

# **OFW 339 Guidance notes on how to complete the application for a Satellite Service Network Operator Licence for Earth Station(s) on Train (OFW 338)**

## **How to Fill In Your Licence Application**

This guide has step-by-step instructions to help you fill in your OFW 338 form, for a Satellite Service Network Operator Licence for Earth Station(s) on Train application. It is aimed at new customers and for applicants who are unfamiliar with this licence application process.

If, after reading this note, you need more help, please telephone the Space Services Unit during office hours on 020 7981 3189.

Contact the Ofcom Contact Centre on 0845 456 3040 for any Ofcom forms and information sheets referred to within these guidance notes. All information sheets are also available on the Ofcom website [www.ofcom.org.uk](http://www.ofcom.org.uk). From time to time the OFW 338 and the information within these guidance notes may change. Therefore please check that you have the latest release.

### **1. Introduction**

OFW 338 can be used for any Satellite Service Network Operator responsible for Earth Station(s) on Train that are to be deployed in geographical areas administered by Ofcom operating in the transmit frequency range 14 – 14.25 GHz band.

#### **1.1. Your responsibility**

It is your responsibility to make sure that you fill in the form legibly, completely and accurately. Any missing or incorrect information may delay the application and may require us to return the form to you.

Please follow carefully the advice provided both in OFW 338 and in these guidance notes.

If you are making an application for the first time then you will be required to pay the initial licence fee before we will process any subsequent applications or issue the licence documentation.

Remember, no matter who applies on your behalf the named licensee will be legally responsible for the satellite network system operation.

#### **1.2. Our responsibility**

If we receive an incomplete form, we will attempt to contact you so that the required information can be obtained. If we are unable to contact you, or the required information is not available, we may return the form. When we are satisfied that all the correct information has been provided we will acknowledge this via the address stated in question B.2.

#### **1.3. Licence requirements**

The licence is issued under the terms of the Wireless Telegraphy Act 2006. It is an instrument under which Ofcom authorises the use of radio apparatus to "a person". Legally "a person" may be an individual operating a business from one of their own premises or two or more people acting together as a Partnership, Company or an Incorporated Association. The WT Act licence must state the full name of the specific person, company or organisation so that the licence is quite clear.

#### **1.4. Conditions regarding use of the licence**

Your licence will be issued subject to the following requirements. Please read them carefully.

The licence supersedes all licences and schedules previously issued for the radio service.

The operation of a radio service other than in accordance with the terms and conditions of the licence is an offence under the Wireless Telegraphy Act 2006.

The licence is valid until the renewal date on the licence, and thereafter so long as the licensee continues to pay the renewal fee to Ofcom on or before the renewal date.

All proposed changes to the radio service must first be notified to Ofcom and, if agreed, authorised by Ofcom or its appointed agents.

The licensee must ensure that any new person operating the stations fully complies with the conditions of the licence.

Ofcom or its appointed Agents may at any time revoke the licence or vary the licence conditions providing an explanation of the reason(s) for this action. In such circumstances, the licensee will be informed by a month's notice in writing during which time the Licensee may make any representations which Ofcom must consider. The Licensee may surrender a licence (or part thereof) at any time or request a variation which Ofcom will consider as if it is a new application request.

Ofcom or its appointed Agents reserve the right to change at any time the frequencies assigned for the licensee's use but in accordance with the variation process describe above.

The station(s) and the licence shall be available for inspection at all reasonable times (or when an urgent situation leading to suspected undue interference or suspected serious breach of the terms and conditions of the licence occurs at any time) by a person acting under the authority of Ofcom.

The stations may be closed down at any time on the request of a person acting under the authority of Ofcom if undue interference is being caused or a serious breach of the terms and conditions is occurring.

Ofcom reserves the right to assign frequencies specified in the licence schedule to other licensees.

The stations shall transmit and receive only on the frequencies specified in the licence schedule.

#### **1.5. Ofcom treatment of changes to the application**

Simple changes, prior to finalising the technical assignment, will be made at the discretion of the assignment engineer of Ofcom or its Agents.

Ofcom will attempt to accommodate all changes to an existing licence, liaising with customers as and when required. Any variations, for any reason, will negate any previously applicable Quality of Service target, which in this application type is 28 days and this will be reinitialised to the date of receipt of the variation.

## **2. General advice before answering questions**

### **2.1. Before starting**

When completing an OFW 338 you may find it useful to have access to the following documents:

- [Ofcom Licensing policy manual](#)
- [Guide to Class of Emissions](#)

All are available on the website at [www.ofcom.org.uk](http://www.ofcom.org.uk)

Use these guidance notes to help you to answer the relevant questions. If you have any doubts about answering the OFW 338 questions please contact the relevant appointed organisation before submitting the application.

