An Coimisiún um
Rialáil Cumarsáide
Commission for
Communications Regulation

Non-Confidential submissions to ComReg Consultation 24/65 'Radio Spectrum Management Operating Plan 2025-2028'

Non-Confidential

Reference: ComReg 24/99s

Date: 13/12/2024

An Coimisiún um Rialáil Cumarsáide
Commission for Communications Regulation
1 Lárcheantar na nDugaí, Sráid na nGildeanna, BÁC 1, Éire, D01 E4X0.
One Dockland Central, Guild Street, Dublin 1, Ireland, D01 E4X0.
Teil | Tel +353 1 804 9600 Suíomh | Web www.comreg.ie

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8. Fogarty Fenwick Ltd
9. Galway City Innovation District
10. RTÉ
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Proposed Radio Spectrum Management Operating Plan for 2025 – 2028

Response From Three Ireland

13th September 2024

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1 Introduction

Three welcomes the opportunity to comment on ComReg's consultation on its proposed Radio Spectrum Management Operating Plan for the period 2025 – 2028.

The proposal, in effect, sets out a workplan for the relevant period and where appropriate outlines an approximate timeline for any required consultations and the high level issues that might be consulted.

In this context Three's response to the current consultation does not represent a position on any of the substantive issues that might be consulted on in the various consultation stream outlined in the plan.

2 Summary

As ComReg outlines in the proposed management plan, spectrum is a key input to downstream commercial and economic activity.

Three therefore believes that the overall thrust of the Radio Spectrum Management Operating Plan for the period 2025 - 2028 should be to give the market certainty as the availability of spectrum inputs.

To this end we believe that the workstreams dealing with MBSA1 licence expiry and the expiry of the national block licenses in the 26GHz band should be commenced earlier than outlined in the plan.

These are cornerstone spectrum inputs to the mobile sector and we also believe that consideration should be given to other elements of the plan being realigned to maximise the potential utility of these spectrum blocks.

We are also of the view that section on compliance enforcement does not reflect Three's experience as a licensee and that the plan should include a work item relating to the review of the operational procedures in respect of interference complaints.

Our detailed views on these topics are set out below.

3 MBSA1 license expiry

The spectrum covered by the MBSA1 Licenses which are due to expire in 2030 is a foundational input to the provision on mobile services in Ireland. Notwithstanding the additional spectrum made available to the market on foot of the MBSA2 award process, early certainty regarding the roadmap for the MBSA1 spectrum is required to allow operators plan network and service evolution and to plan and phase the significant capital investment that will be required to support the growth in Mobile Data usage that ComReg itself is forecasting.

ComReg needs to avoid a cliff-edge scenario occurring with the expiry of the MBSA 1 licences. Early knowledge of the roadmap for this spectrum beyond the current licence expiry in 2030 would allow effective transition of services, if required, and the seamless integration of network planning, procurement, and expenditure in the MBSA2 spectrum into new planning that would be required for the MBSA1 spectrum under any new licence arrangements.

Three believes that as a first step in the process for considering how to deal with the MBSA1 spectrum, ComReg should consult on whether the current MBSA1 licenses should be extended to co-terminate with the current 3.6GHz licenses. This is because there might be substitutability or complementarity reasons for making the 3.6GHz band available for re-licensing at the same time as the 800MHz, 900MHz, and 1800MHz bands which would result in overall more effective use of spectrum it the medium to long term.

Experience from previous licence award processes shows that the end-to-end process from the initial consultation on the approach to the design of an award process (including what is in scope) to the actual award of licenses and use of the awarded spectrum could take 4 years.

In light of this, and to avoid the cliff edge outlined above, Three is of the strong view, that the work in the MBSA1 spectrum must be sequenced to allow an initial consultation in early 2025.

4 26GHz National Block Licence Expiry

The proposed workplan sets out very clearly the success of the National Block Licence regime in the 26GHz band, as is demonstrated by the very high levels of link deployment in this band.

These deployments support the mobile service provided over both the MBSA1 and MBSA2 spectrum blocks and have become a cornerstone of mobile network design in Ireland.

The volume of links deployed means that it would be difficult for operators to quickly react to any changes to the structure of the block licence regime by migrating to different solutions.

While the workplan outlines that there will be a consultation on a new award and licensing framework for 26 GHz National Block Licences prior to the expiry of current licences in August 2028, it gives no indication of timeframes.

Given the now central role that 26GHz National Block Licenses play in fixed link deployment Three believes that it is essential that activity on a renewal regime commences in the very short term.

5 Compliance and interference

Three's perception of the process for reporting, investigation and resolution of interference issues is not reflected in the summary set out in the draft plan.

Three believes that the volume of reported issues materially understates the actual incidence of interference issue.

Three is of the view that this disjoint is due to operational and administrative limitations in the process for making reports.

Three believes that a work item should be added to the Workplan to review the operational and administrative processes for reporting interference issues.

6 MBSA2 licence award

We note the reference to completing MBSA 2 in section 4.3.2, which is headlined as "A positive outcome delayed by litigation". In paragraph 4.6.1, ComReg states the following: *"While the completion of the MBSA2 took longer than expected (in the main due to Three's appeal, which delayed the assignment of some MBSA2 spectrum rights by up to 14 months[128,129]) with consequential costs to the Irish economy[130]"*.

> *[130] In the MBSA2 High Court proceedings, ComReg obtained reports from economic experts Dr. Dan Maldoom (ComReg Document 23/35a) and Professor J. Peter Clinch (ComReg Document) which estimate the likely economic benefits from the widespread deployment of 5G to be in the order of €1 bn per annum.*

Three is surprised with the presentation used in this this section. At the least, it is open to misinterpretation as it does not give a whole or balanced representation of the appeal taken by Three and the basis on which the auction proceeded. It is also possible that the presentation could be interpreted as an implied criticism of the appeals process through the courts. In addition, it is surprising that ComReg has repeated a reference to loss to the Irish economy in footnote 130. ComReg is aware that the validity of this assessment was challenged in court on multiple material grounds and that such challenges were not answered or contradicted. It is misleading for ComReg to repeat these claims without also highlighting that material errors in their calculation have been pointed out and not responded to.

ComReg spent several years considering and consulting on the award process that is MBSA 2. The particular decision brought forward by ComReg was flawed in that it placed Three at a material disadvantage in the award process. This flaw was highlighted by Three on multiple occasions (together with suitable alternatives) throughout the consultations, but disappointingly it was ultimately carried forward into the final decision. In this context, it was entirely predictable that the decision would be appealed and ComReg should have provided for this in its planning. Like all interested parties, Three has a statutory right to appeal. ComReg is aware of that and of the fact that in this case Three simply exercised that right, following which the process of the courts was followed.

Following the various appearances in court, the award process was permitted only to proceed to the point where ComReg had completed the auction, but not awarded any licences, i.e. ComReg was not permitted to complete the award process until the result was known to bidders and until Three had withdrawn its appeal. The award process itself was flawed and that flaw remained. It just happens that in this case the flaw did not have a material impact on the outcome of the award, however that does not mean that the flaw was non-existent or that it was unnecessary for Three to take its appeal. ComReg could not guarantee that this would be the case and did not offer to run the auction without awarding licences until the last days of the court appeals.

Given the legal rights of all interested parties with appropriate standing to challenge reviewable decisions made as part of awards processes, ComReg should factor the

possibility of the extension of time to a final award necessitated by the exercise of these rights. It should therefore commence awards process activities in sufficient time to mitigate the risk of delay from statutory appeals.

7 Other Issues

7.1 Engagement with AirNav Ireland to resolve compatibility issues with MFCN in 2.6 GHz band

It is noted that the unfettered use of the 2.6GHz band has been delayed beyond the date that would have been reasonably expected at the time the auction was run. Operators bid for, won, and paid for this spectrum (Access Fee and Usage fee) on the basis of earlier expected availability. Some of this value is now lost to the winning bidders. [redacted]. Operators also have roll-out obligations in their licences with timelines. These cannot be met if spectrum is unavailable.

These are not merely commercial or compliance issues. The downstream impact is to limit the ability of operators to offer the best possible service in the vicinity of the State's most significant international gateway. In this regard Three notes the increasing reliance on app based travel management tools (e.g. check in and boarding passes).

Three notes that the plan gives updated indicative tasks and timelines for AirNav Ireland to complete the work necessary to allow operator use the spectrum that they have paid for.

7.2 3.8-4.2 GHz band

Three notes the proposal for a consultation on WBB private network use but believes that this is a lower priority than activity in respect of 3.6GHz, MBSA1, or 26GHz spectrum and that ComReg resources and effort should also be assigned to reflect this prioritisation.

7.3 3.6GHz band

Dense Air Spectrum in 3.6GHz

Three believes that this spectrum should be available for assignment whenever the other licences in this band are made available for re-assignment. This is to allow maximum flexibility for licensees at the time of re-award, including the possibility to obtain uniform national licences. To achieve this, it would be necessary to rule-out licensing of this spectrum for any period that goes beyond the licences currently held by Three, Eir, Vodafone, and Imagine.

7.4 Report on EU competitiveness: Looking ahead

Mario Draghi, former prime minister of Italy and former president of the European Central Bank (ECB) completed a report on behalf of the European Commission. The report looks at the challenges faced by the industry and companies in the Single Market.

The findings of the report will contribute to the Commission's work on a new plan for Europe's sustainable prosperity and competitiveness

In relation to the telecoms sector the report outlines a number of proposals. These include spectrum related aspects (such as licence duration).

While not a formal Commission position Three believes that it indicates a potential direction of travel and that ComReg should as a minimum consider relevant aspects as options or inputs to any consultations it conducts.

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eir's Response to ComReg Consultation: Proposed Radio Spectrum Management Operating Plan for 2025 - 2028

ComReg Document: ComReg 24/65

30 August 2024

DOCUMENT CONTROL

Document name	eir response to ComReg Consultation 24/65
Document Owner	eir
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The comments submitted in response to this consultation document are those of Eircom Limited (trading as 'eir' and 'open eir'), collectively referred to as 'eir Group' or 'eir'.

eir's response to consultation 24/65

1. eir welcomes the opportunity to comment on ComReg's proposed work plan for the next 3 years.

MBSA1 Licences

2. eir notes ComReg's proposal to consult towards the middle of the 2025-2028 period on spectrum for Wireless Broadband (WBB) Mobile Fixed Communication Network (MFCN) use. ComReg indicates that such a consultation would include consideration of proposals to address the expiry of MBSA1 liberalised use licences on 12 July 2030.

3. ComReg states at paragraph 4.31, "*Consulting on this matter during 2026, would afford circa 3½ to 4½ years in advance of licence expiry on 12 July 2030, and would be a similar timeframe to that required for the MBSA1 and MBSA2 awards both of which were more complex*" [emphasis added]. This phrasing suggests that ComReg has already pre-determined that licence expiry should be addressed by way of a spectrum auction award process as it has done on previous occasions.

4. eir does not agree that designing another auction process to address the expiry of MBSA1 licences would be appropriate or consistent with the evolution of the European regulatory framework as set out in the Code (Directive 2018/1972 establishing the European Electronic Communications Code transposed to Irish law by S.I. No. 444 of 2022 European Union (Electronic Communications Code) Regulations 2022).

5. As ComReg notes (paragraph 4.11), "*mobile data traffic volumes in Q1 2024 were 425,211 Terabytes – up 20% from previous year and up 82% compared to Q1 2021 (3 years ago), which is an average growth rate of 22% per annum*". ComReg observes at paragraph 4.23 "*Taking both demand and supply side factors into consideration, Frontier forecasts that by 2028 total mobile data traffic is expected to have grown 2.2 times when compared with 2023, that is from 1,500 petabytes (PB)112 per year in 2023 to 3,200 PB in 2028*".

6. MNOs must invest significantly to meet the data demands of their customers. However, in stark contrast, the total mobile market revenue (per ComReg QKDR) has only increased by 15% over the same 3 year period and is not expected to increase substantially in future years. MNOs need predictable and cost effective access to spectrum resources in order to support the required network expansion.

7. It should also be noted that the outcomes from the last spectrum auctions have resulted in inefficient use of spectrum in 3.6Ghz. Dense Air has exited the market and the spectrum has been denied to efficient users (see later section). There is also evidence that Imagine is reducing its network and hence its use of 3.6GHz and 2.3Ghz is not efficient. This is clear evidence that complex auctions are an inefficient way to secure efficient use of this limited resource.

8. The need for predictable and cost effective access to spectrum is acknowledged in the Code which encourages longer duration licences and renewal / extension rights in order to support the fundamental objective of promoting investment in Very High Capacity Networks. Regulation 32 requires "*(2) The Regulator shall assess the need for a renewal at its own initiative or upon request by the holder of the right, in the latter case not earlier than five years prior to expiry of the duration of the rights concerned. This shall be without prejudice to renewal clauses applicable to existing rights.*"

9. ComReg's work plan must therefore explicitly acknowledge that a review to consider renewal rights for mobile spectrum licences will be undertaken.

3.6 GHz Licences

10. Consideration of 3.6GHz licences gives rise to two matters from eir's perspective. Firstly the surrender of Dense Air's licence and secondly the expiry of licences on 31 July 2032.

11. eir notes with interest that Dense Air surrendered its 3.6GHz licence effective 31 July 2024. ComReg proposes to do nothing with the spectrum in the near

term and states at paragraph 4.27 "*at this time there is likely to be little demand for these rights as prior to handing back the 3.6 GHz band licence to ComReg, Dense Air would inevitably have exhausted its other options to sell or transfer the spectrum rights to other parties*". This is not a correct characterisation of the situation.

12. [✂ ✂]

13. With regard to expiry of the licences in 2032, ComReg states at paragraph 4.35, "*Running a single band award is generally less complex and quicker to run than a multi-band award, noting that for the 3.6 GHz band award, the first consultation was issued in July 2015, circa 2 years in advance of its completion in June 2017.*"

14. eir believes the same considerations apply as do for MBSA1 licences, i.e. the merits of implementing a renewal regime nust be fully considered and there should be no pre-determination that expiring licences should be addressed by way of a spectrum auction award process.

26GHz Block Licences

15. The current block licences have an expiry date of 1 August 2028. ComReg proposes at paragraph 4.144, to "*conduct a consultation on a new award and licensing framework for the 26 GHz national block licences prior to the expiry of the current 26 GHz national block licences for fixed links in August 2028*". eir agrees it is appropriate for the continued use of 26GHz for national block licences. eir does not envisage any material demand arising for this spectrum for WBB MFCN use. The current licensing regime makes efficient use of the spectrum and has proven beneficial for all fixed link users as the licensees have reduced their demand for fixed links in other bands.

16. However, for the reasons explained above, we believe consideration should be given to establishing a renewal regime rather than pre-determining that licence expiry should be address through spectrum auction awards.

Commission for Communications Regulation
One Dockland Central, Guild Street,
Dublin 1, Ireland, D01 E4X0

30th August 2024

Re: Submissions to ComReg 24/65

Dear Sir/Madam,

Imagine welcomes the publication of ComReg's Proposed Radio Spectrum Management Operating Plan for 2025 – 2028 and makes the following observations: -

1. Section 2 The Framework for Spectrum Management in Ireland

Section 2 of the document makes many accepted references to the benefits of an effective spectrum management plan and the requirements to promote competition and investment etc, for example: -

Para. 2.7 *.....section 12(2)(a) of the 2002 Act requires ComReg to take all reasonable measures which are aimed at the promotion of competition, including:*

i. ensuring that there is no distortion or restriction of competition in the electronic communications sector

Para. 2.42 *the availability of spectrum is necessary for the entry and expansion of many operators in electronic communications markets.....*

the efficient management of the national radio spectrum (and numbering) resources is required to facilitate competition, enhance connectivity and promote efficient investment,

Indeed, ComReg's stated strategic intentions **1.6 Connectivity and Network resilience** (par. 2.42) and **3.2 Competition and Investment** (par. 2.15) have specific goals related to enhancement of connectivity and promotion of efficient investment and the promotion of connectivity and incentivisation of infrastructure rollout.

It is difficult to reconcile such statements in the face of the significant impact that the state subsidised rollout of the national broadband plan, based exclusively in the deployment of fibre, is having on many key sectors of the wireless industry and their ability to make effective and efficient use of spectrum, whether licensed or unlicensed.

Nowhere in the RSMOP, or the 2025-2027 ComReg Strategy Statement[1], is there any mention or discussion of the impact of the NBP and how it might influence and shape spectrum policy and how

[1] ComReg 24/68 ComReg Strategy Statement 2025-2027

ComReg intends to take account of this while ensuring it is able to meet many of the stated goals related to spectrum management.

In section 2.2.1. The importance of the radio spectrum, ComReg references the €7.2 billion of radio spectrum to Irish GNI (par. 2.18). ComReg's also refers to its approach to making this estimation and several market developments that need to be considered (Par. 2.20). Does ComReg intend to include the impact of the fibre based NBP rollout on the economic contribution of wireless based broadband services and operators whether FWA or MBB based. The withdrawal of DAI from the market should also be considered in this regard.

2. Section 4. Spectrum for MFCN/WBB

Regarding the surrender of Dense Air's 3.6GHz band licence (Pars. 4.26 – 4.28) Imagine do not necessarily agree that the fact the spectrum was not sold or transferred to other parties indicates a lack of demand but rather that it may not have been possible to agree the terms of such sale or transfer.

Whilst this will inevitably be dealt with in any consultation relating to MBSA1 or the 3.6GHz licences Imagine would be interested to know what ComReg proposes to do with the returned spectrum in the interim – for example would this spectrum be available for short term leasing?

Para. 2.42 Imagine would be of the view that 3.6 GHz band should be excluded from the MBSA1 process managed in a separate process, similar to how the 3.6 GHz band award was successfully managed previously.

Regarding the 3.8GHz to 4.2GHz Band (Pars. 4.87-4.92) Imagine agrees with the proposed approach and suggested timing.

Regarding Section 4.3.6 The 26GHz Band (Pars. 4.87-4.92) Imagine responded to the 2021 study and was more optimistic regarding the potential opportunities for MFCN in 26GHz band as demonstrated in markets such as Italy where the spectrum had already been made available and still believes that notwithstanding the current challenges of securing investment for the deployment wireless network, due to the distortion in the market caused by the NBP, the availability of spectrum in this band has an important role to play meeting the objectives of the EU Gigabit Infrastructure Act Regulation ('GIA')[2].

3. Section 5. Factors informing ComReg's proposed work plan for 2025 to 2028

Para. 5.1 Imagine believes that the impact of the NBP state aid driven fibre network on wireless broadband deployments (FWA, MBB) should be considered as a factor affecting the demand for radio spectrum whether in the RSMOP or in the ComReg Strategy Statement 2025-2027

[2] Regulation (EU) 2024/1309 of the European Parliament and of the Council of 29 April 2024

4. Annex 1. Summary of legal framework and statutory objectives relevant to the management of the radio spectrum

Promotion of Competition

Par.A1.55 Section 12(2)(a) of the 2002 Act requires ComReg to take all reasonable measures which are aimed at the promotion of competition, including:

- ensuring that there is no distortion or restriction of competition in the electronic communications sector

How is this going to be achieved when commercial operators who must invest considerable sums in spectrum and network deployment must compete in areas where their NGA capable networks have been overbuilt by the state aid funded NBP network?

Par.A1.63 This states that

In carrying out its functions, ComReg is required, amongst other things, to:

- *take the utmost account of the desirability that the exercise of its functions aimed at achieving its radio frequency management objectives does not result in discrimination in favour of or against particular types of technology for the provision of ECS*[3]

Section 12(6) of the 2002 Act is not specific to just achieving radio frequency management objectives and applies equally to ensuring that there is no discrimination against wireless technologies. In our opinion ComReg has failed to meet this requirement since there is clear evidence of distortion and restriction of competition in the electronic communications sector caused by the NBP.

Yours sincerely,

Mike Stacey
CTIO
Imagine Communications Group

[3] Section 12(6) of the 2002 Act

Vodafone Response to Consultation

Proposed Radio Spectrum Management Operating Plan for 2025 - 2028

Consultation (ComReg 24/65)

Version: Non-Confidential

Date: 9/9/24

Response to Consultation

Vodafone welcomes the opportunity to respond to the Proposed Radio Spectrum Management Operating Plan for 2025 – 2028 consultation. This advance engagement is important, and the document provides a useful level of clarity on the focus of efforts for ComReg. We appreciate the efforts to ensure there is some indicator of timing and prioritisation for the different workstreams over the coming three years and beyond. The proposed range of activities as set out in Chapter 6 are relatively clear and Vodafone will engage with the specific elements of the work plan as issues arise. We will monitor the Annual Action Plan for specific timelines on individual workstreams. The proposed plan intentionally focuses on operational aspects of the work plan. In response Vodafone have provided a limited number of comments below on workplan activities including engagement on 2.6GHz, 6GHz and the use of Satellite. However on spectrum plans a more detailed engagement is now required.

We must engage now in a broader spectrum policy review

Vodafone Group are clear that the way Europe seeks to fund internet infrastructure upgrades is broken and policy change is required if we are going to fix this. It is recognised now across the EU that planning and investment certainty is needed on spectrum and the traditional model of auctions no longer work. It is undeniable fact that **telcos across Europe are caught in a negative cycle of stagnating revenues, low returns and a decline in market valuation** leading to lower investment prospects. The situation is no different in Ireland and is arguably more acute given the inherent challenges on economies of scale.

We must make policy changes now if Ireland is to achieve real 5G ambitions. It is very clear that in Ireland with a population of 5.5 million operators have a more difficult argument for capital expenditure allocations to fund investment in the 5G core than an operator in Germany where the population is 84 million. The question we need to ask is how we can make the business case for Ireland more compelling. This question needs to be answered sooner rather than later. **There is an urgent need and more importantly an opportunity to review the national policy on spectrum allocation in the context of Irelands Digital ambitions**.

Certainty on spectrum allocation will enable Irish operators to secure a more substantial portion of the investment funds typically allocated to their European operators. **A stable, predictable, and long-term view on spectrum allocation makes Ireland a more attractive destination for capital investment which in turn enhances Irelands ability to achieve its ambitions to drive innovation, growth, inward investment, and jobs through key industrial 5G standalone programmes**.

The recent EU Commission (Draghi) report on The Future of European competitiveness[1] recommends *"At least double the duration of frequency licences, with the possibility of reselling during their lifespan to encourage investment propensity, incentivise capital allocation to new technologies and mitigate the financial risks of early investment".*

To contribute to this important policy discussion in Ireland **Vodafone has now commissioned a Frontier Economics report 'Managing Spectrum to Benefit Ireland'** which we attach as part of this consultation response. The document sets out alternative approaches for efficient spectrum allocation and provides examples of working models across Europe. Further details are set out below and in the accompanying Frontier report.

[1] EU competitiveness: Looking ahead - European Commission (europa.eu)

Chapter 6 – Specific Workplan Activities

Vodafone will participate in the specific workplan activities listed and of particular interest will be the consultations around 26GHz, 1.4GHz and 3.2GHz to 3.4GHz. Vodafone are willing to engage at any time with ComReg to inform consultations in advance.

- 2.6GHz: Vodafone welcome the focus in the workplan to resolve compatibility issues to ensure this important band can be fully utilised. We note the recent clarification from ComReg confirming technical conditions in the 2.6GHz band to protect the TA10 Aeronautical Primary Radar is no longer applicable. However, the full technical conditions applicable to the existing Star 2000 Radar at Dublin Airport remain applicable. ComReg advise that AirNav Ireland now plan to complete the installation of a filter on the existing Star 2000 radar in Q2 2025 which is well outside the period initially advised in advance of allocation.

  [redacted] The timelines [redacted] are now a major issue [redacted]. Vodafone will engage ComReg further to discuss ongoing challenges.

  We would note that Vodafone have been kept informed via ongoing engagement with ComReg teams on the best estimates for times on completion of this key task, which is largely outside ComReg's control.

