



An Coimisiún um
Rialáil Cumarsáide
Commission for
Communications Regulation

Publication of Radio Spectrum Licence Information

Consultation

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1 Introduction

- 1.1 The Commission for Communications Regulation (“ComReg”) is the statutory body responsible for the regulation of the electronic communications (telecommunications, radiocommunication and broadcasting networks), postal and premium rate sectors in Ireland in accordance with European Union (“EU”) and Irish law. ComReg also manages Ireland’s radio spectrum (or “spectrum”).
- 1.2 In exercising its function of the management of Ireland’s radio spectrum (and in accordance with relevant ministerial Policy Directions given under section 13 of the Communications Regulation Act, 2002, as amended (the “2002 Act”), ComReg’s spectrum management objective is to ensure the efficient management and use of the radio spectrum. ComReg is obliged to effectively carry out this function, including having regard to relevant government policy statements and international developments. ComReg also has the general objective of promoting competition in the provision of electronic communications networks and associated facilities.¹
- 1.3 Radio spectrum is a limited and valuable national resource that permeates all areas of communications, including radio, television, mobile (voice and data), aeronautical/marine navigation and satellite communications. Increased demand for the radio spectrum requires that it be used efficiently and that effective spectrum management processes be employed to maximise the benefits to society. The ability to take full advantage of the spectrum resource depends on the spectrum management activities that facilitate the implementation of radio systems with minimum radio interference.
- 1.4 Consequently, spectrum management involves the careful consideration of a broad range of factors (e.g. administrative, regulatory, social, economic and technical) with a view to ensuring that radio spectrum is efficiently used. Additionally, spectrum management is required to ensure the efficient assignment and subsequent use of scarce frequencies among competing uses and users. This is essential to promote competition within the relevant downstream markets, particularly given that spectrum is an essential input in the provision of many ECS and an inefficient assignment of spectrum has the potential to distort competition and create inefficient outcomes for society.
- 1.5 Information relating to radio spectrum is a key requirement for many parties with an interest in the electronic communications market, including electronic network and service providers, equipment manufacturers, broadcasters, end-

¹ Regulation 4(3)(b) of S.I. 444 of 2022, the European Union (Electronic Communications Code) Regulations 2022.

users, and the general public. ComReg recognises that the quality and availability of information on radio spectrum facilitates the entry of new players into the electronic communications market and can reduce network and service deployments.

- 1.6 This results in improved competition and innovation in the provision of wireless communication services, as access to radio spectrum information can:
- (a) reduce timescales and costs associated with market entry;
 - (b) reduce risk and uncertainty regarding spectrum availability; and
 - (c) create greater awareness of opportunities to access unused spectrum, encouraging new, innovative wireless applications.
- 1.7 Therefore, ComReg proposes to publish on its online tool Siteviewer² the relevant radio spectrum information in respect of all licences granted by ComReg commencing with fixed radio links and satellite earth stations. This would ensure ComReg meets its obligations under the Access to Information on the Environment Regulations, align with ComReg's "Open by Default" approach to data held by it³, and would deliver ComReg's and the Government's strategic goals^{4 5} to promote enhanced connectivity and support efficient investment.
- 1.8 During the recent consultations in respect of the introduction of new licensing regimes for fixed links licences⁶ and satellite earth station licences⁷, ComReg signaled its intention to consult on the publication of radio spectrum licence information on Siteviewer⁸.

² <https://siteviewer.comreg.ie/#explore>

Siteviewer is an interactive map of Ireland containing the following information;

- the location of every mobile telephone mast,
- the operators which own or controls each mast,
- the types of mobile services provided at each mast.

³ See section 7.2 of ComReg Document 23/34 – Electronic Communications Strategy Statement: 2023-2025 – published 13 April 2023.

⁴ ComReg Document 23/34 – Electronic Communications Strategy Statement: 2023-2025 – published 13 April 2023.

⁵ <https://www.gov.ie/en/publication/1a70d-statement-of-strategy-2021-2023/>

⁶ [Review of the Fixed Radio Links Licensing Regime: Response to Consultation and Decision | Commission for Communications Regulation \(comreg.ie\).](#)

⁷ [Review of the Satellite Earth Station Licensing Regime: Response to Consultation and Decision | Commission for Communications Regulation \(comreg.ie\).](#)

⁸ <https://siteviewer.comreg.ie/#explore> – Siteviewer is an interactive map of Ireland containing the following information;

- the location of every mobile telephone mast,
- the operators which own or controls each mast,
- the types of mobile services provided at each mast.

1.9 This consultation document sets out ComReg's proposal in this regard.

1.2 Structure of this document

1.10 This document is structured as follows:

- **Chapter 2:** sets out the background to ComReg's proposal, the objective of the proposal, and the proposed information to be published;
- **Chapter 3:** sets out ComReg's assessment of the relevant requirements for publishing radio spectrum licence information;
- **Chapter 4:** sets out the legal and regulatory basis for publishing radio spectrum information; and
- **Chapter 5:** sets out next steps in the consultation process.

2 Proposed publication of radio spectrum information

2.1 Background

- 2.1 There are currently in excess of 22,000 radio spectrum licences, used for the provision of various different telecommunications services in the State. This includes mobile communication services, satellite services, air traffic control and broadcasting services among others.
- 2.2 Heretofore, ComReg has published information in respect of certain radio spectrum licences on its website. For example, the location of every mobile base station licensed under the 3G and Liberalised Use Licences⁹ are available on Siteviewer, which is a ComReg interactive map of Ireland that currently provides the following information to the general public:
- (a) the location of very mobile base station;
 - (b) the licensee that operates each base station;
 - (c) the type of services (for example GSM, UMTS, LTE, NR) provided at each base station location; and
 - (d) the NIR (Non-ionising radiation) report for those sites where surveys have been conducted.
- 2.3 While Siteviewer does not represent mobile service coverage¹⁰, it is an informative tool for a broad range of stakeholders, such as electronic communication network and service (“ECN/S”) providers, infrastructure developers such as wind farm developers, and members of the public, who wish to know base station locations and the services provided from those locations.
- 2.4 As a next step to making information held by ComReg publicly available, and to meet its requirements under the Access to Information on the Environment Regulations to be proactive in disseminating environmental information to the public, ComReg is proposing to publish and make available all radio spectrum licence information held by it commencing with fixed link and satellite earth station licences. Of the 22,000 radio spectrum licences in operation currently, there is in excess of 16,000 fixed link and satellite earth station licences (c.

⁹ [Mobile & Wireless Broadband Licences | Commission for Communications Regulation \(comreg.ie\)](https://www.comreg.ie)

¹⁰ The outdoor mobile coverage map shows ComReg’s predicted mobile outdoor coverage across Ireland and at specific addresses and/or Eircodes selected by consumers for all Mobile Service Providers.

70% of all licences).

2.2 Objective

2.5 ComReg is of the preliminary view that the publication of radio spectrum licence information would assist it in meeting its statutory obligation to progressively publish environmental information as set out in the Access to Information on the Environment Regulations 2007 (the “AIE Regulations”) 2007¹¹ (the “AIE Regulations”) and Directive 2003/4/EC¹² (the “AEI Directive”).

2.6 The proposal would also:

- (a) assist ComReg in meeting its relevant statutory objectives to ensure the efficient management and use of the radio frequency spectrum under section 12 of the 2002 Act to:
 - (i) promote competition,
 - (ii) contribute to the development of the internal market, and
 - (iii) promote the interests of users within the Community.
- (b) ensure that data collected as part of its regulatory duties would be published as Open Data¹³, in line with the Government Open Data Strategy 2017 – 2022¹⁴; and
- (c) support the Government’s Mobile and Broadband Taskforce which is tasked with identifying and overcoming barriers to improved connectivity. In its Annual Report for 2022-2023¹⁵.

2.7 ComReg is also guided by the regulatory principles and obligations provided for under the European Union (Electronic Communications Code) Regulations 2022, S.I. No. 444 of 2022, (the “ECC Regulations”). Such principles and obligations are outlined further at Annex 1 and include:

¹¹ S.I. No. 133 of 2007 – European Communities (Access to Information on the Environment) Regulations 2007

¹² DIRECTIVE 2003/4/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 28 January 2003 on public access to environmental information and repealing Council Directive 90/313/EEC

¹³ Open Data: A piece of data or content is open if anyone is free to use, reuse, and redistribute it — subject only, at most, to the requirement to attribute and/or share-alike” [The Open Data Handbook](#).

¹⁴ Goal 5.1 of ComReg’s Electronic Communications Strategy Statement for 2021 to 2023.

¹⁵ Mobile Phone and Broadband Taskforce: Annual Report 2022 – 2023: <https://assets.gov.ie/263160/6c471634-84cd-485c-84a0-214d0d9f5f47.pdf> - the Mobile and Broadband Taskforce identifies the publication of fixed radio links information as an action under its “Improving information and access to Assets and Infrastructure” pillar, one of three pillars identified to support the delivery of its objective.

26. (1) The Regulator shall ensure that all relevant information on rights, conditions, procedures, charges, fees and decisions concerning general authorisations, rights of use and rights to install facilities is published and kept up to date in an appropriate manner in order to provide easy access to that information for all interested parties.

2.1 Proposed radio spectrum licence information to be published

- 2.8 In conducting its licensing function, ComReg requires licence applicants to provide detailed information in relation to the proposed apparatus to be deployed. The information required varies by licence types and the required technical assessment in order for ComReg to grant a licence. For example, fixed link licence applications require detailed technical assessment by ComReg to coordinate each new application with existing licensed fixed links.
- 2.9 Fixed link applicants are required to provide detailed information in respect of the apparatus to be deployed, including frequency of operation, make and model of equipment, antenna power, gain, pattern, modulation scheme, etc. In contrast, Fixed Wireless Access Local Area¹⁶ licence applications do not require the same degree of detail in the application process as the technical assessment does not require the same level of analysis to ensure coordination between different licensees of the radio spectrum.
- 2.10 ComReg observes that in its recent consultations in respect of the introduction of new licensing regimes for fixed links licences¹⁷ and satellite earth station licences¹⁸, it has opened up a number of new frequency bands for both fixed links and satellite earth stations and that in a number of frequency bands these services enjoy co-primary status.
- 2.11 In this regard, ComReg outlined in Document 23/96¹⁹ its intention to publish a consultation on a proposal to publish and make available radio spectrum licence information on Siteviewer in a transparent and accessible manner which would, amongst other things, assist and facilitate coordination between operators and help avoid harmful interference.
- 2.12 ComReg further observes that several European National Regulatory Authorities

¹⁶ <https://www.comreg.ie/industry/radio-spectrum/licensing/search-licence-type/fixed-wireless-access-local-area-fwala/>

¹⁷ [Review of the Fixed Radio Links Licensing Regime: Response to Consultation and Decision | Commission for Communications Regulation \(comreg.ie\).](#)

¹⁸ [Review of the Satellite Earth Station Licensing Regime: Response to Consultation and Decision | Commission for Communications Regulation \(comreg.ie\).](#)

¹⁹ ComReg Document 23/96 – Review of the Satellite Earth Station Licensing Regime: Response to Consultation and Decision – published 4 October 2023.

(“NRAs”) already make radio spectrum licence information publicly available to varying degrees, see Appendix 2 for more information. For example:

- Switzerland’s Bundesamt für Kommunikation publishes information regarding mobile network stations, broadcasting stations and fixed links;²⁰
- The Consumer Protection and Technical Regulatory Authority of Estonia publishes licence information except for security services, governmental services and protection of personal information;²¹ and
- Ofcom’s System Information System provides, amongst other things, information on a range of radio spectrum licences including the entity has been assigned spectrum at specific locations.²²

2.13 ComReg is proposing to publish and make available all relevant information (the “radio spectrum information”) contained in each radio spectrum licence, which includes, but is not limited to, the following²³;

- ComReg’s licence reference number;
- Licensee Name;
- Licence Type;
- Licence commencement and expiry date;
- Location coordinates of apparatus²⁴ and stations²⁵;
- Frequency band(s);
- Channel number;
- Frequency assignment;
- Frequency bandwidth;
- Output power;

²⁰ [Maps of Switzerland - Swiss Confederation - map.geo.admin.ch](http://map.geo.admin.ch).

²¹ <https://mtr.tija.ee/>.

²² [Spectrum information portal - Ofcom](http://spectrum.ofcom.gov.uk).

²³ ComReg notes that not all of these parameters are applicable to each licence type.

²⁴ ‘Apparatus’ means apparatus for wireless telegraphy as defined in section 2 of the Act of 1926.

²⁵ ‘Station’ is defined in the ITU’s Radio Regulations as “one or more transmitters or receivers or a combination of transmitters and receivers, including the accessory equipment, necessary at one location for carrying on a radiocommunication service, or the radio astronomy service”.

- Radio:
 - Make and type;
 - receive threshold²⁶;
- Space Station Name (for SES licences);
- Space Station Operator (for SES licences);
- Call signs²⁷; and
- Antenna details including:
 - Make and type;
 - gain;
 - Polarisation;
 - Azimuth;
 - Beamwidth;
 - Antenna size;
 - height above ground; and
 - elevation angle

²⁶ The level of the wanted signal received for a given bit error rate.

