



Commission for
Communications Regulation

GUIDELINES DOCUMENT

Guidelines For Applicants For a Teleport Facility Licence in The Fixed Satellite Service in Spectrum Above 3GHz

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Foreword

A Teleport is an international telecommunications hub providing connection between satellite networks and national terrestrial networks. These “telecommunications ports” allow telecommunications operators to mutually benefit from the co-location or sharing of common facilities and afford other operators the opportunity to out-source some of their functions to the Teleport operators.

This licence is designed to offer considerable discounts and flexibility for medium to large operators. It is also designed to encourage the cohesive and co-ordinated development of dedicated Teleport Facilities. Such facilities consist of at least three satellite earth stations and are capable of operating to multiple satellites, offering a high degree of flexibility to accommodate the broadband needs of today’s telecommunications networks. A Teleport Facility is a major industrial project that would be expected to be of great economic benefit to the surrounding region.

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1. General

- 1.1 This document explains the application procedure for a licence for a Teleport Facility in the Fixed Satellite Service¹ operating above 3 GHz issued by the Commission for Communications Regulation (ComReg). It is in the form of a set of Guidelines and does not purport to be a legal document. It should be read in conjunction with the Wireless Telegraphy (Teleport Facility) Regulations, 2001 (Statutory Instrument No. 18 of 2001) but is not a legal interpretation of those Regulations.
- 1.2 A Teleport Facility is defined as being a telecommunication hub consisting of three or more non-transportable satellite earth stations, which are capable of transmitting on more than one frequency to more than one space station simultaneously using steerable antennas.
- 1.3 A Telecommunications Hub is defined as being a facility providing access, to or from telecommunications networks, systems or services to which section 111 of the Act of 1983 applies (as amended by the Licensing Regulations).

2. Statutory Regulations

- 2.1 A Wireless Telegraphy Licence is required under Section 3 of the Wireless Telegraphy Act 1926 to keep and operate apparatus for wireless telegraphy. The specific regulations governing the issue of Teleport Licences are contained in the Wireless Telegraphy (Teleport Facilities) Regulations, 2001 (Statutory Instrument No. 18 of 2001). It should be noted that the functions of the Minister specified in these Regulations have been transferred to the Commission in accordance with the provisions of the Communications Regulation Act 2002
- 2.2 Many categories of satellite earth station are exempted from requiring a licence under the Wireless Telegraphy Acts (1926-1988). Satellite earth stations which are exempt from licensing, and form part of a Teleport Facility, will not be included as part of a Teleport Facility Licence. A listing of classes of equipment that are licence exempt can be found on the ComReg web site².
- 2.3 The applicant should be aware that any Teleport Facility Licence granted by the Commission is for the keeping and operating of the apparatus for wireless telegraphy which is specified in the licence. Any licence issued by the Commission does not absolve the licensee from complying with any other statutory obligations.

¹ As defined in ITU RR Article S1.21

² A list of licence exemptions can be found at <http://www.comreg.ie/>. Current document number 00/68.

- 2.5 A service licence is required where an operator is providing a telecommunications service or network as defined in Section 111 of the Postal and Telecommunications Services Act, 1983, as amended by the European Communities (Telecommunications Licences) Regulations, 1998 (S.I. No. 96 of 1998).

There are two types of service licences: the General Telecommunications Licence and the Basic Telecommunications Licence. A brief description of these licences is given in Annex A.

3. Frequency Spectrum Information

- 3.1 The radio frequency spectrum is an important and scarce national resource. It is the policy of the Commission to manage the spectrum in an efficient and orderly manner, in order to obtain optimum use from this resource. Also, in the interest of the efficient use of the radio spectrum, it is the policy of the Commission to review the use of the spectrum on an ongoing basis.

Changes in the spectrum allocated for satellite services can arise for the following reasons:

- The requirements of international organisations;
- EU legislation;
- National requirements.

- 3.2 When and if such changes in policy occur, it may be necessary to amend licences that have been issued. (See also Section 14).

- 3.3 While the Commission will endeavour to minimise the potential for interference between users and services, no liability shall accrue to the Commission arising from interference to licensees of radio systems.

- 3.4 A licence does not confer any right of ownership of the frequency spectrum. It allows the assigned frequency channel to be used during the term of the licence in accordance with the conditions of the licence.

- 3.5 The Table of Frequency Allocations - Ireland³ provides details on spectrum allocations in Ireland. Applicants should be aware that some of the frequency spectrum available for use by satellite services is shared with other services, including fixed radio links.

- 3.6 In relation to shared bands the Commission takes the view that priority for services of a similar status is based on a first-come-first-served principle. In accordance with ITU procedures, established stations will have priority. Currently in Ireland, generally, most established stations are terrestrial fixed link stations. Further information on the issue of spectrum sharing can be seen in Annex B.

