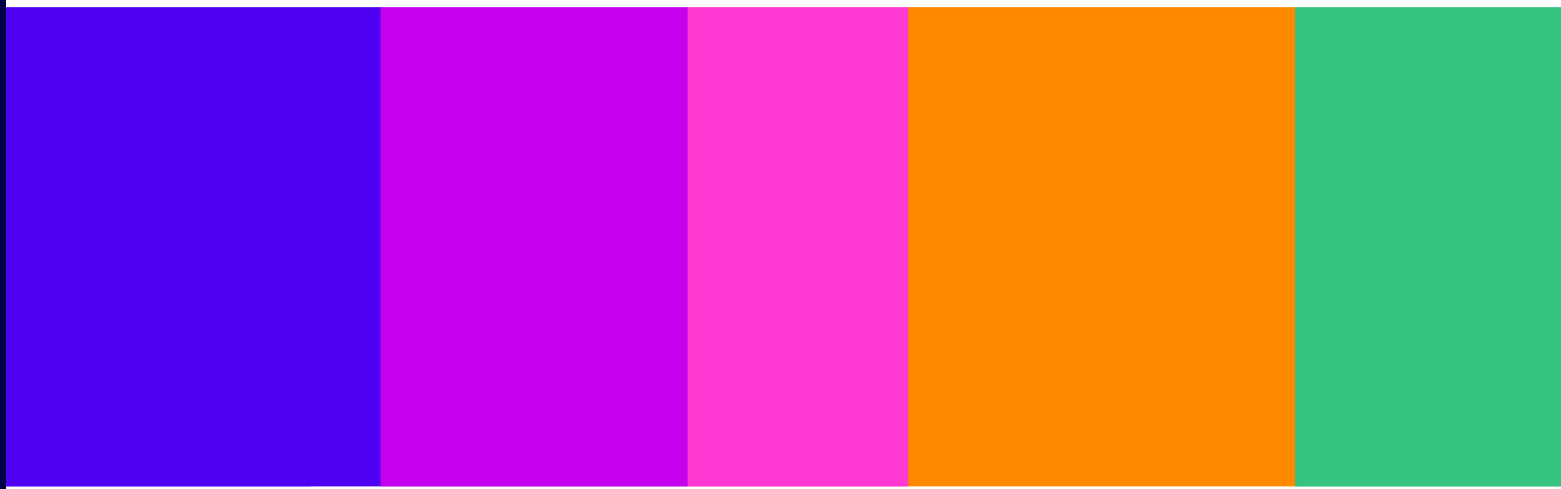


Procedures for the Management of Satellite Filings

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This document is a draft new version of our Procedures document and is subject to consultation. We will publish a new version of these Procedures after consultation.



Version history

Date	Changes	Paragraphs
14 March 2019	Changes made to reflect the Satellite filings cost recovery statement	Amended: 4.2, 4.7, Section 10, 12.9, Table 1
	Corrections from previous consultation	Deleted 13.3 Annex 4

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1. Scope and purpose

Background

- 1.1 Satellite and space services are important for an increasing range of business, social and scientific applications. Satellites might use spectrum for a variety of reasons such as: to provide communications services; to monitor the Earth and the atmosphere and transmit the data back to Earth; to provide Position, Navigation and Timing (PNT) services; or to support lunar or deep space missions. All space services require spectrum for Tracking, Telemetry and Control (TT&C); this allows the satellite operator to communicate with its satellite(s) to ensure safe operation.
- 1.2 In order to operate any space services, operators must obtain access to spectrum for the uplink (Earth to space) as well as the downlink (space-to-Earth) path from the satellite to stations on the ground. Operators also need to secure orbital positions in space for their satellites. A satellite's orbit, whether a Geostationary Orbit (GSO) or a non-Geostationary Orbit (NGSO), will influence the area of the globe the satellite can serve and therefore the way it uses spectrum.
- 1.3 Spectrum and orbits are valuable and limited resources. Radio spectrum is in high demand as wireless technologies change and develop across a range of sectors. It can become challenging to find frequencies as some spectrum bands become congested. Equally, new technologies can open up opportunities for space services in frequencies that were previously unavailable.
- 1.4 Spectrum and associated orbits therefore have to be managed and planned in order to avoid interference. The international nature of satellite services means that this coordination must take place within a framework of international rules administered by the International Telecommunication Union (ITU), as further described in section 2 of this document.

Scope and Purpose

- 1.5 This document describes the procedures that must be followed by companies or other organisations that are registered, or have their headquarters, in the United Kingdom (UK), British Overseas Territories, the Channel Islands and the Isle of Man and that wish to submit applications through the UK for the management and processing of satellite filings. It includes details of the coordination and registration processes that are needed to achieve international recognition under the ITU procedures.
- 1.6 This document describes the roles and responsibilities of Ofcom and the applying operator for each of the different types of application that are currently permitted under the ITU Radio Regulations (Radio Regulations) including:
 - a) Article 5 (Frequency allocations);
 - b) Article 9 (Procedure for effecting coordination with or obtaining agreement of other administrations); and,

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- c) Article 11 (Notification and recording of frequency assignments) and the relevant appendices regarding the procedures for advance publication, coordination and notification of frequency assignments.
- 1.7 This document also covers the frequency bands that are subject to assignment planning arrangements (e.g. for the broadcasting satellite service), where particular procedures are applicable. These procedures are set out in Appendices 30, 30A and 30B of the Radio Regulations, which contain the worldwide frequency allotment and assignment plans with associated procedures and technical data.
- 1.8 Ofcom represents the UK Government in the ITU and acts as the UK notifying administration under the ITU procedures. The general role and functions of Ofcom are set out in section 3 of this document. In carrying out this role, we seek to promote efficient use of spectrum, support innovation and growth and enable competition for the benefit of UK consumers.
- 1.9 Where appropriate, Ofcom is required to submit data to the ITU so that the frequency assignments can be registered in the ITU Master International Frequency Register (Master Register) and receive international recognition in accordance with Article 8 of the Radio Regulations. The international rights and obligations of administrations regarding their own and other administrations' frequency assignments are derived from the recording of the assignments in the Master Register, or the conformity of the assignments with a frequency plan.
- 1.10 This document consolidates all previous procedures documents published by the Radiocommunications Agency and Ofcom on this subject, including:
- a) [RA 301 – Procedures of the United Kingdom Administration in Relation to Satellite Networks](#);
 - b) [Procedures for the Management of Satellite Filings, Ofcom, 29 March 2007](#);
 - c) [Procedures for the Management of Satellite Filings, Ofcom, 30 March 2016](#);
 - d) [Procedures for the Management of satellite Filings, Ofcom, 14 March 2019](#).
- 1.11 This document also takes into account changes to the Radio Regulations agreed by the 2019 and 2023 World Radiocommunication Conferences which are relevant to the management of satellite filings.
- 1.12 Any reference in this document to the ITU Radio Regulations and the international legal provisions is provided for information purposes only. All references are correct, as far as Ofcom is aware, at the time of publication of these procedures. Applicants are encouraged to obtain their own advice prior to making an application in accordance with these procedures and undertake such technical investigations as they may deem necessary.
- 1.13 A glossary of terms used in this document is included at Annex 1.

2. ITU procedures for coordination and notification of satellite networks

Introduction to the ITU

- 2.1 This introduction to the ITU and the procedures of the Radio Regulations is for information purposes only. It is included to provide an overview of the role of the ITU and a general description of the procedures set out in the Radio Regulations. This introduction also provides the international context for Ofcom's filing procedures, which are set out in section 7 of this document. This general description is not intended to be a comprehensive guide to the Radio Regulations and the procedures for satellite filings, nor does it cover the procedure for terrestrial filings in relation to earth stations.
- 2.2 The ITU is a specialised agency within the United Nations system of organisations where representatives from governments and the private sector coordinate global telecommunications networks and services. The instruments of the ITU are the Constitution, Convention and Administrative Regulations (of which the Radio Regulations are a part). Together these three instruments form an international treaty governing the use of the radio spectrum to which the signatory ITU Member States, including the UK, are bound. These instruments contain the main principles and regulations governing the following major elements:
- a) frequency allocations to different categories of radiocommunication services;
 - b) the rights and obligations of Member States in obtaining access to the spectrum/orbit resources; and,
 - c) international recognition of these rights by recording frequency assignments and, as appropriate, orbital positions used or intended to be used in the Master Register.
- 2.3 The ITU has three sectors through which its work is conducted. These are the Telecommunication Development Sector (ITU-D), the Telecommunication Standardisation Sector (ITU-T) and the Radiocommunication Sector (ITU-R). Each sector has a Bureau headed by a Director. The Radiocommunication Bureau (ITU-BR) is important for the purposes of this document as it:
- a) is responsible for applying the provisions of the Radio Regulations and agreements between administrations of the same Region, see section 2.11;
 - b) records and registers frequency assignments and also the orbital characteristics of space networks, and maintains the Master Register; and,
 - c) provides advice to the ITU Member States on the equitable, effective and economical use of the radio-frequency spectrum and satellite orbits, and investigates and assists in resolving cases of harmful interference.
- 2.4 Member States are each represented by their national administration, which is the government department or service responsible for discharging the obligations set out in the ITU instruments and adopting appropriate national legislation to implement these obligations.

2.5 Article 6 Para 1 (CS 37) of the Constitution provides that the:

“Member States are bound to abide by the provisions of this Constitution, the Convention and the Administrative Regulations in all telecommunication offices and stations established or operated by them which engage in international services or which are capable of causing harmful interference to radio services of other countries”.

In the UK, Ofcom is the national administration by direction of the Secretary of State under section 22 of the Communications Act 2003 (2003 Act).

The Radio-Frequency Spectrum and Orbits – Scarce Resources

2.6 The position in outer space occupied by a satellite determines the area of the earth that its signals can reach. In addition, its orbit and its distance from the Earth will determine which area the signals will cover and may also affect the strength of those signals.

2.7 Some communications and broadcast satellites operate in the geostationary-satellite orbit (GSO) which is at an altitude of 35,800 km in the plane of the equator. The importance of this orbit is that at this altitude, each satellite rotates around the earth’s axis every 24 hours and so appears to be stationary above a fixed point on the earth. A satellite network of three geostationary satellites positioned 120° apart can cover most of the surface of the earth, although coverage may be limited to regions below around 75 degrees of latitude. The GSO represents a scarce natural resource, as does the radio-frequency spectrum. It is thus essential to have an efficient global mechanism to assign and coordinate frequencies and to assign orbital slots on the GSO.

2.8 Other applications for satellite networks use orbits at lower or higher altitudes than the GSO where the satellites do not appear to be stationary to an observer on earth. Similar procedures for coordination are also provided for these networks.

2.9 The international nature of satellite services dictates that the spectrum they use must be managed internationally by the ITU. The role of the ITU Member States in relation to the regulation of the radio-frequency spectrum and orbital positions, such as positions in the GSO, is set out in Article 44 Para 2 (CS 196) of the Constitution of the ITU and re-iterated in No. 0.3 of the Radio Regulations. The latter states that:

“In using frequency bands for radio services, Members shall bear in mind that radio frequencies and any associated orbits, including the geostationary-satellite orbit, are limited natural resources and that they must be used rationally, efficiently and economically, in conformity with the provisions of the Radio Regulations, so that countries or groups of countries may have equitable access to both, taking into account the special needs of the developing countries and the geographical situation of particular countries”.

Categories of Satellite Service

- 2.10 There are a number of broad regulatory categories of satellite service defined by the ITU and which are used for the allocation of spectrum within the Radio Regulations. Each category can have quite different characteristics, as described below.
- a) Fixed-Satellite Service (FSS) – This is a radiocommunication service “between earth stations at given positions, when one or more satellites are used; the given position may be a specified fixed point or any fixed point within specified areas; in some cases this service includes satellite-to-satellite links, which may also be operated in the inter-satellite service; the fixed-satellite service may also include feeder links for other space radiocommunication services” (see No. 1.21 of the Radio Regulations).
 - b) Mobile-Satellite Service (MSS) – This is a radiocommunication service which is:
 - between mobile earth stations and one or more space stations, or between space stations used by this service; or,
 - between mobile earth stations by means of one or more space stations.This service may also include feeder links necessary for its operation.
 - c) Broadcasting-Satellite Service (BSS) – This is a radiocommunication service in which signals transmitted or retransmitted by space stations are intended for direct reception by the general public. The term “direct reception” encompasses both individual reception and community reception.
 - d) Other services include science services, such as the Earth Exploration Satellite Service, and the Radio Navigation Satellite Services (like GPS).
- 2.11 While MSS, FSS and BSS have particular regulatory meanings and are used for the allocation of spectrum, it should be noted that in practice there is some blurring and convergence in the applications for which they are used.
- 2.12 A more complete list of satellite services and definitions can be found in Article 1 of the ITU Radio Regulations.

Introduction to Frequency Allocation and Coordination

- 2.13 The two important areas of ITU regulatory involvement with regard to satellites are:
- a) frequency allocations (Article 5 of the Radio Regulations); and,
 - b) the coordination, notification and recording in the Master Register (Articles 9 and 11 of the Radio Regulations).
- 2.14 Section IV of Article 5 of the Radio Regulations provides the Table of Frequency Allocations (Table). This Table sets out, frequency band by frequency band, which radiocommunication services have allocations in each of the three ITU Regions. The Regions are broadly defined in No. 5.2 as: Region 1, Europe/Africa; Region 2, Americas; and Region 3, Asia/Oceania. The UK falls within Region 1.
- 2.15 The ITU Radio Regulations define those uses for specific frequency bands that will have international recognition in each of the three Regions. Within each frequency band, radiocommunication services are allocated on the basis of ‘primary’ and ‘secondary’ services, either on a worldwide or regional basis. By definition, stations of a secondary service will neither cause harmful interference to, nor claim protection from harmful

interference caused by existing or future stations of the primary service (see No. 5.30 of the Radio Regulations). In many instances, bands of frequencies are allocated to more than one service on a co-primary basis. In such cases, specific sharing conditions are imposed on each service, e.g. limitations on equivalent isotropically radiated power (e.i.r.p.), minimum elevation angles for earth stations and maximum levels of interference.

