



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

# 3.6 GHz Band Transition

## Progress Report 2023

**Reference:** ComReg 23/43

**Date:** 09/05/2023

## Legal Disclaimer

This report is not a binding legal document and also does not contain legal, commercial, financial, technical or other advice. The Commission for Communications Regulation is not bound by it, nor does it necessarily set out the Commission's final or definitive position on particular matters. To the extent that there might be any inconsistency between the contents of this document and the due exercise by it of its functions and powers, and the carrying out by it of its duties and the achievement of relevant objectives under law, such contents are without prejudice to the legal position of the Commission for Communications Regulation. Inappropriate reliance ought not therefore to be placed on the contents of this document.

# Content

Section	Page
1 Introduction and Background .....	6
2 Update on 3.6 GHz Band Transition .....	8
2.2 Localised Transition Plans (“LTP”) .....	8
2.3 Transition Activities – Existing Licensees .....	9
2.4 3.6 GHz Band spectrum availability .....	9
2.5 Notifications of Non-Compliance .....	10
2.6 Commercial services .....	12
3 3.6 GHz Band Spectrum Lease Licences .....	14
4 Next Steps .....	16

# Annex

## Section

## Page

Annex 1: Commencement of Lots Under 3.6 GHz Band Liberalised Use Licences	17
---	----

# Table of Figures

Section	Page
Figure 1: 3.6 GHz Commenced & Offered Lots (%) .....	10
Figure 2: Number of base stations rollout by 3.6 GHz Band Licensees.....	13

## Chapter 1

# 1 Introduction and Background

- 1.1 The Commission for Communications Regulation (“ComReg”) is the statutory body responsible for the regulation of the electronic communications telecommunications, radio communications and broadcasting networks), postal and premium rate sectors in Ireland in accordance with European (“EU”) and Irish law. ComReg also manages Ireland’s radio frequency spectrum (“radio spectrum” or “spectrum”) and the national numbering resource. Under the Communications Regulation Act 2002, as amended, ComReg has a range of functions and objectives in relation to the provision of electronic communications networks (“ECN”) and electronic communications services (“ECS”) which includes ensuring the efficient and effective use of the national radio spectrum resource.
- 1.2 As noted in ComReg’s Electronic Communications Strategy Statement 2021 to 2023<sup>1</sup>, radio spectrum, as a medium over which data can be transmitted, is an essential input in the supply of wireless/radio-based ECN / ECS for a diverse range of uses and end-users. It is a finite and valuable national resource as it underpins nearly all communications services in the State. These communication services include mobile telephony, wireless broadband, radio and television broadcasting and radio communications used by commercial business and by air and maritime transport.
- 1.3 Many services rely on wireless connectivity as part of the backbone linking mobile base stations, providing feeds to broadcast transmitters and telemetry links that allow the monitoring of disperse infrastructure, for example water reservoir levels and remote power transformers. The availability of spectrum is therefore necessary for the entry and expansion of many operators in electronic communications markets.
- 1.4 The growing demand for radio spectrum is driven by society’s ever-increasing demands for access to data-intensive services while on the move. In this context it is ComReg’s goal<sup>2</sup> that the management of spectrum facilitates competition, enhances connectivity and promotes efficient investment.
- 1.5 In May 2017, ComReg announced the results of its 3.6 GHz Band Spectrum Award (“Award”)<sup>3</sup>. The Award, which was conducted by auction, resulted in the successful

---

<sup>1</sup> ComReg document 21/70 – Electronic Communications Strategy Statement 2021 to 2023 – published 30 June 2021.

<sup>2</sup> ComReg’s Competition & Investment strategic intention – Goal 1.6: The management of spectrum and numbers facilitates competition, enhances connectivity and promotes efficient investment.