²⁷ Article 19 of the ITU Radio Regulations requires call signs to be allocated and assigned for certain services by the relevant authorities to identify stations.

3 Requirements for publishing radio spectrum licence information

3.1 In determining whether or not to publish and make available radio spectrum licence information on Siteviewer, ComReg has identified a number of requirements for the publication of radio spectrum information. The requirements identified by ComReg are as follows:

- Access to Information on the Environment;
- Access to and availability of Information;
- Efficient Spectrum Management;
- Ensuring the compliant use of the radio spectrum;
- Promoting Competition;
- Efficient investment and innovation;
- Supporting non-spectrum matters; and
- Impact on consumers.

3.2 In this chapter ComReg assesses each of these requirements in turn below.

3.2 Access to Information on the Environment

3.3 ComReg notes that the AIE Regulations, as amended, along with the AEI Directive, provide legal rights to those seeking to access information on the environment from public authorities, who are required to make environmental information available in a progressive manner. ComReg notes that:

(i) Article 7(1) of the AEI Directive requires Member States to:

“ensure that environmental information progressively becomes available in electronic databases which are easily accessible to the public through public telecommunication networks.”

3.4 ComReg further notes that the radio spectrum information held by it relates to information about radio apparatus that emit in various ways either, or both, non-ionising radiation and energy that are likely to affect the air and atmosphere elements by passing through them, as identified in in the definition of

“environmental information” contained in Regulation 3(1)²⁸ of the AIE Regulations. Therefore, ComReg is of the preliminary view that radio spectrum information held by ComReg as set out in paragraph 2.14 is “environmental information”²⁹ relating to emissions and radiation as defined in Regulation 3(1) of the AIE Regulations.

- 3.5 Regarding the publication of environmental information, ComReg notes that Regulation 8 of the AIE Regulations sets out the grounds that mandate for not publishing certain information, while Regulation 9 sets out the discretionary grounds for not publishing certain information.
- Regulation 8 of the AIE Regulations states that a public authority shall not make available environmental information in accordance with Article 7 of the AEI Directive where disclosure of the information—
 - (a) would adversely affect—
 - (i) the confidentiality of personal information relating to a natural person who has not consented to the disclosure of the information, and where that confidentiality is otherwise protected by law,
 - (ii) the interests of any person who, voluntarily and without being under, or capable of being put under, a legal obligation to do so, supplied the information requested, unless that person has consented to the release of that information,
 - (iii) the protection of the environment to which that information relates, or
 - (iv) without prejudice to paragraph (b), the confidentiality of the proceedings of public authorities, where such confidentiality is otherwise protected by law (including the Freedom of Information Acts 1997 and 2003 with respect to exempt records within the meaning of those Acts);

or

²⁸ See paragraph 4.3

²⁹ “Environmental information” means any information in written, visual, aural, electronic or any other material form on: (a) the state of the elements of the environment, such as air and atmosphere, water, soil, land, landscape and natural sites including wetlands, coastal and marine areas, biological diversity and its components, including genetically modified organisms, and the interaction among these elements; (b) factors, such as substances, energy, noise, radiation or waste, including radioactive waste, emissions, discharges and other releases into the environment, affecting or likely to affect the elements of the environment referred to in (a).

(b) to the extent that it would involve the disclosure of discussions at one or more meetings of the Government, is prohibited by Article 28 of the Constitution.

- Regulation 9 of the AIE Regulations states that:

(1) A public authority³⁰ may refuse to make available environmental information where disclosure of the information requested would adversely affect—

- (a) international relations, national defence or public security,
- (b) the course of justice (including criminal inquiries and disciplinary inquiries),
- (c) commercial or industrial confidentiality, where such confidentiality is provided for in national or Community law to protect a legitimate economic interest, or
- (d) intellectual property rights.

(2) A public authority may refuse to make environmental information available where the request—

- (a) is manifestly unreasonable having regard to the volume or range of information sought,
- (b) remains formulated in too general a manner, taking into account article 7(8),
- (c) concerns material in the course of completion, or unfinished documents or data, or
- (d) concerns internal communications of public authorities, taking into account the public interest served by the disclosure.

3.6 Where the environmental information relates to emissions, the exceptions are limited to only those set out at Regulation 9(1). ComReg considers the applicability of all of the above exceptions below.

³⁰ The AIE Regulations apply to public authorities (Article 3(1)). Public authorities subject to the AIE Regulations include:

- Government departments;
- Local authorities;
- Non-commercial state agencies, e.g. the Environmental Protection Agency;
- Commercial state agencies, e.g. EirGrid;
- Regulatory bodies, e.g. the Commission for communications Regulation; and
- Certain private entities that perform public administrative functions, or that have public responsibilities or functions/ provide public services under the “control” of a public authority.

Therefore, ComReg is a public authority for the purposes of the AIE Regulations.

- 3.7 In addition, ComReg does not consider that any of the more general exceptions in Regulation 9(2) of the AIE Regulations apply. As ComReg holds the information, it is not manifestly unreasonable to disclose, it is neither incomplete, unfinished nor relates to internal communications.

International relations and national security

International relations

- 3.8 ComReg is of the view that there would not be any adverse effect to international relations from publishing all of the information set out in paragraph 2.14. Indeed, ComReg notes that the ECC and ITU actively encourage administrations to make radio spectrum information publicly available in the interests of transparency and coordinated use of shared spectrum. ComReg further notes that a number of European national regulatory authorities, outlined at Appendix 2, also actively publish radio spectrum information.

National security

- 3.9 Regulation 9 of the AIE Regulations states that:

“(1) A public authority may refuse to make available environmental information where disclosure of the information requested would adversely affect—

(a) international relations, national defence or public security,”

- 3.10 ComReg is of the view that publication of information held by it in respect of An Garda Síochána or the Defence Forces could adversely affect national defence or public security. Consequently, ComReg does not propose disclosing any radio spectrum licence information which identifies frequency assignments and/or apparatus used by An Garda Síochána or the Irish Defence Forces
- 3.11 However, ComReg is of the view that that the publication of the information indicated in paragraph 2.14 for authorised undertakings would not adversely affect national security.
- 3.12 ComReg further notes that some of this information is already made available. For example, ComReg has been publishing the mobile network operators' (MNOs) base station locations and service type since 2004 on its Siteviewer website.
- 3.13 However, ComReg would evaluate any formal requests by Government with regards to the publication or otherwise of certain radio spectrum information in the interest of national security.

The course of justice

- 3.14 ComReg is of the view that the proposed publication of the radio spectrum information does not concern the course of justice or the ability of a person to receive a fair trial or the ability of a public authority to conduct an inquiry of a criminal or disciplinary nature. The exemption exists to ensure that there should be no disruption to the administration of justice and no prejudice to the rights of individuals or organisations to a fair trial.

Intellectual property rights

- 3.15 ComReg is of the view that regarding the radio spectrum information set out in paragraph 2.14, Licensees do not have Database Rights in the information as they do not provide a database but information in a licence application format as required.
- 3.16 ComReg notes that it is the only party which has undertaken a "substantial investment" in obtaining, verifying or presenting the contents of the database. ComReg further notes that the applicants and licensees providing the information do not require investment independent of the resources required for the completion of the application form, nor is additional investment needed in the organisation and arrangement of the information required by ComReg as part of a radio spectrum licence application. Thus, no rights in the database have been created for the Licensees.
- 3.17 ComReg is also of the view that the radio spectrum information set out in paragraph 2.14 does not require copyright protection or any other type of Intellectual Property Rights as the information is not original work³¹.
- 3.18 The radio spectrum information is of a type and nature required to assess a radio spectrum licence application and issue an appropriate radio spectrum licence. ComReg notes that there is no independent creative effort in the way the information is chosen and entered.

Personal Data

- 3.19 ComReg notes that Regulation 8 of the AIE Regulations states that a public authority shall not make available environmental information in accordance with Article 7 of the AEI Directive where disclosure of the information—
- 3.20 *(a) would adversely affect—*

(i) the confidentiality of personal information relating to a natural person who has not consented to the disclosure of the information, and where

³¹ The COPYRIGHT AND RELATED RIGHTS ACT, 2000, as amended, defines "work" as a literary, dramatic, musical or artistic work, sound recording, film, broadcast, cable programme, typographical arrangement of a published edition or an original database and includes a computer program except in Part II, Chapter 7 where "work" means "literary, dramatic, musical or artistic work or film."

that confidentiality is otherwise protected by law,

(ii) the interests of any person who, voluntarily and without being under, or capable of being put under, a legal obligation to do so, supplied the information requested, unless that person has consented to the release of that information,

- 3.21 ComReg observes that for certain licence types such as Business Radio, or Amateur Station licences ComReg gathers personal data such as the contact details of Licensees. ComReg does not intend to publish any personal information it holds in respect of any radio spectrum licence. However, ComReg intends to publish the name of Amateur Station Licensees in the interest of transparency so that other Amateur Station Licensees have information as to the holder of a specific call sign.³²
- 3.22 ComReg notes that in certain instances (e.g. Amateur Station licences) the Amateur Station address will be the same as the licensee's residential address. In such circumstances, ComReg intends to publish this information as it relates to the locations of licensed apparatus, subject to the consent of the particular Amateur Station licensee concerned.
- 3.23 ComReg notes that this is also the practice elsewhere. For example, the German Federal Network Agency (Bundesnetzagentur or BNetzA) publishes a list of the Amateur Station call signs it assigns, including the name of the Licensee and the location of the Amateur Station where the Licensee has consented to the publication of the location information.³³

Commercial confidentiality

- 3.24 ComReg notes that some licensees may be of the view that:
- publishing apparatus locations and associated technical information would show how networks are set up and may provide their competitors with a commercial advantage; and
 - providing the location of transmitters would enable competitors to identify another company's commercial end-users.
- 3.25 In assessing any views of ECN/S providers regarding the commercial confidentiality of the radio spectrum licence information associated with them, ComReg applies the tests laid down by law and as set out in its guidelines on

³² Call signs are allocated and assigned by the relevant authorities to identify stations, not individuals, in line with Article 19 of the ITU Radio Regulations.

³³

https://data.bundesnetzagentur.de/Bundesnetzagentur/SharedDocs/Downloads/DE/Sachgebiete/Telekommunikation/Unternehmen_Institutionen/Frequenzen/Amateurfunk/Rufzeichenliste/rufzeichenliste_afu.pdf

the treatment of confidential information.³⁴ These tests are well known. In essence, the material must have the necessary “quality of confidence” for it to be confidential. In this regard, ComReg assesses:

- a) Whether radio spectrum licence information is material which the Licensee believes would be injurious to him (or advantageous to his competitors or others) if it were released.
- b) Whether the Licensee believes the material to be confidential.
- c) Whether that belief is reasonable.
- d) The usages and practices of the communications sector regarding the material in question.

3.26 The radio spectrum licence information ComReg proposes to publish can be categorised as follows:

- a) Technical information relating to the operation of the licensed system;
- b) Radio spectrum information; and
- c) Location information.

3.27 ComReg considers below whether information under each of the above categories would be injurious to him (or advantageous to his competitors or others) if it were released. As respondents will be aware, the fact that a person or company asks for information to be treated as confidential does not of itself establish it as such.

a) Technical information

3.28 ComReg notes that technical information³⁵ on the operation of radio spectrum networks is not commercially confidential as all radio networks need to meet a minimum network availability to ensure optimum service delivery i.e. the degree to which the network is operable and not in a state of failure or outage at any point of time. Radio spectrum networks also cannot exceed certain EIRP thresholds, (as set out in industry standards, ComReg guidelines, and statutory instruments), to ensure compliance with licence conditions and non-ionising radiation limits. These requirements are well known within industry and are publicly available.

3.29 ComReg also notes that the equipment deployed by Licensees is non-proprietary, commercially available, and must comply with the European Union

(Radio Equipment) Regulations of 2017.

- 3.30 Therefore, ComReg is of the preliminary view that the publication of this information would not be injurious to a Licensee (or advantageous to the Licensee's competitors or others) as the information is already publicly available in some form. ComReg further notes that the make and model of radio equipment used by Licensees does not relate to the procurement and service contracts that Licensees have with their equipment suppliers, therefore no commercial confidentiality exists. ComReg is also of the preliminary view that it is widely known within industry which companies manufacture and supply radio equipment to ECN/S providers.

b) Radio spectrum information

- 3.31 The radio spectrum bands and/or channel plans for each of the radio spectrum licence types is published by ComReg on its website. ComReg already publishes the spectrum assignments for a number of licence types such as liberalised use, fixed wireless access, third-party business radio, etc. ComReg notes that no commercial confidentiality issues have ever arisen from the publication of that information as it merely identifies which frequencies have been assigned to the Licensees.
- 3.32 ComReg notes that it is well understood within industry which spectrum bands are used to support the networks and services provided by various undertakings. ComReg further notes that Regulation 26(1) the EEC Regulations requires ComReg to publish all relevant information on rights concerning rights of use for radio spectrum:

*"The Regulator shall ensure that **all relevant information on rights, conditions, procedures, charges, fees and decisions concerning general authorisations, rights of use and rights to install facilities is published and kept up to date in an appropriate manner in order to provide easy access to that information for all interested parties.**" [emphasis added]*

- 3.33 ComReg is of the view that information on radio spectrum assignments is relevant information concerning rights of use. Therefore, ComReg is of the preliminary view that the publication of the spectrum assignments for other licence types would be no different in effect as it would not reveal any confidential commercial matters.

c) Location information

- 3.34 While some licensees may be of the view that publishing the location of apparatus would enable competitors to identify their commercial end-users, ComReg notes that it proposes to just publish the geographic coordinates of the apparatus, which does not contain any information regarding end-users.

