



An Coimisiún um
Rialáil Cumarsáide
Commission for
Communications Regulation

COVID-19: Potential Further Temporary ECS Licensing

July 2021 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 October 2021) and provide information relevant to the consideration of any further COVID-19 temporary spectrum licensing framework beyond 1 October 2021, including next steps and envisaged consultation timelines regarding same.
2. Since the current temporary licensing framework was put in place in March 2021, the prevailing circumstances relevant to any further temporary licensing framework have continued to evolve as outlined in Sections 1.1 to 1.4 below. In this regard, the Commission for Communications Regulation (“ComReg”) observes that:
 - The **MNOs have continued to apply for, be granted and make use of the COVID-19 temporary licences** to provide additional network capacity to meet the increased voice and data traffic demands arising from the Government’s COVID-19 measures (see Section 1.1 and Annex 1);
 - **There continues to be uncertainties around the future prevalence of COVID-19 and its variants** and with this the duration and extent to which the Irish Government will need adapt to and continue to take measures to address same (see Section 1.2 below);
 - While COVID-19 measures have been lifted or eased in recent months, **significant Government policy/restrictions remain in place**, including that people should continue to work from home unless necessary to attend in person (see Section 1.2 below);
 - **Ireland’s vaccination programme continues to progress** and, as of 6 July, over 2.5M adults were partially vaccinated (68%) and almost 2M (52%) were fully vaccinated. Further, from Monday 5 July, people aged 18 to 34 years can get the single dose Janssen vaccine at a local pharmacy and according to Paul Reid, Chief Executive Officer of the Health Service Executive (HSE) all adults could be fully vaccinated by early end of August or early September (see Section 1.2 below);
 - While **aggregate MNO voice and data traffic volume** has remained relatively stable over the last six months from January to June 2021, it **remains greater than the pre-COVID-19 base levels**, at aggregate

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.

increases of circa 66% (data) and 4% (voice) for June 2021, though noting that data traffic would have increased by a certain amount anyway given trends in recent years (see Section 1.3 below);

- The **Multi Band Spectrum Award (MBSA2) process** for the long-term assignment of spectrum rights in the 700 MHz, 2.1 GHz, 2.3 GHz and 2.6 GHz bands **continues to progress** and it **formally commenced** on 16 April 2021 with the publication of the Information Memorandum (Document 21/40)² (“IM”). The earliest **envisaged commencement date** for spectrum rights is **14 February 2022** for the 700 MHz, 2.3 GHz and 2.6 GHz bands, and **16 October 2022** for the 2.1 GHz band. Certain aspects of ComReg’s decision (Document 20/122) for this award are under appeal (See Section 1.4 below);
- On 28 May 2020, Regulations³ were made for the grant of a **Liberalised Use 2.1 GHz Band licence** to the existing 3G Licensees. In June 2021, Three and Vodafone applied for and were each granted a licence in accordance with these regulations.

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

3. Given the extraordinary situation presented by COVID-19 and the increased traffic demands placed on wireless networks (see Section 1.3 below) arising from the Government measures to address same (see Section 1.2 below) (the “Temporary Situation”), and pursuant to requests from affected operators, ComReg has consulted upon and (with the consent of the Minister) put in place three consecutive licensing frameworks for the temporary assignment of spectrum rights of use. These are:
 - the Temporary ECS licensing framework (from 8 April 2020 to 7 October 2020)⁴;

² [Document 21/40](#) - Information Memorandum and Draft Regulations , available at www.comreg.ie

³ [S.I 265 of 2021](#) - Wireless Telegraphy (Third Generation and GSM Licence (Amendment) and Interim Licensing) Regulations 2021, available at www.irishstatutebook.ie/.

⁴ 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.

- the Further Temporary ECS licensing framework (from 8 October 2020 to 1 April 2020)⁵; and
 - the Further Temporary ECS (No. 2) licensing framework (from 2 April 2021 to 1 October 2021)⁶.
4. 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.
 5. 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 Form⁷ when applying for a licence.
 6. To date, six separate temporary spectrum licences covering the overall period from April 2020 to 1 October 2021 have been issued to each of the three mobile network operators (MNOs) (Meteor, Three and Vodafone) as detailed in Table 1 below. In these licences, spectrum rights in the 700 MHz and 2.1 GHz bands were temporarily assigned to each of the MNOs, with the exception of the most recent licences, where Three and Vodafone did not request temporary 2.1 GHz spectrum rights, as each of these MNOs had applied for and been granted a 2.1 GHz Band Liberalised Use Licence in June 2021.
 7. 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. The extent of this deployment varies per MNO.

⁵ 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.

⁶ 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

⁷ See paragraph 4 of Part 6 of the Application Form in Documents [20/27a](#), [20/88a](#) and [21/24a](#).

⁸ For example, see:

- Section 3.2 of ComReg Document 21/16 which summarises the MNOs' submissions in support of a Further Temporary ECS (No.2) licensing framework; and
- Annex 1 of this document which sets out the information from the MNOs in support of a renewal licence under the Further Temporary ECS (No.2) 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)

1.2 Government COVID-19 measures and vaccination programme

8. Since March 2020 the Irish Government has taken a suite of measures to tackle COVID-19, including requiring⁹:

⁹ [Citizen Information](http://www.citizensinformation.ie/), Public Health Measures for Covid-19, available at www.citizensinformation.ie/

- people stay at home, except for work, education or other essential reasons, or to exercise within 5 kilometres of your home;
 - people work from home, unless your work is an essential service that cannot be done from home;
 - people not to visit other households except for essential purposes; and
 - schools, colleges and childcare facilities to be temporarily closed.
9. In February 2021, the Government introduced a revised plan, called the ‘COVID-19 Resilience and Recovery 2021: The Path Ahead’¹⁰ to gradually lift the COVID-19 restrictions in Ireland,
10. Over May, June and July of this year, several COVID-19 restrictions have been lifted or eased, and further easing is indicated for later this July, subject to the public health situation at that time¹¹. However, as of 6 July 2020, significant COVID-19 restrictions/Government policies remain in place¹² including that people should continue to work from home unless necessary to attend in person.
11. Further, recently there has been an increasing prevalence of the highly transmissible Delta variant of COVID-19 in Ireland, which according to Prof. Philip Nolan, Chair of the National Public Health Emergency Team (NPHE) epidemiological modelling advisory group, “*presents significant dangers to the unvaccinated population and to the partially vaccinated population*”.¹³

COVID-19 vaccination programme

12. To date, the European Medicines Agency (EMA) has authorised the use of four vaccines in Europe: the Pfizer/BioNTech, Moderna, AstraZeneca and Janssen COVID-19 vaccines¹⁴.

