



An Coimisiún um
Rialáil Cumarsáide
Commission for
Communications Regulation

COVID-19: Temporary spectrum management measures

Further temporary spectrum rights (No.3) in the 700 MHz Duplex, 2.1 GHz and 2.6 GHz Bands

Consultation and Draft Decision including Draft Regulations

Reference: ComReg 21/87

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Chapter 1

1 Introduction

- 1.1 This document sets out the Commission for Communications Regulation's ("ComReg") proposals to implement a further temporary electronic communications service ("ECS") (No.3) licensing framework beyond 1 October 2021 (the "Proposed Approach"), given the temporary and extraordinary situation currently presented by COVID-19 and the increased traffic demands placed on wireless networks (see Section 2.3 below) arising from the Government measures to address same (see Section 2.2 below), (hereinafter termed the "Temporary Situation"), and includes detailed consideration of the anticipated end to the Temporary Situation in the near future and the need for MNOs to begin transitioning out of any further temporary rights granted. This document also invites submissions from interested parties on the Proposed Approach.
- 1.2 As discussed below, and based on current information, **ComReg expects that this will be its final proposal to put in place a further temporary licensing framework on the basis of the Temporary Situation**, noting among other things that, since the current temporary licensing framework was put in place in March 2021¹, there have been significant changes in the prevailing circumstances relevant to any further temporary licensing framework (as outlined in Sections 2.2 to 2.5 below), including that:
- Since May 2021, **the Government** has either eased or lifted a number of its COVID-19 measures and, on 31 August, **set out its plan for the final phase of its response to the COVID-19 pandemic - COVID-19: Reframing the Challenge, Continuing Our Recovery and Reconnecting**² ("**Government's COVID-19 Plan**");
 - The **Government's COVID-19 Plan is a significant shift in approach** from protection at the population level through regulations and restrictions to protection at a personal level, or in other words "**to manage COVID-19 in a more "mainstream" way rather than as an exceptional threat requiring society-defining interventions and action**"³;

¹ See ComReg Document 21/24 - COVID-19: Further Temporary Spectrum Management Measures (No.2) – Published 22 March 2021.

² [COVID-19 - Reframing the challenge, continuing our recovery and reconnecting](https://www.gov.ie/en/publication/3361b-public-health-updates/) - <https://www.gov.ie/en/publication/3361b-public-health-updates/>

³ Page 5, the Government's Covid-19 Plan.

- The **Government’s COVID-19 Plan** will see “*..the majority of restrictions lifted and replaced by guidance and advice to enable us to work together to protect ourselves and to live our lives to the fullest extent possible*” and among other things it sets out that:
 - from 20 September 2021, attendance at work for specific business requirements may commence on a phased and staggered attendance basis; and
 - from 22 October 2021 onwards⁴ the final significant shift in approach should occur with the majority of restrictions being lifted including the requirements for physical distancing and for mask wearing outdoors and in indoor private settings⁵;
- Factors informing the Government’s COVID-19 Plan include recent public health advice and **the rates and uptake being achieved in Ireland’s vaccination programme** (over 88 percent of the population over 18 are fully vaccinated, with almost 92 percent of adults⁶ having received at least 1 dose)⁷;
- While the **Mobile Network Operator (MNO) data traffic volumes** have continued to increase, **the volume increases are typical of mobile markets** noting that mobile data traffic volumes have increased for every quarter since ComReg’s Quarterly Key Data records began. Moreover, the rate of annual growth has declined from a COVID-19 peak of 46% in Q1 2020 to 34% in Q1 2021, which is in line with traffic growth before the pandemic (i.e. 30-35%).
- For **MNO voice traffic volumes**, while ComReg’s Quarterly Key Data Reports indicate that this increased from a stable pre COVID-19 level to a 20% increase in Q2 2020 (and maintained an increased level of 15% in Q1 2021 compared to pre COVID-19), the more recent figures from the network performance reports point to reduced traffic levels in the latter half of the year (aggregate monthly voice traffic increases of 0% and -4% increase for July and August 2021 compared a pre COVID-19 baseline) indicating a declining trend in voice traffic volumes towards those seen before the pandemic .

1.3 As a related matter, ComReg also notes that:

⁴ Based on the criteria of at or close to 90% of people 16 or over being fully vaccinated in the coming weeks, and having regard to the incidence and behaviour of the disease at that time.

⁵ As captured on the [gov.ie](https://www.gov.ie) – the “*Measures that will remain in place include, self-isolation when we have symptoms*” and “*mask wearing in healthcare settings, indoor retail and on public transport*”

⁶ Aged 18 and over

⁷ Page 5, the Government’s Covid-19 Plan.

- The **Multi Band Spectrum Award (MBSA2) process** for the long-term assignment of spectrum rights in the 700 MHz, 2.1 GHz, 2.3 GHz and 2.6 GHz bands **formally commenced** on 16 April 2021 with the publication of the Information Memorandum (Document 21/40)⁸ (“IM”) and continues to progress. The earliest **envisaged commencement date** for spectrum rights is **14 February 2022** for the 700 MHz, 2.3 GHz and 2.6 GHz bands, and **16 October 2022** for the 2.1 GHz band. Certain aspects of ComReg’s decision (Document 20/122) for this award are under appeal (see Section 2.5 below); and
- On 28 May 2020, regulations were made enabling the grant of a **Liberalised Use 2.1 GHz Band Licence** to existing 2.1 GHz band Licensees.⁹ In June 2021, Three and Vodafone applied for and were each granted such a licence in accordance with these regulations.

1.4 It is important to note that the background to, and context of, the Proposed Approach is exceptional and, while in this document ComReg proposes a further temporary spectrum licensing framework of up to 6 months, ComReg:

- reminds interested parties that the **existing and any further Temporary ECS Licensing frameworks are entirely without prejudice to ComReg’s MBSA2 award** for the long-term assignment of spectrum rights of use in the 700 MHz Duplex, 2.1 GHz, 2.3 GHz and 2.6 GHz bands (see Section 2.5 below) as provided for in the MBSA2 decision¹⁰; and
- emphasises that **network operators should now begin to make transition plans and take actions in advance of the end of the presently proposed temporary spectrum licences in light of the Temporary Situation**, noting that, based on current information, ComReg expects this to be its final proposal for a further temporary licensing framework in relation to the Temporary Situation.

⁸ [Document 21/40](#) - Information Memorandum and Draft Regulations , available at www.comreg.ie

⁹ [S.I. 265 of 2021](#) - Wireless Telegraphy (Third Generation and GSM Licence (Amendment) and Interim Licensing) Regulations 2021, available at www.irishstatutebook.ie/.

¹⁰ ComReg Document No. [20/122](#), ComReg Decision D11/20; *Multi Band Spectrum Award - Response to Consultation and Decision - The 700 MHz Duplex, 2.1 GHz, 2.3 GHz and 2.6 GHz Bands*, published 18 December 2020.

Temporary spectrum rights issued to date

- 1.5 Given the Temporary Situation, and pursuant to requests from affected operators¹¹ for temporary spectrum rights, ComReg has previously consulted upon and, with the consent of the Minister, put in place three consecutive licensing frameworks of six months duration each for the temporary assignment of spectrum rights of use.
- 1.6 This has facilitated the issue of temporary spectrum rights in the 700 MHz Duplex and 2.1 GHz bands to all three MNOs¹² which have been used to provide additional network capacity to address the increased traffic demands arising from the Temporary Situation. This has, in turn, also facilitated the leasing of 3.6 GHz spectrum rights from other rights holders in the band to Imagine which has helped it to manage increases in data traffic on its network resulting from the Temporary Situation.

Consideration of any further temporary spectrum licensing framework

- 1.7 In light of the expiry of the existing temporary licensing framework (and licences) on 1 October 2021 and the potential continuance of the Temporary Situation beyond that date, in July 2021 ComReg published Document 21/74¹³, an Information Notice, which set out guidance regarding the information requirements and next steps in considering whether further temporary licensing framework beyond 1 October 2021 might be appropriate.
- 1.8 In summary, this guidance recommended that the MNOs submit a joint or common request for any further temporary licensing framework to ComReg by 6 August 2021 which would (i) set out the specific details of any such joint/common request and (ii) provide sufficiently detailed supporting information based on the updated and prevailing COVID-19 considerations at that time.
- 1.9 Each of the MNOs has now submitted to ComReg a common letter requesting a further Temporary ECS Licensing framework (“MNO’s Request”) and, separately, individual supporting information.
- 1.10 This consultation document sets out ComReg’s:

¹¹ The three mobile network operators (“MNOs”) submitted a common letter requesting temporary spectrum rights on 24 March 2020 (See Annex 3 of Document [20/21](#)) and on 2 September 2020 (see Annex 3 of Document [20/86R](#)).

¹² Namely, Meteor Mobile Communications Limited (“Meteor”), Three Ireland (Hutchison) Limited (“Three”) and Vodafone Ireland Limited (“Vodafone”).

¹³ ComReg Document 21/74 - COVID-19 Potential Further Temporary ECS Licensing – July 2021 update and next steps in considering any further temporary licensing framework – Published 9 July 2021.

- preliminary assessment of the MNO's Request and whether a further temporary licensing framework would be appropriate in principle (Chapter 3);
- specific proposals in respect of a possible further temporary licensing framework (Chapter 4) and draft decision in respect of same (Chapter 5); and
- draft regulations which would be made subject to the consent of the Minister under the Wireless Telegraphy Act 1926 to give effect to ComReg's specific proposals (Annex 4).

1.11 Noting the importance of consulting close to the expiry date of the existing licensing framework and then progressing matters expeditiously due to the nature of the Temporary Situation, ComReg is again employing a greatly accelerated consultation process and requests that submissions from interested parties be provided by no later than close of business on **Monday 13 September 2021**.

1.1 Structure of document

1.12 The remainder of this document is structured as follows:

- **Chapter 2:** sets out some background information relevant to this consultation, including information on the previous and current Temporary Spectrum Licensing Frameworks, the Government measures to address COVID-19, network traffic information since the adoption of the Government measures, ComReg's MBSA2 project, other supporting actions such as spectrum leasing;
- **Chapter 3:** sets out information on the MNO's Request, ComReg's observations on same and its preliminary assessment and view on whether it would be appropriate in principle to provide for further temporary spectrum rights in light of the Temporary Situation;
- **Chapter 4:** sets out ComReg's proposals for a further temporary spectrum licensing framework;
- **Chapter 5:** sets out ComReg's draft Decision regarding its proposals;
- **Chapter 6:** sets out information on submitting comments on this consultation and outlines the next steps;
- **Annex 1:** includes a glossary of terms;

- **Annex 2:** summarises ComReg's statutory functions, objectives and duties relevant to the management of Ireland's radio frequency spectrum;
- **Annex 3:** sets out the non-confidential submissions from the MNOs in support of their requests for further temporary spectrum rights of use and correspondence with other interested parties; and
- **Annex 4:** sets out the Draft Regulations to facilitate the proposed assignment of further temporary spectrum rights of use by ComReg.

Chapter 2

2 Background Information

2.1 This chapter sets out some background information relevant to this consultation regarding:

- the COVID-19 Temporary Spectrum Licensing Frameworks implemented to date;
- the Government measures to address COVID-19 and associated vaccination plan;
- network traffic information since the adoption of the Government measures;
- consumer information: mobile voice and mobile data services;
- ComReg's MBSA2 project; and
- other supporting actions such as spectrum leasing.

2.1 COVID-19 Temporary Spectrum Licensing Frameworks implemented to date

2.2 Given the Temporary Situation, and pursuant to requests from affected operators¹⁴, ComReg has consulted upon and (with the consent of the Minister) put in place three consecutive licensing frameworks for the temporary assignment of spectrum rights of use. These are:

- the Temporary ECS licensing framework (from 8 April 2020 to 7 October 2020)¹⁵;
- the Further Temporary ECS licensing framework (from 8 October 2020 to 1 April 2021)¹⁶ and

¹⁴ The three MNOs submitted a common letter requesting temporary spectrum rights on 24 March 2020 (See Annex 3 of Document [20/21](#)), on 2 September 2020 (see Annex 3 of Document [20/86R](#)) and on 9 & 11 February 2021 (see Annex 3 of Document [21/16](#)).

¹⁵ Given effect by the Wireless Telegraphy (Temporary Electronic Communications Services Licences ([S.I. No. 122 of 2020](#)),) Regulations 2020 which were made on 8 April 2020 with the consent of the Minister for Communications, Climate Action and Environment.

¹⁶ Given effect by the Wireless Telegraphy (Further Temporary Electronic Communications Services Licences) Regulations 2020 ([S.I. No. 407 of 2020](#)) which were made on 2 October 2020, with the consent of the Minister for the Environment, Climate and Communications.

- the Further Temporary ECS (No. 2) licensing framework (from 2 April 2021 to 1 October 2021)¹⁷.
- 2.3 Each of these licensing frameworks has provided for the temporary assignment of spectrum rights in the 700 MHz Duplex, 2.1 GHz and 2.6 GHz bands for a period of up to 6 calendar months.
- 2.4 Such temporary licensing frameworks were and are intended solely to address the Temporary Situation and are entirely without prejudice to the award of spectrum rights of use in the MBSA2 (see Section 2.5 below). Applicants for a temporary licence have accepted same in the relevant Application Declaration Form¹⁸ when applying for a licence.
- 2.5 To date, six separate temporary spectrum licences covering the overall period from April 2020 to 1 October 2021 have been issued to each of the three MNOs as detailed in Table 1 below.
- 2.6 As outlined by the MNOs' in their current submissions in support of a further temporary licensing framework (see Section 3.2 and Annex 3 of this document), the temporary spectrum rights have been used to provide additional network capacity to support the provision of voice and data services to consumers, to address the increased traffic demands arising from the COVID-19 measures. While the extent of this deployment varies per MNO, each MNO has demonstrated that the extent of its deployment is considerable.

¹⁷ The Wireless Telegraphy (Further Temporary Electronic Communications Services Licences) (No.2) Regulations 2021 ([S.I. No. 137 of 2021](#)) were made on 22 March 2021, with the consent of the Minister for the Environment, Climate and Communications

¹⁸ See paragraph 4 of Part 6 of the Application Form in Documents [20/27a](#), [20/88a](#) and [21/24a](#).

Table 1: COVID-19 Temporary spectrum licences issued

Licence		Meteor	Three	Vodafone
Temporary ECS Licensing Framework	1. Initial Licence	9 April 2020 to 8 July 2020 (700 MHz & 2.1 GHz)	9 April 2020 to 8 July 2020 (700 MHz & 2.1 GHz)	22 April 2020 to 21 July 2020 (700 MHz & 2.1 GHz)
	2. Renewal Licence	9 July 2020 to 7 October 2020 (700 MHz & 2.1 GHz)	9 July 2020 to 7 October 2020 (700 MHz & 2.1 GHz)	22 July 2020 to 7 October 2020 (700 MHz & 2.1 GHz)
Further Temporary ECS Licensing Framework	3. Initial Licence	8 October 2020 to 7 January 2021 (700 MHz & 2.1 GHz)	8 October 2020 to 7 January 2021 (700 MHz & 2.1 GHz)	8 October 2020 to 7 January 2021 (700 MHz & 2.1 GHz)
	4. Renewal Licence	8 January 2021 to 1 April 2021 (700 MHz & 2.1 GHz)	8 January 2021 to 1 April 2021 (700 MHz & 2.1 GHz)	8 January 2021 to 1 April 2021 (700 MHz & 2.1 GHz)
Further Temporary ECS (No2) Licensing Framework	5. Initial Licence	2 April 2021 to 1 July 2021 (700 MHz & 2.1 GHz)	2 April 2021 to 1 July 2021 (700 MHz & 2.1 GHz)	2 April 2021 to 1 July 2021 (700 MHz & 2.1 GHz)
	6. Renewal Licence	2 July 2021 to 1 October 2021 (700 MHz & 2.1 GHz)	2 July 2021 to 1 October 2021 (700 MHz)	2 July 2021 to 1 October 2021 (700 MHz)

2.2 COVID19: Government's measures and vaccination plan¹⁹

2.7 Since March 2020, the Government has set out four separate plans²⁰ to tackle COVID-19 and taken a suite of measures, including, at various stages, requiring²¹:

- people to stay at home, except for work, education or other essential reasons, or to exercise within 2 (then 5) kilometres of their home;
- people to work from home, unless their work is an essential service that cannot be done from home;
- people not to visit other households except for essential purposes; and
- schools, colleges and childcare facilities to be temporarily closed.

2.8 Since May of this year, several COVID-19 measures have been gradually lifted or eased²² and on 31 August 2021, the Government set out its fifth plan ("COVID-19: Reframing the Challenge, Continuing Our Recovery and Reconnecting")²³ (the "Government's COVID-19 Plan") for the final phase of its response to the COVID-19 pandemic.

2.9 The Government's COVID-19 Plan is a significant shift in approach from protection at the population level through regulations and restrictions to protection at a personal level, or in other words *"to manage COVID-19 in a more "mainstream" way rather than as an exceptional threat requiring society-defining interventions and action"*²⁴.

2.10 The Government's COVID-19 Plan will see *"..the majority of restrictions lifted and replaced by guidance and advice to enable us to work together to protect ourselves and to live our lives to the fullest extent possible"* and among other things it sets out that:

¹⁹ This overview is provided only to aid understanding of the effects of these measures on network and is not intended to be comprehensive. Reliance should not be placed on this overview for other purposes including, without limitation, health protection and regulatory compliance. ComReg also notes that the Government plan may change in light of the developing situation.

²⁰ These plans demonstrate the evolving response of the Government to tackling COVID-19 and are:

- Ireland's National Action Plan;
- the Roadmap to Reopening Society and Business;
- Resilience & Recovery 2020-21 - Plan for Living with COVID-19; and
- Resilience and Recovery 2021- The Path Ahead.

²¹ [Citizen Information](https://www.citizensinformation.ie/), Public Health Measures for Covid-19, available at www.citizensinformation.ie/

²² Government of Ireland *"Public health measures that will come into place from 5 July"*, available at www.gov.ie

²³ *COVID-19 - Reframing the challenge, continuing our recovery and reconnecting* - <https://www.gov.ie/en/publication/3361b-public-health-updates/>

²⁴ Page 5, the Government's Covid-19 Plan.

- from 1 September public transport will return to 100% capacity;
- from 6 September:
 - organised indoor events, mass gatherings and live music can commence with certain restrictions;
 - certain relaxations of restrictions already in place for other existing activities (e.g. outdoor events, cinemas and theatres)
- from 20 September:
 - attendance at work for specific business requirements may commence on a phased and staggered attendance basis;
- from 22 October²⁵ the final significant shift in approach should occur with the majority of restrictions being lifted, including amongst other things:
 - requirements for physical distancing;
 - requirements for mask wearing outdoors and in indoor private settings;
 - limits on numbers at indoor and outdoor events and activities;
 - limits on numbers that can meet in private homes/gardens;
 - certification of vaccination, immunity or testing as a prerequisite for access to, or engagement in, any activities or events (with exception of international travel); and
 - the requirement to work from home - allowing a return to physical attendance in workplaces on a phased and cautious basis appropriate to each sector.

2.11 The Government measures that will remain in place beyond 22 October include:

- self-isolation when one has symptoms; and
- mask wearing in healthcare settings, indoor retail and on public transport.

²⁵ Based on the criteria of at or close to 90% of people 16 or over being fully vaccinated in the coming weeks and having regard to the incidence and behaviour of the disease at that time.

- 2.12 Factors informing the Government's COVID-19 Plan include recent public health advice and the rates and uptake being achieved in Ireland's vaccination programme²⁶.

COVID-19 Vaccination Programme

- 2.13 To date, the European Medicines Agency (EMA) has authorised the use of four vaccines in Europe: the Pfizer/BioNTech, Moderna, AstraZeneca and Janssen COVID-19 vaccines²⁷.
- 2.14 All four vaccines have been administered in Ireland and, as of 7 September 2021, the total number of vaccine doses rolled out in Ireland was 6,951,760 broken down into 3,720,088 (Dose 1) and 3,231,672 (Dose 2) including 233,632 (Single Dose – Janssen vaccination), meaning that more than 3.2 million people are now fully vaccinated²⁸.
- 2.15 As of 3 September 2021, the cumulative vaccine uptake for first dose in adults over 18 in Ireland is almost 92% and for full vaccination is just above 88%²⁹, giving Ireland one of the highest rates of COVID-19 vaccination doses administered in Europe³⁰.

2.3 Network traffic since the adoption of COVID-19 measures

- 2.16 Following the adoption of COVID-19 measures in March 2020, electronic communications networks³¹ have experienced increased voice and data traffic, above the growth rates that would have been expected in the ordinary course, given the greater dependence on these networks for work, personal, social and educational activities.
- 2.17 This section presents information on the network traffic demands being placed on MNOs in light of the Temporary Situation informed by:
- I. The weekly network performance reports provided by network operators to ComReg's Network Industry Forum; and

²⁶ Page 5, the Government's Covid-19 Plan.

²⁷ European Medicines Agency, "COVID-19 vaccines", available at www.ema.europa.eu/

²⁸ Government of Ireland, "[Latest vaccine statistics](#)"

²⁹ Irish Times, "Covid-19 Vaccine Tracker..", available at www.irishtimes.com

³⁰ Statista, "Number of Covid-19 Vaccination doses administered in Europe as of 25 August 2021, by country", available at www.statista.com

³¹ Including fixed and mobile networks

- II. ComReg's Quarterly Key Data Reports and the Data Portal where ComReg informs stakeholders of the key trends and developments in the Irish electronic communications market.

2.18 The network performance report and associated data provides recent information on how mobile voice and data traffic has grown since the introduction of COVID-19 measures. This data is reported weekly with records submitted up to 30 August 2021. However, information from the ComReg Quarterly Key Data Reports³² allows for comparison with time periods before the introduction of COVID-19 measures and therefore provides relevant information on the extent to which mobile voice and data increases are natural or specifically related to the introduction of COVID-19 measures.

I. Network Performance Reports

2.19 The data provided by network operators to ComReg's Network Industry Forum is presented as follows:

- Figure 1 presents updated aggregate monthly change in voice and data traffic volumes on the mobile networks from February 2020 to August 2021, compared to a pre-COVID-19 base level (i.e., February 2020);
- Table 2 (using the same dataset) shows the annual % change in the aggregate monthly voice and data traffic volume for the last 7 months; and
- Table 3 below presents individual MNO information on its latest weekly mobile voice and data traffic volume change.

³² ComReg Document 21/63, "Quarterly Key Data Report – Q1 2021", published 10 June 2021.

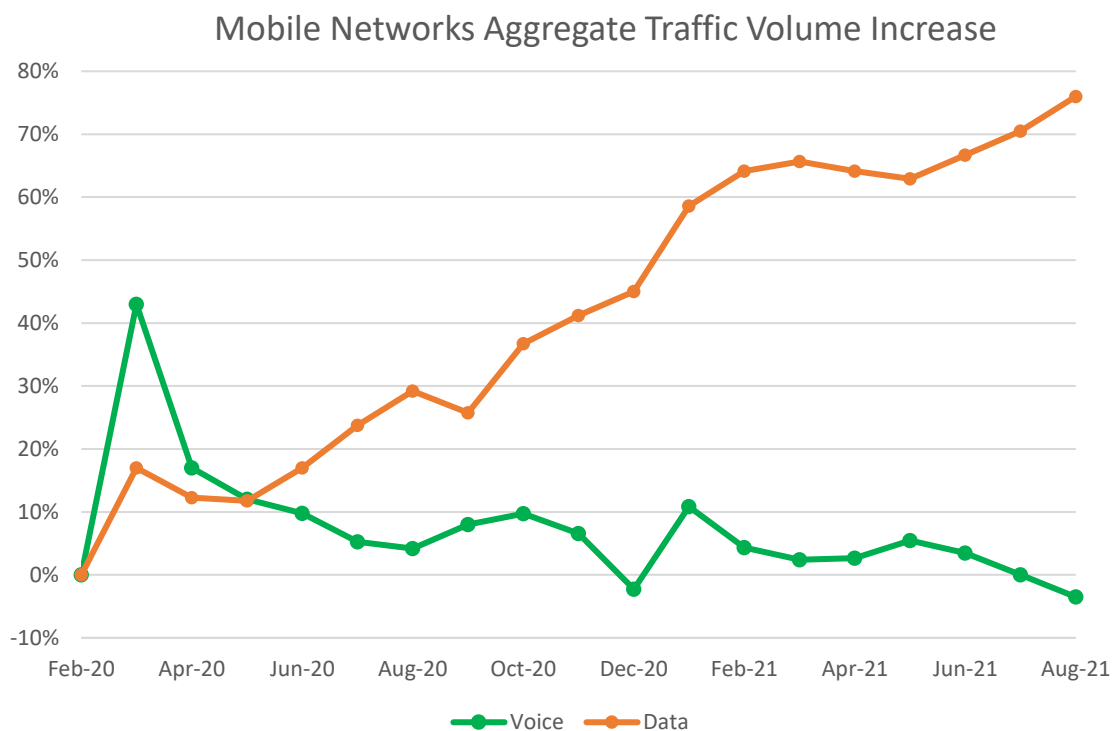


Figure 1: Mobile Networks Monthly Aggregate Traffic Volume Increase³³

Table 2: Annual percentage change in aggregate monthly mobile voice and data traffic volumes³⁴

	Voice traffic volume Annual % change	Data traffic volume Annual % change
February 2021	4%	64%
March 2021	-28%	42%
April 2021	-12%	46%
May 2021	-6%	46%
June 2021	-6%	42%
July 2021	-5%	38%
August 2021	-7%	36%

³³ Note that these are total traffic volume increases above a base level before the COVID-19 government restrictions were put in place.

³⁴ Note that these figures are an annual change and therefore relative to the previous figure 12 months ago.

Table 3: Individual Mobile Network Operator traffic volume changes (data compiled on 30 August 2021) [REDACTED]

MNO	Voice traffic change	Data traffic change
Meteor	[REDACTED]	[REDACTED]
Three	[REDACTED]	[REDACTED]
Vodafone	[REDACTED]	[REDACTED]

2.20 From this information ComReg observes:

- For **MNO voice traffic volumes**, in March 2020 this increased sharply by 43% compared to the pre-COVID-19 base level, but since then, it has been on a declining trend, and data from the most recent two months of this year (July and August 2021) indicates that mobile voice traffic has returned to its pre COVID-19 levels and below (see Figure 1 above). This declining trend is also illustrated in Table 2 where the annual percentage change in aggregate monthly voice traffic volumes over the last 6 months has been negative; and
- For **mobile data traffic volumes**, in March 2020 this increased sharply with a 17% increase compared to the pre-COVID-19 base level. Since then, mobile data traffic volumes have generally³⁵ increased at a stable rate, particularly over the last six months from March to August 2021 (see Figure 1 above). This stabilisation is also evident from Table 2 above where the annual percentage change in aggregate monthly data traffic volumes over the last 6 months has remained in the range +36% to +46%, with the three most recent months of June, July and August 2021 illustrating a declining trend in the annual % change.

II. ComReg Quarterly Key Data

2.21 The data provided from ComReg’s Key Data Reports is presented as follows:

- Figure 2 provides information on growth of mobile data expressed in terms of volumes and annual % growth.

³⁵ Noting that mobile data traffic volumes increased at a somewhat greater pace in October 2020 and January 2021.

- Figure 3 provides information on growth of mobile voice expressed in terms of volume and annual % growth.
- Figure 4 provides information on growth of fixed data compared to mobile data.

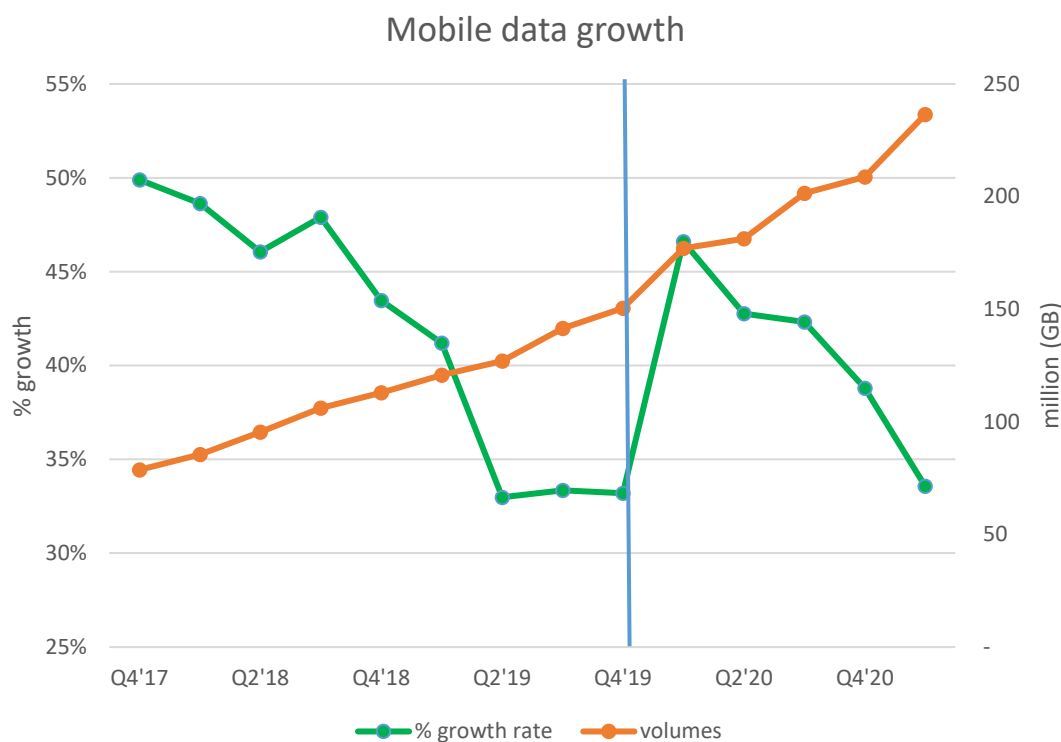


Figure 2: Mobile data growth

2.22 Figure 2 shows the growth in mobile data for each quarter in terms of volume and rate of growth over the past three years. This provides a contrast on how data growth evolved before and after the introduction of COVID-19 measures. In summary:

- prior to the introduction of COVID-19 measures at the beginning of 2020:
 - data volumes (i.e., each GB uploaded or downloaded) were already increasing significantly; and
 - growth rates had stabilised around 30 - 35% for the previous three quarters.
- each of the four quarters in 2020 show growth rates, above pre-COVID-19 levels, with a peak growth rate during COVID-19 of 47% in Q1' 2020.

