



An Coimisiún um
Rialáil Cumarsáide
Commission for
Communications Regulation

Starlink Internet Services Limited: application for a satellite earth station licence

Information Notice

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Chapter 1

1 Background Information

- 1.1 Non-geostationary orbit (“NGSO”) satellite systems deliver broadband services from space using a constellation of satellites, usually in a low or medium earth orbit. The user terminals operate on licence-exempt basis in-line with ComReg Document 20/47, as amended.¹
- 1.2 On 19 March 2025, ComReg received an application (the “Application”) from Starlink Internet Services Limited (“Starlink”) for a wireless telegraphy satellite earth stations (“SES”) licence to operate within the 18 GHz² and 28 GHz³ frequency bands in Killala, Co. Mayo.
- 1.3 The granting of an SES licence would authorise Starlink to operate an SES in Ireland to connect to its NGSO system to enhance the connectivity capabilities and capacity for Starlink users. The proposed frequencies and technical details of the application are set out in tables 2 – 4 of annex 1 of this document.
- 1.4 Starlink provides satellite broadband services direct to consumers in Ireland.⁴ It currently operates an existing SES for its NGSO constellation at Garrettstown, Co Cork which is licensed to operating on the frequencies listed in table 1.

Table 1: Starlink’s licensed frequencies at Garrettstown, Co Cork

Centre Frequency (GHz)	Bandwidth (MHz)	EIRP (dBW)
27.75	500	67
28.3	500	67
28.85	500	67
29.75	500	67

- 1.5 As set out in ComReg Documents 23/96⁵ and 24/48⁶ there is a revised process for considering radio licence applications for NGSO SES which connect NGSO systems to the internet or to a private network. The purpose of the process is to assist in ensuring the co-existence of networks and services which have a co-

¹ <https://www.comreg.ie/media/2023/10/ComReg-2047R5.pdf>

² 17.7-19.7 GHz (Space-to-earth)

³ 27.5-29.5 GHz (Earth-to-space)

⁴ <https://www.starlink.com/ie/>

⁵ See Annex 2 of ComReg Document 23/96 – Review of the Satellite Earth Station Licensing Regime: Response to Consultation and Decision – published 4 October 2023.