¹⁰ Government of Ireland, “*Covid-19 Resilience & Recovery 2021, The Path Ahead*”, available at www.gov.ie

¹¹ Government of Ireland “*Public health measures that will come into place from 5 July*”, available at www.gov.ie

¹² For example:

- Citizen Information, “*Public health measures for COVID-19*”, available at www.citizensinformation.ie/ ; and
- Government of Ireland “*Public health measures that will come into place from 5 July*”, available at www.gov.ie/

¹³ Irish Times, “*Delta variant may account for almost 70% of cases in Ireland, Nphet says*” published Friday 2 July, available at www.irishtimes.ie.

¹⁴ European Medicines Agency, “*COVID-19 vaccines*”, available at www.ema.europa.eu/

13. All four of these vaccines are being administered in Ireland and, according to the COVID Tracker App (which is made available by the Health Service Executive and the Department of Health), as of 6 July 2021, the total number of vaccine doses rolled out in Ireland was 4,486,999, broken down into 2,541,492 (Dose 1, excl. Janssen), 1,873,441 (Dose 2) and 72,066 (Single Dose – Janssen vaccination), meaning that almost 2 million people are now fully vaccinated.
14. Furthermore, from Monday 5 July, people aged 18 to 34 years can get the single dose Janssen vaccine at a local pharmacy¹⁵, and Paul Reid, CEO of the HSE, forecasts that all adults could be fully vaccinated by end of August or start of September¹⁶

1.3 Network traffic since the adoption of COVID-19 measures

15. The adoption of COVID-19 measures has resulted in increased voice and data traffic on electronic communications networks given the greater dependence on these networks for work, personal, social and educational activities, and information from the MNOs (for example see Annex 1 of this document) indicates that the geographical location of this increased traffic remains altered compared to what would be expected normally absent restrictions.
16. To better understand the changing demands being placed on network operators in light of COVID-19, and their ability to meet these demands, weekly network performance reports are provided by network operators to ComReg's Network Industry Forum.

Mobile Networks Aggregate Traffic Volume Increase

17. Figure 1 below presents updated aggregate monthly change in voice and data traffic volume on the mobile networks from April 2020 to June 2021.
18. From this ComReg observes that while the monthly aggregate MNO voice¹⁷ and data traffic volume has remained relatively stable over the last six months from January to June 2021, it remains greater than the pre-COVID-19 base levels, at aggregate increases of circa 66% (data) and 4% (voice) for June 2021, noting that data traffic would have increased by a certain amount anyway given trends in recent years.

¹⁵ HSE, "Rollout of COVID-19 vaccine", available at www.hse.ie

¹⁶ [Paul Reid forecasts all adults could be fully vaccinated by end of August or start of September \(irishtimes.com\)](http://www.irishtimes.com), 4 July 2021

¹⁷ Aggregate MNO voice traffic volumes decreased in December 2020 in line with historical trends at Christmas.

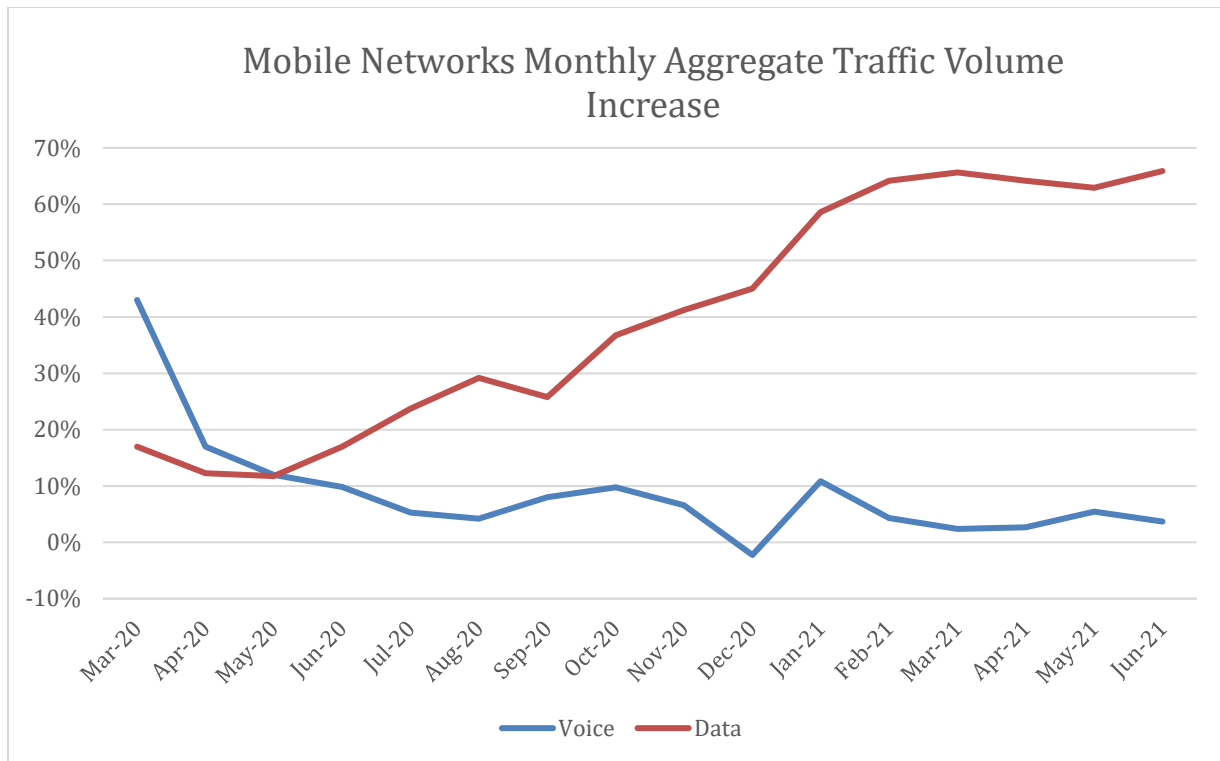


Figure 1: Mobile Networks Monthly Aggregate Traffic Volume Increase¹⁸

19. In addition, ComReg observes that the above information also broadly aligns with the Part 2 information supplied by the MNOs in their applications for a Further Temporary ECS (No.2) renewal licence (this refers to the information marked confidential in Annex 1).