ComReg currently publishes the geographic location of apparatus for liberalised use licences on its Siteviewer website.

3.35 ComReg further notes that while a commercial customer may be assumed from the geographic location of apparatus, a Licensee's competitors may be able to determine a Licensee's customers from general market research. Therefore, ComReg is of the preliminary view that the geographical location of apparatus is not commercially confidential as it does not identify a commercial end-user.

3.36 ComReg notes Paragraph 12.4 of the Guidance for Public Authorities and others on implementation of the Regulations (May 2013) published by the Minister for the Environment, Community and Local Government (the Minister's Guidance)³⁶ addresses the application of the article 9(1)(c) exception:

“the fact that a person or company asks for information to be treated as confidential does not of itself establish it as such for the purpose of the Regulations, and the public authority must satisfy itself that real and substantial commercial interests are threatened.”

3.37 Finally, ComReg notes that in a recent Decision³⁷ the Commission for Environmental Information (“CEI”) stated the following regarding whether information can be considered commercially confidential and thereby exempt from release under article 8(a)(ii) or 9(1)(c) of the AIE Regulations:

“In order to show that the confidentiality is protecting a legitimate economic interest as required by article 9(1)(c), there must be some adverse effect on the legitimate economic interest that the confidentiality is designed to protect. Accordingly, when relying on article 9(1)(c) the appellant must set out the reasons why it considers that disclosure of the information at issue could specifically and actually undermine the economic interest identified. The risk of the economic interest being undermined must be reasonably foreseeable and not purely hypothetical (see by analogy, C-57/16 P ClientEarth v Commission, paragraph 51). If there would be no adverse effect on the economic interest identified, then article 9(1)(c) cannot be relied upon, as it would not be shown that the confidentiality is protecting that economic interest.”

3.3 Access to and availability of Information

3.38 Effective spectrum management also requires flexibility and responsiveness to adapt to changes in, among other things, technologies, demand from spectrum

³⁶ <https://assets.gov.ie/40897/4a384c0c760c43bba41ef0d151defa6f.pdf>

³⁷ CASE NUMBER: OCE-120059-J8M5X7 – Company A and Commission for Regulation of Utilities – published 7 June 2023. <https://www.ocei.ie/decisions/company-a-and-commission/>

users and end-users, market developments and public policy. In that regard, ComReg identifies its Information Policy as an important regulatory tool in allowing it to effectively manage to radio spectrum, see section 7.2 of ComReg's – Electronic Communications Strategy Statement: 2023-2025 (ComReg Document 23/34)³⁸.

- 3.39 ComReg is of the preliminary view that the publication of this radio spectrum information is likely to be central to the performance of its spectrum management functions. ComReg considers that providing information on existing radio spectrum licensees' deployments is essential if different ECN/S service providers are expected to coordinate with existing users to avoid harmful interference.

Access to radio spectrum licence information for ECN/S undertakings

- 3.40 Both existing and potential ECN/S undertakings would benefit from access to radio spectrum licence information as it would assist them in making informed decisions on the efficient planning and deployment of electronic communication networks and/or services.
- 3.41 Access would provide a more comprehensive understanding of spectrum availability and network deployments by existing licensees which would aid future deployment of ECN/S. It would also allow ECN/S undertakings to undertake a preliminary inter-operator interference analysis in advance of submitting a radio spectrum licence application to ComReg. Currently, ECN/S undertakings only have sufficient information to carry out an intra-network interference analysis and have no information to coordinate their services with other co-primary services e.g., fixed radio links and satellite earth stations.
- 3.42 Where there is a possibility of harmful interference between different service providers, this can be best managed if the operators themselves have access to the necessary information to undertake a preliminary assessment regarding the likelihood of harmful interference. Access to relevant radio spectrum licence information is central to ensuring the efficient assignment and use of the radio spectrum. The opportunity to accurately pre-plan assignments with greater certainty would speed up the time taken to process licence applications and reduce administration costs for all parties.
- 3.43 ComReg currently provides useful information on deployments to interested parties on mobile base stations on Siteviewer³⁹, and fixed radio links information to licence applicants through the eLicensing⁴⁰ platform. In

³⁸ ComReg 23/34 – Electronic Communications Strategy Statement: 2023-2025 – published 13 April 2023

³⁹ <https://siteviewer.comreg.ie/#explore>

⁴⁰ <https://elicensing.comreg.ie/>

Document 21/136, ComReg signalled its intention to make fixed radio links licence and satellite earth stations licence information publicly available on Siteviewer. ComReg noted that providing access to this information would provide greater transparency regarding what services are deployed in particular areas and would assist operators with their network planning.

Access to radio spectrum licence information for non-ECN/S entities

- 3.44 Non-ECN/S entities such as developers of large physical structures would also benefit as they would be able to efficiently plan deployments which may impact radio spectrum licensees. Large physical structures can cause interference to ECN/S networks and services by blocking signals. Therefore, having access to radio spectrum licence information informs the planning process and enables early engagement with any potentially affected licensees.
- 3.45 Therefore, industry stakeholders would welcome having access to radio spectrum licence information as it would support their networks and services, enable them to make informed decisions regarding network deployment planning, support internal licence application processes, and ensure the efficient use of spectrum.
- 3.46 ComReg observes that licensees may have concerns about the proposals set out in this consultation document regarding other interested parties having access to radio spectrum licence information.

ComReg's Open Data Policy

- 3.47 In addition to assisting ComReg meet its objectives of promoting competition between undertakings and ensuring the efficient use of spectrum, the publication of licence information would also ensure that data collected as part of its regulatory duties would be published as Open Data in line with Ireland's Open Data Strategy 2017 – 2022⁴¹ for the benefit of all interested parties.

Information Asymmetry

- 3.48 ComReg notes that information asymmetries can prevent consumers and/or ECN/S providers from making fully informed choices regarding choosing and/or providing services, which in turn results in market failures.
- 3.49 Where there is none or partial information in a market there is a higher likelihood that incorrect decisions will be made, which in turn leads to inefficient outcomes. The lack of information results in asymmetry in the market, i.e. that licensees have only access to partial information.

⁴¹ Goal 5.1 of ComReg's Electronic Communications Strategy Statement for 2021 to 2023.

3.50 To facilitate and contribute to the development of the internal market by removing remaining obstacles and to promote competition, ComReg regularly publishes reports regarding the key trends and information on the electronic communications sector, such as:

- 3.6 GHz Band Transition: Progress Report;
- ComReg Consumer Care Statistics Report;
- ComReg Consumer Line Statistics Report
- Fixed Radio Links Annual Report;
- Implementation of EU Open Internet Access Regulations in Ireland;
- Network Operations Annual Report;
- Non-Ionising Radiation Report;
- Quarterly Key Data Report;
- Quality of Postal Service Annual Report; and
- Spectrum Intelligence & Investigations publications.

3.51 The absence of sufficient information being made available can lead to inefficiencies in the market, and in extreme cases result in market failure. Regarding the radio spectrum information held by ComReg, the publication of that information would enable ECN/S providers to make more informed decisions about network and service deployments resulting in network and spectrum efficiencies.

3.52 From a public interest perspective, the publication of radio spectrum information would allow consumers to have a better understanding of how the radio spectrum is used in Ireland. ComReg is of the view that when the general public have questions regarding network deployments, the absence of full information being available may not fully address such enquiries.

3.53 For the reasons set out above ComReg is of the view that the proposed publication of the radio spectrum licence information would be proportionate, in the public interest and would ensure that ComReg meets with its statutory obligations.

3.4 Efficient Spectrum Management

3.54 Providing access to radio spectrum information would enable licence applicants to conduct preliminary inter-operator interference analysis prior to submitting a radio spectrum application to ComReg. This would result in the minimisation of

potential interference between Licensees and increased spectrum reuse, thereby encouraging more efficient use and ensuring the effective management of radio spectrum.

- 3.55 Access to radio spectrum information would also enable ECN/S providers to strategically deploy their networks in an efficient manner, enable the coordination of primary services, and allow potential new entrants to identify spectrum and/or locations which would be suitable for the testing of new radio equipment and/or trialling new services.
- 3.56 From an administrative perspective, where a radio spectrum licence applicant can undertake an inter-operator interference analysis rather than just an intra-operator analysis, this streamlines the application process by removing some of the guess work regarding choosing a suitable channel.
- 3.57 Therefore, ComReg is of the preliminary view that the publication of radio spectrum information is preferred from an efficiency and spectrum management perspective.

3.5 Ensuring the compliant use of the radio spectrum

- 3.58 The publication of relevant radio spectrum licence information would assist in resolving harmful interference cases experienced by ECN/S providers. For example, if a licensee was to experience harmful interference, it would in the first instance be able to use the published information to undertake an initial assessment to determine if the cause was an intra or inter network issue. With the information provided on Siteviewer, licensees may, as a first step, be able to resolve the matter by engaging with other licensees without requiring the assistance of ComReg's Spectrum Intelligence and Investigations team⁴².

3.6 Promoting Competition

- 3.59 Potential distortions or restrictions to competition arising from the non-publication of radio spectrum information are often due to ECN/S providers not having sufficient detailed information on spectrum usage and network deployments to make informed decisions within the internal market.
- 3.60 ComReg is of the preliminary view that the publication of radio spectrum information would contribute to an open and competitive market as it would enable all ECN/S undertakings to identify geographic areas where certain services are not being provided, where there may be opportunities to compete with existing providers, and where they could potentially provide new services

⁴² For example, another licensee may inadvertently have tuned a fixed link on an incorrect channel, and by having access to the information the impacted licensee may be able to resolve the matter quickly by drawing the relevant licensee's attention to the issue.

using radio spectrum.

- 3.61 Therefore, ComReg is of the preliminary view that publishing information on radio spectrum information would contribute to an open and competitive market as existing and potential ECN/S providers would have visibility of physical network deployments across the country, which in turn would enable ECN providers to determine the optimum deployment of physical network infrastructure.

3.7 Efficient investment and innovation

- 3.62 Creating the conditions for promoting efficient investment and innovation in new and enhanced infrastructure involves ComReg exercising its regulatory functions in an appropriate and predictable fashion, thus providing regulatory certainty. Therefore, similar to addressing to distortions to competition, where ECN/S providers have sufficient detailed information on spectrum usage and network deployments this would enable them to make informed decisions within the internal market.

- 3.63 As set out in its Electronic Communications Strategy Statement for 2023-2025⁴³, ComReg's mission is that through effective and relevant regulation, it facilitates the development of a competitive communications sector in Ireland that attracts investment, encourages innovation, and empowers consumers to choose and use communications services with confidence.

- 3.64 Goal 1.6 of ComReg's Electronic Communications Strategy Statement reflects a primary objective of ComReg's spectrum management functions because effective competition between wireless service providers brings long term benefits to consumers in terms of enhanced competition, choice, quality of services and innovation. The efficient assignment and use of the radio spectrum is clearly an important consideration in promoting efficient investment.

- 3.65 By encouraging research and innovation ComReg hopes to expand the opportunities for industry, citizens and consumers through better use of the radio spectrum. In that regard, ComReg's Test & Trial Ireland,⁴⁴ which encourages innovation and development of wireless communications using Ireland's radio spectrum, enables licensees to:

- Confirm viability prior to commercial rollout;
- Utilise pioneering new technology;

⁴³ See [Electronic Communications Strategy Statement 2023 – 2025 | Commission for Communications Regulation \(comreg.ie\)](#)

⁴⁴ <https://www.testandtrial.ie/>

- Benefit from a low cost testing environment to enable innovation;
- Test wireless blueprints for export to global markets;
- develop of wireless communications;
- Showcase inventive research; and
- Trial wireless products for European and/or Global markets.

3.66 The publication of radio spectrum information would enable Test & Trial Ireland applicants to, inter alia:

- Confirm availability of spectrum prior to submitting an application and rollout;
- Engage with existing licensees to discuss any potential co-existence matters;
- encourage a wider range of studies to be carried out; and
- enable third-party providers to develop innovative services to use the information in different ways.

3.67 Therefore. ComReg is of the preliminary view that access to radio spectrum information would promote innovation and encourage efficient investment. This would in turn allow for the cost-effective deployment of ECN/S and prevent inefficient duplication of investment caused by predictable changes to the regulatory regime.

