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Satellite: overview

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A practice note providing an introduction to satellite policy, law and regulation internationally, in the EU and in the UK.

Scope of this note

The world's first satellite, Sputnik 1, was launched by the former Soviet Union (now Russia) on 4 October 1957. On 6 April 1965, the US placed the first geostationary satellite, Intelsat 1, in orbit. From these early steps, we now have a significant number of (peaceful civilian) commercial uses of outer space, including:

- Broadcasting.
- Telecommunications (fixed and land and maritime mobile satellite services).
- Position, navigation and timing (commonly referred to as PNT), including the global positioning system (GPS).
- Earth observation.
- Meteorology.

The military also make extensive use of outer space. Today, initiatives such as government satellite communications (GOVSATCOM) show that space is increasingly used for the provision of both governmental and commercial satellite services for security purposes and governmental applications.

This practice note considers the international, European and UK frameworks which govern the use of satellites in space.

International framework

Satellites are, by their nature, extra-terrestrial and extra-territorial. Accordingly, their usage is governed by an extensive international legal framework, under the aegis of the United Nations (UN), made up of treaties, declarations, agreements and conventions governed by international law, which may be implemented into national law. There is also a growing network of bilateral agreements in place between states active in various space-related activities and increasingly between states and commercial players.

Apart from the obvious concerns about the "peaceful uses" of outer space, the legal framework governing the use of satellites is grounded in the allocation of orbital positions for satellites, the related radio-frequency spectrum to enable communication to and from the satellites, and the related frequencies for terrestrial use of those communications. In relation to orbital positions, geostationary orbits (GSO) are in "fixed" positions approximately 36,000 kilometres above Earth, and medium and low Earth orbits (often abbreviated as MEOs and LEOs respectively) operate at lower altitudes.

To enable a "fair and equitable" use of the finite space closely surrounding Earth, co-ordination of these positions is based on the need for satellites not to interfere with each other physically. This is especially important with regard to the radio frequency spectrum (also finite, although some prefer to say "scarce") used by satellites to prevent "harmful interference" (a highly technical area) between the services using different spectrum.

United Nations

Following resolutions passed in 1961 and 1962 concerning the peaceful uses of outer space, and a subsequent declaration setting out the principles governing the activities of states in outer space, the UN concluded a number of treaties and agreements through its Committee on the Peaceful Uses of Outer Space (UNCOPUOS), which was established in 1959. These include:

- The 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Outer Space Treaty). This deals with the liabilities of states that launch objects into outer space, including liabilities for any consequential damage, whether occurring in space or on Earth.
- The 1972 Convention on International Liability for Damage Caused by Space Objects (Liability

Convention). This establishes clear liability for various kinds of damage caused by space activity, expanding on the Outer Space Treaty.

- The 1974 Convention on Registration of Objects Launched into Outer Space (Registration Convention). This defines the duties of any "launching state" and, in effect, gives jurisdiction to the state that launches a space object from its territory or that procures the launch.

There are also agreements governing the following:

- Recovery of astronauts: the 1968 Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (Agreement on the Rescue and Return of Astronauts).
- Exploration of the Moon: the 1979 Agreement Governing the Activities of States on the Moon and Other Celestial Bodies.
- The International Space Station: there is a 1998 intergovernmental agreement among the governments of Canada, governments of member states of the European Space Agency, the government of Japan, the government of the Russian Federation and the government of the United States of America concerning co-operation on the Civil International Space Station.

Not all member states of the UNCOPUOS have ratified, and therefore implemented into national law, these treaties and agreements, even though the treaties now form part of the corpus of international law governing outer space. For example, the UK has ratified only the following four of the five international treaties, thus accepting them as obligations binding on the UK as a matter of international law as between those other ratifying states:

- Outer Space Treaty.
- Liability Convention.
- Registration Convention.
- Agreement on the Rescue and Return of Astronauts.

There are also five declarations and legal principles as follows:

- Declaration of Legal Principles Governing the Activities of States in the Exploration and Uses of Outer Space 1963.
- Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting 1982.
- Principles Relating to Remote Sensing of the Earth from Outer Space 1986.
- Principles Relevant to the Use of Nuclear Power Sources in Outer Space 1992.
- Declaration on International Co-operation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries 1996.