- rates of growth since that peak steadily declined in subsequent quarters such that annual data growth rates were comparable to pre-COVID-19 levels in Q1' 2021.

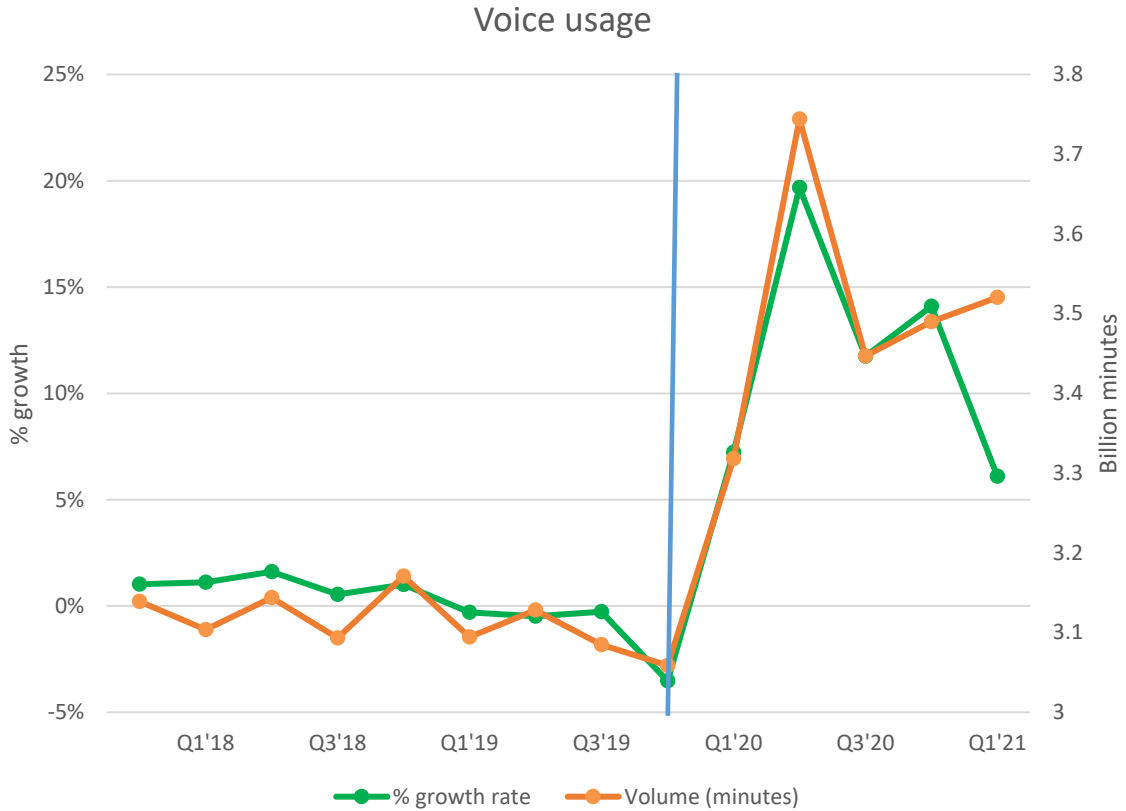


Figure 3: Mobile voice minutes growth

2.23 Figure 3 shows the growth in voice minutes for each quarter in terms of volume and rate of growth, over the past three years. This provides a contrast on how mobile voice growth evolved before and after the introduction of COVID-19 measures. In summary:

- prior to the introduction of COVID-19 measures at the beginning of 2020:
 - volume of minutes on a quarterly basis was around 3.1 billion minutes (aside from some seasonable variability).
 - there was close to a zero rate of growth for the period in the lead up to COVID (indeed it has been close to zero for the previous 5 years).

- each of the four quarters in 2020 show growth rates and volume of minutes above pre-COVID levels, with peak increases during COVID-19 of around 20% or 3.6 billion minutes in Q2 2020.
- usage since that peak in Q2 2020 have steadily declined in subsequent quarters although usage to Q1 2021 remained above pre-COVID levels.

2.4 Consumer information: mobile voice and mobile data services

Document 20/21

2.24 In Document 20/21, ComReg noted the following background information:

- Around half of households do not have a fixed line **voice connection** and would primarily rely on mobile networks (which have close to full population penetration) to make voice calls³⁶;
- 10% of households do not have internet access of any kind³⁷ and such households would be entirely reliant on accessing essential services over the phone during the Temporary Situation; and
- Around 20% of households primarily rely on wireless means to provide **internet access** to the household³⁸;
- reliable data services play an important role in the provision of mobile voice services through the provisions of VoLTE³⁹, Native Wi-Fi⁴⁰ and VOIP⁴¹ calling which reduces the load on mobile voice networks (see paragraph 4.16 of Document 20/21).

³⁶ Mobile Consumer Experience Survey 2019, Document 19/101, slide 22.

³⁷ CSO, "Information Society Statistics", accessed on 25 August 2021, available at www.cso.ie

³⁸ ComReg notes that its "2019 Residential Market Research Survey", published in June 2020, showed that at least 18% of households rely on wireless as their means of accessing broadband. See slide 17.

<https://www.comreg.ie/publication/2019-residential-market-research>

³⁹ Voice over Long-Term Evolution

⁴⁰ Native Wi-Fi technology, allows calls and texts to be made on a device utilising a Wi-Fi connection rather than through the mobile network directly

⁴¹ Voice over internet protocol

- 2.25 In Document 20/21, ComReg also set out its view that consumers may have an increased need for mobile voice and data in order to access various essential and non-essential services provided **over the phone** (see paragraph 4.12 of Document 20/21) and **online** (see paragraph 4.18 and 4.19 of Document 20/21) that would likely be required by consumers during the Temporary Situation.
- 2.26 However, in line with the removal of the COVID-19 measures and opening up of society from October 2022, consumers are likely to have a reduced need for accessing these services over the phone or online (see impact on consumers below). Therefore, the need for mobile voice and data in order to access various essential and non-essential services provided over the phone and online primarily applies in the period up to 22 October 2021.

COVID-19 related consumer surveys

- 2.27 Research findings from data collected by ComReg⁴² on broadband and mobile phone usage since COVID-19 measures were introduced highlight the importance of telecommunications services. For example:
- 95% of respondents value being able to access and use broadband at home during COVID-19⁴³;
 - 87% of respondents value being able to access and use their mobile phone at home during COVID-19; and
- 2.28 Consumers also use wireless services to carry out work-related activities while at home. For example:
- Amongst those currently working, 1 in 3 are working from home to some degree. Amongst all currently working:
 - some 85% state they are using their home broadband service to work remotely.
 - 44% of respondents use mobile data to carry out work-related activities while at home during the ongoing COVID-19 pandemic⁴⁴; and
 - 53% of respondents use mobile voice to carry out work-related activities while at home during the on-going COVID-19 pandemic⁴⁵.

⁴²ComReg Document 21/42, 'Impact of Covid-19 on Consumer Use and Perception of Telecommunication Services', published January 2021.

⁴³ Ibid, slide 3.

⁴⁴ Ibid, slide 22

⁴⁵ Ibid

2.29 However, in light of the removal of the COVID-19 restriction requiring working from home where possible, it is reasonable to expect that the proportion of broadband and voice usage at home for work-related activities will decline below that experienced during the working from home restrictions.

2.5 MBSA2: Long-term assignment of spectrum rights in the 700 MHz, 2.1 GHz, 2.3 GHz and 2.6 GHz bands

2.30 In parallel with the COVID-19 temporary spectrum rights, ComReg has progressed its MBSA2 project for the long-term assignment of spectrum rights of use in the 700 MHz, 2.1 GHz, 2.3 GHz and 2.6 GHz bands (the “Award Bands”) and on 18 December 2020, ComReg published its Decision D11/20⁴⁶ (the “MBSA2 Decision”) on same.

2.31 As noted in Document 20/122, spectrum awards, and particularly those suitable for the deployment of mobile and wireless broadband services, are very important events which occur only every few years and which have economy-wide impact. ComReg’s previous spectrum awards⁴⁷ have, among other things, promoted effective competition including new market entry, and facilitated the rollout of enhanced existing and new services/technologies, including 4G and 5G, to the benefit of Irish consumers.

2.32 The MBSA2 is every bit as important as ComReg’s previous spectrum awards and its progress will enable licensees to make long-term capital expenditure decisions and is an important aspect of general economic and social development in Ireland for the foreseeable future for reasons including that it:

- will lead to improved network coverage and capacity, with significant economic benefits;

⁴⁶ See:

- [ComReg Document No. 20/122, ComReg Decision D11/20; Multi Band Spectrum Award - Response to Consultation and Decision - The 700 MHz Duplex, 2.1 GHz, 2.3 GHz and 2.6 GHz Bands](#), published 18 December 2020. Available at: <https://www.comreg.ie/publication/>;
- [ComReg Document No. 20/122a; Multi Band Spectrum Award - DotEcon Report Assessment of responses to consultation on Draft Decision](#), published 18 December 2020. Available at: www.comreg.ie/publication/;
- [ComReg Document No. 20/122b; Multi Band Spectrum Award - A Report by Plum Consulting London LLP](#), published 18 December 2020. Available at: www.comreg.ie/publication/; and
- [ComReg Document No. 20/122s; Multi Band Spectrum Award - Updated Versions of Non-confidential Submissions to Document 19/124, 20/32 and 20/56](#), published 18 December 2020. Available at: www.comreg.ie/publication/.

⁴⁷ The last major award was in 2017 for the 3.6 GHz band, a 5G candidate band, and before that in 2012 for the 800 MHz, 900 MHz and 1800 MHz bands. See:

- [3.6 GHz band award webpage - www.comreg.ie](#); and
- [2012 MBSA webpage - www.comreg.ie/](#).

- will likely result in significant cost savings for existing network operators that secure spectrum in the award; and
- is central to meeting the European Commission’s (“EC”) 5G for Europe Action Plan, a strategic initiative which concerns all stakeholders, private and public, small and large, in all Member States, to meet the challenge of making 5G a reality⁴⁸.

Appeal of the MBSA2 Decision

- 2.33 On 14 January 2021, Three Ireland (Hutchison) Limited and Three Ireland Services (Hutchison) Limited (collectively “Three”) lodged an appeal against the MBSA2 Decision to the High Court.
- 2.34 As outlined by ComReg in Information Notice Document 21/04R⁴⁹, Three’s appeal does not of itself affect the taking effect of the MBSA2 Decision or prevent action being taken to implement it and ComReg is opposing the appeal in full.
- 2.35 The Appeal hearing was held in June 2021. It was mentioned in court on 23 July and was adjourned with the Court indicating that further directions would be issued to the parties.

Implementation of the MBSA2 Decision

- 2.36 On 16 April 2021, the award process formally commenced with the publication of the IM. The IM details the processes and procedures that ComReg is employing to implement Decision 11/20, and an indicative timeline for the steps in the MBSA2 is set out in Table 17 of the IM. ComReg is committed to ensuring the timely delivery of the MBSA2 and, to date, the award has progressed in line with the indicative timeline set out in Table 17 of the IM, albeit that, recently, certain adjustments have been made and notified to Applicants with respect to the timeline for the submission of Phase 2 Application Documentation.
- 2.37 On 28 May 2021, two sets of Wireless Telegraphy (“WT”) regulations associated with the MBSA2 were made by ComReg with the consent of Eamon Ryan, Minister for the Environment, Climate and Communications. These are:

⁴⁸ European Commission, “5G Action Plan”, available at ec.europa.eu/

⁴⁹ ComReg Document [21/04R](#), “Appeal by Three in relation to Multi Band Spectrum Award – The 700 MHz Duplex, 2.1 GHz, 2.3 GHz and 2.6 GHz Bands” published 20 January 2021 and revised on 29 January 2021, available at www.comreg.ie.

- The Wireless Telegraphy (Liberalised Use and Related Licences in the 700 MHz Duplex, 2.1 GHz, 2.3 GHz and 2.6 GHz Bands) Regulations 2021⁵⁰; and
- The Wireless Telegraphy (Third Generation and GSM Licence (Amendment) and Interim Licensing) Regulations 2021⁵¹.

2.38 Among other things, these regulations provide for:

- the granting of “liberalised use” licences in the 2.1 GHz band for existing 3G licensees;
- the granting of “interim licences” in the 2.1 GHz band to Three; and
- the granting of “liberalised use” licences for spectrum rights in the 700 MHz, 2.1 GHz, 2.3 GHz and 2.6 GHz bands in accordance with the outcome of the MBSA2.

2.39 In June 2021, Three and Vodafone were granted a 2.1 GHz Band Liberalised Use licence.

2.6 Other supporting actions: spectrum leasing

2.40 In support of the provision of services to end users during the Temporary Situation and in light of the implementation of COVID-19 temporary spectrum licensing frameworks, ComReg has encouraged the MNOs to consider taking other supporting actions including the leasing of spectrum rights to other affected operators.

2.41 Following consultation on several notifications received from the MNOs and Dense Air with respect to the leasing of 3.6 GHz spectrum rights to Imagine, ComReg made Spectrum Lease Determinations on same⁵² and subsequently issued several 3.6 GHz band spectrum lease licences to Imagine in 2020 and 2021. This enabled the lease of 3.6 GHz band spectrum rights from each of the three MNOs and Dense Air at various locations and each for a three-month period as detailed in Table 4 below.

⁵⁰ [S.I 264 of 2021](#) .

⁵¹ [S.I 265 of 2021](#) .

⁵² See ComReg Documents 20/51, 20/77, 20/87, 20/97 and 21/46

Table 4: Time periods of Imagine's 3.6 GHz band Lease Licences with the three MNOs and Dense Air

Dense Air	Eir	Three	Vodafone
22 Sept 2020 – 21 Dec 2020	22 June – 21 September 2020	22 June – 21 September 2020	22 June – 21 September 2020
22 Dec 2020 – 21 March 2021	13 Oct 2020 – 12 Jan 2021	13 Oct 2020 – 12 Jan 2021	13 Oct 2020 – 12 Jan 2021
11 May 2021 – 10 Aug 2021	13 Jan 2021 – 12 April 2021	Not extended ⁵³	13 Jan 2021 – 12 April 2021
11 Aug 2021 – 10 Nov 2021	11 May 2021 – 10 Aug 2021		11 May 2021 – 10 Aug 2021
	11 Aug 2021 – 10 Nov 2021		11 Aug 2021 – 10 Nov 2021

2.42 Imagine currently holds one 3.6 GHz band spectrum lease licence which expires on **10 November 2021**⁵⁴.

2.43 Noting the context of this consultation and ComReg's proposals for a further temporary spectrum licensing framework for a period of up to 6 months from 2 October 2021 to 1 April 2022, ComReg would invite the MNOs, Dense Air and Imagine to consider whether it would now be appropriate to agree further spectrum leases and, if so, to promptly notify same for ComReg's consideration.

⁵³ As noted on the [3.6 GHz Band Transition webpage](#) of ComReg, on 11 January 2021, Imagine and Three decided not to extend their Spectrum Lease Licence agreement.

⁵⁴ In respect of spectrum leased from each of Dense Air, Eir and Vodafone.

Chapter 3

3 MNOs Request and ComReg's preliminary assessment of same

3.1 In this chapter, ComReg:

- provides some background to the MNO's Request, in particular, by reference to ComReg Document 21/74;
- outlines the MNO's Request (both the common letter and individual supporting information) including by reference to the types of information identified in Document 21/74;
- outlines its preliminary observations of the material received from the MNOs; and
- outlines its preliminary assessment of whether a further licensing framework would, in principle, be appropriate, having regard to the potential impact on competition, consumers, and other relevant statutory objectives.

3.1 Document 21/74 – ComReg's information requirements

3.2 In light of the expiry of Further Temporary ECS (No.2) Licences on 1 October 2021, and the potential continuance of the Temporary Situation beyond that date, ComReg published Document 21/74, being an Information Notice setting out guidance regarding the information requirements and next steps in considering any further temporary licensing framework beyond 1 October 2021.

3.3 ComReg identified that, in considering any further Temporary ECS Licensing framework, the next formal step would be for the MNOs to submit a joint or common request to ComReg by 6 August 2021:

- (i) setting out the specific details of the joint/common request indicating any elements of the existing Temporary ECS Licensing framework that ought to be changed (if any) and the reasons for same; and
- (ii) providing sufficiently detailed information based on the updated and prevailing COVID-19 considerations at that time to support a request for any further Temporary ECS Licensing framework.

- 3.4 To assist the MNOs in making such a submission, paragraph 40 of Document 21/74 set out the following non-exhaustive list of information that ComReg would expect each MNO to submit separately to ComReg in support of any joint or common request.

A. Network traffic / capacity / performance information

- (i) information regarding the traffic (voice and data), capacity /performance of the network considering the extraordinary situation arising from COVID19. In particular, the changes in network traffic (voice and data), capacity / performance since COVID-19 until now;
- (ii) information on the expected traffic demand and network capacity beyond 1 October 2021; and
- (iii) observations of how much of the changes in traffic and capacity is due to forecasted annual changes that would be expected on a network in the normal course (accounting for seasonal changes and projected market developments in the absence of COVID-19) and those that can reasonably be considered to be directly related to Government COVID-19 measures.

B. Ability to make use of existing temporary spectrum assignments in any further Temporary ECS Licensing framework – Sites and transmitters

- (i) information regarding the number, locations and deployment dates of sites/transmitters per spectrum band that have actually been used to date using temporary ECS rights of use, indicating the terrestrial system(s) (e.g. LTE) supported; and
- (ii) information on the number of sites/transmitters per band that would be expected to be used over the duration of any further temporary licensing framework indicating the terrestrial system(s) (e.g. LTE) being supported. Note, where a Licensee has applied for and been granted a 2.1 GHz Band Liberalised Use licence, information for the 2.1 GHz band should not be included.

C. How temporary rights have assisted with the provision of ECS in the State

- (i) Information on how existing temporary rights have assisted in alleviating the network capacity/performance constraints to-date. Please provide:

- a. information on the percentage of network traffic (voice and data) carried by temporary spectrum rights for the each of the 700 MHz band and 2.1 GHz bands; and
 - b. information highlighting trends where the network capacity/network performance improvements are correlated to use of temporary ECS rights of use. For example, when temporary ECS rights of use were brought into use the network / capacity improvements observed at these times.
- (ii) Information on how temporary rights may materially assist over the duration of any further Temporary ECS Licensing framework, noting that where a Licensee has applied for and been granted a 2.1 GHz Band Liberalised Use licence, information on the 2.1 GHz band should not be included.

D. Managing the risks to the provision and quality of existing ECS given the use of the temporary spectrum rights

Information regarding the management of risks to the provision and quality of existing ECS and the measures taken to date by the MNO. For example, the key measures taken on foot of Annex 4 of Document 20/27 - 700 MHz Coordination Procedures.

E. Risks where there is no further Temporary ECS Licensing framework.

The risk of congestion and other disruption to consumer services and the locations where it would most likely arise in the event that there is no further Temporary ECS Licensing framework, identifying if such congestion or disruption would reasonably be considered to be due to COVID-19 matters or mobile market developments / commercial strategy matters.

F. Actions required in relation to no further Temporary ECS Licensing framework.

Details of the preparations and actions that the MNOs has taken and would need to take in the event of no further Temporary ECS Licensing framework.

G. Other Factors: Any other factors that the MNOs deem relevant to the consideration of any further Temporary ECS Licensing framework.

3.2 MNOs Request

3.2.1 MNO Common Letter

- 3.5 On 21 July (Vodafone) and 22 July 2021 (Eir and Three), the three MNOs each submitted a common letter to ComReg (see Annex 3).
- 3.6 In this common letter, the MNOs *“jointly request that the terms of the current Temporary Spectrum Management Measures detailed in ComReg 20/88 (D08/20) are extended unchanged”*.
- 3.7 In support of their common request, the MNOs submit that:
- *“While Ireland has made considerable progress in administering vaccines, the emergence of new variants of Covid continues to create challenges, preventing us from returning to our pre-covid patterns of work, education, and social lives. Quoted in the Irish Times July 1st Dr Tony Holohan has warned that “A concerning increase in recent Covid-19 infections driven by the Delta variant indicates a fourth wave of the pandemic is now beginning in Ireland”, and also in this month both the Netherlands and France have re-imposed Covid restrictions that had been relaxed. Unfortunately, it is clear we face a further period of uncertainty.”*
 - *“The change to working practice, the move to online education, and the change to social interaction that was forced upon us over the last 18 months have had dramatic effects on the patterns of demand for mobile service in Ireland. Mobile networks have contributed strongly towards supporting this change in the quantity and location of offered traffic by rapidly changing our network build plans supporting the changing traffic patterns, often to support traffic in commuter towns and in rural areas.”*
 - *“In the coming months we continue to face further uncertain changes in traffic patterns. While it is hoped that the situation will improve in the coming months such that the Government can reduce some of the restrictions, e.g. pupils will return to school and some return to office workplaces, the timing of any changes remains uncertain. Supporting customers through this changing demand will only be possible through further investment in networks including mobile networks, particularly in the rural areas that do not currently have sufficient connectivity. It is impossible to predict where local surges may occur, so service providers must prepare on the basis that they could be anywhere.”*

- *“The Temporary Spectrum Licences first issued by ComReg in April 2020 have helped in an important way to meet the new demands placed on mobile networks. In mid-March 2020 when measures to prevent the spread of Covid-19 were announced all mobile operators experienced an immediate and significant growth in average and peak throughput for both voice and data. The physical location of the demand also changed – out of city centres to residential areas.”*
- *“The rapid enactment of the Temporary Spectrum Measures by ComReg has allowed operators to support this traffic at performance measures similar to those achieved pre-Covid. As new infrastructure cannot be built at short notice, and as operators had already adjusted network configuration to the maximum extent, the Temporary Spectrum Measures have been crucial to giving mobile operators flexibility to mitigate significant congestion in voice and data networks.”*
- *“As we move forward in the coming months and the next phases of action dealing with Covid, it is important that ComReg should ensure that the current Temporary Spectrum Licences continue past the 30th September date of the current regulation. We ask that these measures are extended at least on the same basis as previously in three-monthly periods. This will enable operators to build capacity in the different locations required and, importantly, to invest efficiently. Building new sites to cope with any short-term demand in advance of the planned Spectrum auction would be extremely inefficient.”*

3.8 Regarding their interactions with interested parties in relation to the temporary spectrum rights, the MNOs submit that:

“The mobile operators have worked closely with ComReg and Government in supplying ongoing information on network stability and traffic. In using the temporary rights we have also carefully managed the risks to the provision and quality of existing ECS through careful co-ordination with other radio spectrum users and cable companies. We are confident that we can maintain this high level of cooperation through an extended Temporary Licence period.”

3.9 Regarding the MBSA2 (see section 2.5 above), the MNOs:

“acknowledge that ComReg has stressed that any temporary licensing framework is intended solely to address the exceptional and extraordinary situation presented by COVID-19 and that it is entirely without prejudice to the award of long-term rights of use in these spectrum bands in its proposed multi-band spectrum award.”

3.2.2 Individual MNO supporting information

- 3.10 In support of their common request, each MNO subsequently submitted supporting information of the kind identified in paragraph 40 of Document 21/74. Non-confidential versions of these submissions are included in Annex 3.
- 3.11 ComReg outlines below the key points submitted using the same structure as outlined at paragraph 40 of Document 21/74.

Paragraph 32 (A): Network traffic information

- 3.12 **In relation to 32 A (i) “changes in network traffic (voice and data), capacity / performance from pre-COVID-19 until now”:**
- Eir submits that it has seen “*very significant*” voice and data traffic growth since the emergence of the Temporary Situation in March 2020:
 - For **mobile data traffic**, Eir submits that data traffic growth in particular has continued since the initial national lockdown and there has been sustained growth throughout 2020 and into 2021, and, for January to June 2021, its year-on-year growth of monthly data volumes has been between [X ██████████ X] and that the COVID-19 step change seen in 2020 has not receded. Eir also submits that with the move to home-based working, the locations of the traffic has also changed and so the traffic profile per cell and site has altered as a result of COVID-19.
 - In relation to the monthly trends, Eir submits that the trendline for 2021 to date would seem to indicate a slightly slower monthly growth which may be as a result of a larger January 2021 growth [X ██████████ X] as well as full year data not yet available.
 - For **mobile voice traffic**, Eir submits that this has been flat for recent years but in March 2020 a step change occurred. While this surge fell back somewhat, Eir submits that mobile voice traffic is still above pre-COVID-19 levels, and that 2021 traffic volumes (January to June 2021) seem to be largely in line with 2020 figures showing the additional voice traffic capacity attributed to COVID-19 has not abated.
 - Three submits that:

- its daily **voice traffic** volumes remain elevated above its baseline [✂ ██████████ ✂] on 2 June 2021 and notes that voice tends to peak at times coinciding with changes in the level of COVID-19 measures;
- in relation to its **data network**, the impact of the COVID-19 measures is much more significant with sustained increases in both busy hour and total daily traffic throughout the different levels of restrictions. As of 23 May 2021, Three’s daily busy hour data network throughput was [✂ ██████████ ✂] above its baseline forecast⁵⁵ while its daily network volume was [✂ ██████████ ✂] above its baseline forecast. While the traffic volumes have reduced somewhat and there is a return of some traffic to city-centre locations, Three submits that data traffic has continued to out-grow forecasts and the geographical location of the traffic remains altered from what it would expect if the COVID-19 measures were completely removed;
- Vodafone submits that it has experienced “*very significant*” increases in both voice and data traffic since January 2020, as detailed in Table 5 below. For example, it notes that for the period January 2020 to June 2021 its 4G downlink (“DL”) traffic volume increase of [✂ ██████████ ✂] is approximately double the increase planned pre-COVID-19. Vodafone also submits that there has been a marked movement in traffic from city centre areas to suburban and rural areas and to time-of-day traffic patterns in these areas.

Table 5: Vodafone’s voice and data traffic increases since January 2020
[✂ REDACTED ✂]

	Change Jan 2020 to Nov 2020	Change Nov 2020 to June 2021	Change Jan 2020 to June 2021
3G Voice Traffic	[✂ ██████████ ✂]	[✂ ██████████ ✂]	[✂ ██████████ ✂]
4G DL Traffic Volume	[✂ ██████████ ✂]	[✂ ██████████ ✂]	[✂ ██████████ ✂]
4G UL Traffic Volume	[✂ ██████████ ✂]	[✂ ██████████ ✂]	[✂ ██████████ ✂]

⁵⁵ Baseline forecast here refers to the forecasted data increase on its network across the year before the Temporary Situation.

3.13 In relation to 32 A (ii) information on the expected traffic demand and network capacity beyond 1 October 2021; and 32 A (iii) observations on how much of the changes in traffic and capacity is due to forecasted annual changes that would be expected on a network in the normal course (accounting for seasonal changes and projected market developments in the absence of COVID-19) and those that would be related to Government COVID-19 measures:

- Eir submits that it expects voice and data traffic to continue on the same growth trajectory as even though Level 5 restrictions are being relaxed the voice and data volumes continue to trend reasonably close to 2020 levels and Eir notes that most businesses are unlikely to start to return to their offices until September at the earliest.
- In relation to how much traffic growth would be attributable to COVID-19, Eir submits that the very significant growth in 2020 is very evident versus the prior year growth trajectory and 2021 figures seem to be almost in line with last year's trends. Eir submits that data traffic growth during 2021 is averaging [✂ [REDACTED] ✂] so far compared with [✂ [REDACTED] ✂] in 2020.
- Three provides a comparison of two forecasts to April 2022, being: (1) its baseline daily busy hour data forecast excluding COVID-19 effects and (2) the adjusted forecast which assumes ongoing measures that restrict normal behaviour based on the COVID-19 measures that are in place in July 2021 as opposed to any future measures, e.g. schools closed or localised restrictions. In this forecast, Three anticipates ongoing growth in (1) above i.e., its baseline traffic during 2021/2022, and submits that the forecast uplift in traffic resulting from COVID-19 measures (i.e., (2) above) indicates significant growth above its baseline. Comparing the two forecasts, Three estimates the daily busy hour network data traffic for forecast (2) would be:
 - [✂ [REDACTED] ✂] greater than forecast (1) at end of year 2021; and
 - [✂ [REDACTED] ✂] greater than forecast (1) at 1 April 2022;
- Three submits that, while normal network improvement measures (including the deployment of additional spectrum, equipment, and sites) can be expected to meet normal growth in demand, these increases need to be planned for in advance and take time to deliver.

- Three also submits that there is a layer to traffic demand which is unpredictable at this time, including the location of that demand, and it states that it would not “*be possible or practical to expand network capacity to meet the uplifted demand growth without access to the Temporary Licence for 700MHz.*” Further it states that “*[b]uilding new sites and rolling out equipment is both slow and expensive and it would not be practical or efficient at this time to try to reconfigure our network to meet a short-term remaining demand*”.
- Vodafone estimates that over the past year the change in network traffic is approximately [✂ [REDACTED] ✂]. Noting its comparison of November 2020 versus June 2021 traffic, Vodafone submits that data traffic is continuing to grow in excess of old/normal patterns, and that it is becoming apparent that the post-COVID-19 traffic profile and patterns cannot be expected to return to or mirror pre-COVID-19 patterns. In this regard, it notes that the acceleration of remote working and access to online services is a growing reality.
- In relation to future growth (i.e. post 30 September 2021), Vodafone expects traffic growth to considerably exceed the [✂ [REDACTED] ✂] growth in its pre-COVID-19 plan. In addition, it notes that while there is uncertainty in overall traffic volume there is also uncertainty in where traffic will be delivered as it is unclear how quickly workers will return to office environments.