³ Updated from time to time. Document number 01/23 which is available from the Commission, or on the web-site www.comreg.ie

- 3.7 Coordination is the process, by which the requirements of the various users of radio spectrum are balanced, against the available resources and the reduction of the probability of interference between the various users to acceptable levels. In some cases it may be necessary for the Commission to undertake international co-ordination procedures, particularly where there is a possibility of interference to/from the terrestrial and/or satellite services of another administration, which may take up to two years to complete. Successful coordination cannot be guaranteed. Further information on coordination can be found in Annex C.
- 3.8 The applicant may be required to take site shielding steps in order to minimise or eliminate interference that may occur to, or from, existing terrestrial or other stations (See Annex C for further details on Site Shielding).
- 3.9 Block allocations of spectrum (band segmentation) will not be made for satellite service purposes. Frequency channels are assigned to individual Earth Stations on a non-exclusive basis. Accordingly, licensees should be aware that the Commission will, where possible, facilitate other users in sharing the same frequency channels.
- 3.10 In those circumstances where a satellite service user requires a variable bandwidth for day to day operations, the user may lease the maximum required bandwidth from the satellite operator and use smaller segments as needed. For spectrum management purposes, the Commission must still consider the full bandwidth as a unit, and a licence is required for the full bandwidth. This applies to services that make use of Single Channel Per Carrier (SCPC) and demand assigned spectrum methods.
- 3.11 Where an applicant requests channels in a specified band, it should be noted that the Commission cannot guarantee that the spectrum requested can be made available at specific locations. The Commission recognises that specific channels may be required to communicate with individual satellites, for both telecommunications and non-telecommunications applications. Detailed discussions with the Commission may be necessary in such circumstances to facilitate an engineering solution or to seek an alternate location where operation on the requested frequency would be possible.

4. Wireless Telegraphy Licences

4.1 Teleport Facility Licence

The Teleport Facility Licence will cover all of the licensable⁴ fixed satellite earth stations that form part of a Teleport Facility under a single licence.

⁴ Licensable fixed satellite earth stations are earth stations that are not exempted from the requirement to hold a Wireless Telegraphy licence (See Doc. 00/68).

4.2 Duration of Licences

Licences are issued for an initial period of 60 months as prescribed in legislation. After this period a Teleport Facility Licence may be eligible for renewal. The renewal period is 12 months (See Section 12). There is no provision for short term or temporary teleport facility licenses.

The Commission regularly reviews licence duration for all Wireless Telegraphy Licences.

5. Airport Exclusion Zones

It is internationally recognised that there is a need to protect aircraft avionics from the possibility of interference arising from earth stations operating in close proximity to airports.

- **Consequently, the deployment of teleport facilities in areas around certain airports is restricted.**

Regulation 12(f) of the Teleport Facility Regulations, 2001 (**S.I No. 18 of 2001**) requires that the Licensee must ensure that a teleport facility shall be operated and used so as not to cause harmful interference with any lawfully operated wireless telegraphy apparatus, and in particular wireless telegraphy apparatus used for any purpose on which the safety of any aircraft may depend.

In order to satisfy this statutory requirement of ensuring that the safety of aircraft is not affected by the teleport facility, the Licensee must comply with special requirements relating to Airport Exclusion Zones.

- **Teleport Facilities, or any parts thereof, shall not operate inside airport Exclusion Zones.**

Annex E contains details of Airport Exclusion Zones and Airport Contact Personnel.

6 Pre-Application Consultation

As the application process is a single stage process, applicants will need to undertake detailed planning work prior to submitting an application. As this may require significant time and expenditure on the part of applicants, the Commission recommends that applicants undertake pre-application consultation. The Commission will, where both parties deem it necessary, communicate its understanding in writing of the outcome of any formal pre-application consultation to the prospective applicant.

7. The Application Process

- 7.1 Applications in respect of licences for Teleport Facilities must be made using the application form obtainable from the Commission or from the Web Site <http://www.comreg.ie/> (Document 01/33). The application form (completed and signed, including the co-ordination fee) should be submitted to the Commission. The Commission will normally consider applications on a first come – first served basis.
- 7.2 It should be noted that all applications for licences are evaluated on the basis of the written information provided on the application forms, in addition to any supplementary written information supplied at the request of the Commission, and that all decisions of the Commission are communicated in writing.
- 7.3 If the application is not in accordance with the Guidelines, the applicant will be notified with reasons as to why the application is being refused.
- 7.4 If the application is in accordance with the Guidelines the application will be subject to a detailed evaluation of the technical details.
- 7.5 The application for each proposed satellite earth station included in a Teleport Facility Licence application may be individually approved or refused or additional information may be requested from the applicant prior to a decision. Where the Commission considers it necessary, consultation will take place with the applicant.

8. Evaluation of Applications

Each application for a Teleport Facility Licence is evaluated using the information provided by the applicant on the application form and supplementary written information where applicable.