International Telecommunication Union

The International Telecommunication Union (ITU), established in 1865 (as the International Telegraph Union), is the oldest treaty organisation in the world and is now part of the UN structure. Orbital positions, and related radio-frequency spectrum and satellite orbits, are managed at the international level by the ITU, which has responsibility for ensuring:

- Their rational, equitable and efficient use.
- The avoidance of harmful interference between radiocommunication systems and their respective uses of radio-frequency spectrum.

There are 193 member states, the most of any international, intergovernmental organisation, bound by various internationally binding legal instruments of the ITU: the Constitution, the Convention and the Administrative Regulations (including the Radio Regulations), which together form a treaty binding on the member states. The UK is a member state.

Revision of the ITU's Constitution and Convention generally takes place at Plenipotentiary Conferences held every four years. The Administrative Regulations are revised at specially convened conferences, which in the case of the Radio Regulations is the World Radiocommunication Conference, which was last held in November 2019 and is next scheduled for November 2023.

Increasingly, organisations within the private sector have a place in the ITU, whether as:

- Members of the various sectors of the ITU, which include:
  - radiocommunication (ITU-R), which manages international radio-frequency spectrum and satellite orbits;
  - standardisation (ITU-T), which manages issues around technical standards; and
  - development (ITU-D), which manages issues relevant to developing countries.
- "Recognised Operating Agencies".
- Scientific or other relevant organisations.

ITU-R develops and manages space-related assignment or allotment plans and provides mechanisms for the development of new satellite services by allocating suitable orbital slots. The Radio Regulations, which are highly technical and are administered within ITU-R by the Radio Regulations Board, cover:

- The allocation of frequencies to different categories of radiocommunication services.
- The rights and obligations of member states in obtaining access to the spectrum and orbital resources.
- The co-ordination procedures, which are complex and can be somewhat political.
- The international recognition of these rights through the recording of frequency assignments and orbital positions in the Master International Frequency Register (MIFR).

ITU member states are the signatories to these international instruments. National administrations of member states are usually the communications regulator of each member state (some member states still have a ministry) and they have day-to-day responsibility as regards the ITU and the obligations of each member state. In the UK, the Office of Communications (Ofcom) is the national administration, by direction of the Secretary of State (Department for Digital, Culture, Media and Sport (DCMS)) under *section 22* of the Communications Act 2003 (CA 2003). The International Frequency Allocation Table is maintained by Ofcom insofar as it has been transposed into the UK Frequency Allocation Table.

World Trade Organisation

The World Trade Organisation (WTO) General Agreement on Tariffs and Trade in relation to equipment, and the General Agreement on Trade in Services (GATS), are relevant to satellite-based services relating to liberalisation and the opening of markets for public telecommunications services and systems. The GATS Agreement on Basic Telecommunications Services contains a number of "specific commitments" and exemptions concerning basic telecommunications services, which include fixed satellite services and mobile satellite services and systems.

In the UK, Ofcom has responsibility for the UK's compliance with relevant commitments and WTO agreements given by the UK.

UNIDROIT Space Assets Protocol

The Space Protocol to the Cape Town Convention on International Interests in Mobile Equipment was adopted on 7 March 2012. It is a private international law instrument. Article XXXIV of the Space Protocol specifically provides that it will not affect the rights and duties of states under the existing UN space law treaties and the legal instruments of the ITU. On entry into force, with ten ratifications or accessions, the Space Protocol will establish a separate international registry of security interests in space assets. So far, four states (Burkina Faso, Saudi Arabia, Zimbabwe and Germany) have signed the Space Protocol.

Before the Space Protocol enters into force, the Supervisory Authority must certify that the international registry for space assets is fully operational. The Supervisory Authority is responsible for the setting up of the international registry for the registration of "international interests" in each category of mobile equipment and assignment and acquisitions of international interest. It is not yet clear which entity will become the Supervisory Authority, although the ITU has expressed an interest.

