



An Coimisiún um
Rialáil Cumarsáide
Commission for
Communications Regulation

COVID-19: Potential Further Temporary ECS Licensing

January 2022 update and next steps in
considering any further temporary licensing
framework

Information Notice

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An Coimisiún um Rialáil Cumarsáide
Commission for Communications Regulation

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1 Introduction

1. The purpose of this Information Notice is to provide an update on the current COVID-19¹ temporary licensing framework (under which licences are due to expire on 1 April 2022) and provide information relevant to the consideration of any further licensing framework beyond 1 April 2022, including next steps and envisaged consultation timelines regarding same.

1.1 COVID-19: Temporary Spectrum Licensing Frameworks implemented to date

2. Given the Government measures to address the extraordinary situation presented by COVID-19 (see Section 1.2 below) and the increased traffic demands placed on wireless networks arising from same (see Section 1.3 below) (the “Temporary Situation”), and pursuant to requests from affected operators, since April 2020 ComReg has consulted upon and (with the consent of the Minister) put in place four consecutive licensing frameworks for the temporary assignment of spectrum rights of use. These are:
 - the Temporary ECS licensing framework (from 8 April 2020 to 7 October 2020)²;
 - the Further Temporary ECS licensing framework (from 8 October 2020 to 1 April 2021)³;
 - the Further Temporary ECS (No. 2) licensing framework (from 2 April 2021 to 1 October 2021)⁴; and

¹ COVID-19 is an illness that can affect your lungs and airways and is caused by a virus called SARS-CoV-2 (2019-nCoV) coronavirus.

² The Wireless Telegraphy (Temporary Electronic Communications Services Licences ([S.I. No. 122 of 2020](#)) Regulations 2020 were made on 8 April 2020 with the consent of the Minister for Communications, Climate Action and Environment.

³ The Wireless Telegraphy (Further Temporary Electronic Communications Services Licences) Regulations 2020 ([S.I. No. 407 of 2020](#)) were made on 2 October 2020, with the consent of the Minister for the Environment, Climate and Communications.

⁴ The Wireless Telegraphy (Further Temporary Electronic Communications Services Licences) (No.2) Regulations 2021 ([S.I. No. 137 of 2021](#)) were made on 22 March 2021, with the consent of the Minister for the Environment, Climate and Communications.

- the Further Temporary ECS (No. 3) licensing framework (from 2 October 2021 to 1 April 2022)⁵.
3. Each of these licensing frameworks has provided for the temporary assignment of spectrum rights in the 700 MHz, 2.1 GHz and 2.6 GHz bands for an overall period of up to 6 calendar months.
 4. Such temporary licensing frameworks are intended solely to address the Temporary Situation and are entirely without prejudice to the award of spectrum in the Multi-Band Spectrum Award (see Section 1.4 below). Applicants for a temporary licence have accepted same in the Application Declaration Form⁶ when applying for a licence.
 5. To date, eight separate temporary spectrum licences for spectrum rights in the 700 MHz and 2.1 GHz bands⁷, covering the period from April 2020 to 1 April 2022, have been issued to each of the three mobile network operators (MNOs) (Meteor, Three and Vodafone), as detailed in Table 1 below.
 6. As outlined by the MNOs' submissions to ComReg's consultations and their most recent renewal applications⁸, the temporary spectrum rights have been used to provide additional network capacity to support the provision of voice and data services to consumers to address the increased traffic demands arising from the COVID-19 measures.

⁵ The Wireless Telegraphy (Further Temporary Electronic Communications Services Licences) (No.3) Regulations 2021 ([S.I. No. 501 of 2021](#)) were made on 30 September 2021, with the consent of the Minister for the Environment, Climate and Communications.

⁶ See paragraph 4 of Part 6 of the Application Form in ComReg Documents [20/27a](#), [20/88a](#), [21/24a](#) and [21/96a](#).

⁷ Since July 2021, Three and Vodafone have not requested or been assigned temporary 2.1 GHz spectrum rights, as each applied for and was granted a 2.1 GHz Band Liberalised Use Licence in June 2021, thus removing the need for temporary rights in that band for these operators.

⁸ For example, see:

- Section 3.2 of [ComReg Document 21/87](#) which summarises the MNOs' submissions in support of a Further Temporary ECS (No.3) licensing framework; and
- Annex 1 of this document which sets out the information received from the MNOs in support of a renewal licence under the Further Temporary ECS (No.3) licensing framework.

Table 1: Details of the COVID-19 temporary spectrum licences issued

| Licence | | Meteor | Three | Vodafone |
|---|--------------------|---|---|---|
| Temporary ECS Licensing Framework | 1. Initial Licence | 9 April 2020 to 8 July 2020 (700 MHz & 2.1 GHz) | 9 April 2020 to 8 July 2020 (700 MHz & 2.1 GHz) | 22 April 2020 to 21 July 2020 (700 MHz & 2.1 GHz) |
| | 2. Renewal Licence | 9 July 2020 to 7 October 2020 (700 MHz & 2.1 GHz) | 9 July 2020 to 7 October 2020 (700 MHz & 2.1 GHz) | 22 July 2020 to 7 October 2020 (700 MHz & 2.1 GHz) |
| Further Temporary ECS Licensing Framework | 3. Initial Licence | 8 October 2020 to 7 January 2021 (700 MHz & 2.1 GHz) | 8 October 2020 to 7 January 2021 (700 MHz & 2.1 GHz) | 8 October 2020 to 7 January 2021 (700 MHz & 2.1 GHz) |
| | 4. Renewal Licence | 8 January 2021 to 1 April 2021 (700 MHz & 2.1 GHz) | 8 January 2021 to 1 April 2021 (700 MHz & 2.1 GHz) | 8 January 2021 to 1 April 2021 (700 MHz & 2.1 GHz) |
| Further Temporary ECS (No2) Licensing Framework | 5. Initial Licence | 2 April 2021 to 1 July 2021 (700 MHz & 2.1 GHz) | 2 April 2021 to 1 July 2021 (700 MHz & 2.1 GHz) | 2 April 2021 to 1 July 2021 (700 MHz & 2.1 GHz) |
| | 6. Renewal Licence | 2 July 2021 to 1 October 2021 (700 MHz & 2.1 GHz) | 2 July 2021 to 1 October 2021 (700 MHz) | 2 July 2021 to 1 October 2021 (700 MHz) |
| Further Temporary ECS (No3) Licensing Framework | 7. Initial Licence | 2 October 2021 to 1 January 2022 (700 MHz & 2.1 GHz) | 2 October 2021 to 1 January 2022 (700 MHz) | 2 October 2021 to 1 January 2022 (700 MHz) |
| | 8. Renewal Licence | 2 January 2022 to 1 April 2022 (700 MHz & 2.1 GHz) | 2 January 2022 to 1 April 2022 (700 MHz) | 2 January 2022 to 1 April 2022 (700 MHz) |

1.2 Government's COVID-19 measures and vaccination programme

7. Since March 2020, the Government has set out five separate plans⁹ to tackle COVID-19 and has implemented a suite of measures¹⁰ at different points during this time, including requiring:
- that people stay at home, except for work, education or other essential reasons, or to exercise within 5 kilometres of your home;
 - that people work from home, unless your work is an essential service that cannot be done from home;
 - that people not to visit other households except for essential purposes; and
 - schools, colleges and childcare facilities to be temporarily closed.
8. The Government's fifth and latest plan for tackling COVID-19 (the "Government's COVID-19 Plan") was published in August 2021¹¹. While the Government's COVID-19 Plan envisaged that from 22 October 2021 onwards most COVID-19 measures would be lifted and replaced by guidance and advice, in recent months the Government has re-introduced certain measures given the increased levels of infections and the uncertainties of its future trajectory.
9. As of 17 January 2022, the COVID-19 measures¹² currently in place include that:
- Everyone should work from home unless it is necessary to attend the workplace in person;

⁹ These plans demonstrate the evolving response of the Government to tackling COVID-19 and are:

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

¹⁰ On 20 March 2020, the [Health \(Preservation and Protection and Other Emergency Measures in the Public Interest\) Act 2020 \(Act 1 of 2020\)](#), was signed into law. This was extended until at least 9 November 2021 by the [Health and Criminal Justice \(Covid-19\) \(Amendment\) Act 2021 \(Act 12 of 2021\)](#) and the Dáil has voted to extend these powers until 9 February 2022. The Act gives the Minister for Health the power to make regulations to introduce measures to slow down the spread of the virus.

See Citizens Information, "Public Health Measures for COVID-19", accessed on 18 January 2022, available at <https://www.citizensinformation.ie/>

¹¹ Gov.ie, "COVID-19: Reframing the Challenge, Continuing Our Recovery and Reconnecting", August 2021, available at <https://assets.gov.ie/197018/ee93451c-2c67-4ea4-ad2b-ba5fb38bfce2.pdf>

¹² Gov.ie, "[Public Health Measures in Place Right Now](#)", 17 January 2022, available at <https://www.gov.ie/>

- People should limit their contacts throughout the coming period to the greatest degree possible and visits to private homes should be kept to a maximum of 3 other households (that is, 4 households in total); and
- No indoor events, including entertainment, cultural, community and sporting events, will take place after 8pm. All restaurants, bars and cafes, excluding take away or delivery services, are to close at 8pm. Strict social distancing is required in all bars and restaurants, including hotels (reverting to pre-22 October measures).

