

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

**Report for the period 1 October 2018 – 31 December 2018**

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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 October 2018 to 31 December 2018. 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

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)

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Exec asst [megan.donald@ota-bts.org.uk](mailto:megan.donald@ota-bts.org.uk)

### **2.2 Budget**

The operational budget for 2018/2019 is £477,364 with a contingency of £470,000.

Expenditure from 1 April 2018 to 31 December 2018 is £303,137.70 with no recourse to contingency.

### **2.3 Stakeholder Meetings**

During this period regular meetings and communication with stakeholders have continued 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.

## **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.**

The 2018-19 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\\_2018-19.pdf](https://www.arqiva.com/documentation/reference-offers/broadcast-radio/Arqiva_Radio_Rate_Card_for_Network_Access_2018-19.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 accounts for the period 1 July 2017 to 30 June 2018 have been produced and approved and are available at:

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

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 above link.

## **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 2018 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.

## **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 is presently in the latter stages and the report will be published with the next Adjudicator quarterly report.

## **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.

In March 2016, the Office of the Adjudicator BTS undertook the first audit of the accuracy of the KEEP data, the second audit was undertaken in June 2016. Twelve transmitter sites were visited for the assessment of 1343 antennas, the electricity use of 56 transmitter systems and the accommodation allocated to 12 transmitter systems. The audit tests showed that 256 antenna observations were not reasonably consistent with the KEEP records while both the electricity use and accommodation use were reasonably consistent with Arqiva's records. The 256 antennas were predominantly microwave dishes for non-broadcast use and while these data inconsistencies may impact the calculation of some charges to Broadcasters the overall impact was found to be minimal.

In May 2016 Arqiva produced an action plan to address inconsistencies in the antenna records and in September 2017 a third audit of six sites was undertaken by the Adjudicator. The selection of these six sites includes two which were included in a previous audit, two which had been surveyed by Arqiva and two which had neither been audited or surveyed.

The site observations in the September 2017 audit showed a similar number of discrepancies to Arqiva's KEEP records when compared to previous audits in March 2016 and June 2016. In the September 2017 audit, 743 site observations were compared to Arqiva's KEEP records. Of these 743 antennas, 136 were recorded as not reasonably consistent with Arqiva records

Arqiva worked with the Adjudicator in the analysis of the findings and noted that ... *'Despite positive action since the last audit, Arqiva is disappointed that this audit has picked up several data record issues and we recognise that there is still work to do to carry on improving our antenna data records. We note that the observations have a very small impact on some customer charges, both positive and negative.....'*

The full audit report was provided as an annex to the December 2017 report.

A further KEEP audit has been completed and shows significant improvement on previous audits. The full report is attached as an Annex to this report. The Adjudicate intends a further audit in 2019.

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

The Adjudicator has no formal role in the 700MHz clearance programme but some aspects do come within the remit.

## Audit of Arqiva site records undertaken in September 2018

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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	20/11/18	J Butler	First draft for comment
0.2r	5/12/18	J Butler	Second draft and redacted version ✂
0.3r	13/12/18	J Butler	Includes update from Arqiva
1.0r	14/12/18	J Butler	Final version non-confidential redacted ✂

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## 1. Document Purpose

The purpose of this document is to;

1.1. Set out the findings from the fourth audit of a selection of Arqiva's sites undertaken in September 2018, 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 sites which have been recently surveyed by Arqiva and compare to previous findings.

Prior to 2017, audits have included tests of electricity use and accommodation charges. In line with the 2017 audit, this September 2018 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 September 2018 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) The audit showed significant improvement in the accuracy of the KEEP database when compared to previous audits and highlighted minor opportunities for improvement in Arqiva's processes for maintaining records.
- 2) The four sites chosen for this September 2018 audit have all been recently surveyed by Arqiva and the KEEP database updated. These surveys were carried out by an external supplier and the results from these surveys were used to update the KEEP database. Discrepancies between site observations in this audit and the KEEP database help identify strengths or weaknesses in Arqiva processes. None of the sites have previously been included in a KEEP audit by the Adjudicator BTS.
- 3) The transmitter site observations in this September 2018 audit showed fewer discrepancies with Arqiva's KEEP records when compared to previous audits. In this September 2018 audit, 393 site observations were compared to Arqiva's KEEP records. Of these 393 antennas, 339 were recorded as reasonably consistent with the Arqiva records, 12 were recorded as not reasonably consistent with Arqiva records and 42 were recorded as observations.
- 4) Of the 12 records which were not reasonably consistent with observations, none were related to broadcast assets. However, of these 12, 6 were antennas with inconsistencies which do have a minor impact on broadcast customer charges.
- 5) The causes of the inconsistencies have been determined by Arqiva and categorised as shown in the table below;

