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# Aeronautical Radio Licences

Guidance on fees

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**GUIDANCE:**

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## About this document

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In this guidance we explain how we calculate the fees that we charge for our Aeronautical Radio ground station Licences. However, this document is guidance only and does not have any legal status. The formal legal position is set out in applicable legislation.

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# 1. Introduction and background

## The basis of our fees

- 1.1 When we grant licences under the Wireless Telegraphy Act 2006 ('the Act'), we normally charge a fee. This fee may be set at a level that recovers some of the costs that we incur in managing the radio spectrum used by the licensees and in administering licences. Alternatively, the fee may reflect the value of the spectrum being used. We call this 'Administered Incentive Pricing' ('AIP').
- 1.2 Between 2008 and 2010, we conducted a review of the fees charged for Aeronautical Radio Licences<sup>1</sup>. That led to the current charging regime. Some of the resulting AIP-based aeronautical radio licence fees are generic (applying the same fee level to all channels), while others are bespoke, reflecting the individual characteristics of the station.
- 1.3 Another outcome of that review was that licences that authorise stations established in the Crown Dependencies<sup>2</sup> attract different fees from licences that authorise stations established in the United Kingdom.

## Factors affecting fees

- 1.4 The fees that we charge depend on any one or more a number of factors. These include:
  - The type of Licence (the licence 'product')
  - The location of the station
  - The dimensions of the Designated Operational Coverage ('DOC')
  - The type of DOC (Circular, Area or Polygonal)
  - The width of the radio channel (8.33 kHz, 25 kHz or 50 kHz)
- 1.5 The value of the spectrum reflects how easy it is to re-use that frequency. A very large DOC will prevent the assigned frequency from being re-used for hundreds or even thousands of miles. The licence authorising that ground station will attract a higher fee. However, a station serving a smaller DOC (for example, a DOC measuring 10 NM x 3000 feet) will attract a lower fee.
- 1.6 We explained the method for calculating fees, in our 2011 policy statement<sup>3</sup>.

## Fees for short-term licences

- 1.7 Where a station is needed only for a short period, for example to cover an air show, we charge a *pro rata* fee, as long as the normal annual fee would be at least £75. The fee payable for the temporary station is 1/12 of the normal annual fee for each month or part

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<sup>1</sup> [https://www.ofcom.org.uk/consultations-and-statements/category-1/spectrum\\_pricing](https://www.ofcom.org.uk/consultations-and-statements/category-1/spectrum_pricing) and <https://www.ofcom.org.uk/consultations-and-statements/category-2/bespoke-fees-aeronautical>

<sup>2</sup> Guernsey, Jersey and the Isle of Man

<sup>3</sup> [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0021/71913/8197\\_statement.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0021/71913/8197_statement.pdf)

thereof. This means that, if the last day of a month is a Saturday and an event runs for the whole weekend, then the fee is 2/12 of the normal annual fee.

## **Rounding and limitations on fees**

1.8 We apply the following restrictions to our fees:

- If a Bespoke Fee is not divisible by 50, we round the fee down to the nearest £50;
- If a Bespoke Fee is calculated to be less than £75 annually, we charge £75;
- Short-term licences are available only where the annual fee is at least £75;
- The minimum fee payable for a short-term licence (see §1.7, above) is £20;
- If the licensee is a registered charity and has as its object the safety of human life in an emergency, we charge only half the normal fee.

## 2. Generic AIP-based fees

### What is a 'generic' fee?

- 2.1 Having determined the value of the spectrum used by aeronautical ground stations, we decided that some stations could be charged a generic or a flat rate fee, rather than a bespoke fee, calculating how easy it would be to re-use the station's specific assignment.
- 2.2 A 'generic' fee is a charge either per licence (for example the Aeronautical Station (Recreational Aviation) Licence, which costs £75 annually) or per channel (for example the Aeronautical Station Aerodrome Surface and Operational Control) Licence, which costs £116.67 annually, for each 8.33 kHz channel that is assigned). In each case, the fee reflects the value of the spectrum and its scope for re-use. In the case of the Recreational Aviation licence, the same channels are shared across the country. This is reflected in the low fee.

## 3. Calculating bespoke AIP-based fees

### Introduction

3.1 Bespoke fees are calculated according to the dimensions of its DOC and the distance to the radio horizon. Together, these indicate the ‘sterilisation area’, telling us how close the frequency could be re-used. DOCs can be circular, polygonal or based on a wider area. The fee calculation for each of these is different and in the following sections, we explain how each type of fee is calculated. The basis and rationale for this method of calculation was explained in Section 4 of our 2011 statement<sup>4</sup>.