COVID-19 vaccination programme

10. As of 17 January 2022, and based on figures provided by the Health Service Executive¹³:
 - the cumulative vaccine uptake for people 5 years and older in Ireland of one dose is 84.64% and for full vaccination is 81.89%, giving Ireland one of the highest rates of COVID-19 vaccination doses administered in Europe¹⁴; and
 - the cumulative booster vaccine uptake for people 5 years and older is 61%.

1.3 Network traffic since the adoption of COVID-19 measures

11. This section presents updated information on the network traffic demands being placed on MNOs at a national level¹⁵ in light of the Temporary Situation and is based on:
 - I. The weekly network performance reports provided by network operators to ComReg's Network Industry Forum¹⁶; and

¹³ Gov.ie, "Vaccinations", 17 January 2022, available at <https://covid19ireland-geohive.hub.arcgis.com/pages/vaccinations>.

¹⁴ Statista, "*Number of Covid-19 Vaccination doses administered in Europe by country*", available at www.statista.com

¹⁵ The MNOs also submit (See Annex 1) that the location and traffic profile has altered with COVID-19, with more traffic for example moving to rural areas.

¹⁶ The network performance report and associated data provides recent information on how mobile voice and data traffic has grown since the introduction of COVID-19 measures. This data is reported weekly with records submitted up to 17 January 2022.

- II. ComReg's Quarterly Key Data Reports and the Data Portal where ComReg reports on the key trends and developments in the Irish electronic communications market¹⁷.

I. Network Performance Reports

12. The data provided by network operators to ComReg's Network Industry Forum (illustrated in Figure 1) presents updated aggregate monthly change in voice and data traffic volumes on the mobile networks from February 2020 to August 2021, compared to a pre-COVID-19 base level (i.e., February 2020)

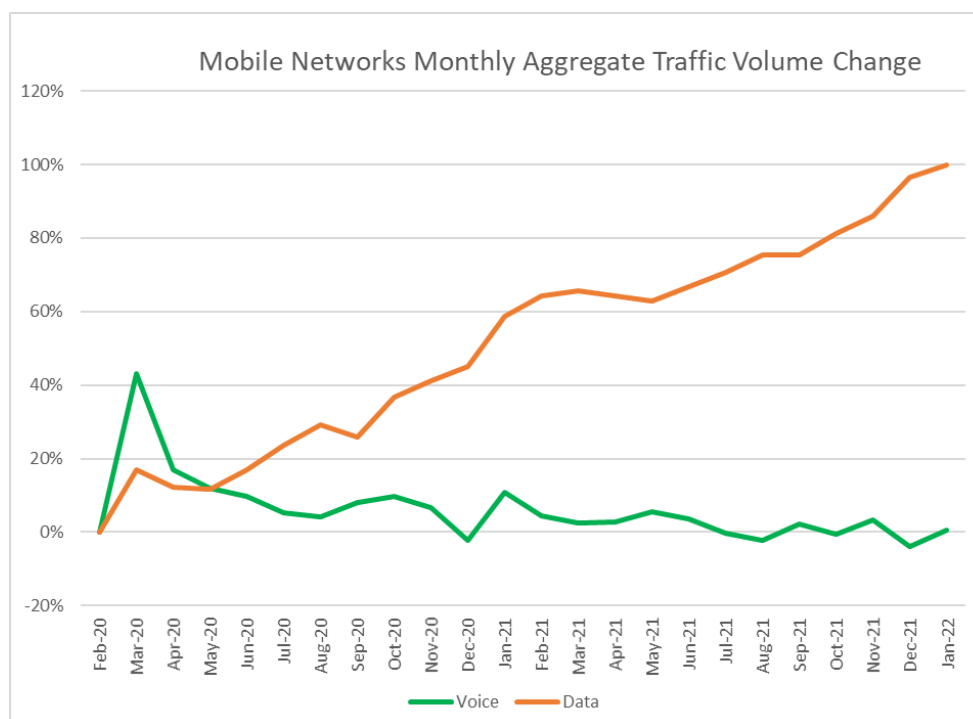


Figure 1: Mobile Networks Monthly Aggregate Traffic Volume change¹⁸

13. From this information ComReg observes:

- For **mobile voice traffic volumes**, in March 2020 this increased sharply by 43% compared to the pre-COVID-19 base level, but since then, it has declined to pre-COVID-19 levels; and

¹⁷ Information from the ComReg Quarterly Key Data Reports allows for comparison with time periods before the introduction of COVID-19 measures and therefore provides relevant information on the extent to which mobile voice and data increases are natural or may have been influenced by the introduction of COVID-19 measures.

¹⁸ Note that these are total traffic volume changes against a base level immediately before the COVID-19 government restrictions were put in place in March 2020.

- For **mobile data traffic volumes**, in March 2020 this increased sharply with a 17% increase compared to the pre-COVID-19 base level, and since then, this has generally increased at a stable rate with no sharp increases or decreases.

II Updated ComReg Quarterly Key Data

14. Information from the data sets¹⁹ informing ComReg’s Quarterly Key Data Reports, including its most recent data for Q3 2021²⁰ is presented as follows:

- Figure 2 provides information on mobile data expressed in terms of volumes and annual % growth; and
- Figure 3 provides information on mobile voice expressed in terms of volume and annual % growth.

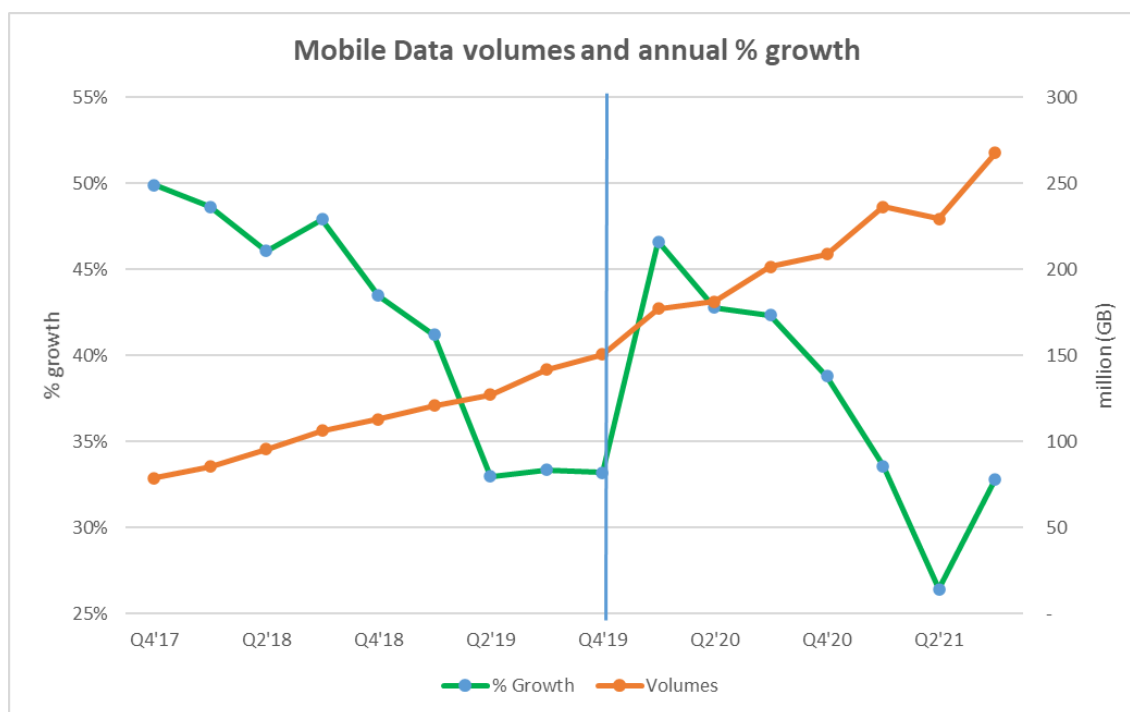


Figure 2: Mobile data volumes and annual percentage growth

15. Figure 2 shows the growth in mobile data for each quarter in terms of volume and the rate of growth over the past four years and allows for comparison of mobile data growth evolution before and after the introduction of COVID-19 measures. In summary:

¹⁹ See <https://www.comreg.ie/industry/electronic-communications/data-portal/tabular-information/>

²⁰ ComReg [Document 21/125](#), “Quarterly Key Data Report – Q3 2021”, published 9 December 2021, available at <https://www.comreg.ie/>

- prior to the introduction of COVID-19 measures at the beginning of 2020:
 - mobile data volumes (i.e., GBs uploaded or downloaded) were already increasing significantly; and
 - annual percentage growth rates had stabilised around 30 - 35% for the previous three quarters.
- each of the four quarters in 2020 show growth rates above pre-COVID-19 levels, with a peak growth rate during COVID-19 of 47% in Q1 2020; and
- rates of growth since that peak have steadily declined in subsequent quarters such that annual percentage data growth rates are comparable to, or somewhat lower than, the 30-35% growth levels pre-COVID-19.