<https://www.comreg.ie/media/2023/10/ComReg-2396.pdf>

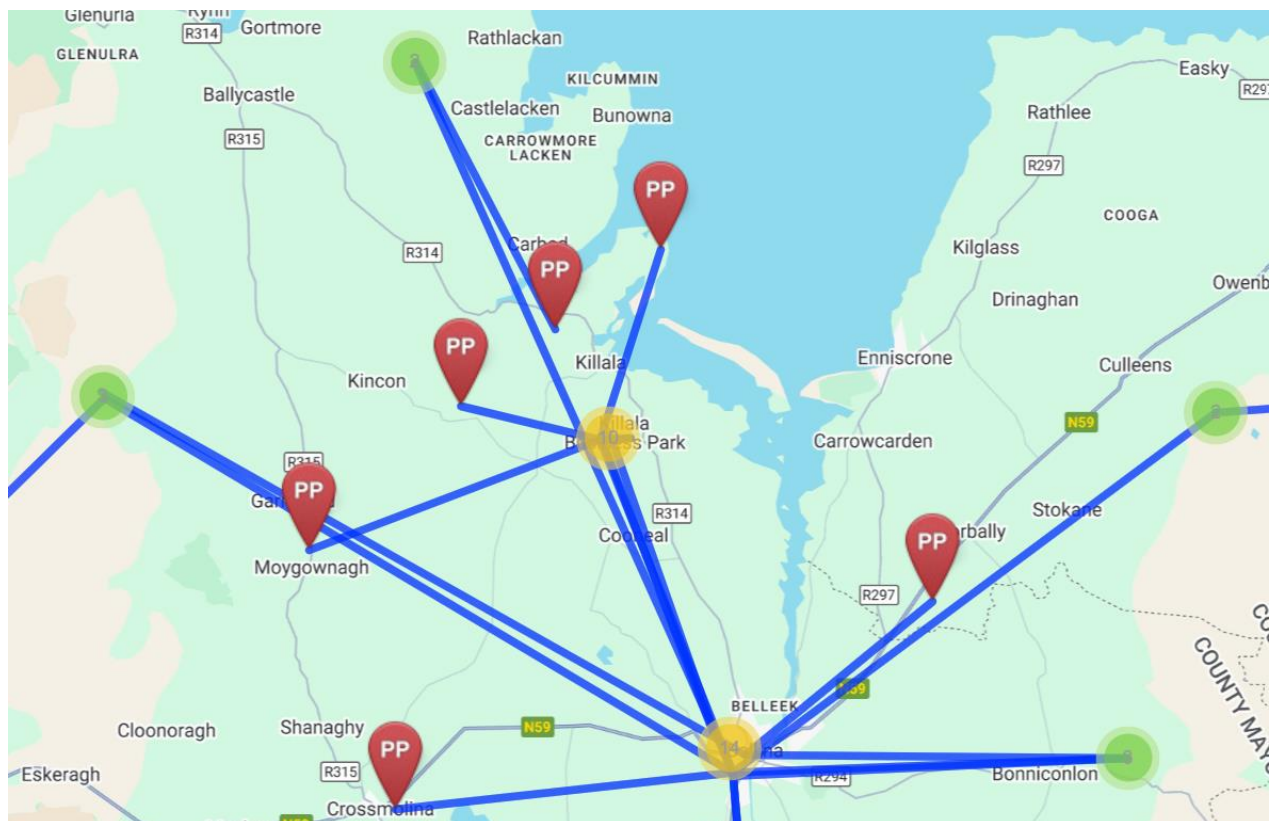
⁶ ComReg Document 24/48 – Satellite Earth Station Licensing Guidelines – published 17 June 2024.

<https://www.comreg.ie/media/2024/06/ComReg-2448.pdf>

primary allocation in certain frequency ranges.

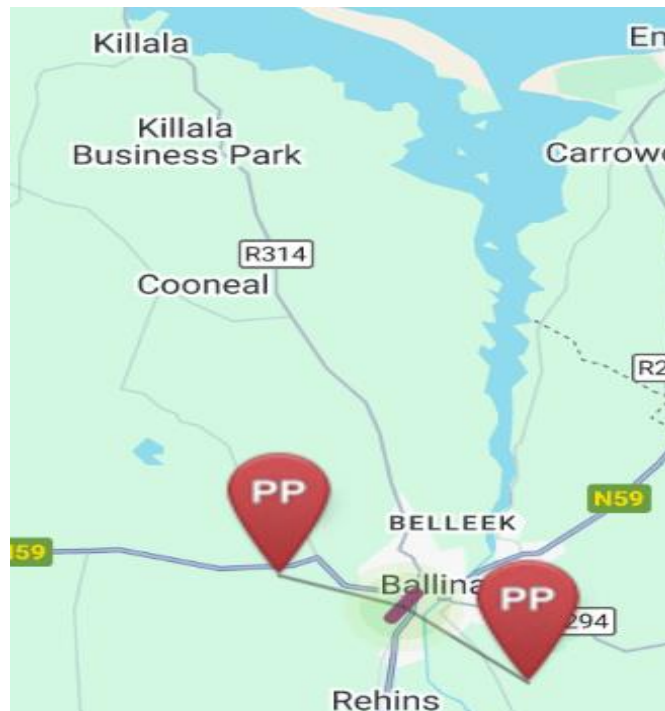
- 1.6 The 18 GHz and 28 GHz frequency bands are also available for fixed radio link licensing within the 17.7-19.7 GHz and 27.9405-28.4445 GHz paired with 28.9485-29.4525 GHz ranges. The 18 GHz band is allocated for satellite services in the Space-to-earth direction (receive), while the 28 GHz band is allocated for satellite services in the Earth-to-space direction (transmit).
- 1.7 Several fixed radio links using the 18 GHz band are located nearby to the proposed site of the SES, with one fixed radio link at the same site operating on 17727.5/18737.5 MHz with a bandwidth of 28 MHz.