Para 32 (B): Ability to make use of existing temporary spectrum assignments in any further Temporary ECS Licensing framework

- 3.14 **In relation to 32 B (i)** “*information regarding the number, locations and deployment dates of sites/transmitters per spectrum band that have been used to date using temporary ECS rights of use, indicating the terrestrial system(s) (e.g. LTE) supported*”; **and 32 B (ii)** “*information on the number of sites/transmitters per band that would be expected to be used over the duration of any further temporary licensing framework indicating the terrestrial system(s) (e.g. LTE) being supported*”. Table 6 below shows the number of sites deployed by each operator using temporary spectrum rights as of July 2021, and the intentions of each operator should a further temporary ECS licensing framework be put in place.

Table 6: Total sites deployed and planned using temporary spectrum
[REDACTED]

	700 MHz Sites		2.1 GHz Sites	
	Deployed (July 2021)	Planned	Deployed (July 2021)	Planned
Eir	[REDACTED]	Plans to bring on more sites	[REDACTED]	Plans to bring on more sites
Three	[REDACTED]	[REDACTED]	N/A	N/A
Vodafone	[REDACTED]	[REDACTED]	N/A	N/A

3.15 As noted in Table 6 above, each of the MNOs has deployed sites in the 700 MHz band and plans to deploy further sites in this band should a further temporary ECS licensing framework be put in place.

3.16 In relation to the 2.1 GHz band, Eir is the only MNO using temporary spectrum rights and, should a further temporary ECS licensing framework be put in place, it plans to deploy further sites in this band.

Para 32 (C): How temporary rights have assisted with the provision of ECS in the State

32 C (i) How existing temporary rights have assisted in alleviating the network capacity/performance constraints to-date, providing:

- a. information on the percentage of network traffic (voice and data) carried by temporary spectrum rights for the each of the 700 MHz band and 2.1 GHz bands; and*
- b. information highlighting trends where the network capacity/network performance improvements are correlated to use of temporary ECS rights of use.*

32 C (ii) How temporary rights may materially assist over the duration of

any further Temporary ECS Licensing framework

3.17 All three MNOs submit that:

- to date, the temporary spectrum rights have been used to provide additional network capacity which supports, and improves in some cases, the provision of voice and data services in light of the increased traffic demands arising from the COVID-19 measures; and
- should a further temporary spectrum licensing framework be put in place, the MNOs would continue to use this spectrum to provide additional capacity to meet the increased traffic demands on their network. In particular:

3.18 Eir:

- estimates that in 2021 (January to June), around [] of data traffic has been supported by the 700 MHz and 2100 MHz bands respectively and that the LTE700 and LTE2100 bands carry [] respectively of the total network voice traffic.
- states that it has activated VoLTE to complement its existing voice over Wi-Fi service, thus enabling the refarming of some of its 2.1 GHz rights for LTE (LTE2100); and
- notes that it is difficult to predict where and when demand will shift and considers that having temporary rights available nationally allows contingent capacity to be made available which can help absorb the impacts on demand arising from lockdown measures (localised or otherwise).

3.19 Three:

- notes that the 700 MHz band is particularly important for users in suburban and rural areas where the 800 MHz and 900 MHz bands may be experiencing congestion as a result of the temporary shift in traffic; and
- conservatively estimates that the use of the 700 MHz band on Three's network has significantly increased quality of service to over [] users in sub-urban or rural areas. Three notes that a withdrawal of the temporary spectrum would mean a return to reduced quality for customers from Three, and also Virgin Media, Tesco Mobile, and LycaMobile.

- 3.20 Vodafone submits that, without the capacity provided by the temporary spectrum, all of the [✂ [REDACTED] ✂] sites using 700 MHz would now be experiencing significant congestion.





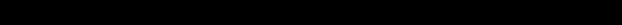
Para 32 (D): *Managing the risks to the provision and quality of existing ECS given the use of the temporary spectrum rights, e.g. key measures taken on foot of the 700 MHz Coordination Procedures (Annex 4 of Document 20/27)*

- 3.21 All three MNOs submit that the co-ordination procedures of the existing Temporary ECS Licensing Framework have worked well and that no adverse effects on other services have been reported. In addition:
- Eir submits that it has had extensive engagement with Virgin Media regarding 700 MHz site activation to enable testing pre/post activation and to mitigate the risk of interference to Virgin Media’s CATV services during the first phase of LTE 700 MHz activation, and it has continued to maintain very close co-ordination week-to-week with Virgin Media and the other MNOs; and
 - Vodafone notes that the increase in capacity resulting from the temporary spectrum rights has facilitated the lease of spectrum in the 3.6 GHz band to FWA operators.

Para 32 (E): *The risk of congestion and other disruption to consumer services and the locations where it would most likely arise in the event of no further Temporary ECS Licensing framework, identifying if such congestion or disruption would reasonably be considered to be due to COVID-19 matters or mobile market developments / commercial strategy matters*

- 3.22 All three MNOs note that, in the event of no further temporary spectrum rights, there is a risk of congestion or degraded service. For example:
- Eir submits that the risk of congestion or degraded service is very real throughout Ireland noting that the voice and traffic growth is network wide with a continued guideline to work from home where possible in addition to the implementation of further lockdown measures from time to time such as the temporary closure of schools. In addition, it notes that *“Building new sites to cope with any short term demand in advance of the planned Spectrum auction would be extremely inefficient”*;
 - Three estimates that this would materially affect connectivity for approximately [✂ [REDACTED] ✂] users and would bring the risk that

many of those customers would no longer be able to work from home or connect to school in compliance with public health guidance. In addition, Three notes that, while there has been something of a return to normal patterns as restrictions have been removed, it submits that there remains a significant alteration to demand on its network resulting from the Government’s COVID-19 measures;

- Vodafone notes that the capacity of many of its most busy network sites would be reduced significantly and its customers would unfortunately experience extensive congestion. Vodafone notes that the locations where this would occur are spread nationwide in suburban and rural areas;
- Vodafone also notes that the 700 MHz layer has and continues to be particularly important in offloading/serving congested areas in rural/suburban Ireland. Without the 700 MHz layer in particular, Vodafone submits that remote workers in congested areas of rural Ireland would face significant service issues; and
- Vodafone also states that [✂ 



 ✂]

Para 32 (F): Details of the preparations and actions that the MNOs have taken and would need to take in the event of no further Temporary ECS Licensing framework

3.23 Eir states that it “continues to transform its network, building new infill and capacity sites, increase 5G network sites and deploy VoLTE”. These programmes have continued throughout the emergency and will continue through 2021 but are complemented by the Temporary ECS Licensing framework. If there is a discontinuation of the Temporary Licensing framework Eir submits that this will result in service degradation where traffic growth continues at elevated levels due to the impact of the COVID-19 measures.

3.24 Three submits that, if a further temporary spectrum framework is not implemented, there would be an immediate reduction in capacity, causing some currently well performing cells to become congested and others to suffer reduced quality. In particular, Three submits that:

- there are no quick remedies to this congestion as existing sites are already optimised for normal traffic patterns;

- in some cases it might be feasible to build new sites but this is generally a slow and expensive process and is not feasible in the short term or for short-lived traffic demand; and
- that most harm would be in rural areas where Three has been able to introduce 700 MHz relatively quickly to meet the increased demand.

3.25 Vodafone submits that [✂ [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] ✂]

Para 32 (G): Any other factors that the MNOs deem relevant to the consideration of any further Temporary ECS Licensing framework

3.26 Eir notes the positive short-term benefits that accrue to citizens and society from extending the temporary licensing framework.

3.27 Vodafone notes that:

- [✂ [REDACTED] ✂] of mobile data in rural areas is now catered for by the 700 MHz layer. This layer is providing enhanced accessibility and data services to customers who would be seriously challenged in terms of data services in hard-to-reach rural locations without access to this 700 MHz layer,
- [✂ [REDACTED] ✂]
- [✂ [REDACTED] ✂]

3.3 ComReg's observations on the common request

3.28 This section sets out ComReg's observations on the common request, noting:

- firstly, that the request is for the terms of the current temporary spectrum measures to be extended unchanged for the six-month time period from 2 October 2021 to 1 April 2022; and
- secondly, that the Government's COVID-19 Plan is a significant change in the prevailing circumstances to consider in relation to any future temporary spectrum licensing framework, particularly noting that on 22 October 2021 the majority of COVID-19 measures are planned to be lifted.

3.29 In light of the above, ComReg considers it appropriate to set out its observations on the MNOs' request with respect to two separate timeframes, being: (i) 2 October 2021 to 21 October 2021 and (ii) 22 October 2021 to 1 April 2022

3.3.1 The timeframe 2 October 2021 to 21 October 2021

3.30 In the timeframe 2 October 2021 to 21 October 2021 (i.e. the period up to the planned removal of the majority of Government COVID-19 measures), ComReg observes that the following factors would appear to support a further temporary spectrum licensing framework:

- a) Significant Government measures to manage COVID-19 will continue to be in force until 21 October 2021, including requirements for physical distancing.
- b) Mobile voice and data services remain important services for consumers during the Temporary Situation, including that:
 - i. around half of households do not have a fixed line voice connection and would primarily rely on mobile networks (which has close to full population penetration) to make voice calls; and
 - ii. 10 - 20% of households primarily rely on wireless means to provide internet access to the household.

- c) While network traffic levels have stabilised⁵⁶ considerably since March 2020 (when the networks experienced a sharp rise in both voice and data traffic levels), ComReg notes the MNOs’ claims that (i) their networks are still carrying traffic directly attributable to the COVID-19 measures and (ii) that the removal of temporary spectrum rights would cause congestion and service degradation.

- d) The MNOs anticipate further data traffic growth over the coming months at levels in excess of their baseline / pre-COVID-19 forecasts, noting, however, that this information was submitted in July 2021, in advance of the announcement of the Government’s COVID-19 Plan in August 2021.

- e) With the deployment of temporary spectrum rights, the MNOs have been able to rapidly add capacity to support the provision of mobile voice and data services given the increased traffic demands of the Temporary Situation. In this regard, ComReg notes (i) the MNOs’ estimates on the current levels of traffic carried by the temporary spectrum rights and (ii) the MNOs’ observations regarding the potential impact of no further temporary spectrum rights, including:
 - i. Eir’s estimate that, in 2021, [✂ [REDACTED] ✂] of data traffic has been supported by the 700 MHz Duplex and 2.1 GHz bands respectively, and that the LTE700 and LTE2100 bands carry [✂ [REDACTED] ✂] respectively of the total network voice traffic;

 - ii. Three’s estimate that the use of temporary spectrum rights has significantly increased quality of service to over [✂ [REDACTED] ✂] users in suburban or rural areas, and that a withdrawal of the temporary spectrum rights would mean a return to reduced quality for customers from Three, and also Virgin Media, Tesco Mobile, and LycaMobile; and

 - iii. Vodafone’s submission that [✂ [REDACTED] ✂] of mobile data in rural areas is now catered for by the 700 MHz layer and, absent temporary spectrum rights, all of the [✂ [REDACTED] ✂] sites using 700 MHz Duplex spectrum would now be experiencing significant congestion. [✂ [REDACTED] ✂]
 [REDACTED]
 [REDACTED]
 [REDACTED]
 [REDACTED]
 [REDACTED] Further, Vodafone estimates that [✂ [REDACTED] ✂]
 [REDACTED]
 [REDACTED]

⁵⁶ See Section 2.3 of this document.



3.3.2 The timeframe 22 October 2021 to 1 April 2021

3.31 The planned significant shift in the Government’s approach to managing COVID-19 from 22 October onwards with the planned removal of the majority of COVID-19 measures means that the Temporary Situation can reasonably be expected to cease entirely during the timeframe 22 October 2021 to 1 April 2022. ComReg’s observations for this timeframe therefore reflect considerably different factors to those identified previously, including:

- i. the withdrawal of certain COVID-19 measures on a phased basis over time and the impact that this should have on networks noting, in particular, that Government’s COVID-19 Plan states that the withdrawal of the requirement to work from home is to be “*on a phased and cautious basis appropriate to each sector*”;
- ii. the possibility that the Government may have to amend specific aspects of its approach to managing COVID-19, given that there are uncertainties in relation to the trajectory of COVID over the coming period; and
- iii. consideration of the need for the MNOs to make transition arrangements in advance of the cessation of any further temporary spectrum rights.

3.32 In relation to (i) above, ComReg observes that, at this remove, it is not possible to estimate how long the phased implementation of the return-to-workplace policy will take, but notes that further details on this is likely to emerge over time and well in advance of 1 April 2022⁵⁷.

3.33 In relation to (ii) above, ComReg observes that a temporary licensing framework for up to six months would provide a lengthy “safeguard” period to cater for the impact of any amended Government COVID-19 measures on network traffic.

3.34 In relation to (iii) above, ComReg notes that, based on current information, the Temporary Situation is likely to end during the 22 October 2021 to 1 April 2022 timeframe, depending on, among other things, points (i) and (ii) above.

⁵⁷ For example, ComReg observes that:

- The Government’s COVID-19 Plan notes that the LEEF Return to Work Safely Protocol will be further updated to support the transition back to the workplace in advance of the 20th of September.

- 3.35 Noting the above context, and that temporary spectrum licences have always been justified on the basis of prevailing Government COVID-19 measures⁵⁸, **ComReg observes that network operators should now begin to make transition plans and take actions in advance of the end of the presently proposed temporary spectrum licences.**
- 3.36 In this regard, ComReg notes that there are various factors for the MNOs to consider, including the following.
- 3.37 Firstly, from the three spectrum bands proposed for inclusion in any further temporary spectrum rights in this document (i.e. the 700 MHz, 2.1 GHz, and the 2.6 GHz bands) it appears that operators would only need to consider a transition plan for 700 MHz band as:
- the 2.6 GHz band is not in use by any operator; and
 - for the 2.1 GHz band, a licensing framework⁵⁹ is available to the existing 2.1 GHz band licensees (Eir, Three and Vodafone) to obtain a Liberalised Use 2.1 GHz Band Licence. In that regard, in June 2021, Three and Vodafone both applied for and were each granted such a licence, and ComReg observes that Eir is also eligible to apply for a Liberalised Use 2.1 GHz Band Licence and there are no impediments to Eir being granted same.
- 3.38 Secondly, in relation to the 700 MHz band, ComReg observes that, while the level of deployment of 700 MHz sites varies per MNO, all MNOs indicate that the cessation of 700 MHz rights would have negative impacts on its customer services (see paragraph 3.30 bullet (e)).
- 3.39 While the MNOs have each certified that they would take full account of the temporary nature of these spectrum licences in making any investment or marketing decisions⁶⁰, ComReg provides the following observations below in relation to the MNOs' 700 MHz transition planning.

⁵⁸ For example in the Application Declaration Form, (See Part 6 of the Application Form Document 20/24a) Applicants confirm the following in applying for a temporary spectrum licence.

"I confirm that the Applicant is fully aware that the Licences are being made available solely to accommodate the claimed unanticipated spike in demand arising from the extraordinary situation relating to COVID-19, that all Licences granted or renewed under the Regulations will expire 3 months after." (Emphasis Added)

⁵⁹ [S.I 265 of 2021](#) - Wireless Telegraphy (Third Generation and GSM Licence (Amendment) and Interim Licensing) Regulations 2021, available at www.irishstatutebook.ie/.

⁶⁰ In the Application Declaration Form, (See Part 6 of the Application Form Document 20/24a) Applicants confirm the following in applying for a temporary spectrum licence.

"I further confirm that the Applicant identified herein will take full account of this in making any investment or marketing decisions and will not seek to argue that any such decisions made as a result of the grant of a Licence give it any expectation of favourable treatment with regards to access to liberalised rights of use in those bands." (Emphasis Added)

1. The MBSA2 award process is continuing to progress and it remains possible that long-term rights of use in the 700 MHz band could be in place before 1 April 2022. As noted in Section 2.5 above, the earliest envisaged commencement date for spectrum rights in the 700 MHz band is 14 February 2021, although certain parts of ComReg's decision (Document 20/122) for this award are under appeal;
2. The transition planning of voice services from the 700 MHz band ought to be straightforward noting that:
 - Eir is the only MNO which has indicated that it uses the 700 MHz band for voice services and, further, it estimates that the LTE700 band carries only a small percentage, [], of its total network voice traffic;
 - The most recent mobile voice traffic data of July and August 2021 indicates traffic returning to pre-COVID-19 levels; and
 - Voice services are narrow bandwidth services and would not require as much network capacity as high bandwidth data services, thus making it easier for the transition of LTE700 voice services onto other licensed sub-1 GHz spectrum bands such as the 800 MHz and 900 MHz bands, or to above 1 GHz bands such as the 1800 MHz and 2.1 GHz bands (depending on the mobile signal level).
3. The transition planning of data services from the 700 MHz band may well require greater MNO consideration noting (i) the existing usage of the 700 MHz band for data services and (ii) the possible adverse impacts of the cessation of 700 MHz spectrum rights (as summarised in paragraph 3.30 bullet (e) above). While ComReg again notes that the MNOs have certified that each would take full account of the temporary nature of the 700 MHz spectrum rights in making any investment or marketing decisions, ComReg provides the following observations in relation to the MNOs' transition of 700 MHz data services:
 - The rate of annual mobile data growth has declined from a COVID-19 peak of 46% in Q1 2020 to 34% in Q1 2021, which is in line with traffic growth before the pandemic (i.e. 30-35%);
 - Given, among other things, advancements in technology (e.g. VoLTE, Native Wi-Fi, MIMO, Carrier Aggregation etc.) and the recent stabilisation of mobile data rates of growth and mobile voice volumes, the MNOs may have options to further re-optimize the performance of their networks;
 - Should additional mobile network capacity be required, the MNOs have options to add mobile network capacity via the normal manner, including the deployment of additional sites and additional transmitters.

The withdrawal of the majority of COVID-19 measures on 22 October 2021 should further assist in this regard, noting that MNOs have continued to add sites during the Temporary Situation; and

- Should the provision of additional mobile network capacity not be feasible, the MNOs may have alternative options to provide data services to any affected customers. For example, using existing spectrum rights in the 3.6 GHz band for FWA services, or a fixed broadband product, noting the continued rollout of such services via the NBP and by commercial operators.

3.40 Finally, ComReg also observes that there may also be other options available not mentioned above.

3.41 ComReg will take all of the above into account in particular when determining whether and the extent to which further temporary licences would be necessary and appropriate beyond the initial licence period of 2 October 2021 to 1 January 2022.

3.4 ComReg's preliminary assessment of whether a further licensing framework would be appropriate in principle

3.4.1 Background and analytical framework

3.42 In Chapter 4 of Document 20/21, ComReg set out its framework for assessing whether the first proposed temporary licensing framework would be in the best interests of competition and consumers and be otherwise appropriate having regard to ComReg's functions, objectives and duties, including being objectively justified and proportionate.

3.43 In Chapter 4 of Document 20/27, ComReg finalised its assessment having regard to the views of interested parties received in response to Document 20/21.

3.44 Rather than reiterate the entirety of the above analysis when considering whether the further temporary framework would be required, in Documents 20/86R and 20/88, ComReg updated its assessment having regard to subsequent developments and available information.

3.45 ComReg adopts the same approach in the present case and, in this section, updates the above assessments in the context of:

- Impact on consumers;
- Impact on competition; and

- Other relevant functions, objectives and duties.

3.4.2 Impact on consumers

- 3.46 In Chapter 2, ComReg noted that consumers requirement for access to a variety of essential and non-essential services through voice and data services is likely to decline in line with the opening up of society. The various data and voice usage statistics presented in Section 2.3 clearly illustrate that the rate of growth has slowed and is now more consistent with pre-COVID-19 levels. This trend is likely to continue in the coming quarters in line with the further opening up of society and particularly the return to the workplace.
- 3.47 Notwithstanding, the removal of all COVID-19 measures has not yet occurred, and consumers are, to some extent, still likely to require access to the aforementioned services in the period up to the removal of the majority of restrictions (currently envisaged on 22 October) and would likely prefer an approach that supported the provision of those services up to that point. This is mainly because some consumers may not have alternative means of accessing those services in the event of mobile network access issues or quality of service degradation caused by significant capacity constraints. In addition, the return to the workplace will likely occur over a period of time, including after the removal of majority of restrictions on 22 October, as employers and employees come to terms with various logistical and practical complexities of returning to the workplace.⁶¹
- 3.48 In that regard, the Proposed Approach would provide an initial three-month period extending considerably beyond 22 October to allow ComReg to assess the removal of COVID-19 measures at that time and determine whether those restrictions have ended or whether any further renewal period (up to three-months) would be appropriate.
- 3.49 In addition, the Proposed Approach (which also provides for the possibility of one further up to 3-month period) would if necessary and appropriate give MNOs the opportunity to transition out of any further temporary rights in advance of the end of temporary licences (see Section 3.3 above), noting that an uncoordinated cessation of temporary rights of use may cause unnecessary disruption if networks have not been dimensioned in line with traffic patterns consistent with the planned removal of the Government's COVID-19 measures from 22 October onwards.

⁶¹ Finding accommodation – childcare, office re-provisioning etc.

3.50 Therefore, on balance, this would likely be preferable from a consumer perspective because it seeks to minimise any potential consumer disruption to services over relevant period.

3.51 Finally, while consumers would likely welcome the Proposed Approach for the moment given the currently prevailing circumstances, this would be predicated on rights of use expiring in a short period with long term rights of use to be assigned in an open competitive award in the MBSA2, including because the latter would provide long-term regulatory certainty for all operators and the consumer benefits arising from same.

3.4.3 Impact on Competition

3.52 In Section 4.3.1 of Document 20/21, ComReg stated that the temporary assignment of spectrum rights was unlikely to confer a material advantage on any operator or distort downstream competition over the period of the Temporary Situation because, in summary:

- any temporary assignment of rights of use would be based on a justified need to alleviate capacity concerns⁶² on existing infrastructure over a short period (paragraph 4.39 of Document 20/21); and
- an MNO would be unlikely to be able to obtain a material advantage over rivals through the temporary assignment of liberalised rights (paragraph 4.40 of Document 20/21).

3.53 In light of the latest common request received from each of the MNOs to, effectively, extend the terms of the existing temporary licensing framework unchanged, ComReg assumes that the MNOs are satisfied that any further licensing framework implemented on such basis would be unlikely to materially distort competition between them.

3.54 In relation to the MBSA2, ComReg notes that the MNOs *“acknowledge that ComReg has stressed that any temporary licensing framework is intended solely to address the exceptional and extraordinary situation presented by COVID-19 and that it is entirely without prejudice to the award of long-term rights of use in these spectrum bands in its proposed multi-band spectrum award.”* ComReg would also envisage the same/similar text to that currently appearing at paragraph 4 of Part 6 of previous Application Forms in any future

⁶² Such needs being identified by applicants in the application form to be used.

application form in relation to the Proposed Approach.⁶³

3.55 In relation to the potential impact on competition outside of the MNOs (such as other 3.6 GHz Band licensees), ComReg:

- notes that Dense Air did not provide a response to Documents 20/21, 20/86R, 21/16 or 21/74, and Imagine expressed support for the current licensing framework in its response to Document 20/21, 20/86R and 21/16;
- recalls that it approved subsequent leases of 3.6 GHz Band spectrum rights by each of the MNOs and Dense Air to Imagine (see Section 2.6 above). Indeed, in its response to previous consultations, Documents 20/86R and 21/16, and in its MNO-specific information provided for the purpose of informing this consultation (see Section 3.2.2 above) Vodafone notes that the increase in capacity resulting from the temporary spectrum rights has facilitated its lease of 3.6 GHz band spectrum to Imagine;
- remains open to assessing any lease notifications it may receive in a timely manner in light of the circumstances surrounding the Temporary Situation; and
- observes that, by way of this consultation, interested parties may provide views on the potential competition impacts of any further licensing framework.

3.4.4 Assessment of the Proposed Approach against ComReg's relevant functions, objectives and duties

3.56 Annex 2 of this Document summarises the relevant statutory framework informing ComReg's consideration of the Proposed Approach.

⁶³ See, for example, Document 20/24a Part 6 paragraph 4:

"I confirm that the Applicant is fully aware that the Licences are being made available solely to accommodate the claimed unanticipated spike in demand arising from the extraordinary situation relating to COVID-19, that all Licences granted or renewed under the Regulations will expire 3 months after commencement or on 1 October 2021 (whichever is the earliest) and that the longer term questions of assignment of spectrum rights of use in the 700MHz Duplex and 2.6 GHz Band, liberalisation of rights of use in the 2.1 GHz Band and assignment of new rights of use in that band will be determined through such an award process as ComReg shall determine to be appropriate. I further confirm that the Applicant identified herein will take full account of this in making any investment or marketing decisions and will not seek to argue that any such decisions made as a result of the grant of a Licence give it any expectation of favourable treatment with regards to access to liberalised rights of use in those bands."

- 3.57 Based on the information provided by the MNOs and other available information, ComReg is of the preliminary view that the Proposed Approach would be appropriate in the context of ComReg's functions, objectives and duties, including being objectively justified, non-discriminatory and proportionate.
- 3.58 In light of the above, ComReg is of the preliminary view that it would, in principle, be appropriate to implement a third further temporary licensing framework

Chapter 4

4 ComReg's licensing proposals

4.1 In this chapter, ComReg:

- provides a summary of the key licensing elements in the previous and current Temporary ECS Licensing Framework;
- sets out relevant information from the MNO requests on the licensing proposals for any second further temporary licensing framework; and
- outlines its preliminary assessment on the material received from the MNOs and its preliminary view on the licensing proposals for any second further temporary licensing framework.

4.1 Summary of the key elements of ComReg's first two Temporary ECS Licensing Frameworks

4.2 In Chapter 3 of Documents 20/21 and 20/27, and Chapter 4 of Documents 20/86R, 20/88, 21/16 and 21/24 ComReg set out its proposals and final positions, respectively, regarding the following key elements of the Temporary ECS Licensing frameworks implemented to date:

- spectrum bands, assignments and compatibility considerations;
- applicant eligibility and the supporting information requirements;
- licence duration;
- fees; and
- coverage obligations.

4.3 These remain key considerations in connection with any further temporary licensing framework (No. 3) and, along with other matters, are summarised below.

4.1.1 Spectrum bands, assignments and compatibility considerations

- 4.4 The bands made available in the Temporary ECS Licensing frameworks implemented to date were the 700 MHz Duplex, 2.1 GHz and 2.6 GHz Bands. The 700 MHz Duplex and 2.6 GHz Band (subject to certain restrictions to protect IAA radars) were available for licensing, while “liberalised” 2.1 GHz rights were made available to existing 2.1 GHz licensees.
- 4.5 For deployments in the 700 MHz Duplex, the following potential compatibility issues were identified:
- mobile deployments in the 800 and 900 MHz Bands;
 - broadcasting services below 694 MHz; and
 - cable networks that also use frequencies on their closed networks in the 700 MHz Band.
- 4.6 While the likelihood of compatibility issues arising varied in each case, it was important that appropriate mechanisms were put in place to address any issues that might arise.
- 4.7 First, and in relation to managing inter-MNO interference, the assignment of the blocks to the MNOs in the 700 MHz Duplex was made⁶⁴ in the same order as those assigned in the 800 MHz Band as follows:
- **Eir:** 703 to 713 MHz paired with 758 to 768 MHz;
 - **Three:** 713 to 723 MHz paired with 768 to 778 MHz; and
 - **Vodafone:** 723 to 733 MHz paired with 778 to 788 MHz.
- 4.8 Second, and in relation to managing any risk to existing networks, an inter-operator 700 MHz Coordination Agreement was established between the three MNOs, 2RN and Virgin Media (as set out in Annex 4 of Document 20/27) and reflected as a licence condition in any Temporary ECS Licence issued.

⁶⁴ Subject to completing the relevant Application Form and satisfying the eligibility and appropriate evidence requirements.

- 4.9 Spectrum rights in the 2.6 GHz Band were also made available but subject to certain geographic restrictions (or “exclusion zones”)⁶⁵ to ensure compatibility between any MFCN⁶⁶ deployment and the IAA’s primary radar systems.

4.1.2 Applicant eligibility and supporting information requirements

- 4.10 In Documents 20/21, 20/27, 20/86R, 20/88, 21/16 and 21/24 ComReg outlined that the underlying intention of the Temporary ECS Licensing framework(s) was to facilitate operators that can readily utilise the 700 MHz Duplex, 2.1 GHz and/or 2.6 GHz bands. In this regard, ComReg noted that operators:

- should use existing infrastructure to meet the demand of consumers during the Temporary Situation noting that operators should only apply for rights of use they can readily use and be in a position to demonstrate same to ComReg;
- should not use the (Further) Temporary ECS Licences for large-scale network rollout not previously planned; and
- should have some flexibility to install or redeploy equipment as needed by consumers during the Temporary Situation and to continue with existing network upgrade plans.