3.2 In each of the equations, below, the symbols have the following meaning:

Symbol	Meaning
S	The sum (in other words the fee)
RR	‘Reference Rate’. This is the cost of using an 8.33 kHz channel across the whole of the UK. We took the area of the UK to be 71,000 square nautical miles
SA	This is the area of the UK - 71,000 square nautical miles
$\pi$	Pi; we took this to three decimal places: 3.142
r	This is the radius of the DOC, measured in nautical miles
h	This is the height of the DOC, measured in feet

3.3 The calculations, below, are for an 8.33 kHz channel. For a 25 kHz channel the fee will be three times the sum of the calculation, below. Having made the fee calculation (and regardless of the channel width), if the fee is not divisible by 50, it is rounded down to the nearest £50.

3.4 As we set out in our 2011 policy Statement, the fee calculations reflect the relationship between the dimensions of the DOC in the Licence and of a DOC equivalent to the whole of the UK Flight Information Region (‘UK FIR’). Having decided the cost of the UK FIR, we can then work out the cost of smaller DOCs as a proportion of the UK FIR. We also factor in the radio horizon, which shows how close another transmitter, using the same frequency, could be located.

3.5 Annex A shows the type(s) of DOC(s) associated with each licensing product.

3.6 We have published a ready reckoner <https://www.ofcom.org.uk/manage-your-licence/radiocommunication-licences/aeronautical-licensing/licence-fees-calculator> , which gives a very approximate guide to bespoke fees.

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<sup>4</sup> [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0021/71913/8197\\_statement.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0021/71913/8197_statement.pdf)

## Circular DOC

- 3.7 A circular DOC is a cylinder of airspace served by a wireless telegraphy station on the ground.
- 3.8 To calculate the fee for a Circular service, we take the dimensions of the DOC (its height and its radius in feet, as approved by the CAA) and calculate two equations:
- a) First equation:  $S = RR \div SA \times \pi \times ((1.23vh) + r)^2$
- b) Second equation:  $S = RR \div SA \times \pi \times (3.5 \times r)^2$
- 3.9 Based on the product of each of these equations, we then make two further calculations:
- First calculation*
- a) We calculate one quarter of the product of the first equation.
- Second calculation*
- b) We then make two comparisons.
- i) First, we take the smaller of the products of the two equations.
- ii) We then compare that with the quarter of the first equation.
- 3.10 The higher figure in that second comparison is the fee that we charge.

## Area service

- 3.11 An Area Service serves a DOC which is polygonal, rather than circular. However, to calculate the fee for an Area service, we convert the area of the polygon to a circle of equivalent area, using standard trigonometry.
- 3.12 To calculate the fee for an Area service, we take the dimensions of the DOC (its height and its equivalent radius in feet, as approved by the CAA) and calculate the following equation (please see above for an explanation of the symbols):

$$S = RR \div SA \times \pi \times ((1.23vh) + r)^2$$

## Broadcast service

- 3.13 A broadcast service serves a circular DOC.
- 3.14 To calculate the fee for a Broadcast service, we take the dimensions of the DOC (its height and its radius in feet, as approved by the CAA) and calculate the two equations set out below. The fee charged is the lesser of these two products.
- a) First equation:  $S = RR \div SA \times \pi \times ((1.23vh) + r)^2$
- b) Second equation:  $S = RR \div SA \times \pi \times (3 \times r)^2$

## 4. Fees for stations in the Crown Dependencies

### Licence products

- 4.1 Following the review of aeronautical radio licence fees mentioned in section 1, above, we decided to keep the licensing products and associated fees that existed in 2011, for stations established in the Crown Dependencies. These fees seek to recover some of the costs associated with administering licensing.
- 4.2 These are set out in Table 2, below.