European framework

Since the Treaty of Rome (1957), considerable work relevant to the communications sector has been carried out in the EU, particularly with regard to the single market. The EU has taken many policy and legislative steps in the field of communications to create a liberalised and competitive market in communications infrastructure and services through harmonised competition policy, licensing and spectrum management as well as through the creation of independent national regulatory authorities (NRAs), which are generally also the Administrations for ITU purposes, as noted above.

On 31 January 2020, the UK left the EU and the UK-EU withdrawal agreement entered into force. Following the end of the UK-EU transition period, retained EU law was created, the remaining withdrawal agreement provisions came into operation, and the future relationship agreements (including the UK-EU trade and co-operation agreement) started to apply. For general information on the withdrawal agreement, future relationship agreements and the operation of UK law following the end of the transition period, see UK legal change post-transition and UK-EU agreements toolkit and Practical Law's Brexit page.

European institutions

The main EU institutions have all played their part in establishing a competitive framework and regulatory regime for communications, including for satellite systems and services, namely:

- The European Commission (notably the Directorates General Connect, Competition and Growth, as well as the Digital Single Market, Radio Spectrum Committee and the Communications Committee).
- The EU Council (which includes a Competitiveness Council with an explicit space mandate, the Working Party on Telecommunications and Information Society, and the Working Party on Space).

- The European Parliament (in particular, the Committee on Industry, Research and Energy (ITRE) and the Court of Justice of the European Union).

Other significant organisations outside the EU include the European Conference of Postal and Telecommunications Administrations (CEPT) and the European Space Agency (ESA).

ESA is an international intergovernmental organisation, made up of member states including certain EU member states and non-EU member states. It aims to shape the development of Europe's space capability and ensures that investment in space continues to deliver benefits to citizens in Europe and the rest of the world.

In November 2012, the European Commission adopted a Communication on establishing relations between the EU and ESA (see Legal update, Space policy: European Commission adopts Communication on establishing appropriate relations between EU and European Space Agency). While ESA collaborates with the EU on certain space programmes (for example, Galileo and Copernicus), it also has its own distinct space programmes including telecommunications and integrated applications, launchers, Earth observation and human spaceflight.

The CEPT was formed in 1959 with the aim of harmonising and improving services between members (including non-EU member states). The EU has traditionally relied on the CEPT in the field of radio-frequency management and the development of future planned usage, often as part of evolving work under the aegis of the ITU.

However, the European Commission has taken a keener interest in these areas. The EU has the power to develop a European space policy and the European Parliament and Council have the power to adopt a programme to contribute to attaining its policy objectives (*Article 189(2), Treaty on the Functioning of the European Union* (TFEU)). Indeed, in February 2022, the European Commission adopted a space policy in the form of a proposal for a Regulation on a space-based secure connectivity and a Joint Communication of the Commission and the High Representative on an EU approach on Space Traffic Management. The aim of the proposed Regulation is to establish an EU secure satellite communication system that ensures the provision of worldwide secure, flexible and resilient satellite communication services to the EU and member states governmental entities. The proposed Regulation will offer mobile and fixed broadband satellite access, satellite trunking for B2B services, satellite access for transportation, reinforced networks by satellite and satellite broadband and cloud-based services. (See Legal update, Space policy: European Commission adopts proposal for Regulation and Communication.) It invited feedback on the proposals in March 2022 (see Legal update, Space policy: European Commission invites feedback on proposed Regulation on space-based secure connectivity).

The EU has begun to play a greater role in space and it is likely that it may play a greater role in speaking on behalf of its member states at relevant international bodies like the ITU, UNCOPUOS (including the Legal Subcommittee) and the WTO. In April 2021, the European Parliament and the Council adopted Regulation 2021/696 establishing the EU Space Programme for the years 2021 to 2027 and the EU Agency for the Space Programme (EUSPA). Under this new Regulation, the EUSPA's responsibilities include the following:

- The operational management of European Geostationary Navigation Overlay Systems (EGNOS) and Galileo.
- Supporting the development of downstream and integrated applications based on Galileo, EGNOS and Copernicus.
- Co-ordinating user-related aspects of GOVSATCOM.