Cause	Number	Impact on Broadcast customer charges
Recategorised as part of an ongoing project	3	No
Keep Antenna ID removed from Keep in error	3	Yes
Keep records not updated from survey	2	Yes
Telecoms customer has removed an antenna and continues to pay for its use	3	No
Antenna not updated correctly by customer undertaking site works	1	Yes
<b>Total</b>	<b>12</b>	

- 6) Arqiva have analysed the antenna records discrepancies and have calculated the potential impact on customer charges through changes to the apportionment calculations. The following summary has been established from the Arqiva analysis;
  - a) The changes lead to both 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 six sites the antenna discrepancies excluding on-going projects are limited, equating to an overall undercharge of ~~3~~ % (2017 ~~3~~ %) in pass through charges and an overcharge of ~~3~~ % (2017 ~~3~~ %) in non-pass through NA charges.
- 7) 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.

This 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.

The accommodation and electricity usage were previously found to be satisfactory<sup>1</sup> and these tests were not repeated in the September 2017 audit or the September 2018 audit.

- I. The antenna findings from the first audit were that of the 602 antennas, 421 were recorded as reasonably consistent with the Arqiva records, 128 were recorded as not reasonably consistent with Arqiva records and 53 were recorded as observations.
- II. The antenna findings from the second audit were that of the 734 antennas, 520 were recorded as reasonably consistent with the Arqiva records, 128 were recorded as not reasonably consistent with Arqiva records and 66 were recorded as observations.
- III. The antenna findings from the third audit were that of the 743 antennas, 537 were recorded as reasonably consistent with the Arqiva records, 136 were recorded as not reasonably consistent with Arqiva records and 70 were recorded as observations.
- IV. The antenna findings from this fourth audit were that of the 393 antennas, 339 were recorded as reasonably consistent with the Arqiva records, 12 were recorded as not reasonably consistent with Arqiva records and 42 were recorded as observations.

The Office of the Adjudicator BTS produced a report of these findings and Arqiva provided a written response. Arqiva's response acknowledged the findings in the audit report and they committed to implement an action plan to address the findings.

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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 September 2017 audit showed a similar number of discrepancies to Arqiva's KEEP records when compared to previous audits from March 2016 and June 2016. For the 2018 site audit we decided to change the site selection criteria as a similar selection criterion would likely repeat and yield similar results.

The four sites chosen for this September 2018 audit have all been surveyed by Arqiva's external site survey supplier and KEEP records have been updated. By selecting these sites, we assess the effectiveness of these surveys and the effectiveness of Arqiva's change control procedures relating to any subsequent antenna changes. The selected sites are noted below;

Membury, Winterborne Stickland, Bincombe Hill and Black Hill.

- 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. **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 a 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 were asked to annotate the KEEP records with those antennas which 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.

- 13 September 2018: Membury
- 14 September 2018: Winterborne Stickland and Bincombe Hill
- 19 September 2018: Black Hill (Two masts and two towers)



## **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 have been 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 393 antenna observations and only those where the observation was inconsistent with Arqiva’s records are contained in Annex 3. The full list with comments has been 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 53 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 4 antennas which were not recorded in the schedules. The results below relate to the sum of the antennas mounted on the structures or the schedule, 393 antennas in total.

### Of the 393 antennas in total:

- 339** results were recorded as reasonably consistent with the Arqiva records
- 12** results were recorded as not reasonably consistent with Arqiva records
- 42** results were recorded as observations

### Of the 339 ‘reasonably consistent’ results

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

### Of the 12 ‘not reasonably consistent’ results:

- 5** antennas are recorded in the schedule as installed but were not observed on the mast or structure (5 wireless and 0 broadcast)
- 6** antennas were observed on the structure and are not in the schedule as installed or are missing from the schedule (all SHF dishes)
- 1** antennas had data in the schedule which was inconsistent with observations, incorrect mast leg (1 wireless and 0 broadcast)

### Of the 42 observations:

These were generally observations where the antenna may or may not have been on the structure and where it is described as redundant, remove or an on-going project.

A breakdown of the ‘not reasonably consistent’ results is shown below:

Breakdown of ‘not reasonably consistent’ by cause and category	Total	Wireless	Broadcast	None
In schedule as installed and not observed on mast or structure	5	5	0	
Observed on mast or structure and not in schedule as installed	2	2	0	
Observed on mast or structure and missing from schedule	4			4
Schedule data not reasonably consistent with observation	1	1	0	
<b>TOTAL</b>	<b>12</b>	<b>8</b>	<b>0</b>	<b>4</b>

The total includes 4 SHF dish antennas observed on the mast or structure and not recorded in the schedules. From the site observations it was not possible to determine whether they were Wireless or Broadcast antennas.