# A1. Aeronautical services and licence types

## Correlation of services and products

### Tables of services, licence types and fees

- A1.1 The following tables set out the type of internationally-recognised aeronautical service, the corresponding Wireless Telegraphy Act licence product and, where applicable, the type of DOC associated with the service (Circular, Area or Broadcast). Some aeronautical services have alternative DOC types. In those cases, a DOC in UPPER CASE is the normal DOC type for that service and the rarer DOC type is shown in lower case.
- A1.2 Some services may be serviced by any one of several types of Licence Products. Fees for 25 kHz channels are three time the fees for 8.33 kHz channels (£116.67 is rounded to £350).
- A1.3 Table 1 covers stations established in the United Kingdom. Table 2 covers stations established in the Crown Dependencies. All fees for licences in the Crown Dependencies are 'cost recovery'. They seek to recover some of the costs associated with managing licensing and the radio spectrum.

**Table 1.1 - Fees for licences for stations in the UK**

Type of aeronautical service	Ofcom 'Licence product'	DOC type (Area, Broadcast or Circular)	Maximum annual fee payable (£)
N/A (covers use of Microlights, Balloons, Gliders, Parachutes, Hang/Para Gliders)	Aeronautical Station (Recreational Aviation)	N/A (Generic fee)	£75 per station
Air/Ground Aerodrome Flight Information Service (AFIS) Aerodrome Control Service (TWR)	Aeronautical Station (A/G, AFIS and Tower)	CIRCULAR Area (Bespoke fee)	£3,300 per 8.33 kHz channel
Approach Control Service (APP)	Aeronautical Station (Approach)	CIRCULAR Area (Bespoke fee)	£3,300 per 8.33 kHz channel
Area Control Centre Service (ACC) Flight Information Service (FIS)	Aeronautical Station (Area Control)	AREA Circular (Bespoke fee)	£3,300 per 8.33 kHz channel
VOLMET Arrival Automatic Terminal Information Service (ATIS)	Aeronautical Station (Aeronautical Broadcast)	BROADCAST (Bespoke fee)	£3,300 per 8.33 kHz channel
Aircraft Communications Addressing and Reporting System (ACARS)	Aeronautical Station (ACARS)	AREA (Bespoke fee)	£3,300 per 8.33 kHz channel

Type of aeronautical service	Ofcom 'Licence product'	DOC type (Area, Broadcast or Circular)	Maximum annual fee payable (£)
VHF Air-Ground Digital Link (VDL)	Aeronautical Station (VDL)	AREA (Bespoke fee)	£9,900 per 8.33 kHz channel
Operational Control (OPC)	Aeronautical Station (Aerodrome Surface and Operational Control)	N/A (Generic fee)	£116.67 per 8.33 kHz channel
Aerodrome Surface (AS) Ground Movement Control (GMC) Departure ATIS (DATIS)	Aeronautical Station (Aerodrome Surface and Operational Control)	N/A (Generic fee)	£116.67 per 8.33 kHz channel
Aeronautical Navigation Aid	Aeronautical Navigation Aid	N/A (Cost recovery fee)	£50 per station
Emergency Frequency (EMERG)	Aeronautical Station – (Fire and Emergency)	N/A	Free of charge
N/A	Aeronautical Ground Station (High Frequency)	N/A (Cost recovery fee)	£350 per station
N/A	Aeronautical Radar	N/A (Cost recovery fee)	£50, per station
Varies	Aeronautical Station (Offshore)	N/A (Generic fee)	£116.67, per 8.33 kHz channel + £75 if mobiles are used

Table 1.2 - Fees for licences for stations in the Crown Dependencies

Type of aeronautical service	Ofcom 'Licence product'	Annual fee, per frequency
Microlight Balloon Glider Parachute Hang/Para Glider	Aeronautical Ground Station (General Aviation)	£25
Air/Ground Aerodrome Flight Information Service (AFIS) Aerodrome Control Service (TWR)	Aeronautical Ground Station (Air Ground/Flight Information Service) (Can be Aeronautical Ground Station (ATC/GMC))	£100
Approach Control Service (APP) Area Control Centre Service (ACC) Flight Information Service (FIS)	Aeronautical Ground Station (Air Traffic/Ground Movement Control)	£150

Type of aeronautical service	Ofcom 'Licence product'	Annual fee, per frequency
VOLMET Arrival Automatic Terminal Information Service (ATIS)		
Aerodrome Surface (AS) Ground Movement Control (GMC) Departure ATIS (DATIS)		
Aircraft Communications Addressing and Reporting System (ACARS)		
VHF Air-Ground Digital Link (VDL)	Aeronautical Ground Station (Operations Control)	£250
Operational Control (OPC)		
Emergency Frequency (EMERG)	Aeronautical Ground Station (Fire)	£25
(Varies)	AGS (Offshore Platform)	£250