<sup>3</sup> <https://www.comreg.ie/industry/radio-spectrum/spectrum-awards/3-6ghz-band-spectrum-award/>

assignment of all 350 MHz of spectrum rights available. The spectrum was offered in 594 lots spread over nine regions and assigned on a contiguous basis to five Winning Bidders.<sup>4</sup>

- 1.6 On 16 December 2019, ComReg published its 3.6 GHz Band Transition Progress Report for 2019 (Document 19/115)<sup>5</sup>, which provided background to the Award, a summary of ComReg's 3.6 GHz Band Transition Principles and Framework, and an update on the progress of the 3.6 GHz Band Transition for 2019. That information has not been repeated in this report and readers are instead referred to Document 19/115.
- 1.7 The purpose of this report is to provide interested parties with an update on the progress of 3.6 GHz Band Transition. It also provides an update on the Transition Activities in 2022 and 2023 by Existing Licensees and Winning Bidders since the 3.6 GHz Band Transition Progress Report published on the 2 December 2021.<sup>6</sup>
- 1.8 While Transition in some areas remains slower than ComReg might have reasonably anticipated, due in the main to the sluggish rollout of services by some Winning Bidders, a substantial amount of the spectrum in the award is available and is already being deployed in the provision of services such as higher speed fixed wireless access ("FWA") and 5G services.
- 1.9 Annex 1 of this report shows the Lots<sup>7</sup> which have commenced as of 1 April 2023 under Winning Bidders' 3.6 GHz Band Liberalised Use Licences.

---

<sup>4</sup> The Winning Bidders are: Densair Ltd. (formerly known as Airspan Spectrum Holdings Ltd); Imagine Communications Ireland Ltd ("Imagine"); Meteor Mobile Communications Ltd ("Meteor"); Three Ireland (Hutchison) Ltd ("3IRL"); and Vodafone Ireland Ltd ("Vodafone"). See ComReg Document 17/46 – Information Notice: Results of the 3.6 GHz Band Spectrum Award – published 1 June 2017.

<sup>5</sup> ComReg Document 19/115 – 3.6 GHz Band Transition Progress Report 2019 – published 16 December 2019. <https://www.comreg.ie/publication-download/3-6-ghz-band-transition-progress-report-2019>

<sup>6</sup> ComReg Document 21/124 - 3.6 GHz Band Transition Progress Report 2021 – published 2 December 2020: <https://www.comreg.ie/media/2021/12/ComReg-21124-1.pdf>

<sup>7</sup> The 3.6 GHz Band spectrum award consisted of 594 lots spread over nine geographic regions (four rural and five urban), see ComReg Document 17/38 – Information Notice: Results of the 3.6 GHz Band Spectrum Award – published 22 May 2017

## Chapter 2

# 2 Update on 3.6 GHz Band Transition

- 2.1 ComReg has actively engaged with Winning Bidders and Existing Licensees since the completion of the Award to develop and implement appropriate Transition Plans. ComReg has placed particular importance on areas where Winning Bidders have sufficiently developed plans to roll-out new services.
- 2.2 ComReg has also encouraged Winning Bidders and Existing Licensees to engage and develop mutually-agreeable Transition Plan Proposals, which ComReg would then consider with a view to finalising a Transition Plan.
- 2.3 In December 2017, ComReg requested that Winning Bidders submit detailed Transition Plan Proposals by which to develop Localised Transition Plans (“LTPs”). The current position is summarised below:
- Vodafone Ireland Limited (trading as “Vodafone”) (“Vodafone”) provided its Transition Plan Proposal to ComReg in 2019;
  - Dense Air Ireland Limited (“Dense Air”) has yet to submit a Transition Plan Proposal; and
  - ComReg has commenced 100% of the Lots won by Imagine Communications Ireland Limited (“Imagine”), Meteor Mobile Communications Limited (“Meteor”), and Three Ireland (Hutchison) Limited (“Three”).
- 2.4 Please refer to the ComReg website for up-to-date information regarding [3.6 GHz transition activities](#).<sup>8</sup>

## 2.2 Localised Transition Plans (“LTP”)

- 2.5 In April 2019, Vodafone submitted its final Transition Plan Proposal to develop LTPs for the rollout of new services across ten sites using 3.6 GHz Band spectrum previously held by Imagine under the FWALA licensing scheme. ComReg consulted on the proposal, and on 25 June 2019, ComReg implemented LTPs for Vodafone’s rollout of these ten sites. Those LTPs required Imagine to complete all relevant Transition Activities by 5 November 2019.
- 2.6 Upon receipt of a joint request from Imagine and Vodafone, ComReg extended the relevant Commencement and Transition Dates, and consequently all Transition

---

<sup>8</sup> 3.6 GHz Band Transition: <https://www.comreg.ie/industry/radio-spectrum/spectrum-awards/3-6-ghz-band-transition/>



Activities were expected to be completed by 2 February 2020. However, due to the Covid-19 pandemic, those Transition Activities were suspended by the agreement of both parties.