- 4.11 The following applicant eligibility requirements were set out in S.I. 122 of 2020⁶⁷, S.I 407 of 2020⁶⁸ and S.I. 137 of 2021⁶⁹:

“(2) The Commission may grant a Licence, following payment by the applicant of the relevant fee prescribed in Regulation 8, in accordance with the Authorisation Regulations and having regard to, among other things:

(a) available information regarding the extraordinary situation arising from COVID-19 and, in particular, as it may reasonably affect Electronic Communications Networks and the provision of relevant Electronic Communications Services in the State;

(b) available information regarding the impact of the extraordinary situation arising from COVID-19 upon the capacity of the Electronic Communications Network operated by the Undertaking, including the

⁶⁵ As set out on in Document “2.6 GHz Band Exclusion Zones.zip” as published on ComReg’s COVID 19: Temporary Spectrum Measures webpage. <https://www.comreg.ie/industry/radio-spectrum/spectrum-awards/covid-19-temporary-spectrum-management-measures/>

⁶⁶ Mobile or Fixed Communications Network

⁶⁷ The Wireless Telegraphy (Temporary Electronic Communications Services Licences) Regulations 2020, Regulation 4(2).

⁶⁸ The Wireless Telegraphy (Further Temporary Electronic Communications Services Licences) Regulations 2020.

⁶⁹ The Wireless Telegraphy (Further Temporary Electronic Communications Services Licences) (No.2) Regulations 2021

locations in the State where any capacity constraints are occurring or are likely to occur;

- (c) available information regarding how the rights of use of radio frequencies applied for by the Undertaking would reasonably and materially assist in alleviating the capacity constraints identified in subparagraph (b), including the lead time for the Undertaking to effectively make use of such rights of use of radio frequencies;*
- (d) available information regarding the risks to the provision of existing Electronic Communications Services, and the quality of such existing provision, by the Undertaking in making changes to its Electronic Communications Network to effectively make use of the rights of use of radio frequencies applied for;*
- (e) the need to encourage the efficient use and ensure the effective management of the radio frequency spectrum; and*
- (f) the Commission's obligations and objectives in relation to competition for the provision of Electronic Communications Networks and Electronic Communications Services."*

4.12 These information requirements were reflected in part 2 of the respective Application Forms⁷⁰.

4.1.3 Licence duration

4.13 In Document 20/27, ComReg:

- noted that any Temporary ECS Licences issued should be short-term and only for the duration of the Temporary Situation; and
- decided that the initial licence duration would be up to 3 calendar months, with the possibility of a renewal of up to a further 3 calendar months, but where all licences granted or renewed would expire no later than 6 months from the making of the licensing regulations.

4.14 The key reasons informing the above were set out in Section 3.3.2 of Document 20/21.

4.15 In Document 20/86R and 20/88, and having considered views submitted by the MNOs that the duration of any further temporary licences would run until the completion of the MBSA2 award, ComReg was of the view that this would not be appropriate and among other things, noted that:

⁷⁰ See Documents [20/27a](#), [20/27aR](#), [20/88a](#), [20/88aR](#), [21/24a](#) and [21/24aR](#)

- *“the current licensing framework, and indeed any further framework, is a novel intervention intended solely to address the exceptional and extraordinary situation presented by COVID-19 in an objectively justified and proportionate manner in accordance with its statutory obligations”.*
- *“[i]t would clearly not be objectively justified or proportionate to determine the expiry of any further temporary licences by reference to a factor unrelated to the Temporary Situation, i.e. by reference to completion of the Proposed MBSA⁷¹”; and*
- *“ComReg’s current and proposed approach allows for the carrying out of a regular and orderly review of the relevant facts and circumstances underpinning the licensing framework”.*

4.16 In addition, ComReg stated that it would, of course, continue to monitor the situation over the term of any further licensing framework, to inform its approach to any licensing beyond this period.

4.1.4 Fees

4.17 In Documents 20/27, 20/88 and 21/24, ComReg set out its final position that a nominal, non-refundable fee of €100 would apply to both the grant of a Temporary ECS Licence, and for any renewal of same. The reasons informing same were set out in Section 3.4 of Document 20/21, Section 4.3 of Document 20/86R and Section 4.3 of Document 21/16.

4.1.5 Coverage at specific locations

4.18 In the joint MNO request of 24 March 2020, operators requested that they be able to utilise the spectrum to assist in relieving congestion in targeted areas which could include temporary medical facilities. Following consultation in Document 20/21, ComReg decided to include a licence obligation that requires licensees to provide coverage at specific locations related to the Temporary Situation as detailed in Table 6 below.

4.19 In Documents 20/86R, 20/88, 21/16 and 21/24, ComReg noted that the existing licensing framework is working as expected for the purposes of the Temporary Situation and maintained the same coverage obligation as detailed in Table 6 below.

⁷¹ Footnote 62 of Document 20/86R. *“Save of course that the assignment of long-term rights of use should not be delayed by any temporary licences.”*

Table 7: Outdoor coverage obligations at specific locations in relation to the extraordinary situation arising from COVID-19

Coverage	Location	Obligation
Outdoors	Specific locations in relation to the extraordinary situation arising from COVID-19 as may be determined from time to time by the Government and communicated to the Commission by the Department of the Environment, Climate and Communications.	Best efforts using all rights of use available to the Licensee

4.1.6 Other actions that could be taken

4.20 In previous consultations on temporary spectrum rights, ComReg noted that the Temporary Spectrum Management Measures may allow MNOs to temporarily offer consumers flexibility in accessing services over the period through a variety of measures (e.g. increase data caps / call minute allowances etc.) and ComReg encouraged MNOs to consider same.

4.21 ComReg also encouraged and welcomed leasing arrangements, particularly in relation to the 3.6 GHz band.

4.22 ComReg also noted the possibility of assigning temporary rights of use in the 2.3 GHz Band and queried whether the 2.3 GHz Band could be of use to operators during the Temporary Situation. Respondents to earlier consultations however, noted that there was a lack of readily available equipment for both operator and consumer and thus this would likely be an ineffective solution for the Temporary Situation.

4.2 Current MNO request

4.23 As discussed in Section 3.2, the MNOs *“jointly request that the terms of the current Temporary Spectrum Management Measures detailed in ComReg 20/88 (D08/20) are extended unchanged”*.

4.3 Views of other stakeholders

- 4.24 In relation to the 700 MHz Duplex, Virgin Media and 2RN continue to provide their respective support for a further framework subject to the inter-operator 700 MHz Coordination Agreement established between the three MNOs, 2RN and Virgin Media (as set out in Annex 4 of Document 20/27) 700 MHz agreement⁷².
- 4.25 In relation to the 2.6 GHz Band, the IAA continues to provide its support for a further framework, subject to the continued implementation of certain restrictions to protect IAA radars⁷³.

4.4 ComReg assessment and preliminary view

- 4.26 First, ComReg observes that the current further temporary licensing framework is generally operating as expected for the purposes of the Temporary Situation. In particular:
- MNOs have been able to utilise the 700 MHz Duplex where they have existing equipment and Eir has been able to use the 2.1 GHz Band for 4G use at certain sites to assist in dealing with the impact on its network due to the Government's COVID-19 measures;
 - as discussed in Chapters 2 and 3 above, while indications are that data traffic volumes are now returning to a stable level of growth and voice traffic volumes are approaching pre COVID-19 levels, MNOs have over the course of the Temporary Situation seen a notable increase in voice and data traffic, beyond what they previously forecasted and the MNOs have used the temporary spectrum rights in combination with other actions to alleviate congestion and provide additional capacity to support the provision of ECS services during the period of the Government's COVID-19 measures;
 - establishing the Temporary ECS licensing Frameworks has encouraged licensees in the 3.6 GHz band (the three MNOs and Dense Air) to lease spectrum to Imagine (see Section 2.6 above), which has helped Imagine in managing increases in data traffic on its network;
 - the 700 MHz Coordination procedure appears to be working well to adequately manage the risk of any impact on existing networks. Having considered the information submitted by the MNOs and also

⁷² See recent correspondence with Virgin Media and 2RN in Annex 3.

⁷³ See recent correspondence with the IAA in Annex 3.

correspondence with Virgin Media and 2RN⁷⁴, ComReg observes that the MNOs indicate that there has been engagement between the various parties (the three MNOs, Virgin Media and 2RN), and that no issues have been reported by any party; and

- the IAA has indicated its support for keeping the existing terms and conditions unchanged.

4.27 Secondly, in relation to the duration of any further temporary licensing framework, ComReg observes that:

- the MNOs have indicated their support for a 6-month overall duration, consisting of an initial licence of up to 3 months with the possibility of a renewal of up to a further 3 calendar months; and
- ComReg has set out its observations and preliminary assessment of this proposal in Sections 3.3 and 3.4 above where, among other things, ComReg notes that the overall duration of up to 6 months, made up of an up to 3-month initial licence and the potential for an up to 3-month renewal would be appropriate as:
 - at this point, it is not possible to estimate how long it will take for the significant relaxation of COVID-19 measures to take effect;
 - there is a possibility that the Government may have to amend specific aspects of its approach to managing COVID-19 beyond 22 October and a maximum six-month licensing framework would provide an adequate safeguard period to manage the impact that any amended Government measures may have on network traffic;
 - it takes consideration of the MNOs need to make transition arrangements in advance of the cessation of any further temporary spectrum rights associated with the Temporary Situation, noting that the Temporary Situation is expected to cease during the 22 October 2021 and 1 April 2022 timeframe. In that regard, ComReg emphasises that **network operators should now begin to make transition plans and take actions in advance of the end of the presently proposed temporary spectrum licences**; and
 - the renewal process would provide an opportunity for ComReg to assess the removal of COVID-19 measures prior to the end of the initial three-month period and determine whether the Government

⁷⁴ Annex 3 sets out non-confidential ComReg correspondence with Virgin Media and 2RN in this regard.

COVID-19 measures have ended and whether it would be appropriate to issue any further up to three-month renewal licence.

- 4.28 In relation to the renewal process, should initial temporary licences be issued with an expiry date of 1 January 2022, ComReg proposes to contact licensees towards the end of November 2021 reminding them that a completed Application Form and the necessary supporting information can be submitted to ComReg by 1 December 2021. The submission of complete information by this date should facilitate ComReg making its licence renewal assessment in early December 2021, allowing any new renewal licences to be issued shortly thereafter.
- 4.29 Considering the above, the MNOs' support for the current terms to remain unchanged, and the latest views of 2RN and Virgin Media on 700 MHz Coordination⁷⁵ and IAA on the 2.6 GHz Band, and the Government's COVID-19 Plan, ComReg proposes to implement the same licensing framework as set out in Document 21/24 and S.I. 137 of 2021⁷⁶ for the period 2 October 2021 to 1 April 2022. As discussed earlier, and based on current information, ComReg expects that this will be the final temporary ECS licensing framework on the basis of the Temporary Situation.
- 4.30 Accordingly, and in summary, ComReg's preliminary view is that any further temporary ECS licencing framework should have the same licensing conditions (as summarised in Section 4.1 above) as used in the current Temporary ECS Licensing Framework. Details of these licensing proposals are set out in the draft Further Temporary ECS (No.3) Licence Regulations attached in Annex 4.
- 4.31 Further, to enable operators to effectively plan and cater for long term traffic forecasts, it is critical that regulatory certainty regarding the long-term assignment of the relevant spectrum bands in the MBSA2 is executed as quickly as possible. ComReg reiterates that the proposed Temporary ECS Licensing Framework is entirely without prejudice to the MBSA2, and ComReg stresses (as it has repeatedly on previous occasions) that any temporary licensing framework should not be construed as an alternative to same.
- 4.32 Finally, in relation to the duration of any new temporary framework, as noted in Section 2.5 above, ComReg would remind interested parties that it is progressing the MBSA2 award process and it is possible that some spectrum rights could be assigned via the MBSA2 within the duration of the further temporary licensing framework proposed in this document, e.g. spectrum

⁷⁵ Recent correspondence with IAA, 2RN and Virgin Media is contained in Annex 3

⁷⁶ The Wireless Telegraphy (Further Temporary Electronic Communications Services Licences) (No.2) Regulations 2021 ([S.I. No. 137 of 2021](#)) were made on 22 March 2021, with the consent of the Minister for the Environment, Climate and Communications

rights in the 700 MHz band in the MBSA2 could commence as early as 14 February 2022.

- 4.33 ComReg observes that once the MBSA2 award process is completed, any temporary rights in existence at that time would expire in advance of the commencement date of spectrum rights issued under the MBSA2, and MNOs should plan for same.

Chapter 5

5 Draft Decision

This chapter sets out ComReg's draft decision document based on the views expressed by ComReg in the preceding chapters and their supporting annexes.

Decision

1. DEFINITIONS AND INTERPRETATION

1. In this Decision, save where the context otherwise admits or requires:

“2.1 GHz Band” means radio frequency spectrum in the range 1920 to 1980 MHz paired with radio frequency spectrum in the range 2110 to 2170 MHz;

“2.1 GHz Band Block” means a 5 MHz paired block of radio frequency spectrum in the 2.1 GHz Band;

“2.1 GHz Band EC Decision” means European Commission Decision 2012/688/EC⁷⁷ as amended by European Commission Decision 2020/667⁷⁸;

“2.6 GHz Band” means radio frequency spectrum in the range 2500 to 2690 MHz;

“2.6 GHz Band EC Decision” means European Commission Decision 2008/477/EC⁷⁹ as amended by European Commission Decision 2020/636/EU⁸⁰;

“2.6 GHz Band FDD Block” means a 5 MHz block of radio frequency spectrum in the range 2500 to 2570 MHz paired with a 5 MHz block of radio frequency spectrum in the range 2620 to 2690 MHz;

“2.6 GHz Band TDD Fixed Frequency Block (Lower)” means the 5 MHz unpaired block of radio frequency spectrum in the range 2570 to 2575 MHz;

“2.6 GHz Band TDD Fixed Frequency Block (Upper)” means a 5 MHz unpaired block of radio frequency spectrum in the range 2615 to 2620 MHz;

⁷⁷ Commission Implementing Decision of 5 November 2012 on the harmonisation of the frequency bands 1920 - 1980 MHz and 2110 - 2170 MHz for terrestrial systems capable of providing electronic communications services in the Union.

⁷⁸ Commission Implementing Decision (EU) 2020/667 of 6 May 2020 amending Decision 2012/688/EU as regards an update of relevant technical conditions applicable to the frequency bands 1920 – 1980 MHz and 2110 – 2170 MHz.

⁷⁹ Commission Decision of 13 June 2008 on the harmonisation of the 2500 - 2690 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community.

⁸⁰ Commission Implementing Decision (EU) 2020/636 of 8 May 2020 amending Decision 2008/477/EC as regards an update of relevant technical conditions applicable to the 2500 – 2690 MHz frequency band.

“2.6 GHz Band TDD Frequency Generic Block” means a 5 MHz unpaired block of radio frequency spectrum in the range 2575 to 2615 MHz;

“2.6 GHz Band Blocks” means the 2.6 GHz Band FDD Blocks and the 2.6 GHz Band TDD Blocks;

“2.6 GHz Band TDD Blocks” means the 2.6 GHz Band TDD Fixed Frequency Block (Lower), 2.6 GHz Band TDD Fixed Frequency Block (Upper) and 2.6 GHz Band TDD Frequency Generic Blocks;

“700 MHz Duplex” means radio frequency spectrum in the range 703 – 733 MHz paired with 758 – 788 MHz;

“700 MHz Duplex Block” means a right of use in respect of a 2 × 5 MHz block of spectrum in the 700 MHz Duplex;

“700 MHz EC Decision” means Decision (EU) 2016/687⁸¹;

“Authorisation Regulations” means the European Communities (Electronic Communications Networks and Services) (Authorisation) Regulations, 2011 (S.I. No. 335 of 2011);

“Communications Regulation Act 2002” means the Communications Regulation Act, 2002, (No. 20 of 2002), as amended;

“ComReg” means the Commission for Communications Regulation, established under section 6 of the Communications Regulation Act 2002;

“Electronic Communications Network” and **“Electronic Communications Service”** have the meanings assigned to them in the Framework Regulations;

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

“Further Temporary ECS Licence (No. 2)” means a licence of the type set out in draft form in Schedule 1 to the Further Temporary ECS Licence Regulations (No.2);

“Further Temporary ECS Licence Regulations (No. 2)” means the Wireless Telegraphy (FURTHER TEMPORARY ELECTRONIC COMMUNICATIONS SERVICES LICENCES) (No. 2) Regulations, 2021, as set out in S.I No. 137 of 2021;

“Further Temporary ECS Licence (No. 3)” means a licence of the type set out in draft form in Schedule 1 to the Further Temporary ECS Licence Regulations (No.3);

⁸¹ Commission Implementing Decision of 28 April 2016 on the harmonisation of the 694-790 MHz frequency band for terrestrial systems capable of providing wireless broadband electronic communications services and for flexible national use in the Union.

“Further Temporary ECS Licence Regulations (No. 3)” means the Wireless Telegraphy (FURTHER TEMPORARY ELECTRONIC COMMUNICATIONS SERVICES LICENCES) (No. 3) Regulations, 2021, as set out in draft form in Annex 4 to this document ComReg Document 21/87;

“Minister” means the Minister for the Environment, Climate and Communications;

“MNO” means a mobile network operator with an existing network in Ireland;

“Relevant Spectrum” means 700 MHz Duplex Blocks, 2.1 GHz Band Blocks, and 2.6 GHz Band Blocks;

“Undertaking” has the same meaning set out in the Framework Regulations; and

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

2. DECISION-MAKING CONSIDERATIONS

2. In arriving at its decisions in this document, ComReg has had regard to:

- i. the contents of, and the materials and reasoning referred to in, as well as the materials provided by respondents in connection with, the below-listed ComReg documents:
 - a) 18/60, 19/59R, 19/124, 20/122 and 21/40 (insofar as they are relevant to the present decisions and, in particular, concerning the technical licence conditions for the Relevant Spectrum);
 - b) 20/21;
 - c) 20/23;
 - d) 20/27;
 - e) 20/64;
 - f) 20/86R;
 - g) 20/88;
 - h) 21/05;
 - i) 21/16;
 - j) 21/24;
 - k) 21/74;
 - l) 21/87; and
 - m) 21/[YY] [document to which the final decision will be attached]

- ii. the consultants' reports commissioned, and the advice obtained by ComReg, in relation to the subject-matter of the documents and materials listed above (insofar as they are relevant to the present decisions and, in particular, concerning the technical licence conditions for the Relevant Spectrum) and, in particular, ComReg documents 19/59c, 19/124c and 20/122b;
- iii. the powers, functions, objectives and duties of ComReg, including, without limitation those under and by virtue of:
 - a) the Communications Regulation Act 2002, and, in particular, sections 10, 12 and 13 thereof;
 - b) the Framework Regulations, and, in particular, Regulations 13, 16 and 17 thereof;
 - c) the Authorisation Regulations, and, in particular, Regulations 9, 10, 11, 12, 15, 16, 17, 18(1)(c) and 19 thereof;
 - d) the 2.1 GHz Band EC Decision;
 - e) the 2.6 GHz Band EC Decision;
 - f) the 700 MHz EC Decision;
 - g) Sections 5 and 6 of the Wireless Telegraphy Act, 1926; and
 - h) the applicable Policy Directions made by the Minister under section 13 of the Communications Regulation Act 2002,

and, noting that it has:

- i) given all interested parties the opportunity to express their views and make their submissions in accordance with Regulation 11 of the Authorisation Regulations and Regulation 12 of the Framework Regulations,

as set out in the various chapters of Document 20/[YY] [document to which the final decision will be attached] and their supporting annexes.

3. DECISIONS

3. Having had regard to the above considerations, ComReg has decided:

- i. subject to obtaining the consent of the Minister to the making by it of the Further Temporary ECS Licence Regulations (No. 3), to make those regulations under section 6 of the Wireless Telegraphy Act 1926, prescribing relevant matters in relation to Further Temporary ECS Licences (No. 3), including prescribing the form of the licences concerned, their

duration and the conditions and restrictions subject to which they are granted;

700MHz Duplex and 2.1GHz Bands

- ii. upon application properly being made to it by MNOs for Further Temporary ECS Licences (No. 3) with rights of use in the 700 MHz Duplex and 2.1 GHz Bands;
 - a) to select which MNOs will be granted Further Temporary ECS Licences (No. 3) in the 700 MHz Duplex and 2.1 GHz bands having regard to the principles generally described in Chapter 4 of Document 21/87 and further particularised in the Further Temporary ECS Licence Regulations (No. 3), as made, and the material provided by applicants in support of their respective application, including the ability of the applicant to deliver services expeditiously using those rights of use; to assign 2 × 10 MHz of 700 MHz Duplex to each MNO⁸², but where ComReg reserves the right to make alternative assignments in line with its statutory objectives and duties;
 - b) to grant Further Temporary ECS Licences (No. 3), under section 5 of the Wireless Telegraphy Act 1926 to such MNOs for the periods, and subject to the conditions and restrictions (including conditions as to suspension and withdrawal), prescribed in the Further Temporary ECS Licence Regulations (No. 3), including the schedule to Further Temporary ECS Licences (No. 3) as currently set out in Annex 4 of Document 21/87;

2.6 GHz Band

- iii. upon application properly being made to it by an Undertaking for Further Temporary ECS Licences (No. 3) in respect of 2.6 GHz Band Blocks, and following consultation with the Irish Aviation Authority;
 - a) to select which MNOs will be granted Further Temporary ECS Licences (No. 3) with 2.6 GHz Band Blocks having regard to the principles generally described in Chapter 4 of Document 21/87 and further particularised in the Further Temporary ECS Licence Regulations (No. 3), as made, and the material provided by

⁸² Specifically:

- Eir: 703 to 713 MHz paired with 758 to 768 MHz;
- Three: 713 to 723 paired with 768 to 778 MHz; and
- Vodafone: 723 to 733 paired with 778 to 788 MHz.

applicants in support of their respective application; in particular, the proposed location of sites and confirmation that they will comply with the requirement to protect Aeronautical Primary Radars, if the aggregate demand for 2.6 GHz Band Blocks exceeds the amount available, ComReg shall decide the number of 2.6 GHz Band Blocks (if any) to award to each applicant, based on, among other things, the ability of the applicant to deliver services expeditiously using those rights of use;

- b) to grant Further Temporary ECS Licences (No. 3), under section 5 of the Wireless Telegraphy Act 1926 to such MNOs, where spectrum rights shall be assigned on a site by site basis, for the periods, and subject to the conditions and restrictions (including conditions as to suspension and withdrawal), prescribed in the Further Temporary ECS Licence Regulations (No. 3), including the schedule to Further Temporary ECS Licences (No. 3) as currently set out in Annex 4 of Document 21/87;
- c) to consider applications for the addition of sites to a Further Temporary ECS Licence (No. 3) granted in respect of rights of use in the 2.6 GHz Band Blocks from time to time on a first come, first served basis;

Licence Duration

- iv. to make the duration of a Further Temporary ECS Licence (No. 3) up to but no longer than 3 calendar months;
- v. upon application properly being made to it, having regard to the principles generally described in Chapter 4 of Document 21/87 and further particularised in the Further Temporary ECS Licence Regulations (No. 3), and the material provided by applicants in support of their renewal, to renew a Further Temporary ECS Licence (No. 3) for a further period of up to but no longer than 3 calendar months; and
- vi. that any Second Further Temporary ECS Licence granted or renewed shall in any event expire no later than 1 April 2022.

4. STATUTORY POWERS NOT AFFECTED

- 4. Nothing in this document shall operate to limit ComReg in the exercise of its discretions or powers, or the performance of its functions or duties, or the attainment of objectives under any laws applicable to ComReg from time to time.

Chapter 6

6 Submitting comments and next steps

6.1 Submitting Comments

- 6.1 Considering the urgency of the issue, ComReg has set a shorter period compared to the normal four weeks identified in ComReg's Consultation Procedures⁸³, and invites input from interested parties by close of business **Monday 13 September 2021**.
- 6.2 It would make the task of analysing responses easier if comments were referenced to the relevant section / paragraph number in each chapter and annex in this document.
- 6.3 Please also set out your reasoning and all supporting information for any views expressed.
- 6.4 Responses must be submitted in written form (e-mail) to the following recipient, clearly marked — Submissions to ComReg 21/87:
- Mr. Joseph Coughlan
- Email: marketframeworkconsult@comreg.ie
- 6.5 We request that electronic submissions be submitted in an unprotected format so that they can be readily included in the ComReg submissions document for electronic publication.
- 6.6 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 consultation, 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).
- 6.7 In this regard, respondents should submit views in accordance with the instructions set out below. When submitting a response to this consultation that contains confidential information, respondents must choose one of the following options:

⁸³ See Document 11/34.

- A. Preferably, 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 and include the reasons as to why they consider any particular material to be confidential. The separate non-confidential version must have actually redacted all items that were marked and highlighted in the confidential version.

OR

- B. Submit only a confidential version and the reasons as to why they consider any particular material to be confidential, 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 accordance with option A above.

6.8 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.

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

6.2 Next Steps

6.10 Following receipt and consideration of submissions in response to this consultation, and other relevant material, ComReg intends to publish a response to consultation together with its final decision.

6.11 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 endeavours to issue the response to consultation and decision in sufficient time to allow for the making of the regulations and issuing of licences by 1 October 2021.

Annex: 1 Glossary

A1.1 Definitions

- A 1.1 The definitions in this glossary shall apply to this document as a whole.
- A 1.2 Where a term in this glossary is defined by reference to a definition in a section or paragraph and an explanation of that term is provided in this glossary, the latter explanation is for convenience only and reference should be made to the appropriate part of the document for the definitive meaning of that term in its appropriate context.
- A 1.3 Any reference to any provision of any legislation shall include any modification re-enactment or extension thereof.
- A 1.4 Terms defined in this consultation paper shall, unless the context otherwise requires or admits, have the meaning set out below:

3.6 GHz Band	The radio frequency spectrum in the range 3400 MHz to 3800 MHz.
700 MHz Duplex	The frequency range 703-733 MHz paired with 758-788 MHz.
2.1 GHz Band	The frequency ranges 1920-1980 MHz paired with 2110-2170 MHz
2.6 GHz Band	The frequency range 2500 – 2690 MHz.
Aeronautical Primary Radars	Means apparatus (including “Star 2000” and “TA10” models) providing primary aircraft detection used in airport surveillance networks at Dublin, Cork and Shannon airports.
Application Form	ComReg Document 21/24a.
COVID-19	COVID-19 is an illness that can affect your lungs and airways and is caused by a virus called SARS-CoV-2 (2019-nCoV) coronavirus.

Existing Temporary Licensing Framework	ECS	Means the Wireless Telegraphy (Further Temporary Electronic Communications Services Licences) Regulations 2020 (S.I. No. 407 of 2020).
Further Temporary Licence Regulations (No.2)	ECS	Means the regulations as set out in S.I 137 of 2021.
Further Temporary Licence Regulations (No.3)	ECS	Means the draft regulations as set out in Annex 4 of this document
IM		The Information Memorandum ComReg published in Document 21/40 (as may be amended) detailing the processes and procedures ComReg is employing in conducting the MBSA2.
MBSA2		ComReg's Multi-Band Spectrum Award project for the long-term assignment of spectrum rights of use in the 700 MHz Duplex, 2.1 GHz, 2.3 GHz and 2.6 GHz bands Further information is available on ComReg's Spectrum Awards webpage at www.comreg.ie
MBSA2 Decision		Decision D11/20 as published in Document 20/122.
Proposed Approach		ComReg's consideration of the approach as set out in this Document.
SAF		Spectrum Access Fee.
SUF		Spectrum Usage Fee.

Temporary Situation	Means the temporary impact upon electronic communications networks and services from the extraordinary situation arising from the spread of the disease known as COVID-19.
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A1.2 European and Governmental Bodies, Regulatory and Standardisation Organisations

ComReg	Commission for Communications Regulation
DECC	Department of the Environment, Climate and Communications
EC	European Commission
EU	European Union
IAA	Irish Aviation Authority
ITU	International Telecommunication Union

A1.3 Primary and Secondary Legislation and EC Decisions

S.I.	Statutory Instrument
EC Decision 2008/477/EC	European Commission Decision on the harmonisation of the 2500 - 2690 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community as amended by European Commission Decision 2020/636/EU ⁸⁴

⁸⁴ Commission Implementing Decision (EU) 2020/636 of 8 May 2020 amending Decision 2008/477/EC as regards an update of relevant technical conditions applicable to the 2500 – 2690 MHz frequency band.

A1.4 Glossary of Technical Terms

3G	Third Generation Mobile System (e.g. UMTS)
ECS	Electronic Communications Service as defined under the Framework Regulations
GHz	Gigahertz (1 000 000 000 Hertz)
Hertz	Unit of Frequency
kHz	Kilohertz (1 000 Hertz)
LTE	Long Term Evolution of 3G
MHz	Megahertz (1 000 000 Hertz)
MNO	Mobile Network Operator
UMTS	Universal Mobile Telecommunications System.

Annex: 2 Legal Framework and Statutory Objectives

- A 2.1 The Communications Regulation Act 2002 (as amended by the Communications Regulation (Amendment) Act 2007) (the “2002 Act”), the EU Common Regulatory Framework (including the Framework and Authorisation Directives⁸⁵ as transposed into Irish law by the corresponding Framework and Authorisation Regulations⁸⁶), and the Wireless Telegraphy Acts 1926 to 2009⁸⁷ set out, amongst other things, powers, functions, duties and objectives of ComReg that are relevant to the management of the radio frequency spectrum in Ireland and to this consultation document.
- A 2.2 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, Regulation 16 of the Framework Regulations and the provisions of Article 8a of the Framework Directive. ComReg is to carry out its functions effectively, and in a manner serving to ensure that the allocation and assignment of radio frequencies is based on objective, transparent, non-discriminatory and proportionate criteria.
- A 2.3 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 powers, functions, duties and objectives 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.

⁸⁵ Directive No. 2002/21/EC of the European Parliament and of the Council of 7 March 2002 (as amended by Regulation (EC) No. 717/2007 of 27 June 2007, Regulation (EC) No. 544/2009 of 18 June 2009 and Directive 2009/140/EC of the European Parliament and Council of 25 November 2009) (the “Framework Directive”) and Directive No. 2002/20/EC of the European Parliament and of the Council of 7 March 2002 (as amended by Directive 2009/140/EC) (the “Authorisation Directive”).

