



An Coimisiún um
Rialáil Cumarsáide
Commission for
Communications Regulation

COVID-19: Temporary spectrum management measures

Further temporary spectrum rights in the 700 MHz, 2.1 GHz and 2.6 GHz Bands

Consultation and Draft Decision including Draft Regulations

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Chapter 1

1 Introduction

- 1.1 This document sets out the Commission for Communication Regulation's ("ComReg") proposals to implement a further temporary electronic communications service ("ECS") licensing framework given the temporary and extraordinary situation presented by COVID-19¹ and the measures taken by the Irish Government since March 2020² (hereinafter termed the "Temporary Situation") (the "Proposed Approach") and invites submissions on those proposals.
- 1.2 The Temporary Situation has resulted in the provision of voice and data services becoming more important to the day to day life and working arrangements of many people, with these services being used extensively to stay in contact with relatives and friends and to remote work and learn from home.
- 1.3 The swiftness and impact of the March 2020 Government measures resulted in significant changes to the normal traffic levels and patterns of certain electronic communications networks ("ECNs") in Ireland, with overall voice traffic increasing by 30-60% while data traffic grew by 20-25% at that time.
- 1.4 While the level of these aggregate traffic increases for Mobile Network Operators (MNOs) has normalised to some extent, the impact of the COVID-19 measures, including their sometimes localised nature³, continues to present increased traffic demands for the MNOs and other wireless network operators, as outlined in Chapter 2 and 3 of this document.

¹ COVID-19 is a new illness that can affect your lungs and airways and is caused by a virus called coronavirus.

² In March 2020, the Irish Government announced a suite of measures to tackle the extraordinary situation arising from the spread of COVID-19 in Ireland, including:

- the closing of schools, colleges and childcare facilities;
- the cancelation of large public gatherings;
- the closure of all public houses;
- requiring people to stay at home except in specific circumstances, such as "travel to and from work, or for purposes of work, only where the work is an essential health, social care or other essential service and cannot be done from home."
- encouraging people to work from home where possible.

Since then, the Government has continued to revise its advice and measures to reflect developments relating to COVID-19. See section 2.1 below for further details.

³ For example, ComReg is aware that some mobile operators observed demand spikes in Counties Kildare, Laois and Offaly during recent restrictions.

- 1.5 In March and April 2020, ComReg consulted upon⁴ and swiftly put in place a licensing framework⁵ (with the consent of the Minister for Communications, Climate Action and Environment (“the Minister”)) to provide for the temporary assignment of:
- additional spectrum rights of use in the 700 MHz Duplex and 2.6 GHz Band; and
 - liberalised spectrum rights of use in the 2.1 GHz Band, as this band is otherwise currently licensed for 3G-use only.
- 1.6 This temporary assignment was for an overall period of up to 6 months based on a 3-month initial period with the potential for a renewal for the remaining period up to 7 October 2020.
- 1.7 All three MNOs (Meteor Mobile Communications Limited (“Meteor”), Three Ireland (Hutchison) Limited (“Three”) and Vodafone Ireland Limited (“Vodafone”)), applied for and were granted an initial Temporary ECS Licence and a renewal of same for spectrum rights in the 700 MHz and 2.1 GHz bands.
- 1.8 These temporary licences have enabled each of the MNOs to provide additional capacity to meet the heightened traffic demands for voice and data services arising from the Temporary Situation.
- 1.9 In light of the expiry of the existing framework on 7 October 2020, and the separately communicated requests from the MNOs for ComReg to put in place a further Temporary ECS Licensing framework beyond this expiry date, ComReg, in Document 20/64⁶, set out guidance regarding its likely information requirements and the next steps in considering any further temporary licensing framework.
- 1.10 In summary, this guidance recommended that the MNOs submit a joint or common request to ComReg towards the end of August 2020 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.

⁴ See ComReg Documents 20/21, 20/23 and 20/27 available at <https://www.comreg.ie/industry/radio-spectrum/spectrum-awards/COVID-19-temporary-spectrum-management-measures>.

⁵ See the Wireless Telegraphy (Temporary Electronic Communications Services Licences) Regulations 2020 ([S.I. No. 122 of 2020](#)) (“the Regulations”).

⁶ ComReg Document [20/64](#), “COVID-19 Temporary ECS Licensing - July 2020 update and next steps in considering any further temporary licensing framework.”, published 21 July 2020.

1.11 Each of the MNOs has now submitted to ComReg a common letter requesting a further Temporary ECS Licensing framework (“MNOs Request”) and, separately, individual supporting information.

1.12 This consultation document sets out ComReg’s:

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

1.13 Noting the importance of progressing matters in an expedient timeframe due to the nature of the Temporary Situation, ComReg is employing a greatly accelerated consultation process and requesting submissions no later than close of business on Wednesday 23 September 2020.

1.14 It is important to note that the background to, and context of, the Proposed Approach is exceptional and ComReg stresses, for the avoidance of doubt, that the existing and any further Temporary ECS Licensing frameworks are entirely without prejudice to ComReg’s proposed multi band spectrum award where its draft decision in respect of same is contained in Document 19/124 (“Proposed MBSA”)⁷.

Other supporting actions: spectrum leasing

1.15 In support of the provision of services to end users and the wireless industry during the Temporary Situation, ComReg encouraged MNOs to consider taking other supporting actions including the leasing of spectrum to other operators.

1.16 Spectrum lease proposals were submitted to ComReg by Imagine Communications Ireland Limited (“Imagine”) for the lease of spectrum from each of the three MNOs (Meteor, Three and Vodafone) and from Dense Air Limited (“Dense Air”).

⁷ All documents related to the Proposed MBSA are contained on ComReg’s website at this location <https://www.comreg.ie/industry/radio-spectrum/spectrum-awards/proposed-multi-band-spectrum-award/>

1.17 Following due process in accordance with the spectrum lease procedures⁸,

- On 22 June 2020, ComReg granted a 3.6 GHz Band Spectrum Lease Licence to Imagine in respect of certain spectrum rights which Eir, Three and Vodafone agreed to lease to Imagine in certain areas, for a three-month period from 22 June to 21 September 2020. This licence was issued following ComReg's consideration⁹ of the lease proposal from Imagine¹⁰, for an initial three month period, followed by a further three month period subject to the prior agreement by the relevant parties; and
- relevant details of Imagine's proposal to lease 3.6 GHz Band spectrum rights from Dense Air have been published for comment¹¹. The next step in this process is for ComReg to conclude its determination on this lease proposal or to determine whether further investigation is required (and subsequently issue a 3.6 GHz Band Spectrum Lease Licence if appropriate).

1.18 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 8 October 2020 to 7 April 2021, ComReg would encourage:

- the MNOs and Imagine to consider whether it would now (noting the expiry of the MNOs' respective leases to Imagine on 21 September 2020) be appropriate to agree a further six-month period for same, and notify same for ComReg's consideration;
- all relevant parties to consider the time frames associated with their spectrum lease arrangements and notify ComReg as appropriate.

Structure of document

1.19 The remainder of this document is structured as follows:

Chapter 2: sets out some background information relevant to this consultation, including COVID-19 and the Government measures

⁸ ComReg Document [14/11R](#), "Spectrum Transfer and Lease Framework in Ireland Procedures and Guidelines, and Notification Form(s)" published 12 October 2017.

⁹ ComReg Document [20/51](#), "Spectrum Lease Determination Lease of spectrum rights in the 3.6 GHz band from each of Meteor Mobile Communications Limited, Three Ireland (Hutchison) Limited, and Vodafone Ireland Limited to Imagine Communications Ireland Limited." published 19 June 2020

¹⁰ ComReg Document [20/30](#), – Spectrum Lease Notification: Proposed lease of spectrum rights in the 3.6 GHz band from each of Meteor Mobile Communications Limited, Three Ireland (Hutchison) Limited, and Vodafone Ireland Limited to Imagine Communications Ireland Limited – published 8 May 2020.

¹¹ ComReg Document [20/75](#) – "Spectrum Lease Notification, Proposed lease of spectrum rights in the 3.6 GHz band from Dense Air Limited to Imagine Communications Ireland Limited", published 19 August 2020.

adopted, network traffic information since the adoption of the Government measures, the Temporary ECS Licensing framework and licences issued, and a high-level summary of the relevant legal framework;

Chapter 3: sets out information on the MNOs request for further temporary spectrum rights, 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: is 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;

Annex 4 sets out the Draft Regulations to facilitate the proposed assignment of 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, including COVID-19 and the Government measures adopted, network traffic information since adoption of the Government measures, the Temporary ECS Licensing framework and licences issued, the COVID-19 regulatory measures in other countries, and a high level summary of the relevant legal framework.

2.1 COVID-19 and the Government's measures to address same

2.2 On 11 March 2020, the World Health Organisation (“WHO”) announced that COVID-19 could be characterised as a pandemic¹².

2.3 Taking swift action, the following day, the Irish Government announced a suite of measures to tackle the extraordinary situation arising from the spread of COVID-19 in Ireland¹³, including:

- the closing of schools, colleges and childcare facilities;
- the cancellation of large public gatherings;
- the closure of all public houses;
- requesting the public to cancel social gatherings; and
- encouraging people to work from home where possible,

2.4 Since then, the Government has continued to revise its advice and measures, which have included:

- setting out a roadmap for a phased reopening of society and businesses, which included national ‘stay at home’ restrictions limiting movement¹⁴;

¹² <https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>

¹³ See [Statement by An Taoiseach Leo Varadkar On measures to tac099kle Covid-19 Washington, 12 March 2020](#)

¹⁴ <https://www.gov.ie/en/news/58bc8b-taoiseach-announces-roadmap-for-reopening-society-and-business-and-u/>

- localised restrictions on movement in the counties of Kildare, Laois and Offaly¹⁵; and
- the publication of its Resilience and Recovery 2020-2021 – Plan for Living with COVID-19¹⁶ on 15 September 2020 which sets out 5 levels of restrictions for controlling the spread of COVID-19 over the next 6 to 9 months.

2.5 Using this framework, the Government intends to review what it deems the appropriate levels¹⁷ to apply nationally or locally as the Temporary Situation evolves. As of 17 September 2020, Level 2 restrictions apply to all counties while there are additional restrictions in Dublin, and the latest public health measures and Government advice includes ^{18 19 20 21 22 23}:

- avoiding using public transport where possible - not sharing private vehicles with people from outside your household. If this is not possible, face coverings should be worn when sharing a vehicle.
- limits on mass gatherings – whereby Indoor gatherings and events are now limited to 6 people from no more than 3 households while outdoor gatherings and events are limited to 15 people; and
- continuing to work from home where possible and that businesses facilitate same where possible.

2.6 The additional restrictions for Dublin include that:

- no more than 2 households should meet at a time. Socialising at indoor or outdoor public venues should be in a group of 6 or less and only with people from your own household or one other household; and

¹⁵ See

https://merrionstreet.ie/en/Gallery/Images/Statement_on_the_introduction_of_public_health_measures_for_Kildare_Offaly_and_Laois.html <https://www.gov.ie/en/publication/e5175-resilience-and-recovery-2020-2021-plan-for-living-with-covid-19/>

¹⁶ <https://www.gov.ie/en/publication/e5175-resilience-and-recovery-2020-2021-plan-for-living-with-covid-19/>

¹⁷ Note, even at level 1, the lowest level, there would be restrictions on gatherings and events.

¹⁸ <https://www.gov.ie/en/campaigns/c36c85-covid-19-coronavirus/>

¹⁹ <https://www.gov.ie/en/publication/18e18-level-2/>

²⁰ https://www.citizensinformation.ie/en/health/covid19/public_health_measures_for_covid19.html

²¹ See <https://www.gov.ie/en/publication/cf9b0d-new-public-health-measures-effective-now-to-prevent-further-spread-o/>

²² https://www.citizensinformation.ie/en/employment/employment_rights_and_conditions/health_and_safety/working_at_home.html

²³ https://www.citizensinformation.ie/en/health/covid19/public_health_measures_for_covid19.html

- you should limit travel outside the region and only meet one other household when outside the county.

2.7 The situation is constantly under review and further measures may be put in place in Dublin²⁴.

2.2 Network traffic since the adoption of COVID-19 measures

ComReg network industry forum

2.8 In light of COVID-19 and its impact on the level and location of demand for voice and data services across Ireland, ComReg established a network industry forum to better understand the changing demands being placed on network operators and their ability to meet these demands. The forum has three principle objectives:

- To act as a conduit between industry and the Department of Communications, Climate Action and Environment (DCCA) and by extension Government;
- To facilitate the provision by network operators of aggregated network performance information to ComReg and DCCA; and
- For its participants to work collaboratively on communications scenarios or issues that arise as a consequence of COVID-19.

2.9 As outlined above, the forum encourages the provision by operators of network performance updates, which suitably informs ComReg's and other relevant stakeholders' understanding of any continuing need for support and, by extension, any requirement for a further Temporary ECS Licensing framework.

Changes to network traffic when Government measures first adopted (March / April 2020)

2.10 ComReg observes that in March 2020, when Government measures were first adopted, significant changes were experienced with regard to the normal traffic levels and patterns of certain network operators in Ireland, with overall fixed and mobile voice traffic increasing by circa 30-60% and data traffic increasing by circa 20-25% at that time.

²⁴ <https://www.rte.ie/news/coronavirus/2020/0917/1165665-covid-19-dublin/>

2.11 In relation to the mobile networks, ComReg noted significant increases of 43% in voice traffic and 17% increase in data traffic in the first week in April.

April 2020 to date

2.12 In the period from April 2020 to the present, the aggregate monthly voice and data peak traffic on the mobile networks, while having ‘normalised’ to some extent, remains significantly greater than the pre-COVID-19 base levels as shown in Figure 1 below.