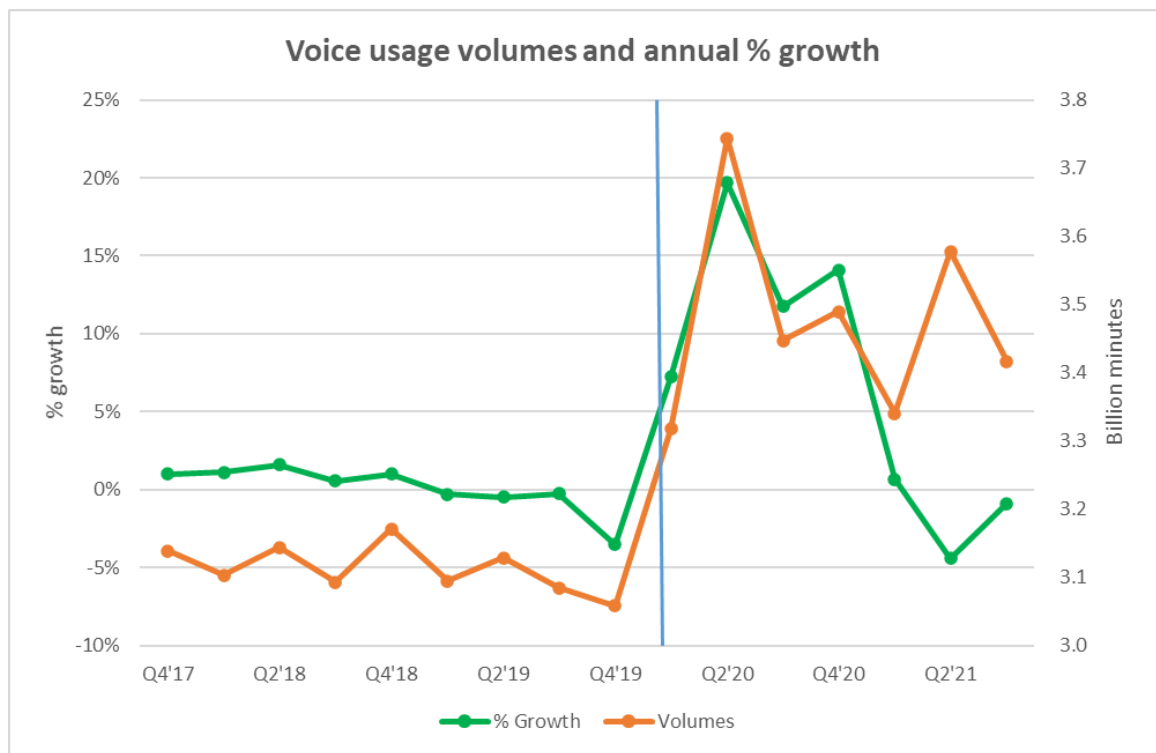


Figure 3: Mobile voice minutes growth

16. Figure 3 shows the growth in mobile voice minutes for each quarter in terms of volume and rate of growth over the past four years and allows for comparison of mobile voice growth evolution before and after the introduction of COVID-19 measures. In summary:

- prior to the introduction of COVID-19 measures at the beginning of 2020:

- volume of mobile voice minutes on a quarterly basis was around 3.1 billion minutes (aside from some reasonable variability); and
- there was close to a zero rate of growth for the period in the lead up to COVID-19 (indeed it has been close to zero for the previous 5 years).
- each of the four quarters in 2020 show growth rates and volume of mobile voice minutes above pre-COVID levels, with peak increases during COVID-19 of around 20% or 3.7 billion minutes in Q2 2020; and
- since that peak in Q2 2020, volumes and the rate of growth have declined, although mobile voice volumes remained above the pre-COVID levels of circa 3.1 billion minutes.

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

17. In parallel with COVID-19 temporary spectrum rights, ComReg has progressed its Multi-Band Spectrum Award (“MBSA2”) project for the long-term assignment of spectrum rights of use in the 700 MHz, 2.1 GHz, 2.3 GHz and 2.6 GHz bands (the “Award Bands”) and, on 18 December 2020, ComReg published its Decision D11/20²¹ (“the MBSA2 Decision”) on same.

Appeal of the MBSA2 Decision

18. On 14 January 2021, Three Ireland (Hutchison) Limited and Three Ireland Services (Hutchison) Limited (collectively “Three”) lodged an appeal against the MBSA2 Decision to the High Court.

²¹ See:

- [ComReg Document 20/122, ComReg Decision D11/20](https://www.comreg.ie/publication/), “Multi Band Spectrum Award - Response to Consultation and Decision - The 700 MHz Duplex, 2.1 GHz, 2.3 GHz and 2.6 GHz Bands”, 18 December 2020. Available at: <https://www.comreg.ie/publication/>;
- [ComReg Document 20/122a](https://www.comreg.ie/publication/), “Multi Band Spectrum Award - DotEcon Report Assessment of responses to consultation on Draft Decision”, 18 December 2020. Available at: www.comreg.ie/publication/;
- [ComReg Document 20/122b](https://www.comreg.ie/publication/), “Multi Band Spectrum Award - A Report by Plum Consulting London LLP”, 18 December 2020. Available at: www.comreg.ie/publication/; and
- [ComReg Document 20/122s](https://www.comreg.ie/publication/), “Multi Band Spectrum Award - Updated Versions of Non-confidential Submissions to Document 19/124, 20/32 and 20/56”, 18 December 2020. Available at: www.comreg.ie/publication/.

19. As outlined by ComReg in Information Notice Document 21/04R²², Three's appeal does not of itself affect the taking effect of the MBSA2 Decision or prevent action being taken to implement it and ComReg is opposing the appeal in full.
20. The appeal hearing was held in June 2021, following which two separate sets of Court directions were issued and the case was mentioned in Court on 23 July and 23 November 2021. Parties are awaiting a judgment to be issued on the matter.

Implementation of the MBSA2 Decision

21. On 16 April 2021, the award process formally commenced with the publication of the Information Memorandum (Document 21/40)²³ ("IM"). The IM details the processes and procedures that ComReg is employing to implement Decision 11/20, and an indicative timeline is set out in Table 17 of the IM. ComReg remains committed to ensuring the timely delivery of the MBSA2 and, to date, the award has progressed in line with the indicative timeline set out in Table 17 of the IM, albeit that certain adjustments have been made to the timeline in respect of the submission of Phase 2 Application Documentation given that, at the present time, same may be accommodated within ComReg's overall commitment to ensuring timely delivery.
22. On 28 May 2021, two sets of Wireless Telegraphy regulations associated with the MBSA2 were signed by Eamon Ryan, Minister for the Environment, Climate and Communications and Jeremy Godfrey, ComReg Commissioner. These are:
 - SI 264 of 2021²⁴ (Wireless Telegraphy (Liberalised Use and Related Licences in the 700 MHz Duplex, 2.1 GHz, 2.3 GHz and 2.6 GHz Bands) Regulations 2021); and
 - S.I 265 of 2021²⁵ (Wireless Telegraphy (Third Generation and GSM Licence (Amendment) and Interim Licensing) Regulations 2021).
23. Among other things, these regulations provide for:

²² ComReg Document [21/04R](#), "Appeal by Three in relation to Multi Band Spectrum Award – The 700 MHz Duplex, 2.1 GHz, 2.3 GHz and 2.6 GHz Bands". published 20 January 2021 and revised on 29 January 2021, available at www.comreg.ie.

²³ ComReg [Document 21/40](#), "Information Memorandum and Draft Regulations", 16 April 2021. Available at www.comreg.ie

²⁴ Irish Statute Book, [S.I 264 of 2021](#), "Wireless Telegraphy (Liberalised Use and Related Licences in the 700 MHz Duplex, 2.1 GHz, 2.3 GHz and 2.6 GHz Bands) Regulations 2021", available at www.irishstatutebook.ie/

²⁵ Irish Statute Book [S.I 265 of 2021](#), "Wireless Telegraphy (Third Generation and GSM Licence (Amendment) and Interim Licensing) Regulations 2021", available at www.irishstatutebook.ie/.

- the granting of “liberalised use” licences in the 2.1 GHz band to existing 2.1 GHz licensees;
 - the granting of “interim licences” in the 2.1 GHz band to Three; and
 - the granting of “liberalised use” licences for spectrum rights in the 700 MHz, 2.1 GHz, 2.3 GHz and 2.6 GHz bands in accordance with the outcome of the MBSA2.
24. In June 2021, Three and Vodafone were granted a 2.1 GHz Band Liberalised Use licence.