### **2.2. How to fill in entry boxes**

Fill in the form by entering information in each field; use Tab and Shift+Tab or the arrow keys to move between fields. Alternatively, you may print this form and complete in dark ink. Place an X in the appropriate box when questions provide multiple answers.

Any questions you feel are not relevant should be left blank.

Any questions, or parts of, which you are unable to answer, should be answered with "NK" (e.g. Not Known).

Please write legibly using dark ink. Electronic submissions may be submitted via email To: [satellite.licences@ofcom.org.uk](mailto:satellite.licences@ofcom.org.uk) and/or by a hardcopy sent by mail to:

Ofcom  
Ops-L-Sat  
Space Services Unit  
Riverside House  
2a Southwark Bridge House  
London SE1 9HA  
Telephone 020 7981 3189/3117  
Facsimile 020 7981 3208

### **2.3. How to answer the questions**

When you are applying for a new licence you need to complete all questions.

When you are applying for a variation to your existing licence please complete Sections A, C, and N and the relevant pages containing the variations.

When you are applying for site clearance for a specific area please complete Sections I and N if applicable.

## Section A Purpose of application

This section of the form allows you to declare the nature of the application.

- A new application;
- A variation to an existing licence;
- A request for site clearance;
- A cancellation of an existing licence.

You should mark the appropriate box.

## Section B Contact details

This section asks you for all the necessary contact details, with addresses, telephone numbers, fax, e-mail, etc.

**B.1 Do you already hold an EST Network licence?**

Yes

No

If you are an existing customer of Ofcom you should select 'Yes' and proceed to question B.1.1

**B.1.1 If yes, please enter either your Ofcom Customer Reference Number**

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The Customer Reference Number, e.g. "0321233 / 001" is your unique Ofcom sales ledger number that you can find on your licence renewal statement, or by contacting Ofcom. It is composed of two parts:

- Part A is the seven-digit integra customer reference number; and
- Part B is the three-digit account number.

Ofcom cannot process an application or issue a licence unless the customer has an account. New customers will be assigned an Ofcom Customer Reference Number on receipt of their application(s). Therefore it is important that you enter this number correctly.

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**B.2 To whom is the licence to be issued?**

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You are required to enter all appropriate contact details here. It is a legal requirement that the original licence must be sent to the licensee's registered office. Therefore this is the only address we will use to send you your licence and accompanying schedules.

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**B.2.1 Company Registration Number**

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\_\_\_\_\_

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Having a registration number is very much dependent on your legal status. You should check whether your legal entity requires you to do so. If so, please enter this in the box provided.

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### **B.2.2 Nature of business**

\_\_\_\_\_

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It is not always obvious, from its name, what the nature of a company's business is. Please enter this in the box provided.

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### **B.3 Should the licensee, at B.2, also be contacted for account matters?**

Yes

No

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If the contact given in question B.2 is the same address for account details then you select 'Yes' and proceed to question B.4, otherwise you should select 'No', and go to question B.3.1.

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#### **B.3.1 If no, please provide the account contact details**

Please provide address and contact details for the account contact.

*Please note that all invoices and payment requests will be sent to the stated account contact address. If the contact should change, you should notify Ofcom immediately in writing*

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### **B.4 Who should be contacted for technical matters?**

Contact as B2

Contact as B3

#### **B.4.1 If neither, please provide technical contact details**

Please provide address and technical contact's details.

**C.1 For a new application, please enter your own unique reference \_\_\_\_\_**

Please enter your own administrative reference to enable your organisation to be able to cross reference your application if you wish.

**C.2 Please enter the date from which you require the new EST Network licence to become effective \_\_\_\_\_ (dd/mm/yyyy)**

This date should allow for licence processing of up to 42 days.

**C.3 Please enter the end date for this new licence (if known) \_\_\_\_\_ (dd/mm/yyyy)**

**C.4 If this is a variation or a cancellation please quote your existing Ofcom Customer EST Network licence number**

Please enter your existing Ofcom Customer **EST Network licence number** (i.e. EST001)

**C.4.1 Please enter the date from which you require the specified variation or cancellation to become effective \_\_\_\_\_**

Please enter the date you intend to commence operations under this variation or when the network will cease operations.

## Section D Network Details

**D.1 Please enter the Name your organisation uses for the EST Satellite Network / Link \_\_\_\_\_**

Please enter your assigned name for the EST Satellite Network.

