally),
- TOP (antenna on top of the tower offset from centre),
- WAL (antenna located on a wall or building),
- P (antenna located on a pole or other cylindrical structure),
- ALL (antenna located on a triangular/delta frame),
- TOR (antenna located on a circular/toroid frame) and
- PLT (platform signifier).

An antenna may have a bearing on which it is pointed, but this may not apply to some antennas such as omni-directional antennas. These antennas may be given a bearing of 0 degrees or 360 degrees.

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**Annex 3: Antenna observations classified as not reasonable**

Columns 12 to 14 show the results of the antenna observations. Columns 1 to 11 are extracted from the KEEP database except where an antenna was observed but not recorded in the KEEP database, in which case the record has been added to this table.



## **Annex 4: Arqiva's analysis of the discrepancies in the KEEP records and the impact on broadcast customer charges**

### **Office of the Adjudicator - Broadcast Transmission Services**

#### **Keep Audit 2019– Impact on Pass-Through Charges**

Following the Keep audit for the Adjudicator at a sample of four sites, Arqiva has carried out analysis of the impact of the discrepancies that were identified in the audit. The customer use of antennas on structures is used to apportion certain charges, including pass-through charges in accordance with customer contracts. These pass-through charges are for the rent and rates related to the use of the site.

Keep is used to record the data associated with antennas on Arqiva's structures and is then used to calculate relative wind loading in order to apportion the correct charge to each customer. Should Keep data be inaccurate, then the charges to each customer could also be inaccurate.

The analysis from the four site samples has identified only small potential changes of the pass-through charges.

In summary for the services on the sample of four sites:

✂

The changes lead to both small increases and small decreases to charges per site per service.

The analysis of the discrepancies is site specific and does not result in common changes that can be implemented more widely across further sites. Furthermore, in the normal course of business the number of sharers increases and decreases over time as well as the underlying rent and rates at each site. This results in annual variations to pass-through charges in the order of 3-5%, which we note is a greater order of magnitude than the variations reported here.

As a result, Arqiva will implement the corrections for the specific sites already identified and will also follow up other on-going initiatives that will review and update the Keep data.

For the services on the sample sites the changes to charges for the customers are being implemented under the terms of the relevant customer contract.

✂

## Office of the Adjudicator - Broadcast Transmission Services

### Keep Audit 2019 – Impact on Network Access (Non-Pass-Through) Charges

Following the Keep audit for the Adjudicator at a sample of four sites, Arqiva has carried out analysis of the impact of the discrepancies that were identified in the audit. The customer use of antennas on structures is used to apportion certain elements of the Network Access contribution to certain customer charges in accordance with customer contracts. The customer use of antennas is not part of the Managed Transmission Service charge.

Keep is used to record the data associated with antennas on Arqiva's structures and is then used to calculate relative wind loading in order to apportion the correct charge to each customer. Should Keep data be inaccurate, then the charges to each customer could also be inaccurate.

The analysis from the four site sample has identified only small potential changes of the Network Access charges.

In summary for the services on the sample of four sites:

✂

Note: The Network Access charges shown are for the four sites sampled.

The changes lead to both small increases and small decreases to charges per site per service, (up to +/- c ✂ pa per TV Multiplex and up to +/- c ✂ pa per Radio service).

The analysis of the discrepancies is site specific and does not result in common changes that can be implemented more widely across further sites. Furthermore, in the normal course of business the number of sharers increases and decreases over time.

As a result, Arqiva will implement the corrections for the specific sites already identified and will also follow up other on-going initiatives that will review and update the Keep data.

For the services on the sample sites the changes to charges for the customers are being implemented under the terms of the relevant customer contract.

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