Weekly network operator performance report

20. From the most recent weekly network operator performance report, compiled on 28 June 2021, ComReg observes that, for the mobile networks, the weekly aggregate voice and data traffic volume is circa 5% and 68% greater than the base pre-COVID-19 level, respectively. Table 2 below sets out this information on an individual MNO basis.

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

Table 2: Individual Mobile Network Operator traffic volume increases (data compiled on 28 June 2021) [REDACTED]¹⁹

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

Updated ComReg Quarterly Key Data

21. Information from the latest ComReg Quarterly Key Data Report²⁰ (to end March/Q1 2021) also indicates significant increases in total mobile voice and mobile data usage since the introduction of COVID-19 measures. However, ComReg also observes that for Q4 2020, and for the first time ever, the total mobile data traffic (both mobile and mobile dongle traffic) for a quarter decreased compared to the previous quarter²¹ before rebounding in Q1 2021²².
22. In relation to **voice minutes**: 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 3.74 billion minutes (19% increase year-on-year) in Q2 2020 before reducing slightly to 3.49 billion minutes (14% increase year-on-year) in Q1 2021.
23. In relation to **data usage**:
- mobile broadband (dongle/router) usage increased by 85% compared to the same period last year where previous annual increases were typically around 50 - 60%;
 - fixed wireless data usage increased by 117% compared to the same period last year where previous annual increases were typically around 40 - 50%; and

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

²⁰ ComReg Document 21/63, "Quarterly Key Data Report – Q1 2021", published 10 June 2021.

²¹ In Q4 2020, the total mobile data traffic was 208,736,000 GB, compared to 211,573,000 GB in Q3 2020.

²² In Q1 2021, the total mobile data traffic was 236,390,000 GB, compared to 208,736,000 GB in Q4 2020.

- mobile data usage increased by around 34% compared to the same period last year where previous annual increases were typically around 30 - 35%.

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

24. 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 D11/20²³ (“the MBSA2 Decision”) on same.
25. As noted in Document 20/122, spectrum awards, and particularly those suitable for the deployment of mobile and wireless broadband services, are very important events which occur only every few years and which have economy-wide impact. ComReg’s previous spectrum awards²⁴ have, among other things, promoted effective competition including new market entry, and facilitated the rollout of enhanced existing and new services/technologies, including 4G and 5G, to the benefit of Irish consumers.
26. The MBSA2 is every bit as important as ComReg’s previous spectrum awards and its progress will enable licensees to make long-term capital expenditure decisions and is an important aspect of general economic and social development in Ireland for the foreseeable future for reasons including that it:
- will lead to improved network coverage and capacity, with significant economic benefits;

²³ See:

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

²⁴ The last major award was in 2017 for the 3.6 GHz band, a 5G candidate band, and before that in 2012 for the 800 MHz, 900 MHz and 1800 MHz bands. See:

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

- will likely result in significant cost savings for existing network operators that secure spectrum in the award; and
- is central to meeting the European Commission's ("EC") 5G for Europe Action Plan, a strategic initiative which concerns all stakeholders, private and public, small and large, in all Member States, to meet the challenge of making 5G a reality²⁵.

Appeal of the MBSA2 Decision

27. 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.
28. As stated by ComReg in Information Notice Document 21/04R²⁶, 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.
29. The appeal hearing was held in June 2021 and, on 17 June 2021, further directions were issued by the Court with 23 July 2021 being the next date for mention in the Court.

Implementation of the MBSA2 Decision

30. On 16 April 2021, the award process formally commenced with the publication of the IM. The IM details the processes and procedures that ComReg is employing to implement Decision 11/20, and an indicative timeline for the steps in the MBSA2 is set out in Table 17 of the IM. ComReg is committed to ensuring the timely delivery of the MBSA2 and to date, the award has progressed in line with the indicative timeline set out in Table 17 of the IM, albeit that recently certain adjustments have been made 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.
31. On 28 May 2021, two sets of Wireless Telegraphy ("WT") regulations associated with the MBSA2 were signed by Eamon Ryan, Minister for the Environment, Climate and Communications and Jeremy Godfrey, ComReg Commissioner. These are:

²⁵ European Commission, "[5G Action Plan](https://ec.europa.eu/5g-action-plan/)", available at [ec.europa.eu/](https://ec.europa.eu/5g-action-plan/)

²⁶ 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.

- SI 264 of 2021²⁷ (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 2021²⁸ (Wireless Telegraphy (Third Generation and GSM Licence (Amendment) and Interim Licensing) Regulations 2021).

32. Among other things, these regulations provide for:

- the granting of “liberalised use” licences in the 2.1 GHz band for existing 3G licensees;
- the granting of “interim licences” in the 2.1 GHz band to Three; and
- the granting of “liberalised use” licences for spectrum rights in the 700 MHz, 2.1 GHz, 2.3 GHz and 2.6 GHz bands in accordance with the outcome of the MBSA2 2021.

33. In June 2021, Three and Vodafone were granted a 2.1 GHz Band Liberalised Use licence. Three now submits that *“it is neither necessary nor appropriate for ComReg to continue to issue temporary licences in the 2100MHz band”* and that *“liberalised 2100MHz licences are only issued under SI 265 of 2021 from this time forward.”* (see Annex 1).