- 6GHz: Vodafone have engaged with Irish policymakers in relation to assignment of the upper 6GHz band. Vodafone analysis shows that some urban 5G cells in larger markets will experience capacity challenges in the 5G capacity layer in around 2028-2029. It is our view that the deployment of 6GHz spectrum for MFCN is the only economical and practical way to provide the additional capacity requirements critically required for mobile networks towards the end of this decade.

- Satellite: It will be important to ensure early engagement on spectrum policy in relation to Satellite services. There are opportunities for Ireland to innovate on Satellite direct to device services and ComReg will be aware of Vodafone projects in conjunction with AST Space Mobile. Vodafone will continue to engage with ComReg on this key policy area and will facilitate wider engagement with Vodafone group as required.

Evolution of Spectrum Policy

There is significant discussion at European level regarding the health of the Telecommunications sector. In fact, it is generally acknowledged that European competitiveness is under threat and digital transformation provides the opportunity to drive competitiveness across European Economies.

The European White Paper[1] 'How to master Europe's digital infrastructure needs?' states *"The future competitiveness of all sectors of Europe's economy depends on these advanced digital network infrastructures and services, as they form the basis for global GDP growth between EUR 1 and 2 trillion and the digital and green transition of our society and economy."* The report also acknowledges that the current financial situation of the communications sector raises concerns for its capacity to source funding for the substantial investments needed to catch up with a significant global technological shift. It is clear that operators require more pro-investment policies in particular long-term certainty over their spectrum holdings.

Radio spectrum policy is pivotal to the health of the sector, and this is especially true in the Irish context. There needs to be engagement at a policy level to assist the discussion for Ireland. It is for this reason Vodafone have commissioned a report from Frontier Economics called "Managing Spectrum to Benefit Ireland" which we attach as part of this workplan call for input.

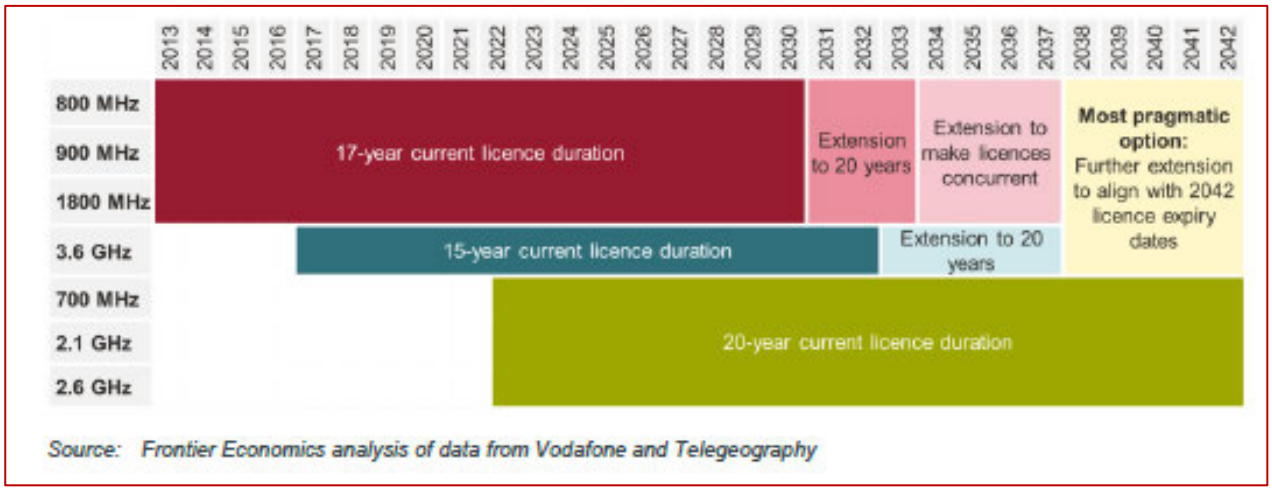
This report examines spectrum policy options with a lens on the Irish perspective. It sets out alternative options and mechanisms available for future assignment of spectrum in Ireland using the models adopted in other Member States as templates.

This alternative options include

1. Perpetual Licences where spectrum holders continue to hold spectrum indefinitely following a minimum term.
2. Administrative renewal where existing holders would retain spectrum allocation which may be subject to amended conditions attached to the licence.
3. Alignment of assignment timeframes to the EU Code minimum duration of 20 years or to consolidate allocation timelines to ensure more efficient allocation and management.

There is push at EU level, as evidenced through the recent Draghi report on future of European competitiveness, for greater harmonisation on Member State spectrum allocation and licensing rules. Each Member State will need to face this challenge. Ireland is several years away from its next requirement for allocation of spectrum for mobile services so the time to engage at a policy level is now.

[1] White Paper – 'How to master Europe's digital infrastructure needs?' (europa.eu)



The Frontier report illustrates options for pro-investment approaches in Ireland. At a minimum regardless, Ireland needs to extend its licences to align to the EU 20 year minimum. It is also clear that further pro-investment options are also needed.

Vodafone plans to engage policy makers in this space however as the agency charged with efficient spectrum allocation and management ComReg plays an instrumental role in policy development on spectrum allocation. ComReg cannot have a passive role in terms of the investment discussion. Moreover, ComReg can provide a suitable framework to drive discussion, to capture the broad range of stakeholder views and to expertly inform policy development in this space.

Vodafone now submit our comments for consideration and look forward to further engagement in the coming weeks and months.

ENDS

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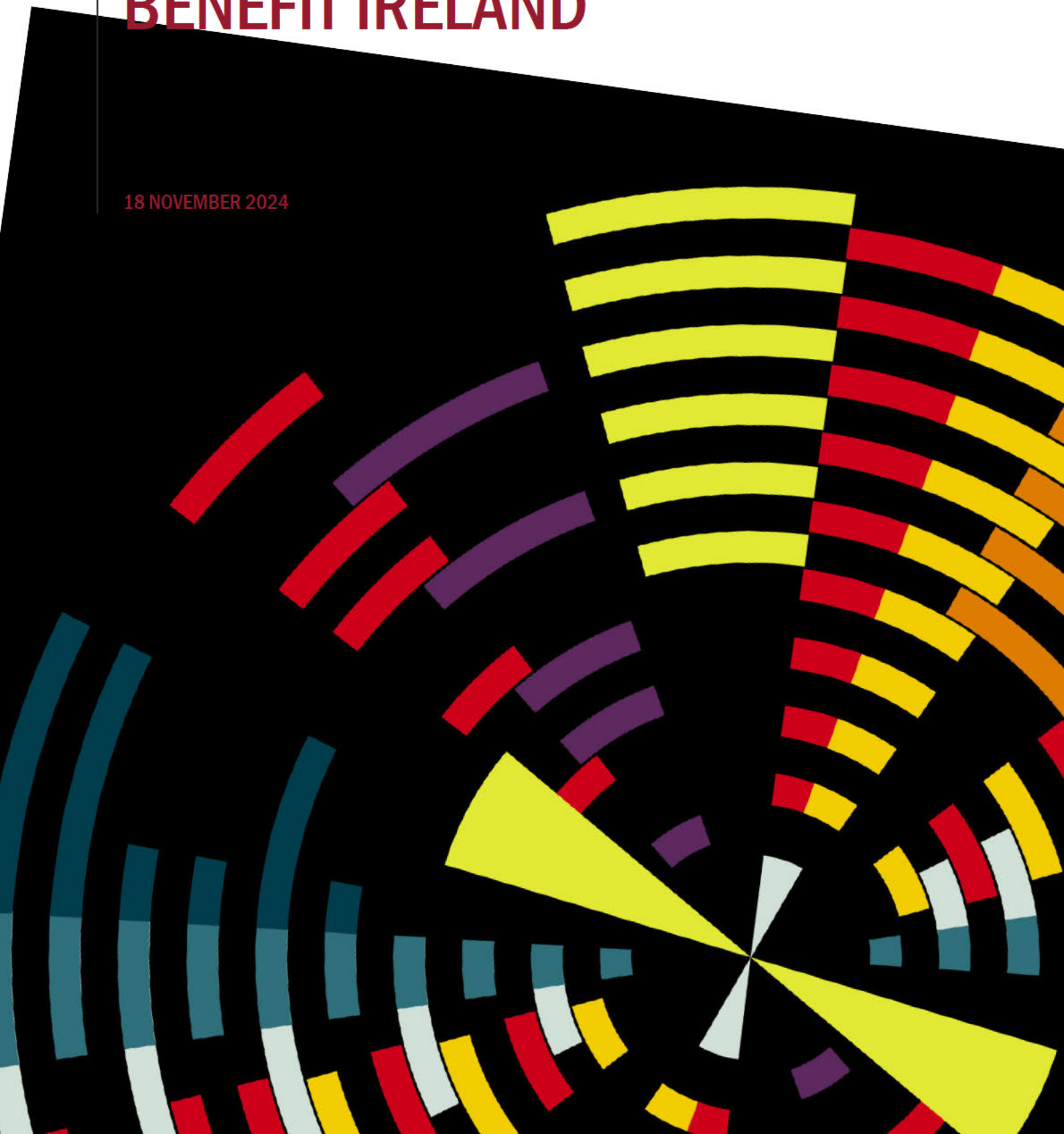
frontier economics

MANAGING SPECTRUM TO BENEFIT IRELAND

18 NOVEMBER 2024



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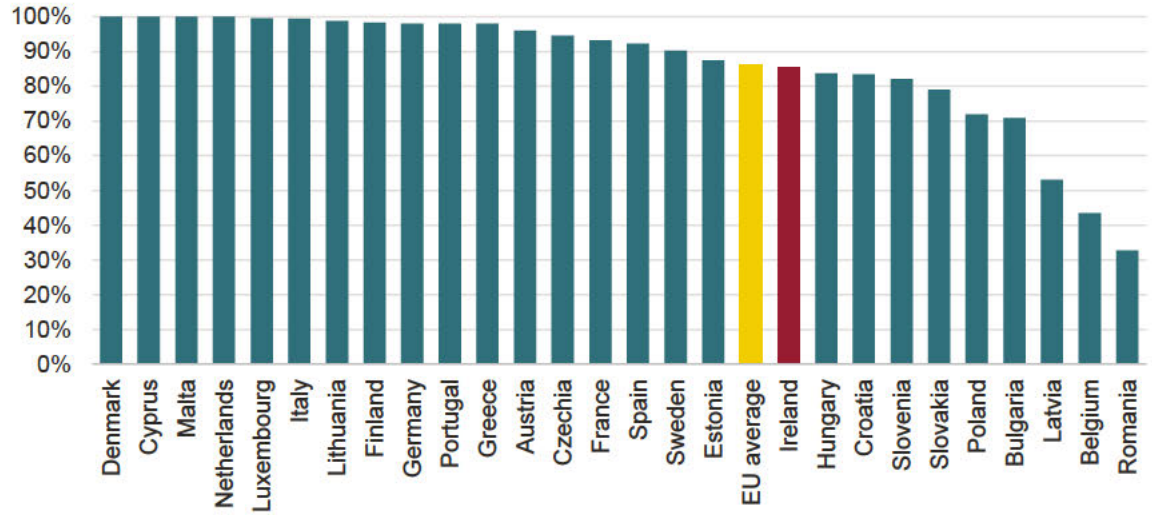
frontier economics

1 Executive Summary

Ireland is strongly committed to progressing the digital transformation of its economy and society, and to building on its position as a digital leader in the EU and globally. The National Digital Strategy is aligned with the EU's Digital Decade 2030 programme.[1] A key dimension of this programme is digital infrastructure. In Ireland, the government has set out specific, EU-aligned targets in this area: (i) all households and businesses to be covered by Gigabit network by 2028; and (ii) all populated areas to be covered by 5G by 2030.[2]

Currently 5G coverage is 85% in Ireland.[3] 5G deployment requires a step change in investment compared to previous generations of mobile technologies, partly because a much denser network of sites is required. Reaching the remaining 15% is likely to be particularly costly due to Ireland's geography: a high proportion of the population live in rural areas (72% vs 22% in the EU on average); a high proportion of houses in rural areas are standalone houses (72%); and road density is high (twice the EU average).[4] Given this, significant network investment will be needed to reach Ireland's Digital Decade targets.

Figure 1 Current 5G coverage in EU Member States



Source: *Frontier Economics, based on https://5gobservatory.eu/observatory-overview/interactive-5g-scoreboard/*

Note: *This is a general indicator that does not presume any particular quality of service measures. All 5G coverage is included. Location covered by at least one operator.*

1 Government of Ireland (2023). Digital Decade Policy Programme Ireland's National Strategic Roadmap, page 4

2 Government of Ireland (2022) Harnessing Digital - The Digital Ireland Framework, page 4

3 https://5gobservatory.eu/observatory-overview/interactive-5g-scoreboard/

4 Government of Ireland (2023) Digital Decade Policy Programme Ireland's National Strategic Roadmap, pages 26-27

Effective spectrum management will be essential to unlock this investment. ComReg already recognised this in its Spectrum Management Strategy for 2022-2024, which set out its objectives to ensure that spectrum is used efficiently to maximise benefits to society, and that spectrum management is used to promote efficient investment in mobile networks.[5]

ComReg is now developing its Spectrum Management Strategy for 2025-2027

Existing spectrum licences in the 800, 900 and 1800 MHz bands are due to expire in 2030. It is important to consider the most appropriate process for re-assigning these spectrum licences given ComReg's objectives to ensure efficiency and to promote investment in mobile networks.[6]

In the past, ComReg has used auctions to re-assign legacy spectrum. However, there are alternative approaches available, which may be better suited to support the objectives of the Digital Decade. Vodafone has commissioned Frontier Economics to assess these alternatives in the context of the Digital Decade objectives and the specific challenges faced by Ireland's mobile sector.

Perpetual licences and administrative/ automatic renewals are more likely to promote investment and to contribute to achieving the Digital Decade objectives than re-auctioning legacy spectrum

National Regulatory Authorities (NRAs) have taken different approaches to assigning spectrum licences in Europe and elsewhere, which broadly fall into the following categories:

- **Perpetual licences** – in some jurisdictions, including the US and the UK, the default is that holders of spectrum will continue to hold spectrum indefinitely after the initial term;
- **Administrative/ automatic renewals** – this approach is widely used to renew spectrum licences. Under this approach, spectrum holders retain their spectrum, but licence conditions attached to the renewed licences may be modified to reflect the NRA or government's evolving objectives; and
- **Competitive allocations[7]/ spectrum auctions** – this approach is typically taken when NRAs allocate new spectrum, for which there is excess demand. However, some NRAs (including ComReg) have also used this approach to re-allocate spectrum after initial spectrum licences have expired.

Perpetual licences provide operators with a high degree of certainty that they can invest in equipment, without material risk that the spectrum will be re-allocated at any time in the future.

5 ComReg (2021) Radio Spectrum Management Strategy Statement 2022 – 2024, paragraphs 3.11 and 3.36, and Figure 2

6 ComReg (2021) Radio Spectrum Management Strategy Statement 2022 – 2024, paragraph A1.10

7 Competitive allocations may take different forms: financial auctions, beauty contests (i.e. allocations based on non-financial criteria, e.g. based on investment commitments) and hybrids (a combination of financial and non-financial criteria).

Spectrum trading then allows efficient re-distribution of spectrum if the initial holder is no longer the operator with highest value.

While competitive allocations are seen as appropriate for allocating new spectrum, they might not be appropriate for renewing existing licences. In particular, there is a risk that re-auctioning spectrum may delay investment by reducing investor certainty. Investments in mobile networks are long-term investments, and mobile network operators (MNOs) may delay investment in new equipment or new technologies in order to avoid equipment being stranded (if their spectrum holdings change post-auction). This would have a negative impact on the introduction of new technologies for consumers and ultimately on Ireland's ability to achieve its Digital Decade objectives (i.e. high quality 5G networks for all by 2030).

Furthermore, if operators lose some of their spectrum, they might need to compensate by re-configuring their networks. For example, they might need to roll out additional sites in areas of high demand, which would be more costly and potentially less efficient than a scenario where MNOs maintain their spectrum holdings. This would further delay investment in high-cost, rural areas.

Delays in 5G roll-out could also hamper investment in, and development of, other innovative technologies and use cases (e.g. artificial intelligence). As acknowledged by the deputy director-general of the European Commission's digital unit, the low availability and uptake of 5G in Europe means that these new technologies and use cases will face delays in uptake.[8]

On the other hand, perpetual spectrum licences and licences that are administratively/ automatically renewed ensure certainty and therefore promote efficient investment, in line with ComReg's objectives. Indeed, with administrative/ automatic renewals, the fact that spectrum licences expire would have no negative impact on MNOs' investment cycles.

Administrative/ automatic renewals may also be preferrable to re-auctioning because they allow policymakers to pursue specific public policy objectives. For example, in France, renewals were subject to commitments such as MNOs adding 4G technology to all 2G and 3G sites; covering main roads and rail; and extending coverage to specifically-identified locations.[9] In Portugal, recent renewals require MNOs to deliver 90% population coverage at 100Mbps in underserved areas, among other commitments.[10] Perpetual licences and administrative/ automatic renewals may result in more timely and less costly spectrum management for both ComReg and MNOs, and have environmental benefits.[11]

It is important to note that perpetual licences and administrative/ automatic renewals do not preclude spectrum re-allocation, as long as spectrum trades are allowed. Indeed, if the current

8 https://www.euronews.com/next/2024/01/30/low-5g-uptake-in-europe-will-stagger-ai-development-commission-official-warns

9 https://en.arcep.fr/news/press-releases/view/n/900-mhz-1800-mhz-and-21-ghz-bandsarcep-opens-a-public-consultation-on-the-terms-and-methods-for-reallocating-longstanding-mobile-telephony-frequencies.html

10 https://www.anacom.pt/render.jsp?contentId=1646761

11 The promotion of more efficient network investment under these re-assignment approaches can help reduce CO2 emissions, given there is "embodied emissions" associated with the production and deployment of radio equipment.

spectrum holder is not the most efficient user of the spectrum (i.e. if there is another user who values the spectrum more highly), the two parties would have incentives to trade (re-allocating the spectrum to the more efficient user). As spectrum trades are allowed in Ireland,[12] perpetual licences and administrative/ automatic renewals are consistent with ComReg's objective to ensure spectrum is used efficiently.[13]

Given re-auctioning legacy spectrum might dampen investment incentives and inhibit Ireland's ability to achieve its Digital Decade objectives, ComReg should consider alternatives to auctions for spectrum re-assignment as it develops its next Spectrum Management Strategy.

Extension of the existing licences

Irrespective of the approach chosen to spectrum renewal, it would be advisable for ComReg to extend the existing licenses in Ireland generally, as this will reduce the frequency of investment uncertainty around the renewal of licences. In addition, there are benefits to making licences that will expire at different times concurrent as this enables more efficient allocations of spectrum.

EU Electronic Communications Code (EECC) Article 49 recommends that spectrum licences should have a minimum duration of 20 years. As shown in Figure 2 below, licences in several spectrum bands are set to expire in c.2030, before they have reached this milestone.

Elsewhere in Europe, NRAs have chosen to extend spectrum licences in similar situations. For example, in Germany expiring licences have been extended by five years in return for moderate additional coverage obligations and statutory fees.[14] Meanwhile in Spain, licences can now be issued for 40 years (20-year initial term plus a conditional 20-year extension), and government recently decided to extend all existing licences by 10 years.[15,16]

There is a clear benefit to extending existing licences for 800 MHz, 900 MHz and 1800 MHz spectrum to align expiry dates with those with latest expiry date (i.e. with the 700 MHz, 2.1 GHz and 2.6 GHz licences), as illustrated in Figure 2. This would boost investor certainty, drive forward 5G connectivity and ultimately help Ireland achieve its Digital Decade objectives.

Failing this, investor certainty could be protected to some extent by ensuring that all licences have a duration of at least 20 years, and by making the 800/ 900/ 1800 MHz licences concurrent with the 3.6 GHz licences (i.e. by extending these licences to 2037).

12 ComReg (2014) Consultation response: Spectrum Trading in the Radio Spectrum Policy Programme bands

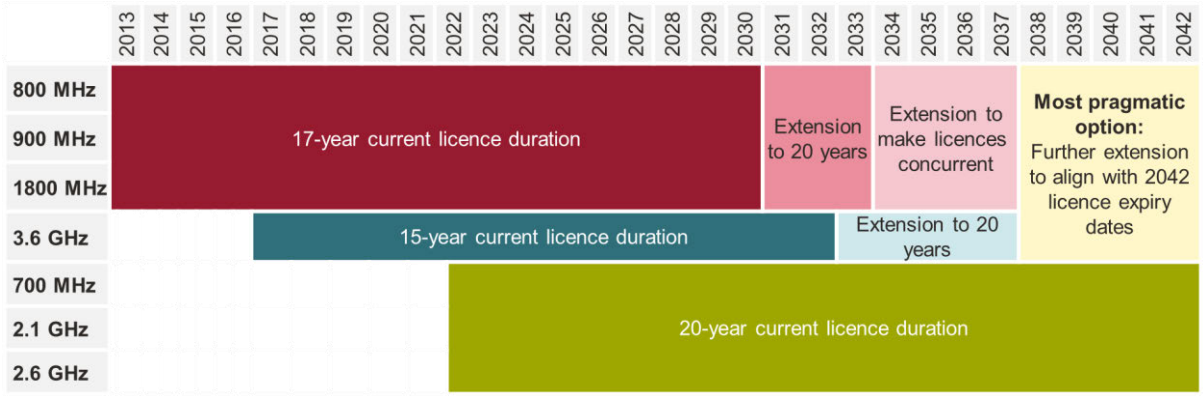
13 Relatively high annual licence fees in Ireland means that there is a clear cost to hold spectrum, although in the absence of annual licence fees there is an equivalent opportunity cost of holding the spectrum when another player has higher value.

14 https://www.bundesnetzagentur.de/SharedDocs/Pressemitteilungen/EN/2024/20240513_PKE.html

15 https://www.reuters.com/business/media-telecom/spanish-telcos-welcome-40-year-5g-licence-windfall-2021-04-27/

16 https://5gobservatory.eu/spain-extends-mobile-operator-spectrum-licences-by-10-years/

Figure 2 Illustration of a pro-investment licence extension policy in Ireland



Source: Frontier Economics analysis of data from Vodafone and Telegeography

2 The role of spectrum management in delivering Ireland's Digital Decade objectives

ComReg is due to publish a consultation on its 2025-2027 Radio Spectrum Management Strategy in Q3 2024. This will include its plans for the assignment of the existing spectrum licences, which are up for renewal in the near future. In particular, the 800 MHz, 900 MHz and 1800 MHz spectrum licences are expiring in 2030, meaning ComReg will need to take a decision on how to re-assign this spectrum.

Vodafone has commissioned Frontier Economics to assess the different possible approaches to re-assign spectrum. Our assessment has considered, in particular, the context of the mobile sector in Ireland. In the rest of this section, we set out this context, specifically:

- Ireland's Digital Decade objectives;
- specific challenges to mobile network investment in Ireland; and
- the importance of spectrum management and ComReg's objectives.