Legislative regime

The current EU regulatory regime is set out in the European Electronic Communications Code ((EU) 2018/1972) (EECC), which had to be implemented by member states and the UK (as the implementation date was during the transition period) by 21 December 2020, and which replaced the previous 2002 regime.

The Radio Spectrum Decision (2002/676/EC) is also of relevance to satellite regulation: it sets out the procedures for harmonising policy at a technical level and created the Radio Spectrum Committee to carry out the policy harmonisation. The Decision continues to apply in the UK as retained EU law.

EU member states are:

- Obliged to manage radio frequencies for electronic-communication services in their territory effectively (*Article 45, EECC*). Radio spectrum is still subject to individual rights of use granted by individual EU member states through the NRAs.
- Authorised to grant general, rather than specific, authorisations, subject to competition law principles (although specific authorisations, or individual rights of use, are permitted in certain circumstances) (*Article 46, EECC*).

The Body of European Regulators for Electronic Communications (BEREC) is established under Regulation (EU) 2018/1971, which came into force on 20 December 2018. BEREC acts as an independent advisory body, formulating guidelines on regulatory best practice to

assist harmonisation between NRAs. It also provides opinions and recommendations to assist the European Commission (and, on request, the European Parliament and the Council) in applying the regulatory framework effectively and consistently. The UK is no longer a member of or subject to guidance issued by BEREC.

Management of radio spectrum

The European Commission has power to manage and allocate radio spectrum through the following bodies:

- The Communications Committee, established under Article 118 of the EECC.
- The Radio Spectrum Committee, established by the Radio Spectrum Decision.
- The Radio Spectrum Policy Group, established by the European Commission as a consultative group following the adoption of the Radio Spectrum Decision.

The European Commission works on this in conjunction with BEREC.

Mobile satellite service regulation

A mobile satellite service (MSS) is a service provided by a satellite system that allows high-speed communication between satellites and handheld mobile terminals, using the radio spectrum, to provide services such as:

- High-speed internet access to mobile television, public protection and disaster relief.
- Satellite telephone systems that allow telephone calls to be made and received anywhere in the world.

A complementary ground component (CGC) is terrestrial infrastructure that supports a MSS system by enabling terrestrial networks to use spectrum also used by a MSS system without causing interference, so enabling spectrum to be exploited more efficiently and enhance its coverage (such as in urban areas) to deliver a wider range of services.

MSS legislative framework

In 2007, the European Commission adopted the Spectrum Decision (2007/98/EC) allocating the 2GHz "S-band" spectrum to MSSs, including those with a CGC, in all member states.

Subsequently, the European Parliament and Council adopted the MSS Decision (626/2008/EC) defining the EU selection and authorisation process for systems providing MSS in the S-band. Although the MSS Decision establishes a harmonised spectrum **allocation** process (that is, allocation takes place at EU level), the subsequent **authorisation** to use spectrum in national markets is the responsibility of individual member states. This was the first occasion on which the EU created a pan-European spectrum licensing procedure. Among other things, the MSS Decision set out "common conditions" by which selected operators must exercise their rights to operate MSS services, for example, obligations to use the assigned radio spectrum for MSS, to comply with milestones for launching services, to report to member states and so on.

Selection of MSS providers

In May 2009, the European Commission selected Inmarsat Ventures Limited and Solaris Mobile Limited (since acquired by EchoStar Mobile Limited) to provide MSSs over the 2GHz spectrum throughout the EU.

Authorisation

In October 2011, the European Commission adopted Decision 2011/667/EU to ensure co-ordination between EU member states in enforcing compliance with the "common conditions" of authorisation. For more information, see Legal update, Decision to accelerate high-speed mobile satellite services.

In February 2016, following proposals by Inmarsat to use spectrum in the 2GHz band to provide broadband services to passengers on aircraft through a combination of satellite and ground-based communication links, Ofcom consulted on the authorisation conditions for this use of the CGC (see Legal update, Ofcom consults on authorising terrestrial base stations for broadband on aircraft). Ofcom published a statement in November 2017 (see Legal update, Ofcom publishes technical conditions and fees for operation of base stations for aircraft broadband).