2 Next steps in considering any further Temporary ECS Licensing framework

25. In this section, ComReg outlines the envisaged process to determine whether a further Temporary ECS Licensing framework may be warranted beyond 1 April 2022. In considering this matter, ComReg observes there are various factors to assess including:

- the likelihood of COVID-19 measures being in place beyond 1 April 2022, including any plans for a phased withdrawal of such COVID-19 measures, and the impact that any such measures would have on network traffic. In this regard, ComReg observes that in the Government's COVID-19 Plan published in August 2021, the planned withdrawal of the 'work from home' requirement from 22 October 2021 onwards (which was subsequently re-introduced) was to be *"on a phased and cautious basis appropriate to each sector"*;
- the possibility that the Government may have to amend specific aspects of its approach to managing COVID-19. This could be required given uncertainties in the COVID-19 trajectory; and
- reasonable "transition" activities required to be undertaken in advance of the cessation of any temporary spectrum rights.

26. In relation to the above factors, and for the avoidance of doubt, once the Government has removed COVID-19 measures to a significant extent, in particular its policy and recommendations around working from home during the Temporary Situation (noting that this may be on a phased basis), any relative uplift in network traffic would likely thereafter be viewed by ComReg as resulting from market forces and consumer / workforce lifestyle changes rather than being directly related to Government COVID-19 measures. In this scenario, the continuance of a Temporary ECS Licensing framework is less likely to be justified. This is because, in the normal course, network operators would be expected to address such developments through network investment and/or securing additional spectrum rights of use. Although, ComReg is aware that the MNOs may also need time to take reasonable transition activities in advance of the cessation of any temporary spectrum rights.

2.1 Submission of a joint/common request from the MNOs

27. In addition to the continued provision of network performance data, the next formal step in considering whether any further Temporary ECS Licensing framework would be appropriate would be for the MNOs to submit a joint or common request to ComReg:
 - (i) setting out the specific details of the joint/common request indicating any elements of the existing Temporary ECS Licensing framework that ought to be changed (if any) and the reasons for same; and
 - (ii) providing sufficiently detailed information based on the updated and prevailing COVID-19 considerations at that time to support a request for any further Temporary ECS Licensing framework.
28. This joint/common request should be submitted by **10 February 2022**.
29. To assist the MNOs in making such a submission, the following is a non-exhaustive list of information that ComReg would expect each MNO to include in support of any joint/common request.
30. Noting that the MNOs have previously submitted information in support of the current Further Temporary ECS (No.3) licensing framework, ComReg expects that the information submitted by the MNOs will **include an update to the datasets previously provided, highlighting the relevant changes** since the data was last submitted in November 2021.
31. ComReg understands that some of the information outlined below may be considered commercially sensitive by the individual MNOs and that, in such circumstances, ComReg would expect each MNO to separately submit any such material to ComReg on a confidential basis alongside the submission of the joint/common request (see further details under Section 2.2 below).

A. Network traffic / capacity / performance information

- (i) Information regarding the traffic (voice and data), capacity /performance of the network considering the extraordinary situation arising from COVID19. In particular, the changes in network traffic (voice and data), capacity / performance since COVID-19 until now;
- (ii) Information on the expected traffic demand and network capacity beyond 1 April 2022; and

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

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

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

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

- (i) Information on how existing temporary rights have assisted in alleviating the network capacity/performance constraints to-date. Specifically, please provide information on the percentage of network traffic (voice and data) carried by temporary spectrum rights for the each of the 700 MHz band and 2.1 GHz bands
- (ii) Information on how temporary rights may materially assist over the duration of any further Temporary ECS Licensing framework, noting that where a Licensee has applied for and been granted a 2.1 GHz Band Liberalised Use licence, information on the 2.1 GHz band should not be included.

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

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

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

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

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

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

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

2.2 Confidentiality of submissions to this Information Notice

32. In submitting the above information (which may include separate individual MNO information), ComReg requests that electronic submissions be submitted in an unprotected format so that a non-confidential version (see below) of each submission can be readily included in any public consultation that ComReg might issue.
33. As outlined above, ComReg appreciates that some of the information submitted may be considered confidential. In order to promote openness and transparency, ComReg will publish all submissions received, as well as all substantive correspondence on matters relating to any further Temporary ECS Licensing framework, subject to the provisions of ComReg's guidelines on the treatment of confidential information (Document 05/24).
34. In this regard, the MNOs and any other respondents should make their submissions (i.e., joint/common letter and supporting information, other views, etc.) in accordance with the instructions set out below. When making a submission which 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 submission. The confidential version must have all confidential information clearly marked and highlighted in accordance with the instruction set out below and separately include the reasons as to why the respondent considers any particular material to be confidential. The separate non-confidential version must have 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 the respondent considers 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.

35. 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 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); and
- c. A Scissors symbol (Symbol code: Wingdings 2:38) must be included inside each of the square brackets.

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

2.3 Envisaged timeframes for a consultation

37. Assuming that a satisfactory request is received by ComReg in accordance with Sections 2.1 and 2.2 above by **10 February 2022**, ComReg envisages that it would complete its consultation process on a potential new Further Temporary ECS licensing framework during March 2022, in advance of the expiry date of licences under the current framework on 1 April 2022.

38. ComReg notes that any further temporary licensing framework would be intended solely to address the impact on wireless networks of Government measures aimed at addressing the exceptional and extraordinary situation presented by COVID-19 and would be entirely without prejudice to the award of long-term rights of use in these spectrum bands under MBSA2.

2.4 Importance of supporting ComReg's network industry forum

39. Finally, ComReg would stress the importance of the MNOs' continued attendance and contribution to ComReg's network industry forum, supported by the submission of the weekly network reports referenced earlier. This information is critical to informing ComReg's and other relevant stakeholders' understanding of any continuing need for support, in particular through any further Temporary ECS Licensing framework.

Annex 1: Non-confidential information from MNOs in their Further Temporary Licence (No.3) renewal applications