- 2.7 As noted in the ComReg Document 21/125, Vodafone confirmed to ComReg at a meeting in September 2021 that it was discussing with Imagine the recommencement of its Transition Activities. Vodafone has yet to notify ComReg of when it intends to restart the Transition Activities as set out in the LTP. However, Imagine confirmed to ComReg in March 2023 that it was in contact with Vodafone in mid-February 2023 to discuss Transition Activities and at that time was awaiting further information from Vodafone on its rollout plans.

## 2.3 Transition Activities – Existing Licensees

### Existing Licensees

- 2.8 Progress has been made in the orderly transition of the Existing Licensees from the 3.6 GHz Band, including:
- e-Nasc Éireann Teoranta ('Enet'), Lighthouse Networks Ltd (trading as Lightnet), PermaNET, Ripplecom Communications Ltd ("Ripplecom") and Western Broadband Networks Ltd (trading as WestNet) have all completed their transition from the 3.6 GHz Band; and
  - While the LTPs, which were developed and implemented to transition Imagine from 3.6 GHz Band Lots awarded to Vodafone, are currently suspended, Imagine has continued with its Transition Activities more generally. Imagine has migrated from 75% of the Transition Service Areas ("TSA")<sup>9</sup> originally licensed under its 3.6 GHz Band Transition Protected Licence ("TPL")<sup>10</sup>.

## 2.4 3.6 GHz Band spectrum availability

### Winning Bidders

- 2.9 Significant progress has been made in the orderly transition of the 3.6 GHz Band and this progress has facilitated the commencement of spectrum rights for all new 3.6

<sup>9</sup> Under Transition Licences existing licensees are permitted to operate in local service areas, referred to as Transition Service Areas (TSAs), where they previously operated under the 3.6 GHz Band FWALA licensing scheme which ceased following the Award on 31 July 2017. At the start of Transition, all TSAs had a 20 km radius boundary around a defined centre point. As Transition has progressed, the area of some TSAs has been reduced to reflect completion of Transition activities which affect only part of a TSA and to facilitate ongoing Transition Activities in the remainder of the TSA.

<sup>10</sup> A Licence in the form as set out in Schedule 4 of the Wireless Telegraphy (3.6 GHz Band Licences) Regulations 2016, which entitles the holder to keep and have possession of Apparatus for the provision of FWA services in one or more than one FWALA Service Area, subject to the terms and conditions set out therein.

GHz Band licensees to varying degrees:

- On 1 September 2018, ComReg commenced 100% of the Lots won by Imagine;
- On 1 September 2020, ComReg commenced 100% of the Lots won by Three;
- On 1 April 2022, ComReg commenced 100% of the Lots won by Meteor;
- As of 1 April 2023, ComReg has commenced 91% of the Lots won by Dense Air; and
- As of 1 April 2023, ComReg has commenced 88% of the Lots won by Vodafone. ComReg offered to commence a further 2% of Vodafone’s Lots in July 2018 but this offer was declined by Vodafone.

Figure 1 below shows the percentage of commenced lots by each Winning Bidder as of 31 December 2022. Annex 1 shows the status of specific Lots in each region for each Winning Bidder.