Inmarsat has since been granted authorisations from the NRAs across various EU jurisdictions to use the 2GHz spectrum and to use CGCs for its European Aviation Network (EAN), which is intended to provide broadband-like services to airline passengers.

Litigation

Viasat and Eutelsat, who are competitors to Inmarsat, claimed that:

- Inmarsat had not been compliant with the requirements set out in the MSS Decision.
- The NRAs erred in granting Inmarsat authorisations to use the 2GHz spectrum and the CGCs for the operation of the EAN.

Viasat launched court actions in jurisdictions across the EU, including in the Competition Appeal Tribunal in the UK, and in the European General Court. Eutelsat launched a court action in France and intervened in Viasat's European General Court case.

Following references by the Belgian courts (Brussels Court of Appeal and the Brussels Court of First Instance) and the French Court of Appeal to the ECJ, the ECJ ruled as follows:

- Where an operator, which is selected and authorised to use the 2GHz spectrum under the MSS Decision, has failed to provide MSSs by means of a mobile satellite system by the deadline set in the MSS Decision, the NRAs of the EU member states are not entitled to refuse to grant the authorisations necessary for the provision of CGCs of mobile satellite systems on the ground that that operator has failed to honour the commitment given its application (*Viasat UK and another v IBPT (Case C-100/19) EU:C:2020:174* and *Eutelsat SA v ARCEP and another (Case C-515/19) EU:C:2021:273*).
- A mobile satellite system does not have to be principally based (in terms of capacity of transmitted data) on the satellite component of that system. CGCs of mobile satellite systems may be installed to cover the entire territory of the EU, on the basis that the satellite component cannot ensure communications at any point of that territory with the "required quality", subject to the following:
  - there is no distortion of competition;
  - that satellite component has real and specific usefulness, in that the component must be necessary for the functioning of the mobile satellite system; and
  - where there is independent operation of the CGCs, in the case of failure of the satellite component, the operation must not exceed 18 months (*Eutelsat*).
- The concept of "mobile earth station" under the MSS Decision must be interpreted as not requiring that, to fall within that concept, that station is capable of communicating, without the use of separate equipment, with both a CGC and a satellite (*Eutelsat*).

On 10 March 2021, the European General Court handed down a judgment dismissing Viasat's application that the European Commission was required to take action to revoke the S-band allocation as Inmarsat's use of the 2GHz band spectrum for EAN fell outside the permitted use under the MSS Decision (*ViaSat, Inc v Commission (Case T-245/17) EU:T:2021:128*). For more on this case, see Legal update, MSS satellite operator could not be refused CGC authorization (ECJ).

Following the CAT's rejection of the Viasat's appeal, the UK Court of Appeal followed the ECJ's approach in *Viasat UK* in May 2020 and also dismissed Viasat's appeal (see Legal update, Viasat mobile satellite service appeal dismissed (Court of Appeal)).

Brexit and UK-EU copyright clearance

Since the end of the transition period, UK-based satellite broadcasters that formerly relied on the country-of-origin copyright clearance rule under the Satellite and Cable Directive (93/83/EEC) when broadcasting into the EEA may need to clear copyright in each member state to which they broadcast.

However, satellite services may be able to fall within the country-of-origin rules if a service is provided by an uplink in a EU country. If there is more than one uplink, jurisdiction falls to the EU country where the first uplink was established. If the uplink is in the UK, the jurisdiction falls to the EU country which operates the relevant satellite capacity. In most cases, this is likely to be either Luxembourg or France, from where the majority of EU broadcasting satellites are operated. These countries have different notification systems and providers should contact the relevant national regulator to ascertain local regulatory requirements.

On the other hand, the UK government has said that it will continue to apply the country-of-origin principle in the UK in respect of broadcasts transmitted into the UK, that is, UK copyright clearance is not required where clearance has already been obtained in the originating state, whether a member of the EEA or not, except where the broadcast originates in a country with lower levels of copyright protection (see IPO guidance: Copyright clearance for satellite broadcasting from 1 January 2021 (30 January 2020)).