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

Confidential

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

1. Network traffic / capacity / performance information

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


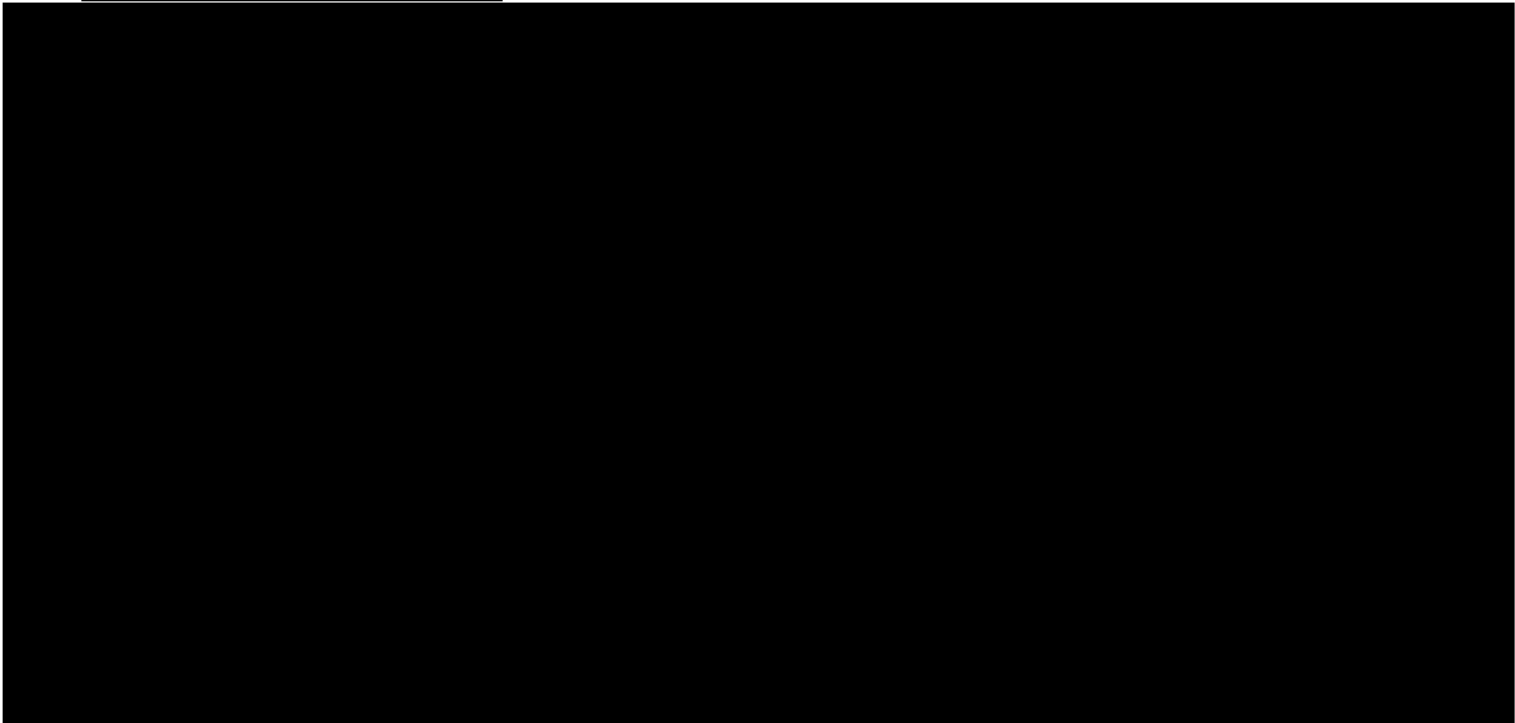
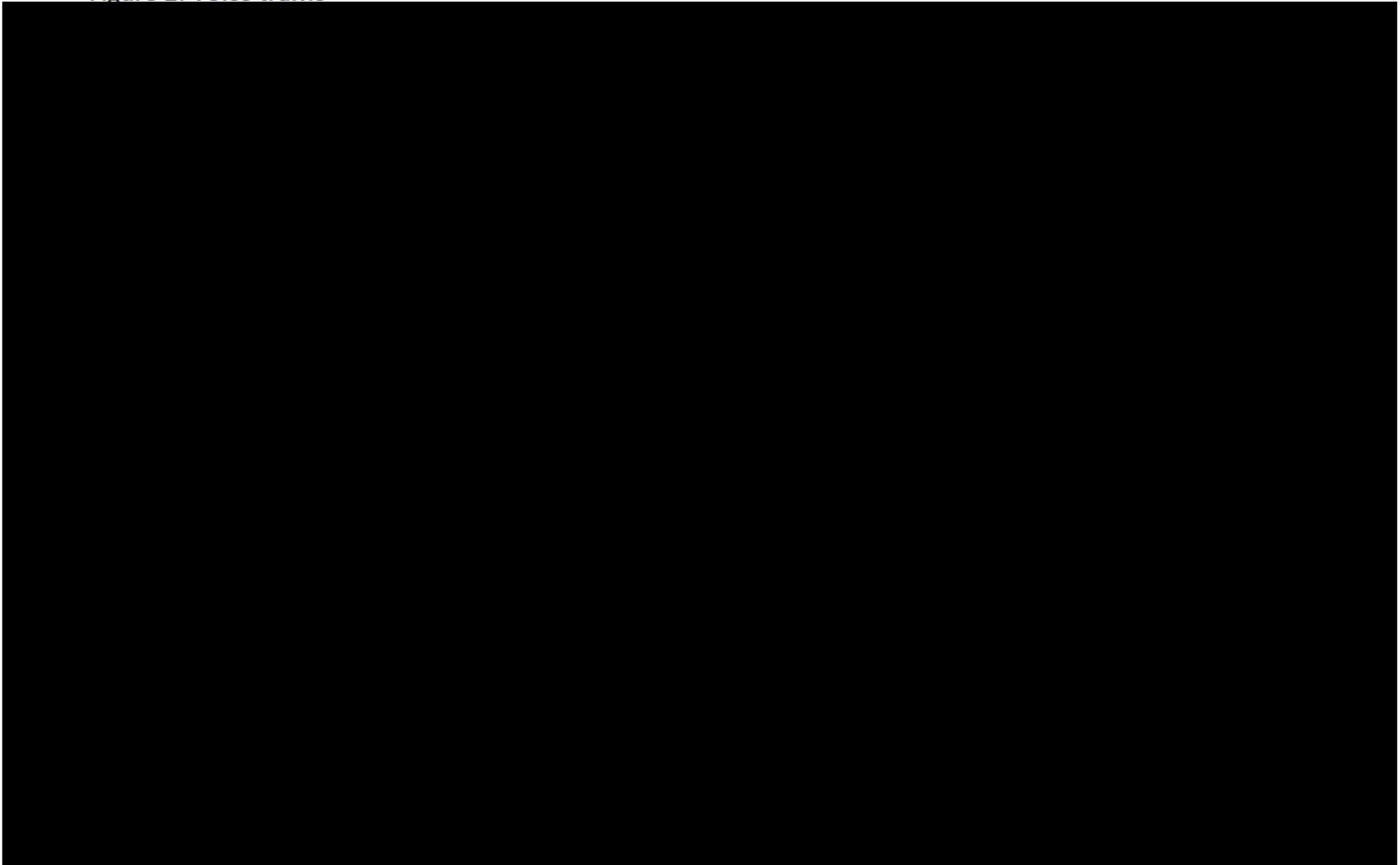
Data traffic growth in particular has continued since the initial national lockdown and sustained such growth throughout 2020 which has continued into 2021. While the data traffic in the network has been growing over recent years however, the trend line shown in Figure 1 below indicates an inflection point in the 2020 data traffic growth starting in March coinciding with the commencement of Covid 19 movement restrictions which have continued with some variation in the restrictive measures. It should also be noted with the return to home based working the locations of the traffic has also changed and so the traffic profile per cell and site has altered as a result of Covid 19.  so the Covid step change seen in 2020 has not receded notwithstanding the trendline for 2021 is not quite as steep as 2020's but this may have reverted to 2020 levels recently since the return to "work from home" protocols.

Figure 1: Data traffic growth trends



eir's mobile voice traffic has been flat prior to Covid but in March 2020 a step change occurred due to the first lockdown. Figure 2 below shows clearly that voice traffic is still above pre-Covid 19 levels and the 2021 traffic volumes are largely in line with the additional voice traffic attributed to Covid in 2020.

Figure 2: Voice traffic



(ii) information on the expected traffic demand and network capacity beyond 1 January 2022.

MMC: We expect Data traffic to continue on the same growth trajectory as recently working from home has been reinstated as the Covid recommendation.

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

MMC: We have provided voice and data trends for the last four years, the very significant growth in 2020 is very evident versus the prior year growth trajectory as noted in response (i) above and 2021 figures following slightly behind 2020 but well above pre covid growth rates. Data traffic growth during 2021 is averaging **8%** so far as compared with **8%** in 2020. Voice traffic in 2020 continues to show the presence of the step increase seen post Covid across 2020.

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

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

MMC: Please see attached file ('CONFIDENTIAL Licence Application Parts 3 and 4 Renew 30Nov21') which details sites activated to date. eir mobile has extensively utilised the Temporary ECS licences with over 2200 cells now

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live. eir mobile has utilised the 700Mhz band as an additional capacity layer on the upgraded sites and despite the very significant growth in particular of data traffic has continued to improve data throughputs on these sites.

eir mobile is also activating 2100Mhz for LTE with over 2700 LTE cells now live on the 2100MHZ band eir continues to balance the support of voice and data service requirements across our network.

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

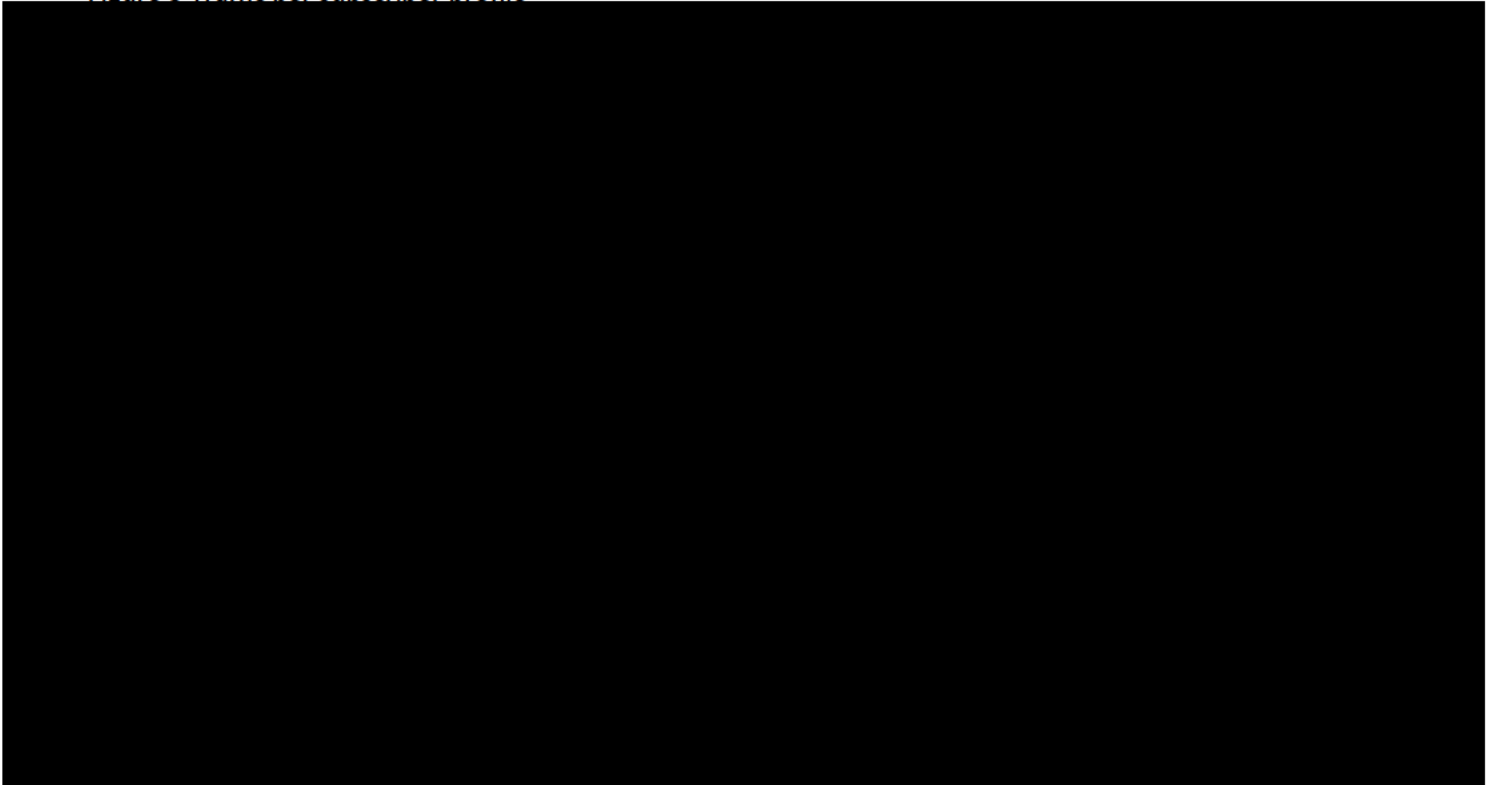
MMC: ✂ [REDACTED]