Operations under No. 4.4 of the Radio Regulations

- 2.16 In general, we expect applicants to apply for frequency assignments which fall within the Table. However, we understand that there may be some cases where this is not possible.
- 2.17 An ITU Member State may deviate from the Table, but only to the extent that harmful interference is not caused to any other ITU Member State that is using the spectrum in accordance with Article 5 of the Radio Regulations. No. 4.2 of the Radio Regulations states:

“Member States undertake that in assigning frequencies to stations which are capable of causing harmful interference to the services rendered by the stations of another country, such assignments are to be made in accordance with the Table of Frequency Allocations and other provisions of these Regulations.”

No. 4.4 continues by stating that:

“Administrations of the Member States shall not assign to a station any frequency in derogation of either the Table of Frequency Allocations in this Chapter or the other provisions of these Regulations, except on the express condition that such a station, when using such a frequency assignment, shall not cause harmful interference to, and shall not claim protection from harmful interference caused by, a station operating in accordance with the provisions of the Constitution, the Convention and these Regulations.”

- 2.18 Further information on how we evaluate applications under No. 4.4 is provided in Section 6.

Significance of Recording in the Master Register

- 2.19 The Articles of the Radio Regulations contain procedures by which a satellite network's frequency assignments can be registered, through its national administration, with the ITU in order to obtain international recognition. This means that all administrations are informed of the use of the assignments and that they are taken into account in any future planning conducted at the national, regional or international level.
- 2.20 No. 8.1 of the Radio Regulations states that the:
- “international rights and obligations of administrations in respect of their own and other administrations' frequency assignments shall be derived from the recording of those assignments in the Master International Frequency Register (the Master Register) or from their conformity, where appropriate, with a plan.”
- 2.21 The international rights are subject to the provisions of the Radio Regulations and those of any relevant frequency allotment or assignment plan.

- 2.22 The specific procedures setting out the rights and obligations of each administration in relation to orbit and spectrum management and providing the means to achieve radiocommunication in a controlled interference environment have been laid down by successive ITU World Radiocommunication Conferences (WRCs) based on two main principles: efficient use and equitable access. Two mechanisms for the sharing of orbit and spectrum resources have been developed and implemented:
- a) a priori planning procedures which are designed to provide equitable access to orbit/spectrum resources for future use; and,
 - b) coordination procedures.
- 2.23 In relation to b) above, the coordination procedure is an obligatory process of negotiation between administrations with the aim of achieving the efficient use of the orbit/spectrum resource through a controlled interference environment in which satellite networks can operate and satisfy actual requirements which include:
- i) GSO networks in all services and frequency bands, and non-GSO networks in certain frequency bands governed by the procedure in No. 9.11A of the Radio Regulations, which are subject to coordination procedures; and
 - ii) other non-GSO networks for which only the advance publication procedure is necessary (see section 2.28(a) below).

Introduction to Planned and Non-Planned Bands

- 2.24 The Radio Regulations contain procedures leading to a recording in the Master Register for space services relating to bands that are either covered by a “plan”, or that are accessible on a “first-come-first-served basis”.
- 2.25 An assignment in a non-planned band results from an application by an operator for an assignment in a given band, with a specified coverage and a particular orbital position. Such applications are, in general, filed on a first-come-first-served basis.
- 2.26 In the planned bands, equitable access to spectrum is guaranteed by a priori planning (for example, by way of an allotment plan identifying a particularity of channels, an orbital location, a set of technical characteristics and a given service area for each administration), normally carried out at a world or regional planning conference. Each administration submits its requirements, technical bases for the plan are established at the conference and a plan is drawn up in relation to the available spectrum. Assignments are then pre-registered in the names of specific administrations. The assignment or allotment plans form part of the Radio Regulations.

Non-Planned Bands

Coordination Procedures for Non-planned Bands

- 2.27 As mentioned in section 2.25, for services in non-planned bands the use of the resource is implemented through a first-come-first-served procedure based on the principle that rights are acquired through negotiations with other administrations (i.e. coordination agreements). Successful coordination will lead to the international recognition of the use of the assignments of the networks and the recording of their assignments in the Master Register.

- 2.28 There are three basic steps in the coordination procedures for satellite networks in non-planned bands:
- a) advance publication information;
 - b) request for coordination; and
 - c) notification.

The coordination procedures are described in Article 9 of the Radio Regulations. Each step is described below.

Advance Publication Information

- 2.29 Section II of Article 9 of the Radio Regulations describes the procedure for effecting coordination applicable to a satellite network. For those satellite networks not subject to such a procedure, the first stage of the regulatory process is the submission by a national administration to the ITU-BR of a general description of the network for advance publication in the International Frequency Information Circular (BR IFIC). This stage is called the Advance Publication Information (API).
- 2.30 The BR IFIC provides information to other national administrations on developments in space systems, especially those that have the potential to cause interference. For those satellite networks not subject to the coordination procedure described in Section II of Article 9 of the Radio Regulations, the date of receipt by the ITU of the API marks the start of their regulatory period. Currently, these networks are required to be brought into use within seven years of the date of receipt by the ITU of the API. API must be supplied not earlier than seven years and preferably not later than two years before the planned date of bringing into use of the network.
- 2.31 Further details can be found in Article 9, Section I of the Radio Regulations.

Request for coordination

- 2.32 For those satellite networks subject to the coordination procedure described in Section II of Article 9 of the Radio Regulations, the first stage of the regulatory process is the submission of the complete information (to be sent under No. 9.30) by a national administration to the ITU-BR. The date of receipt by the ITU of this information marks the start of their regulatory period. Currently, these networks are required to be brought into use within seven years of the date of receipt by the ITU of this information.
- 2.33 Before an administration can notify the ITU-BR or bring into use a frequency assignment it must effect coordination with other administrations identified as affected administrations. Coordination, as described in Section II of Article 9, is a formal regulatory obligation both for an administration seeking a frequency assignment for its network and for an administration whose existing or planned services may be affected by that assignment. An agreement arising from coordination confers certain rights and imposes certain obligations on the administrations that are parties to that agreement.
- 2.34 Co-ordination is required in all cases except:
- a) those cases where it is not stated in Article 9 of the Radio Regulations that coordination is required; or
 - b) when an unmodified assignment in a planned band (Appendix 30, 30A or 30B of the Radio Regulations) is brought into use.

- 2.35 Further details can be found in Article 9, Section II of the Radio Regulations.
- 2.36 Where coordination is required, it comprises the submission of the technical characteristics of the proposed satellite network in the ITU software format together, in some cases, with a list identifying administrations with which coordination is required.
- 2.37 Receipt by the ITU-BR of a Request for Coordination establishes the regulatory precedence of the network. Networks whose Request for Coordination was received by the ITU-BR after this prior Request for Coordination are deemed to have lower regulatory precedence to, and must seek a coordination agreement with, those networks with higher regulatory precedence i.e. the networks where the relevant Request for Coordination was received earlier and which are affected by the later network.
- 2.38 The ITU-BR will examine the information provided by the notifying administration and identify any other administrations with which coordination may need to be effected and include the names of these other administrations in the publication of this information in the BR IFIC.
- 2.39 Within four months of the publication of the BR IFIC an identified administration must respond by either agreeing to the Request for Coordination or disagreeing and providing information as to its own assignments on which the disagreement is based.
- 2.40 The affected administration may use any appropriate means to resolve the matter and reach a coordination agreement with the administration submitting the Request for Coordination. The results of the coordination agreement will be communicated to the ITU-BR. If this agreement results in modifications to the published characteristics of the respective networks, these modifications will also be published in the BR IFIC.
- 2.41 For effecting coordination, the frequency assignments which are to be taken into account in the coordination process are those:
- a) in the same frequency band as that of the proposed assignment;
 - b) which belong to the same service or another service to which that band is allocated with equal rights or with a higher category allocation;
 - c) which are in conformity with the Radio Regulations; and,
 - d) which are either recorded in the Master Register or coordinated under the provisions of the Radio Regulations or are themselves under coordination but have regulatory precedence over the proposed assignments.
- 2.42 Assignments are recognised by prior networks by virtue of the coordination agreements which have been secured. If coordination is not complete against any assignments with which it was required, then the network operator cannot claim protection from harmful interference from, and must remove any harmful interference caused to such prior networks. In short, it must operate on a non-interference-non-protection basis in respect of those assignments.

EPFD masks

- 2.43 Article 22 of the Radio Regulations contains equivalent power flux-density (EPFD) limits applicable to non-GSO systems in certain bands to ensure the protection of GSO networks in the same bands without the need for individual coordination.
- 2.44 Non-GSO systems to which this applies are required to supply additional information describing the operation of their system, so that the ITU-BR can determine their compliance with the relevant limits in Article 22.
- 2.45 This additional information, specified in Appendix 4 of the Radio Regulations, is provided in the form of power-flux density (pfd) and effective isotropic radiated power (eirp) masks. Recommendation ITU-R S.1503 provides guidelines for their generation and application.
- 2.46 It is the responsibility of the applicant to prepare these masks and supply them along with the required information set out in Table 1 – Due Diligence Requirements.
- 2.47 Operations of non-GSO satellite systems are expected to be carried out within the envelope set out by the filing and by the masks supplied, and applicants will be required to supply a letter of commitment to Ofcom indicating that they shall not operate outside of the limits specified by the mask.

Notification

- 2.48 The notification of a frequency assignment to the ITU-BR in accordance with Article 11 of the Radio Regulations is the final regulatory step leading to the recording of the frequency assignment in the Master Register. The provisions relating to notification of frequency assignments are primarily stipulated in Article 11 of the Radio Regulations, except for certain services which affect or which are related to the planned assignments. The importance of a recording in the Master Register is mentioned in section 2.19 above.
- 2.49 As specified in Nos. 11.2 and 11.9 of the Radio Regulations, any frequency assignment to transmitting and receiving stations needs to be notified to the ITU-BR if, for example:
- a) the use of the assignment is capable of causing harmful interference to, or capable of receiving harmful interference from, any station, of another administration;
 - b) if the assignment is to be used for international radiocommunications;
 - c) if the assignment is subject to the coordination procedure of Article 9; or,
 - d) if international recognition is required for that assignment.
- It is generally safe to assume that all assignments related to space services need to be notified.
- 2.50 Under No. 11.44.1, complete notification information, constituting a “receivable notice” in accordance with the ITU Rules of Procedure, must be received by the ITU-BR before the end of seven years from the date of receipt of API under No. 9.1 or from the date of receipt of the information sent under No. 9.30, as applicable. For assignments which do not require coordination under Section II of Article 9, the notification procedure for space stations can generally be initiated upon the completion of the API procedure. For assignments which do require coordination under Section II of Article 9, the notification procedure for space stations can be initiated upon the completion of the coordination procedure.
- 2.51 In order to initiate the notification procedure an administration will, in accordance with No. 11.15, provide the relevant characteristics as set out in Appendix 4 of the Radio Regulations. The ITU-BR will examine the notice that it receives, and if the notice does not

contain the mandatory information, as specified in Appendix 4 of the Radio Regulations, the ITU-BR will request the notifying administration to provide the missing information, failing which the notice is returned in accordance with No. 11.27.

- 2.52 On receipt of a complete notice the ITU-BR will publish its contents and the date of receipt in the BR IFIC. This constitutes the acknowledgement to the notifying administration of receipt of the notice.
- 2.53 The ITU-BR will then examine the notice received. If the ITU-BR confirms that this is in conformity with the Radio Regulations (No. 11.31) it will record the relevant assignment in the Master Register¹. If the examination, as described in Nos. 11.30 to 11.34, leads to a favourable finding, the assignment will be recorded in the Master Register.
- 2.54 An important feature of this procedure is that the Master Register provides, as well as the basic characteristics of the assignment, an indication of each assignment's status with respect to the other assignments, reflecting the findings issued at the time when it was recorded in the Master Register. In the interval between issues administrations are kept informed of new assignments notified to the ITU-BR and of the findings formulated in this respect by way of the BR IFIC.

Non-GSO deployment milestones

- 2.55 To ensure non-GSO systems are deployed in a timely manner, WRC-19 introduced a milestones process, which applies after the 7-year notification period. The non-GSO deployment milestones process is set out in Resolution 35 of the Radio Regulations. Resolution 35 also sets out the types of non-GSO systems and the frequencies which are required to comply.
- 2.56 Where a non-GSO system has been brought into use in the frequency bands and services listed in Resolution 35 of the Radio Regulations, deployment information must be submitted to the ITU-BR no later than the below specified deadlines.

Milestone Number	Percentage of constellation to be deployed	Deadline for information to be supplied to ITU-BR
M0	1 satellite	7-year limit + 30 days
M1	10%	7-year limit + 2 years + 30 days
M2	50%	7-year limit + 5 years + 30 days
M3	100%	7-year limit + 7 years + 30 days

- 2.57 Notifying administrations shall also submit to ITU-BR, no later than 90 days after the expiry of each of the milestone periods, the modifications to the characteristics of the notified or recorded frequency assignments if the number of space stations declared as deployed:

¹ Where coordination has not been completed other procedures will apply (for example, see Nos. 11.32, 11.32A and 11.41 of the Radio Regulations).