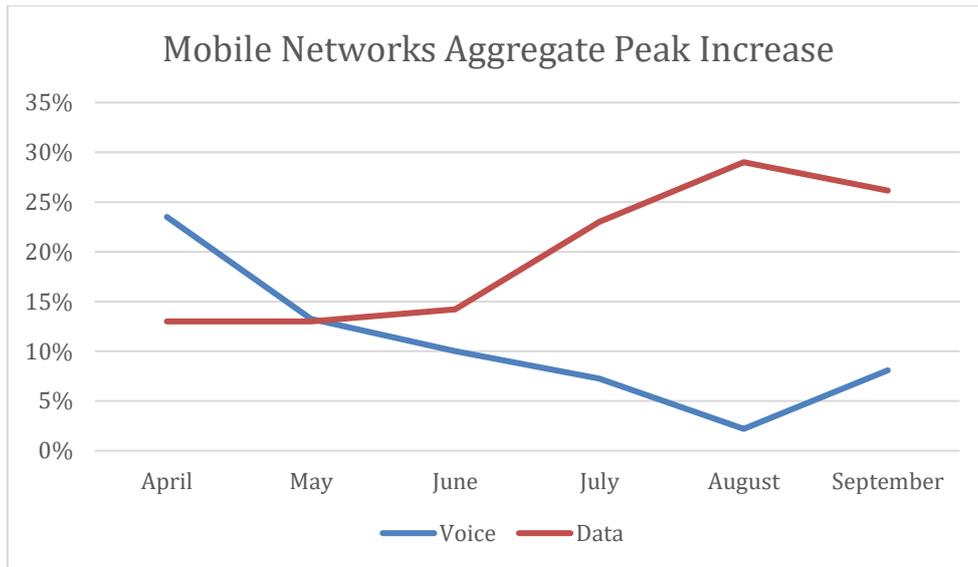


Figure 1: Mobile Networks Aggregate Peak Increase²⁵

2.13 From the most recent weekly network operator performance report, compiled on 14 September 2020, ComReg observes that for the mobile networks:

- the weekly aggregate voice and data peak traffic remains circa 9% and 25% greater than the base pre-COVID-19 level, respectively; and
- the weekly peak traffic increases on individual mobile networks compared to pre COVID-19 levels, as set out in Table 1 below, has been relatively stable lately with the percentage levels for 14 September being broadly typical of recent weeks²⁶.

²⁵ Note that these peak increases are above a base level before the COVID-19 government restrictions were put in place, and do not take account of typical seasonal or annual variations in traffic.

²⁶ For the network weekly report of 14 September 2020, ComReg observes that voice and data traffic on all operator networks has continued to remain stable with a slight decrease in mobile data traffic and a slight increase in mobile voice traffic which is most likely due to students being back at school.

Table 1: Individual Mobile Network Operator traffic increases (data as at 14 September 2020) [REDACTED] ²⁷

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

2.14 Weekly network information is also collected from Imagine in relation to its fixed wireless network. For its network operator performance report of 14 September, Imagine’s network experienced a peak data traffic increase of [REDACTED] compared to pre COVID-19 levels. ComReg observes that this percentage level increase is higher than that of the mobile networks and is also broadly typical of the percentage increase on Imagine’s network for recent weeks.

Other ComReg data

2.15 Information from the latest ComReg Quarterly Key Data Report²⁸ (to end June/Q2 2020) also indicates significant increases in total mobile voice and mobile data usage since the introduction of COVID-19 measures.

2.16 In relation to voice minutes, information from Document 20/82 shows the following:

- Calls from mobiles had been relatively static for the previous 5 years, fluctuating within a range of 3 – 3.1 billion minutes, but increased to an all-time high of 3.32 billion minutes (7% increase year-on-year) in Q1 and to 3.74 billion (19% increase year-on-year) in Q2;
- Calls from fixed to mobile have been on a downward trend over the past 5 years but recorded a 30% increase in Q2 2020 (year-on-year), the largest quarterly increase recorded by ComReg; and

²⁷ Note that these peak increases are above a base level before the COVID-19 government restrictions were put in place, and do not take account of typical seasonal or annual variations in traffic.

²⁸ ComReg Document [20/82R](#), “Quarterly Key Data Report - Q2 2020”, published 10 September 2020.

2.17 In relation to data usage, the latest ComReg Quarterly Key Data Report shows the following

- Mobile broadband (Dongle/Router) usage increased by 90% compared to the same period last year where previous annual increases were typically around 50 - 60%;
- Fixed wireless data usage increased by 150% compared to the same period last year where previous annual increases were typically around 40 - 50%;
- Mobile data usage increased by around 45% compared to the same period last year where previous annual increases were typically around 30 - 35%.

2.3 Consumer information: mobile voice and mobile data services

Document 20/21

2.18 In Document 20/21, ComReg was of the view that consumers are likely to have an increased need for mobile voice (“Voice Services”) and data services (“Data Services”) during the Temporary Situation. In that regard, ComReg made several observations on Voice and Data services which may, in the main, remain relevant to this consultation.

2.19 In relation to Voice Services, and in summary, ComReg noted the following, all of which remains valid.

- 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 calls²⁹;
- 10% of households do not have internet access of any kind^{30 31} and such households would be entirely reliant on accessing essential services over the phone during the Temporary Situation; and
- Consumers may require access to a variety of essential and non-essential services during the Temporary Situation (See Paragraph 4.12 of Document 20/21).

²⁹ Mobile Consumer Experience Survey 2019, Document 19/101, slide 22.

³⁰ <https://www.cso.ie/en/releasesandpublications/ep/p-isshh/informationstatistics-households2019/householdinternetconnectivity/>

³¹ Ibid - 52% reported that the reason for no access was that they *Do not need internet*. Just over four in every ten (42%) reported *Lack of skills* as a reason for not having household internet access.

2.20 In relation to Data Services, and in summary, ComReg noted the following, all of which remains valid.

- Around 20% of households primarily rely on wireless means to provide **internet access** to the household³².
- a mobile broadband internet connection is most common in less affluent households who may have a greater requirement for essential services over the period.
- reliable data services play an important role in the provision of mobile voice services through the provisions of VoLTE, Native Wi-Fi and VOIP calling which reduces the load on mobile voice networks (See Paragraph 4.16 of Document 20/21).

2.21 ComReg also provided a list of 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.

Consumer Surveys

2.22 Since March 2020, ComReg notes that several surveys have been published that support the view that consumers value being able to access such services remotely.

2.23 The Central Statistics Office (“CSO”) conducted a series of surveys on the impact of COVID-19 on society which pointed to an increasing reliance on the internet for the delivering of a variety of services. For example:

- The CSO, among other things, assessed the ‘Impact of COVID-19 on ICT Usage by Households’ and found that 84% of internet users are now online daily and that online purchases doubled compared to pre-COVID-19 levels³³.

³² ComReg notes that subsequent to the publication of Document 20/27 the “2019 Residential Market Research Survey” was published in June and 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>

³³

<https://www.cso.ie/en/csolatestnews/pressreleases/2020pressreleases/pressstatementictusage duringthecovid-19period/>

- The CSO also point to an increased use of high data content e.g. playing or downloading games was reported by 30% of internet users in March, an increase of seven percentage points on the corresponding survey period in January.³⁴

2.24 Research findings from data collected by ComReg³⁵ on broadband and mobile phone usage since COVID-19 restrictions were introduced showed a growing reliance on telecommunications as 77% of respondents state that their usage has increased due to COVID-19. Furthermore:

- 93% of respondents value being able to access and use broadband at home during COVID-19.³⁶
- 89% of respondents value being able to access and use their mobile phone at home during COVID-19.³⁷

2.4 Existing Temporary ECS Licensing Framework and licences issued to-date

2.25 In March 2020, the three MNOs submitted a common letter to ComReg, together requesting the temporary assignment of additional spectrum rights of use in the 700 MHz Duplex, 2.1 GHz and 2.6 GHz bands in order to facilitate additional network capacity.

2.26 In requesting these spectrum rights, the MNOs noted that:

“New infrastructure cannot be built at short notice, so operators must look to whatever tools they have available to optimise networks to the current situation. We all have already adjusted network configuration to the extent that we can (e.g. adjustments to capacity). We now need to look to other options that are available to us to increase network capacity.” (emphasis added)

³⁴

<https://www.cso.ie/en/csolatestnews/pressreleases/2020pressreleases/presstatementimpactofcovid-19onvirtuallife/>

³⁵ ComReg Document 20/61, 'Impact of Covid-19 on Consumer Use and Perception of Telecommunication Services', published June 2020.

³⁶ Ibid, slide 3.

³⁷ Ibid, slide 4.

- 2.27 In March and April 2020, ComReg consulted upon³⁸ and swiftly put in place a licensing framework³⁹ (with the consent of the Minister) for the temporary assignment of:
- additional spectrum rights of use in the 700 MHz Duplex and 2.6 GHz Band; and
 - liberalised spectrum rights of use in the 2.1 GHz Band, as this band is otherwise currently licensed for 3G-use only.
- 2.28 This temporary assignment was for an overall period of up to 6 months based on a 3-month initial period with the potential for a renewal for the remaining period up to 7 October 2020.
- 2.29 ComReg stressed that this temporary licensing framework was 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 MBSA.
- 2.30 All respondents to the consultation accepted this key principle⁴⁰ and it was subsequently incorporated into the Application Declaration Form (see paragraph 4 of Part 6 of the Application Form⁴¹).
- 2.31 Regarding the use of existing infrastructure, ComReg also made clear that the temporary licensing framework should not be used for large-scale network deployments that were not previously planned, while recognising that MNOs should have some flexibility to install or redeploy equipment and to continue with their existing network upgrade plans.⁴²
- 2.32 All three MNOs applied for and were granted an initial licence and a subsequent renewal for the 700 MHz and 2.1 GHz bands as detailed in Table 2 and Table 3 below.

³⁸ See ComReg Documents 20/21, 20/23 and 20/27 available at <https://www.comreg.ie/industry/radio-spectrum/spectrum-awards/COVID-19-temporary-spectrum-management-measures>.

³⁹ See the Wireless Telegraphy (Temporary Electronic Communications Services Licences) Regulations 2020 ([S.I. No. 122 of 2020](#)) (“the Regulations”).

⁴⁰ See paragraphs 3.3 to 3.6 of ComReg Document 20/27.

⁴¹ See ComReg Document 20/27a.

⁴² See paragraph 3.22 of Document 20/27.

Table 2 COVID-19 Temporary ECS Licences – Initial Licences

Operator	Commencement Date	Expiry Date	Spectrum Bands
Meteor	9 April 2020	8 July 2020	700 MHz and 2.1 GHz bands
Three	9 April 2020	8 July 2020	700 MHz and 2.1 GHz bands
Vodafone	22 April 2020	21 July 2020	700 MHz and 2.1 GHz bands

Table 3: COVID-19 Temporary ECS Licences – Renewal Licences

Operator	Commencement Date	Expiry Date	Spectrum Bands
Meteor	9 July 2020	7 October 2020	700 MHz and 2.1 GHz bands
Three	9 July 2020	7 October 2020	700 MHz and 2.1 GHz bands
Vodafone	22 July 2020	7 October 2020	700 MHz and 2.1 GHz bands

2.5 Legal Framework

2.33 Annex 2 of this document sets out in detail ComReg’s statutory functions, objectives and duties relevant to its management of Ireland’s radio frequency spectrum.

Chapter 3

3 MNO common request and ComReg's preliminary assessment of same

3.1 In this chapter, ComReg:

- provides some background to the current MNO request, in particular, by reference to ComReg Document 20/64;
- outlines the MNO request (both the common letter and individual supporting information) including by reference to the types of information identified in Document 20/64;
- outlines its preliminary assessment 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 20/64 – ComReg's information requirements

3.2 In light of the expiry of Temporary ECS Licences on 7 October 2020, and the individual requests received from the MNOs⁴³ for ComReg to put in place a further Temporary ECS Licensing framework beyond this expiry date, on 21 July 2020 ComReg published Document 20/64 setting out guidance regarding its likely information requirements and the next steps in considering any further temporary licensing framework.

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 towards the end of August 2020⁴⁴ which would:

⁴³ For example, each of the MNOs included such a request in their submission to Document 20/32, "Proposed Multi Band Spectrum Award – Draft Information Memorandum and Draft Regulations". ComReg will publish the non-confidential version of these submission in due course.

⁴⁴ ComReg notes that the end of August would give ComReg sufficient time to complete an accelerated consultation process, while also being sufficiently close to the end of the existing licensing framework on 7 October 2020, to allow the MNOs to submit updated information based on the prevailing COVID-19 considerations at that time, and for ComReg to consider same.

- (i) set 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) provide 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 16 of Document 20/64 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/common request.

A. Network traffic / capacity / performance information

- (i) up-to-date 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.*
- (ii) information on the expected traffic demand and network capacity beyond 7 October 2020.*
- (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 and those that would be related to COVID-19.*

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

- (i) up-to-date information regarding the number, locations and deployment dates of sites/transmitters for each spectrum band in existing Temporary ECS Licence.*
- (ii) the number of sites/transmitters for each spectrum band that an MNO would expect to use over the duration of any further Temporary ECS Licensing framework.*

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

- (i) how existing temporary rights have assisted in alleviating the network capacity/performance constraints to-date. For example, information highlighting where the network capacity/performance improvements are correlated to use of temporary ECS rights of use, i.e. when*

temporary ECS rights of use were brought into use, the network / capacity improvements observed at these times.

(ii) how temporary rights may materially assist over the duration of any further Temporary ECS Licensing framework.

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.

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

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

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

3.2 MNO request for further COVID-19 temporary spectrum licensing

3.2.1 MNO Common Letter

3.5 On 2 September 2020, the CEOs of the three MNOs each submitted a common letter to ComReg (see Annex 3).

3.6 In this common letter, the MNOs note that:

- they “jointly request that the terms of the current Temporary Spectrum Management Measures detailed in ComReg 20/27 are extended unchanged”; and
- their “preference is that the new end date is set at the completion of the planned spectrum award.”

3.7 In support of their common request, the MNOs submit that:

- *“The health measures necessary to prevent spread of Covid-19 have forced us all to change our home life and work life massively. ... In mid-March when measures to prevent 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. We have also seen similar effects when the local restrictions were applied to Kildare, Laois and Offaly.”*
- *“The Temporary Spectrum Licences issued by ComReg in April have helped in an important way to meet the new demands placed on mobile networks. ... The rapid enactment of the Temporary Spectrum Measures by ComReg 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 were crucial to avoiding significant congestion in voice and data networks.”*
- *The change to working practice and to social interaction that was forced upon us in recent months is likely to have a lasting effect. ... It seems we will need to live with Covid-19 for some time yet, with possible local restrictions from time to time. ... 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 will occur, so service providers must prepare on the basis that they could be anywhere.*
- *“As we move forward in the next phases of action dealing with Covid, it is important that ComReg should ensure that the current Temporary Spectrum Licences continue past the October 7th date of the current regulation. ... 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 2021 Spectrum auction would be extremely inefficient.”*

3.8 Regarding ComReg’s proposed MBSA for the award of long-term spectrum rights of use in the 700 MHz Duplex, 2.1 GHz, 2.3 GHz and 2.6 GHz bands, the MNOs state that:

“It is accepted that the Temporary Spectrum Management Measures cannot delay implementation of the outcome of the next spectrum award. To reassure ComReg on this point, each operator commits to a rapid transition from the Temporary Spectrum Management Measures upon completion of the long-term spectrum award.”