⁸⁶ The European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2011 (S.I. No. 333 of 2011) and the European Communities (Electronic Communications Networks and Services) (Authorisation) Regulations 2011 (S.I. No. 335 of 2011) respectively.

⁸⁷ The Wireless Telegraphy Acts 1926 to 1988 and Sections 181 (1) to (7) and (9) and Section 182 of the Broadcasting Act 2009.

A 2.4 All references in this annex to enactments are to the enactment as amended at the date hereof, unless the context otherwise requires.

New European Electronic Communications Code

A 2.5 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. The EECC replaces the EU Common Regulatory Framework adopted in 2002 (and amended in 2009) under which ComReg has regulated electronic communications since 2003.

A 2.6 With some limited exceptions (see Article 124 of the EECC), Member States had until 21 December 2020 to transpose the EECC into national law⁸⁸. The DECC is responsible for the transposition of the EECC and ComReg has assisted the DECC in that regard as appropriate.

A 2.7 ComReg understands that the EECC is unlikely to be transposed into national law until at least Q4 2021. However, for the avoidance of doubt, electronic communications providers must continue to comply with their obligations, ComReg will continue to regulate the electronic communications sector under its existing powers, and redress mechanisms for customers will continue unchanged until new legislation is introduced.

A 2.8 Notwithstanding, and for the avoidance of doubt, ComReg is satisfied that, to the best of its knowledge, the granting of Temporary ECS Licences for the purposes of the Temporary Situation, and under the conditions described in this document, would not conflict with the objectives of the EECC or the obligations likely to be imposed on ComReg under national legislation implementing same.

A2.1 Primary Objectives and Regulatory Principles under the 2002 Act and Common Regulatory Framework

A 2.9 ComReg’s primary objectives in carrying out its statutory functions in the context of electronic communications are to:

- promote competition⁸⁹;
- contribute to the development of the internal market⁹⁰;

⁸⁸ With the exception of Articles 53(2), (3) and (4), and Article 54 (See Article 124).

⁸⁹ Section 12 (1)(a)(i) of the 2002 Act.

⁹⁰ Section 12 (1)(a)(ii) of the 2002 Act.

- promote the interests of users within the Community⁹¹;
- ensure the efficient management and use of the radio frequency spectrum in Ireland in accordance with a direction under section 13 of the 2002 Act⁹²; and
- unless otherwise provided for in Regulation 17 of the Framework Regulations, take the utmost account of the desirability of technological neutrality in complying with the requirements of the Specific Regulations⁹³ in particular those designed to ensure effective competition⁹⁴.

A2.1.1 Promotion of Competition

A 2.10 Section 12(2)(a) of the 2002 Act requires ComReg to take all reasonable measures which are aimed at the promotion of competition, including:

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

A 2.11 In so far as the promotion of competition is concerned, Regulation 16(1)(b) of the Framework Regulations also requires ComReg to:

- ensure that elderly users and users with special social needs derive maximum benefit in terms of choice, price and quality, and

⁹¹ Section 12(1)(a)(iii) of the 2002 Act.

⁹² Section 12(1)(b) of the 2002 Act. Whilst this objective would appear to be a separate and distinct objective in the 2002 Act, it is noted that, for the purposes of ComReg's activities in relation to electronic communications networks and services ("ECN" and "ECS"), Article 8 of the Framework Directive identifies "*encouraging efficient use and ensuring the effective management of radio frequencies (and numbering resources)*" as a sub-objective of the broader objective of the promotion of competition.

⁹³ The 'Specific Regulations' comprise collectively the Framework Regulations, the Authorisation Regulations, the European Communities (Electronic Communications Networks and Services) (Access) Regulations 2011 (S.I. No. 334 of 2011), the European Communities (Electronic Communications Networks and Services) (Universal Service and Users' Rights) Regulations 2011 (S.I. 337 of 2011) and the European Communities (Electronic Communications Networks and Services) (Privacy and Electronic Communications) Regulations 2011 (S.I. No. 336 of 2011).

⁹⁴ Regulation 16(1)(a) of the Framework Regulations.

- ensure that, in the transmission of content, there is no distortion or restriction of competition in the electronic communications sector.

A 2.12 Regulation 9(11) of the Authorisation Regulations also provides that ComReg must ensure that radio frequencies are efficiently and effectively used having regard to section 12(2)(a) of the 2002 Act and Regulations 16(1) and 17(1) of the Framework Regulations. Regulation 9(11) further provides that ComReg must ensure that competition is not distorted by any transfer or accumulation of rights of use for radio frequencies and, for this purpose, ComReg may take appropriate measures such as mandating the sale or the lease of rights of use for radio frequencies.

A2.1.2 Contributing to the Development of the Internal Market

A 2.13 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:

- removing remaining obstacles to the provision of ECN, ECS and associated facilities at Community level;
- encouraging the establishment and development of trans-European networks and the interoperability of transnational services and end-to-end connectivity; and
- 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 2.14 In so far as contributing to the development of the internal market is concerned, Regulation 16(1)(c) of the Framework Regulations also requires ComReg to co-operate with the Body of European Regulators for Electronic Communications (“BEREC”) in a transparent manner to ensure the development of consistent regulatory practice and the consistent application of EU law in the field of electronic communications.

A2.1.3 Promotion of Interests of Users

A 2.15 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.

A 2.16 In so far as promotion of the interests of users within the EU is concerned, Regulation 16(1)(d) of the Framework Regulations also requires ComReg to:

- address the needs of specific social groups, in particular, elderly users and users with special social needs, and
- promote the ability of end-users to access and distribute information or use applications and services of their choice.

A2.1.4 Regulatory Principles

A 2.17 In pursuit of its objectives under Regulation 16(1) of the Framework Regulations and section 12 of the 2002 Act, ComReg must apply objective, transparent, non-discriminatory and proportionate regulatory principles by, amongst other things:

- promoting regulatory predictability by ensuring a consistent regulatory approach over appropriate review periods;
- ensuring that, in similar circumstances, there is no discrimination in the treatment of undertakings providing ECN and ECS;
- safeguarding competition to the benefit of consumers and promoting, where appropriate, infrastructure-based competition;

- 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 competition and consumers that exist in the various geographic areas within the State; and
- imposing ex-ante regulatory obligations only where there is no effective and sustainable competition and relaxing or lifting such obligations as soon as that condition is fulfilled.

A2.1.5 Other Obligations under the 2002 Act

A 2.18 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;⁹⁵
- have regard to international developments with regard to the radio frequency spectrum⁹⁶; 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.⁹⁷

A2.1.6 Policy Directions⁹⁸

A 2.19 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.

⁹⁵ Section 12(3) of the 2002 Act.

⁹⁶ Section 12(5) of the 2002 Act.

⁹⁷ Section 12(6) of the 2002 Act.

⁹⁸ 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.

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

Policy Direction No.3 on Broadband Electronic Communication Networks

A 2.21 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 2.22 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.

Policy Direction No.5 on Regulation only where necessary

A 2.23 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 2.24 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 2.25 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 2.26 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 2.27 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

A2.2 Other Relevant Obligations under the Framework and

Authorisation Regulations

A2.2.1 Framework Regulations

Regulation 17

A 2.28 Regulation 17 of the Framework Regulations governs the management of radio frequencies for ECS. Regulation 17(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 and Regulation 16 of the Framework Regulations and the provisions of Article 8a of the Framework Directive, ensure:

- the effective management of radio frequencies for ECS;
- that spectrum allocation used for ECS and issuing of general authorisations or individual rights of use for such radio frequencies are based on objective, transparent, non-discriminatory and proportionate criteria; and
- ensure that harmonisation of the use of radio frequency spectrum 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 economies of scale and interoperability of 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 the EU.

A 2.29 Regulation 17(2) provides that, unless otherwise provided in Regulation 17(3), ComReg must ensure that all types of technology used for ECS may be used in the radio frequency bands that are declared available for ECS in the Radio Frequency Plan published under Section 35 of the 2002 Act in accordance with EU law.

A 2.30 Regulation 17(3) provides that, notwithstanding Regulation 17(2), 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:

- avoid harmful interference;
- protect public health against electromagnetic fields;
- ensure technical quality of service;

- ensure maximisation of radio frequency sharing;
- safeguard the efficient use of spectrum; or
- 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 17(6).

A 2.31 Regulation 17(4) requires that, unless otherwise provided in Regulation 17(5), ComReg must ensure that all types of ECS may be provided in the radio frequency bands, declared available for ECS in the Radio Frequency Plan published under Section 35 of the Act of 2002 in accordance with EU law.

A 2.32 Regulation 17(5) 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 2.33 Regulation 17(6) requires that measures that require an ECS to be provided in a specific band available for ECS must be justified in order to ensure the fulfilment of a general interest objective as defined by or on behalf of the Government or a Minister of the Government in conformity with EU law such as, but not limited to:

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

A 2.34 Regulation 17(7) 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 defined by or on behalf of the Government or a Minister of the Government.

A 2.35 Regulation 17(8) provides that ComReg must, in accordance with Regulation 18, regularly review the necessity of the restrictions referred to in Regulations 17(3) and 17(5) and must make the results of such reviews publicly available.

A 2.36 Regulation 17(9) provides that Regulations 17(2) to (7) only apply to spectrum

allocated to be used for ECS, general authorisations issued and individual rights of use for radio frequencies granted after 1 July 2011. Spectrum allocations, general authorisations and individual rights of use which already existed on 1 July 2011 are subject to Regulation 18 of the Framework Regulations.

A 2.37 Regulation 17(10) provides that ComReg may, having regard to its objectives under Section 12 of the 2002 Act and Regulation 16 and its functions under the Specific Regulations, lay down rules in order to prevent spectrum hoarding, in particular by setting out strict deadlines for the effective exploitation of the rights of use by the holder of rights and by withdrawing the rights of use in cases of non-compliance with the deadlines. Any rules laid down under this Regulation must be applied in a proportionate, non-discriminatory and transparent manner.

A 2.38 Regulation 17(11) requires ComReg to, in the fulfilment of its obligations under that Regulation, respect relevant international agreements, including the ITU-RR and any public policy considerations brought to its attention by the Minister.

Decision to limit rights of use for radio frequencies

A 2.39 Regulation 9(2) of the Authorisation Regulations provides that ComReg may grant individual rights of use for radio frequencies by way of a licence where it considers that one or more of the following criteria are applicable:

- it is necessary to avoid harmful interference;
- it is necessary to ensure technical quality of service;
- it is necessary to safeguard the efficient use of spectrum; or
- it is necessary to fulfil other objectives of general interest as defined by or on behalf of the Government or a Minister of the Government in conformity with EU law.

A 2.40 Regulation 9(10) of the Authorisation Regulations provides that ComReg must not limit the number of rights of use for radio frequencies to be granted except where this is necessary to ensure the efficient use of radio frequencies in accordance with Regulation 11.

A 2.41 Regulation 9(7) also provides that:

- where individual rights of use for radio frequencies are granted for a period of 10 years or more and such rights may not be transferred or leased between undertakings in accordance with Regulation 19 of the Framework Regulations, ComReg must ensure that criteria set out in

Regulation 9(2) apply for the duration of the rights of use, in particular upon a justified request from the holder of the right.

- where ComReg determines that the criteria referred to in Regulation 9(2) are no longer applicable to a right of use for radio frequencies, ComReg must, after a reasonable period and having notified the holder of the individual rights of use, change the individual rights of use into a general authorisation or must ensure that the individual rights of use are made transferable or leasable between undertakings in accordance with Regulation 19 of the Framework Regulations.

Publication of procedures

A 2.42 Regulation 9(4)(a) of the Authorisation Regulations requires that ComReg, having regard to the provisions of Regulation 17 of the Framework Regulations, establish open, objective, transparent, non-discriminatory and proportionate procedures for the granting of rights of use for radio frequencies and cause any such procedures to be made publicly available.

Duration of rights of use for radio frequencies

A 2.43 Regulation 9(6) of the Authorisation Regulations provides that rights of use for radio frequencies must be in force for such period as ComReg considers appropriate having regard to the network or service concerned in view of the objective pursued taking due account of the need to allow for an appropriate period for investment amortisation.

Conditions attached to rights of use for radio frequencies

A 2.44 Regulation 9(5) of the Authorisation Regulations provides that, when granting rights of use for radio frequencies, ComReg must, having regard to the provisions of Regulations 17 and 19 of the Framework Regulations, specify whether such rights may be transferred by the holder of the rights and under what conditions such a transfer may take place.

A 2.45 Regulation 10(1) of the Authorisation Regulations provides that, notwithstanding Section 5 of the Wireless Telegraphy Act, 1926, but subject to any regulations under Section 6 of that Act, ComReg may only attach those conditions listed in Part B of the Schedule to the Authorisation Regulations. Part B lists the following conditions which may be attached to rights of use:

- Obligation to provide a service or to use a type of technology for which the rights of use for the frequency has been granted including, where appropriate, coverage and quality requirements.

- Effective and efficient use of frequencies in conformity with the Framework Directive and Framework Regulations.
- Technical and operational conditions necessary for the avoidance of harmful interference and for the limitation of exposure of the general public to electromagnetic fields, where such conditions are different from those included in the general authorisation.
- Maximum duration in conformity with Regulation 9, subject to any changes in the national frequency plan.
- Transfer of rights at the initiative of the rights holder and conditions of such transfer in conformity with the Framework Directive.
- Usage fees in accordance with Regulation 19.
- Any commitments which the undertaking obtaining the usage right has made in the course of a competitive or comparative selection procedure.
- Obligations under relevant international agreements relating to the use of frequencies.
- Obligations specific to an experimental use of radio frequencies.

A 2.46 Regulation 10(2) also requires that any attachment of conditions under Regulation 10(1) to rights of use for radio frequencies must be non-discriminatory, proportionate and transparent and in accordance with Regulation 17 of the Framework Regulations.

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

A 2.47 Regulation 11(1) of the Authorisation Regulations provides that, where ComReg considers that the number of rights of use to be granted for radio frequencies should be limited it must, without prejudice to Sections 13 and 37 of the 2002 Act:

- give due weight to the need to maximise benefits for users and to facilitate the development of competition, and
- give all interested parties, including users and consumers, the opportunity to express their views in accordance with Regulation 12 of the Framework Regulations.

A 2.48 Regulation 11(2) of the Authorisation Regulations requires that, when granting

the limited number of rights of use for radio frequencies it has decided upon, ComReg does so “...on the basis of selection criteria which are objective, transparent, non-discriminatory and proportionate and which give due weight to the achievement of the objectives set out in Section 12 of the 2002 Act and Regulations 16 and 17 of the Framework Regulations.”

- A 2.49 Regulation 11(4) provides that where it decides to use competitive or comparative selection procedures, ComReg must, inter alia, ensure that such procedures are fair, reasonable, open and transparent to all interested parties.

Fees for spectrum rights of use

- A 2.50 Regulation 19 of the Authorisation Regulations permits ComReg to impose fees for rights of use which reflect the need to ensure the optimal use of the radio frequency spectrum.

- A 2.51 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 Regulation 16 of the Framework Regulations.

Amendment of rights and obligations

- A 2.52 Regulation 15 of the Authorisation Regulations permits ComReg to amend rights and conditions concerning rights of use, provided that any such amendments may only be made in objectively justified cases and in a proportionate manner, following the process set down in Regulation 15(4).

A2.3 Other Relevant Provisions

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

- A 2.53 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 2.54 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 revocation) as may be prescribed in regard to it by regulations made by ComReg under Section 6.
- A 2.55 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 2.56 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 2.57 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 2.58 Regulation 10(1) of the Authorisation Regulations provides that, notwithstanding section 5 of the Act of 1926 but subject to any regulations made under section 6 of that Act, where ComReg attaches conditions to rights of use for radio frequencies, it may only attach such conditions as are listed in Part B of the Schedule to the Authorisation Regulations.

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

A 2.59 Article 4 of the Competition Directive 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.”*

Annex: 3 Request from operators including supporting information and correspondence from other interested parties

1 2RN

From: Johnny Evans [REDACTED]
Sent: 18 August 2021 15:03
To: Conor Berkeley
Subject: RE: [Confidential] Further Temporary Spectrum Measures - 700 MHz Band

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and believe the content is safe.

Hi Conor,

Yes, we are content with the current agreement and happy that it is still relevant and appropriate should it be extended. Thanks for asking.

Regards, Johnny

Johnny Evans

Head of Projects and Coverage Planning

2RN

Block B, Cookstown Court, Old Belgard Road, Tallaght, Dublin 24, Ireland

D24 WK28

Phone: [REDACTED]

Mobile: [REDACTED]

From: Conor Berkeley [REDACTED]
Sent: Wednesday 18 August 2021 15:00
To: Johnny Evans [REDACTED]
Subject: [Confidential] Further Temporary Spectrum Measures - 700 MHz Band

Hi Johnny,

In April 2021, ComReg issued licences to the MNOs under a further temporary spectrum framework as a result of the ongoing Covid-19 pandemic. These licences issued for a maximum period of 6 months. This further temporary licensing framework and the licences will expire on 1 October 2021.

In light of the expiry of the existing temporary licensing framework (and licences) on 1 October 2021 and the potential continuance of the ongoing Covid-19 pandemic beyond that date, in July 2021 ComReg published Document 21/74 Information Notice which set out guidance regarding the information requirements and next steps in considering any further temporary licensing framework beyond 1 October 2021. In August, ComReg received a common letter from the three MNOs requesting a further Temporary ECS Licensing framework and, separately, individual supporting information for same.

In considering the above, ComReg will shortly publish a consultation document setting out its proposals for a further temporary spectrum framework for a further 6 months from October 2021. In relation to the 700 MHz band, it is proposed that the current agreement remains in place with respect to the 700 MHz band between 2RN, Virgin Media and the MNO's with regards to any further temporary spectrum measure framework.

Could you please respond by email to confirm that RTÉ/2RN are content with the current 700 MHz agreement and that it remains appropriate and relevant to RTÉ/2RN requirements in relation to possible further temporary spectrum measures that may be implemented by ComReg?

Kind regards,
Conor

2 Eircom Limited and Meteor Mobile Communication Limited (trading as ‘eir’ and ‘open eir’), collectively referred to as ‘eir Group’ or ‘eir’



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By email only: jeremy.godfrey@comreg.ie

22 July 2021

Re: Extension of Temporary Spectrum Assignments (Covid-19)

Dear Jeremy,

This common letter is sent from the CEOs of Ireland's three mobile network operators and is a follow-up to the previous letters from March and September of 2020 and February 2021 requesting ComReg to assign spectrum to the mobile networks on a temporary basis. ComReg responded positively to those requests by assigning spectrum on a temporary basis and all three network operators have been able to use the resulting temporary licences to the benefit of their customers. In the face of the ongoing exceptional circumstances arising from the Covid-19 pandemic the purpose of this letter is to request further extension of the temporary licences in accordance with ComReg 21/74.

Introduction

Just like many countries around the world, Ireland has experienced a massive shock. The health measures necessary to prevent spread of Covid-19 have forced us all to change our home life and work life massively. We have been reminded of the importance of modern communications networks and they have played a pivotal role in allowing people to continue work while staying at home but also to maintain vital connectivity for social purposes.

While Ireland has made considerable progress in administering vaccines, the emergence of new variants of Covid continues to create challenges, preventing us from returning to our pre-covid patterns of work, education, and social lives. Quoted in the Irish Times July 1st Dr Tony Holohan has warned that "A concerning increase in recent Covid-19 infections driven by the Delta variant indicates a fourth wave of the pandemic is now beginning in Ireland", and also in this month both the Netherlands and France have re-imposed Covid restrictions that had been relaxed. Unfortunately, it is clear we face a further period of uncertainty.



Changed Practices

The change to working practice, the move to online education, and the change to social interaction that was forced upon us over the last 18 months have had dramatic effects on the patterns of demand for mobile service in Ireland. Mobile networks have contributed strongly towards supporting this change in the quantity and location of offered traffic by rapidly changing our network build plans supporting the changing traffic patterns, often to support traffic in commuter towns and in rural areas.

In the coming months we continue to face further uncertain changes in traffic patterns. While it is hoped that the situation will improve in the coming months such that the Government can reduce some of the restrictions, e.g. pupils will return to school and some return to office workplaces, the timing of any changes remains uncertain. Supporting customers through this changing demand will only be possible through further investment in networks including mobile networks, particularly in the rural areas that do not currently have sufficient connectivity. It is impossible to predict where local surges may occur, so service providers must prepare on the basis that they could be anywhere.

Spectrum Licensing is Critical

The Temporary Spectrum Licences first issued by ComReg in April 2020 have helped in an important way to meet the new demands placed on mobile networks. In mid-March 2020 when measures to prevent the spread of Covid-19 were announced all mobile operators experienced an immediate and significant growth in average and peak throughput for both voice and data. The physical location of the demand also changed – out of city centres to residential areas.

The rapid enactment of the Temporary Spectrum Measures by ComReg has allowed operators to support this traffic at performance measures similar to those achieved pre-Covid. As new infrastructure cannot be built at short notice, and as operators had already adjusted network configuration to the maximum extent, the Temporary Spectrum Measures have been crucial to giving mobile operators flexibility to mitigate significant congestion in voice and data networks.

As we move forward in the coming months and the next phases of action dealing with Covid, it is important that ComReg should ensure that the current Temporary Spectrum Licences continue past the 30th September date of the current regulation. We ask that these measures are extended at least on the same basis as previously in three-monthly periods.

This will enable operators to build capacity in the different locations required and, importantly, to invest efficiently. Building new sites to cope with any short-term demand in advance of the planned Spectrum auction would be extremely inefficient.

We acknowledge that ComReg has stressed that any temporary licensing framework is intended solely to address the exceptional and extraordinary situation presented by COVID-19 and that it is entirely without prejudice to the award of long-term rights of use in these spectrum bands in its proposed multi-band spectrum award.



The mobile operators have worked closely with ComReg and Government in supplying ongoing information on network stability and traffic. In using the temporary rights we have also carefully managed the risks to the provision and quality of existing ECS through careful co-ordination with other radio spectrum users and cable companies. We are confident that we can maintain this high level of cooperation through an extended Temporary Licence period.

Noting ComReg's request in document 21/74 for a joint submission from Operators setting out the specific details of the joint/common request, we now wish to jointly request that the terms of the current Temporary Spectrum Management Measures detailed in ComReg 20/88 (D08/20) are extended unchanged.

Each Operator will in addition make a separate submission to ComReg giving the details of their network traffic etc., supplying the information detailed in ComReg 21/74 paragraphs 40 A-G.

We will continue to work closely with ComReg through your ongoing network industry forum and through the supply of any required information. We assure you of our ongoing commitment to supporting the changed economy in Ireland and request that you proceed to consider our application as soon as possible.

Yours sincerely,

A handwritten signature in black ink that reads "Carolan Lennon".

Carolan Lennon
CEO

Meteor Mobile Communications Ltd (MMC) material in support of request to extend the Covid-19 Temporary ECS Licensing regime

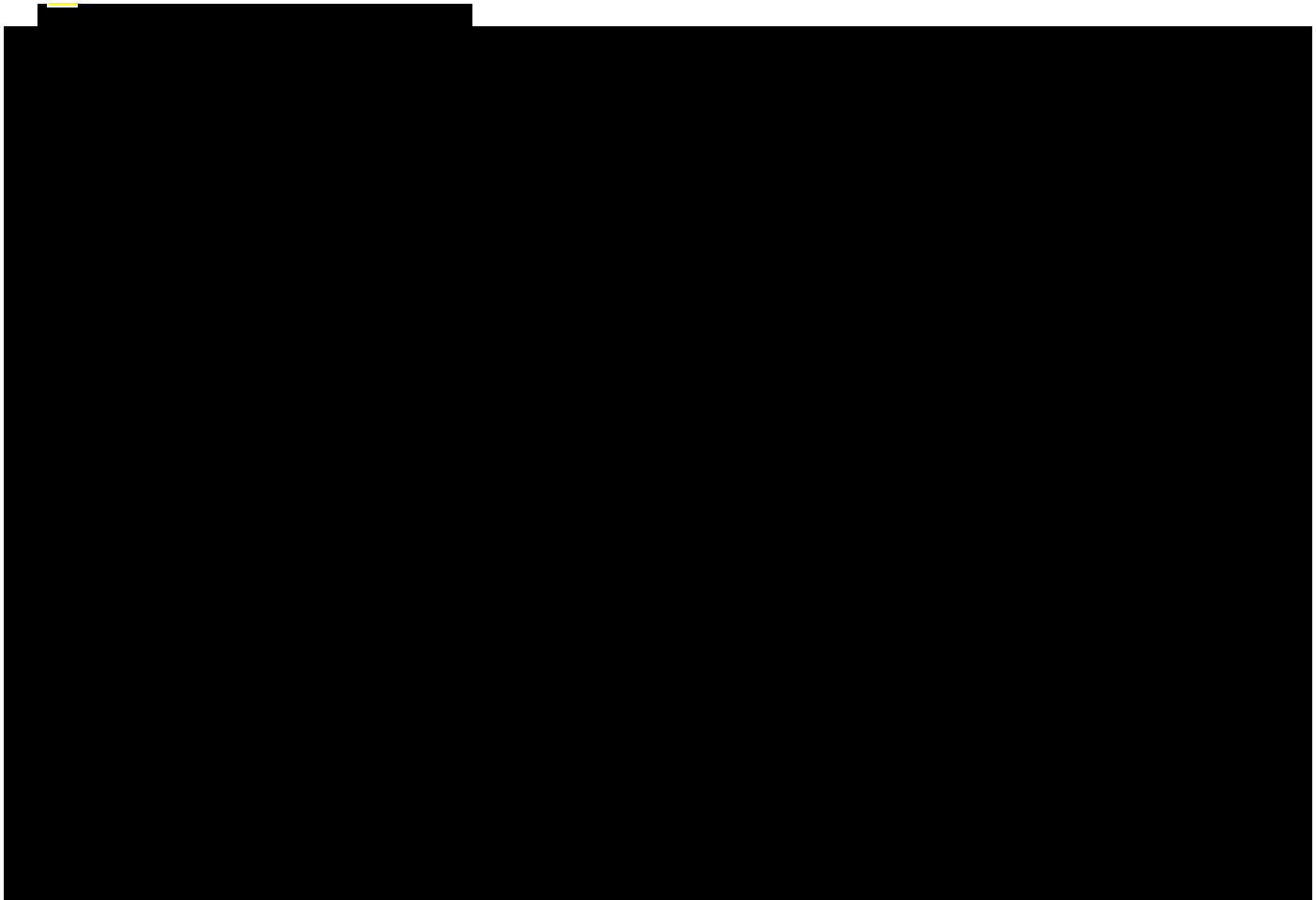
The following material is provided and should be read in conjunction with Carolan Lennon's letter to Commissioner Godfrey dated 22nd July 2021 (the CEO letter).

A. Network traffic / capacity / performance information:

(i) information regarding the traffic (voice and data), capacity and performance of the network considering the extraordinary situation arising from COVID-19. In particular, the changes in network traffic (voice and data), capacity and performance since COVID-19 until now.

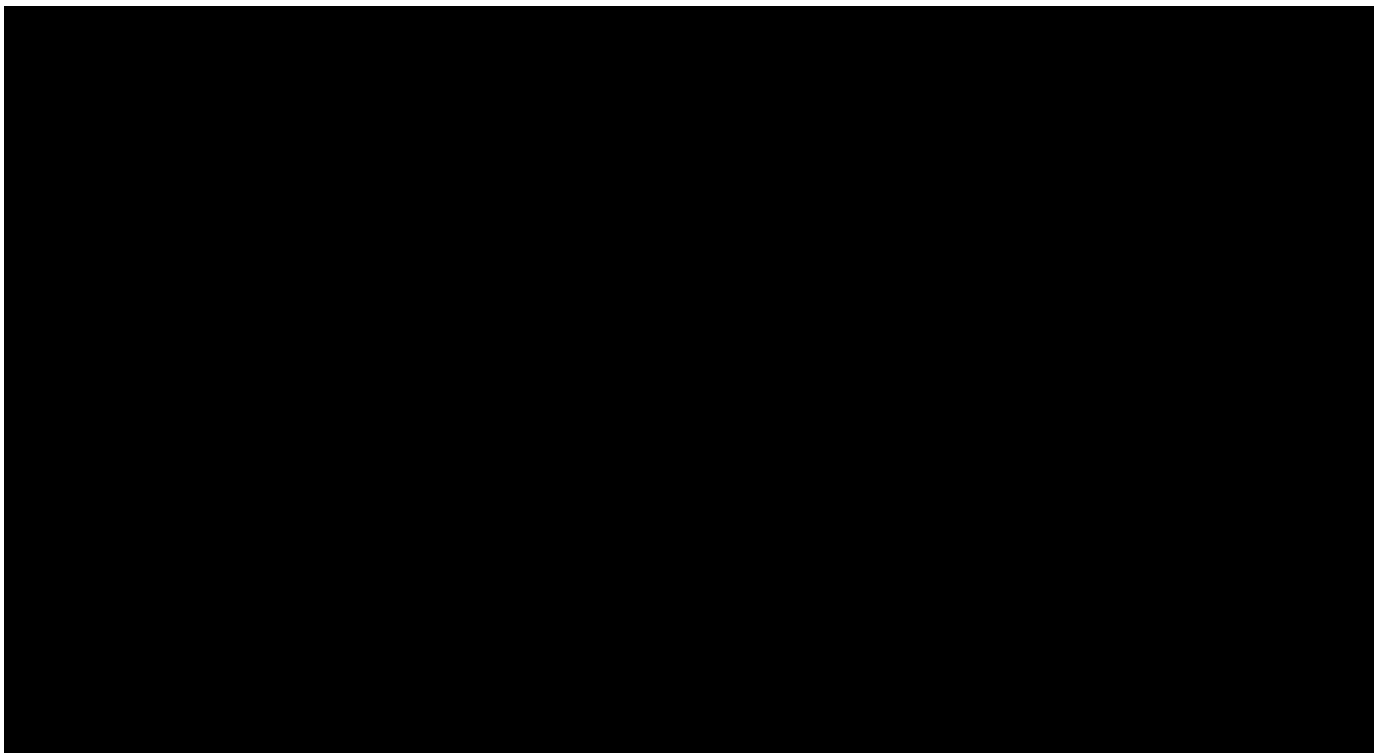
MMC: We have seen very significant Voice and Data Traffic growth since the emergence of this extraordinary situation arising from Covid-19.