2.1 Ireland's Digital Decade objectives

As set out in the government's Digital Decade Policy Programme National Strategic Roadmap, Ireland is strongly committed to supporting and progressing the digital transformation of its economy and society, and to building on its position as a digital leader at the heart of Europe and globally. The National Digital Strategy is aligned with the European Union's Digital Decade 2030 programme,[17] which sets out the EU's ambition to pursue digital policies that empower people and businesses to seize a prosperous digital future, and accelerate investment.[18]

A key dimension of the Digital Decade programme is digital infrastructure. And as shown in Figure 3 below, in Ireland, the government has aligned with the EC's specific targets in this area, including:

- all households and businesses covered by Gigabit network by 2028; and
- all populated areas covered by 5G by 2030.[19]

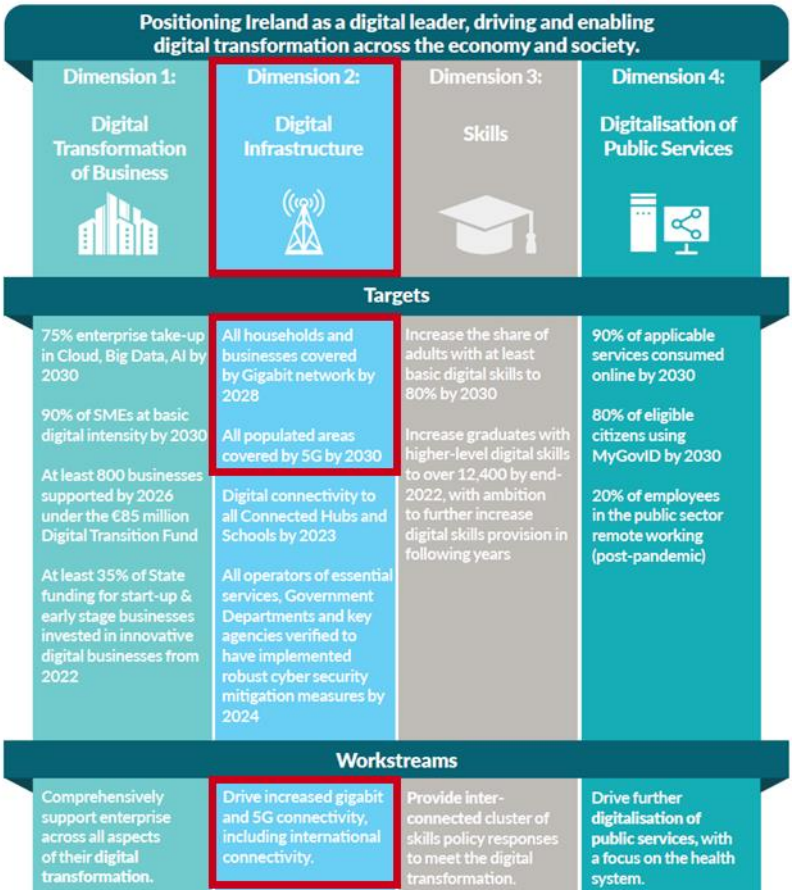
The Irish government identified driving increased gigabit and 5G connectivity as a key workstream for reaching these targets.

17 Government of Ireland (2023). Digital Decade Policy Programme Ireland's National Strategic Roadmap, page 4

18 European Commission (2021) Staff Working Document accompanying the Proposal for a Decision of the European Parliament and of the Council establishing the 2030 Policy Programme "Path to the Digital Decade", page 5

19 Government of Ireland (2022) Harnessing Digital - The Digital Ireland Framework, page 4

Figure 3 Ireland's national Digital Decade framework



Source: *Government of Ireland (2022) Harnessing Digital - The Digital Ireland Framework, page 4*

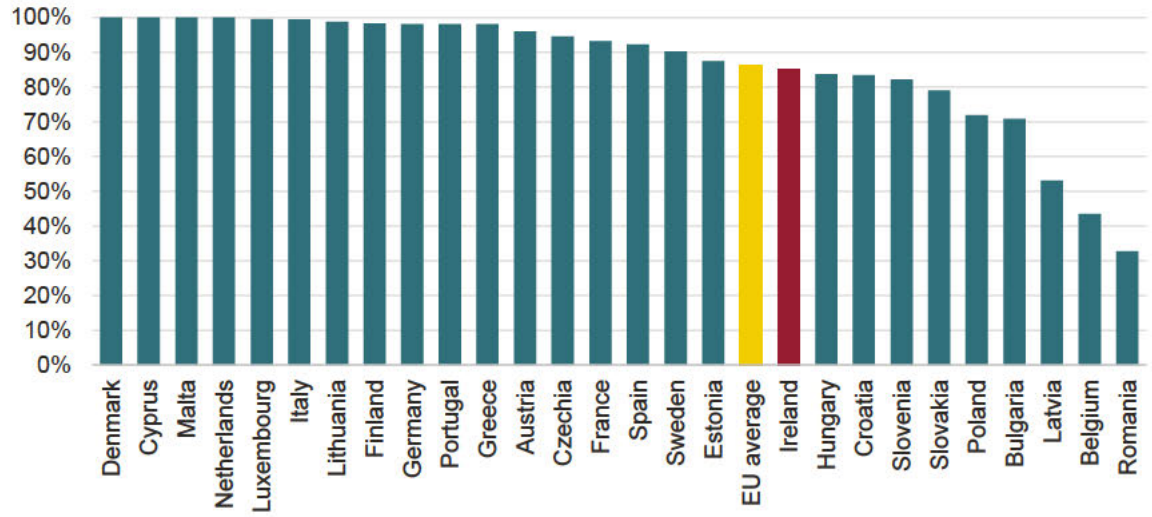
Note: *The most relevant aspects of the framework are highlighted in red boxes (annotations added by Frontier). Some less relevant workstreams in the context of this report have been cropped out*

Further progress on coverage is needed for Ireland to achieve the objectives of the Digital Decade

Ireland is targeting 100% 5G population coverage by 2030, while currently 5G coverage is 85%.[20] This is around the EU average, as shown in Figure 4 below. 5G coverage in Ireland has increased by 55 percentage points since 2020, but extending 5G coverage into hard-to-reach rural areas is progressively more expensive and is likely to take longer.

[20] https://5gobservatory.eu/observatory-overview/interactive-5g-scoreboard/

Figure 4 Current 5G coverage in EU Member States



Source: *Frontier Economics, based on https://5gobservatory.eu/observatory-overview/interactive-5g-scoreboard/*

Note: *This is a general indicator that does not presume any particular quality of service measures. All 5G coverage is included. Location covered by at least one operator.*

2.2 Specific challenges to network investment and roll-out in Ireland

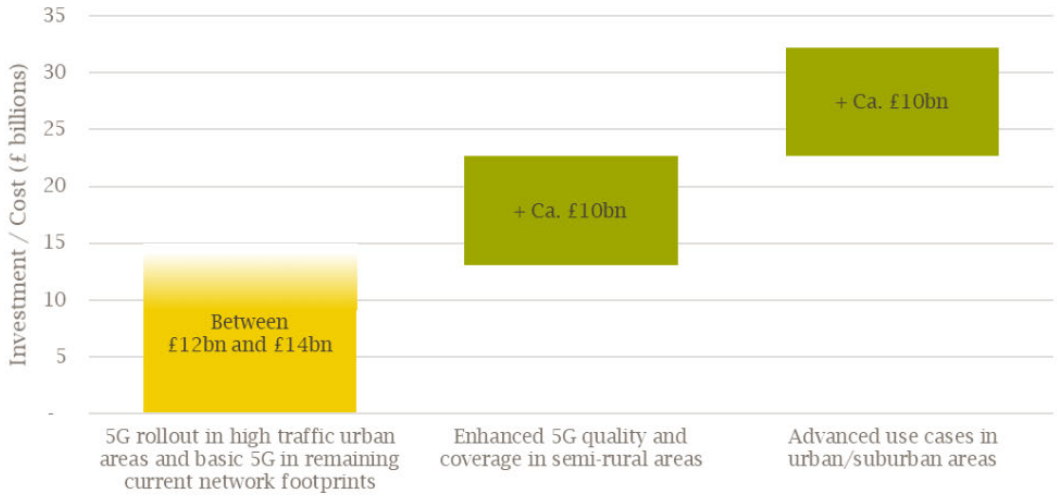
Compared to previous generations of mobile technologies, delivering the full capabilities of 5G requires a step-change in the amount of investment, partly because a much denser network of sites is required.

For example, as of 2022 in the UK, the investment required to roll-out full 5G ranged from about £12bn to £34bn (€14bn to €40bn), depending on the scale of roll-out, whereas the investment likely to be committed by MNOs was about £9bn (€10bn to €11bn).[21,22]

21 https://www.connectivityuk.org/wp-content/uploads/2022/09/The-Investment-Gap-to-Full-5G-Rollout.pdf

22 GBP figures converted to EUR based on European Central Bank average exchange rate for 2022.

Figure 5 UK 5G investment required by 2030 depending on scale of roll-out



Source: *https://www.connectivityuk.org/wp-content/uploads/2022/09/The-Investment-Gap-to-Full-5G-Rollout.pdf*
Note: *Figures are presented in GBP 2022 prices.*

Delays in 5G roll-out could also hamper investment in, and development of, other sectors. In particular, 5G is expected to unlock numerous use cases that leverage technologies such as automated vehicles, sensor-based monitoring and artificial intelligence to increase productivity and economic growth. As acknowledged by the deputy director-general of the European Commission's digital unit, the low availability and uptake of 5G in Europe means that these new technologies and use cases will face delays in uptake.[23]

Extending 5G coverage to reach the remaining 15% of Ireland's population (i.e. to achieve the Digital Decade objectives) is likely to be particularly costly due to Ireland's geography. In particular, Ireland is a rural country, with a markedly lower population density than other European countries. The Irish government's strategic roadmap to reach its Digital Decade objectives highlighted several specific challenges to rolling out Very High Capacity Networks (VHCNs):[24,25]

1. **72% of the population live in predominantly rural areas, compared to just 22% in the EU on average.**[26] There are 69.3 persons per square kilometre in Ireland compared to the European average of 117.5 persons per square kilometre. 37% of the rural

23 https://www.euronews.com/next/2024/01/30/low-5g-uptake-in-europe-will-stagger-ai-development-commission-official-warns

24 The term VHCN refers principally to 5G mobile networks and fibre-to-the-premises (FTTP) fixed networks.

25 Government of Ireland (2023) Digital Decade Policy Programme Ireland's National Strategic Roadmap, pages 26-27

26 According to Eurostat (2018), 72% of the Irish population live in NUTS 3 areas that are defined as predominately rural areas. Principles and Characteristics - NUTS - Nomenclature of territorial units for statistics - Eurostat (europa.eu)

population is spread across 95% of the total area of Ireland – this low population density means more infrastructure is needed to cover a relatively small population.

2. **71.8% of houses in rural areas are categorised as "one-off" houses.** This can pose additional challenges in providing connectivity to sparsely-populated areas due to the high fixed costs of network infrastructure over thinly-distributed populations.

3. **Ireland's road density is twice the EU average.** Ireland has one of the highest road networks per population. This means it is more costly to provide coverage on the road network, with coverage of roads being important for MNOs to achieve spectrum licence obligations for 5G spectrum.[27]

As a result, costs for infrastructure deployment will be higher in Ireland than in other EU countries. Importantly, this means significant network investment will be needed to reach Ireland's Digital Decade targets. Meanwhile, the nature of extending coverage to sparsely-populated areas makes it relatively difficult for MNOs to recover the associated costs (due to relatively low demand in these areas).

2.3 The importance of spectrum management, and ComReg's objectives

Spectrum management will be essential to unlock the investment needed to achieve Ireland's Digital Decade objectives.

ComReg's spectrum management principles recognise the importance of spectrum policy for spurring investment

In its Spectrum Management Strategy for 2022-2024, ComReg set out its framework for managing spectrum in Ireland, as well as its overall objectives. These recognised that spectrum management is an important tool for promoting efficient investment in mobile networks.[28] More broadly, ComReg emphasised the need for "*effective spectrum management processes be employed to maximise the benefits to society*".[29]

Under the 2002 Act and Common Regulatory Framework, ComReg must apply objective, transparent, non-discriminatory and proportionate regulatory principles by, amongst other things:

- **promoting regulatory predictability** by ensuring a consistent regulatory approach over appropriate review periods;

[27] For example, the coverage obligations attaching to the 700 MHz band award require, among other things, the provision of a 30 megabits per second (Mbit/s) service to 95% of the population, 90% of motorways, and 80% of primary roads. See: ComReg (2022) Multi Band Spectrum Award – Results of the Main Stage: Information Notice, pages 2-3.

[28] ComReg (2021) Radio Spectrum Management Strategy Statement 2022 – 2024, paragraphs 3.11 and 3.36, and Figure 2

[29] ComReg (2021) Radio Spectrum Management Strategy Statement 2022 – 2024, paragraph 3.11

- safeguarding competition to the benefit of consumers and promoting, where appropriate, infrastructure-based competition; and
- **promoting efficient investment and innovation in new and enhanced infrastructures […]**.[30]

This puts investor certainty and promotion of investment at the heart of ComReg's objectives for spectrum management.

ComReg is developing its Spectrum Management Strategy for 2025-2027

As ComReg is developing its forward-looking spectrum management strategy, it is important to consider the most appropriate process for renewing the soon-to-expire spectrum licences given ComReg's objectives to ensure efficiency and to promote investment in mobile networks.[31]

In the following Sections, we discuss the potential options for spectrum renewals (Section 3), as well as the need to extend the existing licenses to make them concurrent (Section 4). We conclude our assessment in Section 5.

30 ComReg (2021) Radio Spectrum Management Strategy Statement 2022 – 2024, paragraph A1.18

31 ComReg (2021) Radio Spectrum Management Strategy Statement 2022 – 2024, paragraph A1.10

3 Potential options for (re)assigning spectrum

As existing spectrum licences in the 800 MHz, 900 MHz and 1800 MHz bands approach expiry, ComReg needs to consider the most appropriate way to re-assign this spectrum. NRAs have taken different approaches to (re)assigning spectrum licences which broadly fall into the following categories:

- **Perpetual licences** – in some jurisdictions, including the US and the UK[32], the default is that holders of spectrum will continue to hold spectrum indefinitely after the initial term;
- **Administrative/ automatic renewals** – this approach is widely used to renew spectrum licences. Under this approach, spectrum holders retain their spectrum, but licence conditions attached to the renewed licences may be modified to reflect the NRA or government's evolving objectives; and
- **Competitive allocations/ spectrum auctions** – this approach is typically taken when NRAs allocate new spectrum, for which there is excess demand. However, some NRAs (including ComReg) have also used this approach to re-allocate spectrum after initial spectrum licences have expired. [33,34]

The rest of this Section is structured as follows:

- first, we discuss administrative/automatic renewals and perpetual licences, and provide some examples of how similar approaches have been used in other jurisdictions; and
- second, we argue that perpetual licences and administrative/automatic renewals are more likely to promote investment and to contribute to achieving the Digital Decade objectives than re-auctioning legacy spectrum.

3.1 Examples of recent administrative/automatic renewals, and the use of perpetual licences as alternatives to re-auctioning spectrum

In recent years, several NRAs have opted to administratively/automatically renew spectrum licences, instead of re-auctioning legacy spectrum. Some NRAs have also granted perpetual licences. Below we present case studies on:

- Administrative/automatic renewal in return for enhanced coverage obligations in **France** and **Portugal**;

32 We discuss the UK and US examples in more detail below.

33 Historically, Ireland has re-auctioned legacy spectrum. In the 2013 spectrum award in Ireland, ComReg re-auctioned 900MHz and 1800 MHz spectrum as well as 'new' 800 MHz spectrum. More recently, ComReg re-auctioned 2100 MHz spectrum together with 700 MHz, 2300 MHz and 2600 MHz bands through the Multi-Band Spectrum Award (MBSA2). See https://www.comreg.ie/industry/radio-spectrum/spectrum-awards/proposed-multi-band-spectrum-award/

34 There are a few other countries in Europe, which have taken a similar approach (i.e. re-auctioning legacy spectrum alongside new spectrum). In Belgium, for example, the existing spectrum in 900MHz, 1800 MHz and 2100MHz bands was auctioned together with new 5G bands (700 MHz and 3.6 GHz). See: https://specure.com/successful-multiband-spectrum-auction-in-belgium/

- Perpetual licences with Annual Licence Fees (ALFs) (as in the **UK**)**;** and
- Perpetual licences in the **US**.

As highlighted in the case studies, these approaches to spectrum re-assignment were chosen by NRAs as they promote investment by MNOs, while ensuring that other public policy objectives are also met (e.g. promoting competition and spectrum efficiency).

Examples of administrative/automatic renewals in exchange for enhanced coverage obligations

Figure 6 Case study: administrative/automatic renewal in France

France

In 2018, the French government, Arcep, and MNOs agreed that 900 MHz, 1800 MHz and 2100 MHz licences would be **renewed** by Arcep for 10 years. Arcep and MNOs agreed for 2x3.7 MHz in the 900 MHz band and 2x9.8 MHz in the 2100 MHZ band to be redistributed from existing holders to the player with the smallest existing holdings, such that all four MNOs have equal holdings in these bands.

The decision recognised the **importance of providing certainty** for stakeholders over the future of these spectrum resources, and pursued two main goals:

1. **digital regional development**; and
2. **fair and effective competition** between operators that benefits users.

Upon the renewal of licences, **MNOs were subject to several new obligations**:

- adding 4G to all 2G and 3G cell sites;
- covering the main roadways and daily commute trains;
- introducing a targeted coverage scheme that requires every operator to cover 5,000 new locations that the Government, in tandem with local authorities, identified as being in need of coverage;
- increasing quality of service; and
- achieving ubiquitous indoor coverage.

Source: Frontier Economics based on Arcep Décision n° 2018-1306 (2018) relative au compte rendu et au résultat des procédures d'attribution d'autorisations d'utilisation de fréquences dans les bandes 900 MHz, 1800 MHz et 2,1 GHz en France métropolitaine pour établir et exploiter un réseau radioélectrique mobile ouvert au public

Figure 7 Case study: administrative/automatic renewal in Portugal

Portugal

In 2021, ANACOM administered a **renewal** of MNOs' licences in the 900 MHz and 1800 MHz bands until 2033.

ANACOM decided to renew spectrum licences instead of re-auctioning, as renewal **"promotes the stability of operations and allows the continuity of existing investments as planned by their holders"**.

However, to ensure the maximum benefit to consumers, ANACOM imposed **additional obligations** on MNOs. Specifically, by 2033:

- MNOs are obliged to cover additional 100 areas with low population density which fall outside the scope of the existing 5G obligations;
- Coverage in these areas must extend to 90% of the population; and
- Coverage in these areas must deliver a minimum speed of 100Mbit/s.

Source: Frontier Economics based on https://www.anacom.pt/render.jsp?contentId=1646761

Perpetual licences with Annual Licence Fees

Figure 8 Case study: perpetual licences with ALFs in the UK

United Kingdom

In the UK, some spectrum licences are indefinite. Therefore, Ofcom does not re-assign the spectrum. However, after the initial term ends, Ofcom applies annual licence fees (ALFs) to reflect the market value of spectrum.

Ofcom sets ALFs with regards to its duties, namely to:

- **ensure that spectrum is used optimally;**
- **promote investment, innovation, and competition; and**
- **maximise benefits to consumers.**

- ALFs are set so that the "*benefits to society will be maximised over time if spectrum is priced to reflect opportunity cost*" (i.e. the price that reflects the value of spectrum in its best alternative use).
- This **approach aims to incentivise inefficient users to relinquish their spectrum or to sell it to the higher-value users via spectrum trades**.
- Ofcom undertakes fee level reviews when there is a reasonable likelihood that the fees charged are significantly out of line with the opportunity cost of its use.

Source: Frontier Economics based on: Ofcom (2021) Statement: Annual licence fees for 2100 MHz spectrum; Ofcom (2010) SRSP: The revised Framework for Spectrum Pricing; and UK Government (2014) The UK Spectrum Strategy.

Despite having indefinite spectrum licences, MNOs in the UK are subject to significant uncertainty due to the changing ALFs. Ofcom's approach has been criticised both by MNOs[35] and by some industry experts.[36] In light of that, UK government, in its Wireless Infrastructure Strategy, asked Ofcom *" to review and set out for ministers a clear and forward-looking rationale for its approach to setting mobile spectrum fees* [...] *This should include an assessment of the current tools used to deliver the benefits of a market-based approach to spectrum management, considering* […] *the extent to which they may need to evolve to adapt to changing market conditions and support a strong investment environment*."[37]

35 See for example Vodafone's response to Ofcom's 2100 MHz ALF consultation, https://www.ofcom.org.uk/siteassets/resources/documents/consultations/category-2-6-weeks/221990-proposed-annual-licence-fees-for-2100-mhz-spectrum/responses/vodafone

36 See for example "Market mechanisms that are applied to licensed mobile spectrum in the UK could be improved" by Analysys Mason and Professor Martin Cave, https://www.analysysmason.com/about-us/news/newsletter/spectrum-market-mechanisms-quarterly/

37 https://www.gov.uk/government/publications/uk-wireless-infrastructure-strategy/uk-wireless-infrastructure-strategy

Perpetual spectrum licences in the US

In the US, spectrum licences have an initial term, but with a high expectation of renewal (and can therefore be considered indefinite). However, unlike in the UK, MNOs do not pay ALFs in the US. With this approach, the regulator aims to give licence holders greater certainty and to incentivise them to invest in their networks. For renewal, the licence holder must continue to provide the required level of service and to demonstrate compliance with any licence-specific rules.[38]

3.2 Perpetual licences and administrative/ automatic renewals are more likely to promote investment and to contribute to achieving the Digital Decade objectives than re-auctioning legacy spectrum

Perpetual licences and administrative/automatic renewals appear to be more appropriate than re-auctioning spectrum for promoting investment and achieving Ireland's Digital Decade objectives. In particular, perpetual licences provide operators with a high degree of certainty that they can invest in equipment, without material risk that the spectrum will be re-allocated at any time in the future. Administrative renewals also provide a greater degree of certainty than re-auctioning spectrum and can also be used to achieve policy objectives.

Re-auctioning of legacy spectrum, on the other hand, is likely to:

- dampen investment, even where auctions are designed well; and
- cause inefficiency by creating artificial scarcity.

We discuss these points in more detail below.

Re-auctioning may dampen investment, even where auctions are designed well

Re-auctioning spectrum may delay investment due to increased uncertainty.

Investments in mobile networks are in general longer-term investments, with equipment in these networks having a long economic lifetime: the European Commission's modelling of mobile network costs indicates that active equipment in mobile networks have lifetimes of 5-10 years, with passive equipment have lifetimes of 20 years or more.[39] Greater uncertainty over whether deployed mobile equipment will have use in an operators' network over these periods is therefore a factor in network investment decisions.

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38 See in particular: https://www.fcc.gov/document/fcc-reforms-license-renewal-rules-wireless-spectrum-0; and https://www.federalregister.gov/documents/2017/09/01/2017-18501/uniform-license-renewal-discontinuance-of-operation-and-geographic-partitioning-and-spectrum

39 European Commission mobile cost model for roaming and mobile voice call termination, sheet "2G INP Resource life". Finalisation of the mobile cost model for roaming and the delegated act on a single EU-wide mobile voice call termination: SMART 2017/0091 | Shaping Europe's digital future (europa.eu)

Typically in mobile networks, various types of radio equipment are tailored to specific frequency bands to ensure optimal performance and compliance with regulatory standards. This applies to power amplifiers, radio frequency (RF) filters, duplexers and transceivers. Even if the amount of spectrum stays the same, but the position within a band changes, it can affect the design of these elements. For example, the size and shape of RF filters required by MNOs might be affected.

Given that operators are not guaranteed that they will be able to win back their current spectrum holdings, auctions could delay investment in new equipment/ technologies in order to avoid the new equipment being stranded (if their spectrum holding changes post auction). This would have a negative impact on the introduction of new technologies for consumers and ultimately on Ireland's ability to achieve its Digital Decade objectives (i.e. high quality 5G networks for all by 2030). As such, re-auctioning legacy spectrum could undermine ComReg's spectrum management objectives to enhance connectivity and promote investment.

If operators lose some of their spectrum, they might need to compensate by re-configuring their networks. For example, they might need to roll out additional sites in areas of high demand. This is likely to be more costly and less efficient than a scenario where MNOs maintain their spectrum holdings. This would have an addition negative effect on deploying 5G networks in high-cost, rural areas.

On the other hand, perpetual spectrum licences and licences that are renewed automatically ensure greater certainty and therefore promote efficient investment. Indeed, with automatic renewals, the fact that initial spectrum licences expire would have no negative impact on MNOs' investment cycles.