3.2.2 Individual MNO supporting information

3.9 In support of their common request, each MNO subsequently submitted the supporting information listed in paragraph 16 of Document 20/64. The non-confidential versions of these submissions are included in Annex 3.

3.10 ComReg outlines below the key points submitted using the structure from paragraph 16 of Document 20/64.

Paragraph 16 (A): Network traffic information

3.11 **In relation to 16 A (i) changes in network traffic (voice and data), capacity and performance from pre-COVID-19 until now.**

- Eir submits that monthly voice traffic volumes increased sharply during March, whereas overall traffic volumes on its **voice network** has grown by approximately [✂ [REDACTED] ✂] from the period of March to September 2020 compared to 2019. In relation to its data network, its monthly data traffic volumes have increased over the last 6 months by [✂ [REDACTED] ✂] from pre COVID-19 levels.
- Three submits that busy hour peak traffic on its **voice network** rose sharply [✂ [REDACTED] ✂] in March above pre COVID-19 levels and while it has since reduced it remains elevated by approximately [✂ [REDACTED] ✂]. In relation to its **data network**, busy hour data network throughput is on average [✂ [REDACTED] ✂] above its baseline forecast for the period since March with the most recent figures being [✂ [REDACTED] ✂] above the baseline forecast⁴⁵.
- Three also notes several other factors as follows:
 - that the geographic demand has changed where demand has moved out of town and city centres to sub-urban and rural areas;

⁴⁵ Baseline forecast here refers to the forecasted data increase on its network across the year before the Temporary Situation

- that uplink traffic has increased by higher percentages [X █] than for downlink traffic, and that the uplink traffic is greatest in rural areas [X █] and Dublin border counties [X █]; and
- that it experienced local surges of voice traffic around the time of the announcement of localised restrictions (7 August 2020) in Kildare, Laois, and Offaly;
- Vodafone submits that weekday daily voice traffic increased sharply [X █] during the early days of the emergency, whereas the end of August overall voice traffic is [X █] ahead of its pre COVID-19 levels. In relation to its data network, Vodafone submits that it observed a [X █] increase in weekday data traffic and that its total data traffic at the end of August is [X █] ahead of COVID-19 levels.

3.12 In relation to 16 A (ii) information on the expected traffic demand and network capacity beyond 7 October 2020; and 16 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 and those that would be related to COVID-19:

- Eir submits that voice traffic was relatively flat across the same period of 2019 and that all the [X █] voice traffic increase is attributable to the changes in behaviour due to COVID-19. Eir submits that voice traffic is expected to be sustained at its new elevated level with potential further growth for the remainder of 2020 following summer holidays and staycations in Ireland. Eir also submits that data traffic growth between March and September 2020 [X █] is much higher than the data traffic growth during the same period of 2019 which was [X █]. It therefore submits that in effect the difference between the two levels of [X █] data traffic growth is attributable to COVID-19. Eir submits that it expects the data traffic growth to continue on the same trajectory for the remainder of 2020.
- Three provides a comparison of two forecasts from September 2020, being: (1) its baseline forecast excluding COVID-19 effects and (2) the adjusted forecast which assumes ongoing measures that restrict normal behaviour as follows:
 - Comparing the two forecasts the daily busy hour network traffic for forecast (2) is

- [REDACTED] greater than forecast (1) at 4 months;
 - [REDACTED] greater than forecast (1) at 9 months; and,
 - [REDACTED] greater than forecast (1) at 12 months.
- Vodafone submits that the period of September to December has historically been the period of the year with the greatest increase in traffic. Its network investment was planned at fulfilling a traffic growth forecast of [REDACTED] for the entire year, however in the past 6 months it has already seen [REDACTED] growth post COVID-19. Considering this, Vodafone submits that, as traffic continues to grow, it anticipates that the traffic growth for the year will be [REDACTED].

Para 16 (B): Ability to make use of existing temporary spectrum assignments in any further Temporary ECS Licensing framework

3.13 In relation to 16 B (i) up-to-date information regarding the number, locations and deployment dates of sites/transmitters for each spectrum band in existing Temporary ECS Licence.; and 16 B (ii) the number of sites/transmitters for each spectrum band that an MNO would expect to use over the duration of any further Temporary ECS Licensing framework.”, the table below shows the number of sites currently in use by each of the operators and the intentions of the operators should a further temporary ECS licensing framework be put in place.

Table 4: Total sites deployed and planned using temporary spectrum [REDACTED]

	700 MHz Sites		2.1 GHz Sites	
	In use	Total planned	In use	Total planned
Eir	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Three	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Vodafone	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Para 16 (C): How temporary rights have assisted with the provision of ECS in the State

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

- 3.14 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 with the increased traffic demands arising from the COVID-19 measures.
- 3.15 Eir estimates that its deployment of LTE (4G) on the 700 MHz band (“L700”) has supported [✂ [REDACTED] ✂] of its data traffic and has improved the data performance on the existing LTE bands, 800 MHz and 1800 MHz.
- 3.16 Three notes that when the “Stay at Home” requirements were first introduced, it experienced a surge in demand and there was a reduction in the average throughput received by individual end users and an increase in the number of cells that would be classified as congested. With the roll-out of 4G on the 700 MHz and 2100 MHz bands, Three notes that:
- [✂ [REDACTED] ✂] and overall end-user throughput has recovered, and in some places is now higher than the pre-March level; and,
 - for the [✂ [REDACTED] ✂] sites where it has deployed 4G on the 2100 MHz band, this carries on average [✂ [REDACTED] ✂] of the data traffic.
- 3.17 Three also identifies network improvements in a specific area, Gaggin Co. Cork, as an example of how consumers are benefitting from improved data throughputs given the temporary measures.
- 3.18 Vodafone notes that its 2100 MHz deployment has allowed it to:
- carry out a “Nationwide Retune/Reuse Program of 2100 MHz” which gave it the flexibility to manage excess UMTS speech traffic and relieve congestion caused by the weekday voice traffic increases; and
 - reduce network cell congestion following further 4G data traffic growth.
- 3.19 Vodafone also provides a specific example of the impact of its LTE deployment of 2100 MHz (“L2100”) at its WHLINC site. In this example, Vodafone notes that the activation of L2100 increased the available “PRB Capacity” (Radio Capacity) by [✂ [REDACTED] ✂], helping to maintain the Average User Throughput despite the increased data traffic growth.

- Vodafone believes that it would not be able to build sites quickly enough to meet the forecasted increased traffic demands and, absent further temporary spectrum rights, it is likely that greater than [X [REDACTED] X] of its sites would experience congestion, resulting in reduced data services.

Para 16 (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

3.24 As outlined below, the three MNOs have taken steps, and are planning further actions, to best equip their network to meet the increased traffic demands.

- Eir states that it “continues to transform its network throughout 2020, build new infill⁴⁶ and capacity sites, [X [REDACTED] X]”. In addition, it notes that these programmes have continued throughout the emergency and will continue for the remainder of 2020 but are complemented by the Temporary ECS Licensing framework.
- Three states that when [X [REDACTED] X]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] X]
- Vodafone outlines several practical steps that it would need to take in the event of no further Temporary ECS licensing and notes that these changes would reduce or remove service from customers close to the cell edge. In addition, Vodafone adds that it has reviewed possible solutions, and it believes that building new sites would be the only way to provide service at current levels. In relation to new sites it believes that “[i]t would not be feasible or economic to build additional cell sites between now and the auction date.”

⁴⁶ Eir has built [X [REDACTED] X] Infill sites in the period March – August 2020 to assist with capacity and coverage requirements.

Para 16 (G): Any other factors that the MNOs deem relevant to the consideration of any further Temporary ECS Licensing framework

3.25 Eir reiterated the commitment in the MNO common letter to rapidly “*transition from the Temporary Spectrum Management Measures upon completion of the long-term spectrum award*” and stressed that “*extending the temporary licensing regime will not negatively impact ComReg’s longer term plans for the next spectrum award.*”

3.3 ComReg’s observations of the common request

3.26 This section sets out (i) ComReg’s observations on the factors supporting the consideration of another temporary spectrum release and (ii) some additional considerations.

(i) Factors supporting a further temporary spectrum release

3.27 In considering the background information presented in Chapter 2, and the MNO information as outlined in Section 3.2 above, ComReg observes that there are several factors which support a further temporary spectrum release by ComReg. These include that:

a) The Government continues to review and update the measures to tackle COVID-19, and such measures and restrictions, including encouraging work from home where possible, are likely to remain in place beyond 7 October. In this regard, ComReg observes that:

- i. there are no firm predictions about how the COVID-19 pandemic will evolve over the coming period; and
- ii. very recently, the Government published its “*Resilience and Recovery 2020-2021: Plan for Living with COVID-19*”.⁴⁷ As explained in the introduction to that document this is a framework for considering restrictive measures for the next 6 months or so and that the roadmap will be fully reviewed at the end of March 2021.

“The Framework for Restrictive Measures is a risk management strategy for the next 6-9 months. It is designed to allow individuals, families, businesses and services better understand, anticipate and prepare for the measures Government might introduce to stop escalation of the transmission of the disease.”

⁴⁷ <https://www.gov.ie/en/publication/e5175-resilience-and-recovery-2020-2021-plan-for-living-with-covid-19/>, Published 15 September 2020

It is framed to account for periods which there is low incidence of the disease, with isolated clusters, low community transmission, through to situations where there is high or rapidly increasing incidence, widespread community transmission and the pandemic is escalating rapidly in Ireland and globally. It recognises the need for society and business to be allowed to continue as normally as possible. Finally, the framework is designed so that either national or county level restrictions can be applied.”

- b) Mobile voice and data services are important services for consumers, particularly during the Temporary Situation. For example,
- 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. around 20% of households primarily rely on wireless means to provide internet access to the household.
- c) The introduction of Government measures in March 2020, and the continuation of these measures as revised since then, has resulted in significant voice and data traffic increases for the mobile networks (see Sections 2.2 and 3.2 above)⁴⁸. While ComReg notes that the traffic increases on mobile networks have become somewhat ‘normalised’ over recent weeks, ComReg also observes that the weekly aggregate mobile voice and data peak traffic levels remain circa **9%** and **25%** greater than the base pre-COVID-19 level. In that regard:
- i. For **mobile voice services**, ComReg observes that the above increase is likely to be substantially, if not wholly, due to the Temporary Situation⁴⁹ given the stable to declining trend for mobile voice minutes over the previous years as indicated in ComReg’s Quarterly Key Data Reports (“QKDR”);
 - ii. For **mobile data services**, ComReg observes that the supporting information provided by the MNOs show that the data traffic has steadily grown since March 2020 and at a rate notably greater than

⁴⁸ In relation to the network traffic and general performance of the networks. ComReg notes that the operators have presented the data in different ways using different metrics, for example total network volumes per day, weekday or month are used in some cases and in others network busy hour or peak traffic is presented. While the metrics used vary it is clear that both voice and data levels have notably increased since the introduction of government measures due to COVID-19 in March 2020.

⁴⁹ Due to much of the population now working remotely or from home and reducing their social visits. Both of these types of face to face interactions have been somewhat replaced by telephone conversations.

previous years. This trend is also illustrated in the QKDR for Q2 2020 where mobile data usage increased by around 45% compared to the same period last year and noting that annual increases have typically been between 30-35%. While ComReg observes that not all the growth in mobile data traffic is COVID-19 related⁵⁰, and networks would typically need to plan for expected forecast growth, it appears clear that a significant portion of the aggregate mobile data traffic increase is due to the Temporary Situation; and

- iii. Regarding future voice and data traffic levels, ComReg observes that the 'normalisation' of traffic levels over recent weeks suggests that the current traffic levels are a good indicator of the traffic uplift due to the Temporary Situation, although ComReg also observes that some MNOs⁵¹ have suggested that further COVID-19 related increases may also occur, as noticed with the recent introduction of localised restrictions.
- d) The additional and unexpected mobile voice and data traffic levels in March 2020 increased the congestion level of the mobile networks and reduced the quality of some services to consumers. For example, Three indicates that some users experienced a reduced average data throughput at that time.
- e) With the deployment of temporary spectrum rights, the MNOs have been able to rapidly deploy additional capacity to support, and improve in some cases, the provision of voice and data services given the increased traffic demands of the Temporary Situation. For example, Three indicates that the average data throughput per user have recovered and despite the increase in traffic on the network, average user speeds have increased above the pre-COVID-19 levels.

⁵⁰ Other possible factors include normal forecasted annual growth, the recent removal of data caps on some plans and speed increases for certain consumers due to the extra spectrum being made available

⁵¹ On the forecasted data provided by MNOs, ComReg observes that very large forecasted levels are presented. In particular, Three set out a forecast where they attribute large ever increasing changes in network traffic levels due to COVID-19 beyond a typical annual forecast. ComReg is not aware of the assumptions and models underpinning this forecast, especially when data traffic increases have 'stabilised' on networks in August and September 2020 and is therefore not in a position to validate this forecast.

- f) While the MNOs have also taken other actions to alleviate increased congestion on their networks due to the Temporary Situation, the MNOs believe that the deployment of temporary spectrum rights has been significant in ameliorating this congestion. 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 estimates that its deployment of L700 carries [✕ [REDACTED] ✕] of its data traffic;
 - ii. Three estimates that for the [✕ [REDACTED] ✕] sites where it has deployed 4G on the 2100MHz band (L2100), this carries on average [✕ [REDACTED] ✕] of the data traffic. In addition, Three believes that absent further temporary spectrum rights [✕ [REDACTED] ✕];
 - iii. Vodafone believes that absent further temporary spectrum rights it is likely that greater than [✕ [REDACTED] ✕] of its sites would experience congestion, resulting in reduced data services.

(ii) Additional considerations

Site deployments of temporary spectrum rights.

3.28 ComReg's analysis of the site deployment information and plans submitted by the MNOs suggests that:

- they have each focussed on utilising the Temporary ECS licences in different ways. For example, some have focussed on utilising one band, while others have been able to make use of the two bands to different degrees; and
- this appears to have been influenced by the respective readiness of each operator to use the different spectrum bands due to the equipment available to them.

3.29 While recognising that the temporary spectrum rights provide MNOs some flexibility to install or redeploy equipment and to continue with their existing network upgrade plans, ComReg reiterates that the temporary spectrum rights should not be used as a mechanism for large scale deployments not previously planned.

3.30 To minimise any disruption to consumers when temporary spectrum rights expire, ComReg encourages the MNOs to continue to take actions that prepare their networks based on long-term spectrum rights for example building infill and capacity sites, upgrading networks to maximise available spectrum, etc.