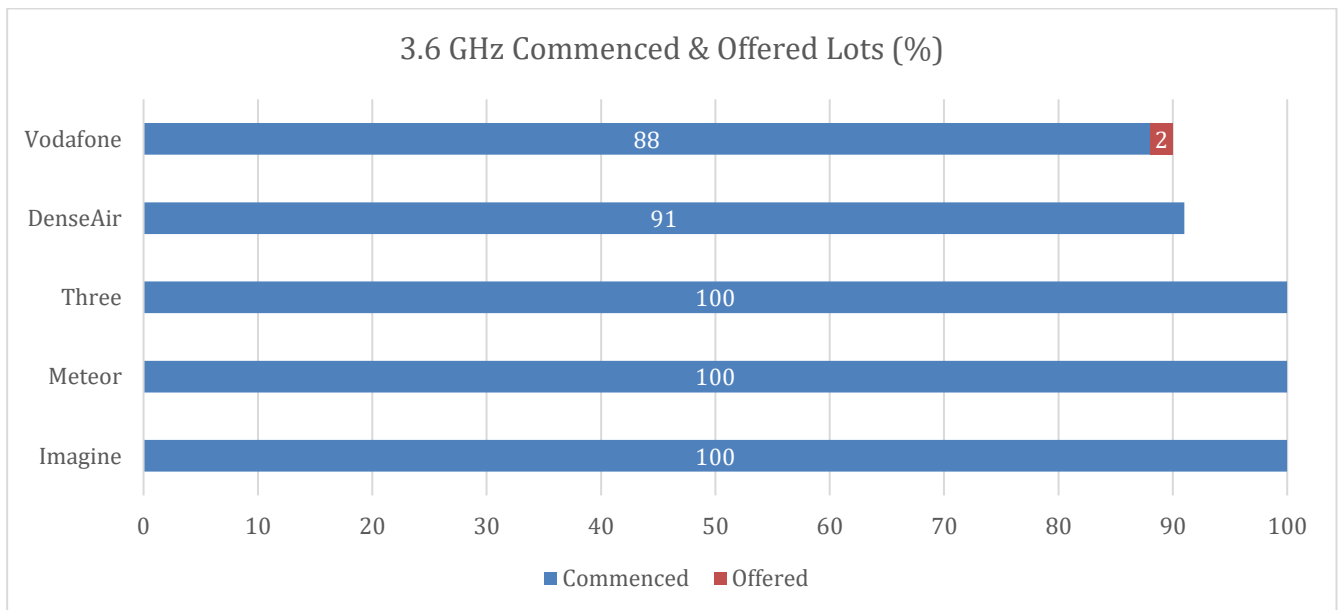


Figure 1: 3.6 GHz Commenced & Offered Lots (%)

## 2.5 Notifications of Non-Compliance

2.10 On 15 December 2022, ComReg issued notifications of findings of non-compliance

to Dense Air<sup>11</sup> and Vodafone<sup>12</sup>. The notifications of non-compliance were made in accordance with Regulation 16(3) of the European Communities (Electronic Communications Networks and Services) (Authorisation) Regulations 2011 (“the Authorisation Regulations”).

2.11 The notifications concerned:

- (a) Dense Air not working and using the required 15 Rollout Base Stations in at least 4 counties for the South East Region by 25 March 2022, 3 years from the Licence Commencement Date for same Region; and
- (b) Vodafone:
  - (i) not working and using the required 15 Rollout Base Stations for the South East Region<sup>13</sup> by 21 November 2021, 3 years from the Licence Commencement Date for same Region; and
  - (ii) not working and using the required 15 Rollout Base Stations in at least 4 counties for the South East Region.

### **Dense Air**

2.12 On 20 December 2022, Dense Air responded to the notification of non-compliance and stated that it had addressed its non-compliance by deploying three additional base stations in the South East Region. On 10 January 2023 and 15 February 2023, Dense Air subsequently submitted updated information to ComReg in respect of Parts 1, 2 and 3 of its 3.6 GHz Band Liberalised Use Licence.

2.13 On 27 April 2023, ComReg issued its Opinion of Non-Compliance (the “Opinion”) regarding Dense Air wherein ComReg formed the Opinion that Dense Air did not comply with Regulation 6(1) of the 3.6 GHz Band Licence Regulations and, in particular:

- (a) Paragraph 2 of Sub-section 2 of Section 4 of Part 4 of the Licence; and
- (b) Regulation 6(13) of the 3.6 GHz Band Licence Regulations.

2.14 Notwithstanding the Opinion, ComReg noted that on 10 January 2023 and 15 February 2023, Dense Air submitted information to ComReg in respect of Parts 1, 2

---

<sup>11</sup> ComReg Document 22/106 – Notification of a Finding of Non-Compliance to Dense Air Ireland Limited with respect to the 3.6 GHz Regulations – published 15 December 2022.