²⁷ [S.I 264 of 2021](http://www.irishstatutebook.ie/) - 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/

²⁸ [S.I 265 of 2021](http://www.irishstatutebook.ie/) - Wireless Telegraphy (Third Generation and GSM Licence (Amendment) and Interim Licensing) Regulations 2021, available at www.irishstatutebook.ie/.

2: Next steps in considering any further Temporary ECS Licensing framework

34. In this section, ComReg outlines the envisaged process to determine whether a further Temporary ECS Licensing framework may be warranted beyond the expiry of the current temporary licences on 1 October 2021, in light of the prospect of continued Government measures to address COVID-19 and the impact this may have on relevant network operators.
35. However, in light of the extensive roll out of vaccines in Ireland to date, it is important to note that **ComReg and network operators must now begin planning for the end of these temporary licences in the near future**. In that regard, 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, 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 which case the continuance of a Temporary ECS Licensing framework would unlikely 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.

2.1 Submission of a joint/common request from the MNOs

36. In addition to the continued provision of network performance data outlined 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 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.
37. ComReg requests that such a joint/common request be submitted by **6 August 2021**.

38. 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.
39. Noting that the MNOs have previously submitted information in support of the current Further Temporary ECS (No.2) 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 June 2021.
40. 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 October 2021; and
- (iii) observations of how much of the changes in traffic and capacity is due to forecasted annual changes that would be expected on a network in the normal course (accounting for seasonal changes and projected market developments in the absence of COVID-19) and those that can reasonably be considered to be directly related to Government COVID-19 measures.

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

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

Note, where a Licensee has applied for and been granted a 2.1 GHz Band Liberalised Use licence, information for the 2.1 GHz band should not be included.

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

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

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

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

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

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

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

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

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

2.2 Confidentiality of submissions to this Information Notice

41. 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.
42. 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).
43. 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 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.
44. 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.
45. For example, “Redtelecom has a market share of [✂ 25% ✂].”

2.3 Envisaged timeframes for a consultation

46. Assuming that a satisfactory request is received by ComReg in accordance with Sections 2.1 and 2.2 above by **6 August 2021**, ComReg envisages that it would complete its consultation process on a potential new Further Temporary ECS licensing framework during September 2021, in advance of the expiry date of licences under the current framework on 1 October 2021.
47. 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

48. 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.2) renewal applications

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

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

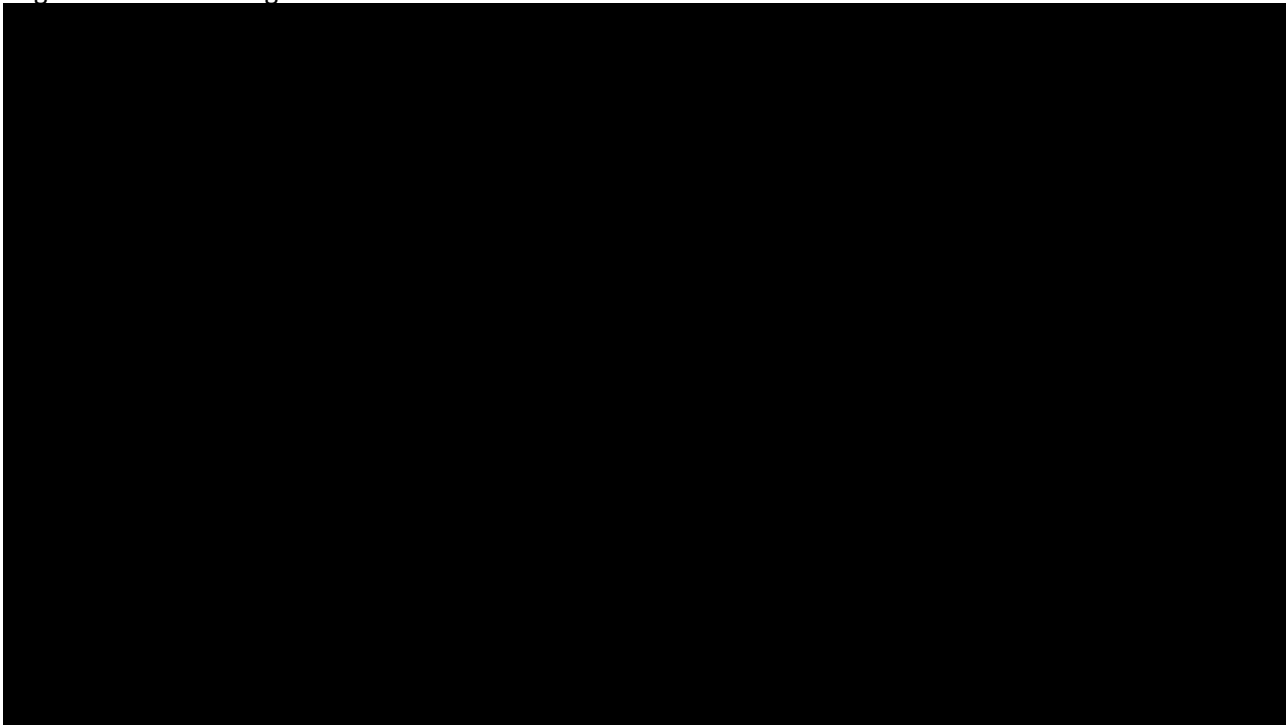
1. Network traffic / capacity / performance information:

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

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

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

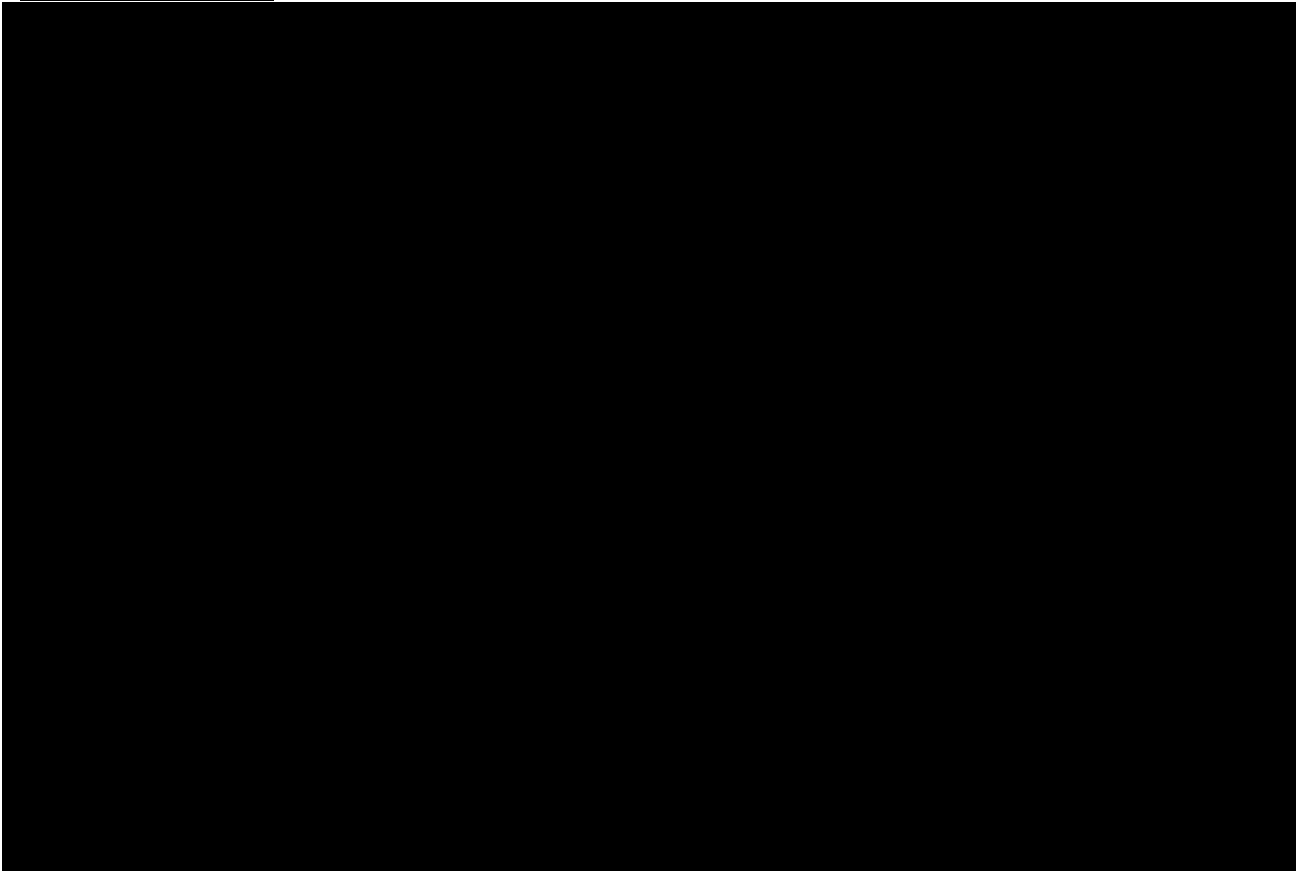
Figure 1: Data traffic growth trends



The trendline for 2021 to date would seem to indicate a slightly slower monthly growth of [REDACTED] from [REDACTED] per month in 2020 but there are still seven months to include and monthly trends seem broadly in line with recent ratios since the effects of Covid-19 on network demand started.

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

Figure 2: Voice traffic



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

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

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

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

2. Ability to make use of temporary rights - 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. Note that this can be provided separately in a Microsoft Excel sheet, alongside the requirements under Part 3 and Part 4 of the Application Form.

MMC: Please see attached file ('Confidential MMC Licence Application Parts 3 and 4 23Jun20') which details sites activated to date. eir mobile has extensively utilised the Temporary ECS licences with over [REDACTED] cells now live. eir mobile has utilised the 700Mhz band as an additional capacity layer on the upgraded sites and despite the very significant growth in particular of data traffic has continued to improve data throughputs on these sites.

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

(ii) information on the number of sites/transmitters per band that would be expected to be used over the duration of the licence renewal indicating the terrestrial system(s) (e.g. LTE) being supported. Note, where a Licensee has applied for and being granted a 2.1 GHz Band Liberalised Use licence, Part 3 (Schedule of Apparatus) and Part 4 (Apparatus Location and Details) information for the 2.1 GHz band should not be included in the renewal application.

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

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

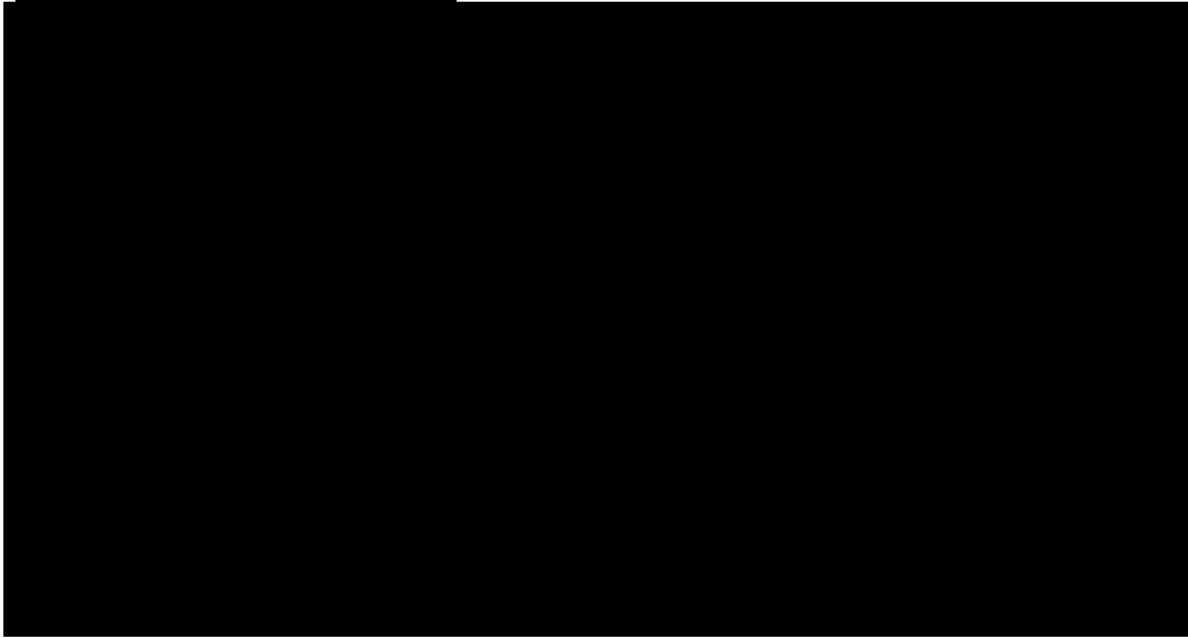
(i) information on how the existing temporary rights of use of radio frequencies has assisted in alleviating the network /capacity /performance constraints to date. Please provide:

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

b. information highlighting trends where the network capacity/network performance improvements are correlated to use of temporary ECS rights of use. For example when temporary ECS rights of use were brought into use (see 2 above) the network traffic / capacity / performance improvements observed at these times.

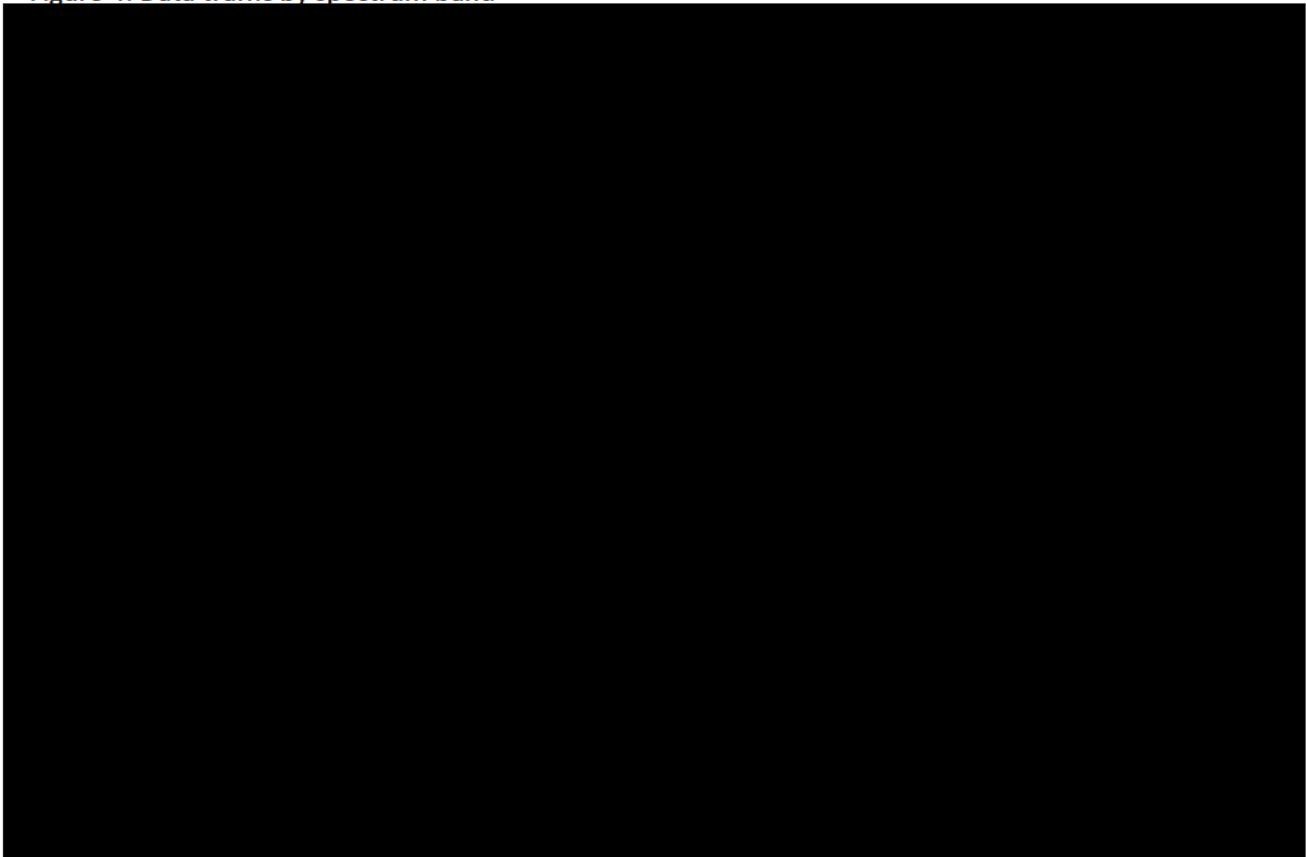
MMC: It has already been shown above how the total traffic on the network has grown since Covid. It is also worth noting the step change in the traffic per subscriber that has occurred since Covid-19 arrived. This is seen in Figure 3 below. The addition of LTE700 has helped to accommodate this traffic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

Figure 3 Traffic per subscriber profile



As illustrated around [redacted] and [redacted] of data traffic has been supported by the 700MHz and 2100MHz bands respectively in 2021. In the case of Voice services the LTE700 and LTE2100 bands carry [redacted] and [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 a licence renewal, noting that where a Licensee has applied for and being granted a 2.1 GHz Band Liberalised Use licence, information on the 2.1 GHz band should not be included.

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

4. Managing the risks to the provision and quality of existing ECS:

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

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

5. Risks in relation to non-renewal: The risk of congestion and other disruption to consumer services and the locations where it would most likely arise in the event of the non-renewal of a Licence, 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 previous correspondence *"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 temporary refarming of the 2100 band from UMTS to LTE would be removed resulting in lower customer experience and increased congestion impacting the ability of citizens to work, learn, and engage in society.

6. Actions required in relation to non-renewal: Details of the preparations and actions that the Licensee has taken and would need to take in the event of a non-renewal of a Licence.

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

7. Other factors: that the Licensee deems relevant to the consideration of the renewal of a Licence.

MMC: 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.