- a) For M1 - If less than 10% of the total number of satellites (rounded down to the lower integer) indicated in the latest notification information published in Part I-S of the BR IFIC for the frequency assignments; in this case, the modified total number of satellites shall not be greater than 10 times the number of space stations declared as deployed.
 - b) For M2 - If less than 50% of the total number of satellites (rounded down to the lower integer) indicated in the latest notification information published in Part I-S of the BR IFIC for the frequency assignments; in this case, the modified total number of satellites shall not be greater than two times the number of space stations declared as deployed.
 - c) For M3 - If less than 100% of the total number of satellites indicated in the latest notification information published in Part I-S of the BR IFIC for the frequency assignments; in this case, the modified total number of satellites shall not be greater than the number of space stations declared as deployed.
- 2.58 Any required modifications are to be prepared by the operator and submitted to Ofcom for review prior to being submitted to the ITU-BR

Non-GSO orbital tolerances

- 2.59 Specific orbital tolerances apply to non-GSO systems having an orbital eccentricity less than 0.5 and an apogee altitude less than 15,000 km notified as part of a non-GSO FSS, BSS or MSS system subject to non-GSO Milestones (See Resolution 35 of the Radio Regulations), See Resolution 8 of the Radio Regulations).
- 2.60 The following tolerances are permitted for deviations between the notified and observed orbital characteristics of non-GSO systems:
- Apogee and Perigee Altitudes:
 - For altitudes $\leq 2,000$ km: ± 70 km.
 - For altitudes $> 2,000$ km: $\pm 5\%$ of the notified altitude.
 - Inclination Angle:
 - For altitudes $\leq 2,000$ km: $\pm 2^\circ$.
 - For altitudes $> 2,000$ km: $\pm 3^\circ$.
- 2.61 Administrations must provide deployment information to the ITU-BR regarding the observed orbital characteristics of their satellites. This information should include the observed distances to the apogee and perigee along with the observed inclination angles, as set out in Annex 1 of Resolution 8.
- 2.62 Where a satellite has been used for the purpose of bringing into use or bringing back into use or counted towards the non-GSO deployment milestone:
- a) the maximum allowed difference between the observed distance to the apogee or perigee of the space station and the distances to the apogee or perigee of a space station previously declared under this Resolution is 30 km;
 - b) the maximum allowed difference between the observed angle of inclination of the orbital plane of the space station and the angle of inclination of the orbital plane of a space station previously declared under this Resolution is 2° (for a notified altitude of the apogee/notified altitude of the perigee of 2 000 km or less), or 3° (for a notified altitude of the apogee/notified altitude of the perigee greater than 2 000 km).

Non-GSO post-milestone reporting

- 2.63 Where a non-GSO system has completed the milestone process described above, notifying administrations shall communicate to ITU-BR the required deployment information (See Annex 1, Resolution 35 of the Radio Regulations). This is required no later than 30 days after the expiry of the 11-year period after the end of the seven-year regulatory period.
- 2.64 Thereafter, notifying administrations must provide the deployment information every four years thereafter to the ITU-BR. This information must be provided to the ITU-BR no later than 30 days after the expiry of a four-year period.
- 2.65 If the number of satellites considered as part of the system falls below the total number of satellites published in the BR IFIC², then the notifying administration shall:
- a) provide a report to the ITU-BR, containing the date when this event, or events, began, and a general explanation of the event(s) for each affected satellite. This report should be submitted each year within 30 days of the date on which the milestones process was completed;
 - b) provide to the ITU-BR the date or dates on which each affected satellite was restored to operational status or replaced. This should either be submitted as part of the annual report under resolves 22a, or with the next report under resolves 19 or 20, whichever comes first.
- 2.66 These reports are for information purposes only.

Planned bands

- 2.67 For planned bands, the ITU procedures are different, as explained below. As briefly mentioned in section 2.26, planned bands are those subject to a priori planning procedures. This a priori planning seeks to guarantee equitable access to orbit/spectrum resources for future use, as referred to in Article 44 Para 2 (CS 196) of the Constitution of the ITU and No. 0.3 of the Radio Regulations. No coordination is required for assignments contained in the plans.
- 2.68 The Radio Regulations contain three Appendices dealing with planned bands and which contain the associated regulatory procedures and technical annexes for the planned bands as follows:
- a) Appendix 30, setting out the provisions for all services and associated plans and list for the BSS in certain bands;
 - b) Appendix 30A, setting out the provisions and associated plans and list for feeder links for the BSS in certain bands; and,
 - c) Appendix 30B, setting out the provisions and associated plan for the FSS in certain bands.
- 2.69 Each Appendix sets out the frequency and orbital position plans for those services in the bands specified. The plans essentially provide assignments which are pre-coordinated.
- 2.70 Although the plans are contained in the relevant Appendices, the bands themselves are included in the Table of Frequency Allocations in Article 5 of the Radio Regulations.

² The total number of satellites may either be listed in the Master Register in Part II-S of the BR IFIC or in the latest notification information published in BR IFIC (Part I-S) for the frequency assignments.

- 2.71 Administrations may seek to modify the plans. In each Appendix, it is possible to modify the plan, either by changing the characteristics of an assignment, or by making an additional use. In either of these cases, there are specific procedures in the relevant Appendix for coordination and notification of these changes to the plan. The procedures for making changes to the plan in Appendix 30B are different from the procedures for making changes to the plans in Appendix 30 and Appendix 30A.

Making Use of the Planned Bands in Appendix 30 and 30A

- 2.72 Under Appendix 30 and Appendix 30A a “Part A”³ publication represents a request for coordination (as previously described in relation to non-planned bands) of an amendment to a plan. It must be received by the ITU-BR not earlier than eight years and not later than two years before the proposed change to the plan is brought into use. Once coordination has been completed, the final characteristics of the plan are submitted to the ITU.
- 2.73 In a similar way to non-planned bands, the process continues with notification, where the details of the new assignments are examined and recorded in the Master Register.

Making Use of the Planned Bands in Appendix 30B

- 2.74 Appendix 30B consists of two parts: “Part A” is a plan of allotments to administrations on the basis of national service areas (Plan); and “Part B” contains networks of systems which existed at the time the Plan was created in 1988. To make use of an assignment under Appendix 30B one of five processes must be undertaken and the successful application of any of the five processes will result in an assignment being recorded in the Appendix 30B List (the Appendix 30B equivalent of the Master Register). The five actions are as follows:
- a) converting an allotment into an assignment which is in conformity with the Plan;
 - b) converting an allotment into an assignment which is not in conformity with the Plan;
 - c) the recording of assignments to existing systems set out in Part B of the Plan in the Appendix 30B List;
 - d) introducing a sub-regional system; and,
 - e) making an additional use.
- 2.75 In all but the third case (which relates to existing systems and where the ITU is already in possession of the relevant information) the details of the proposed assignments must be received by the ITU-BR not earlier than eight years and not later than two years before the proposed assignments are brought into use.

Regulatory Requirements

- 2.76 This section applies to both planned and non-planned bands.
- 2.77 The status given to each assignment recorded in the Master Register derives from the successful application of the relevant coordination procedures and the resulting coordination agreements. However, the status is conditional on:
- a) the assignment being brought into use within a defined regulatory time limit (see No. 11.44.1 of the Radio Regulations);
 - b) notification information; and,

³ As explained in the [preface of the BR IFIC](#)

- c) due diligence information (ITU-R Resolution 49, see section 2.79), where applicable, being submitted within the defined regulatory time limit.
- 2.78 The bringing into use of the assignments and receipt by the ITU-BR of notification information and Resolution 49 data must all have occurred before the expiry of the relevant regulatory period. Failure to do this will normally result in the filing being cancelled by the ITU-BR.

Administrative Due Diligence – Resolution 49

- 2.79 In the majority of cases for proposed networks in FSS, MSS and BSS the submission of due diligence information to the ITU-BR is required in accordance with ITU Resolution 49 of the Radio Regulations. Resolution 49 requires administrations to impose certain administrative due diligence requirements on satellite networks for which they act as the notifying administration, including specific information relating to the contractual status of the satellite and launch vehicle. Therefore, before registering a prospective network with the ITU-BR, it is incumbent on an administration to satisfy itself that there is a realistic likelihood that the satellite will be launched and will not block a valuable orbital slot or frequency assignment because it subsequently fails to be developed. It is also incumbent on an administration to monitor progress against pre-specified milestones for the deployment of the satellite network.
- 2.80 The primary reason for requiring this due diligence information is to avoid the reservation of orbital resources without actual use.
- 2.81 The due diligence information required is set out in Annex 2 of Resolution 49 and includes specific details of the satellite network operator and details of the API and coordination request publications. The information must also include details of contractual undertakings related to the construction and launch of the relevant satellites. The information should be provided to the ITU-BR as early as possible before bringing into use of the frequency assignment, but in any case it must be submitted before the end of the seven year period established as a limit to bringing into use a satellite network for non-planned bands⁴. We set out our due diligence process in section 5.

Bringing into Use

- 2.82 Where notification occurs before an administration brings the assignments into use, the administration must inform the ITU-BR within 30 days of the date when the network's frequency assignments have been brought into use. (See No. 11.47 of the Radio Regulations).
- 2.83 When informing the Bureau of the bringing into use, or bringing back into use after suspension, of a frequency assignment to a space station in a geostationary satellite network, the notifying administration is required by the Radio Regulations to indicate to the Bureau whether or not this action has been accomplished with a satellite that has previously been used to bring into use, or resume the use of, frequency assignments at a

⁴ The time limit is eight years for planned bands in Appendix 30 and 30A. For Appendix 30B planned bands, the due diligence information must be received before the date of bringing into use.

different orbital location within the three years prior to the date of submission of this information.

- 2.84 In cases where a notifying administration informs the Bureau, pursuant to section 2.83 above, that it has brought into use, or resumed the use after suspension of, a frequency assignment to a space station in a geostationary satellite network with a satellite that has previously been used to bring into use, or resume the use of, frequency assignments at a different orbital location within three years prior to the date of submission of this information, the notifying administration is also required by the Radio Regulations to indicate, for that same three-year period, some pre-determined details about the operational history of that satellite⁵.
- 2.85 Under a decision made in the 2012 World Radiocommunication Conference (WRC-12)⁶, it was recognised that an administration can bring into use, or continue the use of, frequency assignments for one of its satellite networks by using a space station which is under the responsibility of another administration or intergovernmental organization. This is provided that this latter administration or intergovernmental organization, after having been informed, does not object, within 90 days from the date of receipt of information, to the use of this space station for such purposes.
- 2.86 In the case where we become aware of a request from another administration to use a UK-licensed satellite to bring into use or continue the use of a frequency assignment, we would discuss this request with the CAA (as the UK's satellite licensing authority) and other relevant Government departments as appropriate.

World Radiocommunication Conferences

- 2.87 ITU WRCs, which are held approximately every three to four years, have the power to amend the Radio Regulations according to specific agenda items identified by the preceding conference. Amendments might include the revision of certain procedures, adding new technical criteria for sharing between services, the addition of new allocations to services etc. WRCs are attended by delegations from Member States. Subject to providing satisfactory credentials, Member States sign the Final Acts of the WRC by which the treaty (embodied in the ITU Constitution, Convention and Administrative Regulation) is amended.

Compliance with International Treaties

- 2.88 Satellite networks for which Ofcom is the notifying administration must be operated in accordance with the relevant treaties to which the UK is a signatory. These include the following United Nations treaties and principles:
- a) the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies⁷;

⁵ The provision of the information described in sections 2.83 and 2.84 derives from the relevant decisions made at WRC-15. It should be noted that, when notifying the Bureau of the bringing into use, or resuming the use after suspension of frequency assignments, Ofcom may ask for more information than that prescribed by the ITU under Resolution 40 of the Radio Regulations.

⁶ See Minutes of the 13th Plenary Meeting, WRC-12

⁷ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies 1967, 610 UNTS 205.

- b) the Convention on International Liability for Damage Caused by Space Objects⁸; and,
- c) the Convention on Registration of Objects Launched into Outer Space⁹.

- 2.89 In essence, the various United Nations space treaties and principles make the UK government responsible for ensuring that space activities carried out by UK individuals, companies or other organisations are consistent with the international obligations of the UK.
- 2.90 The UK's obligations under the various United Nations space treaties and principles are implemented through the UK Outer Space Act 1986, Space Industry Act 2018 and associated regulations. The licensing and regulatory mechanisms set out in this legislation are administered in the UK by the independent regulator, the Civil Aviation Authority. Applicants who may require a licence under the Outer Space Act 1986 or Space Industry Act 2018 should contact the Civil Aviation Authority.

⁸ Convention on International Liability for Damage Caused by Space Objects 1972, 961 UNTS 187.

⁹ Convention on Registration of Objects Launched into Outer Space 1975, 1023 UNTS 15.

3. The role of Ofcom

- 3.1 Ofcom has statutory duties under the 2003 Act and the Wireless Telegraphy Act 2006 (“2006 Act”) to regulate the provision of electronic communications networks and services and the use of the electro-magnetic spectrum. More specifically, these duties include:
- a) to further the interests of citizens in relation to communications matters (section 3(1)(a) of the 2003 Act);
 - b) to further the interests of consumers in relevant markets (section 3(1)(b) of the 2003 Act);
 - c) the duty to promote competition in relevant markets (sections 3(1)(b) and 4(3) of the 2003 Act and section 3(2)(d) of the 2006 Act);
 - d) the requirement to secure the optimal use for wireless telegraphy of the electromagnetic spectrum, and the efficient management of that spectrum (section 3(2)(a) of the 2003 Act and section 3(2)(a) of the 2006 Act);
 - e) the requirement to ensure that its regulatory activities are transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed (section 3(3)(a) of the 2003 Act); and,
 - f) the duty to consider the desirability of encouraging investment and innovation in relevant markets (sections 3(4)(d) of the 2003 Act and section 3(2)(c) of the 2006 Act).
- 3.2 Ofcom is also required to comply with directions from the Secretary of State in respect of relevant international obligations, as mentioned below.
- 3.3 Pursuant to a direction from the Secretary of State under section 22 of the 2003 Act, Ofcom represents the UK Government in the ITU and acts as the UK notifying administration under ITU procedures in relation to international management of the radio spectrum and orbit resources. Provisions of the 2003 Act relevant to Ofcom’s international functions, such as satellite filings, include the following:
- a) Section 5 of the 2003 Act gives the Secretary of State power to give directions to Ofcom for the purpose of securing compliance with international obligations, as well as for other specified purposes such as in the interests of national security.
 - b) Section 22 of the 2003 Act imposes a duty on Ofcom to do such things as it is required to do by the Secretary of State to represent the UK on international and other bodies in relation to communications matters. The Secretary of State has required Ofcom to carry out various international representation functions in relation to radio spectrum, including making satellite filings. Section 22 of the 2003 Act also provides Ofcom with the power to represent the British Overseas Territories, the Channel Islands and the Isle of Man if requested to do so by the Secretary of State. However, the Secretary of State is not entitled to direct Ofcom to comply with such a request and cannot compel Ofcom to take on that role, but can give directions about how Ofcom is to carry out any representative role that it undertakes in accordance with such a request. Following a formal request from the DTI¹⁰ to Ofcom to represent the British Overseas Territories, the Channel Islands and the Isle of Man, Ofcom agreed to take on this in 2005.