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

(i) Network capacity/performance constraints to-date. Please provide information on the percentage of network traffic (voice and data) carried by temporary spectrum rights for the 700 MHz band, and for the 2.1 GHz band if the Licensee is continuing to use temporary spectrum rights for the 2.1 GHz band;

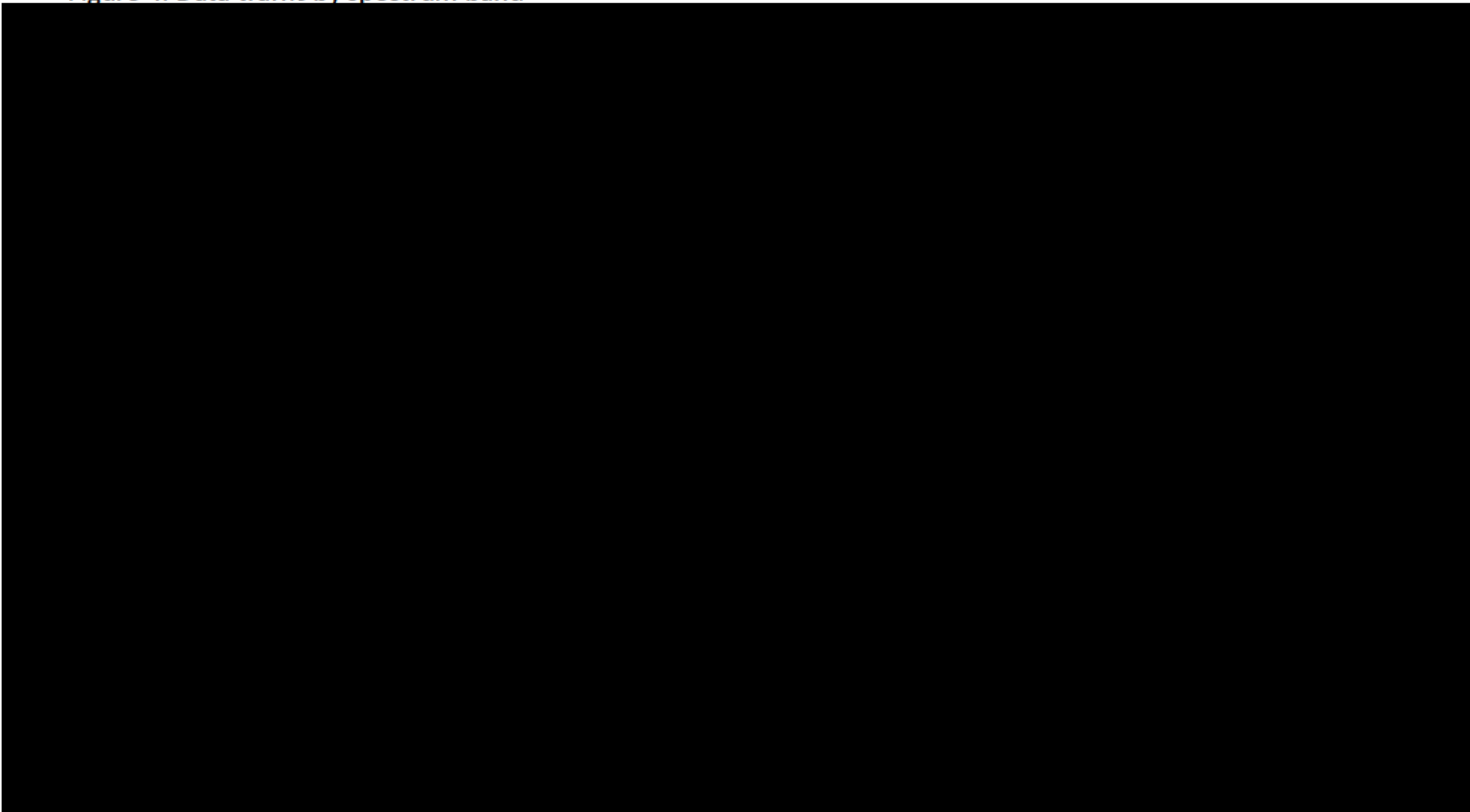
MMC: It has already been shown above how the total traffic on the network has grown since Covid. It is also worth noting the step change in the traffic per subscriber along with the increased rate of growth that has occurred since Covid-19 arrived. This is seen in Figure 3 below. The addition of LTE700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

Figure 3 Traffic per subscriber profile



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

Figure 4: Data traffic by spectrum band



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

MMC: The temporary rights will continue to allow mobile network operators to make available additional capacity to meet the increased demand for mobile network services, particularly data, allowing citizens to engage socially and economically during these challenging times. eir has activated VoLTE to complement our existing Voice over WiFi service, thus enabling the refarming of some 2100Mhz for LTE. This further enhances capacity availability on an extensive base of network sites. It is difficult to predict where and when demand will shift. Having the licences available nationally allows contingent capacity to be made available which can help absorb the impacts on demand arising from lockdown measures (localised or otherwise).

4. 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 had extensive engagement with Virgin Media on site activation to enable their

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testing pre/post activation and mitigate the risk of interference to their CATV services during the first phase of L700 activation. This has been successful on the basis that no interference was noted by Virgin Media upon eir mobile site activations and eir mobile has continued to maintain very close co-ordination week to week with Virgin Media and the other mobile operators. The coordination procedures are working really well with the other operators

5. Risks in relation to the non-renewal of a further Temporary ECS licence.

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

MMC: The risk of congestion or degraded service is very real throughout Ireland in the event of no further Temporary ECS Licensing framework, the voice and traffic growth is network wide with a continued guideline to work from home where possible in addition to the implementation of further lockdown measures from time to time such as the temporary closure of schools. As highlighted in the CEO letter *"Building new sites to cope with any short term demand in advance of the 2021 Spectrum auction would be extremely inefficient"*. In the scenario where the licenses are not renewed the capacity of the LTE700 band along with the improved customer experience resulting from the refarming of the 2100 band from UMTS to LTE would be removed resulting in lower customer experience and increased congestion impacting the ability of citizens to work, learn, and engage in society.

6. Actions required in relation to the expiry of the further Temporary ECS Licensing framework.

Details of the preparations and actions that the MNO has taken and would need to take in relation to the expiry of the further Temporary ECS Licensing framework

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

7. Other factors: Any other factors that the MNOs deem relevant to the consideration of a further Temporary ECS Licence renewal

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

2 Three Ireland (Hutchison) Limited



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

29th November 2021

Brendan O'Brien
Commission for Communications Regulation
One Dockland Central
Guild Street
Dublin 1

Dear Brendan

Temporary Spectrum Licence (No. 3)

This document together with the attached completed application form is Three's application to extend its temporary licence for use of 700MHz spectrum for an additional period of three months (Jan to end March 2022). The Part 2 information supporting the application is included below, and the Part 3 information is also included in the spreadsheet that accompanies this document. We have given instructions to pay the application fee by bank transfer last week.

Unfortunately, and a little surprisingly we now find ourselves in the middle of the 4th wave of infections by Covid-19. There is also considerable concern and uncertainty arising from the just-discovered Omicron variant. At this time, Government instruction is for citizens to work from home unless it is essential to travel to work, and to reduce social interactions. Rather than impose further enforced restrictions, the policy is to facilitate and encourage people in reducing their travel and their interaction with other people. Mobile networks providing voice and data connectivity have an important role to play in this facilitation. This was recognised by Án Taoiseach on 29th October last when he stated that "The pandemic further underlined the importance of connectivity in keeping society and our economy functioning, and our people and communities safer". At this time, the need for the temporary licences remains is as great as ever.