It is also worth noting that the government in Ireland is currently consulting on the new security measures guidelines for the electronic communications services.[40] The guidelines state:

> *"Implementation of the Security Measures Regulations will be a complex programme that will in some cases require* ***significant investments in time, financial and human resources****.* […] *Ultimately the costs of implementing the security measures may place pressure on the financial position of providers who in turn may need to increase prices, which may likely influence the price paid by the consumer"* (emphasis added)*.*

ComReg needs to take this into account in developing its forward-looking spectrum strategy. It needs to minimise any additional costs placed on MNOs as they are likely to face high costs of compliance with the new security measures.

Re-auctioning legacy spectrum can cause inefficiency by creating artificial scarcity

Spectrum auctions are often used for assigning new spectrum when it becomes available, as well-designed auctions are expected to provide a transparent, objective way of assigning

[40] Government of Ireland (2024) "Electronic Communications (Security Measures) Regulations Security Measures Guidelines" https://assets.gov.ie/297513/54e82402-2412-4384-b416-2e6b3de97b49.pdf

spectrum to those who will use it most efficiently. But the benefits of auctions can be lost when they are not designed properly. Some have failed to assign spectrum despite it being in demand, while others have been contested for artificially inflating prices, which risks harm to consumers.[41,42]

There is a particularly high risk of inefficient outcomes in auctions where the amount of spectrum is artificially reduced (e.g. because different licences expire at different points in time, and only a small amount of spectrum is made available in a particular auction). This could apply to auctioning new spectrum and re-auctioning of the existing legacy spectrum. The EC has found that this could distort investment:

> *"Moreover, in certain cases* ***where spectrum bidders ended up paying higher prices due to artificial scarcity created by auction design, this has been associated with a reduction in investment capacities and delays in services deployment*** *by providers of electronic communications networks and services. Ultimately****, it is the consumers and business users who have paid the price in terms of suboptimal quality of services, which ultimately negatively impacts EU's economic growth, competitiveness and cohesion****"*[43] (emphasis added).

Given that there is some variation in licence expiry dates in Ireland, there is a higher risk that re-auctioning the spectrum piece-meal could result in artificial scarcity and thus distort auction outcomes. In other words, there is a risk that spectrum re-auctioning may lead to reduced and/or delayed investment, in contrast with ComReg's objectives.

Administrative/ automatic renewals can achieve policy objectives while promoting investment

Administrative/ automatic renewals may also be preferrable to re-auctioning because they allow policymakers to pursue specific public policy objectives. As set out in Figure 6 and Figure 7 above, this was the case in France and Portugal where NRAs renewed licences. In summary:

- the French NRA increased coverage obligations (e.g. to cover the transport networks and less well-served areas) and enhanced quality of service requirements; and
- the Portuguese NRA also increased coverage obligations, focusing on areas with low population density, and imposed quality of service obligations for these areas.

Perpetual licences and administrative/ automatic renewals do not preclude spectrum re-allocation

41 Expensive spectrum has been linked to lower quality mobile services with worse coverage and higher prices.

42 https://www.gsma.com/connectivity-for-good/spectrum/wp-content/uploads/2021/09/Auction-Best-Practice.pdf

43 EC (2024) White paper: How to master Europe's digital infrastructure needs?, page 14

It is important to note that perpetual licences and administrative/ automatic renewals do not preclude spectrum re-allocation, as long as spectrum trades are allowed. Indeed, if the current spectrum holder is not the most efficient user of the spectrum (i.e. if there is another user who values the spectrum more highly) the two parties would have incentives to trade (re-allocating the spectrum to the more efficient user). To illustrate:

- suppose there are two operators: A and B – operator A has 2x15 MHz of 900 MHz spectrum (i.e. three 2x5 MHz blocks), while B has one 2x5 MHz block in this band;
- if operator A's valuation of its third 2x5 MHz block is €20m, but B's valuation for an additional 2x5 MHz block is €40m, there is likely to be a trade between A and B; i.e.
- operator A would likely sell its third 2x5 MHz block to operator B at a price between €20m (any lower and operator A would not find the trade profitable) and €40m (any higher and operator B would not find the trade profitable).

Spectrum trading is allowed in Ireland under current ComReg regulation,[44] and there are examples of spectrum trades taking place in other jurisdictions (e.g. in the UK[45]). Therefore, the granting of perpetual licences, or administrative/ automatic renewals should not preclude spectrum re-allocation if it improves efficiency.

If despite the allowance of spectrum trading, there is a deemed spectrum imbalance, NRAs may seek to rectify this by auctioning additional spectrum, rather than re-auctioning legacy spectrum. For example, when auctioning 800 MHz spectrum in the UK, Ofcom took into account the existing spectrum asymmetry in the 900 MHz spectrum. In order to address the asymmetry, Ofcom imposed a spectrum cap on operators' total sub-1 GHz spectrum holdings (i.e. on 800 MHz and 900 MHz spectrum combined).[46]

Perpetual licences and administrative/ automatic renewals may result in more timely and less costly spectrum management, and have environmental benefits

In addition to the above, perpetual licences and administrative/ automatic renewals could also help avoid the time and associated cost that is often associated with designing and implementing spectrum auctions. The spectrum auction process often includes a consultation on the auction design and process, a process for gauging demand and choosing allowed bidders in the auction process, and then the process of carrying out the auction itself. This can be a time-consuming process, as shown by the MBSA 2 auction process, which took a number of years to complete.[47] The process can also be costly for regulators and operators, including costs for the regulator in developing / procuring the auction software and platform and

44 ComReg (2014) Consultation response: Spectrum Trading in the Radio Spectrum Policy Programme bands

45 https://www.ofcom.org.uk/manage-your-licence/radiocommunication-licences/mobile-wireless-broadband/trades

46 https://www.ofcom.org.uk/siteassets/resources/documents/consultations/uncategorised/8141-award-800mhz-2.6ghz/associated-documents/statement-summary.pdf

47 ComReg's consultation document D19/59R on the spectrum award was published on June 18th 2019. The issuing of MBSA2 Liberalised Use Licences to operators was then completed by ComReg on January 19th 2023. www.comreg.ie/media/2024/02/ComReg-2411.pdf

overseeing the auction process, and costs for operators a th its engagement in the different stages of the regulatory process and participatio on itself. Administrative/ automatic renewals are likely to facilitate a more streamli .

These re-assignment approaches may also have e l benefits. There are "embodied emissions" associated with the production a ent of radio equipment. This means that the promotion of more efficient networ by MNOs under these approaches versus re-auctioning spectrum can help r emissions i.e. through avoiding potential stranding of assets and the need to de al network equipment if auctions result in a change and/or reduction in spectr for an MNO. Studies commissioned by ComReg also indicate that there may ronmental benefits from these re-assignment approaches promoting faster invest [48]

[redacted]

48 For example, an the expert report commissioned by ComReg as part of the MBSA 2 auction process found that faster 5G roll-out could reduce cumulative carbon emissions. See https://www.comreg.ie/media/2023/04/ComReg-2335b.pdf, section 3.3.

4 Extending the existing licenses and making them concurrent

Irrespective of the spectrum re-assignment approach chosen, it would be advisable for ComReg to extend the existing licenses in Ireland to ensure that they have at least 20-year durations and to make them concurrent.

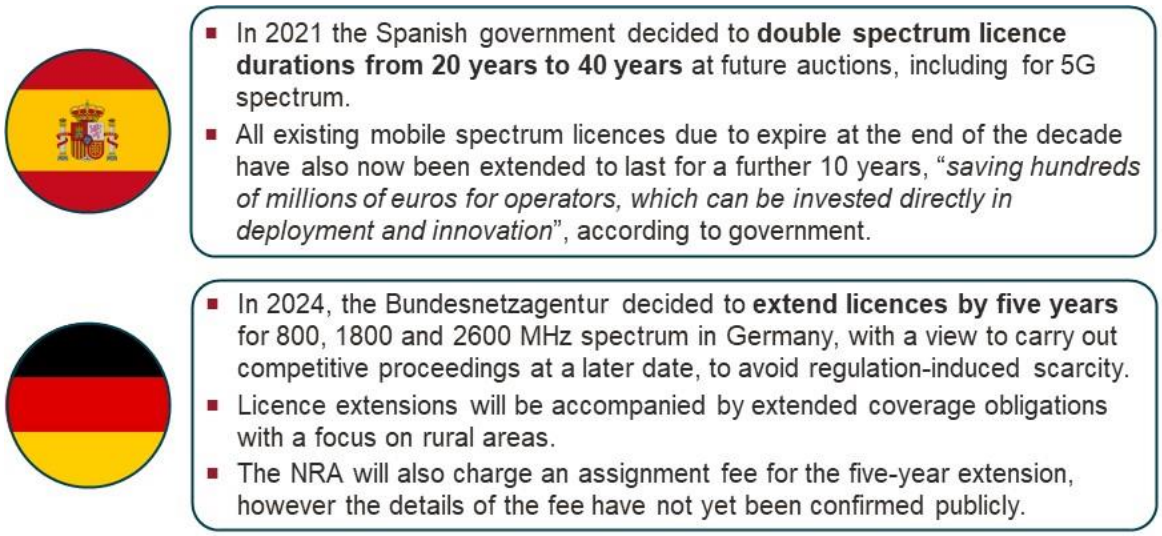
EECC Article 49 sets out that:

> *"Where Member States grant individual rights of use for radio spectrum* […] *for a limited period,* ***they shall ensure regulatory predictability for the holders of the rights over a period of at least 20 years regarding conditions for investment in infrastructure which relies on the use of such radio spectrum****,* […]
>
> *To that end, Member States shall ensure that such rights are* ***valid for a duration of at least 15 years and include, where necessary to comply with the first subparagraph, an adequate extension thereof****, under the conditions laid down in this paragraph"*[49] (emphasis added).

As such, the EECC effectively recommends that spectrum licences should have a minimum duration of 20 years to ensure regulatory predictability and stable conditions for investment.

As discussed earlier, licences in several spectrum bands are set to expire in 2030, before they have reached this milestone. Elsewhere in Europe, NRAs have chosen to extend spectrum licences in similar situations, as set out in Figure 9 below.

Figure 9 Case studies: spectrum licence extensions in Spain and Germany



Source: Frontier Economics based on https://5gobservatory.eu/spain-extends-mobile-operator-spectrum-licences-by-10-years/; https://www.reuters.com/business/media-telecom/spanish-telcos-welcome-40-year-5g-licence-windfall-2021-

[49] Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code (Recast), Article 49, paragraph 2

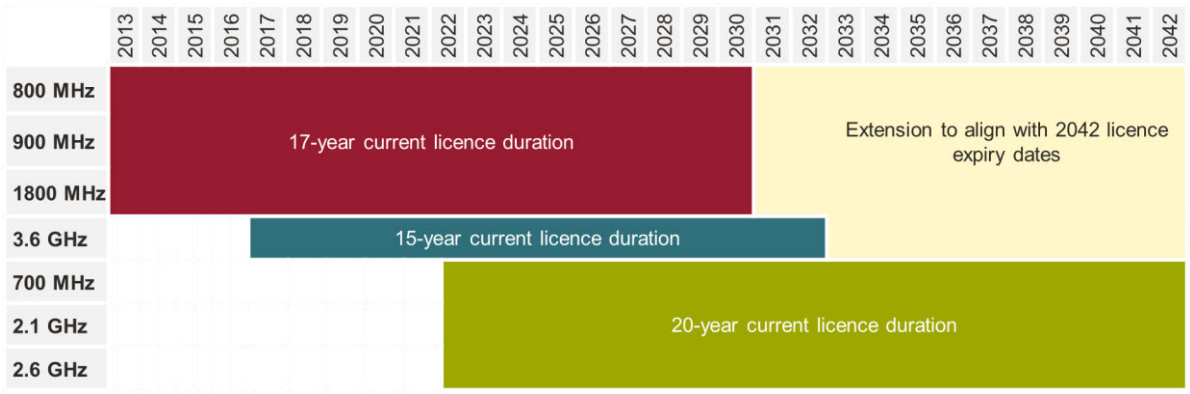
04-27/; ETNO (2023) European Spectrum Policy for the Digital Decade – options for the new Radio spectrum policy programme; https://www.bundesnetzagentur.de/SharedDocs/Pressemitteilungen/EN/2024/20240513_PKE.html; and https://5gobservatory.eu/germany-to-extend-mobile-spectrum-licences-by-five-years.

Extending licences in this way gives investors greater certainty that they can recover investment in new equipment/technologies that rely on their current spectrum holdings (e.g. because they have longer to recover the investment and there are fewer potential cliff edges, where existing spectrum may no longer be available due to re-allocation).

Meanwhile extending existing licences and making them concurrent would provide MNOs with greater certainty that, if auctioning was used to re-assign the spectrum once the licences expire,[50] then the auction would include multiple bands and therefore would be less likely to suffer from artificial scarcity (especially if new spectrum can be auctioned at the same time). As such, making existing licences concurrent would give investors greater confidence that spectrum will be re-assigned efficiently.

In Ireland, licences for spectrum in the 800 MHz, 900 MHz and 1800 MHz bands are due to expire in 2030 - 17 years after issue; and licences for 3.6 GHz spectrum are set to expire in 2032 - 15 years after issue. Meanwhile existing licences for spectrum in the 700 MHz, 2.1 GHz and 2.6 GHz bands (i.e. the MBSA2 licences) are also fixed in duration and set to expire in 2042 (after a 20-year initial term). There is a clear benefit to extending existing spectrum licences in Ireland to align expiry dates across all the bands, as illustrated in Figure 10. This would boost investor certainty, drive forward 5G connectivity and ultimately help Ireland achieve its Digital Decade objectives.

Figure 10 Illustration of a pro-investment licence extension policy in Ireland

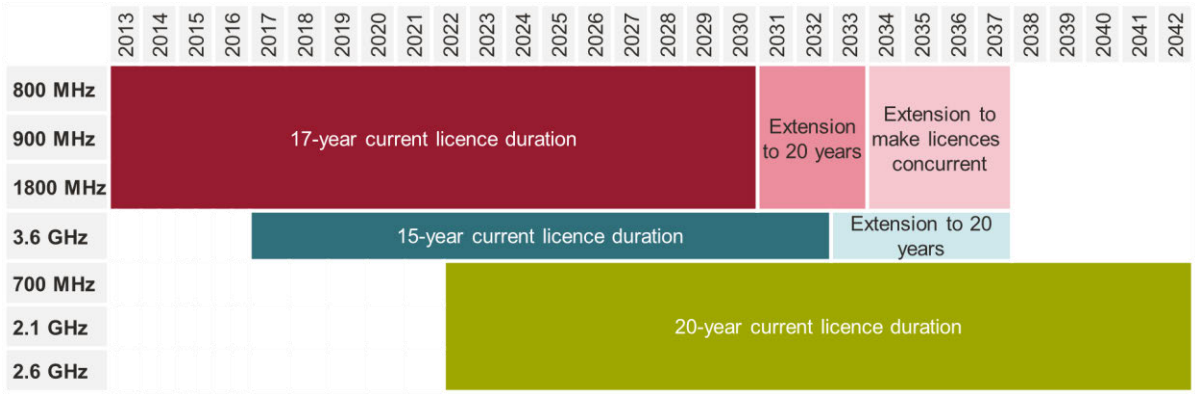


Source: Frontier Economics analysis of Vodafone and Telegeography data *[Insert Notes]*

Failing this, investor certainty could be protected to some extent by (i) ensuring that all licences have a duration of at least 20 years, and (ii) making the 800 MHz, 900 MHz and 1800 MHz licences concurrent with the 3.6 GHz licences (as illustrated in Figure 11). This would ensure better alignment with EECC guidance and would reduce the risk of spectrum scarcity at any future re-assignment.

50 We note that re-auctioning the spectrum may not be the optimal approach to re-assignment - see discussion in Section 3.

Figure 11 Illustration of a shorter-term extension to existing spectrum licences



Source: Frontier Economics analysis of Vodafone and Telegeography data

5 Conclusion

When developing its forward-looking spectrum policy, ComReg needs to assess costs and benefits of different options for spectrum re-assignment.

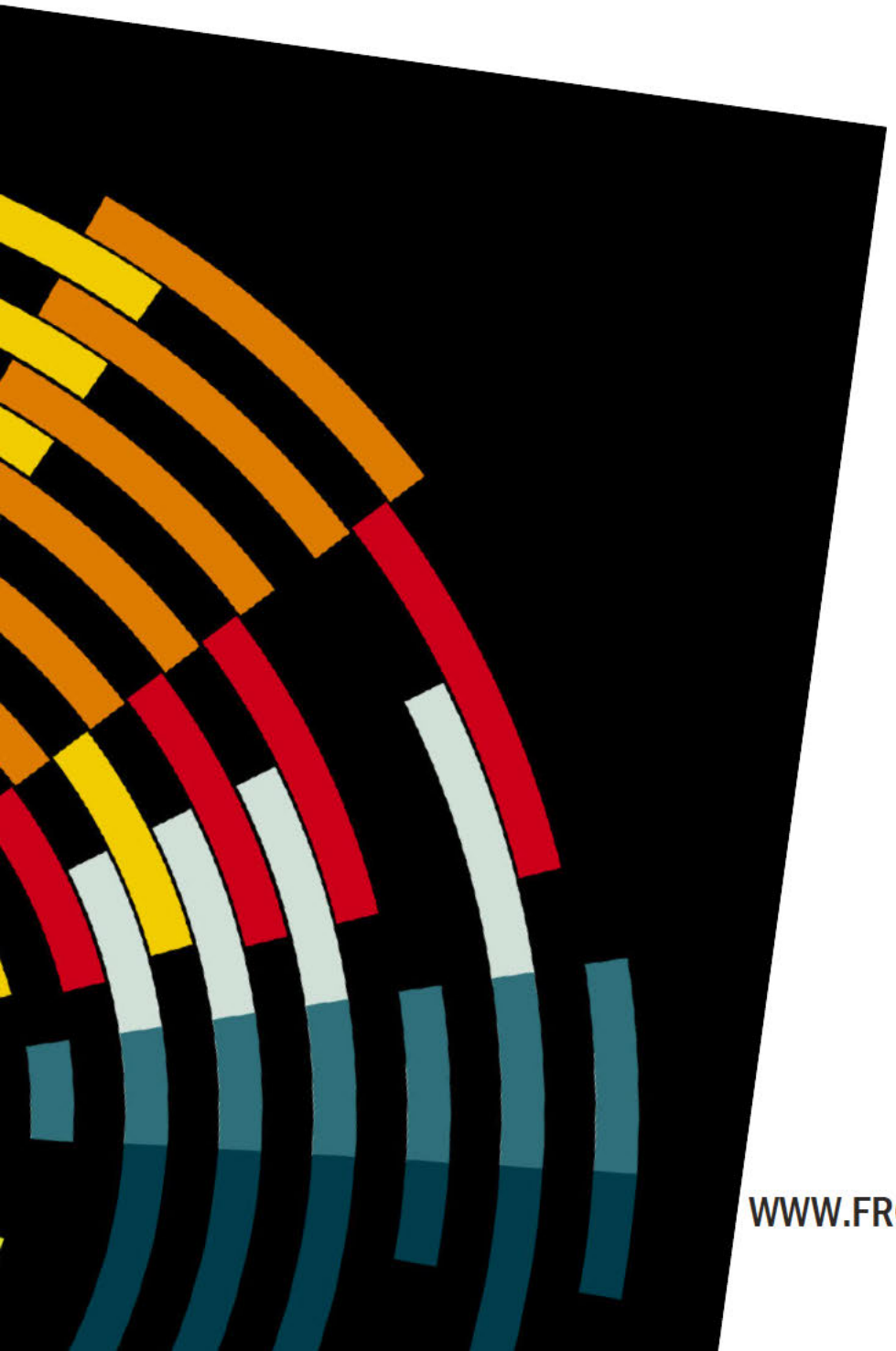
There is evidence that there are benefits from giving MNOs greater certainty on the likelihood of retaining their spectrum at the end of fixed terms. In particular, towards the end of existing licence durations operators might be deterred from investing in new equipment/ new technology, if there is a risk that they might lose their existing spectrum holdings and that the network assets may be (partially) stranded.

Any existing spectrum imbalances/ differences in demand for spectrum can be efficiently addressed through awards of new spectrum and through spectrum trades, rather than through re-auctioning of existing spectrum between operators. As such, the benefits of allowing full re-allocation of existing spectrum are likely to be outweighed by the risk of dampening investment incentives.

In light of the above, ComReg should consider alternatives to auctions for spectrum re-assignment as it develops its next Spectrum Management Strategy. Recent precedent from other jurisdictions suggests that perpetual licences and administrative/ automatic renewals appear to be, on balance, better suited to promoting investment and achieving the network roll-out required to meet the Digital Decade objectives.

In any case, there is a clear benefit to extending existing licences, ensuring that all licences have duration of at least 20 years. In addition, there are benefits from ensuring that licences run concurrently, by aligning expiry dates across all spectrum bands (to the extent possible). This would boost investor certainty and maximise the efficiency of any future spectrum re-assignments.

In line with best practice, it will be important for ComReg to engage with industry ahead of any decisions on spectrum re-assignment, so that it can continue to achieve its spectrum management objectives.



30 August 2024

Subject: Viasat response to ComReg Document 24/65 on the Proposed Radio Spectrum Management Operating plan for 2025-2028

Introduction

Viasat welcomes the opportunity to comment on ComReg's public consultation ComReg 24/65 on the Proposed Radio Spectrum Management Operating Plan ("Consultation").[1]

In these comments Viasat: (1) provides information on the latest satellite-powered broadband services that Viasat provides in Europe and around the world; (2) expresses appreciation for ComReg's actions on opening the 27.5-29.5 GHz (28 GHz), 17.7-19.7 GHz and Q/V bands for earth station licensing; (3) proposes that ComReg include in the Spectrum Management Operating Plan for 2025-2028 an item on continuation of the updating of the Guidance Document ComReg 24/48[2] to reduce earth station license fees and introduce licensing conditions for large NGSO systems supporting equitable access; (4) provides information about regulatory and technical difficulties related to the use of satellite direct-to-device (D2D) services in the spectrum allocated to terrestrial services and licensed to mobile operators; (5) provides reservations on ComReg's inclusion of the 1492-1517 MHz band segment in the proposal to consult on the award of the 1.4 GHz band for Mobile Fixed Communication Network (MFCN)/ Wireless Broadband (WBB) use and urges ComReg to ensure protection of Mobile Satellite Service (MSS) operations in the 1518-1559 MHz band; and (6) urges ComReg to ensure protection of satellite broadband services in the 28 GHz band in the case that any part of the 24.25-27.5 GHz (26 GHz) band is authorized for terrestrial IMT/5G use, providing that any award of the 26 GHz band for terrestrial IMT/5G use is subject to clearly demonstrated demand.

Viasat is a global leading provider of communications solutions across a wide variety of technologies, both satellite and terrestrial. Viasat's use of the Ka band, specifically the paired frequency bands 27.5-30 GHz (Earth-to-space) and 17.7-20.2 GHz (space-to-Earth), is robust as Viasat uses this spectrum today to provide hundreds of millions of high-speed broadband connections every year to households, businesses and passengers in North America, Central and

[1] See *Proposed Radio Spectrum Management Operating Plan for 2025-2028* (ComReg 24/65, 1 August 2024), https://www.comreg.ie/media/2024/08/ComReg-2465.pdf.

[2] See *Guidance Document 24/48 Satellite Earth Station Licensing Guidelines (17.06.2024),* https://www.comreg.ie/media/2024/06/ComReg-2448.pdf.

South America,[3] Australia,[4] and across Europe[5], including through capabilities obtained in the acquisition of Inmarsat[6]. The closing of the Inmarsat acquisition enables the companies to bring together spectrum, satellite, and terrestrial assets, including 21 satellites in space spanning Ka-, L- and S- bands.