Proposed MBSA

3.31 While ComReg notes the MNOs acceptance that temporary spectrum rights should not delay the outcome of the proposed MBSA and their commitment “to a rapid transition from the Temporary Spectrum Management Measures upon completion of the long-term spectrum award”, ComReg reiterates that:

- the temporary licensing framework is intended solely to address the exceptional and extraordinary situation presented by COVID-19 and it is entirely without prejudice to the award of long-term rights of use in these spectrum bands in its Proposed MBSA; and
- the assignment of long-term rights in these bands is expected to be of significant benefit to stakeholders, competition and consumers as it will provide regulatory certainty on the long-term rights for these spectrum bands, promote competition and incentivise investment and the deployment of new services to the benefit of users.

Co-ordination procedures of existing Temporary ECS Licensing Framework

3.32 Having considered the information submitted by the MNOs and also correspondence with the other interested parties⁵², ComReg observes that the existing coordination procedures for the 700 MHz band which includes the three MNOs, Virgin Media and 2RN, appears to be working well and no issues have been reported.

⁵² Annex 3 sets out non confidential correspondence with Virgin Media, 2RN in this regard.

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

3.4.1 Background and analytical framework

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

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

3.35 Rather than reiterate the entirety of the above analysis, in this section, ComReg updates its assessment having regard to subsequent developments and available information in the context of:

- Impact on consumers:
- Impact on competition; and
- Other relevant functions, objectives and duties.

3.4.2 Impact on consumers

3.36 In Chapter 2, ComReg noted that consumers continue to require access to a variety of essential and non-essential services during the Temporary Situation. The various data and voice usage statistics presented therein, and the information submitted by the MNOs in Section 3.2 above, also support the view that the temporary rights of use have alleviated potential capacity constraints and assisted in the provision of those services⁵³ (see Section 4.3 of Document 20/21).

3.37 Consumers are therefore likely to support the Proposed Approach (for the same reasons set out in Section 4.2 of Document 20/21) provided it continues to alleviate potential capacity constraints and assists in the provision of essential and non-essential services. In that regard, ComReg notes that.

- the ability to connect to the internet and/or to make or receive voice calls is likely to remain significantly important for all consumers over

⁵³ ComReg also observes that making the temporary spectrum available has resulted in some consumers experiencing faster available download and upload speeds.

the Temporary Situation;

- some consumers are unlikely to have alternative means of making calls or connecting to the internet in the event of mobile network outages or quality of service degradation caused by capacity constraints;
- the Proposed Approach would:
 - reduce the likelihood of capacity constraints and the associated disruption to services arising during the Temporary Situation;
 - be preferable to other alternatives to mitigate network disruption e.g. additional sites, throttling, reduced data allowances; and
 - facilitate users to effectively work from home in the event of any additional Government measures in the future. For example, the restriction of people's movement to the home or geographic restrictions which would further increase the load on mobile networks.

3.38 ComReg also notes that, while consumers would likely welcome the Proposed Approach, 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 such as the Proposed MBSA. This would provide regulatory certainty for all operators and set the necessary conditions for sustainable competition and ongoing network investment.

3.4.3 Impact on Competition

3.39 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 concerns⁵⁴ 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).

⁵⁴ Such needs as identified by Applicants in the Application Form – Annex 3.

- 3.40 In light of the latest common request received from each of the MNOs to extend the terms of the existing licensing framework unchanged, ComReg assumes that the MNOs are satisfied that any further licensing framework on such basis would be unlikely to materially distort competition between them.⁵⁵
- 3.41 At the same time, ComReg notes and agrees with the point raised by the MNOs that “[it] is accepted that the Temporary Spectrum Management Measures cannot delay implementation of the outcome of the next spectrum award.” In that connection, ComReg would stress that any further temporary licensing framework is intended solely to address the exceptional and extraordinary situation presented by COVID-19 and that it would be entirely without prejudice to the award of long-term rights of use in the relevant 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 the Application Form in any future application form.
- 3.42 In relation to the potential impact on competition outside of the MNOs (such as other 3.6 GHz Band licensees), ComReg:
- recalls that Dense Air did not provide a response to Document 20/21 and Imagine expressed support for the current licensing framework in its response to Document 20/21;
 - recalls that it approved subsequent leases of 3.6 GHz Band spectrum rights from each of the MNOs to Imagine⁵⁶. Indeed, Vodafone notes that the increase in capacity resulting from the spectrum rights has facilitated its lease of spectrum to Imagine;
 - recalls that it is currently assessing a proposed lease of 3.6 GHz Band rights from Dense Air Ireland 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
 - notes that, by way of this consultation, interested parties may provide views on the potential competition impacts of any further licensing framework.

⁵⁵ Although ComReg notes Eir’s view in its submission to Document 20/32 that “eir does not believe it would be appropriate to further extend the temporary liberalisation measures in the 2100MHz band given the material spectrum imbalance that persists” as published in Document 20/68.

⁵⁶ ComReg Document 20/51, “Spectrum Lease Determination Lease of spectrum rights in the 3.6 GHz band from each of Meteor Mobile Communications Limited, Three Ireland (Hutchison) Limited, and Vodafone Ireland Limited to Imagine Communications Ireland Limited.” published 19 June 2020

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

- 3.43 Annex 2 of this Document summarises the relevant statutory framework informing ComReg's consideration of the Proposed Approach.
- 3.44 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.
- 3.45 In light of the above, ComReg is of the preliminary view that it would, in principle, be appropriate to implement a 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 ComReg's existing Temporary ECS Licensing Framework;
- sets out the relevant information from the MNO requests on the licensing proposals for any 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 further temporary licensing framework.

4.1 Summary of the key elements of ComReg's existing Temporary ECS Licensing Framework

4.2 In Chapter 3 of both Document 20/21 and Document 20/27 ComReg set out its proposals and decisions, respectively, regarding the following key elements of the existing Temporary ECS licensing framework:

- 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 and, along with other matters, are summarised below.

4.1.1 Spectrum bands, assignments and compatibility considerations

- 4.4 The bands made available for Temporary ECS Licences 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 Firstly, and in relation to managing inter-MNO interference, the assignment of the blocks to the MNOs in the 700 MHz Duplex⁵⁷ was made 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 paired with 768 to 778 MHz; and
 - **Vodafone:** 723 to 733 paired with 778 to 788 MHz.
- 4.8 Secondly, 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.

⁵⁷ Subject to a complete application and satisfying the eligibility and appropriate evidence requirements.

- 4.9 Spectrum rights in the 2.6 GHz Band were made available but subject to certain geographic restrictions (or “exclusions zones”)⁵⁸ to ensure compatibility between any MFCN⁵⁹ deployment and the IAA’s primary radar systems.

4.1.2 Applicant eligibility and supporting information requirements

- 4.10 In Documents 20/21 and 20/27, ComReg outlined that the underlying intention of the Temporary ECS Licensing Framework 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 if they can readily use those rights of use and be able to demonstrate this capability to ComReg;
- should not use the 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 2020⁶⁰:

“(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;*

⁵⁸ As set out on in Document 2.6 GHz Band exclusion Zones.zip as published on ComReg’s Spectrum Awards webpage. <https://www.comreg.ie/industry/radio-spectrum/spectrum-awards/covid-19-temporary-spectrum-management-measures/>

⁵⁹ Mobile or Fixed Communications Network

⁶⁰ Wireless telegraphy (Temporary Electronic Communications Services Licences) Regulations 2020, Regulation 4(2).

- (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 Application Form.

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.

4.1.4 Fees

4.15 In Document 20/27, 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.

4.1.5 Coverage at specific locations

4.16 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 5 below.

Table 5: 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 Communications, Climate Action and the Environment	Best efforts using all rights of use available to the Licensee

4.1.6 Other actions that could be taken

- 4.17 In Document 20/21, 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.
- 4.18 ComReg also encouraged and welcomed leasing arrangements, particularly in relation to the 3.6 GHz band.
- 4.19 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, however, noted that there is currently 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 common request

4.20 As discussed in Chapter 3, the MNOs:

- *“jointly request that the terms of the current Temporary Spectrum*

Management Measures detailed in ComReg 20/27 are extended unchanged"; and

- expressed their preference that *"the new end date is set at the completion of the planned spectrum award"*.

4.3 ComReg assessment and preliminary view

4.21 First, ComReg observes that the existing licensing framework is generally operating as expected for the purposes of the Temporary Situation. In particular:

- MNOs can utilise the 700 MHz Duplex where they have existing equipment and use the 2.1 GHz Band for 4G use at certain sites to assist in dealing with the increase in data traffic;
- as discussed in Chapters 2 and 3, MNO's have seen a notable increase in voice and data traffic, beyond what the operators previously forecasted for the year and 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;
- establishing the Temporary ECS licensing Framework has encouraged licensees in the 3.6 GHz band (the three MNOs and Dense Air) to lease spectrum to Imagine, which has helped Imagine to deal with the increases in data on its network; and
- the 700 MHz Coordination procedure appears to be working well to adequately manage the risk of any impact on existing networks. The MNOs indicate that there has been engagement between the various parties (the three MNOs, Virgin Media and 2RN), and no issues have been reported.

4.22 Therefore, and noting the MNOs' preference for the current terms to remain unchanged and the latest views of the IAA, 2RN and Virgin Media on 700 MHz Coordination⁶¹, ComReg does not see any basis to adopt a licensing approach different to the current framework.

4.23 Accordingly, ComReg proposes that the key elements of the existing temporary licensing framework (as summarised in Section 4.1 above) would apply under the proposed further licensing framework.

⁶¹ Recent correspondence with IAA, 2RN and Virgin Media is contained in Annex 3

- 4.24 In relation to the MNOs' preference that the duration of any Further Temporary ECS Licences would run to the completion of the Proposed MBSA, ComReg does not consider this approach to be appropriate for the reasons outlined below.
- 4.25 **First**, ComReg recalls that 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. It 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 MBSA⁶².
- 4.26 **Second**, and in contrast to the MNOs' proposal, 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, including updated information regarding the Government's response in dealing with COVID-19, in particular noting *Living with COVID-19*, the Government's risk management strategy for the coming 6 months or so, the performance of the networks themselves and any ongoing requirements for Temporary ECS licences.
- 4.27 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 is executed as quickly as possible. ComReg reiterates that the existing and any future Temporary ECS Licensing Framework is entirely without prejudice to ComReg's Proposed MBSA, and ComReg stresses that any temporary licensing framework should not be construed as an acceptable alternative to this.
- 4.28 In light of the above, ComReg proposes to maintain the same approach to Licence duration as currently used in the Existing Temporary ECS Licensing Framework.
- 4.29 ComReg would, of course, continue to monitor the situation over the term of any further licensing framework, including consideration of ongoing information provided by licensees and other operators (e.g. to the network industry forum) and other relevant information, to inform its approach to any licensing beyond this period.

⁶² Save of course that the assignment of long-term rights of use should not be delayed by any temporary licences.

4.30 In summary, ComReg's preliminary view is that any further Temporary ECS Licencing framework should have the same licensing conditions as currently used in the Existing Temporary ECS Licensing Framework. Details of these licensing proposals are set out in the draft "Further Temporary Electronic Communications Services Licences" Regulations set out in Annex 2.

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/EC⁶³;

"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/EC⁶⁴;

"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;

⁶³ 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.

⁶⁴ 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.

“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 – 733 MHz paired with 758 – 788 MHz;

“700 MHz Duplex Block” means a right of use in respect of a 2x5 MHz block of spectrum in the 700 MHz Duplex;

“700 MHz EC Decision” means Decision (EU) 2016/687⁶⁵;

“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” (or **“ECN”**) and **“Electronic Communications Service”** (or **“ECS”**) 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” means a licence of the type set out in draft form in Schedule 1 to the Further Temporary ECS Licence Regulations;

“Further Temporary ECS Licence Regulations” means the Wireless Telegraphy (FURTHER TEMPORARY ELECTRONIC COMMUNICATIONS SERVICES LICENCES) Regulations, 202X, as set out in draft form in Annex 4 to ComReg Document 20/86R;

“Minister” means the Minister of Communications, Climate Action and Environment;

⁶⁵ 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.

“**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;

“**RSPP Decision**” means Decision No 243/2012/EU⁶⁶;

“**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 and 19/124 (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; and
 - g) 20/XX [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 and 19/124c;
- 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;

⁶⁶ Decision No 243/2012/EU of the European Parliament and of the Council of 14 March 2012 establishing a multiannual radio spectrum policy programme.

- 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 RSPP Decision;
- e) the 2.1 GHz Band EC Decision;
- f) the 2.6 GHz Band EC Decision;
- g) the 700 MHz EC Decision;
- h) Sections 5 and 6 of the Wireless Telegraphy Act, 1926; and
- i) the applicable Policy Directions made by the Minister under section 13 of the Communications Regulation Act 2002,

and, noting that it has:

- j) 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/[XX] [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, to make those regulations under section 6 of the Wireless Telegraphy Act 1926, prescribing relevant matters in relation to Further Temporary ECS Licences, 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 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 in the 700 MHz Duplex and 2.1 GHz bands having regard to the principles generally described in Chapter [X] of Document 20/XX [document to which the final decision will be attached] and further particularised in the Further Temporary ECS Licence Regulations, 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 x 10 MHz of 700 MHz Duplex to each MNO⁶⁷, 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, 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, including the schedule to Further Temporary ECS Licences as currently set out in Annex 4 of Document 20/86R;

2.6 GHz Band

- iii. upon application properly being made to it by MNOs for Further Temporary ECS Licences 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 with 2.6 GHz Band Blocks having regard to the principles generally described in Chapter [X] of Document 20/[XX] [document to which the final decision will be attached] and further particularised in the Further Temporary ECS Licence Regulations, as made, and the material provided by applicants in support of their respective application; in particular, the proposed location of

⁶⁷ 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.

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, 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, including the schedule to Further Temporary ECS Licences as currently set out in Annex 4 of Document 20/86R;
- c) to consider applications for the addition of sites to a Further Temporary ECS Licence 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 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 [X] of Document 20/[XX] [document to which the final decision will be attached] and further particularised in the Further Temporary ECS Licence Regulations, and the material provided by applicants in support of their renewal, to renew a Further Temporary ECS Licence for a further period of up to but no longer than 3 calendar months; and
- vi. that any Further Temporary ECS Licence granted or renewed shall in any event expire no later than 6 calendar months from the date of the Temporary ECS Licence Regulations.