<sup>12</sup> ComReg Document 22/107 – ComReg issues a Notification of a Finding of Non-Compliance to Vodafone Ireland Limited with respect to the Wireless Telegraphy (3.6 GHz Band Licences) Regulations – published 15 December 2023.

<sup>13</sup> See Section 2.2 of ComReg Document 16/71 for information regarding the Regions where 3.6 GHz Band spectrum rights of use were awarded. [https://www.comreg.ie/media/dlm\\_uploads/2016/08/ComReg-1671-1.pdf](https://www.comreg.ie/media/dlm_uploads/2016/08/ComReg-1671-1.pdf)

and 3 of the Licence. ComReg observed that this information shows that Dense Air had subsequently deployed Rollout Base Stations in at least 4 counties in the South East Region. Accordingly, ComReg decided to close the investigation and take no further action. ComReg will, however, continue to monitor and supervise compliance by all 3.6 GHz Band licensees with their respective obligations.<sup>14</sup>

### Vodafone

- 2.15 On 16 January 2023, Vodafone responded to its notification and stated that a roll out programme was under development to address its non-compliance and that it would update ComReg regarding rollout progress at the end of each calendar quarter. On 31 March 2023 and 4 April 2023, Vodafone provided a list of 14 sites within the South East Region where it proposes to deploy apparatus under its 3.6 GHz Band Licence.
- 2.16 To assist with assessing Vodafone's submissions, ComReg is currently seeking expert advice regarding Vodafone's roll out programme, including the time it would take Vodafone to come into compliance with its obligation to rollout 15 Base Stations across 4 counties in the South East Region and the likely harm arising from Vodafone's continuing non-compliance.

## 2.6 Commercial services

- 2.17 While the rollout of services by Winning Bidders has been more protracted than ComReg had anticipated, a substantial amount of the 3.6 GHz Band spectrum has nonetheless been made available for use by Winning Bidders. This has enabled Winning Bidders to launch higher speed FWA<sup>15</sup> and 5G services.<sup>16</sup>
- 2.18 Figure 2 below shows the current rollout of sites by each of the Winning Bidders in each region. ComReg notes that Section 4 of S.I. No. 532/2016<sup>17</sup> sets out obligations for the rollout of base stations by region.

---

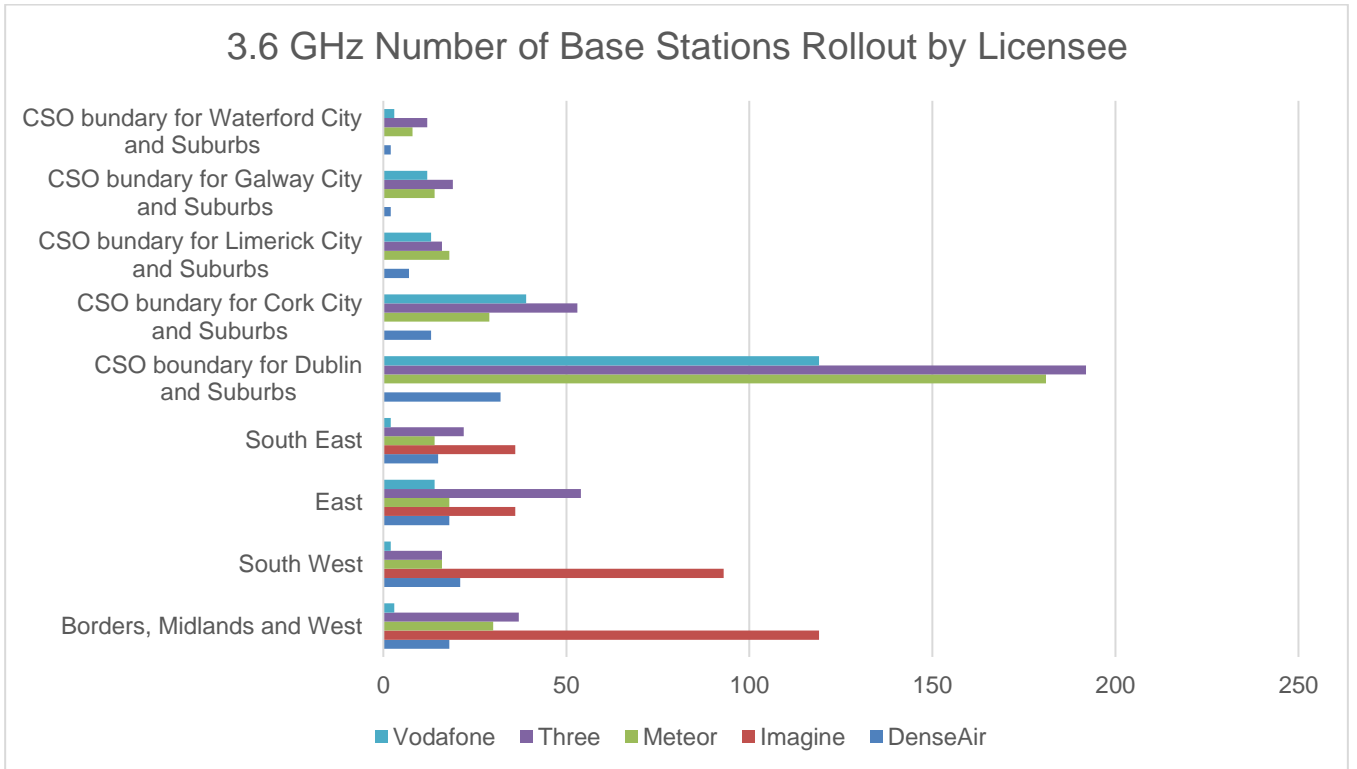
<sup>14</sup> ComReg Document 23/38 – ComReg issues an Opinion of Non-Compliance to Dense Air Ireland Limited with respect to the 3.6 GHz Regulations – published 27 April 2023.