National framework: UK

Space Industry Act 2018 and other regulation

The UK government flows down its obligations under the UN space treaties to non-governmental actors through the UK Outer Space Act 1986 (OSA) and the Space Industry Act 2018 (SIA) and the regulatory framework under the relevant legislation.

In July 2021, the Civil Aviation Authority (CAA) became the UK's space regulator, taking over from the UK Space Agency (UKSA). The CAA licenses space companies and their activities under the OSA and SIA.

The OSA, and the amendments made to it by the Deregulation Act 2015 in relation to a cap on the licensee's liability to indemnify the government, will continue to apply to and regulate activities carried out overseas by UK entities such as:

- The procurement of an overseas launch of a space object.
- The operation of a satellite in orbit from an overseas facility by a UK entity.

The SIA received Royal Assent in March 2018 and came into force in July 2021. The SIA governs all space-related activities carried out in or from the UK such as:

- The procurement of a UK launch (space or sub-orbital).
- Launch (space or sub-orbital) and return (re-entry).
- The operation of a satellite in orbit from a UK facility.
- The operation of a spaceport in the UK.
- The provision of range control services in the UK.

The SIA creates the framework for commercial spaceflight operations in the UK and enables launches to take place from the UK. The following regulations and other documents then provide the detailed provisions required to implement and apply the SIA:

- The Space Industry Regulations 2021/792 (Regulations) which make provision to enable the licensing and regulation of spaceflight activities (including launch and in orbit operations), spaceports and range control services.
- The Spaceflight Activities (Investigation of Spaceflight Accidents) Regulations 2021/793 which establish a spaceflight accident investigation body and make provision as to the conduct of accident investigations.
- The Space Industry (Appeals) Regulations 2021/816 which outline the decisions made by the CAA that may be appealed by a licence applicant or licence holder and create the decision-making body to hear appeals and set the procedures and timescales for making and deciding appeals.
- The Regulator's Licensing Rules which support the CAA's power relating to the granting and renewal of operator, spaceport and range control licences under the SIA.

In addition to the above, the Air Navigation Order applies to anyone intending to undertake the launch of a vehicle in the UK that is not capable of operating above the stratosphere (around 50km altitude). The UK government has also published the following guidance:

- Guidance on applying for a licence.
- Principles and guidelines for the spaceflight regulator in assessing ALARP and acceptable risk.
- Guidance for launch operator and return operator licence applicants and licensees.
- Guidance for spaceport licence applicants and spaceport licensees.
- Guidance for range control licence applicants and licensees.
- Guidance for orbital operator licence applicants and licensees.
- Guidance for the assessment of environmental effects.
- Guidance on security matters for applicants and licensees.
- Guidance on the investigation of spaceflight accidents.
- Guidance for applicants and licensees: Conduct of appeals of decisions made by the regulator under SIA and OSA.
- Guidance on liabilities under SIA.
- Guidance on duties for all licensees under the SIA including monitoring and enforcement by the regulator.

Applications for licences must be made in writing by completing the applicable forms, as specified in the Regulator's Licensing Rules, and must include any other information that the CAA may specify.

National Space Council and National Space Strategy

The National Space Council was established in 2020 as one of the Cabinet Committees to "consider issues concerning prosperity, diplomacy and national security in, through and from Space, as part of co-ordinating overall UK government policy".

In September 2021, the UK government published its first comprehensive National Space Strategy (see HM Government: National Space Strategy (September 2021)). To this end, the House of Commons Science and Technology Committee published a call for evidence to the inquiry, which ran until 23 June 2021 (Parliament UK: Call for evidence: UK space strategy and UK satellite infrastructure). The UK's goals, as set out in the National Space Strategy are:

- To grow and level up its space economy.
- Promote the values of "global Britain".
- Lead pioneering scientific discovery and inspire the nation.
- Protect and defend national interests in and through space.
- Use space to deliver for UK citizens and the world.

UK management of radio-frequency spectrum and satellite orbital positions

Ofcom is the UK administration to the ITU. Ofcom has statutory duties imposed by the CA 2003 and the

Wireless Telegraphy Act 2006 (WT Act) to regulate the provision of electronic communications networks and services and the use of the electromagnetic spectrum.