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 On all aspects of the proposals in this consultation, ComReg invites input from interested parties by close of business Wednesday 23 September 2020. Considering the urgency of the issue, ComReg has set a shorter period compared to the normal four weeks identified in ComReg's Consultation Procedures⁶⁸.
- 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 or the relevant accompanying consultant's report.
- 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 20/86R:

Mr. Joseph Coughlan
Commission for Communications Regulation
One Dockland Central
Guild Street
Dublin 1
D01 E4X0.
Ireland

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.

⁶⁸ See Document 11/34.

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:

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 prior to 7 October 2020.

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 3 400 MHz to 3 800 MHz.
700 MHz Band	The frequency range 694 – 790 MHz.
700 MHz Duplex	The frequency range 703-733 MHz paired with 758-788 MHz.
800 MHz Band	The frequency range 790 – 862 MHz
900 MHz Band	The frequency range 880 – 915 MHz paired with 925 – 960 MHz
2.1 GHz Band	The frequency ranges 1920-1980 MHz paired with 2110-2170 MHz
2.3 GHz Band	The frequency range 2 300 – 2 400 MHz
2.6 GHz Band	The frequency range 2 500 – 2 690 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.

Apparatus	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
Application Declaration Form	Paragraph 4 of Part 6 of the Application Form
Application Form	ComReg Document 20/27a
Appropriate Evidence	<p>The Application Form (Document 20/27a) includes required information including:</p> <ul style="list-style-type: none"> • the radio spectrum band applied for; • the name/identity of the site to be included in the licence; • the coordinates of the site (easting and northing); • equipment index reference; • maximum EIRP for the site; • confirmation for each site that equipment including antennas are in place to be used in the respective band; • the key steps needed to bring the site or group of sites on air including the expected dates for this; and • for each equipment index reference, the terrestrial system, equipment description, manufacturer, make and model of the piece of equipment
Covid-19	COVID-19 is a new illness that can affect your lungs and airways and is caused by a virus called coronavirus.
Draft Regulations	Regulations (WIRELESS TELEGRAPHY (TEMPORARY ELECTRONIC COMMUNICATIONS SERVICES LICENCES) REGULATIONS 2020) intended to be made by ComReg, subject to the consent of the Minister for Communications, Climate Action and Environment.

General Authorisation	An authorisation for an undertaking to provide an electronic communications network or service under and in accordance with Regulation 4 of the Authorisation Regulations.
MBSA2	ComReg's Proposed Multi-Band Spectrum Award
Native Wi-Fi	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.
Proposed Approach	ComReg's consideration of the approach set out in Chapter 3.
Proposed Multi-Band Spectrum Award (MBSA)	ComReg's proposed Multi-Band Spectrum Award. Further information is available at https://www.comreg.ie/industry/radio-spectrum/spectrum-awards/proposed-multi-band-spectrum-award/
RIA	Regulatory Impact Assessment, an analysis of the likely effect of, and necessity of, a proposed new regulation or regulatory change. Such assessments are carried out in accordance with Document 07/56a - Guidelines on ComReg's approach to Regulatory Impact Assessment - August 2007.
SAF	Spectrum Access Fee
SUF	Spectrum Usage Fee
Spectrum right of use	Authorisation to use certain radio frequencies subject to such conditions and restrictions as may be prescribed in a licence or by any regulations made by ComReg under section 6 of the Act of 1926.
Temporary ECS Licences	Means a licence of the type set out in draft form in Schedule 1 to the Temporary ECS Licence Regulations.

Temporary ECS Licence Regulations	Means the Wireless Telegraphy (TEMPORARY ELECTRONIC COMMUNICATIONS SERVICES LICENCES Regulations, 202X, as set out in draft form in Annex 4 to ComReg Document 20/86R.
Temporary Situation	Means the temporary impact upon electronic communications networks and services from the extraordinary situation arising from the spread of the disease known COVID-19.
Temporary Spectrum Management Measures	Refers to the Temporary ECS Licences as granted by ComReg in response to the Temporary Situation.

A1.2 European and Governmental Bodies, Regulatory and Standardisation Organisations

BEREC	Body of European Regulators for Electronic Communications
ComReg	Commission for Communications Regulation
CEPT	Conférence européenne des Administration des postes et des télécommunications. In English, European Conference of Postal and Telecommunications Administrations
CSO	Central Statistics Office
DCCAE	Department of Communications, Climate Action and the Environment
EC	European Commission
ECC	Electronic Communications Committee (of CEPT)

ECO	European Communications Office
EU	European Union
FCC	Federal Communications Commission
HSE	Health Service Executive
IAA	Irish Aviation Authority
IFT	Instituto Federal de Telecomunicaciones
ITU	International Telecommunication Union
WHO	World Health Organisation.

A1.3 Primary and Secondary Legislation

S.I.	Statutory Instrument
2002 Act	The Communications Regulation Act 2002 (No. 20 of 2002), as amended ⁶⁹
Authorisation Regulations	European Communities (Electronic Communication Networks and Services) (Authorisation) Regulations 2011 (S.I. No 335 of 2011)
Directive 2002/77/EC	A European Commission Directive on competition in the markets for electronic communications networks and services
2.6 GHz EC Decision / EC Decision 2008/477/EC	European Commission Decision on the harmonisation of the 2 500 - 2 690 MHz frequency band for terrestrial systems capable of providing

⁶⁹ Includes the Communications Regulation (Amendment) Act 2007 and the Communications Regulation (Premium Rate Services and Electronic Communications Infrastructure) Act 2010.

	electronic communications services in the Community
Framework Regulations	European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2011 (S.I. No 333 of 2011)
Specific Regulations	Specific Regulations has the same meaning as set out in Regulation 2 of the Framework Regulations

A1.4 Glossary of Technical Terms

3G	Third Generation Mobile System (e.g. UMTS)
CPI	Consumer Price Index
DTT	Digital Terrestrial Television
ECN	Electronic Communications Networks
ECS	Electronic Communications Service as defined under the Framework Regulations
FDD	Frequency Division Duplex
FWA	Fixed Wireless Access
GHz	Gigahertz (1 000 000 000 Hertz)
Hertz	Unit of Frequency
kHz	Kilohertz (1 000 Hertz)
LTE	Long Term Evolution of 3G

MFCN	Mobile/fixed communications networks
MHz	Megahertz (1 000 000 Hertz)
MNO	Mobile Network Operator
TDD	Time Division Duplex
UMTS	Universal Mobile Telecommunications System.
VoLTE	Voice over Long Term Evolution
VOIP	Voice over Internet Protocol

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 Directives⁷⁰ as transposed into Irish law by the corresponding Framework and Authorisation Regulations⁷¹), and the Wireless Telegraphy Acts 1926 to 2009⁷² 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

⁷⁰ 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”).

⁷¹ 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.

⁷² The Wireless Telegraphy Acts 1926 to 1988 and Sections 181 (1) to (7) and (9) and Section 182 of the Broadcasting Act 2009.

specific relevance to the matters at hand.

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.

A 2.6 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 2.7 With some limited exceptions (see Article 124 of the EECC), Member States have until 21 December 2020 to transpose the EECC into national law.⁷³ Until then, the existing EU Common Regulatory Framework will continue to apply. However, in developing its proposals for the Proposed Award, ComReg is mindful of the EECC.

A 2.8 ComReg understands that the DCCA will be responsible for the transposition of the EECC and will assist as appropriate.

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 competition⁷⁴;
- contribute to the development of the internal market⁷⁵;
- promote the interests of users within the Community⁷⁶;

⁷³ With the exception of Articles 53(2), (3) and (4), and Article 54 (see Article 124).

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

⁷⁵ Section 12 (1)(a)(ii) of the 2002 Act.

⁷⁶ Section 12(1)(a)(iii) of the 2002 Act.

- ensure the efficient management and use of the radio frequency spectrum in Ireland in accordance with a direction under section 13 of the 2002 Act⁷⁷; 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 Regulations⁷⁸ in particular those designed to ensure effective competition⁷⁹.

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

⁷⁷ 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.

⁷⁸ 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).

⁷⁹ 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 BEREC

A 2.18 Under Regulation 16(1)(3) of the Framework Regulations, ComReg must:

- having regard to its objectives under section 12 of the 2002 Act and its functions under the Specific Regulations, actively support the goals of BEREC of promoting greater regulatory co-ordination and coherence; and
- take the utmost account of opinions and common positions adopted by BEREC when adopting decisions for the national market.

A2.1.6 Other Obligations under the 2002 Act

A 2.19 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;⁸⁰
- have regard to international developments with regard to the radio frequency spectrum⁸¹; and

⁸⁰ Section 12(3) of the 2002 Act.

⁸¹ Section 12(5) of the 2002 Act.

- 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.⁸²

A2.1.7 Policy Directions⁸³

A 2.20 Section 12(4) of the 2002 Act provides that, in carrying out its functions, ComReg must have appropriate regard to policy statements, published by or on behalf of the Government or a Minister of the Government and notified to the Commission, in relation to the economic and social development of the State. Section 13(1) of the 2002 Act requires ComReg to comply with any policy direction given to ComReg by the Minister for Communications, Energy and Natural Resources (“the Minister”) as he or she considers appropriate, in the interests of the proper and effective regulation of the electronic communications market, the management of the radio frequency spectrum in the State and the formulation of policy applicable to such proper and effective regulation and management, to be followed by ComReg in the exercise of its functions. Section 10(1)(b) of the 2002 Act also requires ComReg, in managing the radio frequency spectrum, to do so in accordance with a direction of the Minister under section 13 of the 2002 Act, while Section 12(1)(b) requires ComReg to ensure the efficient management and use of the radio frequency spectrum in accordance with a direction under Section 13.

A 2.21 The Policy Directions which are most relevant in this regard include the following:

Policy Direction No.3 on Broadband Electronic Communication Networks

A 2.22 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.

⁸² Section 12(6) of the 2002 Act.

⁸³ ComReg also notes, and takes due account of, the Spectrum Policy Statement issued by the Department of Communications Energy and Natural Resources in September 2010.

Policy Direction No.4 on Industry Sustainability

A 2.23 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 2.24 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 2.25 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 2.26 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 2.27 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 2.28 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 2.29 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 2.30 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 2.31 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 2.32 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 2.33 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 2.34 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 2.35 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 2.36 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 2.37 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 2.38 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 2.39 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.

Regulation 23 on security and integrity and Regulation 24 on implementation and enforcement of Regulation 23

A 2.40 Regulation 23 provides:

23. (1) Undertakings providing public communications networks or publicly available electronic communications services shall take appropriate technical and organisational measures to appropriately manage the risks posed to security of networks and services. In particular, measures shall be taken to prevent and minimise the impact of security incidents on users and interconnected networks.

(2) The technical and organisational measures referred to in paragraph (1) shall, having regard to the state of the art, ensure a level of security appropriate to the risk presented.

(3) Undertakings providing public communications networks shall take all appropriate steps to guarantee the integrity of their networks, thereby ensuring the continuity of supply of services provided over those networks.

(4) (a) An undertaking providing public communications networks or publicly available electronic communications services shall notify the Regulator in the event of a breach of security or loss of integrity that has a significant impact on the operation of networks or services.

(b) Where the Regulator receives a notification under subparagraph (a), it shall inform the Minister of the said notification and, with the agreement of the Minister, it shall also, where appropriate, inform the national regulatory authorities in other Member States and ENISA.

(c) Where it is considered that it is in the public interest to do so the Regulator, with the agreement of the Minister, may inform the public in relation to the breach notified under subparagraph (a) or require the undertaking to inform the public accordingly.

(5) The Regulator shall annually submit a summary report to the Minister, the European Commission and EINSAs on the notifications received and the actions taken in accordance with paragraph (4).

(6) An undertaking that fails to comply with the requirements of paragraph (4)(a) or (c) commits an offence.

A 2.41 Regulation 24 provides:

24. (1) *For the purpose of ensuring compliance with Regulation 23 (1), (2) and (3), the Regulator may issue directions to an undertaking providing public communications networks or publicly available electronic communications services, including directions in relation to time limits for implementation.*

(2) *The Regulator may require an undertaking providing public communications networks or publicly available electronic communications services to—*

(a) *provide information needed to assess the security or integrity of their services and networks, including documented security policies, and*

(b) *submit to a security audit to be carried out by a qualified independent body nominated by the Regulator and make the results of the audit available to the Regulator and the Minister. The cost of the audit is to be borne by the undertaking.*

(3) *An undertaking in receipt of a direction under paragraph (1) shall comply with the direction.*

(4) *An undertaking that fails to comply with a direction under paragraph (1) or a requirement under paragraph (2) commits an offence.*

A2.2.2 Authorisation Regulations

Decision to limit rights of use for radio frequencies

A 2.42 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 2.43 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 2.44 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 2.45 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 2.46 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 2.47 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 2.48 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 2.49 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 2.50 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 2.51 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 2.52 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 2.53 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 2.54 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 2.55 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 2.56 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 2.57 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 2.58 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 2.59 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 2.60 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 2.61 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.

Broadcasting Act 2009 (the “2009 Act”)

A 2.62 Section 132 of the 2009 Act relates to the duties of ComReg in respect of the licensing of spectrum for use in establishing digital terrestrial television multiplexes and places an obligation on ComReg to issue:

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

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

A 2.63 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.”*

Radio Spectrum Policy Programme

A 2.64 On 15 February 2012, the European Parliament adopted the five-year Radio Spectrum Policy Programme (“RSPP”) which establishes a multi-annual radio spectrum policy programme for the strategic planning and harmonisation of the use of spectrum. The objective is to ensure the

functioning of the internal market in the Union policy areas involving the use of spectrum, such as electronic communications, research, technological development and space, transport, energy and audiovisual policies.

A 2.65 Among other things, Article 5 of the RSP, entitled “Competition”, provides:

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

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

2. For the purposes of the first subparagraph of paragraph 1 and without prejudice to the application of competition rules and to the measures adopted by Member States in order to achieve general interest objectives in accordance with Article 9(4) of Directive 2002/21/EC, Member States may adopt, inter alia, measures:

(a) limiting the amount of spectrum for which rights of use are granted to any undertaking, or attaching conditions to such rights of use, such as the provision of wholesale access, national or regional roaming, in certain bands or in certain groups of bands with similar characteristics, for instance the bands below 1 GHz allocated to electronic communication services. Such additional conditions may be imposed only by the competent national authority;

(b) reserving, if appropriate in regard to the situation in the national market, a certain part of a frequency band or group of bands for assignment to new entrants;

(c) refusing to grant new rights of use of spectrum or to allow new spectrum uses in certain bands, or attaching conditions to the grant of new rights of use of spectrum or to the authorisation of new spectrum uses, in order to avoid the distortion of competition by any assignment, transfer or accumulation of rights of use;

(d) prohibiting or imposing conditions on transfers of rights of use of spectrum, not subject to national or Union merger control, where such transfers are likely to result in significant harm to competition;

(e) amending the existing rights in accordance with Directive 2002/20/EC where this is necessary to remedy ex post the distortion

of competition by any transfer or accumulation of rights of use of radio frequencies.