¹⁰ The Department of Trade and Industry, which was the sponsoring department for spectrum management at this time. This responsibility now sits with the Department for Science, Innovation and Technology (DSIT).

- 3.4 In carrying out this role, we discuss issues with relevant UK Government departments and agencies as needed. We may also share relevant satellite filing information with these departments and agencies on a confidential basis. We may do this at any stage of the satellite filings process and throughout the lifetime of the filing in relation to any decision which may affect the national security or interests of the UK, as determined by the UK Government. In line with section 22 of the 2003 Act, the Secretary of State may require Ofcom to act in accordance with any guidance it provides.
- 3.5 Section 1 of the 2006 Act confers spectrum management functions on Ofcom, including the provision of advice and services and the maintenance of records with respect to the use of the electromagnetic spectrum for wireless telegraphy at places within and outside the UK. The Secretary of State may require Ofcom to exercise these functions for the purpose of complying with the UK's international obligations.
- 3.6 As mentioned, as regards international spectrum management, Ofcom is the UK notifying administration to the ITU. The British Overseas Territories, the Channel Islands and the Isle of Man are not ITU Member States in their own right. Ofcom has undertaken to fulfil the role of notifying administration for the British Overseas Territories, the Channel Islands and the Isle of Man.
- 3.7 Ofcom is required to decide whether to process an application for a satellite network filing based on the criteria set out in sections 4.5 to 4.8 of this document.
- 3.8 In the case of applications submitted on behalf of companies that are registered, or have their headquarters, in the British Overseas Territories, the Channel Islands and the Isle of Man, Ofcom will consult with the relevant governments of these territories. Additionally, applications that may impact frequency assignments (either planned or non-planned) to these territories will be considered in consultation with the governments of these territories.

4. Submission of applications to Ofcom

Submission of Applications for satellite networks

- 4.1 Applications and all related correspondence relating to satellite networks in planned and non-planned bands must be submitted by the applicant to Ofcom in electronic format, where possible, and in accordance with the format required by the ITU Space Services software (<http://www.itu.int/ITU-R/software/space/index.html>) to the following address:

Email: ifc.enquiries@ofcom.org.uk

International Satellite Frequency Coordination Team
Spectrum Group
Ofcom
Riverside House
2A Southwark Bridge Road
London SE1 9HA
United Kingdom

Tel: +44 (0)20 7981 3100

- 4.2 The filing procedure timescales described in section 7 of this document are taken from the date at which the relevant signed [application form](#), technical information and payment is received by the Ofcom International Satellite Frequency Coordination Team from the applicant. Applications shall only be processed upon receipt of payment, as set out in the Notice of Satellite Filing Charges, as described in section 10 of this document. Applicants must ensure that they keep Ofcom updated from time to time if they change any of their address and contact details to be provided in the application form.
- 4.3 A satellite network filing can only be submitted to the ITU by an administration of an ITU Member State. As the notifying administration for the UK, Ofcom will only file a satellite network application to the ITU on behalf of an applicant whose satellite network(s) meets the criteria contained in this document and which is consistent with the ITU Radio Regulations.
- 4.4 The filing of the satellite network with the ITU will not impede the capacity of Ofcom to perform its spectrum management and radiocommunications duties pursuant to the 2003 Act.

Application Criteria

- 4.5 Applicants must establish, to the satisfaction of Ofcom, that their satellite project can be realised within the relevant regulatory time limits and the relevant technical and operational parameters. In particular, Ofcom needs to be satisfied with the content of the management and technical due diligence deliverables provided by the applicant, as defined

for each stage in section 5 of this document. Ofcom will also need to be satisfied that the application is consistent with the ITU and UK tables of frequency allocations.

- 4.6 The applicant must be a company or organisation registered, or having its headquarters, in the UK, British Overseas Territories, the Channel Islands or the Isle of Man.
- 4.7 All applications must be signed by a duly authorised officer of the company or organisation (and where relevant, the representative acting on behalf of the applicant), and must contain all necessary data required to support the application including, in particular, an undertaking that the company or organisation will pay the relevant costs in relation to the ITU filing fees and Ofcom charges, as set out in our Notice of Satellite Filing Charges, as described in section 10 of this document.
- 4.8 Filing data, including alphanumeric data, is to be provided in electronic database format utilising the latest versions of the [ITU Space Services software](#).

Applications for UK2.1 frequencies

- 4.9 Where an applicant makes a submission that contains frequencies that are identified as UK2.1 within the UK Frequency Allocation Table, Ofcom may consult with the UK Ministry of Defence (MOD) prior to the submission being made to the ITU-BR. Consultation with the MOD will occur prior to the initial submission and again prior to the notification of a satellite filing being made to the ITU-BR. Ofcom will only submit the information to the ITU once the MOD has confirmed it has no objections to the application.
- 4.10 Where an applicant requests the submission of notification information to the ITU-BR the MOD may require the applicant to enter into a contract with them, setting out conditions for holding a filing for UK2.1 spectrum. In these instances, Ofcom shall only submit the information to the ITU-BR once the contract has been entered into.
- 4.11 Failure to comply with this contract may lead to the filing being cancelled.

Space Sustainability

- 4.12 Satellites licensed by the Civil Aviation Authority (CAA) must meet [requirements](#) related to space sustainability, including providing space debris mitigation and end of life plans. The CAA also requires licensees to operate in line with good practices, including (at a minimum) the [IADC Space Debris Mitigation guidelines](#).
- 4.13 The Procedures set out in this document do not include specific requirements related to space debris or environmental issues. However, as a matter of best practice, Ofcom encourages all applicants, including those not licensed by the CAA, to adhere to relevant guidelines on space sustainability, including the IADC Space Debris Mitigation guidelines.

5. Ofcom's due diligence requirements

Due diligence requirements

- 5.1 ITU-R Resolution 49 requires national administrations to make submissions to the ITU in respect of the construction and launch (including timings) of its satellite networks. Administrations implement these obligations by imposing administrative due diligence requirements on operators. The purpose of these due diligence requirements is to ensure that filings are only submitted to the ITU where there is a reasonable prospect that the proposed network will be brought into operation within the relevant time period. It also serves to address the problem of reservation of orbit and spectrum capacity without actual use and has an impact, together with other relevant mechanisms, in reducing paper filings and in bringing more transparency to the filing process.
- 5.2 In its capacity as the UK notifying administration, Ofcom aims to ensure that applications submitted to the ITU are consistent with the provisions of the ITU Constitution, Convention and Radio Regulations. These include compliance with the provisions of RR Article 5 (Table of Frequency Allocations), Article 9 (Procedures for effecting coordination with or obtaining agreement of other administrations) and Article 11 (Notification and recording of frequency assignments), as well as obligations under Article 44 of the Constitution. In addition, Ofcom has legal obligations arising from the 2003 Act, which include, in particular, the duty to secure the optimal use for wireless telegraphy of the electromagnetic spectrum (section 3(2)(a) of the 2003 Act).
- 5.3 The ITU-BR relies on the confirmation provided by administrations, under No. 11.47 of the Radio Regulations that a frequency assignment has been brought into use, to assess compliance with the regulatory time period set out in No. 11.44. In addition to the requirements of Resolution 49, Ofcom requires information from applicants, as set out in Table 1, for the purposes of due diligence in order to be satisfied that a proposed satellite network can be realised within the relevant regulatory limits associated with the spectrum and orbital resources for which they are filing.

Requirements for administrative control of the network

- 5.4 Applicants will need to demonstrate that they either have the technical capability or that they have a legally binding contractual commitment by which transmissions to and from stations operating within the planned satellite network can be modified or ceased upon the request of Ofcom. Such a request might arise in the event of unacceptable interference being caused to an existing network.

Due Diligence Requirements

- 5.5 The deliverables required to be provided to Ofcom at each stage of the process are set out in Table 1 below. The deliverables set out in Table 1 are required for both non-planned and planned bands. The deliverable set out in Table 2 is additionally required for unmodified planned bands¹¹.
- 5.6 When applicants have completed a deliverable in Table 1 or 2 they must inform Ofcom of this as soon as practicable.

Table 1 – Due Diligence Requirements

Stage 1	Deliverables	Complete no later than:
	<p>1. The business plan of the applicant including the key milestones of the project (see Annex 2 for an example). In the case of non-GSO systems, the business plan must indicate the minimum number of satellites needed to be deployed in order to provide the intended service to at least the minimum intended quality.</p> <p>2. Information on the resources available to construct and launch the proposed satellite, or to use an in-orbit satellite, and to operate the network for at least three years after launch.</p> <p>3. An estimated list of those networks with which coordination will be required.</p> <p>4. Completed and signed application form and appropriate payment.</p> <p>5. PFD masks – non-GSO systems containing frequencies subject to Article 22 of the Radio Regulations</p>	<p>- The submission of the API (for those frequency assignments not subject to Section II of Article 9);</p> <p>- The submission of the coordination request (for those frequency assignments subject to Section II of Article 9).</p>
Stage 2	Deliverables	Complete before the submission of a request for notification of any of the assignments of the network and no later than:
	<p>1. Evidence of commitment to construct a satellite (or move an existing satellite) to be placed at a given orbital location.</p> <p>EVIDENCE TO BE PROVIDED:</p>	36 months before the expiry of the filing's regulatory deadline.

¹¹ Ofcom may at its discretion ask for deliverables which are additional to those described in Tables 1 and 2.

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	<p><u>Option 1</u>: A copy of the satellite construction contract;</p> <p><u>Option 2</u>: A letter (signed by appropriately authorised persons on behalf of the parties) confirming that a contract has been entered into; or,</p> <p><u>Option 3</u>: A letter of commitment (signed by an appropriately authorised person on behalf of the applicant) confirming that an appropriate in-orbit satellite will be placed in the given orbital location before the expiry of the filing's regulatory deadline.</p>	
	<p>2. A detailed description of the frequencies at which the satellite is capable of operating.</p> <p>EVIDENCE TO BE PROVIDED:</p> <p><u>Option 1</u>: An extract of the relevant parts of the critical design review (CDR) of the satellite; or,</p> <p><u>Option 2</u>: A letter from the satellite manufacturer containing the relevant information.</p>	<p>24 months before the expiry of the filing's regulatory deadline or, in the case where an in-orbit satellite is to be used, 12 months before the request for notification of any of the assignments of the network.</p>
	<p>3. Evidence of commitment to deploy a satellite.</p> <p>EVIDENCE TO BE PROVIDED:</p> <p><u>Option 1</u>: A copy of the launch services contract;</p> <p><u>Option 2</u>: A letter (signed by appropriately authorised persons on behalf of the parties) confirming that a contract has been entered into;</p> <p><u>Option 3</u>: A contractual agreement for borrowing, leasing, or buying an in-orbit satellite that will be placed at the given orbital location before the expiry of the filing's regulatory deadline; or,</p> <p><u>Option 4</u>: A statement from the applicant that the satellite which will be deployed belongs to them with evidence that this has been launched and placed into orbit.</p>	<p>24 months before the expiry of the filing's regulatory deadline.</p>
	<p>4. Evidence for the construction or use of at least one telemetry, tracking and command (TT&C) earth station and of at least one feeder-link earth station communicating with the satellite.</p>	<p>24 months before the expiry of the filing's regulatory deadline.</p>

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	<p>EVIDENCE TO BE PROVIDED:</p> <p><u>Option 1</u>: A copy of each of the contracts for the construction or use of the earth stations; or,</p> <p><u>Option 2</u>: A letter (signed by appropriately authorised persons on behalf of the parties) confirming that a contract has been entered into.</p>	
	<p>5. Evidence of the authorisation to operate (e.g. a licence issued by the relevant competent authority) at least one TT&C earth station and at least one feeder-link earth station.</p> <p>EVIDENCE TO BE PROVIDED:</p> <p><u>Option 1</u>: a copy of the relevant authorisation; or,</p> <p><u>Option 2</u>: a confirmation from the relevant authority that the applicant conforms to the applicable national requirements.</p>	<p>12 months before the launch of the satellite or 12 months before the expiry of the filing’s regulatory deadline, whichever occurs earlier.</p>
	<p>6. A report summarising the status of coordination¹².</p>	<p>Six weeks before the request for bringing into use of the satellite network, or six weeks before the expiry of the filing’s regulatory deadline, whichever occurs earlier.</p>
Stage 3	Deliverables	Complete no later than
	<p>1. Written confirmation of a successful launch (where a new satellite is being used to bring into use the relevant frequency assignment(s)).</p> <p>2. Written confirmation of the number of satellites that will be used to bring the network into operation.</p> <p>3. Confirmation of the frequency assignment(s) intended to be brought into use.</p> <p>4. For geostationary satellite networks, if the bringing into use is planned to be carried out with a space station that has previously been used to bring into use, or resume the use of, frequency assignments at a different orbital location within</p>	<p>The bringing into use.</p>

¹² This deliverable applies only to those frequency assignments subject to Section II of Article 9.

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	<p>the preceding three years, the following information should also be provided for that same three-year period^{13 14} (See Resolution 40 of the Radio Regulations):</p> <p><i>a)</i> the last orbital location where the space station was used to bring into use, or resume the use of, frequency assignments;</p> <p><i>b)</i> the satellite network(s) with which the frequency assignments in <i>a)</i> above were associated; and,</p> <p><i>c)</i> the date on which the space station was no longer maintained at the orbital location in <i>a)</i> above.</p>	
Stage 4	Deliverables	Complete not later than
	An updated full project report showing progress against the milestones in stages 1 to 3.	The request for submission of Resolution 49 data by Ofcom to the ITU.
Stage 5	Deliverables	Complete not later than
	Resolution 35 – non-GSO Milestone 0 Information	2 months before the end of the 7-year regulatory period
Stage 6	Deliverables	Complete not later than
	Resolution 35 – non-GSO Milestone 1 Information	22 months after the 7-year regulatory period
Stage 7	Deliverables	Complete not later than
	Resolution 35 – non-GSO Milestone 2 Information	58 months after the 7-year regulatory period
Stage 8	Deliverables	Complete not later than
	Resolution 35 – non-GSO Milestone 3 Information	82 months after the 7-year regulatory period
Stage 9	Deliverables	Complete not later than
	Resolution 35 – Post-milestone Information	The end of each four year period after completion of

¹³ The same information must be provided also in case a satellite is planned to resume the use after suspension of frequency assignments.