Satellite Services

In Section 3.57(a) of the Consultation ComReg describes its decision to conclude the update of the Satellite Earth Station ("SES") Licensing Guidelines[2]. ComReg decided, among other things, to open a number of new frequency bands for SES licensing, implement a non-geostationary satellite earth station coordination procedure, and introduced new fees. Viasat strong supports ComReg's decision to open the 28 GHz and 18 GHz frequency bands for earth stations licensing since access to these bands is critical for modern satellite broadband systems that require access to multiple channels with bandwidth of several hundreds of megahertz of continuous spectrum in order to meet users' demands for affordable high-speed services wherever they may be. At the same time, Viasat notes that the SES license fee in Ireland remains one of the highest in Europe. For example, in the case of use the 27.5-30 GHz band (*BW* = 2500 megahertz) a base fee

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[3] See https://viasat.com.mx/community-wi-fi/?lang=en; *Viasat Brings Fastest Home Satellite Internet Service to Mexico*, https://www.viasat.com/news/viasat-brings-fastest-home-satellite-internet-service-mexico; *Viasat Completes Brazilian Residential Internet Service Roll-Out--Now Covers 100% of the Country; Offers New Premium Satellite Internet Service Plan with Highest Speed and Data*, https://www.prnewswire.com/news-releases/viasat-completes-brazilian-residential-internet-service-roll-outnow-covers-100-of-the-country-offers-new-premium-satellite-internet-service-plan-with-highest-speed-and-data-301161443.html.

[4] See *Viasat Wins $286M Satellite Broadband Deal with Australia*, https://spacenews.com/viasat-wins-286m-satellite-broadband-deal-australia/.

[5] See *Viasat's Expansion in Europe Helps Bridge the Gap to Faster Broadband (video),* https://corpblog.viasat.com/viasats-expansion-in-europe-helps-bridge-the-gap-to-faster-broadband/; *Viasat Affirms Commitments to Bring its Powerful ViaSat-3 Satellite to Europe*, https://www.viasat.com/news/viasat-affirms-commitments-bring-its-powerful-viasat-3-satellite-europe; *KLM Introduces Viasat In-Flight Wi-Fi on European Flights, https://www.viasat.com/about/newsroom/press-releases/klm-introduces-viasat-flight-wi-fi-european-flights/* (April 22, 2021); *Viasat Completes Acquisition of Remaining Stake in its European Broadband Joint Venture, inclusive of the Ka-Sat Satellite and Ground Assets* (April 30, 2021), https://www.viasat.com/about/newsroom/press-releases/viasat-completes-acquisition-remaining-stake-its-european/; *Viasat Ramps Satellite in the Middle East and Western Europe Ahead of ViaSat-3 Launch; Signs Ka-Band capacity Lease Deal with Avanti Communications* (June 3, 2021), https://investors.viasat.com/news-releases/news-release-details/viasat-ramps-satellite-services-middle-east-and-western-europe.

[6] See *Viasat's Acquisition of Inmarsat Proceeds to Close* (May 25, 2023), https://news.viasat.com/newsroom/press-releases/viasat-acquisition-of-inmarsat-proceeds-to-close.

for an SES license, per year, would be more than about fifty thousand euros using the following formula:

$$A = €\,100 + 150 \times (BW)^{0.75} \cong €\,53{,}133$$

In addition, in the Annex 1 of Guidance Document ComReg 24/48, ComReg establishes a non-geostationary (NGSO) satellite earth stations coordination procedure, however, there are various reasons why coordination may be not achieved. For example, as explained in the contribution to ITU WP4A[7], when a NGSO constellation is required to protect a mega NGSO constellation by implementing an avoidance angle, if the information for active satellites in the large constellation is not known *a priori* or not provided in real-time, the impact to the smaller constellation is severe, blocking any possibility for the small constellation to provide service at that location. Even if the information on the active satellites in the large constellation is provided, the size of the required avoidance angle can still impose significant constraints on the ability of smaller NGSO constellation to provide service.

To avoid this result, it is critical, at a minimum, to adopt a condition requiring "look angle" splitting, for example, requiring NGSO systems serving a country in overlapping frequencies to divide the range of satellite azimuths as seen from a location on the Earth whenever the potential for NGSO/NGSO interference exists at that location[8]. Notably, the same level of "look angle" splitting would occur regardless of the number of satellites in a given NGSO constellation. Each operator would bear the same "splitting" burden by default, in the absence of some other coordinated outcome. This approach would allow multiple NGSO systems to access available spectrum resources on a more equitable basis.

Viasat recommends that ComReg condition licenses for large and mega NGSO constellations to ensure they do not hinder equitable access to shared and limited NGSO orbital resource by requiring NGOS systems authorized to serve Ireland to:

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[7] See *Document 4A/89 from Intelsat Studies related to the working document towards a preliminary draft new Recommendation/Report ITU-R S.[INTERFERENCE-NGSO] - Studies 1 and 2,* https://www.itu.int/md/R23-WP4A-C-0089/en.

[8] In similar cases, the United States imposes spectrum-splitting constraints on "foreign" NGSO systems that seek U.S. market access. *See, e.g., Kinéis Petition for Declaratory Ruling to Access the U.S. Market Using a Low-Earth Orbit Satellite System*, FC 21-118 (rel. Dec. 19, 2021) at 2, 12 (French LEO system granted U.S. market access under the following condition: "Absent a coordination agreement, spectrum will be divided among licensees and grantees of U.S. market access pursuant to section 25.157 of the Commission's rules."), https://www.fcc.gov/document/fcc-grants-market-access-kineis-low-earth-orbit-satellites-0. The US approach, however, disproportionately disadvantages smaller NGSO systems for the reasons explained in here.

• Operate with only 1/***n*** of the look angles in a given country, where ***n*** is the number of NGSO systems authorized to serve that country in the same frequency band; and

• Coordinate in good faith and in advance with other NGSO systems so that all ***n*** look angles may be used to serve that country by those different NGSO systems.

Considering the above, Viasat proposes that ComReg include in its Spectrum Work Plan 2025-2028 an action related to continued updating of the Guidance Document ComReg 24/48 to reduce SES license fees and introduce licensing conditions for large NGSO systems supporting equitable access.

Viasat supports ComReg proposal on preparing a common position for the relevant satellite service Agenda Items scheduled for WRC-27. The Consultation notes that many of the Agenda Items for the next conference WRC-27 are related to satellite service, with a focus on NGSO systems. Viasat draws ComReg's attention to the fact that WRC-23 declined to adopt a future Agenda Item for WRC-27 or WRC-31 with a view toward altering or replacing existing ITU Radio Regulations (RR) Article 22 EPFD or Resolution 76 aggregate limits and instead invited ITU-R to continue the ongoing EPFD technical studies to ensure the continued protection of GSO FSS and BSS networks. Over 60 countries vocally and repeatedly expressed their strong opposition to a proposal by a few mega NGSO constellations to open and change the ITU RR Article 22 EPFD limits to allow more interference into GSO networks. The vast majority of administrations demonstrated their commitment to the protection of GSO networks as an important part of the satellite sector's future. Rejection of this proposal ensures a stable regulatory environment and protects opportunities for national systems for security and economic development in both GSO and NGSO under the longstanding framework by which both have flourished to date.

Considering the above, Viasat invites ComReg to support on-going ITU studies towards the improvement of Recommendation ITU-R S.1503 (including consideration of any new items and studies) and finalising the aggregate EPFD methodologies under Resolution 76 which support the WRC-23 decisions.

Satellite direct-to-device services (Satellite D2D)

Viasat is among other operators seeing an opportunity to provide leadership in the emerging D2D services market by leveraging our substantial installed base of aviation, maritime, and mobile users, emerging 3GPP standards, open architecture, and existing resources. Viasat has already invested a lot of resources and was heavily involved in the 3GPP standards on Non-Terrestrial-Networks (NTN) which addresses MSS spectrum. Viasat is also a founding member of the Mobile

Satellite Services Association (MSSA)[9]. MSSA is a non-profit industry association that seeks to advance global mobile connectivity for D2D, including direct-to-cell (D2C) communications, and Internet of Things (IoT) services via open, standards-based solutions. MSSA will bring significant scale and choice to promote and advance the emerging D2D ecosystem by utilising L-band and S-band spectrum that is already allocated and licensed for MSS. This spectrum is well-suited for integration into a broad range of mobile devices and also for enabling satellite connectivity to consumer mobile devices. It is a transformative opportunity for the satellite industry. MSSA members also support a vision of integrating terrestrial and NTN services to deliver scalable, sustainable and affordable connectivity to any device, anytime, anywhere.

D2D communications will make bridging the connectivity gap a reality by enabling communications on a complementary basis with mass-market terrestrial mobile handsets in unserved and underserved areas (whether urban, suburban, or rural), while leveraging economies of scale. Two different approaches to D2D are being contemplated. The first approach uses already allocated and licensed MSS spectrum for D2D and is feasible within the existing regulatory framework that enables today's MSS services.

The other approach to D2D, often referred to as Supplemental Coverage from Space (SCS), relies on satellite operators transmitting in spectrum allocated to terrestrial services and licensed to mobile operators. The other approach to D2D will require significant changes to regulatory frameworks globally to allow for different uses of spectrum than existing allocations support, and careful management to avoid interference into existing spectrum uses.

One of ComReg's work plan proposal items for the period 2025 – 2028 is to "*monitor developments and input into discussions, as appropriate on satellite D2D services which would use spectrum assigned for MFCN use, and facilitate, as appropriate, the test or trialling of such services in Ireland, as appropriate.*"[10] Viasat highlights the fact that provisioning of satellite D2D services in spectrum allocated to terrestrial services introduces new interference and coexistence issues with respect to existing spectrum users that will require careful study and management. Before any national authorizations, including one for test or trialling of such services in Ireland, are issued to facilitate D2D operations in the spectrum allocated and licensed to terrestrial mobile service, technical studies should be performed to address unresolved technical issues, including issues related to out-of-band emissions, cross-border interference, and satellite-to-satellite interference. Viasat thinks that such studies can be addressed in the proper manner

[9] See https://www.mss-association.org/.

[10] See Sections 6.4 (xiv) of the Consultation.

within the framework of the WRC-27 AI 1.13[11] and proposes ComReg to wait for the WRC-27 results before allocating or authorising any systems in the bands. This solution requires some physical white spaces between the two coverages to avoid interference and will therefore not achieve ubiquitous coverage.

By contrast, the MSS-based approach to D2D preserves mobile network operator (MNO) spectrum and eliminates interference risks while providing opportunities for administrations to leverage existing spectrum and satellite coverage to (i) complement existing mobile network operator infrastructure and connect underserved or unserved parts of urban and suburban areas, as well as mountainous, maritime, aeronautical, isolated, and rural areas, as well as (ii) facilitate short-term, urgent requirements like disaster response. With the advent of MSS-based D2D mass-market devices, it will be possible to ensure that voice, text, and data coverage for all parts of an administration's territory can be provided quickly and cost-effectively. And all of this is possible without compromising the terrestrial mobile service spectrum that MNOs need for their core operations, and without creating new interference challenges. This means it can really provide uninterrupted ubiquitous coverage without interference with MFCN services as they use different spectrum resources. As a result, this solution can truly complement Terrestrial services and allow for additional capacity and applications which can't be provided by using the same spectrum for mobile terrestrial services and satellite services.

Spectrum for Mobile Fixed Communication Network / Wireless Broadband

1.4 GHz Band

Viasat appreciates ComReg's proposal to monitor developments in the 1.4 GHz band until the path forward for this band becomes clearer. As ComReg rightly observes, terrestrial technology in the 1.4 GHz band is not mature and "*the issue of deploying antennas with 1.4 GHz band capability is still largely there*."[12] On the other hand, L-band MSS operators have made great strides towards deploying new and innovative offerings, such as D2D services.

Viasat has concerns, however, about ComReg's inclusion of the 1492-1517 MHz band segment (the "Upper 1.4 GHz band") in its proposal to consult on the award of the 1.4 GHz band for Mobile Fixed Communication Network (MFCN) / Wireless Broadband (WBB) use[13]. Viasat conducts MSS

[11] See *WRC-27 Agenda Item 1.13: to consider studies on possible new allocations to the mobile-satellite service for direct connectivity between space stations and International Mobile Telecommunications (IMT) user equipment to complement terrestrial IMT network coverage, in accordance with Resolution 253 (WRC-23),* https://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A0000100013PDFE.pdf.

[12] See Section 4.107 of the Consultation.

[13] See page 67 of the Consultation.

operations in the 1518-1559 MHz band, which is directly adjacent to the 1.4 GHz band. Due to the technical characteristics of MFCN/WBB signals, introducing these services into the 1.4 GHz band would risk causing harmful interference to Viasat's existing L-band aeronautical, maritime, and land-based services, as well as its upcoming D2D offerings. Accordingly, any use of the 1.4 GHz band for MFCN/ WBB in Ireland would require careful analysis of the compatibility with MSS operations in the adjacent band 1518-1559 MHz. If the uppermost part of the 1.4 GHz band (1492-1517 MHz) is examined, constraints on MFCN/WBB characteristics and system deployments, such as power limits and out of band emissions requirements, would be needed.

To the extent that ComReg decides to reassess its plan for the 1.4 GHz band in Ireland, we suggest that any terrestrial IMT/5G use be limited to the core band (1452-1492 MHz), which is an approach already undertaken by a number of European countries. Use of only the core band for MFCN/WBB would avoid the need for any significant restrictions on those systems or MSS systems and would facilitate the use of cutting edge D2D services. With respect to planned D2D services, Viasat also recommends keeping abreast of activities related to WRC-27 AI 1.13 on studies of "*possible new allocations to the mobile-satellite service for direct connectivity between space stations and International Mobile Telecommunications (IMT) user equipment to complement terrestrial IMT network coverage*." In any case, if ComReg does decide to proceed with the introduction of MFCN/WBB in the 1.4 GHz band, a public consultation would be necessary to ensure that the adjacent band compatibility and interference issues are fully addressed.

26 GHz Band

The 26 GHz is an adjacent band to the 28 GHz band which is critical for satellite broadband operations. As stated above, Viasat, as with many satellite operators, provides broadband services in the adjacent 28 GHz frequency band throughout Europe and the rest of the world. As such, Viasat is concerned about potential out-of-band emissions from the 26 GHz band by terrestrial IMT/5G systems into the 28 GHz band. Increases in power by terrestrial IMT/5G systems in the 26 GHz band could increase out-of-band emissions in the 28 GHz band. The potential impact of increased out-of-band emissions in the 26 GHz band could adversely affect the interference environment in the 28 GHz band by impacting the ability of satellite receivers in space to receive signals from earth stations. Furthermore, terrestrial IMT/5G base station authorizations need to be conditioned on Resolution 242 (WRC-19) out-of-band limits and pointing requirements to protect 28 GHz satellite receivers in space. Viasat agrees with the Consultation that there is no strong basis to limit the use of any existing licenses regimes for fixed links or block allocations or to announce migration plans for same, given the lack of demand for spectrum in the 26 GHz band for MFCN. Viasat's view is that current operators of Fixed Service Point-to-Point (FS P-P) systems are unlikely to invest in a migration from 26 GHz without significant market demand to justify the investment in equipment upgrades. There is ample

spectrum within the 3.25 gigahertz comprising 26 GHz frequency band for both existing FS P-P and potential terrestrial IMT/5G. For any spectrum award for terrestrial IMT/5G systems in the 26 GHz band should be there be clear evidence of demand. Viasat supports ComReg decision to potentially consider the lower part of the 26 GHz band, *i.e.*, 24.250-24.745 GHz (495 megahertz of spectrum), which is not used by fixed links, for local area WBB systems (low to mid power) as the first step.

In conclusion, Viasat summarizes the following points and urges ComReg to:

1. Include a work item in the Radio Spectrum Management Operating Plan for 2025-2028 related to continuation of the updating of the Guidance Document ComReg 24/48 to reduce SES license fees and introduce licensing conditions for large NGSO systems supporting equitable access;

2. Address unresolved technical issues, including issues related to out-of-band emissions, cross-border interference, and satellite-to-satellite interference, before any national authorizations, including one for test or trialling, are issued for satellite D2D operations in the spectrum allocated and licensed to terrestrial mobile service;

3. Ensure the protection of MSS operations in the 1518-1559 MHz band and, in the case of inclusion of the 1492-1517 MHz band segment in the proposal, to consult on the award of the 1.4 GHz band for MFCN/ WBB use; and

4. Ensure protection of satellite broadband services in the 28 GHz band in the case of allocating or authorising any part of the 26 GHz band for terrestrial IMT/5G providing that any reward of the 26 GHz band for terrestrial IMT/5G subject to clearly demonstrated demand.

Viasat appreciates ComReg's consideration of the information above and remains at your disposal to answer any further questions or provide further details as requested.

Benetel Limited
Guinness Enterprise Centre
Taylors Lane,
Dublin D08 C902

Aug 30, 2024

Response to ComReg consultation 24/65

Benetel Limited is an Irish company who is at the forefront of the emerging Private 5G industry. The company has deployed Open RAN split architecture Radio Units in various Private 5G programs around the world.

Private 5G is a massive worldwide opportunity that builds on top of the massive MNO deployments in the various decades of the G's. The momentum gathering around Private 5G is tightly linked to the availability of lightly licensed spectrum in specific countries – the countries that have taken the lead on innovative models are now well advanced on moving to deploying private networks in novel ways.

We would like to see Ireland moving beyond a test and trial approach for lightly licensed spectrum model. We would strongly advocate for spectrum (at least 100MHz) to be made available for 10+ years in the 3.8 – 4.0GHz.

Looking specifically at 5G in a manufacturing situation, the use of 5G allows manufacturers gain a competitive edge, as they are then able to access new technologies which reduce downtime and produce better products, with ubiquitous Internet of Things (IoT), autonomous mobile robots, Digital Twins and augmented reality (AR) being just a few examples.

In the current market, the need for ever-increasing amounts of information to be communicated faster, more reliably and more securely is pushing beyond the limits of traditional wired and Wi-Fi networks. Therefore, ease of access to 5G networks for manufacturers is essential.

In reviewing the experiences of peer companies across the UK, EU and further afield, we have come to the following conclusions:

- 5G networks built by or for the manufacturer are crucial to delivering the network performance required.
- Spectrum needs to be made available directly to enterprises (not via a mobile network operator)
- The licensing model should be cheap and simple to navigate e.g. Germany
- 'Pop-up' licences should be available for a distinct area and for a short period of time to cover a particular event, such as product demos. These licences should be cheap and easily accessible

- ‘Permanent’ licences should be available to enable the use of 5G at specific sites eg company warehouses, factories, etc
- These ‘Permanent’ licences should last for at least 10 years, as companies cannot soundly make investment decisions if they are not sure that they will have the licence for at least a decade

For these reasons, private 5G networks are the best solution available to manufacturing companies. Private cellular 5G networks are the more secure and efficient option, and businesses do not need to sacrifice control for convenience and ease of use.

Effective digital communication is the cornerstone of the manufacturing industry. And as the demand for increasingly larger bundles of information to be sent reliably grows, it is crucial that we make use of every technological advantage available in order to keep up with the industry globally.

Private 5G has the potential to be the most important technology in manufacturing, therefore it would be massively advantageous for the manufacturing industry here to enjoy the same unfettered low-cost access to the 5G spectrum that our peers already enjoy in many EU countries.

Sincerely

Adrian O’Connor
CEO – Benetel Limited

1. FMG ELECTRONICS (DIST) LTD

Garden row, William Street, Kilkenny

2. Summary of why Private 5G is important to our industry

From a very low base in the 1920's Ireland now has an annual manufacturing output of over $200 billion and is at the forefront of global manufacturing in pharmaceuticals, medical devices, electronic components and food and beverages. Industry 4.0, the integration of intelligent digital technologies into manufacturing and industrial processes, has been described as the next Industrial Revolution. To maintain our global position and remain attractive as a location for establishment of both domestic and multinational manufacturing industries it is crucial that the adoption of modern manufacturing technologies is enabled as much as possible.

A key enabler for industry 4.0 is very high-speed, high-capacity, low-latency wireless communications. Manufacturing industries around the world are beginning to take advantage of 5G cellular networks ability to
(1) increase network transmission speed and network capacity
(2) deliver deterministic reliability
(3) dramatically reduce latency.

The use of 5G allows manufacturers a competitive edge, as they are then able to access new technologies which reduce downtime and produce better products, with ubiquitous Internet of Things (IoT), autonomous mobile robots, Digital Twins and augmented reality (AR) being just a few examples.

In the current market, the need for ever-increasing amounts of information to be communicated faster, more reliably and more securely is pushing beyond the limits of traditional wired and Wi-Fi networks. Therefore, ease of access to 5G networks for manufacturers is essential.

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- These ‘Permanent’ licences should last for at least 10 years, as companies cannot soundly make investment decisions if they are not sure that they will have the licence for at least a decade

The issuing of spectrum to Mobile Operators (MOs) alone requires businesses to rely on Operators for access to cellular service. In industries such as manufacturing, necessitating the involvement of MOs leads to numerous drawbacks. It leads to the involvement of a company with little to no understanding of the industry in every stage of the manufacturing process. Often the MOs preferred “one-size-fits-all” approach is incompatible with the businesses requirements, as they lack full control of their network and are unable to customise it to suit their needs. Furthermore, MOs may charge service fees or slow down the network if it exceeds their monthly limits. This can prove devastating for the manufacturer.

Public networks are also not a feasible alternative, as most public networks are 5G non-standalone (NSA) meaning technological innovation over 5G such as network slicing, ultra low latency, etc are not available over public 5G networks.

For these reasons, private 5G networks are the best solution available to manufacturing companies. Private cellular 5G networks are the more secure and efficient option, and businesses do not need to sacrifice control for convenience and ease of use.

3. Experience in other markets

3.1 UK Experience

Swedish industrial machine maker Atlas Copco has reopened a UK facility as a smart factory and innovation centre with a private 5G network. The newly established smart factory leverages private 5G technology to enhance its production capabilities. This setup includes 5G-enabled tool control software, inspection and error-proofing solutions, and 3D laser technology.
https://tecknexus.com/5gusecase/atlas-copcos-new-uk-smart-factory-features-ericsson-5g/

3.2 German Experience

Bosch has built a private industrial 5G network at its semiconductor factory in Reutlingen, Germany
https://5gobservatory.eu/wp-content/uploads/2022/04/5.6.pdf

3.3 French Experience

Airbus is deploying a private 5G communications network across their production locations and final assembly line in France. This offers uninterrupted connectivity

wherever the network is in use, even in areas where coverage was previously patchy or non-existent
https://www.airbus.com/en/newsroom/stories/2024-06-the-future-is-calling-unveiling-airbus-private-5g-network

3.4 Other EU Experience
Agnico-Eagle Finland Oy is installing a private 5G standalone network in the gold mine in Finland
https://5gobservatory.eu/nokia-to-build-private-5g-network-in-finnish-goldmine/

3.5 US Experience
Ericsson has built a 5G smart factory in the USA. The use of a private 5G network allows for more effective communication and a real time production chain
https://www.ericsson.com/en/about-us/company-facts/ericsson-worldwide/united-states/5g-smart-factory

3.6 Asia
Midea, AIS, China Unicom, and Huawei have jointly implemented the first 5G fully-connected factory in Southeast Asia. Harnessing the comprehensive 5G network coverage of the Midea Industrial Park in Chonburi and a 5G+ industrial Internet platform, each production phase is seamlessly connected through 5G terminals to enable faster machine operation
https://www.huawei.com/en/news/2024/5/first-5g-fully-connected-factory

4. Summary

Effective digital communication is the cornerstone of the manufacturing industry. And as the demand for increasingly larger bundles of information to be sent reliably grows, it is crucial that we make use of every technological advantage available in order to keep up with the industry globally.

Private 5G has the potential to be the most important technology in manufacturing, therefore it would be massively advantageous for the manufacturing industry here to enjoy the same unfettered low-cost access to the 5G spectrum that our peers already enjoy in many EU countries.