Each fixed satellite earth station that forms part of the Teleport Facility will be evaluated individually, in isolation and as a part of the overall facility, to determine the extent to which the following criteria would be satisfied by the granting of the licence:

- the orderly and efficient use of the spectrum;
- fairness in the assignment of spectrum between licensees;
- the promotion of fair competition for the provision of telecommunications services;
- radio equipment requirements (see Annex D);
- compliance with other licensing regimes operated by the Commission;
- compliance with international obligations (including co-ordination)

- the effective and efficient delivery of non-telecommunication essential services⁵.

Further explanation in regard to these aspects can be found in Annex F.

9. Notification of Grant of Licence and Payment of Fees

- 9.1 An application for a Teleport Facility Licence must include a non-refundable co-ordination fee of €100,000 (£78,756.40).
- 9.2 Upon written notification of the Commission's intention to issue a licence, payment of the relevant operational fee is due within 1 month of the date on the notification. If the licence fee is not paid within 1 month, the application is deemed to have lapsed. This excludes frequencies requiring co-ordination, which will be added on conclusion of a successful co-ordination process.
- 9.3 On being issued with a licence, the licensee is required to bring the Teleport Facility into operation in compliance with the terms of the licence, within a stated time, which will be agreed with the Commission (i.e. typically 6-12 months), failing which the licence may be revoked.
- 9.4 Except in exceptional circumstances, a licence for a Teleport Facility will not be renewed if the Teleport Facility has not been put into service and the declaration form⁶ has not been submitted to the Commission prior to the renewal date of a licence.
- 9.5 A station may not be included or added in the Licence where the application does not meet the requirements set down by the Commission, or where sufficient spectrum is not available, or where the station cannot be co-ordinated. Where an application is unsuccessful, the applicant will be so notified, reasons will be given for the refusal and the applicant will have an opportunity to appeal such refusal.

10. Fee Structure

The schedule of fees for a Teleport Facility licence consists of two sections (see Annex G for a full schedule of fees):

1. Co-ordination Fees,
2. Operation Fees.

Both Co-ordination and Operation Fees are applicable to all Teleport Facility Licences.

⁵ Non telecommunication essential services include state/safety services, utilities etc.

⁶ See Section 11.

10.1 Co-ordination Fee

10.1.1 Initial Co-ordination Fee

This co-ordination fee must be included with an application for a Teleport Facility Licence and is non-refundable. The co-ordination fee is €100,000 (£78,756.40).

10.1.2 Additional Earth Station Co-ordination Fee

This fee is applicable to applicants who wish to add additional fixed satellite earth stations to their existing Teleport Facility Licence, by way of a modification to the Teleport Facility Licence. The additional co-ordination fee in this case is €2000 (£1575.13) per additional fixed satellite earth station. This fee must be paid on application for a modification to the Teleport Facility Licence.

10.1.3 Additional Space Station Co-ordination Fee

This fee is applicable to applicants who wish to use fixed satellite earth stations, contained within an existing Teleport Facility Licence, to communicate with additional space stations by way of a modification to the Teleport Facility Licence. The additional co-ordination fee in this case is €2000 (£1575.13) per additional space station. This fee must be paid on application for a modification to the Teleport Facility Licence.

10.1.4 Efficiency

The Commission suggests that the maximum number of earth stations and space stations be applied for and co-ordinated at the outset.

10.2 Operation Fees

10.2.1 Initial Operation Fee

The initial operation fee for a Teleport Facility Licence is payable on granting of the licence and its value is calculated on the basis of bandwidth used per fixed satellite earth station included under the Teleport Facility Licence. For more details on the initial operational fee see Annex G.

10.2.2 Renewal Operation Fee

A renewal operation fee is due on renewal of a Teleport Facility Licence. This fee is calculated on the basis of total bandwidth used, per fixed satellite earth station included under the Teleport Facility Licence. For further details of this fee please see Annex G.

11. Commissioning/Site Inspections

- 11.1 For the purpose of ensuring that the satellite earth station is installed and operating in accordance with the licence conditions, a completed declaration form, indicating that the Teleport Facility has been installed, inspected by a qualified person and is in conformance with the licence, must be submitted to the Commission within the time limit specified in the licence.
- 11.2 A NIR compliance survey is required to be carried out by an independent party every 10 months, from the date of issue of the licence, to ensure compliance with the licence. The licensee is required to make available equipment suitable for the completion of these surveys. The results of such a survey should be submitted to the Commission no later than 20 days after the audit has been completed.

12. Renewal of Licences

- 12.1 On written application for renewal the Commission will review individual licences in each case. It may not in all cases be possible to effect renewal. In considering renewal the office will have regard to inter alia:

- whether the Teleport Facility is being operated in accordance with the terms of the expiring licence;
- whether changes in radio frequency management requirements, are being implemented at a national or international level for the band in question (see Section 14);
- whether the Teleport Facility is subject to a review of spectrum (see Section 14).