¹⁴ Ofcom may ask for more information than that described in this deliverable.

		non-GSO milestone reporting (stage 8)
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Table 2 – Additional requirements for planned bands (Appendices 30, 30A and 30B)

Stage	Deliverable
Before bringing into use an unmodified planned assignment	Demonstration that the technical characteristics conform to those of the relevant plan.

- 5.7 In addition to the deliverables specified in Table 1 and Table 2 above, the operator shall provide, at the request of Ofcom, including if and when requested by the ITU-BR, additional information regarding the satellite network. This additional information may include:
- a) the commercial name of the satellite;
 - b) a manufacturer-provided and certified frequency plan for the satellite, and information on the payload description (for example block diagram, frequency plan, travelling wave tube amplifier (TWTA) power, number of transponders, transponder bandwidth, and expected orbital mission life (OML));
 - c) the results of the in-orbit payload/transponder tests performed upon delivery of the satellite;
 - d) the satellite network operator’s licence application to the administration; and
 - e) the transponder lease contracts.
- 5.8 We would normally expect evidence of completion of deliverables to be available well ahead of the deadline. If the deliverable has not been completed by the deadline, Ofcom may consider whether it would be appropriate to cancel the filing. The applicant may ask Ofcom to extend the deadline for a particular deliverable, explaining the exceptional circumstances justifying the request. Ofcom may decide to extend such a deadline. If the applicant has not completed the relevant deliverable by this extended deadline then Ofcom may consider whether it would be appropriate to cancel the filing.

Changes to business plan

- 5.9 The applicant must inform Ofcom, as soon as possible, of any change to the business plan which:
- a) has an impact on the ability to meet the deliverables (described in Table 1) as originally communicated; or,
 - b) necessitates any modification to the technical parameters of the filing.
- 5.10 If the change to the business plan is such that the project is not likely to meet Ofcom’s timelines as described in Table 1 or that the project cannot be completed within the relevant regulatory period(s) of the filing or that the technical parameters of the filing need to be changed, Ofcom may consider what appropriate actions should be taken. These may include cancelling the filing.

Due Diligence requirements and progress monitoring

- 5.11 Applicants will provide to Ofcom yearly progress reports for each satellite network indicating any variations from the previously submitted business plan and also details of their coordination progress and status. Such reports should contain, at a minimum:
- a) project activities undertaken, or completed, for each of the individual deliverables;
 - b) frequency coordination activities undertaken, or completed, in the previous months; and,
 - c) information about any changes or updates to the latest version of the business plan submitted to Ofcom.
- 5.12 If the applicant does not provide a due diligence report by its due date without having obtained Ofcom's prior agreement for a delayed submission, Ofcom will send a reminder within a week following the due date, requesting the applicant to provide the report within 30 calendar days. If the applicant then subsequently does not provide a report by this extended deadline, Ofcom may consider whether it would be appropriate to cancel the filing.
- 5.13 Ofcom will assess the information provided in the reports against the original business plan and its milestones to establish whether sufficient progress is being made to ensure that the project will be completed within the satellite network's regulatory deadline, as specified in section 5.3.
- 5.14 In the event that a progress report indicates that, unless modified, the project is not likely to meet Ofcom's timelines as described in Table 1 or that the project will no longer be completed within the satellite network's regulatory deadline, Ofcom may consider what appropriate actions should be taken. These may include cancelling the filing.

Yearly reports after recording in the Master Register

- 5.15 Once the relevant assignment(s) is recorded in the Master Register and brought into use, the operator (formerly described as the applicant) will provide Ofcom with yearly reports covering the operational status of the assignment(s). The operator will provide these reports to Ofcom every year for the lifetime of the assignment(s).
- 5.16 These reports must set out the status of the implementation of the assignment(s) and whether it is operating in accordance with its recorded characteristics and its business plan.
- 5.17 The first yearly report to Ofcom for a satellite network must contain at least the following information¹⁵:
- a) the satellite name;
 - b) information on which company built the spacecraft, which one launched it and from where, or if not a newly launched spacecraft, who is/was the owner, who is/was the administration licensing the spacecraft and what was its original or previous orbital location; and
 - c) whether the satellite is (still) capable of operating on the frequencies notified or brought into use, based on the operational or testing activities undertaken.

¹⁵ Ofcom may ask for more information than what described here below.

- 5.18 For the first yearly report, and then for every subsequent year, the report must contain the following information¹⁶:
- a) a high level assessment of the operational health and status of the spacecraft in orbit;
 - b) the frequency bands used by each satellite beam and its geographical coverage¹⁷;
 - c) information related to the ground segment that demonstrates that the satellite network can operate according to its design and mission. This may include the location, characteristics and coordination status of its earth stations, and the location and point of contact of its Network Operations Control (NOC) facility;
 - d) whether any issues (operational or due to interference) has been experienced by the payload; and,
 - e) a copy of the latest company's Annual Report and Financial Statements.
- 5.19 Ofcom will assess the information provided in the yearly reports to establish whether the spectrum and orbital resources are being used according to the recorded characteristics of the relevant assignment(s). In the event that Ofcom finds that this is not the case, Ofcom expects to consult with the operator and provide it with reasonable notice in which to apply corrective measures. If appropriate corrective measures are not or cannot be applied in order to bring the assignment(s) back into use or to enable it to operate in accordance with its recorded characteristics and its business plan within the notice period, Ofcom may consider whether it would be appropriate to cancel the filing.
- 5.20 If the applicant does not provide a report by its due date without having obtained Ofcom's prior agreement for a delayed submission, Ofcom will send a reminder within a week following its due date, requesting the applicant to provide the report within 30 calendar days of its due date. If the applicant then subsequently does not provide a report by this extended deadline, Ofcom may consider whether it would be appropriate to suspend or cancel the filing under Section 12.

¹⁶ Ofcom may ask for more information than what described here below.

¹⁷ This information should be updated at the time of the writing of the report.

6. Evaluation of applications

General

- 6.1 All applications will be considered against the criteria contained in this document before submission of the relevant filing information to the ITU-BR. Ofcom's process is illustrated in the flowcharts in Annex 3.
- 6.2 As set out in Section 3, we discuss issues related to satellite filings with relevant UK Government departments and agencies as needed. We may also share relevant satellite filing information with these departments and agencies on a confidential basis. We may do this at any stage of the satellite filings process and throughout the lifetime of the filing in relation to any decision which may affect the national security or interests of the UK, as determined by the UK Government.

Non-planned frequency bands

- 6.3 Ofcom will submit the filings to the ITU-BR in date order of receipt by Ofcom of the complete applications. Ofcom will not publish details of applications for non-planned assignments in advance of submission to the ITU.
- 6.4 Ofcom considers that coordination discussions should commence well in advance of the expiry of a satellite filing's deadline. This is in order to support the integrity and efficiency of the ITU filing regime.

Coordination with non-UK satellite networks

- 6.5 Except where section 6.6 below applies, for those frequency assignments which are subject to Section II of Article 9, Ofcom will not submit notification data for the subject satellite network to the ITU-BR unless the operator presents evidence that coordination has been completed with affected non-UK networks with higher regulatory precedence. In such cases, the applicant must submit copies of the completed coordination agreements to Ofcom.
- 6.6 Ofcom may, where it is satisfied that adequate efforts have been made to achieve coordination, submit notification data under No. 11.41 for a satellite network to the ITU-BR where coordination is still in progress with affected non-UK networks with higher regulatory precedence. In such cases, the applicant must:
- notify Ofcom that coordination for such satellite network is not completed with affected non-UK networks;
 - provide Ofcom with relevant information on the status of the coordination (including which non-UK networks coordination has not been completed with); and,
 - provide any evidence to support its request for notification which Ofcom may require.
- The evidence referred to in paragraph c) may include proposals submitted by the applicant to operators of existing non-UK networks, together with their responses.
- 6.7 Any operation of a network notified under these circumstances can only be on a non-interference and non-protection basis with respect to any senior non-UK network with which coordination was not completed.

- 6.8 Should the UK network recorded under No. 11.41 cause harmful interference to any senior non-UK network with which coordination was not completed, Ofcom may request the operator responsible for that UK network to immediately eliminate such interference, as per No. 11.42. If the operator fails to do so, Ofcom may consider whether it would be appropriate to cancel the filing.
- 6.9 Ofcom should also be notified once the applicant completes coordination, so that Ofcom can inform the ITU-BR under No. 11.41B.

Coordination with UK satellite networks

- 6.10 Except where section 6.11 below applies, for those frequency assignments which are subject to Section II of Article 9, Ofcom will not submit notification data for the subject satellite network to the ITU-BR unless the operator presents evidence that coordination has been completed with affected UK networks with higher regulatory precedence, including those of a British Overseas Territory, the Channel Islands and the Isle of Man. In such cases, the applicant will submit copies of the completed coordination agreements to Ofcom.
- 6.11 Ofcom may, at its discretion and if it is satisfied that adequate efforts have been made to achieve coordination, submit notification data for a satellite network to the ITU-BR where coordination is still in progress with affected UK networks with higher regulatory precedence, including those of a British Overseas Territory, the Channel Islands and the Isle of Man. In such cases, the applicant must:
- a) notify Ofcom that coordination for such satellite network is not completed with affected UK networks;
 - b) provide Ofcom with relevant information on the status of the coordination (including which UK networks coordination has not been completed with); and,
 - c) provide any evidence to support its request for notification which Ofcom may require.
- The evidence referred to in paragraph c) may include proposals submitted by the applicant to operators of existing UK networks, together with their responses.
- 6.12 Any operation of a network notified under these circumstances can only be on a non-interference and non-protection basis with respect to any senior UK network with which coordination was not completed.
- 6.13 Should the junior UK network cause harmful interference to any more senior UK network with which coordination was not completed, Ofcom may request the operator responsible for that junior UK network to immediately eliminate such interference. If the operator fails to do so, Ofcom may consider whether it would be appropriate to cancel the filing.
- 6.14 Ofcom should also be notified once the applicant completes coordination.
- 6.15 If the subject application is brought into use without coordination being completed (see sections 6.6 and 6.11 above) with existing frequency assignments or filings, and any of such existing assignment or filing has been or is subsequently brought into use within its regulatory period and suffers harmful interference from the subject network, then the subject network must mitigate that interference. Failure to do so may lead to Ofcom exercising its powers set out in section 12 of this document.

Planned frequency assignments

- 6.16 With respect to new applications wishing to bring an unmodified UK assignment or allotment into operation, Ofcom will publish a notice indicating that an application has been received and invite other proposals. If additional applications are received, Ofcom will then carry out an award process to determine which application, if any, to accept. Details of the award process will be made available at the time of publication of the notice.
- 6.17 If a proposed satellite filing is not technically compatible with a currently unused UK assignment or allotment in a plan, Ofcom will publish a notice indicating that an application has been received and invite other proposals with regard to the best use of the resource before deciding how to proceed. The procedure which Ofcom decides to follow may include the modification of the assignment to accommodate the successful application, in accordance with the ITU procedures.
- 6.18 If a proposed satellite filing is not technically compatible with the proposed or existing usage of a UK assignment¹⁸, the applicant will be required to obtain the agreement of the operator of the affected assignment before Ofcom can submit the new filing to the ITU.
- 6.19 For new applications by an operator to modify a plan, bring into use an additional use or a sub-regional system which is shown to have no impact on existing UK (including British Overseas Territories) assignments or allotments in that plan, the application will be treated in a similar manner to an application in the non-planned bands, i.e. Ofcom will not initiate a competitive process.
- 6.20 If a proposed satellite filing is not technically compatible with the existing usage or existing proposed usage, by UK operators, of a UK modification or additional use, then Ofcom will not submit notification data to the ITU without first requiring sight of evidence of a coordination agreement with the operator of that existing usage or the existing proposed usage.
- 6.21 For any new application to bring into use a UK planned frequency assignment covering a British Overseas Territory, Ofcom may consult and liaise with the government of the British Overseas Territory to determine how to process the application.
- 6.22 If the proposed satellite filing is not technically compatible with a UK planned frequency assignment covering a British Overseas Territory, as contained in a frequency assignment plan, Ofcom will initially invite the applicant to modify the proposal so as to mitigate the incompatibility. Where this cannot be achieved, Ofcom may consult the British Overseas Territory to determine how to treat the subject application. Such actions would be carried out in compliance with the ITU rules and regulations.

Applications under No. 4.4 of the Radio Regulations

- 6.23 As explained in Section 2, in general we expect applicants to apply for frequency assignments and services which fall within the Frequency Allocation Table of the Radio Regulations. However, we understand that there may be some exceptional cases where this is not possible.

¹⁸ This also applies to modified UK assignments and/or additional use contained in a frequency assignment plan (e.g. the BSS Plan for Regions 1 and 3 contained in Appendix 30 of the Radio Regulations).