3. Where Member States wish to adopt any measures referred to in paragraph 2 of this Article, they shall act in conformity with the procedures for the imposition or variation of such conditions on the rights of use of spectrum laid down in Directive 2002/20/EC.

4. Member States shall ensure that the authorisation and selection procedures for electronic communications services promote effective competition for the benefit of citizens, consumers and businesses in the Union.”

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

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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Citywest Business Campus
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T +353 1 671 4444
eir.ie

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

By email only: [REDACTED]

2nd September 2020

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 earlier letter from March this year requesting ComReg to assign spectrum to the mobile networks on a temporary basis. ComReg responded positively to that request 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. ComReg plans to assign the relevant spectrum on a permanent basis early in 2021 using an auction process and the purpose of this letter is to request further extension of the temporary licences so that they can continue to operate on the current basis up to that time.

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. It seems we will need to live with Covid-19 for some time yet, with possible local restrictions from time to time.

Changed Work Practices

The change to working practice and to social interaction that was forced upon us in recent months is likely to have a lasting effect. We have seen an acceleration in the change in ways of working, which would previously have been expected over several years but have now been adopted in a matter of months. 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 face further uncertain changes in traffic patterns. Pupils returning to school, workplaces will adopt new working models and unfortunately, we may have to cope with a second phase of Covid-19 or local surges. 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 will occur, so service providers must prepare on the basis that they could be anywhere.

Spectrum Licensing is Critical

The Temporary Spectrum Licences issued by ComReg in April have helped in an important way to meet the new demands placed on mobile networks. In mid-March when measures to prevent 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. We have also seen similar effects when the local restrictions were applied to Kildare, Laois and Offaly.

The rapid enactment of the Temporary Spectrum Measures by ComReg 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 were crucial to avoiding significant congestion in voice and data networks.

As we move forward in the next phases of action dealing with Covid, it is important that ComReg should ensure that the current Temporary Spectrum Licences continue past the 7th October date of the current regulation. We ask that these measures are extended until the award process has completed.

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 2021 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 20/64 for a joint/separate 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 20/27 are extended unchanged. Our preference is that the new end date is set at the completion of the planned spectrum award.

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 20/64 paragraphs 16A-G. It is accepted that the Temporary Spectrum Management Measures cannot delay implementation of the outcome of the next spectrum award. To reassure ComReg on this point, each operator commits to a rapid transition from the Temporary Spectrum Management Measures upon completion of the long-term spectrum award.

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,

Carolan Lennon
CEO

Non Confidential version

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 2nd September 2020 (the CEO letter).

A. Network traffic / capacity / performance information

(i) up-to-date 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.

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 initiation national lockdown and sustained such growth throughout the summer period. Figure 1 provides an illustration of the continued Data traffic growth since Feb'20. As can be seen in Figure 1 the growth, particularly in respect of March, July and August has by far exceeded prior year trends.

Figure 1: Data traffic

[✂]

Voice traffic growth saw an initial very significant increase in March on the eir mobile network and largely flattened over the summer months but at an elevated level versus prior years. Figure 2 illustrates the trend for Voice traffic throughout 2020 benchmarked against prior years.

Non Confidential version

Figure 2: Voice traffic

[✂]

(ii) information on the expected traffic demand and network capacity beyond 7 October 2020.

MMC: We expect Data traffic to continue on the same growth trajectory for the remainder of 2020 and especially beyond 7th October 2020.

Voice traffic is expected to be sustained at its new elevated level with potential further growth for the remainder of 2020 following summer holidays and staycations in Ireland.

(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 and those that would be related to COVID-19.

MMC: We have provided voice and data trends for the last 5 years, the very significant growth in 2020 is very evident versus the prior year growth trajectory as noted in response (i) above.

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

(i) up-to-date information regarding the number, locations and deployment dates of sites/transmitters for each spectrum band in existing Temporary ECS Licence.

MMC: Please see attached file ('[✂]') which details sites activated to date. eir mobile has extensively utilised the existing Temporary ECS licence over the last 5 months averaging over [✂] site upgrades utilising 700MHz every month over the period. 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.

[✂]

Non Confidential version

(ii) the number of sites/transmitters for each spectrum band that an MNO would expect to use over the duration of any further Temporary ECS Licensing framework.

MMC: eir mobile expects to deploy a further [X] site upgrades every month for a further Temporary Licence period in 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) how existing temporary rights have assisted in alleviating the network capacity/performance constraints to-date. For example, information highlighting where the network capacity/performance improvements are correlated to use of temporary ECS rights of use, i.e. when temporary ECS rights of use were brought into use, the network / capacity improvements observed at these times.

MMC: As referenced earlier, eir has utilised L700 as an incremental capacity layer to support our customers during the exceptional traffic uplift. Figure 3 illustrates the data traffic utilisation on L700 up to mid Aug thus improving the data performance on the existing L800 & L1800 Bands.

As illustrated ~ [X] of data traffic has been supported by L700. eir anticipate a continuation of L700 activation under an extended temporary licence to assist manage continued data traffic growth in the coming months.

Figure 3: Data traffic by spectrum band
[X]

(ii) how temporary rights may materially assist over the duration of any further Temporary ECS Licensing framework.

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. [X] This will further enhance 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 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.

MMC: eir mobile has worked and co-ordinated extensively with all other operators in planning the activation of 700Mhz, in particular eir mobile has held 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. 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.

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

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, with much more extensive holiday and family breaks in Ireland likely for the remainder of 2020 in addition to the potential for further lockdown measures. As highlighted in the CEO letter *“Building new sites to cope with any short term demand in advance of the 2021 Spectrum auction would be extremely inefficient”*.

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

MMC: eir mobile continues to transform its network throughout 2020, build new infill and capacity sites, increase 5G network sites [X]. These programmes of work have continued throughout the emergency and assist to enhance service for eir customers and will continue for the remainder of 2020 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 as per trendline year to date.

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

MMC: As noted in the CEO letter *“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.”* eir mobile would like to stress that extending the temporary licensing regime will not negatively impact ComReg’s longer term plans for the next spectrum award. As highlighted in the CEO letter *“To reassure ComReg on this point, each operator commits to a rapid transition from the Temporary Spectrum Management Measures upon completion of the long-term spectrum award.”* eir mobile reiterates that commitment here, noting the positive short term benefits that accrue to citizens and society from extending the temporary licensing framework to the point that the next spectrum award is concluded.

[Redacted]

To: William Mccoubrey
Subject: RE: [Restricted] Common Letter: Further Temporary ECS Licensing framework

From: William Mccoubrey [Redacted]
Sent: 07 September 2020 10:57
To: Joseph Coughlan [Redacted]
Cc: Kevin Kennedy [Redacted]
Subject: Re: [Restricted] Common Letter: Further Temporary ECS Licensing framework

Hi Joseph,

Please see comments in the tables. Let me know if you need anything more.

Regards,
William

On Fri, 4 Sep 2020 at 14:17, Joseph Coughlan [Redacted] wrote:

Hi William,

Thanks for sending on the supporting information.

From reviewing this information we have a number of queries as outlined below where we request further information or clarifications

No	Reference	Relevant text	
1	A (i)	Figure 1 provides an illustration of the continued Data traffic growth since Feb'20.	Can Eir quantify the % increases /changes from pre-covid as presented in Figure 1? Data Traffic in Fig.1 has grown by over [X] from period March to Sept.
2	A (i)	Voice traffic growth saw an initial very significant increase in March on the eir mobile network and largely flattened over the summer months but at an elevated level versus prior years. Figure 2 illustrates the trend for Voice traffic throughout 2020 benchmarked against prior years.	Can Eir quantify the % increases /changes from pre-covid as presented in Figure 2? Voice Traffic in Fig. 2 has grown by over [X] from period March to Sept 20.
3	A (iii)	We have provided voice and data trends for the last 5 years, the very significant growth in 2020 is very evident versus the prior year growth trajectory as noted in response (i) above.	Could Eir quantify the percentage change that is related to COVID-19. Data traffic growth during the same period 2019 was [X], in effect over [X] data traffic growth is attributable to Covid-19 in comparing the same period from 2019. Voice traffic was flat in the same period 2019, so the full growth of over [X] is attributable to Covid-19.
4	F	eir mobile continues to transform its network throughout 2020, build new infill and capacity	Can Eir indicate how many new infill and capacity sites have been built since March 2020? eir has built [X] Infill sites in

sites, increase 5G network sites [REDACTED]

the period March - Aug'20 to assist with capacity and coverage requirements as a result of the significant traffic change experienced in 2020. In parallel ~ [REDACTED] sites are upgraded each month to assist enhance our network and support our customers.

Appreciate if you can provide this as soon as possible.

Regards

Joseph

From: William Mccoubrey [REDACTED]
Sent: 03 September 2020 17:11
To: Joseph Coughlan [REDACTED]
Cc: Kevin Kennedy [REDACTED]
Subject: Re: [Restricted] Common Letter: Further Temporary ECS Licensing framework

Hi Joseph,

Please find attached eir specific information in support of the request. Confidential and redacted versions are provided. Please advise if you require anything further at this stage.

Regards,

William

On Thu, 3 Sep 2020 at 16:29, Joseph Coughlan [REDACTED] wrote:

Dear William,

I note the common letter received from Eir, Three and Vodafone of 2 September 2020 in relation to a further framework for the temporary ECS licences. In the common letter it states:

"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 20/64 paragraphs 16A-G."

As indicated in paragraph 15 (ii) of Document 20/56, this information is required to support a request for any further Temporary ECS Licensing Framework.

15. In addition to the continued provision of network performance data as noted above, ComReg observes that the next formal step in considering any further Temporary ECS Licensing framework would be for the MNOs to submit a joint or common request to ComReg towards the end of August^[1] which would:

(i) set 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) provide 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. " (emphasis added)

Please note that in order for ComReg to consider the common request further it needs to receive this supporting information.

Three Ireland (Hutchison) Limited



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

2nd September 2020

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

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 earlier letter from March this year requesting ComReg to assign spectrum to the mobile networks on a temporary basis. ComReg responded positively to that request 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. ComReg plans to assign the relevant spectrum on a permanent basis early in 2021 using an auction process and the purpose of this letter is to request further extension of the temporary licences so that they can continue to operate on the current basis up to that time.

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.

It seems we will need to live with Covid-19 for some time yet, with possible local restrictions from time to time.

Changed Work Practices

The change to working practice and to social interaction that was forced upon us in recent months is likely to have a lasting effect. We have seen an acceleration in the change in ways of working, which would previously have been expected over several years but have now been adopted in a matter of months. Mobile networks have contributed strongly towards supporting



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

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 face further uncertain changes in traffic patterns. Pupils returning to school, workplaces will adopt new working models and unfortunately, we may have to cope with a second phase of Covid-19 or local surges. 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 will occur, so service providers must prepare on the basis that they could be anywhere.

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The Temporary Spectrum Licences issued by ComReg in April have helped in an important way to meet the new demands placed on mobile networks. In mid-March when measures to prevent 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. We have also seen similar effects when the local restrictions were applied to Kildare, Laois and Offaly.

The rapid enactment of the Temporary Spectrum Measures by ComReg 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 were crucial to avoiding significant congestion in voice and data networks.

As we move forward in the next phases of action dealing with Covid, it is important that ComReg should ensure that the current Temporary Spectrum Licences continue past the October 7th date of the current regulation. We ask that these measures are extended until the award process has completed.

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 2021 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



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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 20/64 for a joint/separate 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 20/27 are extended unchanged. Our preference is that the new end date is set at the completion of the planned spectrum award.

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 20/64 paragraphs 16A-G. It is accepted that the Temporary Spectrum Management Measures cannot delay implementation of the outcome of the next spectrum award. To reassure ComReg on this point, each operator commits to a rapid transition from the Temporary Spectrum Management Measures upon completion of the long-term spectrum award.

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

Robert Finnegan, CEO

Second Extension to Temporary Spectrum - Part 2 Information

1. Network and Capacity Information (16A)

Within a few days of the first introduction of measures to prevent the spread of Covid-19, we noticed a significant change in the overall demand for both voice and data traffic. While voice traffic had a significant short-term peak there has been a gradual return towards predicted volumes in the months since March. As can be seen below however voice traffic has not returned to Pre-Covid levels and remains elevated by approximately [§< Confidential]. We expect that the end of Summer, return to school and return to work will bring further traffic growth. Unsurprisingly we also experienced local surges of voice traffic around the time of announcement of local restrictions around August 7th in Kildare, Laois, and Offaly.

[§< Confidential section

end confidential section]

For data traffic the trend is somewhat different. We would have forecast an increase in data traffic demand throughout the year regardless of Covid-19, however when restrictions were first introduced we experienced an instant uplift in overall demand. That increase has been sustained and data traffic continues to grow above baseline forecast which included normal growth. We continue to experience new peaks which are sometimes brought about by events like game or software updates, sports events, etc.

[§< Confidential section

end confidential section]

While the above graphs demonstrate overall network traffic growth, it should be noted that there was also a significant change to normal geographic patterns. In this case, demand moved out of town and city centres to sub-urban and rural areas. We also noticed higher growth in uplink traffic than for downlink, as illustrated in the table below for weekly traffic from March to April.

[§< Confidential section

end confidential section]

We are sharing with ComReg the current forecast which includes the impact of Covid-19 for data traffic on Three's network to September 2021. This forecast takes us through the expected life-time of the Temporary Licences to when we expect the next auction process will have concluded. It shows two trend-lines – our baseline forecast excluding Covid-19 effects and the adjusted forecast which assumes ongoing measures that restrict normal behaviour.

[<Confidential section

end confidential section]

As can be seen, we anticipated ongoing growth in baseline traffic during 2020, but now we must include for 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 to expand network capacity to meet the uplifted demand growth without access to the Temporary Licences.

2. Sites and transmitters (16B)

At this time, Three has enabled LTE on the 2100MHz band on [<Confidential] sites. We have also enabled 700MHz on [<Confidential] sites. The attached spread-sheet (Three Temp Licence to end 2020) provides details of sites that Three plans to bring into service by the end of 2020 if the Temporary Licence is extended.

3. How temporary rights have assisted with the provision of ECS in the state (16C, 16D, 16F)

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 and 2100MHz for 4G data service since.