Please contact me directly if any clarification or further information is required for this application.

Yours Sincerely

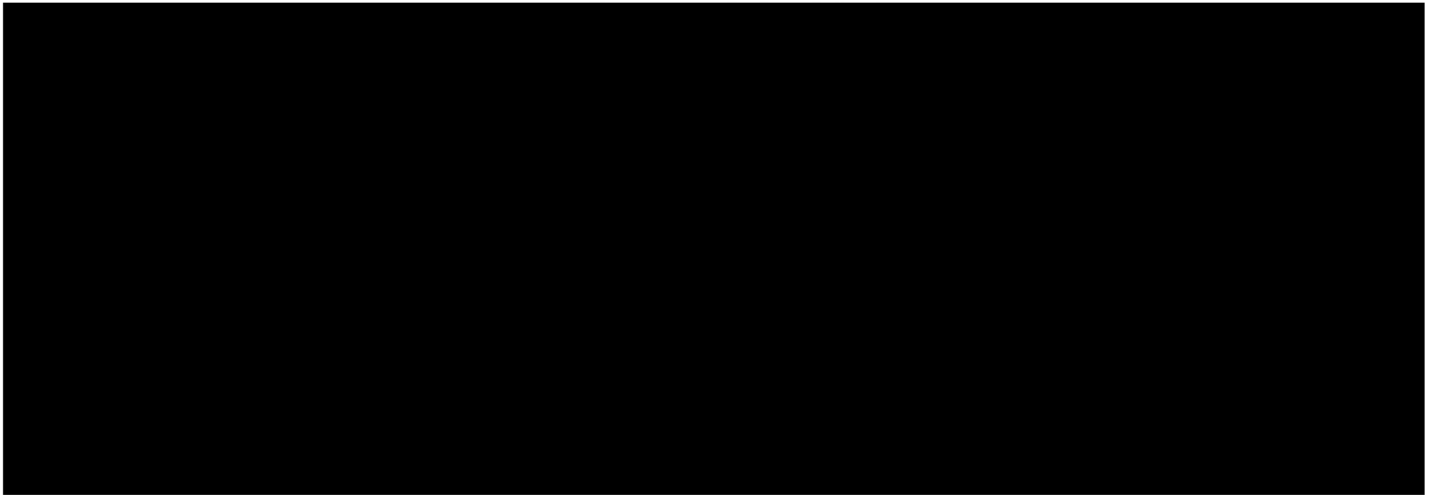
Tom Hickey

Extension to Temporary Spectrum - Part 2 Information

1. Network and Capacity Information

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

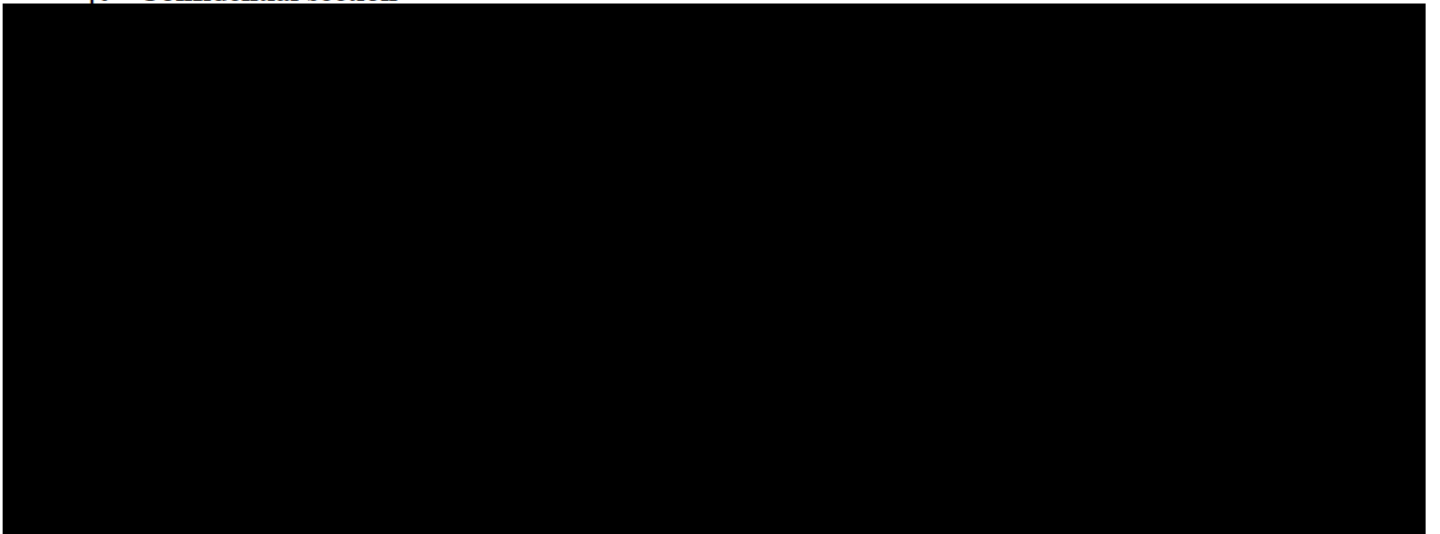
[§< Confidential section

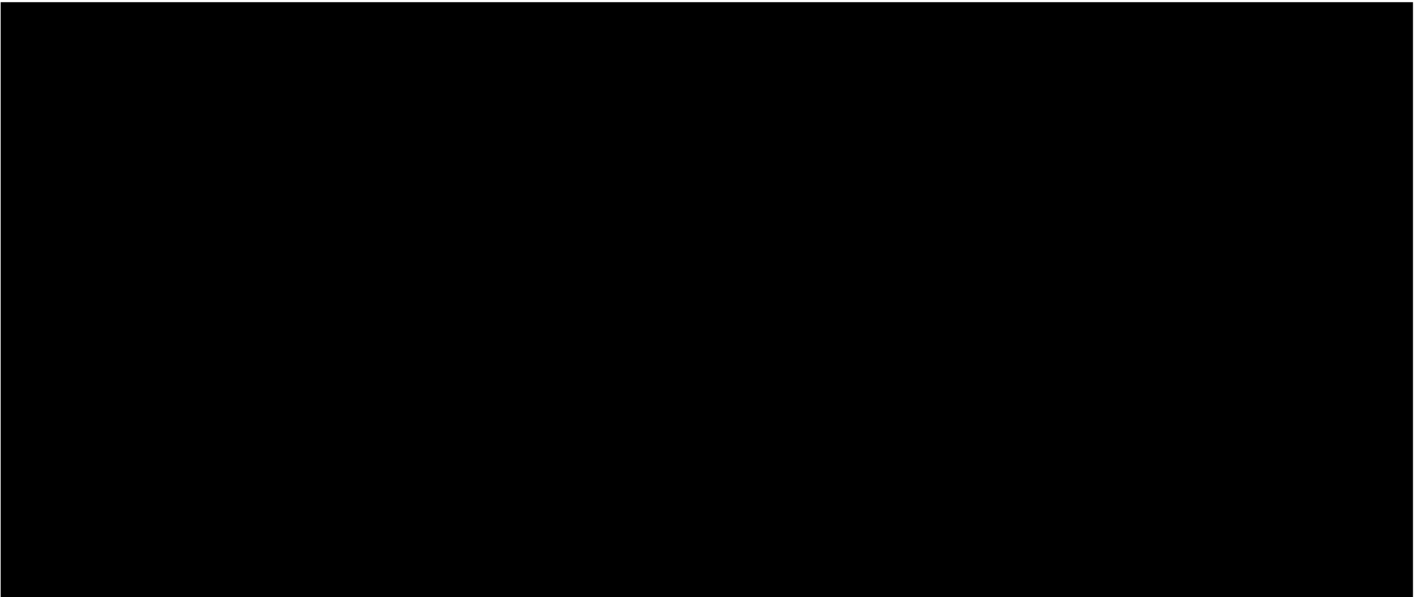


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For data traffic, the impact of Covid-19 restrictions is much more significant. As can be seen in the following two graphs, the increase in both busy hour and total daily traffic has been sustained throughout the different levels of restriction.

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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 April 2022. It shows two trend-lines – our baseline forecast excluding Covid-19 effects and the adjusted forecast which assumes modified behaviour and hybrid ways of working from home. While the uplift above forecast is slightly reducing, it is still significant at [§<Confidential  ].