- 6.24 When we receive an application for use under No. 4.4. we will consider the following factors in making a decision:
- a) whether the requested frequencies are under consideration to be included in the Radio Regulations in a future World Radiocommunication Conference;
 - b) whether there is evidence that the application could promote economic growth and enable early realisation of citizen and consumer benefits from new services or technologies; and
 - c) whether there is reason to be confident that the proposed use would not result in harmful interference to other authorised spectrum users.
- 6.25 Under the ITU Radio Regulations, Ofcom is responsible for ensuring that any frequency assignments operating under No. 4.4. do not cause harmful interference to other frequency assignments that comply with the Radio Regulations. Therefore, an applicant wishing to apply to use frequencies under this arrangement will need to explain to Ofcom how it has determined that its planned use will not cause harmful interference to all other services (on land, in the air and in space). Ofcom may also request that the applicant provides technical evidence in support of their application. Ofcom reserves the right to share this evidence with third parties, including the ITU.
- 6.26 Prior to launching its first satellite(s), an operator planning to operate a satellite service under No. 4.4 must provide us with up-to-date contact details for its space operations centre (SOC). The SOC must be ready to immediately eliminate interference and/or cease operation of its service if required to do so by Ofcom.
- 6.27 We reserve the right to cancel a filing if we assess that the operator is not complying with our instructions related to complying with these requirements.

7. Detailed Ofcom filing procedures

- 7.1 The procedures described below are based on the Radio Regulations (2012 Edition), including relevant amendments made by WRC-15, and the Rules of Procedure (2012 Edition).
- 7.2 The performance of Ofcom’s functions, as set out in this section 7, is dependent upon the applicant satisfying the criteria stated in sections 4.5 to 4.8 of this document and Ofcom receiving correct and complete information from the applicant at each stage of the process, as described below.
- 7.3 Each applicant is responsible for the provision of the appropriate information. On receipt of this information Ofcom will conduct a brief initial validity check. Ofcom will not be responsible for procedural delays caused by incomplete or incorrect information being supplied to Ofcom by the applicant. Ofcom will aim to use its reasonable endeavours to meet the timescales set out in this section.
- 7.4 Any applicant who is concerned about matters of confidentiality should contact Ofcom to discuss these concerns prior to submitting any information required in accordance with Ofcom’s filing procedures.
- 7.5 Ofcom will not submit comments under the ITU regulations on behalf of a UK satellite operator in relation to satellite filings of another administration for satellites that are operated by that UK satellite operator itself, its parent company, its subsidiary or a subsidiary of its parent company, for example in negotiations leading to a coordination agreement. The reason for this is to reduce the amount of coordination between administrations, as it assumed that the satellite operator will make appropriate sharing arrangements within its own organisation, as appropriate.

Non-planned bands

Advance Publication Information (API)

- 7.6 Ofcom will acknowledge receipt of the API data, as specified in Appendix 4 of the Radio Regulations, from the applicant within two working days. The API data must be provided to Ofcom by the applicant in the current ITU software format. Ofcom will then aim to submit this API data to the ITU-BR within five working days of receipt from the applicant. Applicants will be sent copies of Ofcom's email submission to the ITU-BR and also of the ITU-BR's email confirmation of receipt of the API data.

Request for Coordination

- 7.7 Ofcom will acknowledge receipt of the request for coordination data, as specified in Appendix 4 of the Radio Regulations, from the applicant within two working days. The information must be provided to Ofcom by the applicant in the current ITU software format. Ofcom will then aim to submit this data to the ITU-BR, or identified administrations, within 10 working days of its receipt from the applicant. Applicants will be

sent copies of Ofcom's email submission to the ITU-BR and also of the ITU-BR's email confirmation of receipt of the data.

Notification

- 7.8 Ofcom will acknowledge receipt of the notification data, as specified in Appendix 4 of the Radio Regulations, from the applicant within two working days. The information must be provided to Ofcom by the applicant in the current ITU software format. If the intention is for the assignments to be recorded in the MIFR under No. 11.41 of the Radio Regulations, the provisions set out in sections 6.5 to 6.9 apply. Ofcom will then aim to submit the data to the ITU-BR within 10 working days of its receipt from the applicant. Applicants will be sent copies of Ofcom's email submission to the ITU-BR and also of the ITU-BR's email confirmation of receipt of the data.
- 7.9 If Ofcom does not have sufficient information on the status of the filing's coordination, it will normally send a reminder to the applicant when six months are left before the expiry of the filing's regulatory deadline for its network.

ITU Administrative due diligence – Resolution 49

- 7.10 Ofcom will acknowledge receipt of the Resolution 49 data from the applicant within two working days and will then aim to submit this to the ITU-BR within five working days of its receipt. Information must be provided by the applicant in the current ITU software format. Applicants will be sent copies of Ofcom's email submission to the ITU-BR and also of the ITU-BR's email confirmation of receipt of the data.

Bringing into use

- 7.11 Ofcom will acknowledge receipt of the data from the applicant within two working days and will then aim to submit this to the ITU-BR within two working days of its receipt from the applicant. Applicants will be sent copies of Ofcom's email submission to the ITU-BR and also of the ITU-BR's email confirmation of receipt of the data.
- 7.12 For geostationary satellite networks, operators will be required, at the request of Ofcom, including if and when requested by the ITU-BR, to send to Ofcom additional information regarding the geostationary satellite network using the corresponding filings. A non-exhaustive list of these deliverables is provided in Section 5.7.
- 7.13 For non-geostationary satellite systems, if the minimum number of satellites required to deliver the service have not been placed in orbit within the regulatory period, Ofcom may consider whether it is appropriate to submit the notification data to the ITU-BR and whether it is appropriate to modify the parameters of the filing.

Planned bands

- 7.14 There are two cases to consider:
- a) bringing into use an unmodified planned assignment; and
 - b) modifying an assignment or allotment in a plan or proposing and/or making an additional use.

- 7.15 For any new application to use a frequency assignment covering a British Overseas Territory in a planned band, Ofcom will consult with the government of the British Overseas Territory to determine how to process the application (see sections 6.21 and 6.22 of this document).

Unmodified planned assignment (AP30, 30A and 30B)

- 7.16 Action under sections 6.16 to 6.22, as appropriate, will need to be completed before any action by Ofcom under this section 7 is taken. The following procedures will then apply.

Notification

- 7.17 Ofcom will acknowledge receipt of the data, as specified in Appendix 4 of the Radio Regulations, from the applicant within two working days. The information must be provided to Ofcom by the applicant in the current ITU software format. Ofcom will then aim to submit this to the ITU-BR within five working days of its receipt from the applicant. Applicants will be sent copies of Ofcom's email submission to the ITU-BR and also of the ITU-BR's email confirmation of receipt of the data.

ITU Administrative due diligence - Resolution 49

- 7.18 Ofcom will acknowledge receipt of the data from the applicant within two working days. Information must be provided by the applicant in the current ITU software format. Ofcom will then aim to submit this to the ITU-BR within five working days of its receipt from the applicant. Applicants will be sent copies of Ofcom's email submission to the ITU-BR and also of the ITU-BR's email confirmation of receipt of the data.

Bringing into use

- 7.19 Ofcom will acknowledge receipt of the data from the applicant within two working days and will then aim to submit this to the ITU-BR within two working days of its receipt. Applicants will be sent copies of Ofcom's email submission to the ITU-BR and also of the ITU-BR's email confirmation of receipt of the data.
- 7.20 For geostationary satellite networks, operators will be required, at the request of Ofcom, including if and when requested by the ITU-BR, to send to Ofcom additional information regarding the geostationary satellite network using the corresponding filings. A non-exhaustive list of these deliverables is provided in Section 5.7.
- 7.21 For non-geostationary satellite systems, if the minimum number of satellites required to deliver the service have not been placed in orbit within the regulatory period, Ofcom may consider whether it is appropriate to submit the notification data to the ITU-BR and whether it is appropriate to modify the parameters of the filing.

Modifying a planned assignment or allotment or making an additional use (Appendices 30, 30A and 30B)

Prior action required

- 7.22 Action under sections 6.16 to 6.22, as appropriate, will need to be completed before any action by Ofcom under this section 7 is taken. The following procedures will then apply.

Part A or Part B or AP30B submission

- 7.23 Ofcom will acknowledge receipt of the data, as specified in Appendix 4 of the Radio Regulations, from the applicant within two working days. The data must be provided to Ofcom by the applicant in the current ITU software format. Ofcom will then aim to submit this data to the ITU-BR within 10 working days of its receipt from the applicant. Applicants will be sent copies of Ofcom's email submission to the ITU-BR and also of the ITU-BR's email confirmation of receipt of the data.

Notification

- 7.24 Ofcom will acknowledge receipt of the data, as specified in Appendix 4 of the Radio Regulations, from the applicant within two working days. The data must be provided to Ofcom by the applicant in the current ITU software format. Ofcom will then aim to submit this data to the ITU-BR within 10 working days of its receipt from the applicant. Applicants will be sent copies of Ofcom's email submission to the ITU-BR and also of the ITU-BR's email confirmation of receipt of the data.

ITU Administrative due diligence – Resolution 49

- 7.25 Ofcom will acknowledge receipt of the data, as specified in Appendix 4 of the Radio Regulations, from the applicant within two working days. The data must be provided to Ofcom by the applicant in the current ITU software format. Ofcom will then aim to submit this data to the ITU-BR within five working days of its receipt from the applicant. Applicants will be sent copies of Ofcom's email submission to the ITU-BR and also of the ITU-BR's email confirmation of receipt of the data.

Bringing into use

- 7.26 Ofcom will acknowledge receipt of the data from the applicant within two working days and will then aim to submit this to the ITU-BR within two working days of its receipt from the applicant. Applicants will be sent copies of Ofcom's email submission to the ITU-BR and also of the ITU-BR's email confirmation of receipt of the data.
- 7.27 For geostationary satellite networks, operators will be required, at the request of Ofcom, including if and when requested by the ITU-BR, to send to Ofcom additional information regarding the geostationary satellite network using the corresponding filings. A non-exhaustive list of these deliverables is provided in Section 5.7.
- 7.28 For non-geostationary satellite systems, if the minimum number of satellites required to deliver the service have not been placed in orbit within the regulatory period, Ofcom may consider whether it is appropriate to submit the notification data to the ITU-BR and whether it is appropriate to modify the parameters of the filing.

Special Sections Publications¹⁹

¹⁹ ITU "special sections" refer to specific publications within the BR IFIC that detail requests for coordination, advance publication information, and other relevant data for space services.

- 7.29 The obligations under the Radio Regulations that Ofcom transfers to a satellite operator, as described in this document, extend beyond the process leading to the recording of the assignments in the Master Register. Once the assignment is recorded the operator must engage in dialogue with the operators of later networks through the coordination process (as described in section 2.22 of this document).
- 7.30 In order to aid the national administrations and their operators in the coordination process, the ITU produces a fortnightly publication called the 'International Frequency Information Circular - Space Services' (Space BR IFIC) which contains details of space networks proceeding through the various stages of the coordination and notification procedures. Administrations are required by the ITU-BR to identify issues of potential interference arising from these networks in accordance with the Radio Regulations procedures. Ofcom, in turn, passes this obligation on to operators.
- 7.31 The Special Sections are described in the [preface for the BR IFIC](#). In order to give each UK operator the best advantage in coordinating its networks, Ofcom, in its capacity as the UK administration, wishes to respond to all Special Sections in an appropriate manner and in accordance with the Radio Regulations. Operators are responsible for examining Special Sections and responding appropriately to Ofcom, identifying issues of potential interference with their satellite filing.
- 7.32 The BR IFIC can be obtained from the ITU for a one-off or annual subscription fee and comes in DVD-ROM format. The disc contains ITU software, Special Sections in PDF format and an Access Database. This database can also be downloaded, free of charge, from the website but the ITU recommends the use of the PDF versions published on the DVD-ROM as these are considered to be the definitive data source. The Special Sections contained on the BR IFIC are published in accordance with the procedures of Article 9 and Article 11 and Appendices 30, 30A and 30B of the Radio Regulations. A table containing a list of all current and previous Special Section types with descriptors can be found in Section 2 of the [preface for the BR IFIC](#).
- 7.33 On receipt of comments from UK operators in respect of networks published in the BR IFIC, Ofcom will seek any necessary clarification from the operator and draft and distribute the appropriate correspondence in compliance with the deadline quoted on the Special Section. The correspondence will be sent to the relevant notifying administration(s) and to the ITU informing them of which networks have the potential to cause interference to UK filings. Copies of the correspondence will be sent to the relevant UK operator(s).
- 7.34 When a comment is received from an operator regarding a UK filing on the BR IFIC Ofcom will send the appropriate correspondence to the identifying operator and a copy to the originator. Comments must be received by Ofcom within three months of the date of publication of the BR IFIC and the notifying operator will be informed of the potential for interference within four months of the date of publication.
- 7.35 BR IFIC comments received by Ofcom from the ITU and other administrations which identify UK filings as having the potential to cause interference will be acknowledged by Ofcom and forwarded to the operator(s) concerned within 10 working days of receipt. The operator must take the comments into consideration and, if required, take any action necessary. If Ofcom has imposed a deadline, the response must be received by the Space Services Unit at Ofcom within this deadline.
- 7.36 Copies of all other correspondence received by Ofcom which relate to UK filings will be forwarded by Ofcom to the relevant operator(s) within 10 working days of receipt. The

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operator(s) must action, as required, all received correspondence and, if requested, provide a response within the specified timescale or by the Ofcom declared response date, whichever is applicable.

8. Authorisation of applicants to conduct coordination directly

- 8.1 Ofcom may consider requests from applicants to be given authority to deal directly at operator to operator level with all technical and operational aspects of the coordination of frequency assignments and orbital locations, relating to the appropriate satellite networks in accordance with the procedures of the Radio Regulations.
- 8.2 Even in those cases in which authorisation has been granted, Ofcom may attend an operator to operator coordination meeting:
- a) at its discretion;
 - b) at the request of the satellite network operator; or,
 - c) at the request of another administration.

Scope of authorisation

- 8.3 Such authorisation in 8.1 above will be given by Ofcom in a letter of introduction to the other administration, copied to the UK applicant concerned. This letter will confirm that the applicant has the UK administration's authorisation, with respect to the specified networks, to:
- a) enter into coordination by correspondence whenever possible;
 - b) arrange and attend operator to operator coordination meetings; and
 - c) conclude operator to operator agreements.
- 8.4 The letter of introduction will make it clear that:
- a) any operator to operator agreements will require ratification by the relevant administrations, including Ofcom;
 - b) the operator is only authorised to coordinate the networks specified in the letter of introduction; and
 - c) the operator will not be authorised to sign any administration to administration agreements on behalf of Ofcom, or to represent Ofcom.