These duties include:

- Furthering the interests of consumers in relevant markets (*section 3(1)(b), CA 2003*).
- Promoting competition in relevant markets (*sections 3(1)(b) and 4(3), CA 2003*; *section 3(2)(d), WT Act*).
- 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), CA 2003*; *section 3(2)(a), WT Act*).

In performing its duties, Ofcom must:

- Ensure that its regulatory activities are:
  - transparent;
  - accountable;
  - proportionate;
  - consistent; and
  - targeted only at cases in which action is needed.

  (*Section 3(3)(a), CA 2003.*)
- Have regard to the desirability of encouraging investment and innovation in relevant markets (*sections 3(4)(d), CA 2003*; *section 3(2)(c), WT Act*).

Ofcom's spectrum-management functions derive from *section 1* of the WT Act, which also includes the giving 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. In March 2019, Ofcom published the Procedures for the Management of Satellite Filings, which sets out UK procedures to ensure compliance with the Radio Regulations (ITU: Radio Regulations).

Ofcom, as the UK administration, handles the co-ordination of satellite orbital positions and relevant spectrum usage for those positions to determine whether there may be "harmful interference" to any UK systems.

Ofcom's CA 2003 international functions include the following:

- *Section 5* confers on the Secretary of State power to direct 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".
- *Section 22* imposes a duty on Ofcom to represent the UK on international and other bodies in relation to communications matters as required by the Secretary of State.

For the purposes of representing the UK government as the ITU member state, DCMS leads the government's delegation at, for example, Plenipotentiary Conferences. Ofcom is involved in the detailed preparation for these conferences.

The Secretary of State (DCMS) directed Ofcom to represent the UK government in the CEPT Assembly and in some CEPT working groups as well as various ITU Working Groups as the UK Administration. Ofcom also represents the UK on the Council of the European Communications Office.

Ofcom participates in government work that sets the UK policy in relation to use of spectrum, as is embodied in the UK Frequency Allocation Table. UK preparations for ITU World and Regional Radio Conferences take place within the International Frequency Planning Group's subgroup of the UK Spectrum Strategy Committee (UKSSC).

Ofcom also liaises with the Ministry of Defence with regard to the management of spectrum designated for military use.

Since 1 April 2019, Ofcom has charged satellite operators for managing their satellite filings with the ITU (*section 28A, CA 2003*). It has introduced the following charges:

- An upfront application fee for new filing (and modification) requests.
- An annual management charge.
- An application fee for notification requests.

In March 2022, Ofcom published a consultation on its strategy for spectrum use in space. A particular concern is that with more space users deploying more satellites, particularly large numbers of non-geostationary orbit (NGSO) satellites (used to provide broadband to remote locations), which are putting pressure on the use of spectrum. Co-ordination to avoid interference between systems is increasingly complex and managing interference between NGSO systems could also have implications for competition. Ofcom published a statement on licensing NGSO systems in December 2021 (see Ofcom: Non-geostationary satellite systems (Licensing updates) (10 December 2021)). The purpose of Ofcom's strategy is to:

Ofcom intends its proposals to reflect its broader spectrum management strategy published in July 2021 (see Legal update, Ofcom statement on spectrum management strategy).

- Identify the key trends in the sector affecting spectrum use and therefore the broad areas to focus on in the next two to four years. These include communications, Earth observation and navigation, and safe access to space in light of increased potential for space debris.

- Identify "cross-cutting" activities, for example, making it easier for a broader range of space users to access spectrum.
- Set out ongoing activities that support delivery of the strategy, such as Ofcom's role as the UK's filings administrator and representing the UK at the World Radiocommunication Conference 2023.
- Identify further activities to address the challenges and opportunities raised by the growth of NGSO satellite communication systems.

Commercial agreements

The legal, regulatory and contractual aspects for the satellite sector are specialised, although general principles of commercial and competition law apply. Insurance is also an important issue and therefore aspects of insurance requirements are reflected in the relevant commercial contracts, such as contracts to procure satellites and satellite-launch contracts. For checklists on what to include in satellite procurement contracts and satellite launch services contracts, see Checklists, Satellite procurement contract and Satellite launch services contract.