**D.2 Please enter the Associated Space Station(s) – ITU filing designation**

Please enter the ITU filing designation for the geo-stationary satellite(s) to be used whilst in UK waters.

**D.3 Please enter the Associated Space Station(s) – Commercial Name**

Please enter the commercial name the geo-stationary satellite space station(s) is known, e.g. Eutelsat W1

**D.4 Please enter the satellite operator name**

**D.5 Please provide the nominal orbital longitude of the Space Station(s)**

*Longitude*

*East/West* \_\_\_ ° \_\_\_ ' \_\_\_ "

*Longitude*

*East/West* \_\_\_ ° \_\_\_ ' \_\_\_ "

Please enter the nominal orbital position of the geo-stationary satellite(s) to be used.

**D.6 Please give a description of Satellite beam service area**

Please enter the description of the footprint area covered by the nominated space to earth satellite beam assigned by the satellite operator.

**D.7 Please confirm the maximum aggregated accessible transmit bandwidth for the terminal  MHz**

The aggregate sum of the assigned bandwidth in ALL channels available to each terminal should be entered. I.E. if you have specified 3 spot frequencies with dual multi channel working using 256 KHz each, the aggregated bandwidth would be 1,536 KHz. Alternatively if you specify a transponder and the centre frequency and wish to have the flexibility to work across the transponder then the assigned bandwidth of the transponder would be entered.

The licence charges for the EST product will be calculated using the same algorithm as is currently used for the satellite earth station network licence. Details of which are published in the Wireless Telegraphy (Licence Charges) Regulations 2002, schedule 2 and 8) –

<http://www.opsi.gov.uk/si/si2005/20051378.htm>

The algorithm used to calculate the fee is as below. This algorithm was agreed through consultation with the satellite industry and published in Statutory Instrument 2005 No.1378 schedule 2 and 8.

$$\sqrt{433.4 \times \sum_n (P_n \times BW_n \times MOD_n)}$$

Where "n" means the number of Earth Stations terminals (minimum of 50)

"BWn" means the aggregated accessible Transmit Bandwidth available to each terminal

"MODn" means use a Modifier value of 0.5

"Pn" means Transmit Peak power (in Watts) appearing at the flange of the network terminal antenna.

**E.1 Please give the address for the Network Control Facility**

Please provide the location of the NCF as fully and accurately as possible.

**E.2 If the NCF is in the UK, what is the Ofcom licence number?**

Licence number

Please enter the Ofcom licence number for the Permanent Earth Station.

**E.3 If the NCF is NOT in the UK, which country has authorised the Permanent Earth Station ?**

Country \_\_\_\_\_

**E.4 Please state the 24 hour contact telephone number in the event of an emergency, including full country code**

Please enter the Emergency 24 hour contact telephone number. This point should have an English speaker available 24 hours. These details must always be maintained accurately.

**E.5 NCF Contact name**

Please supply the contact name to ask for if appropriate

**E.6 Job title of contact name**

Please supply the contacts post / job / role name to ask for if appropriate (i.e. NCF Operations manager)

**E.7 NCF contact email address**

**E.8 NCF telephone number**

**E.9 NCF fax number**

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**Section F Local Earth Station (LES) 1**

**F.1 Please give the address for each Local Earth Station (LES), if different to the Network Control Facility**

**Section G Local Earth Station (LES) 2**

Please supply details as before in line with Section F if applicable.

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**G.10 Is there any additional information on operational parameters you wish to comment upon?**

Enter any other details that would help describe the network operation and infrastructure.

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## Section H EST Antenna Equipment and Spectrum Pricing Details\*

The details entered in the fields are used as part of the fee calculation and for the technical assessment of the equipment types to be used.

### H.1 What is the initial estimated number of EST installations to be operated under the license?

Please enter the next 12 months estimate of the number of EST installations under control of this network of this type of equipment.

### H.2 Terminal Type Identifier –

Allocate yourself a unique reference to identify this type of terminal e.g. A123, B321

### H.3 Please enter the Manufacturer of the terminal

### H.4 Please enter the Model

### H.5 Type of antenna –

Cassegrain / Gregorian – Offset fed reflector etc

### H.6 Please enter the size of the antenna (min 0.6m) metres

### H.7 Please enter the Maximum E.I.R.P per carrier to one decimal place dBW

### H.8 Please enter the Minimum Operational Elevation angle used when in United Kingdom territory degrees

### H.9 Please enter the Polarization used

### H.10 Please enter the Stabilised pointing accuracy +/- degrees

### H.11 Please enter the Pointing update time degrees/second

### H.12 Please enter the Charging Power to one decimal place Watts

This shall be the RF power supplied to the flange of the antenna in Watts.