Reporting requirements

- 8.5 The operator must provide Ofcom with reports on a yearly basis describing the progress of coordination negotiations established in accordance with these arrangements and including copies of all coordination agreements concluded.

9. Other requirements

- 9.1 The applicant, including those from the British Overseas Territories, the Channel Islands and the Isle of Man, may need to [obtain a licence granted by the Civil Aviation Authority](#) under the Outer Space Act 1986 or Space Industry Act 2018 (as extended to the British Overseas Territories where appropriate) before the date of the planned launch of the satellite.
- 9.2 In addition to any other legal requirements, applicants who intend to carry audio-visual content (television services) should consider whether a licence or authorisation is required for the content service(s). Operators can find more information about this on our [website](#).
- 9.3 Applicants planning satellite communications and other data services for consumers should also consider [wider regulatory obligations](#) regarding the operation of their service.
- 9.4 Other UK legislation may also apply. Applicants are advised to check with appropriate administrations as to whether they are required to obtain national authorisations with respect to the use of the relevant frequencies or the provision of services.
- 9.5 Applicants are advised to check with the British Overseas Territories, the Channel Islands and the Isle of Man, as appropriate, to ensure compliance with any additional relevant regulations of the British Overseas Territories, the Channel Islands and the Isle of Man.
- 9.6 The information provided in this section is not an exhaustive account of all the possible authorisation requirements with which an applicant may need to comply and should not be regarded as a complete or authoritative statement of the law. Ofcom recommends that applicants seek independent professional advice in this respect.

10. Charges and fees

ITU

- 10.1 In accordance with the provisions of ITU Council Decision 482, as amended, the ITU charges fees for processing satellite network filings on a cost recovery basis. Detailed arrangements for the implementation of these cost recovery charges are available from the ITU.
- 10.2 The ITU Finance Department raises its invoices for fees incurred in processing a satellite network filing directly against the satellite network operator concerned. Invoices are sent to Ofcom and Ofcom will then forward these to the operator concerned. On receipt, the operator will make the payment directly to the ITU by the required date and will inform Ofcom that the payment has been made.
- 10.3 If payments are not received by the ITU in accordance with the provisions of Council Decision 482, as amended, the ITU-BR will cancel the filing(s), after informing Ofcom. The process is depicted in the flowchart in Annex 4.

Ofcom

- 10.4 Ofcom may require any person to pay Ofcom a fee for doing satellite filing work under section 28A of the 2003 Act, following a request to carry out such work. Satellite filing work concerns anything connected with obtaining or maintaining international recognition under the Radio Regulations of assignments (or changes in assignments) of radio frequencies to stations in satellite systems or satellite networks.
- 10.5 Ofcom's satellite filing charges are set out in the Notice of Satellite Filing Charges published annually on our [website](#), as varied from time to time.
- 10.6 Satellite filings which are submitted to Ofcom through the British Overseas Territories, the Channel Islands or the Isle of Man are also subject to the charges set out in that Notice.
- 10.7 Ofcom will not commence work on the filing until payment is received, and will not accept a notification request unless all annual management charges have been paid. Non-payment of annual management charges may ultimately result in Ofcom cancelling the filing(s) as noted in paragraph 12.9.

11. Transfer of a UK Satellite Network Filing by one operator to another operator

Request for Transfer

- 11.1 A UK satellite operator may make a request to Ofcom to transfer, from that requesting satellite operator to another UK satellite operator, the ownership and control of a filing which is either:
- a) notified and recorded in the Master Register and in operation; or
 - b) still in the process of coordination; or
 - c) in the advance publication phase.
- 11.2 Any transfer must be between companies or organisations that meet the criteria contained in sections 4.5 to 4.8 of this document.
- 11.3 Any transfer requires Ofcom's prior written consent and is subject to the transferee company or organisation providing evidence that it satisfies the relevant due diligence requirements, as described in section 5.
- 11.4 Ofcom reserves the right to consult publicly prior to authorising any transfer described in section 11.1.
- 11.5 Ofcom has no objection to such a transfer being carried out on commercial terms whereby the original assignee is paid by the transferee to relinquish the filing. This is a matter between the contracting parties.

12. Cancellation, Suspension and relinquishment of UK satellite networks filings

- 12.1 A UK satellite operator may relinquish the use of an assignment in either a planned or non-planned band which is either:
- a) notified and recorded in the Master Register and in operation; or
 - b) still in the process of coordination,
- to Ofcom.
- 12.2 In the event that a UK satellite operator notifies Ofcom that it wishes to relinquish an existing filing, the filing will be cancelled by Ofcom, in accordance with the relevant ITU procedures.
- 12.3 In the event that a UK satellite operator relinquishes a filing which is still in the coordination process, the filing will be cancelled by Ofcom, in accordance with the relevant ITU procedures.

Cancellation due to Non-Compliance with Due Diligence Requirements

- 12.4 Sections 12.5 to 12.9 will apply to the use of an assignment in either a planned or non-planned band which is either:
- a) notified and recorded in the Master Register and in operation; or,
 - b) still in the process of coordination.
- 12.5 As stated in section 5 of this document, applicants will provide Ofcom with due diligence documentation and progress reports for each satellite network indicating any variations from the previously submitted business plan and also details of their coordination progress and status, including whether the original network is likely to enter into commercial service according to the timescale envisaged. Ofcom will use such information to assess whether the applicant's project is meeting the criteria that had been set and will be completed within the satellite network's regulatory time period. Ofcom will assess the facts, circumstances and next stages of each case individually.
- 12.6 If, in Ofcom's opinion, the information supplied by the operator shows that insufficient progress has been made against the deliverable commitments, Ofcom will consult with the relevant operator. Ofcom will provide the operator with an opportunity to remedy the situation, to ensure that progress is brought into line with the deliverable commitments, within a specified timeframe.
- 12.7 If the operator fails to remedy the situation within the specified timeframe, referred to in section 12.6, Ofcom may cancel the filing.
- 12.8 Ofcom will consult with the Secretary of State prior to taking any action to cancel a filing in accordance with section 12.7.

Cancellation due to Non-payment

- 12.9 In the event that a UK satellite operator fails to pay the relevant annual management fee, Ofcom may cancel the filing(s) as noted in paragraph 10.7.

Other Reasons for Suspension or Cancellation

- 12.10 In the event that the operation of any UK satellite network causes harmful interference to other satellite networks, Ofcom will instruct the satellite operator to cease transmission immediately and not to resume operation until such time as the cause of the interference is remedied. If the operator is unable to remedy the interference within six months Ofcom may suspend the filing in accordance with No. 11.49 of the Radio Regulations. If within the period of suspension Ofcom is satisfied that the interference has been remedied, Ofcom will permit transmissions to be recommenced and will notify the ITU-BR that the assignment has been brought back into regular use. Otherwise, if at the end of the suspension period the interference has not been remedied and the filing brought back into regular use the filing will be cancelled by the ITU-BR.
- 12.11 In the event that it is established by Ofcom that a UK satellite network is operating outside either:
- a) its characteristics as recorded in the Master Register; or
 - b) in the case where the ITU-BR has not completed the processing of the notice in accordance with Article 11 of the Radio Regulations, the notified characteristics of the satellite network,
- Ofcom will consult with the relevant operator and request that the matter is remedied within six months.
- 12.12 If the matter described in section 12.11 has not been remedied within six months Ofcom may either suspend or cancel the assignment.

Anomalies and relocations

- 12.13 In the event that a satellite either:
- suffers an anomaly and as a result is no longer able to operate all, or part of, the assignments notified to the ITU as having been brought into use, or recorded in the MIFR; or
 - is relocated from the relevant orbital location,
- the operator shall immediately inform Ofcom of the situation. By a deadline specified by Ofcom, the operator shall also provide Ofcom with a plan which shows both how and when the situation can be remedied (in the case of an anomaly) or how and when operation of the assignments is to be continued thereafter (in the case of a relocation).
- 12.14 Depending on the information provided by the operator, Ofcom may consider whether it would be appropriate to suspend the assignments under consideration in accordance with No. 11.49, or cancel them.

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- 12.15 If Ofcom is not informed of such an event, then if and when these events become known to Ofcom, Ofcom will consult with the operator, which may lead to the assignments either being suspended in accordance with No. 11.49, or cancelled.

13. British Overseas Territories, the Channel Islands and the Isle of Man

General

- 13.1 For the purposes of the procedures described in this document, where an operator submits an application through a British Overseas Territory, the Channel Islands or the Isle of Man, Ofcom's point of contact is with that British Overseas Territory, the Channel Islands or the Isle of Man. As the British Overseas Territories, Channel Islands and the Isle of Man do not have administration status within the ITU, they are considered by Ofcom, in terms of international frequency coordination, as being equivalent to an operator and are consequently afforded the same status as other operators.
- 13.2 The appropriate regulatory authority of the relevant British Overseas Territory, the Channel Islands or the Isle of Man may impose additional fees and other requirements on satellite operators from their jurisdiction as a condition of filing.

Scope of Authorisation to Conduct Coordination Directly

- 13.3 On request, Ofcom will authorise the appropriate regulatory authority of a British Overseas Territory, the Channel Islands or the Isle of Man to act as an operator in its own right, as detailed in section 8 of this document. In all cases, it must be noted that Ofcom remains the UK administration for the ITU and that any agreements with other administrations will be subject to ratification by Ofcom.

Transfer of a Filing by British Overseas Territories, the Channel Islands and the Isle of Man

- 13.4 The British Overseas Territories, the Channel Islands and the Isle of Man have a period of six months (or such longer period as may be agreed with Ofcom) in which to manage the transfer of a filing to another operator within the same jurisdiction. If no transfer has been completed within this six month period, Ofcom will cancel the filing with the ITU-BR.

Relinquishment and Reassignment of Filings for British Overseas Territories, the Channel Islands and the Isle of Man

- 13.5 A satellite operator in a British Overseas Territory, the Channel Islands or the Isle of Man may notify the appropriate regulatory authority in its jurisdiction that it wishes to relinquish an existing filing or a filing which is still in the coordination process. The appropriate

regulatory authority will then have a period of six months (or such longer period as may be agreed with Ofcom) in which to manage the relinquishment and reassignment of the filing to another operator within the same jurisdiction, subject to compliance with due diligence requirements, as set out in section 5 of this document, and the ITU rules and regulations. If no reassignment has been completed within this six month period, Ofcom will follow the procedure as set out in sections 12.1 to 12.3.

Cancellation of Filings due to Non-compliance with Due Diligence Requirements for British Overseas Territories, the Channel Islands and the Isle of Man

- 13.6 Sections 13.7 to 13.9 will apply to a filing which is either:
- a) notified and recorded in the Master Register and in operation; or
 - b) still in the process of coordination.
- 13.7 As stated in section 5 of this document, applicants, which include the British Overseas Territories, the Channel Islands and the Isle of Man on behalf of a satellite operator in their jurisdiction, will provide Ofcom with due diligence documentation and progress reports for each satellite network indicating any variations from the previously submitted business plan and also details of their coordination progress and status, including whether the original network is likely to enter commercial service according to the timescale envisaged. Ofcom will use such information to assess whether the applicant's project will be completed within the satellite network's regulatory time period.
- 13.8 If, in Ofcom's opinion, there is insufficient evidence of progress as against the deliverable commitments on the basis of the information supplied by the operator, Ofcom will consult with the relevant British Overseas Territory, the Channel Islands or the Isle of Man and provide an opportunity in which to remedy the situation.
- 13.9 If the situation is not resolved after the expiry of the time period referred to in section 13.8, as assessed by Ofcom on the basis of the due diligence documentation and any other evidence supplied by the operator, ultimately Ofcom may cancel the filing in accordance with the procedure set out in section 13.5.

Other Reasons for Cancellation of Filings for British Overseas Territories, the Channel Islands and the Isle of Man

- 13.10 In the event that the operation of a satellite network owned and controlled by a satellite operator from a British Overseas Territory, the Channel Islands or the Isle of Man causes harmful interference to other satellite networks, Ofcom will instruct the British Overseas Territory, the Channel Islands or the Isle of Man to cease transmission immediately and not to resume operation until such time as the cause of the interference is remedied. If the satellite operator in the relevant British Overseas Territory, the Channel Islands or the Isle of Man is unable to remedy the interference within six months Ofcom will suspend the filing in accordance with No. 11.49 of the Radio Regulations. If the interference is not

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remedied within the suspension period and the filing brought back into regular use the filing will be cancelled by the ITU-BR.

- 13.11 In the event that it is established by Ofcom that a satellite network in a British Overseas Territory, the Channel Islands or the Isle of Man is operating outside either:
- a) its characteristics as recorded in the Master Register; or
 - b) in the case where the ITU-BR has not completed the processing of the notice in accordance with Article 11 of the Radio Regulations, the notified characteristics of the satellite network,

Ofcom will consult with the relevant British Overseas Territory, the Channel Islands or the Isle of Man and request that the matter is remedied within six months.

- 13.12 If the matter described in section 13.11 has not been remedied within six months Ofcom may either suspend or cancel the filing.

A1. Glossary

For the purpose of this document, the following terms will apply.

Administration

Any governmental department or service responsible for discharging the obligations undertaken in the Constitution of the ITU, in the Convention of the ITU and in the Administrative Regulations.

Allocation

Allocation of a frequency band. Entry in the Table of Frequency Allocations of a given frequency band for the purpose of its use by one or more terrestrial or space radiocommunication services or the radio astronomy service under specified conditions. This term will also be applied to the frequency band concerned.

Allotment

Allotment of a radio frequency or radio frequency channel. Entry of a designated frequency channel in an agreed plan, adopted by a competent conference, for use by one or more administrations for a terrestrial or space radiocommunication service in one or more identified countries or geographical areas under specified conditions.

API

Advance Publication Information. First part of the ITU process for the notification of frequencies used by satellite networks not subject to Section II of Article 9. Consists of data on proposed new satellite networks provided to the ITU-BR by the notifying administration responsible for the network, as described in Section I of Article 9 of the Radio Regulations.