A breakdown of the antennas by site is shown below:

2018 KEEP data tests and site observations		Total	Bincombe Hill	Membury*	Winterborne Stickland	Black Hill SC
	Reasonable observation	339	71	78	40	150
A	Antenna not observed, recorded as installed in schedule	5	0	3	1	1
B	Antenna observed, not recorded in schedule	6	3	0	1	2
	Observation inconsistent with schedule	1	0	1	0	0
	Observation	42	3	18	4	17
C	<b>Total</b>	393	77	100	46	170
(A+B)/C	%of antennas either missing or present and not recorded as such in schedule	3%	4%	3%	4%	2%
	Not included due to wall mount or other	53	5	17	2	29

## 9.2 Comparison to previous findings:

The findings from 2018 are compared to the findings from 2017 in the table below;

2017/2018 KEEP data tests and site observations comparison		2018	2017
	Reasonable observation	339	537
A	Antenna not observed, recorded as installed in schedule	5	43
B	Antenna observed, not recorded in schedule	6	53
	Observation inconsistent with schedule	1	40
	Observation	42	70
C	<b>Total</b>	393	743
(A+B)/C	%of antennas either missing or present and not recorded as such in schedule	3%	13%
	Not included due to wall mount or other	53	67

When compared with the 2017 findings, those from 2018 show a significant reduction in the number of antennas either missing or present and not recorded as such in the KEEP schedule.

Arqiva have provided further analysis in their responses contained in section 10 of this report.

## **10. Responses from Arqiva following the September 2018 audit**

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

Arqiva provided the following response on 12 December 2018.



## **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. On 28 November 2018 Arqiva provided analysis of how the data discrepancies impact rent and rates apportionment (pass through charges) and Network Access charges.

Arqiva's analysis shows a relatively small change in the charge passed through to each customer. The overall change across all sites equates to an under charge of  $\times\%$  ( $\times\%$  2017) to TV customers and an under charge of  $\times\%$  ( $\times\%$  2017) to Radio customers, a few £ per customer.

Arqiva's analysis shows a relatively small change in the Network Access charges based on windloading. The overall change across all sites equates to an over charge of  $\times\%$  ( $\times\%$  2017) to TV customers and an over charge of  $\times\%$  ( $\times\%$  2017) to Radio customers, a few tens of £ per customer.

Arqiva's analysis shows that the data discrepancies in KEEP result in potential minor incorrect charges to customers for both pass-through and network access charges. The analysis also shows that discrepancies are not site specific and charges may be over or under. Arqiva note that they will implement corrections for the sample sites in line with the relevant customer contract.

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 on 27 November 2018:

### Keep Audit 2018 – 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	Impact on Broadcast customer charges
Recategorised as part of an ongoing project	3	No
Keep Antenna ID removed from Keep in error	3	Yes
Keep records not updated from survey	2	Yes
Telecoms customer has removed an antenna and continues to pay for its use	3	No
Antenna not updated correctly by customer undertaking site works	1	Yes
<b>Total</b>	<b>12</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. Three 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.

#### Keep Antenna ID removed from Keep in error

Three dish antennas were identified on structures when their Keep record had previously been updated to a removed status. As such, they were not included in the report. These had been updated in error, based on feedback from customers and their contractors for decommissioning work. Arqiva is looking to use the provision of before and after photographs from contractors for customers as part of the removal process for some antennas. This is expected to assist with tracking the equipment decommissioning and updating Keep appropriately. Although already used in some areas, the obligation will be increased on the customer to reinforce the need for accurate updates.

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

**Keep records not updated from survey**

In updating antenna records from the site surveys that Arqiva has carried out, two records were not updated as they should have been. For future surveys, Arqiva will implement a further checking process to ensure that the updates have all been captured correctly.

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

**Telecoms customer has removed an antenna and continues to pay for its use**

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 three antennas, the customer had chosen to remove the antenna, 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.

**Antenna not updated correctly by customer undertaking site works**

One antenna had not been removed by a customer when they were planning to remove it as part of a swap-out project, although they said that they had removed it. Arqiva is looking to use the provision of before and after photographs from contractors for customers as part of the removal process for some antennas in swap-out projects. This is expected to assist with tracking the equipment changes and updating Keep appropriately. Although already used in some areas, the obligation will be increased on the customer to reinforce the need for accurate updates.

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

**Annex 1: Sample of site photographs**

**From the left; Membury, Winterborne Stickland, Bincombe Hill, Black Hill (TV mast), Black Hill (radio mast), Black Hill (tower)**





## 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

Antenna ID	Antenna Type	Antenna Quantity	Feeder Quantity
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.

Non-confidential redacted version

**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 2018– 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 2018 – 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£~~10~~ pa per TV Multiplex and up to +/- c£~~10~~ 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.