23rd June 2021

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

Dear Brendan

Temporary Spectrum Licence (No. 2)

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. 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, however it might not be received by ComReg until later this week.

There have been several developments since the temporary licences were last issued covering the period from April to June of this year. Some of the restrictions imposed to stem the transmission of Covid-19 have been removed or partially removed and the national vaccination programme has continued to make progress. The outlook from NPHEA could be described as positive but cautious. Three has noticed a limited return to what we would consider to be normal traffic patterns and growth on its network.

That said, we believe there is still some way to go before we can consider that we have returned to normal circumstances. Some concern has been raised about the Delta (and now Delta-plus) variants of the virus which are more transmissible. The Delta variant has accounted for 20% of new cases in Ireland over the last week and An Taoiseach stated today that the further removal of restrictions might need to be delayed because of this. Government policy remains that workers should continue to work from home where possible at this time. On our network we still notice that overall demand and the location of that demand remains shifted, and we still require access to the 700MHz spectrum in order to meet that demand and to support the requirements of workers who connect from home.

ComReg has also recently made Regulations providing for the liberalisation of existing licences in the 2100MHz band (SI 265 of 2021) and is now in a position to issue liberalised licences to existing licensees if they apply for them and accept the conditions attached. Under these circumstances it is neither necessary nor appropriate for ComReg to continue to issue temporary licences in the 2100MHz band. If a licensee sought to extend their 2100MHz liberalised licence rather than to liberalise their existing licence on a permanent basis then this might allow them to "bypass" the conditions appropriate to liberalisation of the 2100MHz licences. Those conditions have been consulted upon and decided upon by ComReg and no appeal has been taken to this aspect of ComReg's Decision. To allow a licensee to "bypass"

the conditions under which these licences will be liberalised could confer an unwarranted benefit. Therefore, it is appropriate that liberalised 2100MHz licences are only issued under SI 265 of 2021 from this time forward. There is no alternative means by which access to the 700MHz or 2.6GHz spectrum bands is available at this time, so it is appropriate that access to these bands continues to be provided under the Temporary Licence regime (SI 137 of 2021). Three has only applied to extend its 700MHz licence at this time.

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, as can be seen below.

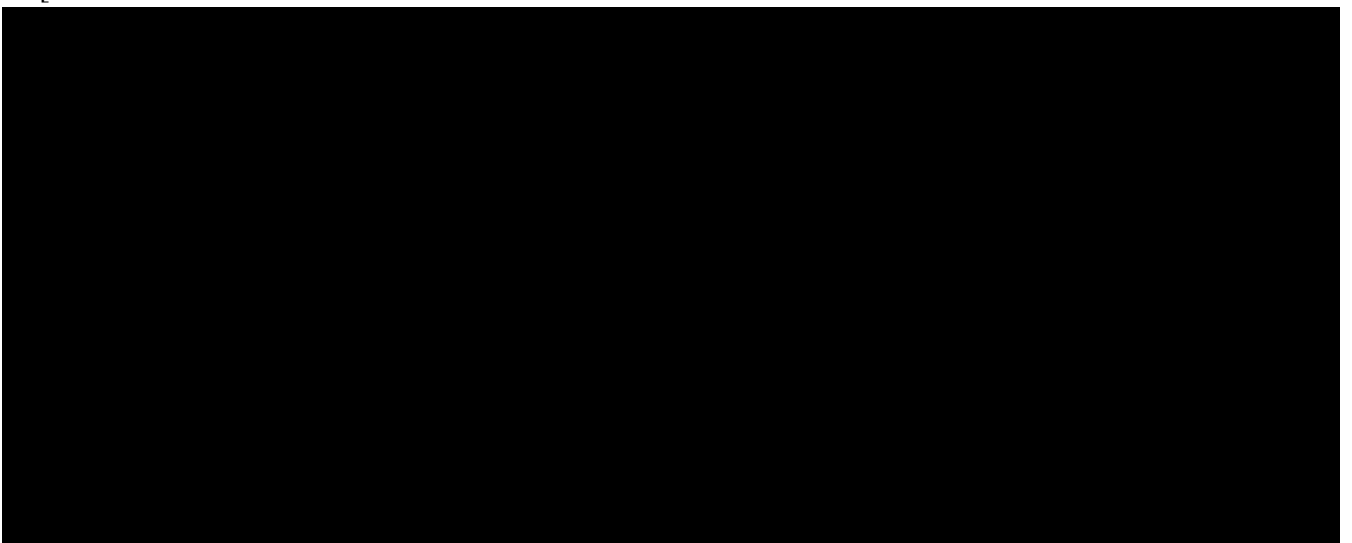
[§< Confidential section



end confidential section]


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

[§< 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 the end of September 2021. It shows two trend-lines – our baseline forecast excluding Covid-19 effects and the adjusted forecast which assumes ongoing measures that restrict normal behaviour. While the uplift above forecast due to restrictions has reduced, it is still significant at [§<Confidential ].

[§<Confidential section



end confidential section]

As can be seen, we anticipate ongoing growth in baseline traffic during 2021, but we must also include the uplift in traffic resulting from Covid-19 restrictions which gives significant growth above our baseline. Normal network improvement measures (including the deployment of

additional spectrum, equipment, and sites) can be expected to meet normal growth in demand. These increases need to be planned for in advance and take time to deliver. We do not believe it would be possible or practical to expand network capacity to meet the uplifted demand growth without access to the Temporary Licence for 700MHz. There is a layer to traffic demand which is still unpredictable at this time, including the location of that demand. Building new sites and rolling out equipment is both slow and expensive and it would not be practical or efficient at this time to try to reconfigure our network to meet a short-term remaining demand.

2. Sites and transmitters

At this time, Three has enabled 700MHz on [§<Confidential █████] sites. We expect to deploy an additional number of additional sites in the period to 1st October 2021.

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 temporary shift in traffic.

As Three's permanently liberalised 2100MHz licence has just commenced, we only have information available on the overall benefit accrued from the temporary licence covering both 700MHz and 2100MHz. On the sites where we have deployed 4G on the temporary licensed spectrum it carries on average [§< Confidential █████] of the traffic. This has had the immediate effect of relieving congestion and delivering higher quality of service to end-users.