Data traffic growth in particular has continued since the initial national lockdown and sustained such growth throughout 2020 and into 2021. While the data traffic in the network has been growing over recent years however, the trend line shown in Figure 1 below indicates an inflection point in the 2020 data traffic growth starting in March coinciding with the commencement of Covid 19 movement restrictions which have continued with some variation in the restrictive measures. It should also be noted with the move to home based working the locations of the traffic has also changed and so the traffic profile per cell and site has altered as a result of Covid 19. So far in 2021 YoY growth of monthly data volumes has been between [REDACTED] so the Covid step change seen in 2020 has not receded.



The trendline for 2021 to date would seem to indicate a slightly slower monthly growth this may be as a result of a larger January growth [REDACTED] as well as full year data not yet available. Monthly trends seem broadly in line with recent ratios since the effects of Covid-19 on network demand started.

eir's mobile voice traffic has been flat for recent years but in March 2020 a step change occurred when the arrival of Covid-19 resulted in the first lockdown. Figure 2 below shows clearly that voice traffic is still above pre-Covid 19 levels and the 2021 traffic volumes seem to be largely in line with 2020 figures showing the additional voice traffic capacity attributed to Covid has not abated.



(ii) information on the expected traffic demand and network capacity beyond 1 October 2021;

MMC: We expect Data traffic to continue on the same growth trajectory as even though Level 5 restrictions are being relaxed the voice and data volumes continue to trend reasonably close to 2020 levels and we note that most businesses are unlikely to start to return to their offices until September at the earliest. Voice traffic similarly.

(iii) observations on how much of the changes in traffic and capacity is due to forecasted annual changes that would be expected on a network in the normal course (accounting for seasonal changes and projected market developments in the absence of COVID-19) and those that can reasonably be considered to be directly related to Government COVID-19 measures.

MMC: We have provided voice and data trends for the last four years, the very significant growth in 2020 is very evident versus the prior year growth trajectory as noted in response (i) above and 2021 figures seem to be almost in line with last year's trends. Data traffic growth during 2021 is averaging [REDACTED] so far as compared with [REDACTED] in 2020. Voice traffic in 2020 continues to show the presence of the step increase seen post Covid across 2020.

B. Ability to make use of temporary assignments in any further Temporary ECS framework - Sites and transmitters:

(i) information regarding the number, locations and deployment dates of sites/transmitters per spectrum band that have actually been used to date using temporary ECS rights of use, indicating the terrestrial system(s) (e.g. LTE) supported.

MMC: Please see attached file ('Confidential Licence Regime Extension Submission Parts 3 and 4 22Jul21') which details sites activated to date. eir mobile has extensively utilised the Temporary ECS licences with over [REDACTED] cells now live. eir mobile has utilised the 700Mhz band as an additional capacity layer on the upgraded sites and despite the very significant growth in particular of data traffic has continued to improve data throughputs on these sites.

eir mobile is also activating 2100Mhz for LTE with over [REDACTED] LTE cells now live on the 2100MHZ band eir continues to balance the support of voice and data service requirements across our network.

(ii) information on the number of sites/transmitters per band that would be expected to be used over the duration of the licence renewal indicating the terrestrial system(s) (e.g. LTE) being supported. Note, where a Licensee has applied for and being granted a 2.1 GHz Band Liberalised Use licence, information for the 2.1 GHz band should not be included.

MMC: Over the lifetime of this proposed extension eir plans to bring further sites live with LTE on both the 700MHz and 2100MHz bands to continue to assist the growing demands on voice and data services.

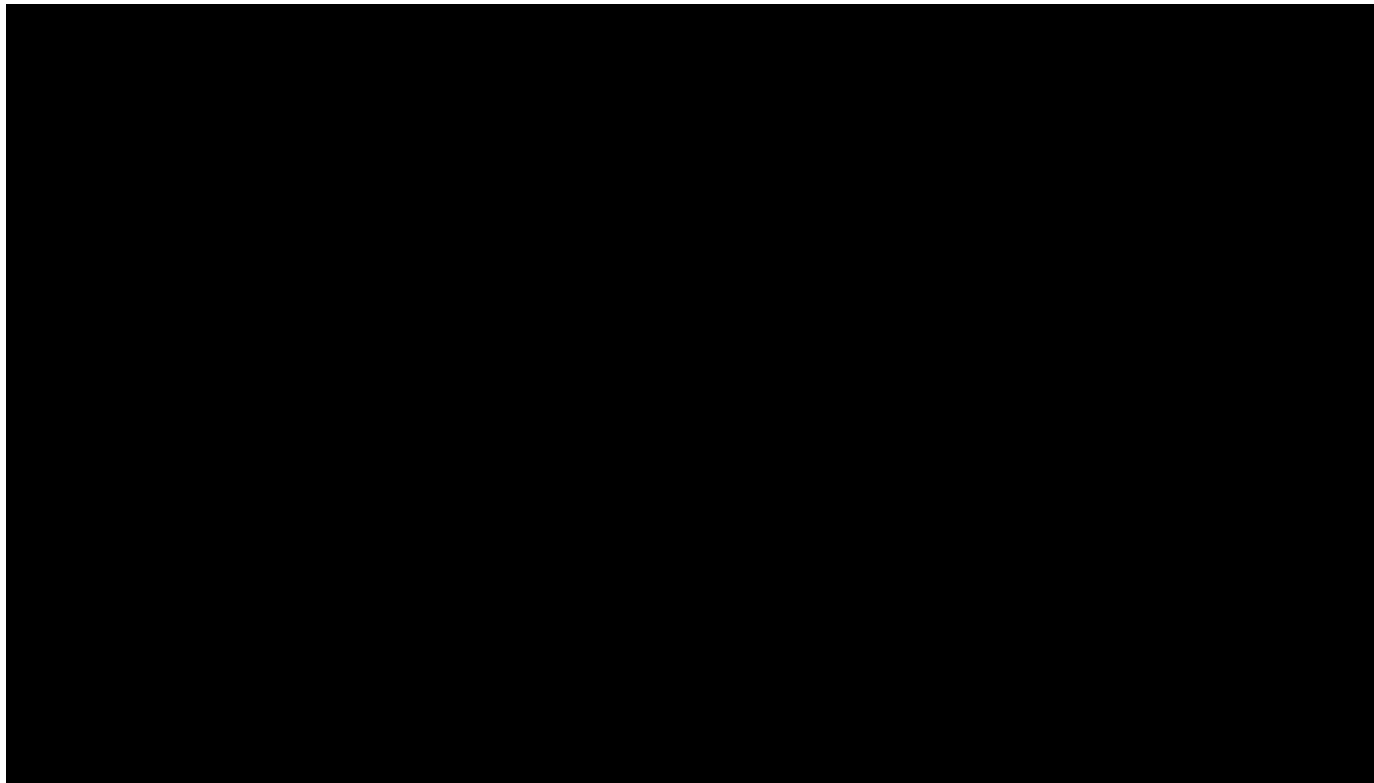
C. How temporary rights have assisted with the provision of ECS in the state:

(i) information on how existing temporary rights have assisted in alleviating the network capacity /performance constraints to date. Please provide:

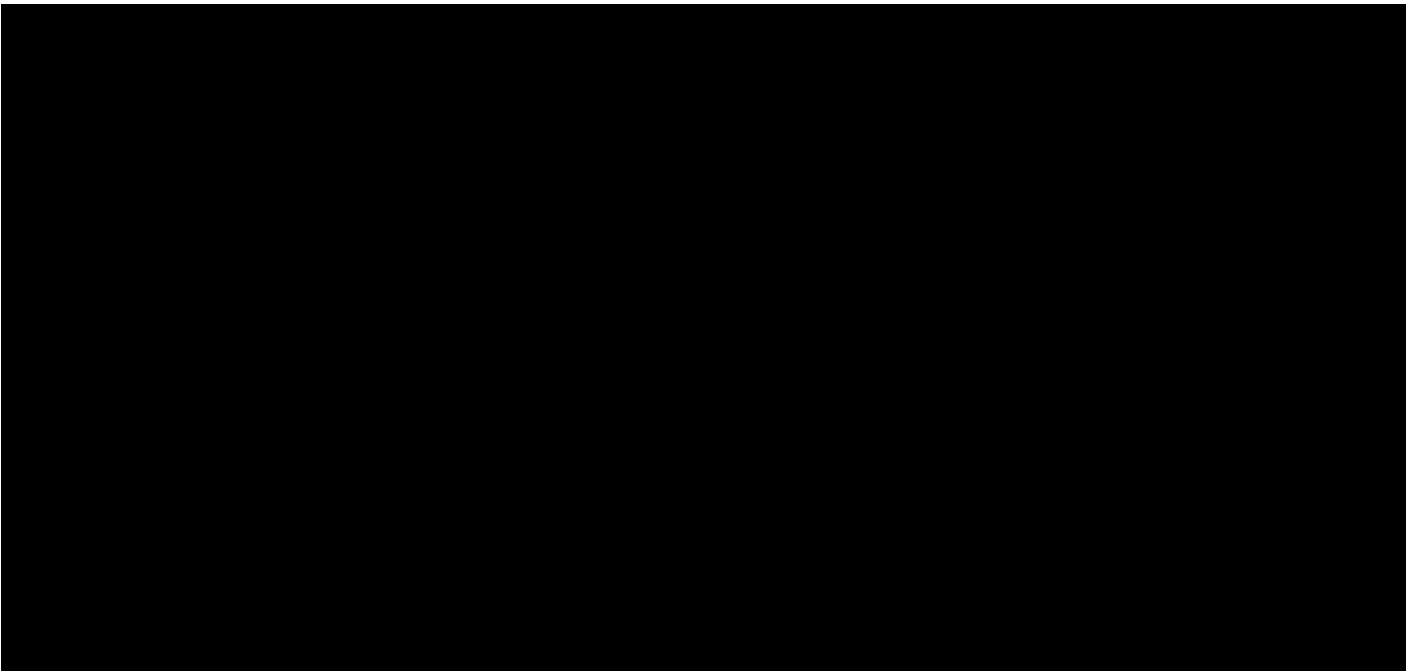
a. information on the percentage of network traffic (voice and data) carried by temporary spectrum rights for the each of the 700 MHz band and 2.1 GHz bands.

b. information highlighting trends where the network capacity/network performance improvements are correlated to use of temporary ECS rights of use. For example when temporary ECS rights of use were brought into use the network / capacity improvements observed at these times.

MMC: It has already been shown above how the total traffic on the network has grown since Covid. It is also worth noting the step change in the traffic per subscriber that has occurred since Covid-19 arrived. This is seen in Figure 3 below. The addition of LTE700 has helped to accommodate this traffic growth. The recent migration of UMTS2100 to LTE2100 has also improved the customer experience through increased carrier aggregation capability while allowing UMTS2100 data move to LTE and load sharing with LTE1800. The availability of ECS via the Temporary License Scheme has assisted in the accommodation of this traffic growth on the network.



As illustrated around [REDACTED] of data traffic has been supported by the 700MHz and 2100MHz bands respectively in 2021. In the case of Voice services the LTE700 and LTE2100 bands carry [REDACTED] respectively of the total network voice traffic. eir anticipates a continuation of LTE700 and LTE2100 activation under an extended temporary licence to assist manage continued data traffic growth in the coming months.



(ii) information on how temporary rights may materially assist over the duration of any further Temporary ECS Licensing framework, noting that where a Licensee has applied for and being granted a 2.1 GHz Band Liberalised Use licence, information on the 2.1 GHz band should not be included.

MMC: The temporary rights will continue to allow mobile network operators to make available additional capacity to meet the increased demand for mobile network services, particularly data, allowing citizens to engage socially

and economically during these challenging times. eir has activated VoLTE to complement our existing Voice over WiFi service, thus enabling the refarming of some 2100Mhz for LTE. This further enhances capacity availability on an extensive base of network sites. It is difficult to predict where and when demand will shift. Having the licences available nationally allows contingent capacity to be made available which can help absorb the impacts on demand arising from lockdown measures (localised or otherwise).

D. Managing the risks to the provision and quality of existing ECS given the use of temporary spectrum rights:

(i) information regarding the management of risks to the provision and quality of existing ECS and the measures taken to date by the MNO. For example, the key measures taken on foot of Annex 4 of Document 20/27 - 700 MHz Coordination procedures.

MMC: eir mobile has worked and co-ordinated extensively with all other operators in planning the activation of 700Mhz, in particular eir mobile had extensive engagement with Virgin Media on site activation to enable their testing pre/post activation and mitigate the risk of interference to their CATV services during the first phase of L700 activation. This has been successful on the basis that no interference was noted by Virgin Media upon eir mobile site activations and eir mobile has continued to maintain very close co-ordination week to week with Virgin Media and the other mobile operators. The coordination procedures are working really well with the other operators

E. Risks where there is no further Temporary ECS Licensing framework: The risk of congestion and other disruption to consumer services and the locations where it would most likely arise in the event that there is no further Temporary ECS framework , identifying if such congestion or disruption would reasonably be considered to be due to COVID-19 matters or mobile market developments / commercial strategy matters.

MMC: The risk of congestion or degraded service is very real throughout Ireland in the event of no further Temporary ECS Licensing framework, the voice and traffic growth is network wide with a continued guideline to work from home where possible in addition to the implementation of further lockdown measures from time to time such as the temporary closure of schools. As highlighted in the CEO letter *"Building new sites to cope with any short term demand in advance of the planned Spectrum auction would be extremely inefficient"*. In the scenario where the licenses are not renewed the capacity of the LTE700 band along with the improved customer experience resulting from the temporary refarming of the 2100 band from UMTS to LTE would be removed resulting in lower customer experience and increased congestion impacting the ability of citizens to work, learn, and engage in society.

6. Actions required in relation to no further Temporary ECS framework: Details of the preparations and actions that the MNOs has taken and would need to take in the event of no further Temporary ECS framework.

MMC: eir mobile continues to transform its network, building new infill and capacity sites, increase 5G network sites and deploy VoLTE. These programmes of work have continued throughout the emergency and assist to enhance service for eir customers and will continue through 2021 but are complimented by the Temporary ECS Licensing framework. A discontinuation of the Temporary Licensing framework will result in service degradation where traffic growth continues at elevated levels due to the impact of Covid 19 restrictions as per the trend line year to date.

7. Other factors: Any other factors that the MNOs deem relevant to the consideration of any no further Temporary ECS framework.

MMC: eir mobile notes the positive short term benefits that accrue to citizens and society from extending the temporary licensing framework.

3 Irish Aviation Authority (IAA)

From: MCGRATH Patrick [REDACTED]
Sent: 18 August 2021 16:44
To: Conor Berkeley
Subject: RE: [Confidential] Further Temporary Spectrum Measures - Radars and the 2.6 GHz Band

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Hi Conor,

Regarding the current temporary licences,

Yes, I can confirm that the current 2.6 GHz band technical conditions remain appropriate and relevant to the IAA's requirements in relation to possible further temporary spectrum measures implemented by ComReg.

Regards,

Paddy.

Patrick McGrath
National Aeronautical Frequency Manager

Irish Aviation Authority,
Control Tower Building,
Huntstown,
Co. Dublin,
K67 FD45
Ireland.



From: Conor Berkeley [REDACTED]
Sent: 18 August 2021 16:40
To: MCGRATH Patrick [REDACTED]
Subject: [Confidential] Further Temporary Spectrum Measures - Radars and the 2.6 GHz Band

* This message originated from outside the Irish Aviation Authority. Please treat hyperlinks, attachments and instructions in this email with caution. *

Hi Paddy,

As you may be aware the current temporary licences held by the three MNO's will expire on **1 October 2021**. ComReg is currently in the process of considering requests for another further temporary spectrum framework as a result of the ongoing pandemic and will shortly publish its consultation on same.

The current framework implements a number of technical conditions to ensure protection of the IAA's radars operating in the 2.7 GHz band with any potential deployment of MFCN in the 2.6 GHz. These conditions include:

- Imposing exclusion zones defined by Figures 4.3, 4.5, 4.6 and 5.3 of the Plum Report (ComReg 19/124c)
- Implementing power flux density limits and
- Ensuring applicants provide relevant site details to IAA (site height, antenna orientation and coverage plots)

ComReg would not be proposing any changes to the current conditions in place with respect to temporary licences in the 2.6 GHz band and IAA Primary Aeronautical Radars.

Could I please request a response by email by **25th August** to confirm that the current 2.6 GHz band technical conditions remain appropriate and relevant to the IAA's requirements in relation to possible further temporary spectrum measures implemented by ComReg?

Kind regards,
Conor

Conor Berkeley

**Bainisteoir, Comhoiriúnacht & Forbairt Speictrim
Manager, Spectrum Compatibility & Development**

**An Coimisiún um Rialáil Cumarsáide
Commission for Communications Regulation**

Uimh. a hAon Lárcheantar na nDugaí, Sráid na nGildeanna, BÁC 1, Éire, D01 E4X0
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Suíomh | Website www.comreg.ie



4 Three Ireland (Hutchison) Limited



Three Ireland (Hutchison) Limited.
Registered Office:
28/29 Sir John Rogerson's Quay,
Dublin 2, Ireland.

Jeremy Godfrey
Commissioner
Commission for Communications Regulation
1 Dockland Central
Guild Street
Dublin 1
D01 E4X0

By email only: jeremy.godfrey@comreg.ie

Thursday, 22 July 2021

Re: Extension of Temporary Spectrum Assignments (Covid-19)

Dear Jeremy,

This common letter is sent from the CEOs of Ireland's three mobile network operators and is a follow-up to the previous letters from March and September of 2020 and February 2021 requesting ComReg to assign spectrum to the mobile networks on a temporary basis. ComReg responded positively to those requests by assigning spectrum on a temporary basis and all three network operators have been able to use the resulting temporary licences to the benefit of their customers. In the face of the ongoing exceptional circumstances arising from the Covid-19 pandemic the purpose of this letter is to request further extension of the temporary licences in accordance with ComReg 21/74.

Introduction

Just like many countries around the world, Ireland has experienced a massive shock. The health measures necessary to prevent spread of Covid-19 have forced us all to change our home life and work life massively. We have been reminded of the importance of modern communications networks and they have played a pivotal role in allowing people to continue work while staying at home but also to maintain vital connectivity for social purposes.

While Ireland has made considerable progress in administering vaccines, the emergence of new variants of Covid continues to create challenges, preventing us from returning to our pre-covid patterns of work, education, and social lives. Quoted in the Irish Times July 1st Dr Tony Holohan has warned that "A concerning increase in recent Covid-19 infections driven by the Delta variant indicates a fourth wave of the pandemic is now beginning in Ireland", and also in this month both the Netherlands and France have re-imposed Covid restrictions that had been relaxed. Unfortunately, it is clear we face a further period of uncertainty.



Changed Practices

The change to working practice, the move to online education, and the change to social interaction that was forced upon us over the last 18 months have had dramatic effects on the patterns of demand for mobile service in Ireland. Mobile networks have contributed strongly towards supporting this change in the quantity and location of offered traffic by rapidly changing our network build plans supporting the changing traffic patterns, often to support traffic in commuter towns and in rural areas.

In the coming months we continue to face further uncertain changes in traffic patterns. While it is hoped that the situation will improve in the coming months such that the Government can reduce some of the restrictions, e.g. pupils will return to school and some return to office workplaces, the timing of any changes remains uncertain. Supporting customers through this changing demand will only be possible through further investment in networks including mobile networks, particularly in the rural areas that do not currently have sufficient connectivity. It is impossible to predict where local surges may occur, so service providers must prepare on the basis that they could be anywhere.

Spectrum Licensing is Critical

The Temporary Spectrum Licences first issued by ComReg in April 2020 have helped in an important way to meet the new demands placed on mobile networks. In mid-March 2020 when measures to prevent the spread of Covid-19 were announced all mobile operators experienced an immediate and significant growth in average and peak throughput for both voice and data. The physical location of the demand also changed – out of city centres to residential areas.

The rapid enactment of the Temporary Spectrum Measures by ComReg has allowed operators to support this traffic at performance measures similar to those achieved pre-Covid. As new infrastructure cannot be built at short notice, and as operators had already adjusted network configuration to the maximum extent, the Temporary Spectrum Measures have been crucial to giving mobile operators flexibility to mitigate significant congestion in voice and data networks.

As we move forward in the coming months and the next phases of action dealing with Covid, it is important that ComReg should ensure that the current Temporary Spectrum Licences continue past the 30th September date of the current regulation. We ask that these measures are extended at least on the same basis as previously in three-monthly periods.



Three Ireland (Hutchison) Limited.
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28/29 Sir John Rogerson's Quay,
Dublin 2, Ireland.

This will enable operators to build capacity in the different locations required and, importantly, to invest efficiently. Building new sites to cope with any short-term demand in advance of the planned Spectrum auction would be extremely inefficient.

We acknowledge that ComReg has stressed that any temporary licensing framework is intended solely to address the exceptional and extraordinary situation presented by COVID-19 and that it is entirely without prejudice to the award of long-term rights of use in these spectrum bands in its proposed multi-band spectrum award.

The mobile operators have worked closely with ComReg and Government in supplying ongoing information on network stability and traffic. In using the temporary rights we have also carefully managed the risks to the provision and quality of existing ECS through careful co-ordination with other radio spectrum users and cable companies. We are confident that we can maintain this high level of cooperation through an extended Temporary Licence period.

Noting ComReg's request in document 21/74 for a joint submission from Operators setting out the specific details of the joint/common request, we now wish to jointly request that the terms of the current Temporary Spectrum Management Measures detailed in ComReg 20/88 (D08/20) are extended unchanged.

Each Operator will in addition make a separate submission to ComReg giving the details of their network traffic etc., supplying the information detailed in ComReg 21/74 paragraphs 40 A-G.

We will continue to work closely with ComReg through your ongoing network industry forum and through the supply of any required information. We assure you of our ongoing commitment to supporting the changed economy in Ireland and request that you proceed to consider our application as soon as possible.

Sincerely,

Robert Finnegan
CEO, Three.



Three Ireland (Hutchison) Limited.
Registered Office:
28/29 Sir John Rogerson's Quay,
Dublin 2, Ireland.

22nd July 2021

Joseph Coughlan
Commission for Communications Regulation
1 Dockland Central
Guild Street
Dublin 1
D01 E4X0

Dear Joseph

Temporary Spectrum Measures – Document 21/74

This letter, together with the accompanying annex is Three's response to ComReg's consultation document 21/74 which considers the requirement for temporary spectrum licences beyond their expiry in October 2021. The annex attached provides the more detailed information requested by ComReg (the Section 2.2 information) some of which is confidential, and I note that a common letter is being sent by the CEOs of the three mobile network operators in parallel to the individual responses.

Overall, we note that the temporary spectrum licences have played a significant role in helping network operators to meet increased demand for services (particularly in less urban areas) that has come about specifically as a result of the decisions taken at central government to combat the spread of Covid-19. At various times and different levels of restriction over the last 17 months the temporary licences have facilitated people in restricting their movement while continuing to carry out day to day activities in a modified way. In this way the temporary licences have been an important contributor to the national effort to limit transmission of Covid-19.

While the vaccination programme is progressing well in Ireland, new mutations of the virus (like the Delta variant) have emerged which have higher transmissibility and we are now again seeing growth in the number of daily infections. This shows that we should remain prepared for further restrictions or other measures that might be taken by Government to limit transmission. The 700MHz spectrum in particular is important for this purpose as all three operators are in a position to use it to add capability to their networks. ComReg's proposal for the MBSA would see the relevant spectrum licenced from 14th February 2022, leaving a gap from when the current temporary licences expire in October. It is sensible and logical to provide for an extension of the current temporary licences in order to fill that gap in spectrum availability.

Yours Sincerely

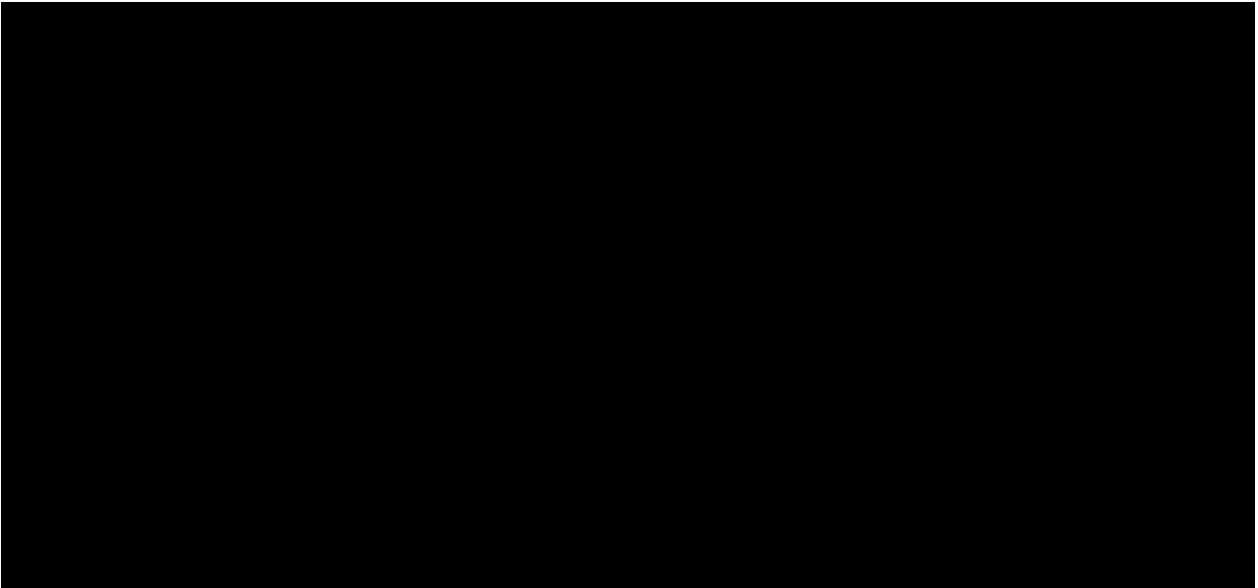
Tom Hickey

Extension to Temporary Spectrum - Part 2 Information

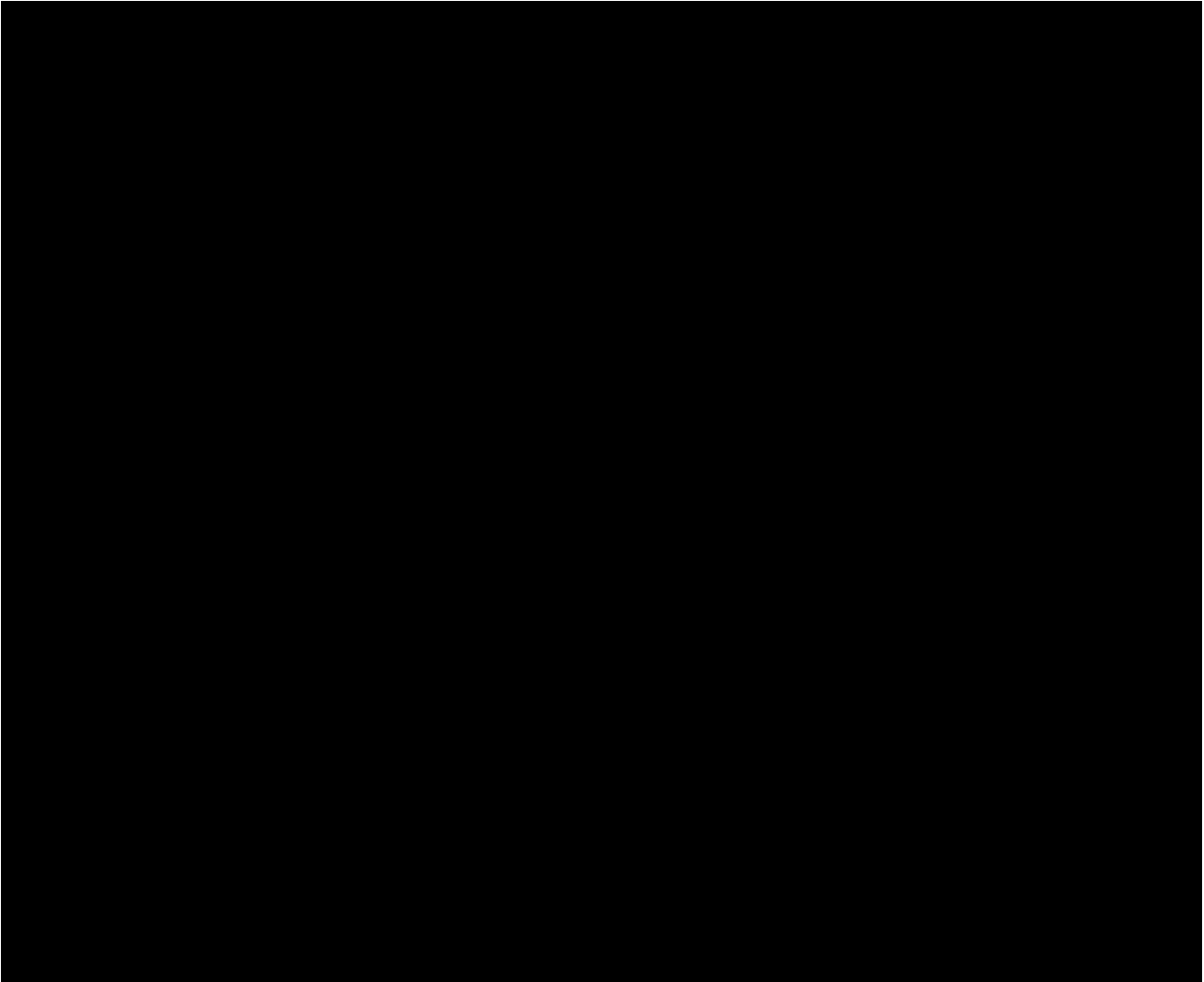
Please note that some of the information was recently provided to ComReg in June 2021 and has not changed materially in the meantime. This Part 2 information has been updated where relevant to reflect the future-looking purpose of the consultation.