- 12.2 Please note that Regulation 8(4) of the Wireless Telegraphy (Teleport Facility) Regulations, 2001 requires that an application for a renewal of a licence is made within a period of 28 days before expiration of the licence.

Applicants are advised to submit to their applications for renewal at the earliest time within this period to facilitate the timely processing of applications.

- 12.3 The renewal period for a Teleport Facility Licence is 12 months.

13. Modification to licences.

- 13.1 Modifications to Licences, or to applications for Licences, must be applied for on the application form (Doc 01/33). A modification to a Licence, or to an application for a licence, may affect the amount of the fees payable.
- 13.2 A breach of the conditions of the licence for any reason will not be permitted, including while a licence modification is under consideration. If re-coordination

of the station under the proposed new conditions cannot be achieved, it may not be possible to accede to the request for modification.

- 13.3 It is recognised that a request for modification of a licence made by the licensee may be at the behest of a satellite operator and the evaluation of the request will take this into account. The request for modification may alternately originate from the Commission, for example, due to an inability to obtain coordination for the initially assigned spectrum or the necessity of implementing international agreements.
- 13.4 Modifications are made effective by means of a licence amendment.

14. Review of Spectrum Usage.

- 14.1 It is the policy of the Commission to conduct, at regular intervals, reviews of spectrum usage and as a consequence of these reviews changes to licences may be required. Further information on this issue can be found in Section 3.11.
- 14.2 In deciding time scales, the Commission will consult with the licensee in any revision of their use of spectrum.

Annex A: Telecommunications Service Licence

There are two categories of Telecommunications Service licence. A licensee cannot hold both types of service licence simultaneously.

A.1 General Telecommunications Licence

A General Telecommunications Licence permits the licensee to provide telecommunications networks and services, including voice telephony, to the general public. Holders of such licences can apply to the Commission for numbers from the national telecommunications numbering resource, for allocation to their customers. General licences are valid for 15 years.

A.2 Basic Telecommunications Licence

A Basic Telecommunications Licence does not cover voice telephony or the provision of services involving the use of numbers from the national telecommunications numbering resource. It is thus tailored to the needs of specialised companies providing, for example, data, Internet and cable-based services. Holders of Basic Licences will be able to apply for a General Telecommunications Licence if, at any stage in the future, they wish to expand the range of services that they provide. Basic Licences are valid for 5 years.

A.3 Fees

The fee for a General Telecommunications Licence is €12,500 (£9,844.55). For a Basic Telecommunications Licence the fee is €2,500 (£1,968.91).

A.4 Application Forms

Copies of application forms and further information on telecommunications service licences are available on the ComReg web site (<http://www.comreg.ie> – documents 98/44, 98/45 and 98/46).

Annex B: Spectrum Sharing Principles

Any sharing restrictions imposed are in line with standard practice. However, it should be borne in mind that due to the high sensitivity of earth station receivers and the high effective radiated power of earth station transmitters, the sharing parameters are different from those used for sharing between terrestrial links.

B.1 Application of ITU principles

In accordance with ITU Regulations⁷, some of the frequency spectrum available for use by satellite services is shared with other services – including fixed radio links. Consequently unrestricted access to the full frequency bands shared with terrestrial services is not permitted. A possibility of interference between the different services exists, unless the assignment of frequencies to the different services is implemented on a coordinated basis. The Commission will endeavour to accommodate the needs of applicants, with due regard to the efficient and orderly use of spectrum.

The Commission applies the ITU methodology⁸ to all sharing cases (See Section 3.5). Coordination principles are explained further in Annex C. While these procedures may not be optimal in all cases, they are internationally recognised and are transparent and non-discriminatory.

⁷ Article S5 of the Radio Regulations, made in 1998 under Article 13 of the Constitution and Convention of the International Telecommunications Union.

⁸ Article S9 and Appendix S7 of the Radio Regulations.

Annex C: Coordination Issues & Site Shielding

C.1 General Issues

Coordination of the individual fixed satellite earth stations forming part of a Teleport Facility is treated in exactly the same manner as an individual fixed satellite earth station not forming part of a Teleport Facility.

Coordination of a satellite earth station between other satellite earth stations or terrestrial stations applies principally to the site of the station. However, variations in the local terrain, antenna radiation patterns, emitted power, receiver sensitivity, assigned frequency or bandwidth will have an effect on the coordination distances. If, after an initial successful coordination, a modification to an earth station results in a reduction of coordination distances, re-coordination is not necessary. However, if a modification results in an increase in the coordination area the station in question will then have to be re-coordinated.

International as well as national coordination may be required; particularly where there is a possibility of interference being caused to the terrestrial and/or satellite services of a neighbouring administration.