Figure 1: Licensed fixed radio links in the 18 GHz band within the Killala area



- 1.8 The nearest licensed fixed radio links in the 28 GHz are located approximately 15 km away in the Ballina area and operate on 28024.5/29032.5 MHz with a bandwidth of 28 MHz.

Figure 2: Licensed fixed radio links in the 28 GHz band within the Killala area



- 1.9 When considering licence applications for SES operating with an NGSO network, ComReg considers coexistence with existing users licensed in co and adjacent frequencies.
- 1.10 The purpose of this Information Notice is to make interested parties aware in the event they wish to make a submission in relation to the proposed application, particularly with regard to coexistence with other licensed networks and services.

Chapter 2

2 Description of system and coexistence

- 2.1 Starlink states that it is requesting authorisation to enhance the connectivity capabilities and capacity for Starlink users by installing an NGSO SES in Killala. The parameters of the proposed NGSO SES are set out in tables 2 – 4 in annex 1.

2.1 Coexistence

- 2.2 When assessing applications for new licences, ComReg must consider whether the proposed deployments are capable of coexisting with existing users (in those bands where they have a co-primary allocation with another service), such that they are capable of providing services to their users without experiencing harmful interference.

- 2.3 In that regard, Starlink states in its application that it:

“confirms that the Killala gateway will not cause harmful interference into any co-frequency Earth Stations. Furthermore, SpaceX confirms that our system is technically capable of complying with the limits in ITU Article 21 / Article 22 and will adhere to these limits. SpaceX has been sharing spectrum and coexisting with other NGSO and GSO satellite operators globally for several years now without any reports of harmful interference.

SpaceX also normally does not require a standard geographic separation between its gateway earth stations and those of other NGSO systems operating at the same frequencies. Instead, coordination discussions will ensure efficient use of spectrum based on technical analyses. SpaceX has a demonstrated track record of working directly with both GSO and NGSO operators to coordinate and coexist and will continue to do so with both current and future operators. Moreover, SpaceX has been successful in coordination with several NGSOs already, while good faith efforts pursuant to Article 9 of the ITU Radio Regulations are on-going with others.

Based on the above, SpaceX expects that there will be no harm to current and future NGSO systems, and does not perceive or foresee any competitive disadvantages to other NGSO operators.”

- 2.4 Taking account of the information and technical parameters provided by Starlink, and having undertaken a initial interference analysis, ComReg is of the preliminary view that the proposed NGSO SES would not cause harmful interference to existing SES and fixed radio links operating in the 28 GHz band. Therefore, ComReg proposes to grant Starlink a licence for its proposed SES at Killala.

- 2.5 However, ComReg welcomes submissions from interested parties regarding the proposals in this Information Notice. Annex 1 provides the full application details of the proposed SES to enable interested parties to conduct their own assessment of the system and its potential impact on their operations. Respondents should provide reasoning and supporting evidence/information for any views expressed.

Chapter 3

3 Next Steps

3.1 Submitting comments


- 3.1 In accordance with ComReg's Consultation Procedures⁷, the consultation period will run until 17:00 on the 25th of June 2025.
- 3.2 Responses must be submitted in written form, by email only, to marketframeworkconsult@comreg.ie and clearly marked – Submissions to ComReg Information Notice 25/31.
- 3.3 Electronic submissions should be submitted in an unprotected format so that they may be readily included in the ComReg submissions document for electronic publication.
- 3.4 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).
- 3.5 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:
- (a) 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.
- 3.6 OR
- (b) 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 have not been marked as per our instructions below, then ComReg will not create the non-confidential

⁷ <https://www.comreg.ie/media/2024/01/ComReg2402.pdf>

redacted version and the respondent will have to provide the redacted non-confidential version in accordance with option A above.