3.8 Non-spectrum matters

3.68 The publication of radio spectrum information would assist non-spectrum related planning processes which could potentially impact ECN/S providers and consumers. An example would be wind farm planning where radio spectrum information plays an important role in the procedures and processes concerning planning in these areas. ^{45 46 47}

3.69 Large physical structures such as windfarms and high-rise buildings may interfere with electromagnetic transmissions from, amongst other things, fixed radio links. The publications of the locations and bearings of radio

⁴⁵ Wind Energy Development Guidelines (2006) - <https://www.gov.ie/en/publication/f449e-wind-energy-development-guidelines-2006/>

⁴⁶ Draft Revised Wind Energy Development Guidelines December 2019 - <https://www.gov.ie/en/publication/9d0f66-draft-revised-wind-energy-development-guidelines-december-2019/>

⁴⁷ SEAI's Community Energy Resource Toolkit: The Planning Process - <https://www.seai.ie/publications/Community-Toolkit-Planning-Process.pdf>

transmissions would assist wind turbine developers to coordinate and engage with licensees. Enabling access to the proposed radio spectrum information would potentially expedite the coordination process as developers would not need to submit a request for information to ComReg and await a response. Publishing the information would also reduce the administrative burden on all parties in processing such requests as developers may be able to avoid areas where there are high concentrations of apparatus.

- 3.70 Increased efficiencies in the processes for planning and deploying wind farms would benefit consumers and the environment by assisting in delivering the Government's goal of delivering large emissions reductions as set out in its Climate Action Plan 2023.⁴⁸

3.9 Impact on consumers

- 3.71 It can be generally assumed that what is good for competition, and what promotes investment in infrastructure, is good for consumers. This is because increased competition between operators brings benefits to customers in terms of price, choice and quality of services. In that regard, options that are good for competition above are likely to be good for consumers.
- 3.72 In addition, the AIE Regulations provides consumers with the right to obtain certain environmental information from a public authority. The AIE Regulations also oblige public authorities to be proactive in disseminating environmental information to the public. They must also make reasonable efforts to maintain environmental information and have it in a form that is accessible and can be reproduced.
- 3.73 Therefore, ComReg is of the preliminary view that the publication of radio spectrum information would have a positive impact on consumers in terms of their understanding of the networks and services deployed in Ireland. It would ensure ComReg meets its obligations as set out in the AIE Regulations to proactively in disseminate environmental information to the public.

⁴⁸ CLIMATE ACTION PLAN 2023 ("CAP23") Changing Ireland for the Better – <https://www.gov.ie/pdf/?file=https://assets.gov.ie/256997/b5da0446-8d81-4fb5-991e-65dd807bb257.pdf#page=null>

4 Legal and Regulatory Basis

4.1 Access to Information on the Environment

- 4.1 The Access to Information on the Environment Regulations 2007⁴⁹ (the “AIE Regulations”), as amended, and Directive 2003/4/EC⁵⁰ (the “AEI Directive”) provide legal rights to those seeking to access information on the environment from public authorities. It also requires public authorities to make environmental information available in a progressive manner.

The AIE Regulations

- 4.2 The AIE Regulations applies where there is a request for environmental information that a public authority holds. ComReg notes it is a public authority as defined by the AIE Regulations.⁵¹

- 4.3 Regulation 3(1) of the AIE Regulations defines "environmental information" as any information in written, visual, aural, electronic or any other material form on—

“(a) the state of the elements of the environment, such as air and atmosphere, water, soil, land, landscape and natural sites including wetlands, coastal and marine areas, biological diversity and its components, including genetically modified organisms and the interaction among these elements,

(b) factors, such as substances, energy, noise, radiation or waste, including radioactive waste, emissions, discharges and other releases into the environment, affecting or likely to affect the elements of the environment,

(c) measures (including administrative measures), such as policies, legislation, plans, programmes, environmental agreements, and activities affecting or likely to affect the elements and factors referred to in paragraphs (a) and (b) as well as measures or activities designed to protect those elements,

(d) reports on the implementation of environmental legislation,

⁴⁹ S.I. No. 133 of 2007 – European Communities (Access to Information on the Environment) Regulations 2007

⁵⁰ DIRECTIVE 2003/4/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 28 January 2003 on public access to environmental information and repealing Council Directive 90/313/EEC

⁵¹ <https://www.comreg.ie/about/foi-aie-info/information-environment/>

(e) cost-benefit and other economic analyses and assumptions used within the framework of the measures and activities referred to in paragraph (c), and

(f) the state of human health and safety, including the contamination of the food chain, where relevant, conditions of human life, cultural sites and built structures inasmuch as they are, or may be, affected by the state of the elements of the environment referred to in paragraph (a) or, through those elements, by any of the matters referred to in paragraphs (b) and (c)."

4.4 Regulations 5(1)(b) and 5(1)(c) require a public authority to:

"(b) make all reasonable efforts to maintain environmental information held by or for it in a manner that is readily reproducible and accessible by information technology or by other electronic means; and

(c) ensure that environmental information compiled by or for it, is up-to-date, accurate and comparable."

The AEI Directive

4.5 Article 1(b) sets that one of the objectives of the AEI Directive is to ensure that, as a matter of course, environmental information is progressively made available and disseminated to the public in order to achieve the widest possible systematic availability and dissemination to the public of environmental information. To this end the use of computer telecommunication and/or electronic technology, where available, shall be promoted.

4.6 Article 7 on the dissemination of environmental information sets out that:

"1. Member States shall take the necessary measures to ensure that public authorities organise the environmental information which is relevant to their functions and which is held by or for them, with a view to its active and systematic dissemination to the public, in particular by means of computer telecommunication and/or electronic technology, where available.

The information made available by means of computer telecommunication and/or electronic technology need not include information collected before the entry into force of this Directive unless it is already available in electronic form.

Member States shall ensure that environmental information progressively becomes available in electronic databases which are easily accessible to the public through public telecommunication networks.

2. The information to be made available and disseminated shall be updated as appropriate and shall include at least:

- (a) texts of international treaties, conventions or agreements, and of Community, national, regional or local legislation, on the environment or relating to it;*
 - (b) policies, plans and programmes relating to the environment;*
 - (c) progress reports on the implementation of the items referred to in (a) and (b) when prepared or held in electronic form by public authorities;*
 - (d) the reports on the state of the environment referred to in paragraph 3;*
 - (e) data or summaries of data derived from the monitoring of activities affecting, or likely to affect, the environment;*
 - (f) authorisations with a significant impact on the environment and environmental agreements or a reference to the place where such information can be requested or found in the framework of Article 3;*
 - (g) environmental impact studies and risk assessments concerning the environmental elements referred to in Article 2(1)(a) or a reference to the place where the information can be requested or found in the framework of Article 3.*
- 3. Without prejudice to any specific reporting obligations laid down by Community legislation, Member States shall take the necessary measures to ensure that national, and, where appropriate, regional or local reports on the state of the environment are published at regular intervals not exceeding four years; such reports shall include information on the quality of, and pressures on, the environment.*
- 4. Without prejudice to any specific obligation laid down by Community legislation, Member States shall take the necessary measures to ensure that, in the event of an imminent threat to human health or the environment, whether caused by human activities or due to natural causes, all information held by or for public authorities which could enable the public likely to be affected to take measures to prevent or mitigate harm arising from the threat is disseminated, immediately and without delay.*
- 5. The exceptions in Article 4(1) and (2) may apply in relation to the duties imposed by this Article.*
- 6. Member States may satisfy the requirements of this Article by creating links to Internet sites where the information can be found.”*

4.2 Spectrum Management

- 4.7** In addition, ComReg has the statutory function under section 10(1)(b) of the Communications Regulation Act 2002 as amended of managing the radio

frequency spectrum, and has the statutory objective under section 12(1)(b) of that Act of ensuring the efficient management and use of the radio frequency spectrum.

- 4.8 In managing the radio spectrum, ComReg has made regulations under the Wireless Telegraphy Act 1926 as amended for the possession and use of many forms of apparatus for wireless telegraphy. These regulations specify the conditions of the licensing regime or, specify the licence-exemption that applies to same.
- 4.9 In fulfilling its licensing role ComReg requires that radio spectrum licence applicants provide certain technical information in relation to the apparatus to be licenced to enable ComReg to determine the appropriate frequency of operation of the apparatus and to ensure that it can operate without causing, or incurring, harmful interference to other users or the radio spectrum.
- 4.10 A summary of ComReg's statutory remit, including relevant functions, objectives, duties and principles is set out in Appendix 1.
- 4.11 Regarding ComReg's proposal to publish radio spectrum information, ComReg notes that the following statutory provisions are particularly relevant to the proposal:
- (a) The Open Data and re-use of Public Sector information Directive (EU) 2019/1024 was transposed into Irish law by SI 376/2021 on July 22nd 2021⁵², and it mandates the release of public sector data in free and open formats. The overall objective of Directive (EU) 2019/1024 is to continue the strengthening of the EU's data economy by increasing the amount of public sector data available for re-use, ensuring fair competition and easy access public sector information, and enhancing cross-border innovation based on data. The following provisions of Directive (EU) 2019/1024 are relevant to ComReg's proposal:
 - (i) Release of non-personal data in open formats and to open standards;
 - (ii) Data to be available in real time and via APIs (where possible); and
 - (iii) Prevention of data lock-in, exclusive arrangements discouraged.
 - (b) The Communications Regulation Act 2002, as amended, ("Act of 2002"),⁵³ and the European Union (Electronic Communications Code)

⁵² <https://www.gov.ie/en/circular/523a7-circular-202021-open-data-directive/>

⁵³ <https://revisedacts.lawreform.ie/eli/2002/act/20/revised/en/html>

Regulations 2022 (“EECC Regulations”)⁵⁴ set out provisions by which ComReg must make radio spectrum information publicly available, including the following:

- (i) Section 10(1)(da) of the Act of 2002,⁵⁵ obliges ComReg to collect, compile, extract, disseminate and publish information for the purpose of contributing to an open and competitive market and also for statistical purposes. In particular Section 10(1)(da) states:

“for the purpose of contributing to an open and competitive market and also for statistical purposes, to collect, compile, extract, disseminate and publish information from undertakings relating to the provision of electronic communications services, electronic communications networks and associated facilities and the transmission of such services on those networks”.

- (ii) Regulation 98(15) of the EECC Regulations⁵⁶ provides that:

“The Regulator and other competent authorities shall, subject to the protection of the confidentiality of any information which they consider to be confidential and the protection of personal data, publish from time to time such information as would, in the opinion of the Regulator or the other competent authority, contribute to an open and competitive market”.

- (iii) Regulation 26(1) of the EECC Regulations requires ComReg to:

“ensure that all relevant information on rights, conditions, procedures, charges, fees and decisions concerning general authorisations, rights of use and rights to install facilities is published and kept up to date in an appropriate manner in order to provide easy access to that information for all interested parties”.

- (iv) ComReg notes that Recital 57 of the EECC Directive provides that:

“Information gathered by national regulatory and other competent authorities should be publicly available, except in so far as it is confidential in accordance with national rules on

⁵⁴ S.I. No. 444/2022 - European Union (Electronic Communications Code) Regulations 2022

⁵⁵ <https://revisedacts.lawreform.ie/eli/2002/act/20/revised/en/html>

⁵⁶ S.I No. 333 of 2011, the European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2011

public access to information and subject to Union and national rules on commercial confidentiality.”

4.1 European Commission Decisions

European Commission Decision 676/2002/EC on a regulatory framework for radio spectrum policy in the European Community (“Radio Spectrum Decision”)⁵⁷

- 4.12 Regarding the availability of information, ComReg notes that Article 5 provides that:

“Member States shall ensure that their national radio frequency allocation table and information on rights, conditions, procedures, charges and fees concerning the use of radio spectrum, shall be published if relevant in order to meet the aim set out in Article 1. Member States shall keep this information up to date and shall take measures to develop appropriate databases in order to make such information available to the public, where applicable in accordance with the relevant harmonisation measures taken under Article 4”.

4.2 The EC’s and CEPT’s views regarding the publication of radio spectrum information

4.2.1 The European Commission

European Commission Decision 676/2002/EC on a regulatory framework for radio spectrum policy in the European Community (“Radio Spectrum Decision”)⁵⁸

- 4.13 ComReg notes the European Commission’s (“EC”) view in the Radio Spectrum Decision regarding the publication of radio spectrum information in recital 14:

*“The **coordinated and timely provision to the public of appropriate information concerning the allocation, availability and use of radio spectrum in the Community is an essential element for investments and policy making.** So are technological developments which will give rise to new radio spectrum allocation and management techniques and radio frequency assignment methods. Development of long-term strategic aspects require proper understanding of the implications of how technology evolves. **Such information should***

⁵⁷ Decision No 676/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community (Radio Spectrum Decision).