Under the Radio Regulations of the ITU⁹, Ireland is required to minimise interference to the wireless telegraphy services of other administrations, just as those other administrations are required to minimise interference to Irish services. The Commission may not, therefore, licence wireless telegraphy transmitters, which may cause interference above an internationally agreed level to receivers outside the country. In addition, a level of interference to receivers in Ireland from foreign transmitters may occur and if this level is within the limits set by international agreement then the operator of a receiver located in Ireland must accept it. Sharing parameters are given in Article S21 of the Radio Regulations.

Although international coordination can be a lengthy process to complete (taking up to several years in some cases), most coordination is completed in approximately six months. The response times for administrations are set in the Radio Regulations¹⁰.

⁹ Articles 196 and 197 of the Constitution of the International Telecommunications Union and S0.3 and S0.4 of the Radio Regulations.

¹⁰ RR-Appendix S7

C.2 Methodology

Use of ITU Procedures

Where required, coordination is carried out in accordance with the ITU-R regulations and recommendations appropriate to both the fixed satellite earth station and frequency band of operation¹¹. In particular, for fixed satellite service earth stations, the coordination area is determined in accordance with Radio Regulation S9, Appendix S7 (Appendix 28) and Recommendations ITU-R IS.847 and ITU-R IS.848.

Interference calculations between stations in Ireland

Interference levels are calculated with respect to other satellite earth stations or terrestrial stations in Ireland using Recommendation ITU-R P.452.

Meeting minimum technical specifications

In order to facilitate the coordination process, stations are required to meet radio equipment requirements as outlined in Annex D.

Requirement for a physical site survey

The applicant is required to supply a physical site survey, showing the horizon elevation angle from the centre of the each of the proposed antennas. This information is required for the coordination process.

Requirement for site shielding

Site shielding is a procedure whereby the earth station is located so that natural or man-made obstructions are positioned between the earth station and potentially interfering, or interfered with, stations. Use may be made of existing obstructions or new shields may be constructed. In the case of shared bands used for satellite downlinks, protection from transmitters in the terrestrial services may be required. Similarly, in the case of shared bands used for satellite uplinks, protection may need to be afforded for terrestrial services' receivers.

¹¹ Regulations and recommendations are subject to change

Annex D: Radio Equipment Requirements

D.1 Compliance with Safety Directives

All licensees of Teleport Facilities are required to comply with the relevant national and EU legislation. In particular, operators should comply with the EMC (89/336/EEC) and Low Voltage Directives (73/23/EEC) and, in the case of transmitting earth stations, with the radiation limits set down by The International Commission for Non Ionising Radiation Protection (ICNIRP) in their guidelines (Guidelines for Limiting Exposure to Time-varying Electric, Magnetic and Electromagnetic Fields (up to 300 GHz), Health Physics, Volume 74, Number 4, April 1998) published in 1998.

D.2 Compliance with Terminal Equipment Directive

Satellite earth stations (licensed or exempted) need to comply with the 'Radio and Telecommunications Terminal Equipment' Directive, 1999/5/EC. Details of any type approval certificates (R&TTE or other relevant equipment directives) should be supplied, along with copies of the certification, in an application for a licence.

D.3 Compliance with Common Technical Regulations

As part of the licence conditions for operating, licensees are also required to comply with the relevant Common Technical Regulation, pursuant to Directive 98/13/EC or, in the absence of such a Common Technical Regulation, are required to comply with: the relevant standard adopted by the European Telecommunications Standards Institute (ETSI); or technical specifications that may be decided periodically by the Commission.

D.4 Antennas

The coordination problems that may arise from the use of antennas with poor side-lobe performance are recognised. Accordingly the minimum acceptable antenna radiation pattern will need to be equivalent to those patterns given in ITU-Recommendations¹². To avert harmful interference it may be required to use high performance antennas in certain circumstances.

D.5 Compliance with Satellite System Specifications

In the absence of such Common Technical Regulation or relevant ETSI standard, licensees are required to adhere to technical specifications that may be set out by satellite providers.

¹² ITU-R S.465

Annex E: Airport Exclusion Zones

Exclusion Zones are applicable to Teleport Facilities. Details of Airport Exclusion Zones are given below.

Definition:

An exclusion zone is an area 1000 metres wide (centred on the runway centre line) and extending 7 km in the approach direction from the stop end of each Instrument Landing Systems (ILS) equipped airport runway.

Where are Exclusion Zones?