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## WAVEFORM DETAILS

### H.14 Please enter the number(s) of carrier(s) per EST

### H.15 Please enter the Maximum occupied bandwidth(s) per carrier MHz

Please enter the bandwidth as defined by the emission code

### H.16 Please enter the carrier(s) centre frequency(ies) MHz

### H.17 Please enter the Emission code applicable

Please refer to Ofcom [OfW 84 Guide to Class of Emissions](#) for further information on emission codes

H.18 Please enter the Modulation method employed

H.19 Please enter the multiple access scheme used if applicable

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#### LINK POWER SPECTRAL DENSITY

H.20 Please enter the Off-axis E.I.R.P emission density within the operating frequency band for co-polarised components at 2.5 degrees  dBW/40KHz

H.21 Please enter the Off-axis emission density within the operating frequency band for cross-polarised components at 2.5 degrees  dBW/40KHz

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#### CHARACTERISTICS OF THE TRANSMITTING ANTENNA

H.22 Please enter the Maximum Isotropic gain of the antenna  dBi

H.23 Please enter the 3dB Transmit Beam Width  degrees

H.24 Please enter the Radiation pattern (give reference pattern or provide attachment)

H.25 If attaching an antenna radiation pattern please enter figure number

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**\* PLEASE COMPLETE AND ATTACH A SEPARATE SECTION H FOR EACH TERMINAL TYPE TO BE LICENSED**

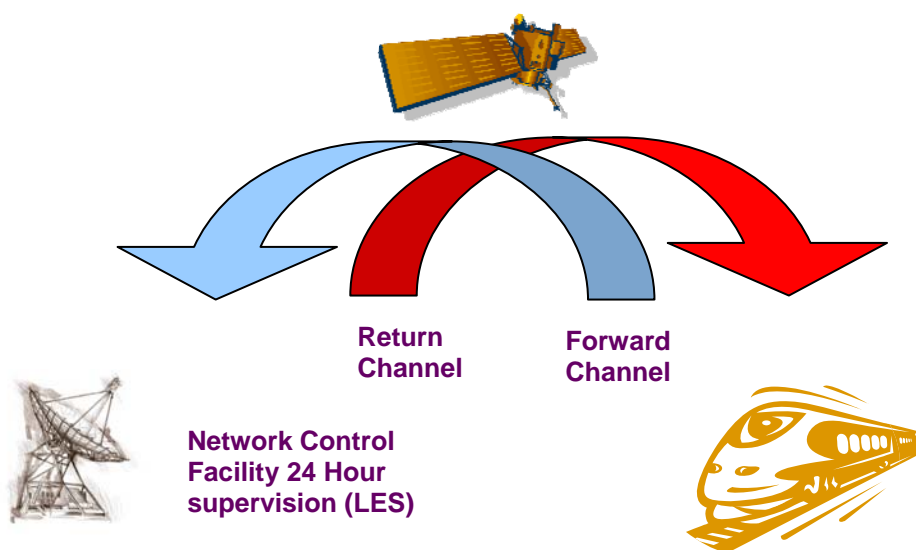
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## Section I Train fitted with EST station(s)

**Please enter details of which train have EST installations been completed that you control?**

This information is for the purposes of Ofcom only and will be treated as commercial in confidence.

## Section J Forward Channel Details LES to EST



- J.1 Please enter the Uplink centre frequency                      MHz
- J.2 Please enter the Uplink polarization
- J.3 Please enter the Downlink centre frequency                      MHz
- J.4 Please enter the Downlink polarization
- J.5 If a dual channel transmission is in operation and the characteristics differ please complete a second Section K with a note of clarification.

## Section K Return Channel Details EST to LES

- K.1 Please enter the transponder(s) Uplink centre frequency                      MHz
- K.2 Please enter the Uplink polarization
- K.3 Please enter the transponder(s) Downlink centre frequency                      MHz
- K.4 Please enter the Downlink polarization
- K.5 If a dual channel transmission is in operation and the characteristics differ please complete a second Section L with a note of clarification.