1. Company description

Fogarty Fenwick Ltd is an Outside Broadcast company specialising in the production of sports coverage for Irish and International broadcasters. As well as operating domestically we regularly travel to major world sporting events where we have seen the capabilities of private 5G networks

2. Summary of why 5G is important to our industry

The Broadcast Television industry across Europe and North America is taking advantage of the wireless broadband capacity of 5G to (1) replace kilometres of cables with simple wireless backpack solutions (2) improve the speed and quality while reducing the cost of Outside Broadcast (OB). Broadcast companies are replacing long cable runs between camera and control suite with 5G wireless backpacks, sending the signals from the cameras wirelessly. This removes the need for cables and makes providing OB facilities cheaper and simpler.

As a company providing OB capability in a small media market, remaining financially viable and continuing to democratise the media by covering events across the country, attention to cost is crucial.

Our learnings from the experiences of peer companies particularly in the UK but also across the EU and North America is that

- Spectrum needs to be made available directly to enterprises (not via a mobile network operator)
- The licensing model should be cheap and simple to navigate
- ‘Pop-up licences’ for a distinct area for a short period of time to cover a particular event for example Electric Picnic of the National Ploughing Championship should be available
- ‘Permanent’ licences should also be available to enable the use of 5G to be available at specific venues eg. Croke Park, Aviva, etc.

The issuing of spectrum to Mobile Operators only has been shown in other markets to necessitate the involvement of a company with no experience or understanding of Broadcast TV into every event that needs to be covered. This adds cost (as the spectrum issued to Operators is then rented at a profit to enterprises) and complexity as Operator processes are typically not responsive and flexible enough to meet the needs of the Media industry.

3. Experience in other markets

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BBC R&D has trialled the use of Non-Public 5G Networks for coverage of events such as the Commonwealth Games, the queens funeral and the kIngs coronation.
https://www.bbc.co.uk/rd/blog/2023-05-5g-non-public-network-coronation
https://www.bbc.co.uk/rd/blog/2022-08-non-public-5g-networks-broadcasting-production

3.2 European Experience

Orange Events built complete 5G Private Networks for coverage of the opening ceremony for the Olympics and for coverage fo the events inside some of the stadiums.
https://amplify.nabshow.com/articles/connect-5g-network-olympics/
https://www.fierce-network.com/wireless/france-television-uses-private-5g-network-olympic-torch-relay

3.3 US Experience

North American leader in mission-critical, real-time video networking and visual collaboration solutions Haivision has repeatedly identified 5G Private Networks as one of the top technologies with the potential to have an impact on broadcast TV.
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Trinity Broadcasting Network (TBN) embeds Private 5G into every facet of content production at the new studio in the Dallas-Fort Worth metroplex area.

https://trilogynextgen.com/how-private-5g-networking-reinvents-the-broadcast-studio/

4. Summary

A broad approach to content creation and particularly Outside Broadcast is essential to represent the variety and number of cultural and sporting events, particularly minority events, and ensure the democratisation of public media. Delivering this within constrained budgets makes it essential to use every technological advantage available. Staying at the forefront of international media technology and maintaining a strong domestic broadcast media capability also requires investment in the latest technology.

Today, one of the most crucial technologies in media is Private 5G. It would be massively advantageous for the broadcast media industry here to enjoy the same unfettered low-cost access to the 5G spectrum crucial to enable this that our peers already enjoy in many EU countries.

1. About PorterShed / GCID

Galway City Innovation District (GCID) was formed in July 2015 as a CLG, not-for-profit, opening its first building, the PorterShed, in May 2016. The PorterShed provides coworking space and acceleration for export-orientated, high-potential technology startup and scaleup companies. Our offering includes managed office space (desk, electricity, high speed broadband included), membership perks, innovation space and community engagement.

2. Why Private 5G is important to us

In the first 5 years the PorterShed boosted job creation supporting the creation of 835+ jobs in the region - this number continues to grow. Importantly, the GCID has nurtured a culture of peer-to-peer support (a community much broader than the residents within the PorterShed) and fostered links with funding agencies, venture capitalists and innovation hubs globally through regular events, programmes, and signposting. In the first 5 years of operation, the PorterShed welcomed 10,000 visitors through its doors.

In 2022 we expanded to Bowling Green (PorterShed a hAon) and Market Street (PorterShed a Dó), to continue this important role as a community connector. As we continue to grow and expand into other sectors, a crosscutting priority is connectivity and digital infrastructure. This increasing role as a facilitator, accelerator and host of workshops for R&D intensive businesses has highlighted the importance of Industry 4.0.

From a very low base in the 1920's Ireland now has an annual manufacturing output of over $200 billion and is at the forefront of global manufacturing in pharmaceuticals, medical devices, electronic components and food and beverages. Industry 4.0, the integration of intelligent digital technologies into manufacturing and industrial processes, has been described as the next Industrial Revolution. To maintain our global position and remain attractive as a location for establishment of both domestic and multinational manufacturing industries it is crucial that the adoption of modern manufacturing technologies is enabled as much as possible.

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1. Increase network transmission speed and network capacity.
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The use of 5G allows manufacturers and other R&D intensive companies a competitive edge, as they are then able to access new technologies which reduce downtime and produce better products, with ubiquitous Internet of Things (IoT), autonomous mobile robots, unmanned vehicles, Digital Twins and augmented reality (AR) being just a few examples.

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1. 5G networks built by or for the manufacturer are crucial to delivering the network performance required.
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5. ‘Permanent’ licences should be available to enable the use of 5G at specific sites e.g. company warehouses, factories, hubs etc.
6. These ‘Permanent’ licences should last for at least 10 years, as companies cannot make strategic investment decisions if they are not sure that they will have the licence for at least a decade.

The issuing of spectrum to Mobile Operators (MOs) alone requires businesses to rely on Operators for access to cellular service. In industries such as manufacturing, necessitating the involvement of MOs leads to numerous drawbacks. It leads to the involvement of a company with little to no understanding of the industry in every stage of the manufacturing process. Often the MOs preferred “one-size-fits-all” approach is incompatible with the business’s requirements, as they lack full control of their network and are unable to customise it to suit their needs. Furthermore, MOs may charge service fees or slow down the network if it exceeds their monthly limits. This can prove devastating for the manufacturer.

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3. EXPERIENCE IN OTHER MARKETS

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capabilities. This setup includes 5G-enabled tool control software, inspection and error-proofing solutions, and 3D laser technology.

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Effective digital communication is the cornerstone of the manufacturing industry and innovation hubs. As the demand for increasingly larger bundles of information to be sent reliably grows, it is crucial that we make use of every technological advantage available to keep pace with the industry globally.

Private 5G has the potential to be the most important technology in manufacturing, therefore it would be massively advantageous for the manufacturing industry here to enjoy the same unfettered low-cost access to the 5G spectrum that our peers already enjoy in many EU countries.

RTE is Ireland's national public service media organisation, providing a comprehensive range of services in broadcasting, publishing, and digital media.

1. Summary of why 5G is important to our industry

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As a company providing OB capability in a small media market, remaining financially viable and continuing to democratise the media by covering events across the country, attention to cost is crucial.

RTÉ collaborates extensively with European PSM operators through its work within the EBU, and our learning is that –

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3. Summary

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SIGMA WIRELESS

Telephone: +353 (0)1 8142100
Email: sales@sigma.ie
Website: www.sigmawireless.com

MISSION CRITICAL COMMUNICATIONS

Commission for Communications Regulation One Dockland Central
Guild Street
Dublin 1 Ireland D01 E4X0

Response to ComReg consultation on:

Proposed Radio Spectrum Management Operating Plan for 2025 - 2028

Reference: ComReg 24/65

Date: 30 August 2024

To whom it may concern:

Sigma Wireless welcomes this opportunity to respond to ComReg's document 24/65 Proposed Radio Spectrum Management Operating Plan for 2025 – 2028.

Sigma Wireless is a fully Irish owned systems integrator, headquartered in Finglas, Dublin, providing mission-critical communications since 1991. Our customer base covers a full range of communications users across practically all the vertical sectors from Government, public safety and utilities to healthcare, transport hubs, industries and enterprises. Whereas our traditional business focused on professional mobile radio systems (PMR) our company is increasingly engaged with customers on the next generation of solutions, especially private LTE and private 5G networks.

Private 5G Networks and the 3.8-4.2 GHz Band

Sigma Wireless strongly support for the timely availability of the 3.8-4.2 GHz band for local-area private 5G networks in Ireland. There is significant commercial interest in

private 5G networks in Ireland and many of our customers today have expressed a need for the security, control and services offered by local-area private 5G networks.
As demonstrated by successful private networks deployments in countries including the USA and UK, this spectrum is crucial for enabling innovative mobile solutions that drive efficiencies and improve business and safety operations. As well as benefitting existing businesses, the availability of such spectrum here will make Ireland an even more attractive and destination for foreign direct investment. This demand is reflected in the chart of 'New private mobile (4G/5G) network customer references' (presented in paragraph 4.50 of the consultation document) showing approximately 30% market growth, and similarly reflected in several published industry market forecasts showing similar growth for the coming years.

Sigma Wireless welcomes the work ComReg is doing to make this band available for local-area private 5G networks. However, the uncertainty around the availability of this band (and a date for a decision on this) is still a huge difficulty for real market engagement and is resulting in lost opportunities for the deployment of private 5G networks.

In section 4.3.7 of the document, and particularly paragraph 4.157, ComReg indicates it may put in place a licensing regime for local area WBB systems for private wireless networks in the 3.8 to 4.2 GHz band in the first half of the 2025-2028 period. In the extreme case, this could be more than two years before spectrum for private 5G will be formally available.

We note from paragraph 4.90 that the end of 2025 is envisaged as the date for adoption of an EC implementing decision on this band. We note also that many of CEPT's draft

reports and draft decisions are already available (paragraphs 4.89), and informed discussions are already taking place regarding an EC implementing decision (paragraphs 4.90).

As this band is already available or proposed in 7 European countries (paragraph 4.154) Sigma Wireless would encourage ComReg to consider accelerating the timeline for the consultation and decision for the 3.8 to 4.2 GHz band. Perhaps the process could be carried out in parallel with CEPT and the EC's timetable above, making the spectrum available here by the end of 2025.

In paragraph 1.144 of Section 4.3.6, it is proposed that ComReg would consult and put in place a licensing regime for local-area WBB. This would consider spectrum in the 3.8-4.2 GHz band and potentially spectrum in the lower part of the 26 GHz Band (24.250 – 24.745 GHz (495 MHz) – Block C).

Sigma Wireless would suggest running separate consultations for each band with priority for the 3.8 to 4.2 GHz band as this is the more developed market internationally, and from discussions with potential customers, we believe there is a real demand for local-area private 5G in this band.

Kindest regards

Paul Donnelly

Sigma Wireless, DAS and Private Networks Design Authority

1. Executive Summary

This document is a submission in response to Comreg Document 24/65, Proposed Radio Spectrum Management Operating Plan 2025-2028.

5G connectivity is a critical enabler for Industry 4.0, the umbrella term for the rapid digitalisation of Manufacturing and Logistics that is already underway. A licensing scheme that enables spectrum allocation directly to the user is crucial for the successful adoption of 5G by enterprise.

Other EU and EEA countries are moving ahead of the EU timeline in the allocation of N77 band spectrum for this purpose. Ability to deploy private networks is becoming a 'hygiene factor' for FDI investment decisions in manufacturing, and Ireland risks being left behind.

There is already a significant cluster of Irish companies supplying the Private Cellular industry globally. It would be very significant to those companies if Ireland were to join the leaders in Private 5G in Europe.

Druid Software requests Comreg to augment the 2025-2028 work plan to:

- Significantly accelerate the plans proposed for 2025-2028.
- Set a target by the end of 2025 to complete surveys and consultations, propose a licensing scheme and begin the issuing of licences in the N77 band.
- Follow best practice as established by Europe's major manufacturing and logistics markets by enabling access to N77 spectrum
    - Through a simple and low-cost licensing framework
    - On a minimum 10 year licence bases
    - With the ability to support 'pop-up' networks for special events
    - Enabling any owner of a premises to licence spectrum directly.

2. Submission on Document 24/65, Proposed Radio Spectrum Management Operating Plan 2025-2028

2.1 Current Workplan proposal

In Comeg's work plan for Mobile and Fixed Communications Network ("MFCN") services for the period 2022 – 2024, the action was taken to:
"Monitor and contribute to the EC's and CEPT's considerations of what, if any, efficiencies might be introduced by a strategic review of the authorisation and licensing of spectrum for MFCN services in the future."

You note that "*CEPT's final deliverables on this mandate are expected in Q4 2024, and EU decision on a Union-wide roadmap for 3.4- 4.4 Ghz spectrum is anticipated in 2025"*

The 2025-2028 work plan states *"in relation to the harmonisation of spectrum for MFCN or WBB services, ComReg proposes to continue to monitor, engage and input into harmonisation discussions and to implement harmonisation decisions as appropriate."*

In Section 6.2.2 of the document, Comreg proposes to
(vii) Consult and put in place, as appropriate in the first half of the 2025-2028 time period [i.e. by December 2026], a licensing regime for local-area WBB systems, which could be used for, among other things, private mobile (4G, 5G etc.) networks. **This would be subject to demand and progress continuing at European (CEPT/EU) level to harmonise the 3.8-4.2 GHz band for local area WBB systems** (low to mid-power) and would potentially spectrum in the lower part of the 26 GHz Band (24.250 – 24.745 GHz (495 MHz) – Block C).

(viii) Consult, towards the middle of the 2025-2028 period, on spectrum for MFCN/WBB use. Such a consultation would, among other things, consider the expiry of MBSA1 licences in 2030 and the multiple harmonised spectrum bands for MFCN/WBB use. Spectrum in the 1.4 GHz band would be considered and perhaps spectrum in the 26 GHz band should clear evidence of demand emerge.

2.2 Suggested amendments

"EU Harmonisation"
As section 6 of this document illustrates, leading European countries are moving in anticipation of the EU decisions and are already actively licensing N77 band spectrum to enterprises (see section 6 below).

Starting implementation of a licensing framework by the end of 2026 is significantly later than many other EU states including the more industrially developed states. A two-year implementation timeline preceded by an EU decision in late 2025 means that Private 5G spectrum, available to companies in Germany since 2019, may not be available to the same manufacturing companies at their Ireland facilities until 2027 or later.

"Demand"
Demand for Private 5G networks cannot be accurately assessed until a communications campaign to enterprises has taken place concerning the availability of Trial licences (see section 8 below). We also contend that business demand in particular cannot be assessed until businesses are aware of the ability to secure a licence for a significant time period, i.e. 10 years, as the capital investment required is not supportable for a trial, the licence for which may only be available for 12 months.

Proposed Amendments to work plan
Druid Software notes the proposed Comreg work activity as set out in section 6.17 of the document and agrees with the steps themselves. However we strongly feel the timeframe for these activities needs to be dramatically accelerated if Ireland is not to fall behind other European and international markets as a desirable location for high-tech manufacturing in the future.

We would propose the action plan be amended to:

- Complete a review of the spectrum and licensing frameworks in similar jurisdictions by mid 2025.
- Purpose and implement a licensing framework by the end of 2025 that shares the characteristics of the most successful markets (e.g. Germany), prominent points being:
    - Spectrum be reserved in 3.8 to 4.2 band in advance of the EU decision
    - Licensing model be cheap and simple via web portal which licence costs similar to WiFi (i.e. little or no licence fee required)
    - Licences be issued “direct to business” not via MNO
    - Licences be available for at least ten years
    - Pop-up licences for temporary events to be availableLicensing framework to be introduced ASAP

3. About us

Druid Software is an Irish-owned developer of cellular core network software, based in Bray, Co. Wicklow. Since its foundation in 2000, Druid has become a global leader in Private Cellular technology for Enterprise and related activity. Druid develops and markets one of the leading cores for Private 5G /Private 4G /LTE Networks. Druid exports effectively 100% of its software to main markets including the USA, Japan, Germany, the UK, France and Netherlands. Druid has offices in the USA, India, Taiwan and Japan with plans to open a South American location in 2025.

4. Importance of Private 5G in the Irish market

Ireland today is an advanced manufacturing country exporting an output of over $200 billion per year. In 2022 $140 billion of Chemicals, Pharmaceuticals and related products, and almost $10 billion of microchips and electronics, were manufactured and exported, primarily by multinational companies based in Ireland.

5G connectivity has in recent years evolved beyond being a technology for improving consumer mobile broadband experience, into being a critical enabler for Industry 4.0, the umbrella term for the rapid digitalisation of Manufacturing and Logistics that is already underway.

Remaining competitive in the manufacturing space increasingly demands the implementation of technologies such as Autonomous Goods Vehicles, Internet of Things (IoT), Computer Vision, Augmented Reality (AR), Artificial Intelligence (AI), Digital Twins and more. Worker productivity and safety is increasingly dependent on ubiquitous broadband communications for both handheld devices (smartphones, tablets, tag-readers etc.) and wearables (man-down / lone worker alarms, AR glasses). In most cases, manufacturing companies have concluded that WiFi, even in its latest versions, is not capable of managing the volume and complexity of wireless data traffic being created by Industry 4.0 technologies and are increasingly adopting 5G Private Cellular Networks. Pharma, Medical Device, Chemicals, Microchips and other sectors (major components in Irish manufacturing) using Druid’s 5G Private Network technology abroad include [redacted].

A quick survey of announcements from Druid's competitors, including the likes of Ericsson and Nokia, also indicates that they are very active in the 5G Private Cellular arena.

As an exporting nation, especially since the advent of Brexit, ensuring efficiency and catering for the growth in traffic volume at Ireland's ports and airports has become of critical national importance. For example freight traffic has grown almost 400% in the last two years at Port of Rosslare. Modern container ports now depend to a great extent on automated or semi-automated gantry cranes to enable fewer crane operators to handle more freight, autonomous vehicles to move containers between ship and road or rail haulage, AI-enabled Computer Visualisation for logistics and Security applications, Digital Signage and real-time traffic routing. Similarly to manufacturing, Ports and Logistics is quickly moving from WiFI to Private Cellular communications to access the port technology of the future. Today, ports in the UK (Sothampton, Thames, Tyne, Teeside, Blyth and Belfast), Netherlands (Rotterdam) Belgium, Germany and Finland have deployed Private 5G networks. Airports are following suit with Private 5G networks rolled out in Frankfurt, Schiphol and others.

While manufacturing and logistics are the main economic drivers of the roll-out of private 5G, other important sectors where the technology is being adopted include:

- Entertainment and Events
- Retail
- Offshore Wind
- Healthcare
- Education
- Mining, Oil and Gas
- Utilities

5. Why "Private" Networks

Access to ubiquitous, high speed 5G SA networks is rapidly becoming a prerequisite for locations of new manufacturing businesses, and a necessary enabler for existing businesses to grow. The nature of 5G means that the density at which base stations need to be rolled out, especially at the indoor coverage quality crucial for manufacturing and logistics, cannot readily be provided by the existing public networks.

Mobile Network Operators (MNOs) see Private Networks as part of a portfolio of services for enterprise they offer, including:

- Provision of a dedicated APN on the public network, which does not improve service quality of coverage.
- Provision of a network slice on the public network (which in practise is very difficult for the MNO to support at scale and has failed to be adopted in European networks)
- Provision of some additional cells at or near the business premises but all network management is to be provided by the public network.
- Provision of dedicated private networks with the MNO acting as spectrum vendor and in some cases as System Integrator.

Druid's experience in the European and global private network markets shows that:

- Mobile Network Operators for the most part do not have the expertise to design and deliver small-scale private networks
- MNOs do not tend to have relationships with the large number of vendor companies focussed on this business segment. Instead MNOs tend to use the public network vendors they have existing relationships with, adding unnecessary cost and complexity for the end customer.
- Only a dedicated private network owned by the end customer delivers the network performance required to deliver on 5G's capabilities.
- Markets where MNOs have a 'gate-keeper' role in enabling private networks tend to have fewer private networks which are associated with higher costs.

6. Experience in other markets

As you correctly state, CEPT has a mandate "to develop technical conditions regarding the shared use of the 3.8-4.2 GHz frequency band for terrestrial wireless broadband systems providing local-area network connectivity in the Union", and has this year published a draft ECC Decision 24(01)159 and a draft CEPT report160 was submitted to the EC for consideration at the RSC meeting of 3 July 2024. CEPT's final deliverables on this mandate are expected in Q4 2024, and EU decision on a Union-wide roadmap for 3.4- 4.4 Ghz spectrum is anticipated in 20025.

However, many of the leading industrial nations in the European Union are not waiting for the EU to issue its findings and national regulators are proceeding to implement licensing frameworks for the N77 band.

Comreg's Proposed Radio Spectrum Management Operating Plan (p 156) lists the following as EU countries where a licensing framework for Band77 spectrum is already available:

- Belgium
- Denmark
- Finland (proposed)
- France
- Poland
- UK
- Norway

The comment that "some use is now emerging" does not reflect the almost one hundred Private 5G networks rolled out in the jurisdictions above in the short period of time since licences were issued. We also note that the GSA statistics used GSAcom Report, "Private Mobile Networks (February 2024)", are based on GSA's standard reporting criteria and so only tracks projects with a minimum value of €100,000 and only gather statistics from the small subset of vendor companies who are GSA-members.

This list also fails to include:

- Germany, (the largest manufacturing nation in Europe) which has had a public licensing framework for N77 spectrum for WBB since 2019 and to date has issued over 200 N77 local licences for enterprises.
- Netherlands, (the largest logistics nation in Europe) which has been licensing spectrum direct to businesses since 2G days and has over a hundred Private 4G networks, has recently started licensing N77 spectrum direct to enterprises.
- Switzerland, where the Federal Office of Communications, (BAKOM - OFCOM in English), the Swiss telecoms regulator has made spectrum available for private 5G from 01 Jan 2024.
- Sweden, where since 01 January 2023, companies may apply for local licences to use radio transmitters in the 3.7 GHz and 26 GHz bands, which may be used for 5G. This enables local 5G networks in industries, mines, harbours, hospitals and other special premises. Companies and verticals that have deployed private 5G include
    - Manufacturing (Atlas Copco)
    - Power grids (ABB Power Grids)
    - Remote controlled machines and automations (Volvo CE)
    - Mines (Boliden)
    - Sawmill production (Fiskarheden)
    - Bearing production (SKF)
    - Paperboard mill (Holmen Iggesund)
    - Electric boat factory (X Shore)

In Italy, Spain, Austria and Czech the use of the N77 band for Enterprise Private Networks is also underway, although currently in these markets a Mobile Operator must be involved in the deployment project. It is worth noting that these jurisdictions are significantly behind those listed above in terms of the numbers of licences issued and the numbers of networks deployed, indicating that a framework that allows enterprises to deploy the networks themselves is best suited to meeting their requirements.

Therefore, while Druid Software endorses ComReg's proposal to "consult, and subsequently put in place a local-area WBB licensing framework" (Section 4.51) in the MFCN spectrum, and endorses Comreg's view of the importance of alignment with EU harmonisation on the 3800 – 4200 MHz band for the purpose of local-area connectivity, the timeline for this project is far behind that of other EU countries, and risks Irish companies falling behind their competitors in Europe. It is for this reason we suggest an amended timeline (see section 2.2)

7. Significance of licensing Private 5G for Irish Private Cellular technology vendors

Although licences for Private Cellular networks for enterprise were only available on a trial basis relatively recently, Ireland is a hub for technology companies in the Private cellular space.