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

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

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

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

4. Risks to the provision and quality of existing ECS

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

5. Risks in relation to non-renewal

At this time we continue to experience abnormal traffic demand on our network. There is a layer of traffic demand that has resulted from Government restrictions which are designed to prevent the spread of Covid-19 and the location of this demand is not consistent with our normal geographic profile. There has been something of a return to normal patterns as restrictions have been removed, however there remains a significant alteration to demand on our network. In March last year when we witnessed the surge from the first measures, there was a deterioration in quality of service for some customers, but there was also new demand when some citizens tried to work from home for the first time. We have been able to bring working connectivity to some customers for the first time using the temporary spectrum, but to also quickly introduce capacity to meet new demand. If the temporary licences are not extended, we estimate that this would materially affect connectivity for approximately [3<Confidential ██████] users. This would bring the risk that many of those customers would no longer be able to work from home or connect to college lectures in compliance with public health guidance.

6. Actions required in relation to non-renewal

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

3 Vodafone Ireland Limited

Application form for a renewal of a Further Temporary Electronic Communications Service Licence (No.2) ComReg 21/24aR

Part 2: Information in relation to the matters identified in Regulation 4(2) and 4(3) of the Regulations

1. Network traffic / capacity / performance information:

- (i) available information regarding the traffic (voice and data), capacity /performance of the network considering the extraordinary situation arising from COVID19.
- (ii) information on the expected traffic demand and network capacity beyond 1 July 2021; and
- (iii) observations of how much of the changes in traffic and capacity is due to forecasted annual changes that would be expected on a network in the normal course and those that can reasonably be considered to be directly related to Government COVID-19 measures.

Changes in work, educational, and social use of Telecommunication brought about by COVID-19 have had an extraordinary effect on the traffic carried in the Vodafone Mobile Network.

The Key metric of 4G Traffic has increased by █████ in May 2021 versus January 2020 (Pre Covid). This increase figure is more than █████ the growth we had estimated in pre Covid times.

Future growth remains very difficult to predict as there is considerable uncertainty about the effect of re-opening business and partial or full return to offices. These changes will affect both the volume of traffic and the locations where traffic demand will vary.

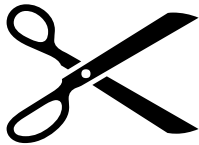
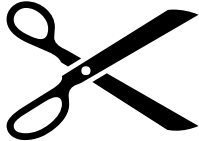
The availability of 700MHz and 2100MHz Carrier Upgrades has played a significant part in addressing key data congestion hot spots and helping us bring congestion back into manageable levels of customer experience, (see bottom graph below)

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

Although 700MHz cells on the VF IE network carry a small percentage of overall traffic (about 2% of Network Busy Hour Data Volumes) they have been targeted to relieve congested areas, particularly in Rural Ireland where other available carriers will not reach.

In terms of L2100, [REDACTED] L2100 cells have been deployed, the benefit here has been seen mainly in managing congestion and demand in Urban/Suburban hot spots. L2100 now accounts for 22% of Network Busy Hour Data Volumes,

This additional Spectrum will greatly help us deal with the ongoing changes in Data Traffic demands of VF IE customers as we go through the various stages of adjusting lockdown.



2. Ability to make use of temporary rights - 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. Note that this can be provided separately in a Microsoft Excel sheet, alongside the requirements under Part 3 and Part 4 of the Application Form.
- (ii) information on the number of sites/transmitters per band that would be expected to be used over the duration of the licence renewal indicating the terrestrial system(s) (e.g. LTE) being supported. Note, where a Licensee has applied for and being granted a 2.1 GHz Band Liberalised Use licence, Part 3 (Schedule of Apparatus) and Part 4 (Apparatus Location and Details) information for the 2.1 GHz band should not be included in the renewal application.

See separate Spreadsheet with details of sites deployed and planned.

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

- (i) information on how the existing temporary rights of use of radio frequencies has assisted in alleviating the network /capacity /performance constraints to date. Please provide:
 - a. information on the percentage of network traffic (voice and data) carried by temporary spectrum rights for the each of the 700 MHz band and 2.1 GHz bands.
 - b. information highlighting trends where the network capacity/network performance improvements are correlated to use of temporary ECS rights of use. For example, when temporary ECS rights of use were brought into use (see 2 above) the network traffic / capacity / performance improvements observed at these times.
- (ii) information on how temporary rights may materially assist over the duration of a licence renewal, noting that where a Licensee has applied for and being granted a 2.1 GHz Band Liberalised Use licence, information on the 2.1 GHz band should not be included.

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

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

We now have \approx cells on-air 700MHz spectrum as well as the sites where we are using liberalised 2100MHz to provide LTE data capacity. All of these sites would be now experiencing significant congestion without the capacity added by the Temporary Measures.

Covid has also driven changes to our technology plan. [REDACTED]
[REDACTED] but as many of [REDACTED]
[REDACTED]

4. Managing the risks to the provision and quality of existing ECS:

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

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

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

We note ComReg's comments in regard to co-ordination and will endeavor to work closely with other users of spectrum.

- 5. Risks in relation to non-renewal:** The risk of congestion and other disruption to consumer services and the locations where it would most likely arise in the event of the non-renewal of a Licence, identifying if such congestion or disruption would reasonably be considered to be due to COVID-19 matters or mobile market developments / commercial strategy matters.

If the Temporary measures are not renewed the capacity of many of our most busy network sites would be reduced significantly. Our customers would unfortunately experience extensive congestion [REDACTED]

The locations where this would occur are spread nationwide in suburban area, towns, and in rural areas

- 6. Actions required in relation to non-renewal:** Details of the preparations and actions that the Licensee has taken and would need to take in the event of a non-renewal of a Licence.

[REDACTED]
[REDACTED] 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. **Other factors:** that the Licensee deems relevant to the consideration of the renewal of a Licence.

Part 3: Schedule of Apparatus

See separate spreadsheet

Part 4: Apparatus Location and Details

See separate spreadsheet