<sup>15</sup> [Over 40,000 homes and businesses in Limerick to benefit from Imagine's high speed broadband - Limerick Live \(limerickleader.ie\)](#)

<sup>16</sup> For example:

- [Eir's GoMo network to offer 5G to customers – The Irish Times](#)
- [Three first mobile network to offer 5G as standard \(rte.ie\)](#); and
- [Vodafone 5G Mobile Broadband: High-speed internet – depending on your location – The Irish Times.](#)

<sup>17</sup> S.I. No. 532/2016 - Wireless Telegraphy (3.6 GHz Band Licences) Regulations 2016 - [S.I. No. 532/2016 - Wireless Telegraphy \(3.6 GHz Band Licences\) Regulations 2016. \(irishstatutebook.ie\)](#)



**Figure 2: Number of base stations rollout by 3.6 GHz Band Licensees**

## Chapter 3

# 3 3.6 GHz Band Spectrum Lease Licences

3.1 Since 2020, ComReg has issued several 3.6 GHz Band Spectrum Lease Licences (“Lease Licences”) to Imagine which allowed it to lease 3.6 GHz Band spectrum rights from each of Dense Air, Meteor, Three and Vodafone at various locations. The Lease Licences have also assisted Imagine with its 3.6 GHz Band Transition Activities and improved the delivery of services for consumers during the Covid-19 pandemic.

- In 2020, ComReg issued Lease Licences to Imagine following the publication of four Spectrum Lease Determinations<sup>18</sup>;
- In 2021, ComReg issued Lease Licences to Imagine following the publication of two Spectrum Lease Determinations<sup>19</sup>;
- In 2022, ComReg issued Lease Licences to Imagine following the publication of a Spectrum Lease Determination<sup>20</sup>; and

---

<sup>18</sup> See:

- ComReg Document 20/51 – Spectrum Lease Determination: Lease of spectrum rights in the 3.6 GHz band from each of Meteor Mobile Communications Limited, Three Ireland (Hutchinson) Limited, and Vodafone Ireland Limited to Imagine Communications Ireland Limited. – published 19 June 2020;
- ComReg Document 20/77 – Spectrum Lease Determination: Lease of spectrum rights in the 3.6 GHz band from each of Meteor Mobile Communications Limited, Three Ireland (Hutchinson) Limited, and Vodafone Ireland Limited to Imagine Communications Ireland Limited – published 25 August 2020;
- ComReg Document 20/87 – Spectrum Lease Determination: Proposed lease of spectrum rights in the 3.6 GHz band from Dense Air Limited to Imagine Communications Ireland Limited – published 22 September 2020; and
- ComReg Document 20/97 – Spectrum Lease Determination: Proposed leases of spectrum rights in the 3.6 GHz band from each of Meteor Mobile Communications Limited, Three Ireland (Hutchinson) Limited, and Vodafone Ireland Limited to Imagine Communications Ireland Limited – published 13 October 2020.