Besides Druid, other Irish-owned, Irish-based companies active internationally in Private 5G include:

- Benetel (Dublin), an industry leader in 5G ORAN Radio Units (O-RUs), providing its technology to Communication Service Providers and Private Networks worldwide.
- Taoglas (Wexford), an Irish-founded company that specialises in designing and manufacturing advanced RF components and solving complex connectivity problems in an array of IoT industries.
- SRS Software Radio Systems (Cork), a leader in 4G and 5G mobile wireless software radio systems.
- Klas (Dublin), an engineering and design company with over 30 years of experience developing innovative communications solutions for the network edge

The fact that these companies have evolved and grown in Ireland shows the depth of talent and expertise in the Irish technology ecosystem. Opening up the ecosystem to allow these companies to do business in their home market would certainly be advantageous to all of them, and also foster Ireland's attractiveness as a location for companies like Ericsson.

8. Pilots already underway

To date the take-up of 5G trial licence has been low, but we believe this is due to a lack of awareness of the trial licensing scheme and of the availability of small-scale RAN and core solutions among Irish companies, rather than a lack of interest.

In discussions with ten companies in three industry sectors during August 2024, eight of the companies are now completing submissions to Comreg for 5G Trial licences. We firmly believe that as more companies become aware of the possibility, the number of trial licences will grow rapidly.

9. Licensing framework options

As part of Comregs 2025-2028 workplan a review of the licensing frameworks in other jurisdictions will likely be carried out. While Druid Software has no expertise in managing licensing processes we would like to share some points from our experience working in this sector across Europe.

1. The markets with the highest take-up and greatest adoption of 3.8 - 4.2 spectrum are those that allow businesses to secure a licence themselves. (e.g. Germany, UK, France, Netherlands, Switzerland). MNOs can certainly play a role in the delivery of Private 5G networks but the markets where they do this most efficiently and effectively are those where they are competing with system integrators and vendors to deploy the best solution at the best price for the licensee.
2. Licence duration is important - enterprises make investment decisions on long timelines so a licence for anything less than ten years will probably not see the uptake that Comreg is hoping for.
3. Licences should be available to large, medium and small companies and entities.

4. Pop-up licences are a key requirement for the future of the broadcasting and events industry
5. Neutral Host networks (ie the ability of the licensee to use the spectrum to improve cellular coverage inside a building or venue) should be allowed under the licence terms as it enhances the business value of the network for venue owners (hotels, sports venues, etc) and allows them to offset part of the cost of the network.

Submission to ComReg Document 24/65

1. Nemeton / Digisat – Companies Overview

Nemeton TV is Ireland's leading independent Production Company, creating hundreds of hours of live sport, documentaries and web content for broadcasters every year. Based in the An Rinn Gaeltacht in County Waterford, creates content in both Irish and English languages.

Digisat, a subsidiary of Nemeton TV, is Ireland's leading provider of Broadcast & Satellite transmission services with a fleet of 4 Ku Band Transportable Earth Stations. Its clients include TG4, RTÉ, TVM, SES, BBC, Sky Sports, Virgin Media, ITN, and many more international clients. Digisat provides live video feeds and IP connectivity over satellite and other wireless services with the highest possible reliability.

2. Summary of why 5G is important to our industry

The Broadcast Television industry across Europe and North America is increasingly leveraging the wireless broadband capabilities of 5G to revolutionise Outside Broadcast (OB) operations. By replacing extensive cabling with wireless solutions, 5G technology is transforming how live events can be covered. The adoption of 5G wireless backpacks, which enable the transmission of high-quality video signals without the need for cumbersome cables, is significantly reducing the cost and complexity of outside broadcast infrastructure while enhancing the speed and quality of broadcasts.

As a company providing OB services in a small media market, it is crucial for us to remain financially viable while ensuring broad and inclusive media coverage across Ireland. To achieve this, we must leverage every technological advantage, including 5G, to reduce operational costs and continue democratising media access.

Providing enterprise digital services - audio, video or data during large scale events and in large stadia is now viable through the implementation of private 5G networks.

Our learnings from the experiences of peer companies particularly in the UK but also across the EU and North America is that:

- Spectrum needs to be made available directly to enterprises (not via a mobile network operator)
- The licensing model should be cheap and simple to navigate
- 'Pop-up licences' for a distinct area for a short period of time to cover a particular event for example Electric Picnic of the National Ploughing Championship should be available
- 'Permanent' licences should also be available to enable the use of 5G to be available at specific venues e.g. Croke Park, Aviva, etc.

The issuing of spectrum to Mobile Operators only has been shown in other markets to necessitate the involvement of a company with no experience or understanding of Broadcast TV into every event that needs to be covered. This adds cost (as the spectrum issued to

Operators is then rented at a profit to enterprises) and complexity as Operator processes are typically not responsive and flexible enough to meet the needs of the Media industry.

3. Experience in other markets

3.1 UK Experience

The BBC has demonstrated the potential of Non-Public 5G Networks through successful trials at major events like the Commonwealth Games and the Queen's funeral. These trials have shown that 5G can be a game-changer for live event coverage by offering a reliable, high-quality, and flexible solution.
https://www.bbc.co.uk/rd/blog/2023-05-5g-non-public-network-coronation
https://www.bbc.co.uk/rd/blog/2022-08-non-public-5g-networks-broadcasting-production

3.2 European Experience

In 2022 RTÉ together with broadcasters from across Europe including BBC, BT Sport, BT Media & Broadcast, TV2 Denmark, Olympic Broadcast Service collaborated with technical partners to demonstrate how private 5G networks can massively boost flexibility and practicality of remote production opportunities.

Elsewhere in Europe, Orange Events has utilised complete 5G Private Networks for broadcasting the opening ceremony of the Olympics and various events within the stadiums. This approach has set a new standard for event coverage in terms of both quality and logistical efficiency.
https://amplify.nabshow.com/articles/connect-5g-network-olympics/
https://www.fierce-network.com/wireless/france-television-uses-private-5g-network-olympic-torch-relay

3.3 US Experience

In North America, Haivision and Trinity Broadcasting Network (TBN) have recognized the impact of Private 5G Networks on broadcast production. Haivision's work highlights 5G's ability to provide high-bandwidth, low-latency connections essential for live video streaming, while TBN has integrated Private 5G into all aspects of content production at its new studio in the Dallas-Fort Worth area.
https://www.haivision.com/blog/broadcast-video/private-5g-networks-broadcast-production/#:~:text=With%20up%20to%201Gbps%20of,video%20over%20the%20same%20network.

Trinity Broadcasting Network (TBN) embeds Private 5G into every facet of content production at the new studio in the Dallas-Fort Worth metroplex area.

https://trilogynextgen.com/how-private-5g-networking-reinvents-the-broadcast-studio/

4. Summary

A broad approach to content creation and particularly Outside Broadcast is essential to represent the variety and number of cultural and sporting events, particularly minority events, and ensure the democratisation of public media. Delivering this within constrained budgets makes it essential to use every technological advantage available. Staying at the forefront of international media technology and maintaining a strong domestic broadcast media capability also requires investment in the latest technology.

Today, one of the most crucial technologies in media is Private 5G. It would be massively advantageous for the broadcast media industry here to enjoy the same unfettered low-cost access to the 5G spectrum crucial to enable this that our peers already enjoy in many EU countries.

Is Mise Le Meas,

Fiachna Mac Murchú
Bainisteoir Córais | *Systems Manager*
[redacted] | www.nemeton.ie | www.digisat.ie
Nemeton TV | An Rinn, Dún Garbhán, Co. Phort Láirge, Éire. X35 XD88

TG4 response to ComReg Document 24/65

Non Confidential

TG4

TG4 is the Irish language free to air public service television channel. It launched on the 31st October 1996 and is available on DTT and all third-party TV platforms operating in the Republic of Ireland. It is also available online and through its on-demand service TG4 Player in Ireland and beyond.

The Broadcast Television industry across Europe and North America is taking advantage of the wireless broadband capacity of 5G to (1) replace kilometres of cables with simple wireless backpack solutions (2) improve the speed and quality while reducing the cost of Outside Broadcast (OB). Broadcast companies are replacing long cable runs between camera and control suite with 5G wireless backpacks, sending the signals from the cameras wirelessly. This removes the need for cables and makes providing OB facilities cheaper and simpler.

As a company providing OB capability in a small media market, remaining financially viable and continuing to democratise the media by covering events across the country, attention to cost is crucial.

Our learnings from the experiences of peer companies particularly in the UK but also across the EU and North America is that

- Spectrum needs to be made available directly to enterprises (not via a mobile network operator)
- The licensing model should be cheap and simple to navigate
- 'Pop-up licences' for a distinct area for a short period of time to cover a particular event for example Electric Picnic or the National Ploughing Championship should be available
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The issuing of spectrum to Mobile Operators only has been shown in other markets to necessitate the involvement of a company with no experience or understanding of Broadcast TV into every event that needs to be covered. This adds cost (as the spectrum issued to Operators is then rented at a profit to enterprises) and complexity as Operator processes are typically not responsive and flexible enough to meet the needs of the Media industry.

Experience in other markets

3.1 UK Experience

BBC R&D has trialled the use of Non-Public 5G Networks for coverage of events such as the Commonwealth Games, the queens funeral and the kIngs coronation.
https://www.bbc.co.uk/rd/blog/2023-05-5g-non-public-network-coronation
https://www.bbc.co.uk/rd/blog/2022-08-non-public-5g-networks-broadcasting-production

3.2 European Experience

Orange Events built complete 5G Private Networks for coverage of the opening ceremony for the Olympics and for coverage fo the events inside some of the stadiums.
https://amplify.nabshow.com/articles/connect-5g-network-olympics/
https://www.fierce-network.com/wireless/france-television-uses-private-5g-network-olympic-torch-relay

3.3 US Experience

North American leader in mission-critical, real-time video networking and visual collaboration solutions Haivision has repeatedly identified 5G Private Networks as one of the top technologies with the potential to have an impact on broadcast TV.
https://www.haivision.com/blog/broadcast-video/private-5g-networks-broadcast-production/#:~:text=With%20up%20to%201Gbps%20of,video%20over%20the%20same%20network.

Trinity Broadcasting Network (TBN) embeds Private 5G into every facet of content production at the new studio in the Dallas-Fort Worth metroplex area.

https://trilogynextgen.com/how-private-5g-networking-reinvents-the-broadcast-studio/

Summary

A broad approach to content creation and particularly Outside Broadcast is essential to represent the variety and number of cultural and sporting events, particularly minority events, and ensure the democratisation of public media. Delivering this within constrained budgets makes it essential to use every technological advantage available. Staying at the forefront of international media technology and maintaining a strong domestic broadcast media capability also requires investment in the latest technology.

Today, one of the most crucial technologies in media is Private 5G. It would be massively advantageous for the broadcast media industry here to enjoy the same

unfettered low-cost access to the 5G spectrum crucial to enable this that our peers already enjoy in many EU countries.

Neil Keaveney
Director of Technology TG4.
29/8/2024

***Galway Harbour Company DAC** (trading as The Port of Galway)*
***Comhlacht Cuain na Gaillimhe DAC** (ag trádáil mar Calafort na Gaillimhe)*

Port of Galway

The Port of Galway welcomes the review by the Commission for Communications Regulation (**"ComReg"**) of the *Proposed Radio Spectrum Management Plan* and the opportunity to respond to this public consultation.

As an island nation, Ireland's Ports fulfil an essential role in facilitating trade, enabling the renewable energy transition, safeguarding marine resources, assisting defence and serving communities locally and nationally.

The current Radio Spectrum Management Strategy Statement, in place since 2022, (2022 to 2024 **"ComReg Document 21/136"**) assisted in delivering a sector that is resilient and adaptable. The Irish Ports sector stepped up to the twin challenges of Brexit and the Covid-19 pandemic, which required significant flexibility and investment in infrastructure, personnel and services. The sector served the country well and proved itself to be responsive and capable of meeting challenges at a local, regional, national and international level.

While the immediate past involved an element of reactive response, the time is now right for Irish Ports to be much more proactive in order to survive and thrive. The new economic reality positions Ireland as the only English-speaking country in the EU, with a growing population, a strong economy and an unmatched opportunity in the development of offshore wind energy and other renewable resources.

It is vital to reframe the Radio Spectrum Management Strategy Statement to recognise that new economic reality and focus firmly on assisting the operations of Ireland's Port infrastructure, in order to capitalise on the opportunity in offshore wind in particular.

The Port of Galway is in the final stages of a planning application with An Bord Pleanála (**"ABP"**) under Article 6(4) of the habitats directive otherwise known as Imperative Reasons for Overriding Public interest (**"IROPI"**). It is with the future expansion of the Port infrastructure at Galway and an already allocated 3 acres for Marine Tech Innovation District at the Port that we see the overarching need for the Ports to be able to access N77 Bands for 5G (Private Network).

Summary of why Private 5G is important to our industry

An estimated 80% of global trade is handled at Ports. Ireland, as an island nation, its Ports are critical infrastructure to the mere functionality and viability of the country. 90% of Ireland's traded goods pass through our commercial Port network, highlighting the importance of the industry. In order to maximise the potential of our Ports and keep pace with our peers in Europe and globally, it is essential that we utilise the most modern and advantageous technology to streamline Port operations.

5G has the potential to revolutionise Ports. From improvements to existing communication and tracking software, to implementing cutting-edge technology, such as staff communications, autonomous vehicles, computer-visualisation for security and traffic flow management, survey drones and augmented reality (AR).
Modern cranes are now equipped with the ability to be connected to 5G cellular networks for remote operation. These advancements not only increase a Port's productivity, but also improve the safety of workers, with advancements such as remote crane operations, wearable technology like man-down alarms for lone workers and AR ensuring safer working environments.

After observing the experiences of our peer companies across the UK, EU and rest of the world, we have arrived at the following conclusions

- 5G networks built by or for the manufacturer are crucial to delivering the network performance required
- Spectrum needs to be made available directly to enterprises, not via a mobile network operator, as operator network requirements and economics are not well aligned with Port requirements
- The licensing model should be cheap and simple to navigate
- 'Pop-up' licences should be available for a distinct area and for a short period of time to cover maritime festivals such as Seafest, Tallships Race etc. These licences should be cheap and easily accessible
- 'Permanent' licences should be available to enable the use of 5G at specific sites eg storage facilities, terminals, offices, etc
- These 'Permanent' licences should last for a minimum of 10 years, as companies cannot justify financial outlays if the licence periods are of a short duration

The issuing of spectrum to Mobile Operators ("**Mos**") alone has been shown in other markets to necessitate the involvement of a company with little experience or understanding of the industry in every aspect of the business. Requiring businesses to rely on MOs for cellular service also adds cost, as the spectrum issued to Operators is then rented at a profit to enterprises. It also complicates the process, since the MOs often engage in a "one-size-fits-all" approach which is not flexible enough to meet the Port's needs.

Public networks are also not a feasible alternative, as most public networks are 5G non-standalone (**"NSA"**) meaning technological innovation over 5G such as network slicing, ultra-low latency are not available over public 5G networks.

For these reasons, private 5G networks are the best solution available to Port operators. Private cellular 5G networks are the more secure and efficient option and businesses do not need to sacrifice control for convenience and ease of use.

Experience in other markets

UK Experience

Several UK ports have deployed private 5G on spectrum issued directly to the Port. This activity has been sponsored by the UK Government under a number of initiatives. Some examples include:

The *Port of Tyne* has deployed a private 5G network across its southern cargo terminal and industrial site in South Shields in the northeast of England. The northern side is home to a car terminal, cruise terminal and ferry terminal, which is expected to be connected on private 5G in the future.
https://www.rcrwireless.com/20231102/internet-of-things/port-of-tyne-in-uk-gets-private-5g-network-from-bt-and-ericsson

The *Port of Southampton* uses a private 5G network to streamline processes and manage the huge volume of commercial, industrial and passenger traffic.
https://www.verizon.com/business/resources/customer-success-stories/associated-british-ports/

The *Port of Blyth* worked with Boldyn Networks to establish a world-class 5G Innovation Lab in the Port, enabled by a private 5G. The 5G innovation lab will provide businesses with access to ultra-fast connectivity, innovation facilities and co-working spaces, in a boost to the regional economy.
https://www.boldyn.com/news/port-of-blyth-becomes-tech-hub-with-private-5g-network-innovation-lab

Belfast Harbour worked with BT to build and manage a live 5G Private Network designed specifically to achieve the highest levels of ultrafast mobile connectivity, coverage, reliability and security across the Port's main operational areas.
https://www.belfast-harbour.co.uk/news/bt-and-belfast-harbour-partner-to-build-the-uk-and-ireland-s-fir-269/

German Experience

At the ports in Hamburg, Kiel, Bremerhaven and Wilhelmshaven, the 5G business customer solution "Campus network L" will improve mobile coverage at the container terminals. This will enable the container terminal operator to deploy digital logistics applications even more securely and with greater flexibility in the future - with exclusive bandwidth, high availability and full 5G performance.
https://blog.privatenetworks.technology/2024/04/deutsche-telekoms-campus-network-l-for.html

French Experience
Port Le Havre has partnered with Nokia to test private LTE/5G use cases that can be rolled out across the Seine Axis Ports of Le Havre, Rouen and Paris from 2021. The 5G network will help Le Havre to keep pace with its competitors and to meet the growing logistical demands resulting from increasing traffic in the port.
https://www.analysysmason.com/contentassets/f3ebeb02b0454ed191e09b55b623c8e4/analysys_mason_le_havre_port_case_study_january2022_rma17.pdf

Other EU Experience
Netherlands
The Port of Rotterdam, Europe's largest Port and its terminals, the Euro-Next Terminal and ABM Terminal, are live on 4G and upgrading to 5G
https://www.portofrotterdam.com/sites/default/files/2023-06/5g-communication-port-of-rotterdam-en.pdf

Belgium
The Port of Groeninge is rolling out 5G to improve productivity and work towards innovation.

Hungary
The intermodal East-West Gate shipping terminal, opened in 2022 in Hungary, was equipped with a private 5G network. The terminal's private 5G network has increased productivity, reduced the facility's personnel-related operating expenses and eliminated the possibility of crane operator injury due to remote-controlled operation.
https://www.rcrwireless.com/20240516/fundamentals/smart-ports-in-europe-five-key-private-4g-5g-deployments
https://www.porttechnology.org/news/europes-largest-intermodal-5g-terminal-opens-in-hungary/

USA Experience
The *Port of Virginia*, USA, has its own private 5G network, which enables an autonomous trucking program while also laying the foundation for future smart ports technology.
https://www.ericsson.com/en/blog/2023/11/private-5g-cellular

Oakland Maritime Support Services at the *Port of Oakland* has agreed to work with a private cellular network operator to implement a private mobile network at the port, offering Long Term Evolution (**"LTE"**) and 5G connectivity. The new connectivity network will be used to enable multiple intermodal container yard management applications in the first phase and new smart port use cases and applications in follow-on phases.
https://smartmaritimenetwork.com/2021/06/09/port-of-oakland-to-build-private-5g-network/

Asia / MidEast
Leading global Port operators including DPW (Dubai Port World) and Hutchison Whampoa are actively exploring private cellular networks at ports throughout Asia and the mid-east.

The port of Nagoya, Japan's biggest port, uses a private 5G network to improve efficiency and safety.
https://www.port-of-nagoya.jp/english/

In Conclusion, Ports act as a gateways for trade into and out of Ireland, as well as a hub for culture and commerce. Because of this, it is essential that we keep pace with the technological advancements occurring in Ports around the world. The most potent of which right now is the equipping of 5G and all the subsequent developments it brings.

Private 5G has the potential to be the most important technology for Port operators. Tetra communications are moving to 5G in which many Ports are part of the Major Emergency Planning in Ireland, low latency to enable automated operations in a safer way, therefore it would be greatly advantageous for the Ports here to enjoy the same unfettered low-cost access to the 5G spectrum that our counterparts already enjoy in many EU countries.

Brian Sheridan

Captain Brian Sheridan
Harbour Master
Port of Galway

1. Company description - 1 paragraph

TITAN, an Irish company, is deeply involved in providing innovative IT and communications solutions to industries, specialising in the integration of advanced fiber, wireless, and cellular technologies. We implement high-speed fiber optic networks to ensure reliable, high-capacity data transmission. Our wireless solutions offer the flexibility and mobility needed for seamless connectivity across various environments. Additionally, we deploy robust cellular networks, including 4G and 5G. Through these efforts, we empower industries to achieve greater efficiency, scalability, and adaptability in the digital age.

www.titan.ie

2. Summary of why Private 5G is important to our industry

From a very low base in the 1920's Ireland now has an annual manufacturing output of over $200 billion and is at the forefront of global manufacturing in pharmaceuticals, medical devices, electronic components and food and beverages. Industry 4.0, the integration of intelligent digital technologies into manufacturing and industrial processes, has been described as the next Industrial Revolution. To maintain our global position and remain attractive as a location for establishment of both domestic and multinational manufacturing industries it is crucial that the adoption of modern manufacturing technologies is enabled as much as possible.
A key enabler for industry 4.0 is very high-speed, high-capacity, low-latency wireless communications. Manufacturing industries around the world are beginning to take advantage of 5G cellular networks ability to
(1) increase network transmission speed and network capacity
(2) deliver deterministic reliability
(3) dramatically reduce latency.

The use of 5G allows manufacturers a competitive edge, as they are then able to access new technologies which reduce downtime and produce better products, with ubiquitous Internet of Things (IoT), autonomous mobile robots, Digital Twins and augmented reality (AR) being just a few examples.

In the current market, the need for ever-increasing amounts of information to be communicated faster, more reliably and more securely is pushing beyond the limits of traditional wired and Wi-Fi networks. Therefore, ease of access to 5G networks for manufacturers is essential.

In reviewing the experiences of peer companies across the UK, EU and further afield, we have come to the following conclusions:

- 5G networks built by or for the manufacturer are crucial to delivering the network performance required. 5G is a

- Spectrum needs to be made available directly to enterprises (not via a mobile network operator)
- The licensing model should be cheap and simple to navigate
- ‘Pop-up’ licences should be available for a distinct area and for a short period of time to cover a particular event, such as product demos. These licences should be cheap and easily accessible
- ‘Permanent’ licences should be available to enable the use of 5G at specific sites eg company warehouses, factories, etc
- These ‘Permanent’ licences should last for at least 10 years, as companies cannot soundly make investment decisions if they are not sure that they will have the licence for at least a decade

The issuing of spectrum to Mobile Operators (MOs) alone requires businesses to rely on Operators for access to cellular service. In industries such as manufacturing, necessitating the involvement of MOs leads to numerous drawbacks. It leads to the involvement of a company with little to no understanding of the industry in every stage of the manufacturing process. Often the MOs preferred “one-size-fits-all” approach is incompatible with the businesses requirements, as they lack full control of their network and are unable to customise it to suit their needs. Furthermore, MOs may charge service fees or slow down the network if it exceeds their monthly limits. This can prove devastating for the manufacturer.

Public networks are also not a feasible alternative, as most public networks are 5G non-standalone (NSA) meaning technological innovation over 5G such as network slicing, ultra low latency, etc are not available over public 5G networks.

For these reasons, private 5G networks are the best solution available to manufacturing companies. Private cellular 5G networks are the more secure and efficient option, and businesses do not need to sacrifice control for convenience and ease of use.