⁵⁸ Decision No 676/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community (Radio Spectrum Decision).

therefore be made accessible in the Community, without prejudice to confidential business and personal information protection under Directive 97/66/EC of the European Parliament and of the Council of 15 December 1997 concerning the processing of personal data and the protection of privacy in the telecommunications sector.⁵⁹ *The implementation of a cross-sectoral radio spectrum policy makes the availability of information on the whole radio spectrum necessary. In view of the general purpose of harmonising radio spectrum use in the Community and elsewhere in Europe, **the availability of such information needs to be harmonised at European level in a user-friendly manner.*** [emphasis added]

European Commission Decision 2007/344/EC on harmonised availability of information⁶⁰

- 4.14 ComReg notes that in Recitals 3, 9 and 10, the EC sets out its reasoning regarding making information publicly available to ensure better regulation and to ensure the development of transparent and effective market based-spectrum policy:

Recital 3: “*The availability of appropriate information is essential in the context of better regulation, since the removal of unnecessary restrictive measures and the introduction of trading of rights to use frequencies require clear, reliable and up-to-date information regarding the actual use.*”;

Recital 9: “*The provision of information regarding rights of use may require a particular effort by Members States, but it is also of high importance for a transparent and effective market based-spectrum policy.*”; and

Recital 10: “*Easy access to the information should be guaranteed to all interested parties, subject to compliance with Community rules on business confidentiality in particular to the provisions of Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive).*”

⁵⁹ Directive 97/66/EC of the European Parliament and of the Council of 15 December 1997 concerning the processing of personal data and the protection of privacy in the telecommunications sector.

⁶⁰ Commission Decision of 16 May 2007 on harmonised availability of information regarding spectrum use within the Community -

4.2.2 CEPT

- 4.15 CEPT⁶¹ decisions are non-binding and voluntarily adopted by members states. However, CEPT is an important European regulatory body with responsibility for developing harmonised decisions, recommendations, and approaches for the use of spectrum. The radio spectrum decisions of the EU (the EU/EC Decisions) are binding decisions on EU Member States and are normally based on the relevant technical harmonisation measures as outlined in the CEPT reports to the EC and are generally adopted subsequent to the prior adoption of a CEPT ECC Decision. Therefore, ComReg notes the importance of taking account of the views of CEPT in considering and proposing policies regarding efficient spectrum management.
- 4.16 CEPT's Electronic Communications Committee ("ECC")⁶² has a primary objective⁶³ to harmonise the efficient use of radio spectrum and satellite resources across Europe. While the fixed service ("FS") is a key medium for delivering telecommunications services with a rapid and local deployment, fixed satellite services ("FSS") are also important, enabling broadband to rapidly and cost effectively be deployed over wide areas, in remote communities often poorly served by fixed or broadband providers.
- 4.17 The ECC has carried out multiple feasibility studies, across several frequency bands to facilitate shared usage across all bands by the FS and the FSS. Those compatibility studies have shown the risk of interference between FS and FSS in areas of low population is low, however the risk of interference in densely populated areas is high.
- 4.18 The ECC's project team FM 44 (satellite communications)⁶⁴ has studied usage of a geo-location database approach to enhance the coexistence between the Fixed Service (FS) and uncoordinated FSS earth stations. PT FM 44 noted that information extracted from a geo-location database allows satellite operators and satellite service providers to identify the frequencies at which the receivers of FSS earth stations would not be subject to interference from Fixed Service links at a given location, based on knowledge of FS deployment.
- 4.19 As a result of that study FM44 developed [ECC Report 241](#) containing information from administrations on national FS frequency assignments. Similarly, FS planners can benefit from knowledge of FSS deployment in an area.

⁶¹ <https://www.cept.org/>

⁶² <https://www.cept.org/ecc/>

⁶³ <https://www.cept.org/ecc/what-we-do>

⁶⁴ <https://cept.org/ecc/groups/ecc/wg-fm/fm-44/client/introduction/>

4.20 The ECC recommends the publication of radio spectrum information to facilitate the co-sharing of FS and FSS services. Examples of this can be found in [ERC Decision \(00\)07](#), [ERC Decision \(00\)02](#), and [ECC Decision \(21\)01](#) where:

- ERC Decision (00)07 sets out that the following FS information should be made publicly available for FSS providers operating in the band 17.7-19.7 GHz band:
 - Longitude and latitude of FS station
 - Geographical coordinates system
 - Azimuth
 - Antenna size, maximum gain
 - Transmitter antenna height above ground
 - Transmitter antenna elevation angle
 - Assigned bandwidth
 - Assigned center frequency
 - Assigned power at antenna port
 - Reference antenna pattern

- Annex 1 of ERC Decision (00)02 states that coordination of FS stations with respect to FSS earth stations in the 37.5-39.5 GHz band:

“Is that information on the fixed links must be available, including the location of transmitters and certain characteristics such as e.i.r.p., antenna radiation pattern, antenna height above ground, antenna azimuth and elevation angle. Similarly for the earth station, the location of the station, its antenna characteristics (radiation pattern, azimuth and elevation angle) and receiver noise temperature are required.”

“For the purpose of being able to identify potential locations for new FSS earth stations, it is necessary for an earth station operator to have knowledge of the location of point-to-point fixed links located in the same country, and sometimes in neighbouring countries. Such information could be provided, for example, through the availability of the FS station information on the administration website.”;

- Annex 1 of ECC Decision (21)01 states that, for the use of bands 47.2-50.2 GHz and 50.4-52.4 GHz:

“information on the fixed links must be available, including the location of transmitters and certain characteristics such as e.i.r.p., antenna radiation pattern, antenna height above ground, antenna azimuth and elevation angle”.

5 Next Steps

5.1 Submitting Comments

- 5.1 All input and comments are welcome. Please reference comments to the relevant section / paragraph number in each chapter and annex or appendix in this document, as this will assist the task of analysing responses and ensuring that all relevant views are taken into account. Please also provide reasoning and supporting information for any views expressed.
- 5.2 ComReg invites views from interested parties on all aspects of the Consultation over the next 30 days.
- 5.3 The 30 day period for comment will run until 16:00 on 20 March 2024, during which time ComReg welcomes submissions in written form (e-mail) to marketframeworkconsult@comreg.ie, clearly marked – Submissions to ComReg Document 24/13.
- 5.4 Electronic submissions should be submitted in an unprotected format so that they may be readily included in the ComReg submissions document for electronic publication.
- 5.5 ComReg appreciates that respondents may wish to provide confidential information if their comments are to be meaningful. In order to promote openness and transparency, ComReg will publish all respondents' submissions to this notice, as well as all substantive correspondence on matters relating to this document, subject to the provisions of ComReg's guidelines on the treatment of confidential information (Document 05/24).
- 5.6 In this regard, respondents should submit views in accordance with the instructions set out below. When submitting a response to this notification that contains confidential information, respondents must choose one of the following options:
- Submit both a non-confidential version and a confidential version of the response. The confidential version must have all confidential information clearly marked and highlighted in accordance with the instruction set out below. The separate non-confidential version must have actually redacted all items that were marked and highlighted in the confidential version.
- OR
- Submit only a confidential version and ComReg will perform the required redaction to create a non-confidential version for publication.

With this option, respondents must ensure that confidential information has been marked and highlighted in accordance with the instructions set out below. Where confidential information has not been marked as per our instructions below, then ComReg will not create the non-confidential redacted version and the respondent will have to provide the redacted non-confidential version in with option A above.

- For ComReg to perform the redactions under Option B above, respondents must mark and highlight all confidential information in their submission as follows:
 - Confidential information contained within a paragraph must be highlighted with a chosen colour;
 - Square brackets must be included around the confidential text (one at the start and one at the end of the relevant highlighted confidential information); and
 - A Scissors symbol (Symbol code: Wingdings 2:38) must be included after the first square bracket. For example, “Redtelecom has a market share of [~~25%~~].”

5.2 Next Steps

- 5.7 When it has concluded its review of all submissions received and other relevant material, ComReg’s intention would be to publish a response to consultation.
- 5.8 While ComReg cannot provide further clarity on the overall timelines at this juncture, as this will depend, among other things, on the nature of responses received to this consultation, ComReg hopes to issue a response to consultation within Q2 2024.

Appendix 1: Relevant Legal Framework

A 1.1 The Communications Regulation Act 2002 (as amended) (the “2002 Act”), the European Electronic Communications Code (which has repealed the EU Common Regulatory Framework, namely the Framework and Authorisation Directives)⁶⁵, as transposed by S.I. No. 444 of 2022, the European Union (Electronic Communications Code) Regulations 2022 (the “ECC Regulations”) and the Communications Regulation and Digital Hub Development Agency (Amendment) Act 2023 (the “2023 Act”), and the Wireless Telegraphy Acts 1926 to 2009⁶⁶ set out, amongst other things, ComReg’s functions and objectives that are relevant to the management of the radio frequency spectrum in Ireland and to this Response to Consultation and Decision document including Regulations.

A 1.2 Apart from licensing and making regulations in relation to licences, ComReg’s functions include the management of Ireland’s radio frequency spectrum in accordance with ministerial Policy Directions under Section 13 of the 2002 Act, having regard to its objectives under Section 12 of the 2002 Act, and Regulation 4 of S.I. No. 444 of 2022.

A 1.3 This annex is intended as a general guide as to ComReg’s role in this area, and not as a definitive or exhaustive legal exposition of that role. Further, this annex restricts itself to consideration of those functions, objectives powers, and duties of ComReg that appear most relevant to the matters at hand and generally excludes those not considered relevant (for example, in relation to postal services, premium rate services or market analysis). For the avoidance of doubt, however, the inclusion of particular material in this annex does not necessarily mean that ComReg considers same to be of specific relevance to the matters at hand. All references in this annex to enactments are to the enactment as amended at the date hereof, unless the context otherwise requires.

The European Electronic Communications Code

A 1.4 On 20 December 2018, Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code (“EECC”) entered into force.

⁶⁵ Directive 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code.

⁶⁶ The Wireless Telegraphy Acts 1926 to 1988 and Sections 181 (1) to (7) and (9) and Section 182 of the Broadcasting Act 2009.

A 1.5 It is important to note that further to Article 125 (“Repeal”) of the EECC, with effect from 21 December 2020, the EECC replaced the EU Common Regulatory Framework adopted in 2002 (and amended in 2009) under which ComReg has regulated electronic communications since 2003⁶⁷.

A 1.6 With some limited exceptions (see Article 124 of the EECC), Member States had until 21 December 2020 to transpose the EECC into national law⁶⁸. The statutory instrument transposing key provisions of the EECC has been published as S.I. No. 444 of 2022⁶⁹ and has been commenced by the Minister⁷⁰. Other provisions of the EECC have been transposed in the Communications Regulation and Digital Hub Agency (Amendment) Act 2023, which has also been commenced⁷¹.

A 1.7 All references in this annex to enactments are to the enactment as amended at the date hereof unless the context otherwise requires.

Primary Functions and Objectives and Regulatory Principles under the 2002 Act and EECC as transposed.

A 1.8 ComReg’s relevant functions pursuant to Section 10 of the Communications Regulation Act 2002, as amended, include the management of the radio frequency spectrum and the national numbering resource. ComReg’s primary objectives in carrying out its statutory functions in the context of electronic communications are to:

- ensure the efficient management and use of the radio frequency spectrum in Ireland in accordance with a direction under section 13 of the 2002 Act;
- Promote competition⁷²;
- Contribute to the development of the internal market⁷³; and
- Promote the interests of users within the Community⁷⁴.

⁶⁷ For the correlation table between relevant articles of the repealed Directives and the EECC, please see Annex XIII of the EECC available here- [EUR-Lex - 02018L1972-20181217 - EN - EUR-Lex \(europa.eu\)](#)

⁶⁸ With the exception of Articles 53(2), (3) and (4), and Article 54 (See Article 124).

⁶⁹ S.I. No. 444 of 2022, The European Union (Electronic Communications Code) Regulations 2022.

⁷⁰ By virtue of S.I. No. 300 of 2023, the European Union (Electronic Communications Code) (Amendment) Regulations 2023.

⁷¹ By virtue of S.I. No. 299 of 2023, the Communications Regulation and Digital Hub Development Agency (Amendment) Act 2023 (Commencement) (No.2) Order 2023.

⁷² Section 12 (1)(a)(i) of the 2002 Act.

⁷³ Section 12 (1)(a)(ii) of the 2002 Act.

⁷⁴ Section 12(1)(a)(iii) of the 2002 Act.

A 1.9 ComReg, in carrying out its regulatory tasks specified in S.I. No. 444, shall take all reasonable measures which are necessary and proportionate for achieving the objectives set out in Regulation 4(3), including the objective to promote connectivity and access to, and take-up of, very high-capacity networks, including fixed, mobile and wireless networks, by all consumers and businesses in the State⁷⁵.