## Section L EST Stations(s) requiring further clearance

**L.1** This section should only be completed once a licence has been issued and then if an EST(s) is intended for use within a specified exclusion area(s)

A separate Section I should be completed for each area

Alternatively, complete Ofcom form OFW 192, Site Clearance application, available on the Ofcom website

Individual co-ordination and clearance is required when any of the following conditions are true:

EST(s) routes operate within airfield boundaries within UK territory

Or are intending to operate within exclusion zones as declared by Ofcom

This process can take up to 28 days from submission to the clearance panel

Please answer as many questions as possible to help identify the location, dates and technical parameters to assist the clearance panel. This is a group of agencies concerned with safeguarding UK radio spectrum, e.g. Civil Aviation Authority.

**L.2** Please enter your Ofcom EST network licence number

**L.3** Please enter the EST Satellite Network Name

**L.4** On which date will EST station operations start?

**L.5** On which date will EST station operations end (if known)?

**L.6** Please enter where the EST operates within airfield/airport boundary exclusion area (if applicable) \_\_\_\_\_

**L.7** Please supply a diagram of the location to clarify the area of operation if required – Diagram Reference

**L.8** Please enter the geographical co-ordinates using WGS84 as the geodetic reference as used by the GPS system to further clarify the area in which the EST will be transmitting

*Latitude/Longitude*

N/S \_\_\_ ° \_\_\_ ' \_\_\_ "

E/W \_\_\_ ° \_\_\_ ' \_\_\_ "

*Latitude/Longitude*

N/S \_\_\_ ° \_\_\_ ' \_\_\_ "

E/W \_\_\_ ° \_\_\_ ' \_\_\_ "

*Latitude/Longitude*

N/S \_\_\_ ° \_\_\_ ' \_\_\_ "

E/W \_\_\_ ° \_\_\_ ' \_\_\_ "

**L.9 Please Describe the intended route for EST operation. Please supply a diagram to clarify this – Diagram Reference \_\_\_\_\_**

*National Grid Reference*  
2- Letters          Easting          Northing  
\_\_\_\_\_

Ofcom can assist in conversion of Lat / Long to NGRs if required.

**L.10 Please enter the Associated Space Station –  
ITU filing designation which the EST will be establishing communications with-**

If you do not know the ITU filing designation please enter the commercial name of the satellite(s)

**L.11 Please enter the Nominal Orbital Longitude for the associated Space Station(s)**

*Longitude*  
E/W \_\_\_ ° \_\_\_ ' \_\_\_ "

**L.12 Please enter the absolute minimum Elevation angle and the variation of minimum Elevation Angles to the associated Space Station for the intended operating routes  degrees**

If you are unable to calculate this figure Ofcom will complete this question

**L.13 Please enter the Azimuth Angle for the transmitting antenna for the proposed location  degrees**

If you are unable to calculate this figure Ofcom will complete this question

**L.14 Please enter the antenna terminal type used**

Please enter the antenna terminal type reference you allocated to this antenna

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**EST HEIGHT DETAILS**

**L.15** Please enter the height (rounded down to the nearest whole metre) of the highest point of the transmitting antenna?

**EST 1**

As measured in metres above ground level

If a second EST installation exists on the same train

**EST 2**

As measured in metres above ground level

**L.16** Please enter the Maximum E.I.R.P of the EST (1)  dBW

If a second EST (2) installation exists on the same train and will be operational please enter the maximum E.I.R.P  dBW

**L.17** Any other relevant details?

\_\_\_\_\_  
\_\_\_\_\_

Please use this field to clarify location and operational requirements

## Section M Ofcom Contact Details

For enquires on EST licensing please contact:

Ofcom  
Spectrum Policy Group  
SR-2 Space  
Riverside House  
2a Southwark Bridge Road  
LONDON  
SE1 9HA

Telephone 020 7981 3189 / 3117  
Fax 020 7981 3208  
Email [satellite.licences@ofcom.org.uk](mailto:satellite.licences@ofcom.org.uk)  
[www.ofcom.org.uk](http://www.ofcom.org.uk)

## Section N Declaration

Please complete and send to Ofcom

Under the Electronic Communications Act 2000 an application form sent electronically has the same status as the same form sent on paper. Ofcom will issue a licence in good faith to the person named and the customer will be given 28 days to notify them if the licence is incorrect.

## Section M Checklist

Please ensure you have completed all relevant sections before submitting application to avoid processing delays

## Section P Where to return your application form

P.1 Please return your completed form and any attachments to:

Ofcom  
Spectrum Policy Group  
SR-2 Space  
Riverside House  
2a Southwark Bridge Road  
LONDON  
SE1 9HA

Telephone 020 7981 3189 / 3117

Preferably email to:

[satellite.licences@ofcom.org.uk](mailto:satellite.licences@ofcom.org.uk)

Or Fax:

020 7981 3208