Assignment

Assignment of a radio frequency or radio frequency channel. Authorisation given by an administration for a radio station to use a specific radio frequency or radio frequency channel under specified conditions.

BR IFIC

Radiocommunication Bureau International Frequency Information Circular (Space Services). This contains information on proposed satellite networks and indicates which existing networks require coordination. It is published by the ITU-BR on a bi-weekly basis.

British Overseas Territories

Those territories for which the UK administration acts as the notifying administration: Anguilla; Bermuda; British Antarctic Territory; British Indian Ocean Territory; British Virgin Islands; Cayman Islands; Falkland Islands; Gibraltar; Montserrat; Pitcairn Island; South Georgia and South Sandwich Islands; Sovereign Base Areas on Cyprus; St Helena and Dependencies (Ascension Island and Tristan da Cunha); and Turk and Caicos Islands. (Source: FCO November 2006).

Channel Islands

Jersey, Guernsey.

Co-ordination

This term refers to the process under which a new user seeks the agreement of existing users to share access to a particular range of frequencies while avoiding harmful interference.

Due diligence

Process by which Ofcom ensures that an application to launch and operate a satellite network demonstrates sufficient technical, financial and legal credentials and by which progress against deliverables are monitored.

Earth Station

A station located either on the earth's surface or within the major portion of the earth's atmosphere and intended for communication with one or more space stations or with one or more stations of the same kind by means of one or more reflecting satellites or other objects in space.

Filing

A description of the frequency assignments of a satellite network in terms of the characteristics contained in a submission to the ITU-BR. The characteristics include orbital parameters (position for GSO or other parameters for non-GSO), space station transmission and reception parameters (including frequency bands, emission bandwidth, power, antenna gain, receiver noise temperature), earth station parameters (location and transmission/reception parameters), type of service (fixed satellite, mobile satellite etc), coverage area and service area (in terms of footprint on the earth).

Frequency Band

A defined range of frequencies that may be allocated for a particular radio service, or shared between radio services.

Interference

The effect of unwanted energy due to one or a combination of emissions, radiations, or inductions upon reception in a radiocommunication system, manifested by any performance degradation, misinterpretation, or loss of information which could be extracted in the absence of such unwanted energy.

ITU-BR

International Telecommunication Union Radiocommunication Bureau.

Master International Frequency Register (Master Register)

An ITU database in which all notified frequency assignments and common frequencies are registered. It consists of lists set out by every administration indicating its coordinated frequencies, its assigned preferential frequencies, its shared frequencies, its frequencies coordinated for planned radiocommunication networks and its frequencies used on the basis of geographical network plans.

Notification

The process whereby frequency assignments of a network are recorded on the Master Register and by which these assignments gain international recognition and protection.

Ofcom

Office of Communications.

Radio Spectrum

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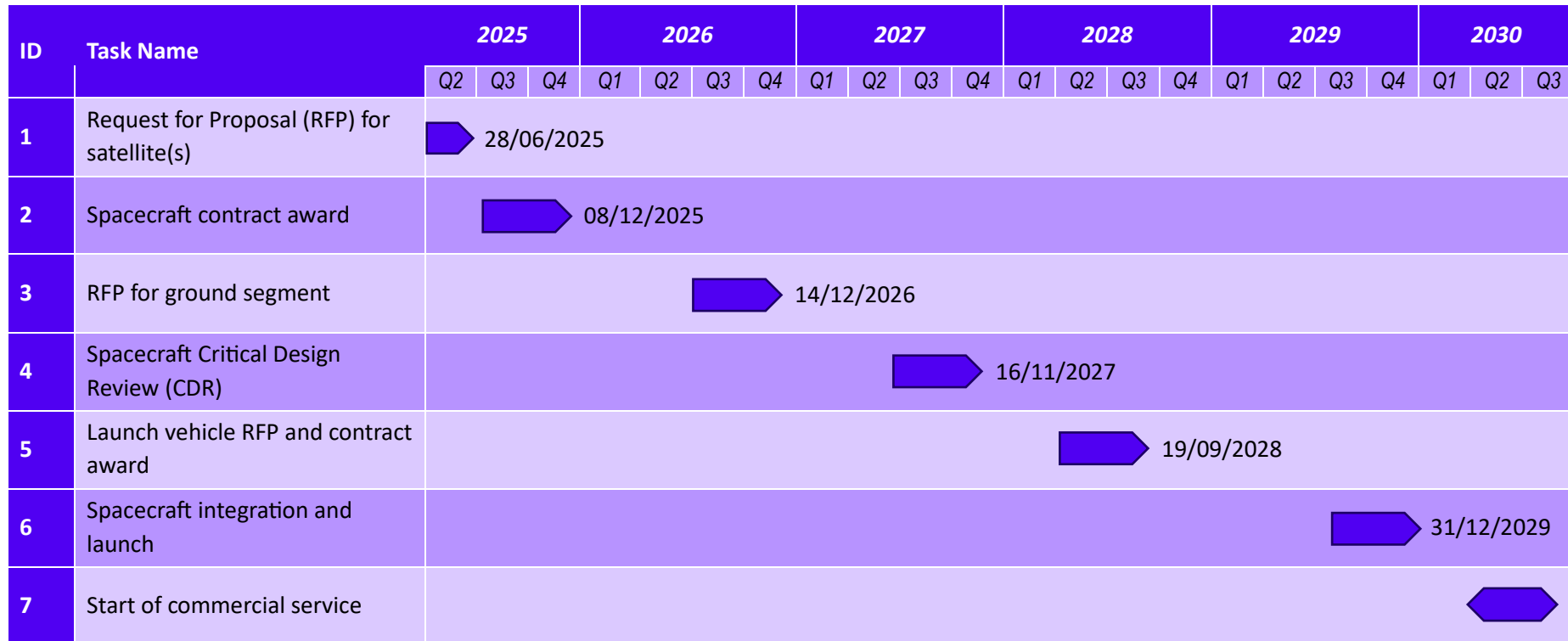
That section of the electromagnetic spectrum comprising frequencies in the range of approximately 10 kHz to 3000 GHz. A kHz (kilohertz) is a frequency of one thousand cycles per second. A GHz (gigahertz) is a frequency of one thousand million cycles per second.

WRC

A World Radiocommunication Conference, one of the principal activities of the ITU Radiocommunication Sector (ITU-R), which is convened normally every three to four years to consider specific radiocommunication matters. A World Radiocommunication Conference deals with those items which are included in its agenda, including the partial or, exceptionally, complete revision of the Radio Regulations.

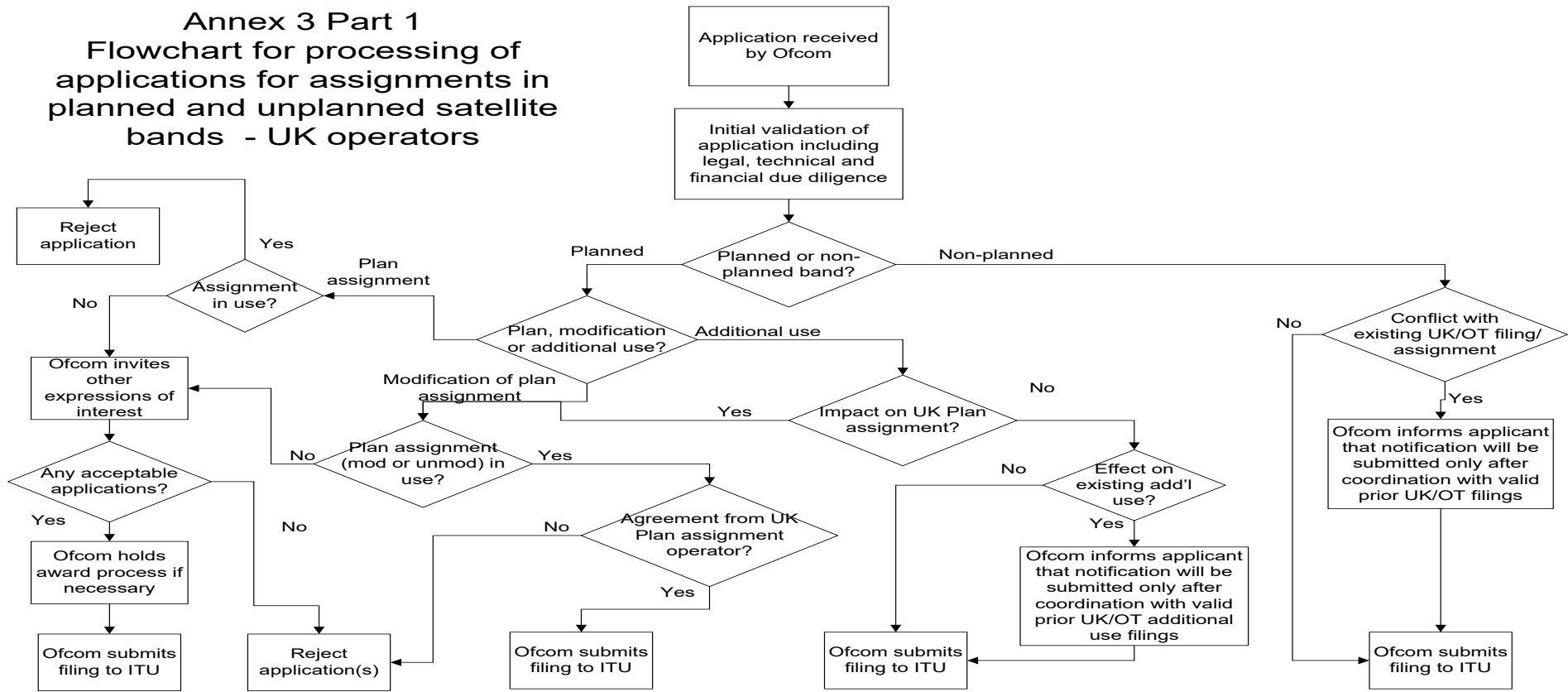
A2. Chart showing key milestones

Figure 1 - Typical Gantt Chart for Business Plan Milestones



A3. Flowchart for processing of applications for assignments in planned and unplanned satellite bands

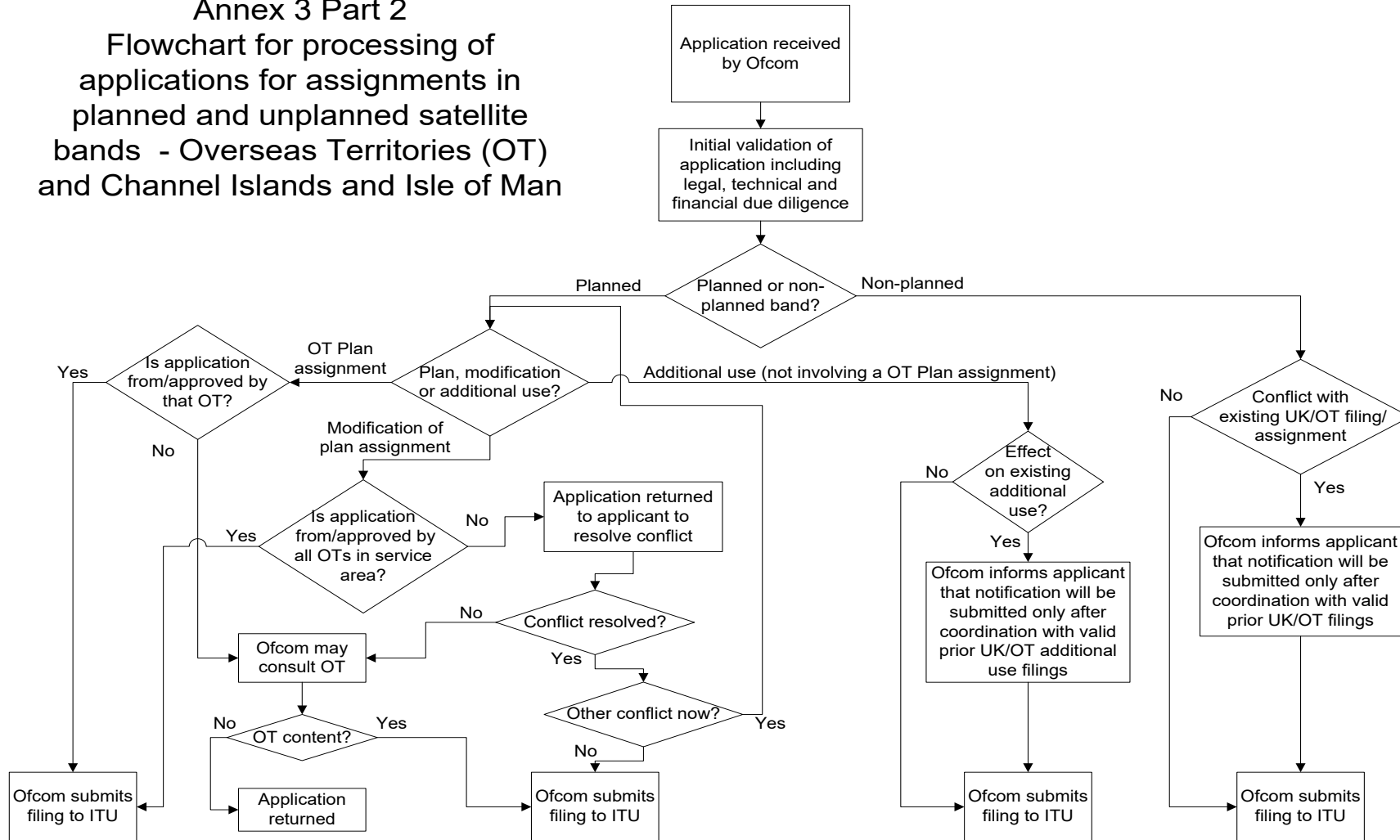
Part 1 – UK operators



Part 2 – Overseas Territories (OT) and Channel Islands and Isle of Man

Annex 3 Part 2

Flowchart for processing of applications for assignments in planned and unplanned satellite bands - Overseas Territories (OT) and Channel Islands and Isle of Man



A4. Satellite Filing – ITU cost recovery process