1. Network and Capacity Information

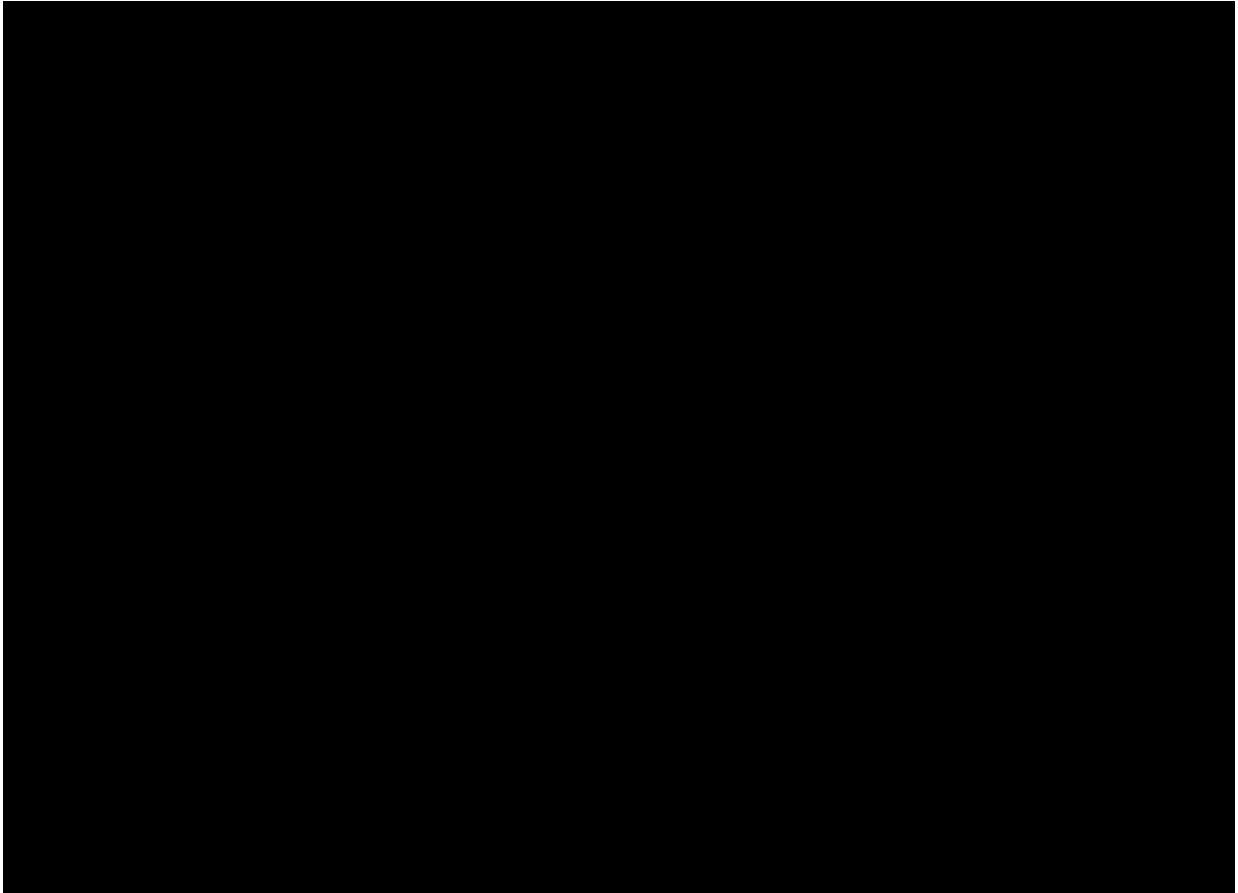
Voice traffic volumes remains elevated above our baseline level. Voice tends to peak at times coinciding with changes to the level of restrictions in place to combat Covid-19, as can be seen below.



For data traffic, the impact of Covid-19 restrictions is much more significant. As can be seen in the following two graphs, the increase in both busy hour and total daily traffic has been sustained throughout the different levels of restriction. While the traffic volumes have reduced somewhat and there is a return of some traffic to city-centre locations, data traffic has continued to out-grow forecasts and the geographical location of the traffic remains altered from what we would expect if restrictions were completely removed.



We are sharing with ComReg the current forecast which includes the impact of Covid-19 for data traffic on Three's network to the end of March 2022. It shows two trend-lines – our baseline forecast excluding Covid-19 effects and the adjusted forecast which assumes ongoing measures that restrict normal behaviour. While the uplift above forecast due to restrictions has reduced, it is still significant at [3<redacted>]. This forecast has been generated based on the level of restriction that is in place today as opposed to any potential future overall restriction or any particular one, e.g. schools closed or localised restrictions in some geographical area.



As can be seen, we anticipate ongoing growth in baseline traffic during 2021/2022, but we must also include the uplift in traffic resulting from Covid-19 restrictions which gives significant growth above our baseline. Normal network improvement measures (including the deployment of additional spectrum, equipment, and sites) can be expected to meet normal growth in demand. These increases need to be planned for in advance and take time to deliver. We do not believe it would be possible or practical to expand network capacity to meet the uplifted demand growth without access to the Temporary Licence for 700MHz. There is a layer to traffic demand which is still unpredictable at this time, including the location of that demand. Building new sites and rolling out equipment is both slow and expensive and it would not be practical or efficient at this time to try to reconfigure our network to meet a short-term remaining demand.

2. Sites and transmitters

At this time, Three has enabled 700MHz on over [3<Confidential ■■■] sites. We expect to deploy an additional number of sites to bring the total to [3<Confidential ■■■] sites by 31st March 2022.

3. How temporary rights have assisted with the provision of ECS in the state

The temporary spectrum licence has allowed Three to rapidly increase its network capacity in many of the areas that have experienced increased congestion arising from the changed demands brought about by Covid-19. When the Temporary Licences were first issued, we were able to

immediately deliver extra capacity to an important but limited number of sites, and we have been able to continually expand the number of sites that use 700MHz since then. Three has received its liberalised 2100MHz licences and we have not sought a temporary licence in the 2.6GHz band at this time, so our ongoing requirement is only for a temporary licence covering the 700MHz band. The 700MHz band is particularly important for users in suburban and rural areas where the 800MHz and 900MHz bands may be experiencing congestion as a result of the temporary shift in traffic.

In March 2020 when restrictions were first introduced and traffic patterns were changed, there was a reduction in overall end-user speed/quality. Even though the overall traffic continued to grow during the year, the Temporary Spectrum Measures allowed us to restore or locally improve throughput/quality. We conservatively estimate that the use of 700MHz under the Temporary Spectrum Licence on Three's network has significantly increased quality of service to over [§<Confidential [REDACTED]] users in sub-urban or rural areas. Withdrawal of the Temporary Spectrum Licence would mean a return to reduced quality of service for customers from Three, but also Virgin Media, Tesco Mobile, and LycaMobile.

When we hit the initial surge in both voice and data traffic we immediately began to make changes to our network to ensure continuity of best service. Measures we could undertake at that time included re-parenting to ensure the distribution of traffic load throughout the network reflects the new profile, and increasing core network capacity. Increasing capacity on the access network is a more difficult task as it involves use of new technology, more spectrum, more cells, or more sites in various locations within the country. The quickest means to increase capacity in a congested area is to introduce new technology or more spectrum on existing sites.

While we continually review the mix of technologies and spectrum available on all sites, it is difficult to make capacity gains without additional sites and equipment. We brought forward our spend on network capacity and also initially deferred building of 5G sites for a period so that we could focus our effort on 4G capacity. We have since rebalanced our effort between 4G and 5G roll out. While we made ongoing gains in network capacity through the normal process of upgrade, the deployment of 700MHz to date has brought significant benefits to customers who would not be so well covered by the higher frequency bands.

4. Risks to the provision and quality of existing ECS

There is a coordination procedure in place between the mobile networks, and also including Virgin Media and other operators where appropriate. Overall, our experience has been that the coordination procedure is working well and there are no significant issues that need to be addressed.

5. Risks in relation to non-renewal

At this time we continue to experience abnormal traffic demand on our network. There is a layer of traffic demand that has resulted from Government restrictions which are designed to prevent the spread of Covid-19 and the location of this demand is not consistent with our normal geographic profile. There has been something of a return to normal patterns as restrictions have

been removed, however there remains a significant alteration to demand on our network. In March last year when we witnessed the surge from the first measures, there was a deterioration in quality of service for some customers, but there was also new demand when some citizens tried to work from home for the first time. We have been able to bring working connectivity to some customers for the first time using the temporary spectrum, but to also quickly introduce capacity to meet new demand. If the temporary licences are not extended, we estimate that this would materially affect connectivity for approximately [3<Confidential ██████] users. This would bring the risk that many of those customers would no longer be able to work from home or connect to college lectures in compliance with public health guidance.

6. Actions required in relation to non-renewal

If the licences are not renewed, we there would be an immediate reduction in capacity, causing some currently well performing cells to become congested and others to suffer reduced quality. There are no quick remedies to this congestion as existing sites are already optimised for normal traffic patterns. In some cases it might be feasible to build new sites but this is generally a slow and expensive process and is not feasible in the short term or for short-lived traffic demand. If the licences are not extended Three would be required to again re-focus its effort away from its 5G service roll-out to try to mitigate network issues where that is possible. This would have a negative impact overall on the development of 5G service in Ireland. Three intends to apply to use 700MHz only, most harm would be in rural areas where we have been able to introduce 700MHz relatively quickly to meet the increased demand.

5 Virgin Media

From: Adrienne Costello [REDACTED]
Sent: 25 August 2021 10:22
To: Conor Berkeley
Cc: Blathin Harnett
Subject: RE: [Confidential] Further Temporary Spectrum Measures - Covid-19

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Hi Conor

Thanks for your email.

I can confirm that we are happy with the current 700MHz agreement and that it remains appropriate and relevant to our requirements.

Kind regards,
Adrienne

From: Conor Berkeley [REDACTED]
Sent: 18 August 2021 16:36
To: Adrienne Costello [REDACTED]
Subject: [Confidential] Further Temporary Spectrum Measures - Covid-19

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Adrienne,

I hope you are well. I am contacting you regarding the 700 MHz band and the agreed procedure between Virgin Media, the mobile operators and 2RN in relation to the rollout of MFCN in the 700 MHz band on a temporary basis as part of ComReg's Further Temporary Spectrum Measures frameworks.

As you will recall, in April 2021, ComReg issued licences to the MNOs under a further temporary spectrum framework as a result of the ongoing Covid-19 pandemic. These licences issued for a maximum period of 6 months. This further temporary licensing framework and the licences will expire on **1 October 2021**.

In light of the expiry of the existing temporary licensing framework (and licences) on 1 October 2021 and the potential continuance of the ongoing Covid-19 pandemic beyond that date, in July 2021 ComReg published [Document 21/74](#) Information Notice which set out guidance regarding the information requirements and next steps in considering any further temporary licensing framework beyond 1 October 2021. In August, ComReg received a common letter from the three MNOs requesting a further Temporary ECS Licensing framework and, separately, individual supporting information for same.

In considering the above, ComReg will shortly publish a consultation document setting out its proposals for a further temporary spectrum framework for a further 6 months from October 2021. In relation to the 700 MHz band, it is proposed that the current agreement remains in place with respect to the 700 MHz band between Virgin Media, the MNOs and 2RN, with regards to any further temporary spectrum measure framework.

Could I please request a response by email by **Wednesday 25th August**, to confirm that Virgin Media are content with the current 700 MHz agreement and that it remains appropriate and relevant to Virgin Media's requirements in relation to possible further temporary spectrum measures that may be implemented by ComReg?

I look forward to hearing from you soon.

Kind regards,
Conor

Conor Berkeley

Bainisteoir, Comhoiriúnacht & Forbairt Speictrim
Manager, Spectrum Compatibility & Development

An Coimisiún um Rialáil Cumarsáide

Commission for Communications Regulation

Uimh. a hAon Lárcheantar na nDugaí, Sráid na nGildeanna, BÁC 1, Éire, D01 E4X0
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Teil | [REDACTED]

Rphost | Email [REDACTED]

Suíomh | Website www.comreg.ie



An Coimisiún um
Rialáil Cumarsáide
Commission for
Communications Regulation



6 Vodafone Ireland Limited



21 July 2021

By Email: jeremy.godfrey@comreg.ie

Cc: garrett.blaney@comreg.ie; robert.mourik@comreg.ie

Jeremy Godfrey
Commissioner
Commission for Communications Regulation,
1 Dockland Central,
Guild Street,
Dublin 1,
D01 E4X0

Dear Jeremy,

Extension of Temporary Spectrum Assignments (Covid-19)

This common letter is sent from the CEOs of Ireland's three mobile network operators and is a follow-up to the previous letters from March and September of 2020 and February 2021 requesting ComReg to assign spectrum to the mobile networks on a temporary basis. ComReg responded positively to those requests by assigning spectrum on a temporary basis and all three network operators have been able to use the resulting temporary licences to the benefit of their customers. In the face of the ongoing exceptional circumstances arising from the Covid-19 pandemic the purpose of this letter is to request further extension of the temporary licences in accordance with ComReg 21/74.

Introduction

Just like many countries around the world, Ireland has experienced a massive shock. The health measures necessary to prevent spread of Covid-19 have forced us all to change our home life and work life massively. We have been reminded of the importance of modern communications networks and they have played a pivotal role in allowing people to continue work while staying at home but also to maintain vital connectivity for social purposes.

While Ireland has made considerable progress in administering vaccines, the emergence of new variants of Covid continues to create challenges, preventing us from returning to our pre-covid patterns of work, education, and social lives. Quoted in the Irish Times July 1st Dr Tony Holohan has warned that "A concerning increase in recent Covid-19 infections driven by the Delta variant indicates a fourth wave of the pandemic is now beginning in Ireland", and also in this month both the Netherlands and France have re-imposed Covid restrictions that had been relaxed. Unfortunately, it is clear we face a further period of uncertainty.

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Directors: Anne O'Leary (CEO), Liam O'Brien & Brice Evin (France)

Changed Practices

The change to working practice, the move to online education, and the change to social interaction that was forced upon us over the last 18 months have had dramatic effects on the patterns of demand for mobile service in Ireland. Mobile networks have contributed strongly towards supporting this change in the quantity and location of offered traffic by rapidly changing our network build plans supporting the changing traffic patterns, often to support traffic in commuter towns and in rural areas.

In the coming months we continue to face further uncertain changes in traffic patterns. While it is hoped that the situation will improve in the coming months such that the Government can reduce some of the restrictions, e.g. pupils will return to school and some return to office workplaces, the timing of any changes remains uncertain. Supporting customers through this changing demand will only be possible through further investment in networks including mobile networks, particularly in the rural areas that do not currently have sufficient connectivity. It is impossible to predict where local surges may occur, so service providers must prepare on the basis that they could be anywhere.

Spectrum Licensing is Critical

The Temporary Spectrum Licences first issued by ComReg in April 2020 have helped in an important way to meet the new demands placed on mobile networks. In mid-March 2020 when measures to prevent the spread of Covid-19 were announced all mobile operators experienced an immediate and significant growth in average and peak throughput for both voice and data. The physical location of the demand also changed – out of city centres to residential areas.

The rapid enactment of the Temporary Spectrum Measures by ComReg has allowed operators to support this traffic at performance measures similar to those achieved pre-Covid. As new infrastructure cannot be built at short notice, and as operators had already adjusted network configuration to the maximum extent, the Temporary Spectrum Measures have been crucial to giving mobile operators flexibility to mitigate significant congestion in voice and data networks.

As we move forward in the coming months and the next phases of action dealing with Covid, it is important that ComReg should ensure that the current Temporary Spectrum Licences continue past the 30th September date of the current regulation. We ask that these measures are extended at least on the same basis as previously in three-monthly periods.

This will enable operators to build capacity in the different locations required and, importantly, to invest efficiently. Building new sites to cope with any short-term demand in advance of the planned Spectrum auction would be extremely inefficient.

We acknowledge that ComReg has stressed that any temporary licensing framework is intended solely to address the exceptional and extraordinary situation presented by COVID-19 and that it is entirely without prejudice to the award of long-term rights of use in these spectrum bands in its proposed multi-band spectrum award.

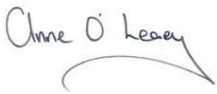
The mobile operators have worked closely with ComReg and Government in supplying ongoing information on network stability and traffic. In using the temporary rights we have also carefully managed the risks to the provision and quality of existing ECS through careful co-ordination with other radio spectrum users and cable companies. We are confident that we can maintain this high level of cooperation through an extended Temporary Licence period.

Noting ComReg's request in document 21/74 for a joint submission from Operators setting out the specific details of the joint/common request, we now wish to jointly request that the terms of the current Temporary Spectrum Management Measures detailed in ComReg 20/88 (D08/20) are extended unchanged.

Each Operator will in addition make a separate submission to ComReg giving the details of their network traffic etc., supplying the information detailed in ComReg 21/74 paragraphs 40 A-G.

We will continue to work closely with ComReg through your ongoing network industry forum and through the supply of any required information. We assure you of our ongoing commitment to supporting the changed economy in Ireland and request that you proceed to consider our application as soon as possible.

Yours sincerely

A handwritten signature in black ink that reads "Anne O'Leary". The signature is written in a cursive style with a long, sweeping underline that extends to the right.

Anne O'Leary
CEO
Vodafone Ireland

Vodafone specific information in response to **Information Notice ComReg 21/74** :

“COVID-19: Potential Further Temporary ECS Licensing

July 2021 update and next steps in considering any further temporary licensing framework”

Vodafone have worked with the other operators to produce a joint/common request from our CEOs to ComReg to extend the the Temporary ECS Licensing framework. This common request letter has been sent from our CEO to ComReg. In addition to the common letter we are supplying the Vodafone specific information below as requested in ComReg 21/74.

40 A Network traffic / capacity / performance information

- (i) Available information regarding the traffic (voice and data), capacity and performance of the network considering the temporary and extraordinary situation arising from COVID-19. In particular, the changes in network traffic (voice and data), capacity and performance from pre-COVID-19 until now.

Date	Jan 20	Nov 20	Jun 21	change Jan 2020 to Nov 2020	change Nov 2020 to June 2021	Total Change Jan 20 to June 21
Voice						
3G Voice Traffic [Erl]						
3G Speech Call Setup Failure Rate [%]						
Data						
4G DL Traffic Volume [GB]						
4G UL Traffic Volume [GB]						
4G ERAB Drop Rate [%]						
4G Init ERAB Establishment Success Rate [%]						

The table above shows clearly the very significant increase in traffic experience since Jan 2020. For example, the 4G downlink traffic has increased by [REDACTED]. This is approx. double the increase we planned for pre-Covid.

It is good to note also that the key metrics measuring network capacity and performance have remained stable over the period, indicating that by using these additional Measures effectively we have maintained excellent network quality while coping with this increased demand.

In addition to this overall increase figure there has been a marked movement in traffic from city centre area to suburban and rural areas and to time-of-day traffic patterns in these areas.

- (ii) information on the expected traffic demand and network capacity beyond 1 October 2021; and
- (iii) observations on how much of the changes in traffic and capacity is due to forecasted annual changes that would be expected on a network in the normal course (accounting for seasonal changes and projected market developments in the absence of COVID-19) and those that can reasonably be considered to be directly related to Government COVID-19 measures.

We have estimated that over the past year the change in network traffic is approximately [REDACTED]
[REDACTED]

In the table above we have included a comparison of Nov 2020 v June 2021 traffic. It is interesting to note that data traffic has continued to grow strongly in this period. It is apparent that data traffic is continuing to grow in excess of old /normal patterns. It is also becoming apparent that post Covid traffic profile and patterns cannot be expected to return to or mirror pre Covid patterns. The acceleration of Remote working and access to online services is a growing reality that needs to be managed by Mobile Network Operators

While it is very difficult to predict how a change in Covid measures might affect future growth in the six months post September 30th we now fully expect traffic growth to considerably exceed the [REDACTED] growth in our pre Covid plan. In addition to uncertainty in overall traffic volume there is uncertainty in where traffic will be delivered as it is now unclear how quickly workers will return to office environments.

B. Ability to make use of existing temporary spectrum assignments in any further Temporary ECS Licensing framework

- (i) information regarding the number, locations and deployment dates of sites/transmitters per spectrum band that have actually been used to date using temporary ECS rights of use, indicating the terrestrial system(s) (e.g. LTE) supported; and
- (ii) information on the number of sites/transmitters per band that would be expected to be used over the duration of any further temporary licensing framework indicating the terrestrial system(s) (e.g. LTE) being supported

See separate spreadsheet.

C. How temporary rights have assisted with the provision of ECS in the State

Information on how existing temporary rights have assisted in alleviating the network capacity/performance constraints to-date. Please provide:

- a. information on the percentage of network traffic (voice and data) carried by temporary spectrum rights for the each of the 700 MHz band and 2.1 GHz bands; and
- b. information highlighting trends where the network capacity/network performance improvements are correlated to use of temporary ECS rights of use. For example, when temporary ECS rights of use were brought into use the network / capacity improvements observed at these times.
- (iii) Information on how temporary rights may materially assist over the duration of any further Temporary ECS Licensing framework, noting that where a Licensee has applied for and been granted a 2.1 GHz Band Liberalised Use licence, information on the 2.1 GHz band should not be included.

As described in 1 above the Covid emergency has driven demand for added capacity in hundreds of sites where we did not expect to have to build capacity.

The additional spectrum, and liberalisation of 2100MHz band, has enabled us to add this capacity without the addition of new sites. Building new sites in this scale would not have been possible.

[REDACTED]
[REDACTED]. All of this site would be now experiencing significant congestion without the capacity added by the Temporary Measures.

Covid has also driven changes to our technology plan. We would have expected to build future capacity using 5G, but as many of our customers do not yet have 5G device we have had to build this capacity using 4G.

In the period November 2020 to February 2021 Traffic has continued to rise. This is evidence that the measure we have taken to increase capacity have worked and that we are not suppressing traffic through lack of capacity.

During the next six months we now plan to equip another [REDACTED] with 700MHz equipment in order to ensure we continue to match customer demand.

D. Managing the risks to the provision and quality of existing ECS given the use of the temporary spectrum rights

- (i) information regarding the management of risks to the provision and quality of existing ECS and the measures taken to date by the MNO. For example, the key measures taken on foot of Annex 4 of Document 20/27 - 700 MHz Coordination procedures.

In bringing our first 700MHz sites on-air, we coordinated closely with cable provider Virgin and DTT provider RTE to ensure that we did not affect existing services. Regular communication has continued with these operators and the other MNOs to ensure no interference with one another's services.

Separately the additional network capacity released to mobile operators by these measures has also facilitated the leasing of 3.5GHz spectrum to Fixed Wireless operators, improving the services they can provide.

- E. The risk of congestion and other disruption to consumer services and the locations where it would most likely arise in the event of no further Temporary ECS Licensing framework, identifying if such congestion or disruption would reasonably be considered to be due to COVID-19 matters or mobile market developments / commercial strategy matters.

If the Temporary measures are not renewed the capacity of many of our most busy network sites would be reduced significantly. Our customers would unfortunately experience extensive congestion, as we could not build new sites to replace this capacity quickly enough.

In terms of 700 and 2100. LTE Carrier Upgrades on these technologies have played a significant part in addressing key data congestion hot spots and helping us bring congestion back into manageable levels of customer experience,

The 700 layer has and continues to be particularly important in offloading/serving congested areas in Rural/Suburban Ireland. Without the 700 layer in particular, remote workers in congested areas of rural Ireland would face significant service issues.

[Redacted text block]

[Redacted text block]

These Temporary measures are extremely important in ensuring both Congestion and Service can be maintained for Customers in this new environment caused by the Covid-19 Pandemic

[Large redacted text block]

F. Details of the preparations and actions that the MNOs has taken and would need to take in the event of no further Temporary ECS Licensing framework

[REDACTED]

G. Any other factors that the MNOs deem relevant to the consideration of any further Temporary ECS Licensing framework

- [REDACTED] of Mobile Data in Rural Areas is now catered for by the 700 MHz layer, This layer is providing enhanced accessibility and data services to customers who would be seriously challenged in terms of data services in hard to reach rural locations without access to this 700 Layer,

- [REDACTED]

- [REDACTED]

Annex: 4 Draft licensing regulations



STATUTORY INSTRUMENTS.

S.I. No. of 2021

WIRELESS TELEGRAPHY (FURTHER TEMPORARY ELECTRONIC
COMMUNICATIONS SERVICES LICENCES) (NO. 3)
REGULATIONS 2021

S.I. No. of 2021

WIRELESS TELEGRAPHY (FURTHER TEMPORARY ELECTRONIC
COMMUNICATIONS SERVICES LICENCES) (NO. 3)
REGULATIONS 2021

The Commission for Communications Regulation, in exercise of the powers conferred on it by section 6(1) of the Wireless Telegraphy Act 1926 (No. 45 of 1926) as substituted by section 182 of the Broadcasting Act 2009 (No. 18 of 2009), and with the consent of the Minister for the Environment, Climate and Communications in accordance with section 37 of the Communications Regulation Act 2002 (No. 20 of 2002), (as adapted by the Communications, Climate Action and Environment (Alteration of Name of Department and Title of Minister) Order 2020 (S.I. No. 373 of 2020)) hereby makes the following Regulations:

Citation

1. These Regulations may be cited as the Wireless Telegraphy (Further Temporary Electronic Communications Services Licences) (No. 3) Regulations 2021.

Interpretation

2. (1) In these Regulations:

“2.1 GHz Band” means radio frequency spectrum in the range 1920 to 1980 MHz paired with radio frequency spectrum in the range 2110 to 2170 MHz;

“2.1 GHz Band Block” means a 5 MHz paired block of radio frequency spectrum in the 2.1 GHz Band;

“2.6 GHz Band” means radio frequency spectrum in the range 2500 to 2690 MHz;

“2.6 GHz Band FDD Frequency Generic Block” means a 5 MHz block of radio frequency spectrum in the range 2500 to 2570 MHz paired with a 5 MHz block of radio frequency spectrum in the range 2620 to 2690 MHz;

“2.6 GHz Band TDD Fixed Frequency Block (Lower)” means the 5 MHz unpaired block of radio frequency spectrum in the range 2570 to 2575 MHz;

“2.6 GHz Band TDD Fixed Frequency Block (Upper)” means a 5 MHz unpaired block of radio frequency spectrum in the range 2615 to 2620 MHz;

“2.6 GHz Band TDD Frequency Generic Block” means a 5 MHz unpaired block of radio frequency spectrum in the range 2575 to 2615 MHz;

“2.6 GHz Band Blocks” means the 2.6 GHz Band FDD Frequency Generic Blocks and the 2.6 GHz Band TDD Blocks;

“2.6 GHz Band TDD Blocks” means the 2.6 GHz Band TDD Fixed Frequency Block (Lower), 2.6 GHz Band TDD Fixed Frequency Block (Upper) and 2.6 GHz Band TDD Frequency Generic Blocks;

“700 MHz Duplex” means radio frequency spectrum in the range 703 to 733 MHz paired with radio frequency spectrum in the range 758 to 788 MHz;

“700 MHz Duplex Block” means a 5 MHz paired block of radio frequency spectrum in the 700 MHz Duplex;

“Act of 1926” means the Wireless Telegraphy Act 1926 (No. 45 of 1926);

“Act of 1972” means the Wireless Telegraphy Act 1972 (No. 5 of 1972);

“Act of 2002” means the Communications Regulation Act 2002 (No. 20 of 2002);

“Apparatus” in relation to Licences means apparatus for wireless telegraphy as defined in section 2 of the Act of 1926 for terrestrial systems capable of providing Electronic Communications Services;

“Authorisation Regulations” means the European Communities (Electronic Communications Networks and Services) (Authorisation) Regulations 2011 (S.I. No. 335 of 2011);

“Commission” means the Commission for Communications Regulation established under the Act of 2002;

“Decision of 2008” means European Commission Decision (2008/477/EC) of 13 June 2008 on the harmonisation of the 2500-2690 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community, as amended by European Commission Implementing Decision (EU) 2020/636 of 8 May 2020;

“Decision of 2012” means European Commission Implementing Decision (2012/688/EU) of 5 November 2012 on the harmonisation of the frequency bands 1920-1980 MHz and 2110-2170 MHz for terrestrial systems capable of providing electronic communications services in the Union, as amended by European Commission Implementing Decision (EU) 2020/667 of 6 May 2020;

“Decision of 2016” means European Commission Implementing Decision (EU) 2016/687 of 28 April 2016 on the harmonisation of the 694 -790 MHz frequency band for terrestrial systems capable of providing wireless broadband electronic communications services and for flexible national use in the Union;

“Electronic Communications Network” (“ECN”) and “Electronic Communications Service” (“ECS”) have the meanings assigned to them in the Framework Regulations;

“Equivalent Isotropically Radiated Power” (“EIRP”) means the product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna;

“FDD” means Frequency Division Duplex;

“Framework Regulations” means the European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2011 (S.I. No. 333 of 2011);

“Further Temporary Electronic Communications Services Licence (No. 3)” means a Licence in the form set out in Schedule 1 to keep and have possession of Apparatus, in accordance with and subject to the terms and conditions set out therein;

“Harmful Interference” has the meaning set out in the Framework Regulations;

“Lease” means the assignment by a Licensee (“the Lessor”) of some or all of a right of use for radio frequencies granted under a Licence for a period less than the remaining duration of the right of use to another party (“the Lessee”), after which the right of use for radio frequencies reverts to the Lessor;

“Licence” means a non-exclusive licence granted under section 5 of the Act of 1926 in accordance with and subject to the matters prescribed in these Regulations to keep and have possession of Apparatus in a specified place in the State, being a Further Temporary Electronic Communications Services Licence (No. 3);

“Licence Commencement Date” means the date, as specified in the Licence, upon which the Licence comes into effect;

“Licensee” means the holder of a Licence;

“Non-exclusive”, in relation to a Licence, means that the Commission is not precluded from authorising the keeping and having possession by persons other than the Licensee, on a Non-Interference and Non-Protected Basis, of apparatus for wireless telegraphy for the radio frequency spectrum specified in the Licence;

“Non-Interference and Non-Protected Basis” means that the use of apparatus for wireless telegraphy is subject to no Harmful Interference being caused to any Radiocommunication Service, and that no claim may be made for the protection of apparatus for wireless telegraphy used on this basis against Harmful Interference originating from Radiocommunication Services;

“Radio Equipment Regulations” means the European Union (Radio Equipment) Regulations 2017 (S.I. No. 248 of 2017);

“Radiocommunication Service” means a service as defined in the Radio Regulations of the International Telecommunication Union involving the transmission, emission or reception of radio waves for specific telecommunication purposes;

“TDD” means Time Division Duplex;

“Transfer” has the meaning set out in the Transfer Regulations;

“Transfer Regulations” means the Wireless Telegraphy (Transfer of Spectrum Rights of Use) Regulations 2014 (S.I. No. 34 of 2014); and

“Undertaking” has the same meaning set out in the Framework Regulations.