<sup>19</sup> See:

- ComReg Document 21/46 – Spectrum Lease Determination: Lease of spectrum rights in the 3.6 GHz band each of Dense Air Ireland Limited, Meteor Mobile Communications Limited and Vodafone Ireland Limited to Imagine Communications Ireland Limited. – published 10 May 2021; and
- ComReg Document 21/131 – Spectrum Lease Determination: Lease of spectrum rights in the 3.6 GHz band from each of Meteor Mobile Communications Limited and Vodafone Ireland Limited to Imagine Communications Ireland Limited – published 16 December 2021.

<sup>20</sup> See ComReg 22/64 – Spectrum Lease Determination: Lease of spectrum rights in the 3.6 GHz band from each of Dense Air Ireland Limited, Meteor Mobile Communications Limited and Vodafone Ireland Limited to Imagine Communications Ireland Limited – Published 25 July 2022:

- In 2023, ComReg issued Lease Licences to Imagine following the publication of a Spectrum Lease Determination.

3.2 ComReg also issued Lease Licences to Eircom Limited which allowed it to lease 3.6 GHz Band spectrum from each of Dense Air and Vodafone at a single location known as the Black Valley in the Macgillycuddy reeks, County Kerry. The Lease License assisted Eircom Limited with the continuation of services following the expiry of its 3.6 GHz Band Transition Unprotected Licence on the 31 July 2022.<sup>2122</sup>

---

<sup>21</sup> ComReg Document 22/65 – Spectrum Lease Determination: Lease of spectrum rights in the 3.6 GHz band Dense Air Ireland Limited and Vodafone Ireland Limited to Eircom Limited – published 25 July 2022.

<sup>22</sup> ComReg Document 23/23 – Spectrum Lease Determination: Lease of spectrum rights in the 3.6 GHz band Dense Air Ireland Limited and Vodafone Ireland Limited to Eircom Limited – published 10 March 2023.

## Chapter 4

# 4 Next Steps

- 4.1 ComReg will continue to engage with Winning Bidders and Existing Licensees in order to develop and implement appropriate Localised Transition Plans in line with the principles of the Transition licensing framework. Additionally, ComReg will commence the remaining Lots for Winning Bidders as they become available following the completion of necessary Transition Activities.
- 4.2 ComReg intends to publish non-confidential, substantive material relating to 3.6 GHz Band Transition following the completion of transition.



# Annex 1: Commencement of Lots Under 3.6 GHz Band Liberalised Use Licences

A 1.1 Following completion of Transition Activities by Winning Bidders and Existing Licensees in the areas and frequency ranges affected, ComReg has commenced Lots in Regions under 3.6 GHz Band Liberalised Use Licences as follows. The tables below show the frequency assignments and associated regions for each 3.6 GHz Band Liberalised Use Licence granted to date, and the status of the associated Lots as of 1 April 2023. Please refer to the ComReg website for up-to-date information regarding [3.6 GHz transition activities](#).<sup>23</sup>

A 1.2 The colours in the tables indicate the following:

**Green** – Lots that have commenced;

**Pink** – Lots that have not yet commenced;

**Amber** – Lots that ComReg offered to commence but were declined by the relevant licensee;

**Blue** – Lots that have not yet commenced but no longer refunded in line with para 2.75 of the Information Memorandum (“IM”) <sup>24</sup>: Delayed availability of Lots caused by Winning Bidder; and

**Black** – Lots that are not applicable to the Licensee.

---

<sup>23</sup> 3.6 GHz Band Transition: <https://www.comreg.ie/industry/radio-spectrum/spectrum-awards/3-6-ghz-band-transition/>

<sup>24</sup> ComReg Document 16/71 - 3.6 GHz Band Spectrum Award - Information Memorandum – Published 29 August 2016