[§<Confidential section



end confidential section]

As can be seen, we anticipate ongoing growth in baseline traffic into 2022, in addition to modified traffic resulting from behavioural changes. 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 they take time to deliver. We do not believe it would be possible or practical to expand network capacity to meet the uplifted demand growth without access to the Temporary Licence for 700MHz. There is a layer to traffic demand which is still unpredictable at this time, including the location of that demand. Building new sites and rolling out equipment is both slow and expensive and it would not be practical or efficient at this time to try to reconfigure our network to meet a short-term remaining demand until we have a full understanding of these new long term traffic patterns illustrating a full reopened economy with new hybrid working behaviours.

2. Sites and transmitters

In the period to the end of March 2022, we expect to have deployed 700MHz spectrum on [redacted] sites. Details are in the attached spread-sheet.

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

The temporary spectrum licence has allowed Three to rapidly increase its network capacity in many of the areas that have experienced increased congestion arising from the changed demands brought about by Covid-19. When the Temporary Licences were first issued, we were able to immediately deliver extra capacity to an important but limited number of sites, and we have been able to continually expand the number of sites that use 700MHz since then. ComReg has decided to liberalise spectrum in the 2100MHz band on a permanent basis, so it is not necessary to include this spectrum in the temporary licence any longer. We have not sought a temporary licence in the 2.6GHz band at this time, so our ongoing requirement is only for a temporary licence covering the 700MHz band. The 700MHz band is particularly important for users in suburban and rural areas where the 800MHz and 900MHz bands may be experiencing congestion as a result of the shift in traffic and many consumers have relied on the service provided on this band over the past year. We see a sustained requirement for this service at the moment.

When the restrictions were first introduced and traffic patterns were changed, there was a reduction in overall end-user speed/quality. Even though the overall traffic continued to grow during the year, the Temporary Spectrum Measures allowed us to restore or locally improve throughput/quality. We conservatively estimate that the use of 700MHz under the Temporary Spectrum Licence on Three's network has significantly increased quality of service to over [redacted] users in sub-urban or rural areas. Withdrawal of the Temporary Spectrum Licence would mean a return to reduced quality of service for customers from Three, but also Virgin Media, Tesco Mobile, and LycaMobile. This would be counter to Government policy to facilitate people in staying at home at this time.

When we hit the initial surge in both voice and data traffic we immediately began to make changes to our network to ensure continuity of best service. Measures we could undertake at that time included re-parenting to ensure the distribution of traffic load throughout the network reflects the new profile and increasing core network capacity. Increasing capacity on the access

network is a more difficult task as it involves use of new technology, more spectrum, more cells, or more sites in various locations within the country. The quickest means to increase capacity in a congested area is to introduce new technology or more spectrum on existing sites.

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

4. Risks to the provision and quality of existing ECS

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

5. Risks in relation to non-renewal

In March last year when we witnessed the surge from the first measures, there was a deterioration in quality of service for some customers, but there was also new demand when some citizens tried to work from home for the first time. We have been able to bring working connectivity to some customers for the first time using the temporary spectrum, but to also quickly introduce capacity to meet new demand. If the temporary licences are not extended, we estimate that this would materially affect connectivity for approximately [3<] users. This would bring the risk that many of those customers would lose connectivity at home, making it difficult to comply with current Government policy of staying at home.

6. Actions required in relation to non-renewal

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

3 Vodafone Ireland Limited



Vodafone Response to Information Requirement

Matters identified in Regulation 4(2) of SI 501 of 2021

Reference: ComReg Doc 20/96aR

Version: [Non-Confidential]

Date: 01/12/21

Introduction

Please find below Vodafone response to Part 2: Information in relation to the matters identified in Regulation 4(2) of the Regulations. Vodafone have provided details under the headings below.

1. Network traffic / capacity / performance information:

- (i) Information regarding the traffic (voice and data), capacity / performance of the network considering the extraordinary situation arising from COVID-19. In particular, the changes in network traffic (voice and data), capacity / performance since COVID-19 until now;
- (ii) Information on the expected traffic demand and network capacity beyond 1 January 2022; and
- (iii) Observations of how much of the changes in traffic and capacity is due to forecasted annual changes that would be expected on a network in the normal course (accounting for seasonal changes and projected market developments in the absence of COVID-19) and those that can reasonably be considered to be directly related to Government COVID-19 measures.

Vodafone Response:

The extraordinary conditions and lack of certainty arising from Covid-19 has been magnified in recent weeks. When ComReg last consulted in September 2021 the outlook was positive. The government planned to re-open the economy and return to work from 22 October 2021 which at the time was thought would be the position until at least until Spring 2022. Against this background ComReg had signalled its expectation that this could well be its final temporary licensing framework.

In recent weeks the country has experienced a significant rise in daily case numbers and the government has set out a range of measures to interrupt the spread of Covid-19 and new variants. As part of these measures everyone is required to work from home unless it is necessary to attend the workplace in person. Essentially the conditions for working from home pre-September 2021 now apply and there are calls for reduced socialisation.

The further uncertainty with the rollback on full and partial office returns and curbs on social movement only add to levels and variability in capacity demand and does not represent stable non-covid network conditions.

The key metric on 4G traffic has increased [REDACTED] from March 20 to October 21. The traffic growth increase [REDACTED] estimated in pre-Covid times. We can also see more of a move towards rural areas with [REDACTED] traffic growth in the period from April 21 to October 21.

2. Ability to make use of existing temporary spectrum assignments in any further temporary ECS licence renewal– Sites and transmitters:

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

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

Vodafone Response:

Please see accompanying spreadsheet with details of locations used and planned locations. This only includes 700MHz information as Vodafone has been granted a 2.1GHz Liberalised Use licence.

3. How temporary rights have assisted with the provision of ECS in the State: (i) Network capacity/performance constraints to-date.

- (i) Please provide information on the percentage of network traffic (voice and data) carried by temporary spectrum rights for the 700 MHz band, and for the 2.1 GHz band if the Licensee is continuing to use temporary spectrum rights for the 2.1 GHz band; and
- (ii) Information on how temporary rights may materially assist over the duration of any further Temporary ECS licence renewal, noting that where a Licensee has applied for and been granted a 2.1 GHz Band Liberalised Use licence, information on the 2.1 GHz band should not be included.

Vodafone Response:

All sites where 700MHz is on air would be now experiencing significant congestion without the capacity added by the Temporary Measures.

The availability of 700MHz has played a significant part in addressing key data congestion hot spots and helping us bring congestion back into manageable levels of customer experience,

Without the 700MHz layer in particular, remote workers in congested areas of rural Ireland would face significant service issues. In fact, in the absence of the 700MHz layer we would expect that, would be suffering congestion or lack of service.

The 700MHz use is very targeted to relieve congestion particularly in more rural parts of Ireland. busy hour mobile data in rural areas is now carried on 700MHz.

The case remains that the temporary spectrum, and liberalisation of 2100MHz band, has enabled us to add this capacity without the addition of new sites in areas that may not in the long term require new sites, but do require capacity under covid conditions.

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

Vodafone Response:

As per previous response we co-ordinated closely with cable provider Virgin and DTT provider RTE to ensure that we did not affect existing services when bringing 700MHz sites on air. And we continue to engage other operators and the other MNOs to ensure no interference with one another's services.

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

We remain committed to co-ordination procedures and will work closely with other spectrum users in this regard.

5. Risks in relation to the non-renewal of a further Temporary ECS licence. The risk of congestion and other disruption to consumer services and the locations where it would most likely arise if a further Temporary ECS licence renewal was not issued, identifying if such congestion or disruption would reasonably be considered to be due to COVID-19 matters or mobile market developments / commercial strategy matters.

Vodafone Response:

The reality is that the temporary measures will need to be in place for the foreseeable future in order to maintain services thereby ensuring continuity of business and support to the economy and society. The challenge in predicting when conditions are optimal to relax temporary measures remains complex as witnessed in recent weeks with the escalation in numbers and emergence of new variants. The absence of temporary licences would mean customers who are working and living from home would suffer congestion and/or lack of service. The impact would be noticeable in particular for those in suburban and rural areas nationwide, where a higher and fluctuating capacity demand is not the norm.

6. Actions required in relation to the expiry of the further Temporary ECS Licensing framework. Details of the preparations and actions that the MNOs has taken and would need to take in relation to the expiry of the further Temporary ECS Licensing framework.

Vodafone Response:

As indicated previously Vodafone continue to plan our future network expansion around the expected Multi-band Spectrum Auction. We expect that as a result of that auction we will be able to add significant capacity to existing sites using new spectrum. If the temporary measures are not extended the only alternative way to increase capacity would be to add new radio sites. Given the short time between now and the planned auction it would not be economic or practical to add sufficient sites if these temporary measures are not renewed.

7. Any other factors that the MNOs deem relevant to the consideration of a further Temporary ECS licence renewal.

Vodafone Response:

Vodafone welcome ComReg's proactive engagement to date in relation to Temporary spectrum and ongoing renewal. It is likely in the coming weeks and by early January the position on a requirement for further roll on of the temporary spectrum requirement from April 2022 will be clear. Vodafone would welcome early engagement 2022 to ensure all parties can plan appropriately.

ENDS