3.7 For ComReg to perform the redactions under Option B above, respondents must mark and highlight all confidential information in their submission as follows:

- (a) Confidential information contained within a paragraph must be highlighted with a chosen particular colour,
- (b) Square brackets must be included around the confidential text (one at the start and one at the end of the relevant highlighted confidential information),
- (c) A Scissors symbol (Symbol code: Wingdings 2:38) must be included after the first square bracket.

3.8 For example, “Redtelecom has a market share of [ 25%].”

3.2 Next Steps

3.9 Following receipt and consideration of submissions in response to this Information Notice, and other relevant material, ComReg intends to publish an Information Notice setting out its decision regarding the application and any non-confidential submissions received.

Annex 1: Proposed Starlink SES operating parameters

Table 2: Proposed Starlink SES operating parameters

Satellite Network details	Name	Starlink
	Type	Non-Geostationary
Earth Station Details	SES Reference Name	Killala
	SES Type	Fixed Earth Station
	Lat/Long (decimal degrees)	54.194077, -9.2114458
	Site Height (AMSL) (m)	49.75
	Antenna Performance Pattern	ITU-R S.580
	Antenna Diameter (m)	1.85
	Antenna Height (above ground level) (m)	2.5
	Tx Antenna Gain (dBi)	52.6
	Tx Antenna beamwidth (degrees)	0.35
	Rx Antenna Gain (dBi)	49.1
	Rx Antenna Beamwidth (degrees)	0.54
	Antenna Azimuth (degrees)	0-360
	Antenna Elevation (degrees)	20-90
	Receiver System Noise Temperature (Kelvin)	297

Table 3: Proposed Starlink transmit parameters

Transmit Parameters											
Centre Frequency (MHz)	Bandwidth (MHz)	Polarisation	Power (W)	Polarisation Angle (if appropriate) (degrees)	Designation of Emission (emission code)						Max Antenna Input Peak Power of emission (dBW)
					Necessary bandwidth of emission index	Type of modulation of main carrier	Nature of signal modulating main carrier	Type of information transmitted	Details of signal	Type of multiplexing	
27750	500	RHC	20.00		480M	D	7	W	-	-	16.00
27750	500	LHC	20.00		480M	D	7	W	-	-	16.00
28350	500	RHC	20.00		480M	D	7	W	-	-	16.00
28350	500	LHC	20.00		480M	D	7	W	-	-	16.00
28850	500	RHC	20.00		480M	D	7	W	-	-	16.00
28850	500	LHC	20.00		480M	D	7	W	-	-	16.00
29750	500	RHC	20.00		480M	D	7	W	-	-	16.00
29750	500	LHC	20.00		480M	D	7	W	-	-	16.00

Table 4: Proposed Starlink receive parameters

Receive Parameters									
Centre Frequency (MHz)	Bandwidth (MHz)	Polarisation	Polarisation Angle (if appropriate) (degrees)	Designation of Emission (emission code)					Type of multiplexing
				Necessary bandwidth of emission index	Type of modulation of main carrier	Nature of signal modulating main carrier	Type of information transmitted	Details of signal	
17925	250	LHC		240M	D	7	W	-	-
17925	250	RHC		240M	D	7	W		
18175	250	LHC		240M	D	7	W		
18175	250	RHC		240M	D	7	W		
18425	250	LHC		240M	D	7	W		
18425	250	RHC		240M	D	7	W		
18925	250	LHC		240M	D	7	W		
18925	250	RHC		240M	D	7	W		
19175	250	LHC		240M	D	7	W		
19175	250	RHC		240M	D	7	W		