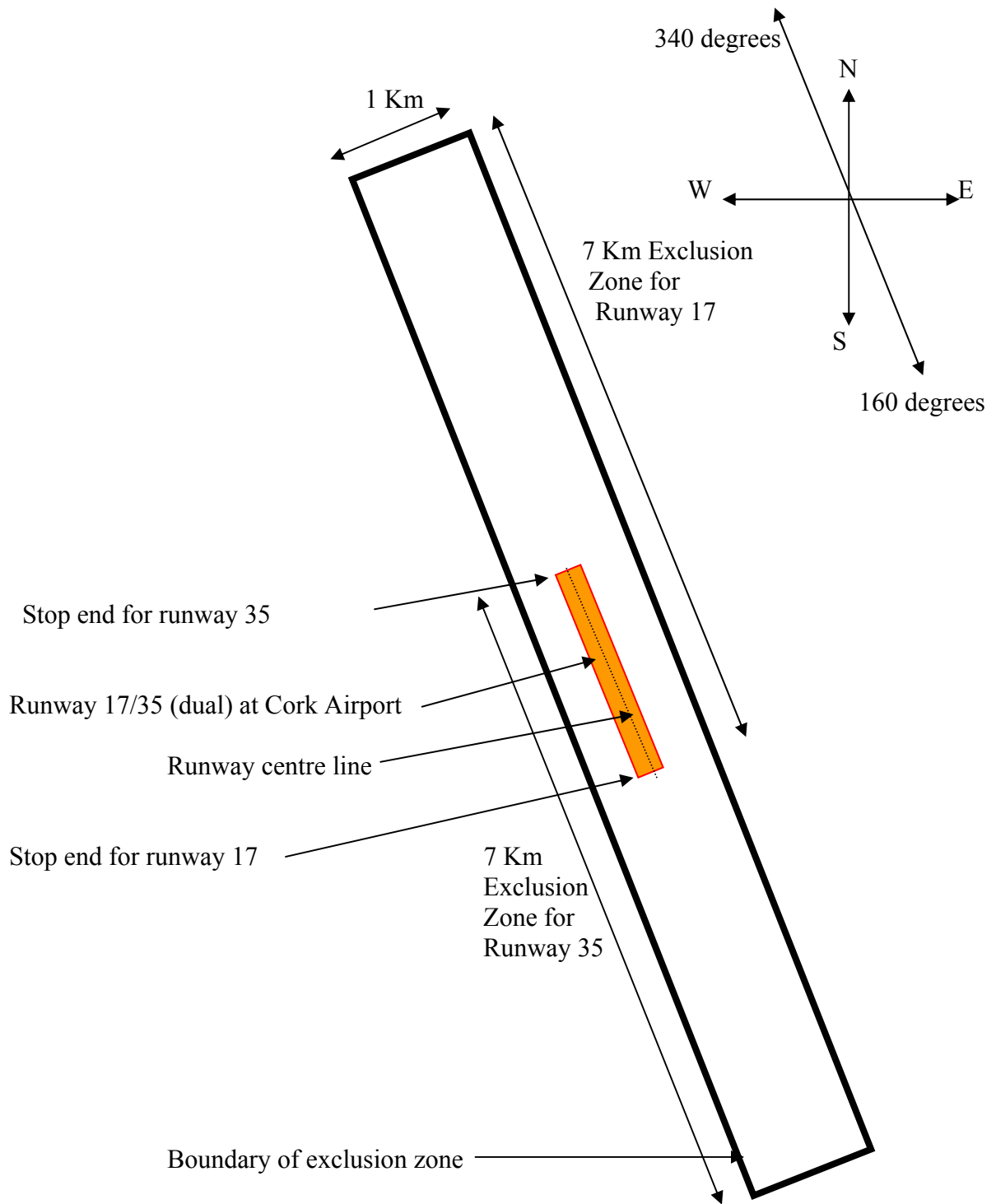
Exclusion zones exist at airports that are currently equipped with Instrument Landing Systems (ILS). Table 1 gives details on the airports that are currently equipped with Instrument Landing Systems:

TABLE 1

Airport Name	Runway ILS	Direction of Exclusion Zone (from Runway stop end in degrees East of True North)	Stop end	
Cork	17	340 degrees	N 51 49.9	W 008 29.1
	28	160 degrees	N 51 51	W 008 29.8
Dublin	28	095 degrees	N 53 25 20.75	W 006 17 24.27
	10	275 degrees	N 53 25 12.94	W 006 15 02.08
	16	337 degrees	N 53 25 11.66	W 006 14 58.54
Shannon	6	232 degrees	N 52 42 36	W 008 54 24
	24	052 degrees	N 52 41 36	W 008 56 24
Knock	27	079 degrees	N 53 54 31	W 008 50 09
Kerry	26	071 degrees	N 52 11 40.75	W 009 32 15.46
Waterford	21	021 degrees	N 52 10 53.65	W 007 05 21.87
Donegal	21	023 degrees	N 55 02 22	W 008 20 35

Satellite Earth Stations that form part of a Teleport Facility may not operate within an exclusion zone.