Management of radio spectrum

A 1.10 Regulation 27 of S.I. No. 444 of 2022 governs the management of radio spectrum. Regulation 27(1) requires that ComReg, subject to any directions issued by the Minister pursuant to Section 13 of the 2002 Act and having regard to its objectives under Section 12 of the 2002 Act, Regulation 4 of S.I. No. 444 of 2022, and Article 4 of the Directive, ensure:

- (a) the effective management of radio frequencies for ECN and ECS;
- (b) that the allocation of, the issuing of general authorisations in respect of, and the granting of individual rights of use for radio spectrum for ECN and ECS are based on objective, transparent, pro-competitive, non-discriminatory and proportionate criteria; and
- (c) ensure that harmonisation of the use of radio frequency spectrum by ECN and ECS across the EU is promoted, consistent with the need to ensure its effective and efficient use and in pursuit of benefits for the consumer such as competition, economies of scale and interoperability of networks and services, having regard to all decisions and measures adopted by the European Commission in accordance with Decision No.676/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in EU (namely the Radio Spectrum Decision).

A 1.11 Regulation 27(3) provides that, without prejudice to Regulation 27(4), ComReg must ensure that all types of technology used for the provisions of ECN or ECS may be used in the radio spectrum declared available for ECSs in the Radio Frequency Plan published under Section 35 of the 2002 Act in accordance with EU law.

A 1.12 Regulation 27(4) provides that, notwithstanding Regulation 17(3), ComReg may, through licence conditions or otherwise, provide for proportionate and non-discriminatory restrictions to the types of radio network or wireless access technology used for ECS where this is necessary to:

⁷⁵ Regulation 4(3)(a) of S.I. No. 444 of 2022.

- (a) avoid harmful interference;
- (b) protect public health against electromagnetic fields;
- (c) ensure technical quality of service;
- (d) ensure maximisation of radio frequency sharing
- (e) safeguard the efficient use of spectrum; or
- (f) ensure the fulfilment of a general interest objective as defined by or on behalf of the Government or a Minister of the Government in accordance with Regulation 27(7).

A 1.13 Regulation 27(5) provides that without prejudice to Regulation 27(7), ComReg must ensure that all types of ECS may be provided in the radio spectrum, declared available for ECS in the Radio Frequency Plan published under Section 35 of the Act of 2002 in accordance with EU law.

A 1.14 Regulation 27(6) provides that, notwithstanding Regulation 17(4), ComReg may provide for proportionate and non-discriminatory restrictions to the types of ECS to be provided, including where necessary, to fulfil a requirement under the International Telecommunication Union Radio Regulations (“ITU-RR”).

A 1.15 Regulation 27(7) requires that measures that require an ECS to be provided in a specific band available for ECS shall be justified in order to ensure the fulfilment of a general interest objective as laid down by or on behalf of the Government or a Minister of the Government in accordance with EU law including, but not limited to:

- (a) safety of life;
- (b) the promotion of social, regional or territorial cohesion;
- (c) the avoidance of inefficient use of radio frequencies; or
- (d) the promotion of cultural and linguistic diversity and media pluralism, for example, by the provision of radio and television broadcasting services.

A 1.16 Regulation 27(8) provides that ComReg may only prohibit the provision of any other ECS in a specific radio spectrum frequency band where such a prohibition is justified by the need to protect safety of life services. ComReg may, on an exceptional basis, extend such a measure in order to fulfil other general interest objectives as laid down by or on behalf of the Government or a Minister of the Government in accordance with European law.

A 1.17 Regulation 27(9) provides that ComReg shall regularly review the necessity of any restrictions imposed under Regulation 27 and shall make the results of such reviews publicly available.

A 1.18 Regulation 27(10) requires ComReg to, in the fulfilment of its obligations under Regulation 27, respect relevant international agreements, including the ITU-RR and other agreements adopted in the framework of the ITU applicable to radio spectrum, any public policy considerations brought to its attention by the Minister.

Authorisation of use of radio spectrum

A 1.19 Regulation 28(1) of S.I. No. 444 of 2022 provides that ComReg shall facilitate the use of radio spectrum, including shared use, under a general authorisation under Regulation S.I. No. 444 of 2022 and limit the granting of individual rights of use for radio spectrum where such rights are necessary to maximise efficient use in light of demand and taking into account the criteria set out in Regulation 28(2).

A 1.20 Regulation 28(2) of S.I. No. 444 of 2022 provides that ComReg may decide to grant individual rights of use for radio frequencies by way of a licence taking account of:

- a) the specific characteristics of the radio spectrum concerned;
- b) the need to protect against harmful interference;
- c) the development of reliable conditions for radio spectrum sharing, where appropriate;
- d) the need to ensure technical quality of communications or service;
- e) objectives of general interest as laid down by or on behalf of the Government or a Minister of the Government in conformity with EU law; and
- f) the need to safeguard the efficient use of spectrum.

A 1.21 Regulation 28(3) provides that when considering whether to issue general authorisations or to grant individual rights of use for the harmonised radio spectrum, taking into account technical implementing measures adopted in accordance with Article 4 of the Radio Spectrum Decision, ComReg shall seek to minimise problems of harmful interference, including in cases of shared use of radio spectrum on the basis of a combination of general authorisation and individual rights of use.

A 1.22 Regulation 29(1) of S.I. No. 444 of 2022 provides that ComReg shall attach conditions to individual rights of use for radio spectrum in accordance with Regulation 9(1) in such a way as to ensure optimal and the most effective and efficient use of radio spectrum. Regulation 29(7) provides that Regulation 29 is without prejudice to the Act of 1926.

Publication of procedures

A 1.23 Regulation 30(2)(a) of S.I. No. 444 of 2022 requires that ComReg shall, having regard to the provisions of Regulation 27 of the S.I. No. 444 of 2022, establish open, objective, transparent, non-discriminatory and proportionate procedures for the granting of individual rights of use for radio spectrum and cause any such procedures to be made publicly available.

Duration of rights

A 1.24 Regulation 31(1) of S.I. No. 444 of 2022 provides that rights of use for radio spectrum shall be in force for such period as ComReg considers appropriate in light of the objectives pursued in accordance with Regulation 36(2) and (3), taking due account of the need to ensure competition, as well, as in particular, effective and efficient use of radio spectrum, and to promote innovation and efficient investments, including by allowing for an appropriate period for investment amortisation.

A 1.25 Regulation 31(2) provides that where ComReg decides to grant individual rights of use for radio spectrum for which harmonised conditions have been set by technical implementing measures in accordance with the Radio Spectrum Decision in order to enable its use for wireless broadband electronic communications services for a limited period, it shall ensure regulatory predictability for the holders of the rights over a period of at least 20 years regarding conditions for investment in infrastructure which relies on the use of such radio spectrum, taking account of the requirements referred to in Regulation 31(1).

Conditions attached to rights of use for radio spectrum

A 1.26 Regulation 9(1) of S.I. No. 444 of 2022 provides that, notwithstanding Section 5 of the Wireless Telegraphy Act, 1926, but subject to any regulations under Section 6 of that Act, where ComReg specifies conditions to be attached to rights of use for radio spectrum, it may only attach such conditions as are listed in Part D of the Schedule 1. Part D lists the following conditions which may be attached to rights of use:

- Obligation to provide a service or to use a type of technology within the limits of Regulation 27, including, where appropriate, coverage and quality of service requirements.
- Effective and efficient use of radio spectrum in conformity with the Regulations.
- Technical and operational conditions necessary for the avoidance of harmful interference and for the protection of public health against electromagnetic fields, taking utmost account of Recommendation 1999/519/EC where such conditions are different from those included in the general authorisation.
- Maximum duration in conformity with Regulation 31, subject to any changes in the National Frequency Allocation Plan.
- Transfer or leasing of rights at the initiative of the holder of the rights and conditions of such transfer in conformity with these Regulations.
- Fees for rights of use in accordance with Regulation 24.
- Any commitments which the undertaking obtaining the rights of use has made in the framework of an authorisation or authorisation renewal process prior to the authorisation being granted or, where applicable, to the invitation for application of rights of use.
- Obligations to pool or share radio spectrum or allow access to radio spectrum for other uses in specific regions or at national level.
- Obligations under relevant international agreements relating to the use of radio spectrum bands.
- Obligations specific to an experimental use of radio frequencies.

A 1.27 Regulation 9(2) provides that (a) any attachment of conditions under Regulation 1) or (b) non-application under paragraph (1) of conditions to undertakings of a class or type as may be determined by ComReg, to rights of use for radio spectrum shall be non-discriminatory, proportionate and transparent and in accordance with Regulation 27.

A 1.28 Pursuant to Regulation 9(3) of S.I. No. 444 of 2022, an undertaking shall comply with the conditions attaching to rights of use for radio spectrum applicable to it.

Procedures for limiting the number of rights of use to be granted for radio spectrum

A 1.29 Regulation 36(1) of S.I. No. 444 of 2022 provides that, without prejudice to Regulation 35, where ComReg concludes that a right to use radio spectrum cannot be subject to a general authorisation and where it considers whether to limit the number of rights of use to be granted for radio spectrum, it shall, inter alia, without prejudice to Sections 13 and 37 of the 2002 Act:

- clearly state the reasons for limiting the rights of use, in particular by giving due weight to the need to maximise benefits for users and to facilitate the development of competition and review the limitation at intervals which it considers reasonable or at the reasonable request of any undertaking affected as appropriate; and
- give all interested parties, including users and consumers, the opportunity to express their views in accordance with Regulation 101.

A 1.30 Regulation 36(2)(a) of S.I. No. 444 of 2022 provides that ComReg may decide , having taken into account the matters referred to in paragraph (1)(a) and (b), that the number of rights of use for radio spectrum referred to in that paragraph ought to be limited and, where the Regulator so decides, it shall clearly establish, and give reasons for, the objectives pursued by means of a competitive or comparative selection procedure under this Regulation, and where possible quantify them, giving due weight to the need to fulfil national and internal market objectives.

A 1.31 Regulation 36(7) provides that where the granting of rights of use for radio spectrum needs to be limited, ComReg shall grant such rights on the basis of selection criteria and a selection procedure which are objective, transparent, non-discriminatory and proportionate. Any such selection criteria shall give due weight to the achievement of the objectives and requirements of section 12 of the Act of 2002 and Regulations 4, 16 and 27.

Fees for spectrum rights of use

A 1.32 Regulation 24(1) of S.I. No. 444 of 2022 permits ComReg, subject to sections 13 and 37 of the Act of 2002, to impose fees for rights of use for radio spectrum, which reflect the need to ensure the optimal use of the radio spectrum.

A 1.33 Pursuant to Regulation 24(2) of S.I. No. 444 of 2022, ComReg is required to ensure that any such fees are objectively justified, transparent, non-discriminatory and proportionate in relation to their intended purpose and take into account the objectives of ComReg as set out in Section 12 of the 2002 Act and the general objectives of the Directive and Regulation S.I. No. 444 of 2022. Regulation 23(3) provides that with respect to rights of use for radio spectrum, ComReg shall seek to ensure that applicable fees are set at a level which ensures efficient assignment and use of radio spectrum by: (a) setting reserve prices as minimum fees for rights of use for radio spectrum by having regard to the value of those rights in their possible alternative uses; (b) taking into account costs entailed by conditions attached to those rights; and (c) applying, to the extent possible, payment arrangements linked to the actual availability for use of the radio spectrum.

Amendment of rights and obligations

A 1.34 Regulation 14(1) of S.I. No. 444 of 2022 permits ComReg to amend rights, conditions and procedures concerning rights of use for radio spectrum, provided that any such amendment may only be made in objectively justified cases and in a proportionate manner, taking into consideration, where appropriate, the specific conditions applicable to transferable rights of use for radio spectrum or for numbering resources.

Other Relevant Legislation and Policy Instruments

Wireless Telegraphy Act, 1926 (the “1926 Act”)

A 1.35 Under Section 5(1) of the 1926 Act, ComReg may, subject to that Act, and on payment of the prescribed fees (if any), grant to any person a licence to keep and have possession of apparatus for wireless telegraphy in any specified place in the State.

A 1.36 Section 5(2) provides that, such a licence shall be in such form, continue in force for such period and be subject to such conditions and restrictions (including conditions as to suspension and withdrawal) as may be prescribed in regard to it by regulations made by ComReg under Section 6.

A 1.37 Section 5(3) also provides that, where it appears appropriate to ComReg, it may, in the interests of the efficient and orderly use of wireless telegraphy, limit the number of licences for any particular class or classes of apparatus for wireless telegraphy granted under Section 5.

A 1.38 Section 6 provides that ComReg may make regulations prescribing in relation to all licences granted by it under Section 5, or any particular class or classes of such licences, all or any of the following matters:

- the form of such licences;
- the period during which such licences continue in force;
- the manner in which, the terms on which, and the period or periods for which such licences may be renewed;
- the circumstances in which or the terms under which such licences are granted;
- the circumstances and manner in which such licences may be suspended or revoked by ComReg;
- the terms and conditions to be observed by the holders of such licences and subject to which such licences are deemed to be granted;
- the fees to be paid on the application, grant or renewal of such licences or classes of such licences, subject to such exceptions as ComReg may prescribe, and the time and manner at and in which such fees are to be paid; and
- matters which such licences do not entitle or authorise the holder to do.