We believe Gaggin in Co. Cork is an interesting example of the benefit to consumers of the temporary measures. The area from Gaggin to Old Chapel lies to the west of Bandon. It is not well served by fixed broadband service, and mobile services in the area were unable to support locals to work from home. Local residents had resorted to working from their cars in the church yard in Bandon to get connectivity. Three has a site in the area, however it is a small mast that is fully loaded and unable to take additional antennae or equipment. On receipt of the Temporary Licence it was decided to deploy

Lack of reliable wi-fi service forces workers into Bandon church car park amid lockdown



An aerial view of Bandon residents of the town of Gaggin have taken to a church car park for internet access and work amid lockdown restrictions.



MONDAY, JUNE 22, 2020 - 10:46 PM



an additional temporary mast in the area delivering 4G data through 700MHz, 800MHz, and 2100MHz. This site is now delivering data at up to 155Mb/s in the Gaggin area and throughput on the site has increased five-fold and is growing. More importantly, it is delivering a service that allows locals to work from home.

The above is a single localised example of the benefits that have come from use of the Temporary Licence, but there have been benefits throughout the country. When the Stay at Home requirements were first introduced and we experienced a surge in demand, there was a reduction in the average throughput received by individual end users and an increase in the number of cells that would be classified as congested. As we have been able to roll-out 4G on 700MHz and 2100MHz overall end-user throughput has recovered and in some places is now higher than the pre-March level. On the [3<Confidential] sites where we have deployed 4G on the 2100MHz band it carries on average [3<Confidential] of the traffic.

While there is no single accepted metric of overall network congestion, Three has developed its own internal classification method which applies a “traffic light” system. Sites that are heavily loaded and which are delivering reduced speed to end users as a result are classified as Red or Orange depending on the number of hours per day that a site is delivering service below a defined threshold. Red = 14 hours or more below threshold per week, while Orange = 7 hours or more below threshold per week.

[3<Confidential section

end confidential section]

4. Risks to the provision and quality of existing ECS (16E)

There is a coordination procedure in place between the mobile networks, and also including Virgin Media and 2RN 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. Three has not deployed any equipment in the 2.6GHz band and does not expect to do so using the Temporary Licence.

Vodafone Ireland Limited



2 September 2020

Confidential

By Email: [REDACTED]

Cc: [REDACTED]

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)

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Changed Work Practices

The change to working practice and to social interaction that was forced upon us in recent months is likely to have a lasting effect. We have seen an acceleration in the change in ways of working, which would previously have been expected over several years but have now been adopted in a matter of months.

Vodafone Ireland Limited

MountainView, Leopardstown, Dublin 18, Ireland
T - +353 (0)1 203 7777 W - www.vodafone.ie

Registered Office: MountainView, Leopardstown, Dublin 18. Registered in Ireland No. 326967
Directors: Anne O'Leary (CEO), Sinead Bryan, Liam O'Brien

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 face further uncertain changes in traffic patterns. Pupils returning to school, workplaces will adopt new working models and unfortunately, we may have to cope with a second phase of Covid-19 or local surges. 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 will occur, so service providers must prepare on the basis that they could be anywhere.

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The Temporary Spectrum Licences issued by ComReg in April have helped in an important way to meet the new demands placed on mobile networks. In mid-March when measures to prevent 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. We have also seen similar effects when the local restrictions were applied to Kildare, Laois and Offaly.

The rapid enactment of the Temporary Spectrum Measures by ComReg 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 were crucial to avoiding significant congestion in voice and data networks.

As we move forward in the next phases of action dealing with Covid, it is important that ComReg should ensure that the current Temporary Spectrum Licences continue past the October 7th date of the current regulation. We ask that these measures are extended until the award process has completed.

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 2021 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.

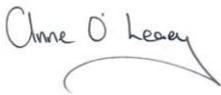
The mobile operators have worked closely with ComReg and Government in supplying ongoing information on network stability and traffic. In using the temporary rights we have also carefully managed the risks to the provision and quality of existing ECS through careful co-ordination with other radio spectrum 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 20/64 for a joint/separate 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 20/27 are extended unchanged. Our preference is that the new end date is set at the completion of the planned spectrum award.

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 20/64 paragraphs 16A-G. It is accepted that the Temporary Spectrum Management Measures cannot delay implementation of the outcome of the next spectrum award. To reassure ComReg on this point, each operator commits to a rapid transition from the Temporary Spectrum Management Measures upon completion of the long-term spectrum award.

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 Update on Traffic and Capacity.

On the 2nd of September 2020 our CEO wrote to the Commissioners seeking an Extension of Temporary Spectrum Assignments (Covid-19). That letter was a joint submission from all mobile operators.

We indicated in that letter that we would send additional, Vodafone specific, information to support the case for an extension of the Temporary Spectrum Measures.

Please see in the following paragraphs updated information from Vodafone.

1. **Network Capacity / Performance information:** Item 1 of Part 2 of Document 20/27aR states.

“Network / capacity information: available information regarding the capacity / performance of the network considering the extraordinary situation arising from COVID19. In particular, the changes in network capacity / performance since COVID-19. Also the licensee’s observations of how much of the change is due to forecasted annual changes in capacity/demand on a network and those related to COVID-19.” (emphasis added)

The following two graphs show the profile of daily traffic pre and post COVID-19 on all seven days of the week. In the early days of the emergency we saw increases of weekday Daily Speech Traffic of up to █ this has reduced in recent weeks but still approx. █ ahead of Pre Covid

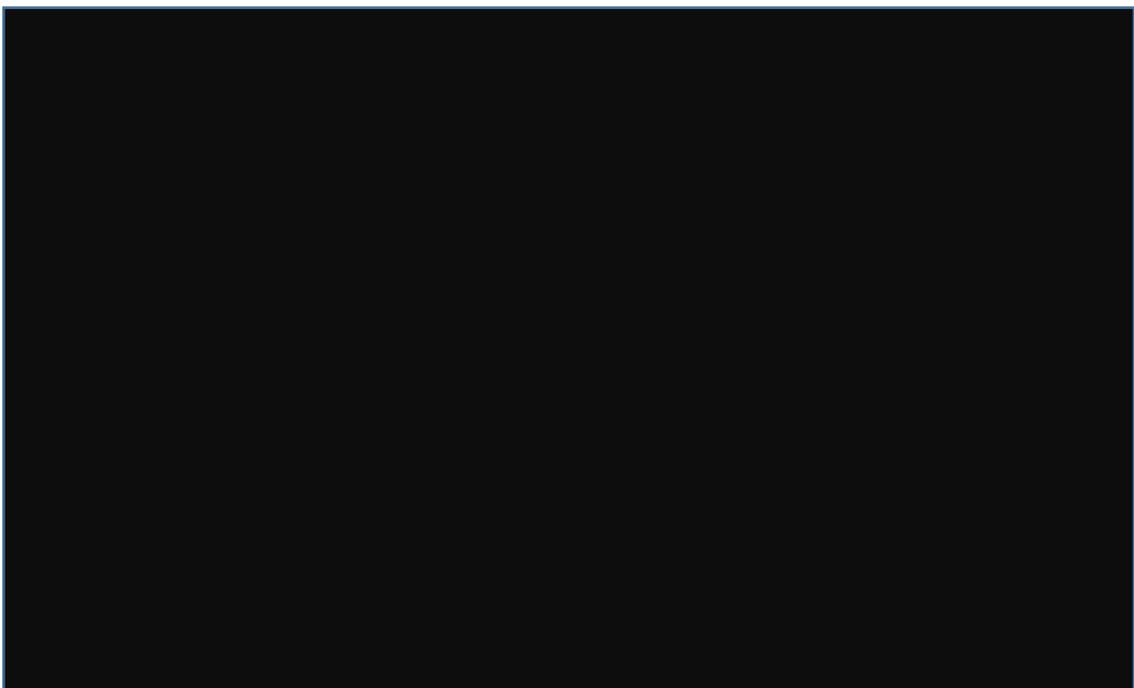
As of the end of Aug 2020 the overall voice traffic is █ ahead of our Pre Covid Levels on Speech Traffic.

In terms of data, initially we see saw weekday increases of █ (effectively bringing our weekday data profile almost in line with our weekend profile).

We believe that all of the change from March to April was related to COVID-19.

At the end of Aug 2020 total data traffic is █ ahead of our Pre Covid Levels on Data Traffic

1) Daily Speech Traffic on the VF IE Network, Pre Covid to End of August, (Week Day increases)



Daily Data Traffic on the VF IE Network, Pre Covid to End of August , (Week Day increases)



Band	700 MHz Sites		2.1 GHz Sites	
Source	Initial Temporary ECS Licence	As per renewal application	Initial Temporary ECS Licence	As per renewal application
Vodafone	█	██████████	█	██████████

We expect the implementation of the 20/21 program in the table above to be completed over the duration of any further Temporary ECS Licensing framework

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

For 2100MHz the Granting of the Temporary rights has allowed Vodafone Ireland to carry out Nationwide Retune/Reuse Program of 2100 MHz Spectrum.

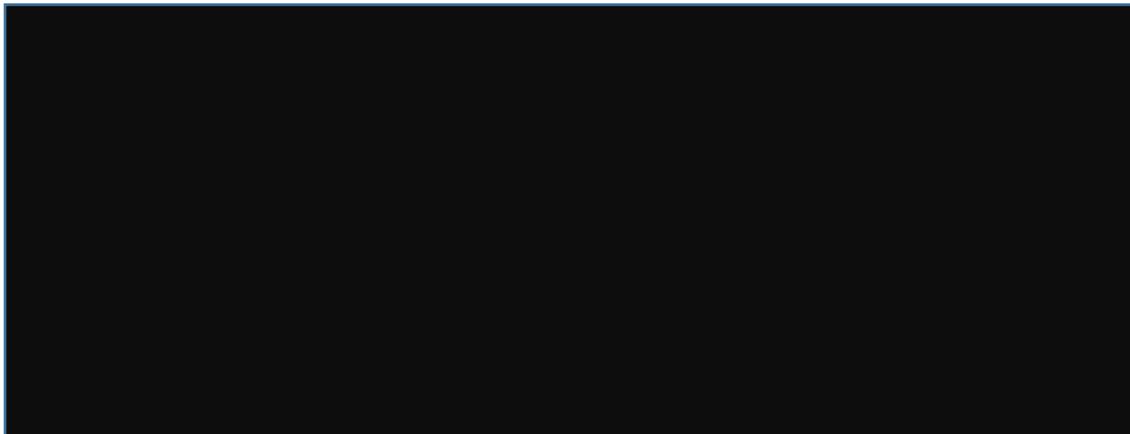
This has given Vodafone the flexibility to manage excess UMTS Speech Traffic from the Covid Crisis period relieving congestion caused by weekday increases of approx. [REDACTED] that were experienced at the peak of the crisis.

Please see below and attached view of Monthly 4G RAN Traffic Volumes V 4G 3Mbps Cell Congestion Rate.

This chart shows the impact of COVID-19 on 4G RAN Data Traffic Volumes in March with a significant increase experienced. [REDACTED]

This traffic growth has continued at an accelerated level since this COVID-19 pandemic. However, in May we see overall NW Cell congestion reduce following further traffic growth post the deployment of L2100 Cells.

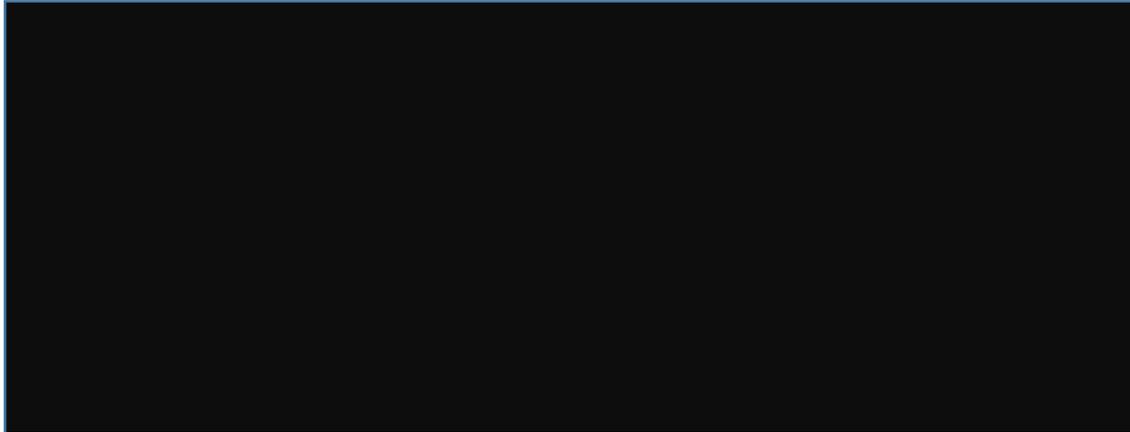
In June we see further traffic growth and continued [REDACTED] there has been other optimisation activities contributing to this, but it's also the period when we have L2100 active.



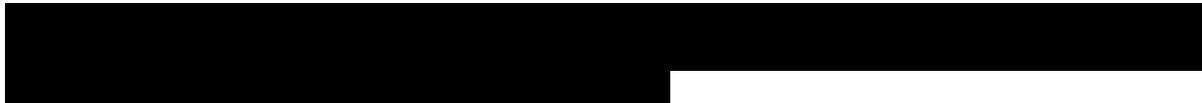
Traffic Example

For further detail on the impact of L2100, we can look at the specific example of WHLINC and its Daily KPI view:

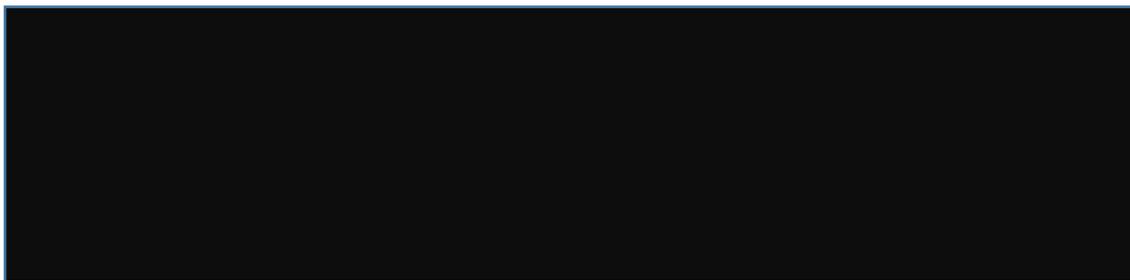
- Traffic Growth Post COVID clearly evident across the ERBS
- L2100 Activation increased available PRB Capacity (Radio Capacity) by [REDACTED]
- Additional Radio Capacity helping to maintain Average User Throughput



Further Addition of 700MHz sites



These 700 MHz sites will target coverage and congestion and significantly increase capacity in the most congested areas of the network. Sites in this band are particularly useful in rural areas where traffic has increased most significantly. These sites are targeting [REDACTED] across our network. These L700 cells have the potential to reduce our Congested Cell count by [REDACTED].