Example: Exclusion Zone at Cork Airport



Note 1 All bearings are given in degrees **east of True North**

Note 2 This diagram is not to scale

Annex F: Application Evaluation Requirements

Applications for Teleport Facility Licenses are evaluated using the following criteria:

1. Teleport Facility

- Purposes of Telecommunication Hub.
- Adequacy of Telecommunications Hub and Facilities.
- Location of Teleport Facility.

2. Individual Earth Station

- Purpose of Earth Station
- Location of Earth Station
- Natural Shielding (Site Survey)
- Satellite Orbital Positions

3. Coordination

- Frequency Band
- Bandwidth
- Emission Details (EIRP and Power Density).
- Equipment Specifications
- Compliance of Radio Equipment. (see Annex D)

Annex G: Schedule of Fees Payable

1. Co-ordination Fees

(i) For a Licence for a teleport facility an initial, non-refundable co-ordination fee of €100,000 (£78,756.40) shall be paid by the licensee on application for a licence.

(ii) For each additional fixed satellite earth station which it is desired to add to the teleport facility subsequent to the initial grant of the licence, a further fee of €2,000 (£1575.13) shall be paid by the Licensee on application for the addition of the additional fixed satellite earth station by way of amendment to Part III, Part VI and Part VII of the licence, in accordance with the provisions of these Regulations.

(iii) For each additional space station to which it is desired for one or more of the fixed satellite earth stations, comprising the teleport facility, to communicate with, a further co-ordination fee of €2,000 (£1575.13) shall be paid by the Licensee, in respect of each fixed satellite earth station comprising the teleport, on application for the addition of the space station by way of amendment to Part III of the licence, in accordance with the provisions of these Regulations.

2. Operation Fees

(i) The Licensee shall pay an operation fee, calculated on the basis of each individual fixed satellite earth station comprising the teleport, on the issue of the Licence. The amount payable in relation to the operation fee will depend on the bandwidth of the radio spectrum used by each of the fixed satellite earth stations comprising the teleport, each of which shall be set out in Part III of the Licence. The amount of the Licence fee is provided for in the numerical table of this paragraph as set out below:

Bandwidth of Radio Spectrum Used	Licence Fee €
Less than 500kHz	50,000 (£39378.20)
500kHz to <2MHz	62,500 (£49222.75)
2MHz to <11MHz	75,000 (£59067.30)
11MHz to <40MHz	100,000 (£78756.40)
40MHz to 80MHz	125,000 (£98445.50)

(ii) The Licensee shall pay an operation fee, calculated on the basis of each individual fixed satellite earth station comprising the teleport, on the renewal of the Licence for a period of 12 months in accordance with the provisions of Regulation 8. The amount payable in relation to the operation fee payable on renewal of the licence will depend on the bandwidth of the radio spectrum used by each of the fixed satellite earth stations comprising the teleport, each of which shall be set out in Part III of the Licence. The amount of the Licence fee is provided for in the numerical table of this paragraph as set out below:

Bandwidth of Radio Spectrum Used	LicenceFee (€)
Less than 500kHz	10,000 (£7875.64)
500kHz to <2MHz	12,500 (£9844.55)
2MHz to <11MHz	15,000 (£11813.46)
11MHz to <40MHz	20,000 (£15751.28)
40MHz to 80MHz	25,000 (£19689.10)

Example of Fee Calculation:

A Teleport Facility consisting of four satellite earth stations as described below:

Earth Station 1 can operate to either one of two satellites:

Satellite A: 32MHz Uplink Bandwidth and 32MHz Downlink Bandwidth.

Satellite B: 32MHz Uplink Bandwidth and 8MHz Downlink Bandwidth.

Earth Station 2 can operate to one satellite:

Satellite C: 9MHz Uplink Bandwidth.

Earth Station 3 can operate to either one of three satellites:

Satellite A: 32MHz Downlink Bandwidth

Satellite B: 16MHz Uplink Bandwidth and 16MHz Downlink Bandwidth

Satellite D: 16MHz Uplink Bandwidth and 16MHz Downlink Bandwidth

Earth Station 4 can operate to either one of two satellites :

Satellite E: 16MHz Uplink Bandwidth and 32MHz Downlink Bandwidth

Satellite F: 16MHz Uplink Bandwidth and 32MHz Downlink Bandwidth

Calculation of Fees.

1. Co-ordination Fees **€100,000 (£78756.4)**

2. Operation Fees (Earth Stations 1 + 2 + 3 + 4):

Earth Station 1 (Maximum Bandwidth =32MHz): **€100,000 (£78756.4)**

Earth Station 2 (Maximum Bandwidth =9MHz): **€75,000 (£59067.3)**

Earth Station 3 (Maximum Bandwidth =32MHz): **€100,000 (£78756.4)**

Earth Station 4 (Maximum Bandwidth =16MHz): **€100,000 (£78756.4)**

Total Operational Costs: **€375,000 (£29,5336.5)**

Total Cost of 5 Year Licence for Teleport Facility: €475,000 (£37,4092.9)

Cost of renewal for each subsequent year: €75,000 (£59,067.3)

If after the third year of operation the Teleport Facility Licensee wished to add an additional earth station to the facility and to allow one of the earth stations already licensed to operate to an additional satellite as outlined below:

Earth Station 5 can operate to either one of two satellites

Satellite A: 8MHz Uplink Bandwidth and 16MHz Downlink Bandwidth.