(2) A word or expression that is used in these Regulations and that is also used in the Act of 1926 has, unless the context otherwise requires, the same meaning in these Regulations that it has in that Act.

(3) A word or expression that is used in these Regulations and that is also used in the Act of 2002 has, unless the context otherwise requires, the same meaning in these Regulations that it has in that Act.

(4) A word or expression that is used in these Regulations and that is also used in the Framework Regulations or in the Authorisation Regulations has, unless the context otherwise requires, the same meaning in these Regulations that it has in those Regulations.

Licences to which these Regulations apply

3. These Regulations apply to Further Temporary Electronic Communications Services Licences (No. 3).

Application for the Grant and Form of Licences

4. (1) Application for the grant of a Licence shall be made by an Undertaking to the Commission in writing and in such form as may be determined by the Commission from time to time.

(2) The Commission may grant a Licence, following payment by the applicant of the relevant fee prescribed in Regulation 8, in accordance with the Authorisation Regulations and having regard to, among other things:

- (a) available information regarding the extraordinary situation arising from COVID-19 and, in particular, as it may reasonably affect Electronic Communications Networks and the provision of relevant Electronic Communications Services in the State;
- (b) available information regarding the impact of the extraordinary situation arising from COVID-19 upon the capacity of the Electronic Communications Network operated by the Undertaking, including the locations in the State where any capacity constraints are occurring or are likely to occur;
- (c) available information regarding how the rights of use of radio frequencies applied for by the Undertaking would reasonably and materially assist in alleviating the capacity constraints identified in connection with sub-paragraph (b), including the lead time for the Undertaking to effectively make use of such rights of use of radio frequencies;
- (d) available information regarding the risks to the provision of existing Electronic Communications Services, and the quality of such existing provision, by the Undertaking in making changes to its Electronic Communications Network to effectively make use of the rights of use of radio frequencies applied for;
- (e) the need to encourage the efficient use and ensure the effective management of the radio frequency spectrum; and
- (f) the Commission's obligations and objectives in relation to competition for the provision of Electronic Communications Networks and Electronic Communications Services.

(3) An Undertaking who applies for the grant of a Licence shall furnish to the Commission such information as the Commission may reasonably require for the purposes of its functions under these Regulations, the Act of 1926, the

Framework Regulations and/or the Authorisation Regulations, and if the Undertaking, without reasonable cause, fails to comply with this paragraph, the Commission may refuse to grant the Licence concerned to the Undertaking.

(4) A Licence to which these Regulations apply shall be in the form specified in Schedule 1, with such variation, if any, whether by addition, deletion or alteration as the Commission may determine from time to time or in any particular case in accordance with the Authorisation Regulations.

Duration of Licences

5. (1) The commencement date and expiry date of a Licence shall be set by the Commission and specified in the Licence.

(2) The duration of any Licence granted under these Regulations shall be up to but no longer than three calendar months.

(3) Upon application properly being made in accordance with Regulation 4, the Commission may renew a Licence granted under these Regulations for a further period of up to but no longer than three calendar months.

(4) Any Licence granted or renewed under these Regulations shall expire no later than 1 April 2022.

Conditions of Licences

6. Any Licensee that is granted a Licence under these Regulations and to which these Regulations apply shall:

- (a) ensure that it complies with the conditions in its Licence and with these Regulations;
- (b) ensure that any Apparatus in the 700 MHz Duplex complies with the Decision of 2016, any Apparatus in the 2.1 GHz Band complies with the Decision of 2012, and any Apparatus in the 2.6 GHz Band complies with the Decision of 2008;
- (c) ensure that all Apparatus installed, maintained, possessed or kept under the Licence is capable of operating within the radio frequency spectrum specified in the Licence;
- (d) ensure that all Apparatus worked or used under the Licence is worked or used only in the radio frequency spectrum specified in the Licence;
- (e) ensure that it makes payment of the fee set out in and in accordance with Regulation 8;
- (f) furnish such information in respect of the Licence as may be requested by the Commission from time to time;
- (g) ensure that all Apparatus, or any part thereof, is installed, maintained, worked and used so as not to cause Harmful Interference;

- (h) ensure that all Apparatus, or any part thereof, complies with the Radio Equipment Regulations;
- (i) comply with any special conditions imposed under section 8 of the Act of 1972;
- (j) upon becoming aware of any event likely to materially affect its ability to comply with these Regulations, or any conditions set out or referred to in any Licence, notify the Commission of that fact in writing no later than 5 Working Days upon becoming aware;
- (k) comply with all obligations under relevant international agreements relating to the use of Apparatus or the frequencies to which they are assigned under a Licence; and
- (l) not Transfer or Lease any rights of use for radio frequencies attaching to a Licence.

Enforcement, Amendment, Suspension and Withdrawal

7. (1) Enforcement by the Commission of compliance by a Licensee with conditions attached to its Licence shall be in accordance with the Authorisation Regulations.

(2) The Commission may amend a Licence from time to time in accordance with the Authorisation Regulations having regard to, among other things, the factors set out in Regulation 4(2), and by giving the Licensee 5 days' notice in writing.

(3) The Commission may suspend or withdraw a Licence in accordance with the Authorisation Regulations.

Licence Fees

8. (1) The fee for a Licence, or renewal of a Licence, is €100 and is non-refundable.

(2) Any payment to be paid by a Licensee under this Regulation shall be made by way of banker's draft or such other means and on such other terms, if any, as the Commission may decide.

Licensee to satisfy all legal requirements

9. Licences granted pursuant to these Regulations do not grant to the Licensee any right, interest or entitlement other than to keep, have possession of, install, maintain, work and use Apparatus at a specified location or locations in the State.

SCHEDULE 1

WIRELESS TELEGRAPHY ACT, 1926

WIRELESS TELEGRAPHY (FURTHER TEMPORARY ELECTRONIC COMMUNICATIONS SERVICES LICENCES) (NO. 3) REGULATIONS 2021

Further Temporary Licence (No. 3) for terrestrial systems capable of providing Electronic Communications Services

Licence under section 5 of the Act of 1926 to keep and have possession of apparatus for wireless telegraphy for terrestrial systems capable of providing Electronic Communications Services.

The Commission for Communications Regulation, in exercise of the powers conferred on it by section 5 of the Act of 1926 hereby grants the following licence to **[LICENSEE NAME]** of **[LICENSEE ADDRESS]** (“the Licensee”).

The Licensee is hereby authorised to keep and have possession of apparatus for wireless telegraphy for terrestrial systems capable of providing Electronic Communications Services as specified in Part 2 of this Licence, subject to such apparatus being installed, maintained, worked and used in accordance with the terms, conditions and restrictions set out in the Wireless Telegraphy (Further Temporary Electronic Communications Services Licences) (No. 3) Regulations 2021 (S.I. No. of 2021) (“the Regulations”), including but not limited to, the following:

(1) The Licensee shall ensure that it complies with all of the conditions contained within the Regulations and within Parts 1 to 4 of this Licence; and

(2) The Licensee shall ensure that it makes payment of the fee detailed in the Regulations.

For the purpose of this Licence, the definitions set out in the Wireless Telegraphy (Further Temporary Electronic Communications Services Licences) (No. 3) Regulations 2021 apply.

This Licence shall come in to effect on **DD/MM/YYYY** (the “Licence Commencement Date”) and, subject to revocation, suspension or withdrawal, expires on **DD/MM/YYYY**.

Signed: _____

For and on behalf of the Commission for Communications Regulation

Date of Issue _____

Part 1

Commencement and expiry dates of Spectrum Blocks

Authorised Band	Name of Spectrum Block	Frequency Assigned to Spectrum Block	Commencement Date per Spectrum Block	Expiry Date per Spectrum Block
<i>700 MHz Duplex, 2.1 GHz, 2.6 GHz, as appropriate</i>	<i>Block A, B, C etc.</i>	<i>From ——— MHz to ——— MHz</i>	<i>DD Month YYYY</i>	<i>DD Month YYYY</i>

Part 2

The Apparatus to which this Licence applies

Authorised Band	Equipment Index Reference	Terrestrial System	Equipment Description	Manufacturer	Model
<i>700 MHz Duplex, 2.1 GHz, 2.6 GHz, as appropriate</i>					

Part 3

Apparatus Location and Details

Authorised Band	Site Identity	Eastings	Northings	Equipment Index Reference	Maximum EIRP/ TRP (dBm/5MHz)
<i>700 MHz Duplex, 2.1 GHz, 2.6 GHz as appropriate</i>					

Part 4

Licence Conditions

Section 1: General

Harmful Interference

1. In the event of Harmful Interference, the affected Licensees shall exchange information with a view to resolving the Harmful Interference by mutual consent. Where resolution cannot be agreed between the affected Licensees, the Commission may mediate in accordance with its statutory functions, objectives and duties.

Section 2: Technical Conditions

Definitions

1. The following additional definitions shall apply to this Licence:

“2RN” means RTÉ Transmission Network DAC (trading as 2rn);

“Active Antenna Systems” or “AAS” means a Base Station and an antenna system where the amplitude and/or phase between antenna elements is continually adjusted resulting in an antenna pattern that varies in response to short term changes in the radio environment. This excludes long-term beam shaping such as fixed electrical down tilt. In AAS Base Stations the antenna system is integrated as part of the Base Station system or product;

“Non-Active Antenna Systems” or “non-AAS” means a Base Station and an antenna system that provides one or more antenna connectors, which are connected to one or more separately designed passive antenna elements to radiate radio waves. The amplitude and phase of the signals to the antenna elements is not continually adjusted in response to short term changes in the radio environment;

“Aeronautical Primary Radars” means apparatus (including “Star2000” and “TA10” models) providing primary aircraft detection used in airport surveillance networks at Dublin, Cork and Shannon airports;

“Base Station” means Apparatus connected to a backhaul network which provides a Radiocommunication Service to Terminal Stations using spectrum in the 700 MHz Duplex, 2.1 GHz Band or 2.6 GHz Band;

“Block Edge Mask” or “BEM” is an emission mask that is defined as a function of frequency in relation to a ‘block edge’, the latter being the frequency boundary of a spectrum block for which rights of use are assigned to a Licensee. The BEM consists of several elements which are defined for certain measurement bandwidths.

“dBm” means decibels of power referenced to one milliwatt;

“Downlink” means transmissions from a Base Station to a Terminal Station;

“IAA” means the Irish Aviation Authority;

“Inter-Licensee Synchronisation Procedure” means the synchronisation procedure set out in Section 3 of this Licence;

“MNO” means a mobile network operator with an existing network in Ireland;

“Power Flux Density limit” or pfd limit (dBW/m²) equals the interference threshold at radar receiver input (measured in dBW) minus the radar antenna gain (measured in dBi) plus $10 \log(4\pi/\lambda^2)$, where λ is the wavelength in meters;

“TD-LTE” means the TDD variant of LTE (Long Term Evolution) technology;

“TRP” (total radiated power) is a measure of how much power the antenna actually radiates and is defined as the integral of the power transmitted in different directions over the entire radiation sphere;

“Terminal Station” means mobile user equipment and fixed customer premise equipment which communicates with a Base Station using spectrum in the 700 MHz Duplex, 2.1 GHz Band or 2.6 GHz Band;

“Uplink” means transmissions from a Terminal Station to a Base Station; and

“Virgin Media” means Virgin Media Ireland Limited.

Technical Conditions

2. The 700 MHz Duplex

- (a) Only terrestrial systems compatible with the Decision of 2016 can be worked and used in the 700 MHz Duplex.
- (b) The FDD mode of operation shall be used in the 700 MHz Duplex. The duplex spacing shall be 55 MHz with Terminal Station transmission (FDD uplink) located in the lower frequency band 703-733 MHz and Base Station transmission (FDD downlink) located in the upper frequency band 758 -788 MHz.
- (c) The Licensee shall comply with all Memoranda of Understanding (‘MoU’)¹ agreed between the Commission and its neighbouring national regulatory authorities responsible for communications matters, in particular the Office of Communications (“Ofcom”) in the UK, or its successor, in relation to the 700 MHz Duplex.
- (d) The Licensee shall comply with the 700 MHz Coordination Procedures as agreed to by the MNOs, 2RN and Virgin Media on 3 April 2020 and published by the Commission on 7 April 2020 as Annex 4 to Commission Document 20/27.

¹ Memorandum of Understanding on frequency coordination between Ireland and the United Kingdom concerning the spectrum coordination of Land Mobile Radio Communication Networks in the frequency range 703 MHz to 2690 MHz, available at www.comreg.ie

Base Stations

- (e) Within a 700 MHz Duplex Block assigned to the Licensee, the in-block power from a Base Station must not exceed a maximum mean EIRP of 64 dBm/5 MHz per antenna.
- (f) Outside of the 700 MHz Duplex Block(s) assigned to the Licensee, the Licensee shall comply with the out-of-block BEM as specified in Section B of the Annex of the Decision of 2016.

Terminal Stations

- (g) The maximum mean in-block power limit of 23 dBm for Terminal Stations shall apply².
- (h) The out-of-block technical conditions set out in Table 10 to Table 12 of the Annex to the Decision of 2016 shall apply.
- (i) Where a Licensee holds more than 2×10 MHz in the 700 MHz Duplex and if this assignment is deployed starting at 703 MHz, the licensee shall not deploy a bandwidth greater than 10 MHz for Terminal Stations in order to meet the conditions as set out in Table 12 of the Annex to the Decision of 2016 to provide protection to the frequency range 470 - 694 MHz.

3. The 2.1 GHz Band

- (a) Only terrestrial systems compatible with the Decision of 2012 can be worked and used in the 2.1 GHz Band.
- (b) The duplex mode of operation shall be FDD. The duplex spacing shall be 190 MHz with Terminal Station transmission (FDD uplink) located in the lower part of the band starting at 1920 MHz and finishing at 1980 MHz and Base Station transmission (FDD downlink) located in the upper part of the band starting at 2110 MHz and finishing at 2170 MHz.
- (c) The Licensee shall comply with all MoU³ between the Commission and its neighbouring national regulatory authorities responsible for communications matters, in particular the Office of Communications (“Ofcom”) in the UK, or its successor, in relation to the spectrum in the 2.1 GHz Band.

Base Stations

² This power limit is specified as EIRP for Terminal Stations designed to be fixed or installed and as total radiated power (TRP) for Terminal Stations designed to be mobile or nomadic. This value is subject to a tolerance of up to + 2 dB, to take account of operation under extreme environmental conditions and production spread.

³ Memorandum of Understanding on frequency coordination between Ireland and the United Kingdom concerning the spectrum coordination of Land Mobile Radio Communication Networks in the frequency range 703 MHz to 2690 MHz, available at www.comreg.ie

- (d) Within a 2.1 GHz Band Block assigned to the Licensee, the in-block radiated power from a Base Station transmitter in the downlink direction must not exceed:
 - (i) an EIRP of 64 dBm/5 MHz per antenna for non-AAS; and
 - (ii) a TRP limit of 57 dBm/5MHz per cell for AAS.
- (e) Outside of the 2.1 GHz Band Block(s) assigned to the Licensee, the Licensee shall comply with the out-of-block BEM as specified in Section C of the Annex to the Decision of 2012.

Terminal Stations

- (f) The maximum mean in-block power limit over frequencies of FDD Uplink of 24 dBm for Terminal Stations shall apply⁴.

4. The 2.6 GHz Band

- (a) Only terrestrial systems compatible with the Decision of 2008 can be worked and used in the 2.6 GHz Band.
- (b) Within the 2.6 GHz Band FDD Generic Frequency Blocks, the duplex mode of operation is FDD, where the duplex spacing shall be 120 MHz with terminal station transmission (Uplink) located in the lower part of the band starting at 2500 MHz (extending to 2570 MHz) and base station transmission (downlink) located in the upper part of the band starting at 2620 MHz.
- (c) Within the 2570 - 2620 MHz frequency range of the 2.6 GHz Band, the modes of operation permitted in accordance with the Decision of 2008 are:
 - (i) TDD;
 - (ii) Base Station transmission only; and
 - (iii) Terminal Station transmission only.
- (d) To achieve coexistence of adjacent FDD and TDD networks:
 - (i) the 2.6 GHz Band TDD Fixed Frequency Block (Lower) is a restricted spectrum block as described in the Annex of the Decision of 2008; and
 - (ii) the 2.6 GHz Band TDD Fixed Frequency Block (Upper) may be utilised in accordance with the Decision of 2008 noting that it may suffer an increased risk of interference due to the emissions from the FDD downlink.
- (e) Licensees assigned 2.6 GHz Band TDD Blocks shall comply with the Inter-Licensee Synchronisation Procedure set out in Section 3 of this Licence.

⁴ This power limit is specified as EIRP for terminal stations designed to be fixed or installed and as TRP for terminal stations designed to be mobile or nomadic. EIRP and TRP are equivalent for isotropic antennas. It is recognised that this value may be subject to a tolerance defined in the harmonised standards to take account of operation under extreme environmental conditions and production spread.

- (f) The Licensee shall comply with all MoU⁵ between the Commission and its neighbouring national regulatory authorities responsible for communications matters, in particular the Office of Communications (“Ofcom”) in the UK, or its successor, in relation to spectrum in the 2.6 GHz Band.

Base Stations

- (g) Within any 2.6 GHz Band FDD Generic Frequency Blocks, any 2.6 GHz Band TDD Generic Frequency Blocks, and the 2.6 GHz Band TDD Fixed Frequency Block (Upper)⁶ assigned to a Licensee, the in-block radiated power from a Base Station transmitter must not exceed an upper limit of:
- (i) 68 dBm/5 MHz per antenna for Non-AAS; and
 - (ii) 60 dBm/5 MHz per cell for AAS.
- (h) Within the 2.6 GHz Band TDD Fixed Frequency Block (Lower), assigned to a Licensee, the in-block radiated power from a Base Station transmitter in the downlink direction must not exceed a mean in-block power of:
- (i) 25 dBm/5 MHz EIRP per antenna for Non-AAS; and
 - (ii) 22 dBm/5 MHz TRP limit per cell for AAS.
- (i) Outside of any 2.6 GHz Band FDD Generic Frequency Blocks assigned to the Licensee, the Licensee shall comply with the out-of-block BEM which is built up by combining Tables 2, 3 and 4 of Section C of the Annex of the Decision of 2008, in such a way that the limit for each frequency is given by the higher value out of the baseline and the in-block power limits.
- (j) Outside of the 2.6 GHz Band TDD Fixed Frequency Block (Lower), any 2.6 GHz Band TDD Generic Frequency Blocks and the 2.6 GHz Band TDD Fixed Frequency Block (Upper) assigned to a Licensee, the Licensee shall comply with the Inter Licensee Synchronisation procedure set out in Section 3.
- (k) Outside of the 2.6 GHz Band TDD Fixed Frequency Block (Lower) and where Base Station antennas are placed indoors, the BEM for Non-AAS may be in line with Table 6 of Section C of the Annex of the Decision of 2008, provided that at geographical borders to other Member States, Table 3 of Section C of the Annex of the Decision of 2008 applies and that Table 5 of Section C of the Annex of the Decision of 2008 remains valid nationwide.

⁵ Memorandum of Understanding on frequency coordination between Ireland and the United Kingdom concerning the spectrum coordination of Land Mobile Radio Communication Networks in the frequency range 703 MHz to 2690 MHz, available at www.comreg.ie

⁶ The 2.6 GHz Band TDD Fixed Frequency Block (Upper), which is immediately adjacent to the FDD downlink, may suffer an increased risk of interference due to the emissions from the FDD downlink.

- (l) Unless otherwise agreed between the Licensee and the IAA in writing, the Licensee shall ensure protection of all Aeronautical Primary Radars⁷, by:
- (i) deploying Base Stations outside of exclusion zones defined in Figures 4.3, 4.5, 4.6 and 5.3 of the Plum Report (Commission Document 19/124c)⁸; and
 - (ii) complying with the relevant Power Flux Density (pfd) limits with respect to:
 - I. the STAR2000 radars with locations as set out in Chapter 3 of Commission Document 19/59c⁹ as follows:
 - A. an out-of-band Base Station pfd limit of -145 dBW/m²/MHz per operator to address impact of spurious MFCN emissions at the radar antenna; and
 - B. an in-band Base Station pfd limit of -83 dBW/m² per operator, to address the impact of blocking and intermodulation effects at radar receivers.
 - II. the TA10 radar with a location as set out in Chapter 5 of Commission Document 19/124c¹⁰ as follows:
 - A. an out-of-band Base Station pfd limit of -156 dBW/m²/MHz per operator to address the impact of spurious MFCN emissions at the radar antenna; and
 - B. an in-band Base Station pfd limit of -93 dBW/m² per operator, to address the impact of blocking and intermodulation effects at radar receivers.
- (m) For deployments in compliance with condition (l) above, the Licensee shall nominate a point of contact for coordination with the IAA and provide written notification to the IAA of any 2.6 GHz Band deployments at least 48 hours in advance of their deployment, and provide such information on any 2.6 GHz Band deployments as may reasonably be required by the IAA, including information on antenna height, antenna orientation, and predicted coverage plots.

Terminal Stations

- (n) The maximum mean in-block power (including Automatic Transmitter Power Control range) of:

⁷ Aeronautical radar locations (Dublin, Shannon and Cork) and technical parameters are detailed in Plum Report, Commission Documents 19/59c and 19/124c, available at www.comreg.ie

⁸ Shape files (.SHP) representing these figures are available at www.comreg.ie

⁹ Commission Document 19/59c, available at www.comreg.ie

¹⁰ Commission Document 19/124c, available at www.comreg.ie

- (i) 35 dBm/5 MHz EIRP; and
 - (ii) 31 dBm/5 MHz TRP,
- shall apply to Terminal Stations¹¹.

Section 3: Inter-Licensee Synchronisation Procedure

This Section 3 applies only to Licensees who have been assigned 2.6 GHz Band TDD Blocks.

Definitions

1. The following additional definitions shall apply in this section:

“Default Frame Structure” means the frame structure as detailed in detailed in 3(1) below;

“Indoor Small Cell” means either a Non-AAS Base Station with an EIRP of less than or equal to 24 dBm per 20 MHz carrier or an AAS Base Station with a TRP of less than or equal to 16 dBm per 20 MHz carrier that is located indoors either within a residential or non-residential property;

“Other Frame Structure” means a frame structure other than the Default Frame Structure;

“Restrictive BEM” means, for Licensees utilising the Other Frame Structure (or failing to synchronise with adjacent channel networks for any other reason): for any 2.6 GHz Band TDD Blocks assigned to a Licensee, a restrictive BEM is given by combining Table 3 and either Table 2¹² or Table 5¹³ as appropriate in Section C of the Annex of the Decision of 2008, in such a way that the limit for each frequency is given by the higher value out of the baseline and the in-block power limits applies;

“Unrestrictive BEM” means Operators utilising the Default Frame Structure on their network (and having a common reference phase clock with adjacent channel operators¹⁴): for any 2.6 GHz Band TDD Blocks assigned to a Licensee, a BEM given by combining Table 2¹² or Table 5¹³ as appropriate, Tables 3 and 4 of Section C. of the Annex of the Decision of 2008, in such a

¹¹ EIRP should be used for fixed or installed terminal stations and the TRP should be used for the mobile or nomadic terminal stations. TRP is a measure of how much power the antenna actually radiates. The TRP is defined as the integral of the power transmitted in different directions over the entire radiation sphere.

¹² For 2.6 GHz Band TDD Generic Frequency Blocks and the 2.6 GHz Band TDD Fixed Frequency Block (Upper)

¹³ For the case of 2.6 GHz Band TDD Fixed Frequency Block (Lower)

¹⁴ Each operator needs to ensure the start of frame is aligned with adjacent channel operators above and below its assignment

way that the limit for each frequency is given by the higher value out of the baseline and the in-block power limits applies;

Introduction

2. (1) Licensees assigned 2.6 GHz Band TDD Blocks shall be bound by the inter-Licensee synchronisation procedure set out in this Section 3.

(2) Licensees shall co-operate in such a way that one network deployment within spectrum in the 2.6 GHz Band does not cause Harmful Interference to that of another Licensee.

(3) This procedure sets out the circumstances in which Licensees may use the Unrestrictive BEM and the Restrictive BEM, so as to minimise the risk of Harmful Interference to other Licensees.

Conditions for using the Unrestrictive BEM

3. Default Frame Structure - The technical conditions for Unrestrictive BEM shall apply where a Licensee's Base Station complies with the Default Frame Structure outlined below:

- (a) Transmissions from a Licensee's Base Station(s) shall have a frame structure as shown in Table 1. Indicated timeslots (or subframes) must not be allocated to anything other than Downlink (D) and Uplink (U) transmissions. 'S' denotes a special subframe. TD-LTE frame configuration 2 (Downlink: Uplink, 3:1) with special subframe configuration 6 or equivalent frame structures whose transmit and receive periods are aligned with this configuration are permitted;
- (b) Timeslots shall have a duration of 1 millisecond; and
- (c) Licensees shall ensure that frames start at a common reference time ($\pm 1.5 \mu\text{s}$) so that all Licensees' frames are aligned and transmissions synchronised.

DL/UL ratio	Timeslot or Subframe number									
	0	1	2	3	4	5	6	7	8	9
3:1	D	S	U	D	D	D	S	U	D	D

Table 1: Default Frame Structure

Conditions for using the Restrictive BEM

4. Other Frame Structure — the technical conditions for Restrictive BEM shall apply where a Licensee's Base Station complies with the Other Frame Structure as outlined below:

- (a) All frame configurations that are not compatible with TD-LTE frame configuration 2 (3:1) with special sub-frame configuration 6 or equivalent frame structure whose transmit and receive periods are aligned with this configuration are permitted;
- (b) Licensees shall co-operate to minimise Harmful Interference caused by sub-frame overlaps if different technologies are used; and
- (c) Licensees using the Restrictive BEM shall not cause Harmful Interference to those Licensees' networks that use the Default Frame Structure (or equivalent). Achieving this may include applying internal guard bands and/or reduced in block power levels in blocks adjacent to those Licensees' networks that use the Default Frame Structure (or equivalent).

Indoor Small Cells

5. Indoor Small Cells for indoor domestic and other indoor locations are permitted to operate under the Unrestrictive BEM on the condition that they do not cause Harmful Interference to any other Licensees.

Section 4: Coverage Requirements

1. Coverage at specific locations in the State

Coverage	Location	Obligation
Outdoors	Specific locations in relation to the extraordinary situation arising from COVID-19 as may be determined from time to time by the Government and communicated to the Commission by the Department of the Environment, Climate and Communications	Best efforts using all rights of use available to the Licensee

Table 1: Outdoor coverage obligations at specific locations in relation to the extraordinary situation arising from COVID-19

GIVEN under the official seal of the Commission for Communications Regulation,
 day of 2021

For and on behalf of the Commission for Communications Regulation

The Minister for the Environment, Climate and Communications, in accordance with section 37 of the Communications Regulation Act, 2002, (as adapted by the Communications, Climate Action and Environment (Alteration of Name of Department and Title of Minister) Order 2020 (S.I. No. 373 of 2020)) consents to the making of the foregoing Regulations.

GIVEN under the Official Seal of the Minister for the Environment, Climate and Communications,

day of 2021

EAMON RYAN

Minister for the Environment, Climate and Communications

EXPLANATORY NOTE

(This note is not part of the Instrument and does not purport to be a legal interpretation.)

These Regulations prescribe matters in relation to the further temporary licences (No. 3) for apparatus for wireless telegraphy for terrestrial systems capable of providing Electronic Communications Services in the 700 MHz Duplex, the 2.1 GHz, the 2.6 GHz Bands to address the temporary impact upon Electronic Communications Networks and Electronic Communications Services from the extraordinary situation arising from COVID-19.

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