A 1.39 Section 6(2) provides that Regulations made by ComReg under Regulation 6 may authorise and provide for the granting of a licence under Section 5 subject to special terms, conditions, and restrictions to persons who satisfy it that they require the licences solely for the purpose of conducting experiments in wireless telegraphy.

A 1.40 Regulation 9(1) of S.I. No. 444 of 2022 provides that, notwithstanding section 5 of the Act of 1926 but subject to any regulations made under section 6 of that Act, where ComReg specifies conditions to be attached to rights of use for radio spectrum, it may only attach such conditions as are listed in Part D of Schedule 1 to S.I. No. 444 of 2022.

A 1.41 Regulation 30(7) of S.I. No. 444 of 2022 provides that for the purpose of Regulation 30, a general authorisation for the use of radio spectrum shall be facilitated by way of an order made by ComReg under section 3(6) of the 1926 Act, declaring that a particular class or description of apparatus for wireless telegraphy is one to which the licence requirements of section 3 of the 1926 Act do not apply.

Broadcasting Act 2009 (the “2009 Act”)

A 1.42 Section 132 of the 2009 Act relates to the duties of ComReg in respect of the licensing of spectrum for use in establishing digital terrestrial television multiplexes and places an obligation on ComReg to issue:

- two DTT multiplex licences to RTÉ by request (see Sections 132(1) and (2) of the 2009 Act; and
- a minimum of four DTT multiplex licences to the BAI by request (see Sections 132(3) and (4) of the 2009 Act) for the provision of commercial TV content.

Article 4 of Directive 2002/77/EC (Competition Directive)

A 1.43 Article 4 of the Competition Directive⁷⁶ provides that:

“Without prejudice to specific criteria and procedures adopted by Member States to grant rights of use of radio frequencies to providers of radio or television broadcast content services with a view to pursuing general interest objectives in conformity with Community law:

- Member States shall not grant exclusive or special rights of use of radio frequencies for the provision of electronic communications services.*
- The assignment of radio frequencies for electronic communication services shall be based on objective, transparent, non-discriminatory and proportionate criteria.”*

Radio Spectrum Policy Programme

A 1.44 On 15 February 2012, the European Parliament adopted, via a Decision⁷⁷, the five-year Radio Spectrum Policy Programme (“RSPP”) which establishes a multi-annual radio spectrum policy programme for the strategic planning and harmonisation of the use of spectrum. The objective is to ensure the functioning of the internal market in the Union policy areas involving the use of spectrum, such as electronic communications, research, technological development and space, transport, energy and audiovisual policies.

A 1.45 Among other things, Article 5 of the RSPP, entitled “Competition”, provides:

“1. Member States shall promote effective competition and shall avoid distortions of competition in the internal market for electronic communications services in accordance with Directives 2002/20/EC and 2002/21/EC.

They shall also take into account competition issues when granting rights of use of spectrum to users of private electronic communication networks.”

⁷⁶ Commission Directive 2002/77/EC of 16 September 2002 on competition in the markets for electronic communications networks and services.

⁷⁷ Decision No 243/2012/EU of the European Parliament and of the Council of 14 March 2012 establishing a multiannual radio spectrum policy programme.

Policy Directions⁷⁸

A 1.46 Section 12(4) of the 2002 Act provides that, in carrying out its functions, ComReg must have appropriate regard to policy statements, published by or on behalf of the Government or a Minister of the Government and notified to the Commission, in relation to the economic and social development of the State. Section 13(1) of the 2002 Act requires ComReg to comply with any policy direction given to ComReg by the Minister for Communications, Energy and Natural Resources (“the Minister”) as he or she considers appropriate, in the interests of the proper and effective regulation of the electronic communications market, the management of the radio frequency spectrum in the State and the formulation of policy applicable to such proper and effective regulation and management, to be followed by ComReg in the exercise of its functions. Section 10(1)(b) of the 2002 Act also requires ComReg, in managing the radio frequency spectrum, to do so in accordance with a direction of the Minister under section 13 of the 2002 Act, while Section 12(1)(b) requires ComReg to ensure the efficient management and use of the radio frequency spectrum in accordance with a direction under Section 13.

A 1.47 The Policy Directions which are most relevant in this regard include the following:

Policy Direction No.3 on Broadband Electronic Communication Networks

A 1.48 ComReg shall in the exercise of its functions, take into account the national objective regarding broadband rollout, viz, the Government wishes to ensure the widespread availability of open-access, affordable, always-on broadband infrastructure and services for businesses and citizens on a balanced regional basis within three years, on the basis of utilisation of a range of existing and emerging technologies and broadband speeds appropriate to specific categories of service and customers.

Policy Direction No.4 on Industry Sustainability

A 1.49 ComReg shall ensure that in making regulatory decisions in relation to the electronic communications market, it takes account of the state of the industry and in particular the industry’s position in the business cycle and the impact of such decisions on the sustainability of the business of undertakings affected.

⁷⁸ ComReg also notes, and takes due account of, the Spectrum Policy Statement issued by the Department of Communications Energy and Natural Resources in September 2010

Policy Direction No.5 on Regulation only where necessary

A 1.50 Where ComReg has discretion as to whether to impose regulatory obligations, it shall, before deciding to impose such regulatory obligations on undertakings, examine whether the objectives of such regulatory obligations would be better achieved by forbearance from imposition of such obligations and reliance instead on market forces.

Policy Direction No.6 on Regulatory Impact Assessment

A 1.51 ComReg, before deciding to impose regulatory obligations on undertakings in the market for electronic communications or for the purposes of the management and use of the radio frequency spectrum or for the purposes of the regulation of the postal sector, shall conduct a Regulatory Impact Assessment in accordance with European and International best practice and otherwise in accordance with measures that may be adopted under the Government's Better Regulation programme.

Policy Direction No.7 on Consistency with other Member States

A 1.52 ComReg shall ensure that, where market circumstances are equivalent, the regulatory obligations imposed on undertakings in the electronic communications market in Ireland should be equivalent to those imposed on undertakings in equivalent positions in other Member States of the European Community.

Policy Direction No.11 on the Management of the Radio Frequency Spectrum

A 1.53 ComReg shall ensure that, in its management of the radio frequency spectrum, it takes account of the interests of all users of the radio frequency spectrum.

General Policy Direction No.1 on Competition (2004)

A 1.54 ComReg shall focus on the promotion of competition as a key objective. Where necessary, ComReg shall implement remedies which counteract or remove barriers to market entry and shall support entry by new players to the market and entry into new sectors by existing players. ComReg shall have a particular focus on:

- market share of new entrants;
- ensuring that the applicable margin attributable to a product at the wholesale level is sufficient to promote and sustain competition;
- price level to the end user;

- competition in the fixed and mobile markets; and
- the potential of alternative technology delivery platforms to support competition.

Promotion of Competition

A 1.55 Section 12(2)(a) of the 2002 Act requires ComReg to take all reasonable measures which are aimed at the promotion of competition, including:

- encouraging efficient use and ensuring the effective management of radio frequencies and numbering resources;
- ensuring that there is no distortion or restriction of competition in the electronic communications sector; and
- ensuring that users, including disabled users, derive maximum benefit in terms of choice, price and quality.

A 1.56 Regulation 34(1) of S.I. No. 444 of 2022 provides that ComReg shall promote effective competition and avoid distortions of competition in the internal market when deciding to grant, amend or renew rights of use for radio spectrum for electronic communications networks and services in accordance with these Regulations.

Contributing to the Development of the Internal Market

A 1.57 Section 12(2)(b) of the 2002 Act requires ComReg to take all reasonable measures which are aimed at contributing to the development of the internal market, including:

- I. removing remaining obstacles to the provision of ECN, ECS and associated facilities at Community level;
- II. encouraging the establishment and development of trans-European networks and the interoperability of transnational services and end-to-end connectivity; and
- III. co-operating with electronic communications national regulatory authorities in other Member States of the Community and with the Commission of the Community in a transparent manner to ensure the development of consistent regulatory practice and the consistent application of Community law in this field.

A 1.58 In so far as consolidating the development of the internal market is concerned, Regulation 17(2) of S.I. No. 444 of 2022 provides that in carrying out its tasks under these Regulations, ComReg shall, taking the utmost account of its objectives under section 12 of the Act of 2002 and Regulation 4, contribute to the development of the internal market by working with national regulatory authorities in other Member States, BEREC and the European Commission in a transparent manner to ensure the consistent application of the Directive.

Promotion of Interests of Users

A 1.59 Section 12(2)(c) of the 2002 Act requires ComReg, when exercising its functions in relation to the provision of electronic communications networks and services, to take all reasonable measures which are aimed at the promotion of the interests of users within the Community, including:

- ensuring that all users have access to a universal service;
- ensuring a high level of protection for consumers in their dealings with suppliers, in particular by ensuring the availability of simple and inexpensive dispute resolution procedures carried out by a body that is independent of the parties involved;
- contributing to ensuring a high level of protection of personal data and privacy;
- promoting the provision of clear information, in particular requiring transparency of tariffs and conditions for using publicly available ECS;
- encouraging access to the internet at reasonable cost to users;
- addressing the needs of specific social groups, in particular disabled users; and
- ensuring that the integrity and security of public communications networks are maintained.

Technological Neutrality

A 1.60 Further to Regulation 4(5) of S.I. No. 444 of 2022, ComReg, in pursuit of the policy objectives referred to in paragraph (3), shall apply impartial, objective, transparent, non-discriminatory and proportionate regulatory principles by, inter alia —(c) applying European Union law in a technologically neutral fashion, to the extent that this is consistent with the achievement of the objectives set out in paragraph (3).

Regulatory Principles

A 1.61 Further to Regulation 4(5) of S.I. No. 444 of 2022, ComReg, in pursuit of the policy objectives referred to in paragraph (3), shall apply impartial, objective, transparent, non-discriminatory and proportionate regulatory principles by, inter alia: promoting regulatory predictability by ensuring a consistent regulatory approach over appropriate review periods and through cooperation with each other, with BEREC, with the RSPG and with the European Commission:

- ensuring that, in similar circumstances, there is no discrimination in the treatment of undertakings providing ECN and ECS;
- promoting efficient investment and innovation in new and enhanced infrastructures, including by ensuring that any access obligation takes appropriate account of the risk incurred by the investing undertakings and by permitting various cooperative arrangements between investors and parties seeking access to diversify the risk of investment, while ensuring that competition in the market and the principle of non-discrimination are preserved,
- taking due account of the variety of conditions relating to infrastructure, competition, the circumstances of end-users and, in particular, consumers that exist in the various geographic areas within the State, including local infrastructure managed by individuals on a not-for-profit basis, and
- imposing ex-ante regulatory obligations only to the extent necessary to secure effective and sustainable competition in the interest of end-users where there is no effective and sustainable competition and relaxing or lifting such obligations as soon as that condition is fulfilled. BEREC

A 1.62 Under Regulation 4(4) of S.I. No. 444 of 2022, ComReg must:

- having regard to its objectives under section 12 of the 2002 Act and its tasks under these Regulations, actively support the goals of BEREC of promoting greater regulatory coordination and consistency; and
- take the utmost account of guidelines, opinions, recommendations, common positions, best practices and methodologies adopted by BEREC when adopting decisions for the markets in the State.

Other Obligations under the 2002 Act

A 1.63 In carrying out its functions, ComReg is required, amongst other things, to:

- seek to ensure that any measures taken by it are proportionate having regard to the objectives set out in section 12 of the 2002 Act;⁷⁹
- have regard to international developments with regard to the radio frequency spectrum⁸⁰; and
- take the utmost account of the desirability that the exercise of its functions aimed at achieving its radio frequency management objectives does not result in discrimination in favour of or against particular types of technology for the provision of ECS.⁸¹

⁷⁹ Section 12(3) of the 2002 Act.

⁸⁰ Section 12(5) of the 2002 Act.

⁸¹ Section 12(6) of the 2002 Act.

Appendix 2: Radio Spectrum Information provided by the ITU and other national regulatory authorities

International Telecommunications Union

- A 2.1 The Master International Frequency Register (“MIFR”) is the formal database of satellite⁸² and terrestrial⁸³ frequency assignments maintained by the International Telecommunication Union (“ITU”). The MIFR serves as the primary source of information on radio frequency allocations worldwide and is an essential tool for ensuring efficient and interference-free use of the radio frequency spectrum. The MIFR is the final stage of the frequency coordination process and confers international recognition for those frequency assignments.
- A 2.2 The MIFR is publicly accessible and can be searched by frequency band, geographic location, service type, etc. for any country or region worldwide. The MIFR is used to resolve frequency coordination issues between different users and services.

UK

- A 2.3 Ofcom’s System Information System (“SIS”)⁸⁴ provides, amongst other things, visual information on the spread of allocations and applications across the UK, and information on a range of Ofcom licences including who has been assigned spectrum at specific locations.
- A 2.4 Ofcom follows open data principles making the information contained within the SIS available to download as Open Data.⁸⁵ The SIS allows users to, for example,:
- View on a map of the UK the apparatus under each licence for a given licence number, or all licences under a specific application; and
 - View licence details relating to each licence and the associated apparatus (e.g., licensee name, assigned spectrum, geographic locations, locations, technical parameters).