Dense Air										
REGION	LOT	FREQUENCY RANGE	3410 - 3435 MHz							
			3580 - 3585 MHz	3585 - 3590 MHz	3590 - 3595 MHz	3595 - 3600 MHz	3600 - 3605 MHz	3605 - 3610 MHz	3610 - 3615 MHz	
	A1		B22	B23	B24	B25	B26	B27	B28	
REGIONS	Borders, Midlands and West									
	South West									
	East									
	South East									
	Dublin City and Suburbs									
	Cork City and Suburbs									
	Limerick City and Suburbs									
	Galway City and Suburbs									
	Waterford City and Suburbs									

Imagine													
REGION	LOT	FREQUENCY RANGE	3615 - 3620 MHz										
			3560 - 3565 MHz	3565 - 3570 MHz	3570 - 3575 MHz	3575 - 3580 MHz	3580 - 3585 MHz	3585 - 3590 MHz	3590 - 3595 MHz	3595 - 3600 MHz	3600 - 3605 MHz	3605 - 3610 MHz	3610 - 3615 MHz
	B18	B19	B20	B21	B22	B23	B24	B25	B26	B27	B28	B29	
REGIONS	Borders, Midlands and West												
	South West												
	East												
	South East												

Meteor																	
REGION	LOT	FREQUENCY RANGE	3695 - 3700 MHz														
			3615 - 3620 MHz	3620 - 3625 MHz	3625 - 3630 MHz	3630 - 3635 MHz	3635 - 3640 MHz	3640 - 3645 MHz	3645 - 3650 MHz	3650 - 3655 MHz	3655 - 3660 MHz	3660 - 3665 MHz	3665 - 3670 MHz	3670 - 3675 MHz	3675 - 3680 MHz	3680 - 3685 MHz	
	B29	B30	B31	B32	B33	B34	B35	B36	B37	B38	B39	B40	B41	B42	B43	B44	B45
REGIONS	Borders, Midlands and West																
	South West																
	East																
	South East																
	Dublin City and Suburbs																
	Cork City and Suburbs																
	Limerick City and Suburbs																
	Galway City and Suburbs																
	Waterford City and Suburbs																

**Three**

FREQUENCY RANGE		3700 - 3705 MHz	3705 - 3710 MHz	3710 - 3715 MHz	3715 - 3720 MHz	3720 - 3725 MHz	3725 - 3730 MHz	3730 - 3735 MHz	3735 - 3740 MHz	3740 - 3745 MHz	3745 - 3750 MHz	3750 - 3755 MHz	3755 - 3760 MHz	3760 - 3765 MHz	3765 - 3770 MHz	3770 - 3775 MHz	3775 - 3780 MHz	3780 - 3785 MHz	3785 - 3790 MHz	3790 - 3795 MHz	3795 - 3800 MHz	
LOT		B46	B47	B48	B49	B50	B51	B52	B53	B54	B55	B56	B57	B58	B59	B60	B61	B62	B63	B64	B65	
REGION	Borders, Midlands and West																					
	South West																					
	East																					
	South East																					
	Dublin City and Suburbs																					
	Cork City and Suburbs																					
	Limerick City and Suburbs																					
	Galway City and Suburbs																					
	Waterford City and Suburbs																					

**Vodafone**

FREQUENCY RANGE		3475 - 3480 MHz	3480 - 3485 MHz	3485 - 3490 MHz	3490 - 3495 MHz	3495 - 3500 MHz	3500 - 3505 MHz	3505 - 3510 MHz	3510 - 3515 MHz	3515 - 3520 MHz	3520 - 3525 MHz	3525 - 3530 MHz	3530 - 3535 MHz	3535 - 3540 MHz	3540 - 3545 MHz	3545 - 3550 MHz	3550 - 3555 MHz	3555 - 3560 MHz	3560 - 3565 MHz	3565 - 3570 MHz	3570 - 3575 MHz	3575 - 3580 MHz	
LOT		B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20	B21	
REGION	Borders, Midlands and West																						
	South West																						
	East																						
	South East																						
	Dublin City and Suburbs																						
	Cork City and Suburbs																						
	Limerick City and Suburbs																						
	Galway City and Suburbs																						
	Waterford City and Suburbs																						