We expect the implementation of the 20/21 program in the table above to be completed over the duration of any further Temporary ECS Licensing framework

Forecast Traffic

The period September to December has historically been the period of the year with the greatest increase in traffic.

Our network investment this year was aimed at fulfilling a traffic growth forecast of █ for the entire year. In 6 months this year, so far, we have seen █ growth post COVID, and as traffic continues to grow, we anticipate that traffic growth for the year will be █ this would be more than double the traffic growth we expected in our original forecast

Absent an extension of the Temporary Spectrum measures we will not be able to build new sites quickly enough to meet this traffic demand.

We would then likely see a considerable increase in congested cells in the network and a degradation of service for all customers. Without this additional spectrum, it is likely that greater than █ of sites would experience congestion, resulting in reduced data rates or interrupted data services for many customers.

Referring to Section D of Comreg 20/64

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

We note that we have worked co-operatively with other users of spectrum, including the IAA and 2RN, and with the cable company Virgin, to ensure that there has been no interference to other services. Regular meetings have taken place reviewing activity in the 700MHz band and no adverse effects on other services have been reported. In addition the capacity we have received from the temporary allocations and liberalisation of the 2.1GHz band has facilitated us to lease spectrum in the 3.6GHz band to the FWA operator Imagine.

Referring to Section F of Comreg 20/64

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

In event of no further Temporary ECS licensing Vodafone would halt all LTE700 and LTE2100 cells defined in our network with subsequent planned deletion of cells. UMTS2100 cells will be recreated in order to try to offload some of increased 4G data traffic onto 3G layer

These areas would need optimisation for increased traffic on the 4G layer that involves either or both power and antenna down-tilts adjustments which may have impact to marginal coverage locations within the cell service areas.

This effect, combined with normal Cell breathing would reduce or remove service from customers close to the cell edge.

We have reviewed possible solutions but we are already fully using our previous spectrum assignments so new site would be the only way to provide service at current levels. It would not be feasible or economic to build additional cell sites between now and the auction date

2RN

[REDACTED]

Subject: RE: [Confidential] Further Temporary Spectrum Measures - 700 MHz Band

From: Johnny Evans [REDACTED]
Sent: 10 September 2020 08:40
To: Conor Berkeley [REDACTED]
Subject: RE: [Confidential] Further Temporary Spectrum Measures - 700 MHz Band

Hi Conor,

Yes, we are content with the current MoU agreement and would be happy to see it continued.

Regards, Johnny

Johnny Evans
Head of Projects and Coverage Planning
2RN
Block B, Cookstown Court, Old Belgard Road, Tallaght, Dublin 24, Ireland
D24 WK28

From: Conor Berkeley [REDACTED]
Sent: 09 September 2020 17:04
To: Johnny Evans [REDACTED]
Subject: [Confidential] Further Temporary Spectrum Measures - 700 MHz Band

Hi Johnny,

As you are aware in July ComReg published Document 20/64 which provided an update and next steps in considering any further temporary licensing framework, relating to the 700 MHz, 2.1 GHz and 2.6 GHz bands.

In considering the initial Temporary Spectrum Measures and the 700 MHz band in Document 20/21, RTÉ/2RN highlighted concerns with respect to MFCN deployments in the recently available 700 MHz Band. In response to the concerns raised by RTÉ/2RN, an MoU was signed between the mobile operators, 2RN and Virgin Media to ensure coexistence of all relevant systems (Mobile, DTT and Cable).

As the current temporary licences will expire on 7th October, ComReg is in the process of considering requests for further temporary spectrum measures by operators. As part of this process ComReg would propose that the current MoU remains in place with respect to the 700 MHz band and further temporary licences.

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

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

One Dockland Central, Guild Street, Dublin 1, Ireland, D01 E4X0

Suíomh | Website www.comreg.ie



Irish Aviation Authority

[REDACTED]

Subject: RE: [Confidential] 2.6 GHz Band - Further Temporary Spectrum Measures

From: MCGRATH Patrick [REDACTED]
Sent: 10 September 2020 21:59
To: Conor Berkeley [REDACTED]
Subject: RE: [Confidential] 2.6 GHz Band - Further Temporary Spectrum Measures

Hi Conor,

Thanks for the mail.

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.

Further, the IAA support the temporary spectrum measures as a means to ensuring greater access to mobile services for consumers and businesses alike.

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: 09 September 2020 16:53
To: MCGRATH Patrick [REDACTED]
Subject: [Confidential] 2.6 GHz Band - Further Temporary Spectrum Measures

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

Hi Patrick,

As you are aware in July ComReg published Document 20/64 which provided an update and next steps in considering any further temporary licensing framework, relating to the 700 MHz, 2.1 GHz and 2.6 GHz bands.

In considering the initial Temporary Spectrum Measures and the 2.6 GHz band in Document 20/21, the IAA highlighted issues relating to coexistence between deployments in the 2.6 GHz Band and the IAA's Primary Radar installations in the 2.7 GHz Band. In response to the IAA's concerns, ComReg implemented a number of technical conditions to ensure protection of the IAA's radars. These conditions included:

- 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 is in the process of considering requests for further temporary spectrum measures by operators. As part of this process ComReg would not be proposing any changes to the current conditions in place with respect to the 2.6 GHz band and temporary licences.

Could you please respond by email 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

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Uimh. a hAon Lárcheantar na nDugáí, Sráid na nGildeanna, BÁC 1, Éire, D01 E4X0
One Dockland Central, Guild Street, Dublin 1, Ireland, D01 E4X0

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Virgin Media

[REDACTED]

Subject: RE: [Confidential] 700 MHz band and Temporary Spectrum Measures - Document 20/64

From: Adrienne Costello [REDACTED]
Sent: 10 September 2020 15:04
To: Conor Berkeley [REDACTED]
Subject: RE: [Confidential] 700 MHz band and Temporary Spectrum Measures - Document 20/64

Hi Conor

Many thanks for your email and the opportunity to input.

The protocol we have in place with the MNOs is working well. We would like these current arrangements to be maintained if Comreg extend the period over which the temporary licences are effective.

Kind regards,

Adrienne Costello
Regulatory Affairs Manager
Virgin Media | Macken House, 39/40 Mayor Street Upper, Dublin 1, D01 C9W8
[REDACTED]

From: Conor Berkeley [REDACTED]
Sent: 08 September 2020 11:33
To: Adrienne Costello [REDACTED]
Subject: [Confidential] 700 MHz band and Temporary Spectrum Measures - Document 20/64

Hi Adrienne,

I hope you are well, I am contacting you in relation to ComReg's Temporary Spectrum Measures and further temporary licensing framework particularly in relation to the 700 MHz band which Virgin Media have had concerns about previously with regards to your cable network.

In April, Virgin Media, the mobile operators and 2RN agreed to an MoU outlining a 700 MHz procedure in relation to the rollout of MFCN in the 700 MHz band on a temporary basis during the COVID-19 pandemic. I understand that this has worked quite well and that all parties involved have had no notable issues.

In Document 20/64, ComReg outlines next steps for further temporary spectrum measures and has indicated that the mobile operators must collectively request to continue the current measures beyond the licence expiry of 7th October.

In this regard, could you please confirm by return email that the current agreement in place in relation to the coordination procedure for the 700 MHz band for the Temporary Spectrum Measures remains suitable and appropriate from Virgin Media's point of view should further temporary measures in the 700 MHz band be implemented by ComReg?

If you require any further information please do not hesitate to contact me,

I look forward to hearing from you soon,

Kind regards,
Conor

Conor Berkeley

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

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One Dockland Central, Guild Street, Dublin 1, Ireland, D01 E4X0

[REDACTED]

[REDACTED]

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Communications Regulation



Annex: 4 Draft temporary electronic communications services licensing regulations

STATUTORY INSTRUMENTS

S.I. No. _____ of 2020

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

DRAFT

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

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 Communications, Climate Action and Environment in accordance with section 37 of the Communications Regulation Act 2002 (No. 20 of 2002), hereby makes the following Regulations:

Citation

1. These Regulations may be cited as the Wireless Telegraphy (Further Temporary Electronic Communications Services Licences) Regulations 2020.

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;

“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;

“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” 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;

“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. (1) These Regulations apply to Further Temporary Electronic Communications Services Licences.

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 six calendar months from the date of these Regulations.

Conditions of Licences

6. (1) 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, Withdrawal and Suspension

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) A Licence may be suspended or withdrawn by the Commission 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. (1) 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) REGULATIONS 2020

Further Temporary Licence 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) Regulations 2020 (S.I. No. of 2020) (“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) Regulations 2020 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
<i>700 MHz Duplex, 2.1 GHz, 2.6 GHz as appropriate</i>					

Part 4

Licence Conditions

Section 1: General

Harmful Interference

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

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

“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 and 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;

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

“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;

“TDD-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 communicate with a Base Station using spectrum in the 700 MHz Duplex, 2.1 GHz Band and 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. (1) The 700 MHz Duplex

- (a) Only terrestrial systems compatible with the Decision of 2016 (as amended) 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 spectrum in 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.

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.

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

- (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 “*Technical conditions for base stations for terrestrial systems capable of providing electronic communications services within the 738-788 MHz frequency band*” of the Annex to 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.(1) The 2.1 GHz Band

- (a) Only terrestrial systems compatible with the Decision of 2012 (as amended) 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 Memoranda of Understanding (‘MoU’)³ 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 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 an in-block EIRP power of 64 dBm/5 MHz per antenna.
- (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 Table 1 and Table 2 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 dBm⁴ per 5 MHz for Terminal Stations shall apply⁵.

4. (1) The 2.6 GHz Band

- (a) Only terrestrial systems compatible with the Decision of 2008 (as amended) can be worked and used in the 2.6 GHz Band.
- (b) Within the 2.6 GHz Band FDD Frequency Generic 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 duplex mode of operation is TDD.
- (d) Licensees in the 2.6 GHz Band TDD Blocks are bound by the Inter-Licensee Synchronisation Procedure.
- (e) The Licensee shall comply with all Memoranda of Understanding ('MoU')⁶ 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 spectrum in the 2.6 GHz Band.

⁴ For the determination of out of band emissions of terminals in CEPT Report 39 the maximum conducted transmit power of 23 dBm has been used as a reference.

⁵ 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.

⁶ [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

- (f) Within a 2.6 GHz Band FDD Frequency Generic Block and a 2.6 GHz Band TDD Frequency Generic Block assigned to the Licensee, the in-block EIRP from a Base Station transmitter in the downlink direction must not exceed a maximum in-block EIRP of 61 dBm/5 MHz.
- (g) Within the 2.6 GHz Band TDD Fixed Frequency Block (lower) and 2.6 GHz Band TDD Fixed Frequency block (upper) assigned to the Licensee, the in-block EIRP from a Base Station transmitter in the downlink direction must not exceed a maximum in-block EIRP of 25 dBm/5 MHz.
- (h) Outside of 2.6 GHz Band FDD Frequency Generic Block(s) and 2.6 GHz Band TDD Frequency Generic Block(s) assigned to the Licensee, the Licensee shall comply with the unrestricted out-of-block EIRP BEM as specified in Table 1 to Table 3 of the Annex to the Decision of 2008.
- (i) Outside of the 2.6 GHz TDD Band Fixed Frequency Block (Lower) and 2.6 GHz TDD Band Fixed Frequency Block (Upper) assigned to the Licensee, the Licensee shall comply with the restricted EIRP BEM as specified in Table 4 and Table 5 of the Annex to the Decision of 2008.
- (j) Licensees of the 2.6 GHz TDD Band Fixed Frequency Block (Lower) and 2.6 GHz TDD Band Fixed Frequency Block (Upper) acknowledge and accept that usage of these blocks are subject to a greater risk of interference from adjacent blocks.
- (k) For all 2.6 GHz Band Blocks and in cases where antennas are placed indoors. Alternative parameters in line with Table 5 of the Annex to the Decision of 2008 shall be implemented, provided that at geographical borders with other Member States, Table 1 of the Annex to the Decision of 2008 applies, and that Table 4 of the Annex to the Decision of 2008 remains valid nationwide.
- (m) 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:

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

- 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.

(n) For deployments in compliance with condition (m) 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

(o) The maximum mean in-block power (including Automatic Transmitter Power Control range) of 31 dBm/5 MHz TRP, and 35 dBm/5 MHz EIRP, 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.

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

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

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.

Definitions

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

“Default Frame Structure” means the frame structure as detailed in Figure 1 below;

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

“Unrestricted BEM” means: Operators utilising the Default Frame Structure on their network (and having a common reference phase clock with adjacent channel operators¹²) are subject to the Unrestricted BEM specified in the Annex of the Decision of 2008, “B. Unrestricted BEM for Base Stations”.

“Restricted BEM” means: Operators utilising the Other Frame Structure (or failing to synchronise with adjacent channel networks for any other reason) are subject to the Restricted BEM specified in the Annex of the Decision of 2008, “C. Restricted BEM for Base Stations” and “B. Unrestricted BEM for Base Stations”¹³.

Introduction

2. (1) Licensees with 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 Unrestricted BEM and the Restricted BEM, so as to minimise the risk of Harmful Interference to other Licensees.

Conditions for using the Unrestricted BEM

3. (1) Default Frame Structure - The technical conditions for Unrestricted 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 Figure 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

¹² Each operator needs to ensure the start of frame is aligned with adjacent channel operators above and below its assignment

¹³ It is important to note that, in order to meet the restricted mask, operators would likely have to adopt guard bands within their assignment.

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 (+/- 1.5 μ 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

Figure 1: Default Frame Structure

Conditions for using the Restrictive BEM

4. (1) Other Frame Structure — the technical conditions for Restricted 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 Restricted 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).

5. (1) Indoor Small Cells with an EIRP not exceeding 24dBm for indoor domestic and other indoor locations are exempted from synchronisation restrictions. The Unrestricted BEM set out in this Section applies to such Indoor Small Cells 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 Communications, Climate Action and the Environment	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 2020

Chairperson,

For and on behalf of the Commission for Communications Regulation

The Minister for Communications, Climate Action and Environment, in accordance with Section 37 of the Communications Regulation Act, 2002, consents to the making of the foregoing Regulations.

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

day of 2020

Eamon Ryan

Minister for Communications, Climate Action and Environment

DRAFT

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 further temporary licences 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.

DRAFT