⁸² <https://www.itu.int/en/ITU-R/space/Pages/default.aspx>

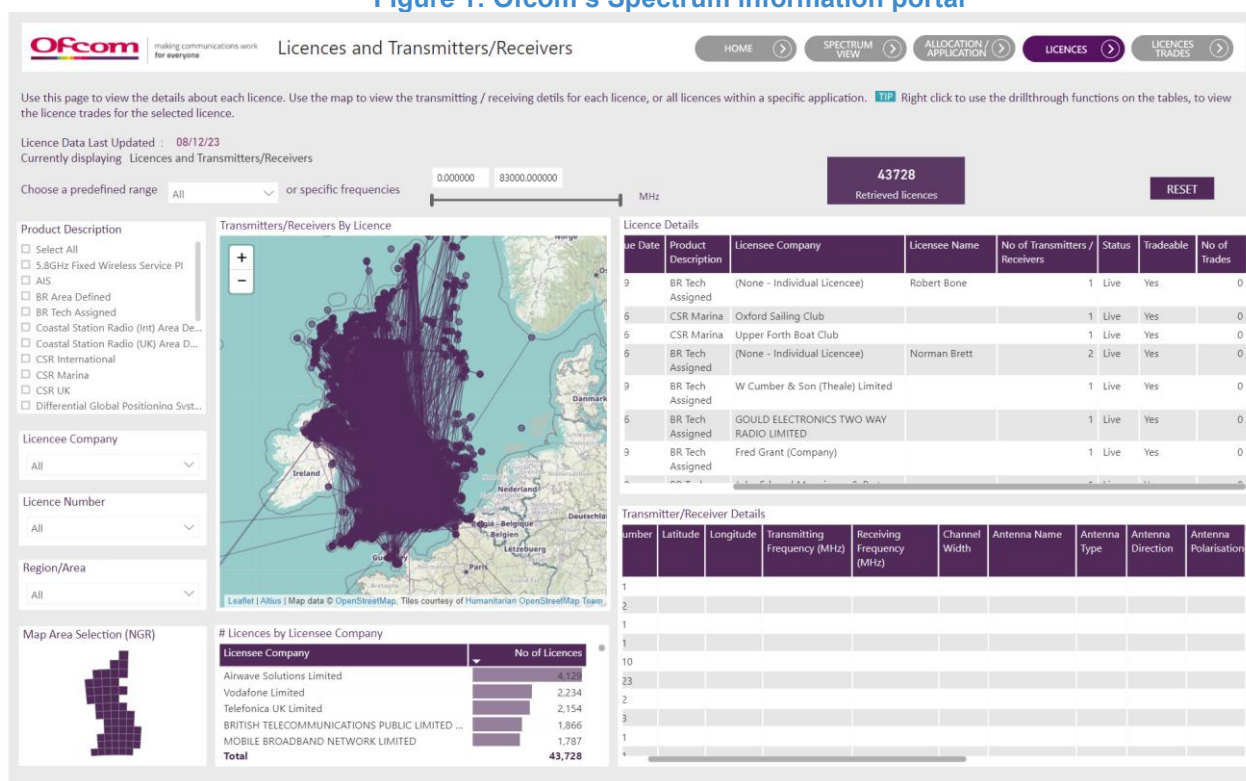
⁸³ <https://www.itu.int/en/ITU-R/terrestrial/Pages/default.aspx>

⁸⁴ <https://www.ofcom.org.uk/spectrum/information/spectrum-information-system-sis/spectrum-information-portal>

⁸⁵ <https://www.ofcom.org.uk/research-and-data/data/opendata>

A 2.5 Ofcom also publishes the licence information in .csv format on its website at <https://static.ofcom.org.uk/static/radiolicensing/html/register/WTR.csv>

Figure 1: Ofcom's Spectrum information portal



A 2.6 The driver for Ofcom's policy to progressively disclose radio spectrum information was the implementation of the requirements as set out in the Environmental Information Regulations 2004⁸⁶. The policy was implemented following a consultation in 2009⁸⁷.

Switzerland

A 2.7 Ofcom (CH) provides information about mobile network stations, broadcasting stations and fixed links on its website at map.geo.admin.ch.

A 2.8 With the exception of fixed radio links, the following information is published on Ofcom's website:

- description of the radio service,
- radiated power of the installation,

⁸⁶ <https://www.legislation.gov.uk/ukxi/2004/3391/contents/made>

⁸⁷ https://www.ofcom.org.uk/consultations-and-statements/category-1/providing_spectrum_information

- in the case of broadcasting stations, extra information on the broadcast channels and frequencies.

A 2.9 However, more detailed information on an individual installation can be obtained from the authorities competent for the protection of the environment within Switzerland.

Estonia

A 2.10 The Consumer Protection and Technical Regulatory Authority of Estonia publishes on its website (<https://mtr.tija.ee/>) where the user can search for radio spectrum information by the name of the licensee. For example, a search of the licences granted to the Estonian mobile operator Telia (see figure 2) provides a list of 232 licences (see figure 3). The first three digits of the licence reference indicates the licence type, for example:

- SLY indicates an MFCN licence (see figures 3, 4 and 5);
- SLG indicates a fixed radio link licence (see figures 6, 7, and 8);
- SLL indicates an aircraft radio licence; and
- SLA indicates an amateur station licence.

Figure 2: Search for Telia licences

The screenshot shows a web browser window with the URL 'taotluse_tulemus'. The page title is 'Operating licences'. There are two tabs: 'Search' (active) and 'Parameters of the output'. The search form contains the following fields:

- Name of entrepreneur:
- Registry code:
- Activity license number:
- Start of validity: until
- Date of expiry: until Termle...
- Start of renouncement: until Termle...
- End of renouncement: until Termle...
- Start of suspension: until
- End of suspension: until Termle...
- Time of modifying: until
- Valid:
- Reason for archiving:
- Time of archiving: until
- Area of activity:
- Classification of Economic Activities code:
- Classification of Economic Activities name:
- Issuer of the activity licence:
- Yearly state fee is unpaid:

Figure 3: Search results for mobile licences

Operating licences

Search Parameters of the output

Used filters:
- Detailed search: no
- Name of entrepreneur: Telia

232 entries found (page 1/12)

No	Number	Name of entrepreneur	Registry code	Start of validity ↓	Date of expiry	Valid	Area of activity	Additional information
1	SLY22/7102	Telia Eesti AS	10234957	Nov 23, 2022	22.11.2023	Yes	Common frequency permit	
2	SLY22/7103	Telia Eesti AS	10234957	Nov 23, 2022	22.11.2023	Yes	Common frequency permit	
3	SLG22/4772	Telia Eesti AS	10234957	Aug 10, 2022	09.08.2023	Yes	Common frequency permit	
4	SLY22/4562	Telia Eesti AS	10234957	Jul 21, 2022	20.07.2023	Yes	Common frequency permit	

Figure 4: Detailed licence information

Number: SLY22/7102
Area of activity: Common frequency permit
Start of validity: 23.11.2022
Valid until: 22.11.2023

Data of the entrepreneur

Name of entrepreneur: Telia Eesti AS
Registry code: 10234957

Contact details

Telephone: 123
Mobile:
E-mail: info@telia.ee
Website: www.telia.ee

Type	Address
Address in Commercial Register	Mustamäe tee 3, Kristiine linnaosa, Tallinn, Harju maakond, 15033

General data Information of the permit

Number of licence: SLY22/7102
Area of activity: Common frequency permit
Start of validity: 23.11.2022
Valid until: 22.11.2023
Issuer of licence: Consumer Protection and Technical Surveillance Authority
Classification of Economic Activities code and name:
Person who submitted the application: Elis Pikmets (phone: 5069674, email: Birjo.Kiik@telia.ee)

Modifications Documents

Figure 5: Information regarding frequency assignment

General data Information of the permit

Type of radio network: mobile/fixed communications network
Conditions of use for radio frequency channel: exclusive use

Transmitting frequencies on the permit:

No	Starting from	Until	Unit
1	778,0000	783,0000	Mhz

Receiving frequencies on the permit:

No	Starting from	Until	Unit
1	723,0000	728,0000	Mhz

Other conditions: The use of a communication network in the Republic of Estonia is regulated by the Minister of Enterprise and Information Technology and the communications service in the

Figure 6: Search results for fixed link licences

Number	SLG22/4772
Area of activity	Common frequency permit
Start of validity	10.08.2022
Valid until	09.08.2023
▲ Data of the entrepreneur	
Name of entrepreneur	Telia Eesti AS
Registry code	10234957
▲ Contact details	
Telephone	123
Mobile	
E-mail	info@telia.ee
Website	www.telia.ee
Type	Address
Address in Commercial Register	Mustamäe tee 3, Kristiine district, Tallinn, Harju county, 15033
General data Information of the permit Radio equipment	
Number of licence	SLG22/4772
Area of activity	Common frequency permit
Start of validity	10.08.2022
Valid until	09.08.2023
Number of decision	SLG22/4772
Date of decision	10.08.2022
Issuer of licence	Consumer Protection and Technical Surveillance Authority
Classification of Economic Activities code and name	
Person who submitted the application	Veiko Praakel (phone: 6402244, email: veiko.praakel@telia.ee)

Figure 7: Detailed licence information

General data		Information of the permit		Radio equipment	
Type of radio network	fixed radio link				
Conditions of use for radio frequency channel	exclusive use				
▲ Transmitting frequencies on the permit:					
No	Starting from	Until	Unit		
1	39130,0000		Mhz		
▲ Receiving frequencies on the permit					
No	Starting from	Until	Unit		
1	37870,0000		Mhz		
Geographical area of activity	counties:				
Counties					
No	County				
1	Laäne-Viru County	Rakvere			
Documents					

Figure 8: Information regarding frequency assignment

Type of equipment fixed station

Fixed radio equipment

1 Class of a fixed device FX

Transmitting frequencies

No	Starting from	Until	Unit
1	39130.0000		Mhz

Receiving frequencies

No	Starting from	Until	Unit
1			Mhz

Classes of emission

1 Class of emission of a fixed device 56M0G7D

Maximum radiated power of a fixed device 30
dBW

Maximum output power of a transmitter of a fixed device 0.032
W

Location of the aerial

Select mast

Name	Address
KREUTZWALDIS-RAKVERE-KS	F. R. Kreutzwaldi St. 5a, Rakvere city, Lääne-Viru county
North longitude 59N2101	East longitude 26E2033
Comment	

Location of the aerial Rakvere city
Address F. R. Kreutzwaldi St. 5a

Information on the aerial

Maximum amplification factor for an antenna of a fixed device 45
dBi

Db
Polarisation of aerial V
Direction of the azimuthal angle of aerial 50
Height of aerial from the ground (m) 50

Figure 9: Information regarding technical parameters

2 Class of a fixed device FX

Transmitting frequencies

No	Starting from	Until	Unit
1	37870.0000		Mhz

Receiving frequencies

No	Starting from	Until	Unit
1			Mhz

Classes of emission

1 Class of emission of a fixed device 56M0G7D

Maximum radiated power of a fixed device 30
dBW

Maximum output power of a transmitter of a fixed device 0.032
W

Location of the aerial

Select mast

Name	Address
ROODEVALJA-LVM	Roodevälja village, Rakvere parish, Lääne-Viru county
North longitude 59N2214	East longitude 26E2331
Comment	

Location of the aerial Roodevälja village, Rakvere parish, Lääne-Viru county

Information on the aerial

Maximum amplification factor for an antenna of a fixed device 45
dBi

Db
Polarisation of aerial V
Direction of the azimuthal angle of aerial 230
Height of aerial from the ground (m) 15

Other conditions The holder of a frequency authorisation is obliged to use in a communication network only hardware and software that is subject to the authorisation and/or notification obligation set out in § 87(3) of the Electronic Communications Act and the Government of the Republic Regulation No. 22 of 06.2006.140 "Requirements for the provision of communication services and technical requirements for communication networks" in accordance with the deadlines of the implementing provisions.

Finland

A 2.11 The Finnish Transport and Communications Agency (Traficom) publishes radio spectrum information regarding mobile networks on its website <https://www.traficom.fi/en/communications/communications-networks/frequencies-and-license-holders-public-mobile-networks>.

Spain

A 2.12 The Ministry of Digital Transformation publishes radio spectrum information regarding wireless service licence, fixed service licences, broadcasting licences,

and space service licences on its website

https://sedeaplicaciones.minetur.gob.es/RPC_Consulta/FrmConsulta.aspx.

Luxembourg

A 2.13 The Luxembourg Institute of Regulation publishes on its website information regarding:

- the frequency or frequency band used;
- the licensee to whom the spectrum has been allocated;
- geographic use; and
- the name of the radio application (broadcasting, etc.).

<https://web.ilr.lu/FR/Professionnels/Frequences-radioelectriques/Utilisation-de-frequences/Registre-des-frequences/Pages/default.aspx>