Satellite B: 16MHz Uplink Bandwidth and 16MHz Downlink Bandwidth.

Earth Station 2 now has the choice to operate to an additional satellite

Satellite B: 16MHz Uplink Bandwidth and 16MHz Downlink Bandwidth

Calculation of additional fees:

1. Additional Coordination Fee (Earth Station 5 + Earth Station 2):

Earth Station 5: **€2,000 (£1575.13)**

Earth Station 2 : **€2,000 (£1575.13)**

2. Additional Operation Fee:

Earth Station 5 (Maximum Bandwidth =16MHz): €100,000 (£78756.4)

-Pro rata for two remaining years of initial licence (2/5 of €100,000):
€40,000 (£31,502.56)

Earth Station 2 (Maximum Bandwidth): €100,000 (£78756.4)

- Less amount already paid: - €75,000 (£59067.3)

€25,000 (£19689.1)

- Pro rata for two remaining years of initial licence (2/5 of €25,000):
€10,000 (£7,875.64)

Total Additional Operational Fee: **€50,000 (£3,9378.2)**

Total Additional Cost of Licence for Teleport Facility: €54,000 (£42,528.46)

New Cost of renewal for each subsequent year: €100,000 (£78756.4)

Annex H: Terminology

H.1 Radio Regulations

Unless otherwise specified, terms have the meaning assigned to them in the relevant national legislation or in the Radio Regulations (1998 edition, as amended by the Final Acts of WRC-2000), made under Article 13 of the Constitution and Convention of the International Telecommunications Union.

H.2 Abbreviations

BSS	Broadcasting Satellite Service
CEPT	Conference of European Postal and Telecommunications Administrations
CTR	Common Technical Regulation
EMC	Electromagnetic Compatibility
ETS	European Telecommunications Standard
ETSI	European Telecommunications Standard Institute
EU	European Union
FS	Fixed Service (terrestrial)
FSS	Fixed Satellite Service
GHz	Gigahertz (frequency range)
GSO	Geostationary Orbit (satellite orbit)
ICNIRP	International Commission for Non-Ionising Radiation Protection
ILS	Instrument Landing System
IRPA	International Radiation Protection Association
ISP	Internet Service Provider
ITU	International Telecommunications Union
MIFR	ITU Master International Frequency Register
NGSO	Non-geostationary Orbit
ComReg	The Commission for Communications Regulation
RR	Radio Regulations (of the ITU)

H.3 General Terminology

“The Act of 1926”: the Wireless Telegraphy Act, 1926, as amended (No. 45 of 1926).

“Coordination Area”: the area associated with an earth station outside of which a terrestrial station sharing the same frequency band, neither causes, nor is subject to, interfering emissions greater than a permissible level. Note that the size of the coordination area will vary with the coordination method used and the number of satellites with which the earth station may communicate.

“Terrestrial Station”: a station effecting terrestrial radiocommunications.

“Terrestrial Radiocommunications”: any radiocommunications other than space radiocommunications or space radio astronomy.

“Earth Station”: means apparatus for wireless telegraphy, located at a fixed point on the surface of the Earth, intended for the transmission of radio signals to, and/or the reception of radio signals from, a station aboard a space vehicle, or from a natural source outside the earth’s atmosphere.

“Fixed Service”: a radiocommunications service between specified fixed points.

“Fixed Satellite Service”: means a radiocommunication service between earth stations at specified fixed points when one or more satellites are used.

“Geostationary Orbit”: an orbit that is characterised by the space vehicle remaining in substantially the same position relative the Earth’s surface.

“ITU Coordination”: the procedure¹³ recommended by the International Telecommunications Union, used to determine the potential interference between the Earth Station and other stations (whether located in Ireland or elsewhere).

“National Telecommunications Numbering Resource” is the set of numbers etc., which are used to route telecommunications traffic.

“Licence”: a Licence under Section 5 of the Wireless Telegraphy Act. 1926 (No. 45 of 1926), being an annual or a short-term Licence for a fixed satellite earth station or Teleports as defined in the Regulations Wireless Telegraphy (Teleports), 2000.

“The Commission”: means The Commission for Communications Regulation.

“Station”: means apparatus for wireless telegraphy.

“Wireless telegraphy” and “apparatus for wireless telegraphy”: meanings as assigned to them by virtue of the Wireless Telegraphy Act. 1926, as amended.

¹³ Radio Regulations S9 and ApS7.