3. Experience in other markets

3.1 UK Experience

Swedish industrial machine maker Atlas Copco has reopened a UK facility as a smart factory and innovation centre with a private 5G network. The newly established smart factory leverages private 5G technology to enhance its production capabilities. This setup includes 5G-enabled tool control software, inspection and error-proofing solutions, and 3D laser technology.
https://tecknexus.com/5gusecase/atlas-copcos-new-uk-smart-factory-features-ericsson-5g/

3.2 German Experience

Bosch has built a private industrial 5G network at its semiconductor factory in Reutlingen, Germany
https://5gobservatory.eu/wp-content/uploads/2022/04/5.6.pdf

3.3 French Experience

Airbus is deploying a private 5G communications network across their production locations and final assembly line in France. This offers uninterrupted connectivity wherever the network is in use, even in areas where coverage was previously patchy or non-existent
https://www.airbus.com/en/newsroom/stories/2024-06-the-future-is-calling-unveiling-airbus-private-5g-network

3.4 Other EU Experience
Agnico-Eagle Finland Oy is installing a private 5G standalone network in the gold mine in Finland
https://5gobservatory.eu/nokia-to-build-private-5g-network-in-finnish-goldmine/

3.5 US Experience
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https://www.ericsson.com/en/about-us/company-facts/ericsson-worldwide/united-states/5g-smart-factory

3.6 Aisa
Midea, AIS, China Unicom, and Huawei have jointly implemented the first 5G fully-connected factory in Southeast Asia. Harnessing the comprehensive 5G network coverage of the Midea Industrial Park in Chonburi and a 5G+ industrial Internet platform, each production phase is seamlessly connected through 5G terminals to enable faster machine operation
https://www.huawei.com/en/news/2024/5/first-5g-fully-connected-factory

4. Summary

Effective digital communication is the cornerstone of the manufacturing industry. And as the demand for increasingly larger bundles of information to be sent reliably grows, it is crucial that we make use of every technological advantage available in order to keep up with the industry globally.

Private 5G has the potential to be the most important technology in manufacturing, therefore it would be massively advantageous for the manufacturing industry here to enjoy the same unfettered low-cost access to the 5G spectrum that our peers already enjoy in many EU countries.

1. Company description

UMAC Systems Ltd is a Systems Integrator and Machine Builder. Our Head Office is in the Kells Enterprise and Technology Centre, Cavan Rd, Kells, Co. Meath with a manufacturing site in Limerick and a UK office in Northern Ireland.
The company serves many sectors including medical device, pharmaceutical, food and beverage, Industrial and Municipal Water and Wastewater sectors. UMAC Systems Ltd deliver solutions to complex challenges presented by our clients. We use our experience in Industrial Automation and Control, Telemetry (Cellular and Radio), Networking and Cybersecurity, Electrical & Mechanical design and work with industry leading suppliers to ensure we integrate the latest technology to ensure success of the solutions.
We see Private 5G networks as a key requirement into the future as the cyberthreat landscape grows more complex by the day.

2. Summary of why Private 5G is important to our industry

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4. Summary

Effective digital communication is the cornerstone of the manufacturing industry. And as the demand for increasingly larger bundles of information to be sent reliably grows, it is crucial that we make use of every technological advantage available in order to keep up with the industry globally.

Private 5G has the potential to be the most important technology in manufacturing, therefore it would be massively advantageous for the manufacturing industry here to enjoy the same unfettered low-cost access to the 5G spectrum that our peers already enjoy in many EU countries.

I trust this submission meets with your approval.

Kind Regards,

John Diggin
Engineering Director

UMAC Systems Ltd.
[redacted]

[redacted]

From: Gary Watts [redacted]
Sent: Friday 30 August 2024 13:56
To: Market Framework Consult
Subject: Fwd: Submissions to ComReg Document 24/65

[redacted]

Dear Sir/Madam,
I represent the scout county of 3 Rock , which includes 7 scout groups with over 800 youth members in the south Dublin area. We appreciate the opportunity to provide feedback on the 'Proposed Radio Spectrum Management Operating Plan for 2025 – 2028' published recently by ComReg.
Radio scouting and amateur radio activities are a big part of our county program every year and more and more parents are asking us how their children can progress to get their amateur radio license.
We were delighted to find out in 2022 that the introduction of a novice or entry-level license would be introduced by 2024 and that Radio Scouting Ireland had drafted a comprehensive training program for scouts.
Our groups are now very disappointed to learn that this is now not the case and, worse still, that resources have not even been identified to deliver in 2025 or soon thereafter. Our groups takes part in and supports international camps and we note that many of our European counterparts have had access to novice license regimes for many years and as a result have well-established radio scouting/amateur radio programs. Our children see this and do not understand why it is so difficult to obtain a license in Ireland.
Radio communication is integral to scouting and has been a part of scouting since 1918. The biggest scouting and guiding event every year is a virtual jamboree called JOTA-JOTI where between 80k0-1.2m scouts and guides contact each other via amateur radio as part of a virtual Jamboree each year, something that many of our groups have taken part in every year in October.
Given this context, we hope you can understand how disappointing the lack of progress on the novice license is a key aspect outlined in the 2022-2024 strategy document[1] especially to our youth members.
While we understand that resourcing is required, we believe that the consultation phase on introducing a novice license should begin without delay.
Thank you for considering our feedback. We look forward to your response.
Yours sincerely,

Gary Watts

Gary Watts
3 Rock Scout County Commissioner
Scouting Ireland

5th Mayo Scouts Radio Club

[redacted]

Date 25/08/2024

Via email to marketframeworkconsult@comreg.ie by 17:00 30/8/24

Re: Submissions to ComReg Document 24/65

Dear Sir/Madam,

We appreciate the opportunity to provide feedback on the 'Proposed Radio Spectrum Management Operating Plan for 2025 – 2028'published recently by ComReg.

Radio communication is integral to scouting and has been a part of scouting since 1918. The biggest scouting and guiding event every year is a virtual jamboree called JOTA-JOTI where between 800k-1.2m scouts and guides contact each other via amateur radio as part of a virtual Jamboree each year.

Radio scouting/ amateur radio and STEM activities are an important part of scouting programs every year. The introduction of a novice/ entry level license by 2024 would have brought us in line with many other countries in Europe and around the world. It would have opened up more opportunities for Irish youth to engage with radio technology activities in a more meaningful way.

We are now very disappointed to learn that this is now not the case and worse still that resources have not even been identified to deliver in 2025 or soon thereafter.

While we understand that resourcing is required, we believe that the consultation phase on the introduction of a novice license should begin without any further delay.

Thank you for considering our feedback.

We look forward to your response.

Yours sincerely,

Matthew Garrett & Leonard McDonnell
5th Mayo Scouts Radio Club

17th Dalkey St. Begnets Scout Group, [redacted]
[redacted]
info@dalkeyscouts.ie

Via email to marketframeworkconsult@comreg.ie

Thursday 15 August 2024

Re: Submissions to ComReg Document 24/65

Dear Sir/Madam,

We appreciate the opportunity to provide feedback on the 'Proposed Radio Spectrum Management Operating Plan for 2025 – 2028'.

As a Scout Group committed to engaging young people in amateur radio, we have a vested interest in fostering their participation in radio experimentation. Our group has often participated in the annual 'Jamboree on the Air' which began in1957, an event that now sees participation from an estimated 500,000 scouts worldwide. In my time as a scout, the late Donnachadh O'Shea (EI6BKB) played a pivotal role in running our scout den's radio station, inspiring many scouts to become amateur radio operators and pursue careers in the communications industry. To continue this tradition, we have recently established a new radio club under our group club callsign, [redacted].

Radio communication is integral to scouting. PMR 'walkie talkies' aid scouts and leaders in conducting activities and games, while also supporting broader scouting activities such as hiking and camping. Complimenting these activities, scouts can engage in global amateur radio initiatives like 'Summits on the Air' and 'Parks on the Air' with the assistance of licenced amateurs. In an era dominated by mobile phones and Wi-Fi, I have seen young people are fascinated by the simplicity and effectiveness of communicating across Europe using just an HF radio, battery, and antenna from the top of a hill.

Given this context, it is disappointing to note the lack of progress on the novice license, a key aspect outlined in the 2022-2024 strategy document[1]. The current strategy appears to be a step backward, as it suggests that work on the novice license framework will only begin once project resources are identified. This raises several questions: What specific resources are required? How long will it take to secure them? What steps have ComReg taken to identify and obtain these resources since the previous policy publication?

[1] https://www.comreg.ie/media/2022/07/ComReg-21-136-Radio-Spec-Management-Sp-Statement.pdf

Moreover, the proposed strategy document asserts that "the absence of a novice licensing regime is not currently impeding anyone from learning about electronics or radio propagation," citing alternatives such as PMR446, CB, and LoRa, as well as online propagation tools. This statement is concerning. While PMR446, CB, and LoRa have their merits, they do not offer the same opportunities for experimentation and access to the HF spectrum or microwave frequencies, which are increasingly important with satellite operations. This perspective seems to reflect a lack of understanding of the different frequencies, modes, and power levels involved. ComReg's stance is inconsistent with CEPT's ECCREP089[2], which emphasizes that "Access to HF frequencies is crucial to the success of the entry-level license" and that "Entry-level licensees must have sufficient spectrum and operating privileges to communicate with and learn from the wider radio amateur community." It is worth noting that ECCREP089 was published 18 years ago, in 2006.

Ireland is falling behind its European counterparts, with 31 countries in Europe already having novice licenses in place[3]. We are losing ground. Therefore, we strongly urge ComReg to allocate the necessary resources and commit to establishing a novice license by 2028 as part of the 2025-2028 strategy.

While we understand that resourcing is required, we believe that the consultation phase should begin soon to gather input from stakeholders on the rights a novice license should entail, considering the implementation and experiences of other CEPT countries. We support the examination approach proposed in the 2022-2024 document, where the "examination is best offered online and, as a consequence, can be taken at any time." We believe a third party with expertise in online certification could effectively manage this, with ComReg and the IRTS providing the question pool and format.

Thank you for considering our feedback. We look forward to your response.

Yours sincerely,

Albert White [redacted]
Group Leader, 17th Dalkey
www.dalkeyscouts.ie

[2] https://docdb.cept.org/download/409
[3] https://www.veron.nl/wp-content/uploads/2023/05/CEPT_landen.pdf

[redacted]

From: delta mike [redacted]
Sent: Wednesday 28 August 2024 12:07
To: Market Framework Consult
Subject: Re: Submission to ComReg Document 24/65

Dear Sir/Madam,

I greatly appreciate the opportunity to provide feedback on the "Proposed Radio Spectrum Management Operating Plan for 2025 – 2028" published recently by ComReg

The importance of Amateur radio is recognised within the context of global and EU regulations and communications across many policy areas. CEPT also notes the role of amateur radio in fostering innovation. Amateurs frequently contribute to technological advancements by experimenting with new modes of digital communication, software-defined radio technologies, and satellite communications, pushing the boundaries of what is technically possible in radio communications.

In September of 2021, the Irish regulator ComReg issued a document titled... "Proposed Strategy for Managing the Radio Spectrum 2022 to 2024". The consultation was widely well received and in response to this document, COMREG received 26 submissions related to amateur radio. ComReg recognised wide support for a form of entry-level or novice-level licensing and ComReg stated in Section 4.61 of ComReg-21136a.pdf, that

It is very disappointing that ComReg has failed to put in place a framework for novice licensing in Ireland within the timeline of their strategy statement (2022-2024) as it intended, I note that it is included in latest strategy consultation, ComReg-24/65, however no resources have been identified to complete this work.

I would urge ComReg to prioritise the introduction of a novice licensing scheme in Ireland similar to other countries as per the CEPT recommendations.

Name] David Maxwell

[Address] [redacted]

East Leinster Amateur Radio Club (ELARC)

Submissions to ComReg Document 24/65

Proposed provision of a 'Novice' level amateur radio licence in Ireland

Responding to ComReg document 24/65, the East Leinster Amateur Radio Club (ELARC) wishes to raise its concerns on the lack of progress towards the provision of a 'Novice' level licence for amateur radio operators in Ireland and wishes to contribute in a positive manner to ComReg's consultation process.

ELARC favours the introduction of a 'Novice' level licence as a way to introduce interested individuals to the practical and operational requirements of safely and effectively operating radio transmitting and receiving equipment.

ELARC considers that Ireland lags behind other European countries in the introduction and availability of a 'Novice' licence as per the European Conference of Postal and Telecommunications Administrations (CEPT) recommendations in ECCREP089 (2006).

Thirty countries in Europe within CEPT, of which eighteen are within the European Union, have introduced a 'Novice' level licence (See ECC Recommendation (05)06 Annex 2 as updated in February 2024). Norway is considering the introduction of a 'Novice' licence.

ELARC feel that a 'Novice' licence would have two types of distinct benefits:

1. Education:
    a. The opportunities afforded to Transition Year students and all ages in Scouting and Guiding in developing new 'real world' skills by combining radio technology with Maker type projects. Such projects with real practical technology are very beneficial to students and can open new career paths.
    b. A 'Novice' level amateur radio licence would present considerable opportunities for experimenting with antennae, propagation, EMC and Station Layout. Such experimentation is unavailable with PMR446 and only on a limited basis with LoRa.
    c. A Novice licence will allow holders to benefit from an established network of clubs and knowledgeable experienced amateur radio operators across the country. This will greatly improve the learning environment for the novice. Such networks are not available within PMR446 or LoRa.
    d. As well as secondary level schools, scouting, guiding and amateur radio clubs, Maker Spaces, Coder Dojos and Men's Sheds will be able to teach the 'Novice' licence syllabus.

e. A 'Novice' licence would be of benefit to secondary-level science teachers and teachers of other STEM and communications-related subjects. It would also be of benefit at third-level to lecturers, students and postgraduate students by enabling the practical testing of otherwise theoretical concepts.

2. Social Cohesion:
   a. A 'Novice' licence, because it offers an easier entry route to amateur radio, will increase the total number of amateur operators in Irish society. It is well established that amateur radio operators can provide a durable and resilient communications network in times of disaster or a communications emergency. Examples of this include the East Leinster Amateur Radio Club (ELARC) and the Amateur Radio Emergency Network. Having a greater number of Amateur operators in Irish society will improve the resilience of many communities, especially in rural Ireland where electrical power outages are commonplace during extreme weather.
   b. 'Novice' operators with UHF and VHF licence privileges will increase the traffic on sometimes quiet repeater systems around the country. This will improve local amateur radio activity at club and community level.

On behalf of the East Leinster Amateur Radio Club:

Johnnie McGee [redacted] Chairman, ELARC

Michael Kennedy [redacted] Secretary, ELARC

Galway Radio Club

August 28, 2024

To: [redacted]
From: Galway Radio Club
Subject: Submissions to ComReg 24/68

Dear David,

We refer to the “Proposed Radio Spectrum Management Operating Plan for 2025-2028" (Comreg-24/65 dated 01-August-2024), specifically sections 3.12 and 6.58 which references a framework for novice licences in Ireland for Radio Amateur Services.

In 6.61, ComReg proposes to begin a comprehensive review of a novice licensing framework, among other items. We welcome the inclusion of this review to the operating plan, and urge that this be prioritised within the 2025-2028 timeline.

As a club, we believe it is vital to the future of Amateur Radio Services in Ireland to provide an easier pathway for the inclusion of people of all ages to this Radio related STEM resource.

We note that in section 6.59 ComReg states that the absence of a novice licence does not impede anyone from using simple radio communication methods (e.g. LoRa, PMR or CB) which are accessed on a licence exempt basis. However, it is important to remember that these methods are generally simple black-box plug and play formats, requiring very little educational or technical background. On the other hand, the Amateur Radio Service is based on a broader understanding of Radio Communications across multiple protocols, covering a wide range of frequency bands (HF, VHF, UHF and Microwave).

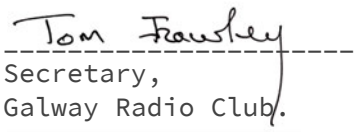
A novice licence would introduce the licensee to an easier path of Radio Communication Technology, requiring them to meet a minimum standard on the importance of regulation, health & safety and technical competency.

Introduction of a Novice Licence would align ComReg's Amateur Radio Service with other European countries and other countries such as the US. As a very recent example, Germany introduced a three-tiered amateur radio licence which was to become effective in June of this year 2024.

We also note that Radio Scouting Ireland is requesting the introduction of a novice licence framework and we strongly endorse their request.

In conclusion, we note the results of a survey of IRTS members a number of years ago. Two of a number of key areas were highlighted as necessary to support the growth in Amateur Radio Services in Ireland. The first key area was in the introduction of Amateur Radio as part of STEM education, and the second was a specifically targeted need for more youth in Amateur Radio. Both of these areas can be met with the introduction of this novice licence framework.

Regards,
Tom Frawley



Secretary,
Galway Radio Club.

Irish Radio Transmitters Society

Amateur Radio In Ireland

Since 1932

Irish Radio Transmitters Society
PO Box 462
Dublin 9
Ireland

Commission for Communications Regulation
One Dockland Central
Guild Street
Dublin 1
Ireland
D01 E4X0

28/8/2024

Dear Sir's

Thank you for publishing ComReg upcoming program of work for 2025-2028 and the opportunity to comment on same. The IRTS recognises its past good working relationship with ComReg and thanks ComReg for its ongoing professional and efficient manner in which it deals with the society and its members, especially in relation to the exam management and issuing of new callsigns.

It is however unfortunate ComReg is not afforded the resources to complete the work on both the section 3.71 (c) novice licence and section 3.71 (d) general increase in transmission power in the 2022/2024 period as hoped, however we look forward to engaging with Comreg on both these matters and the other items in section 6.2.10 in the near future and hopefully not at the end of another four-year period.

Market surveillance of products

In relation to 3.2.3, Market surveillance of products, It's a welcome decision that ComReg has taken a active role in the fight against EMF, We hope there will be resources allocated to this area to address the growing influx of uncompliant product been sold with CE marks on the box, as an example there is a rapidly developing market for Solar PV systems, however where they are poorly installed and or using cheap quality inverters (with poor or no filtering) our members are seeing an increase in wide band interference on the radio spectrum.

Consumers are unaware of the effects their installations are causing and unwilling in most instances to cooperate with anybody that isn't representing an enforcement agency on the matter, some electricians & installers are also impertinent to the matter and not complying with such standards as IEC 60364-7-712 "Low voltage electrical installations – Part 7-712: Requirements for special installations or locations – Solar photovoltaic (PV) power supply systems", or even basic bonding.

Traditional Radio Amateurs would have had a cordial relationship with their neighbours and offer take it upon themselves to remedy the source of interference, however the costs involved in resolving / replacing the defective systems is prohibited and the consumers in many cases are uninterested in entertaining callers to address a problem they cannot see. This has made the reception of signals

impossible in numerous cases and getting more widespread.

We would ask for much more than a media campaign on this subject and some real enforcement to be deployed in an effort to prevent the airways been completely overrun. On the matter of Solar PV alone, it may be prudent of ComReg to relay the importance of controlling EMF to Safe Electric and SEAI who are responsible for the supervision and cofounding of these systems. Although a device like a Solar PV inverter may not be considered a transmitter, with poor filtering it can use the DC cables and solar panel array as an antenna to amplify its imperfections for 100's of meters.

The testing and removal of uncompliant products from the European market is something that is been poorly maintained at EU level. Many of the products seen on the market are self-certified by the manufacturers and stamped with a CE mark. The consumer, retailer and Custom's will therefor believe this product to be bona fide however there are many examples of uncompliant products been sold with no repercussions.

We would welcome ComReg's views on this matter and hope our members may avail of ComReg assistance in dealing with EMF and wideband interference (especially with Solar PV now) and hope ComReg can do more to promote the

awareness of the proper use of electronics in a non-interfering manner, especially by those installing such systems professionally.

The 23 cm spectrum band (1240 – 1300 MHz) Section 6.64-6.67

The IRTS welcomes ComReg's view expressed in section 6.67 "There have been no cases of harmful interference to the RNSS where the cause of the interference is related to Amateur radio operation. Therefore, implementing the guidance in M.2164 is not a proportionate action;" and wishes to advise ComReg of an upcoming "ECC Report 359" expected to be published in September giving greater details on this subject that would support a similar view.

Novice options

Throughout the document "Proposed Radio Spectrum Management Operating Plan for 2025 - 2028" ComReg highlights how it is in keeping in line with CEPT policy, however the views expressed in relation to the novice licence topic are at odds with this. In looking for a pathway to introduce such a licencing grade in Ireland, CEPT already has such a process in place, with many other EU states participating (see https://docdb.cept.org/download/4413) adopting a similar approach would afford greater flexibility between visiting licences from other nations and in reverse the ability for Irish novice stations to bring their hobby with them as they travel.

A sample case for the CEPT novice licence

We are working to develop our youth membership, while studying the course they are also at an age where there are other draws on their time, often coinciding with leaving cert or college course work which is rightly taking precedence, getting them through a full course in one go can be a challenge, so having the option to progress in stages with a reward of some privileges or restricted access as they advance would allow them to develop a better practical approach.

An example of this is evident when we send youth members to an annual international camp (https://www.ham-yota.com) where they meet their counterparts, many of whom are on a similar development path, however our counterparts are showing more advanced confidence and skillsets through their development programs and hands on activity through a novice path.

Radio Amateur Development

The Society is very happy to see the pass rates published for the HAREC exam showing rising numbers year on year, indeed a lot of work has been done to

a) improve the delivery of a training program
b) improve the quality of the training material
c) encourage greater numbers to take the course

On a positive note, as ComReg has also shown, there has been an increase in the numbers taking up the hobby of Amateur Radio and applying for a licence on passing the exam.

However, this has also had the inverse effect of deterring some from completing the course and walking away from the hobby, considering the bar to be too high to achieve in one jump, each year we see over 30% dropping off before sitting an exam and a further 15-20% needing to retake it. We have seen several Irish people opting instead for the UK exam process, whereby they can progress in stages and once fully qualified then apply for a reciprocal full Irish licence, therefor losing out on the benefit of learning from our syllabus and also adding the inconvenience to citizens to take such an obscure route.

Although the Amateur radio community doesn't contribute to the financial running of ComReg in any meaningful way we would hope this does not mean we are not to be afforded the necessary consideration to enhance the hobby for the benefit of all. One can only surmise that the continuous pushing out of the timeline to address the requests made in 2021 and scheduled in the 22/24 program, is most lightly as a lack of available resources, whether through budget or more lightly the availability of skilled RF engineers, as is seen across the telecoms industry nowadays.

In the future where are these people with an interest in electronics & RF going to come from?

Promotion & Development

The IRTS, Radio Clubs and Amateur Radio Operators throughout the country are playing a large part in promoting and fostering the interest and basic development in the very area ComReg and the telecommunication industry will depend on in years to come.

Work done through programs like Radio Scouting offers a gateway to a possible future in communications. Without hands on activities like this an interest in what is a niche employment market will disappear, while every kid knows how to use a phone today there is no concept amongst them as to how the signal or data reaches them!

We have seen additional resources been afforded to Radio Amateurs in other European regions showing the importance that the hobby plays in society, we hope ComReg is of a similar mind when addressing the future development plans outlined in section 6.2.10. We welcome the forthcoming opportunity to engage in detail and expand on these points.

Yours faithfully,

*Sent by email hence no signature

Irish Radio Transmitters Society

[redacted]

From: [redacted]
Sent: Monday 26 August 2024 22:37
To: Market Framework Consult
Subject: Submissions to ComReg Document 24/65

[redacted]

Via email to marketframeworkconsult@comreg.ie
Re: Submissions to ComReg Document 24/65
Dear Sir/Madam,

We are one of the oldest scout troops in Ireland, founded in 1910 by Lord Powerscourt. We have over 160 active members and a waiting list of 420 youth applicants. We appreciate the opportunity to provide feedback on the 'Proposed Radio Spectrum Management Operating Plan for 2025 – 2028' published recently by ComReg.

Radio scouting and amateur radio activities are a big part of our program every year and more and more parents are asking us how their children can progress to get their amateur radio license. We were delighted to find out in 2022 that the introduction of a novice or entry-level license would be introduced by 2024 and that Radio Scouting Ireland had drafted a comprehensive training program for scouts.

We are now very disappointed, as are our members, to learn that this is now not the case and, worse still, that resources have not even been identified to deliver in 2025 or soon thereafter. Our group takes part in and supports international camps and we note that many of our European counterparts have had access to novice license regimes for many years and as a result have well-established radio scouting/amateur radio programs. Our children see this and do not understand why it is so difficult to obtain a license in Ireland.

Radio communication is integral to scouting and has been a part of scouting since 1918. The biggest scouting and guiding event every year is a virtual jamboree called JOTA-JOTI where between 80k0-1.2m scouts and guides contact each other via amateur radio as part of a virtual Jamboree each year.

Given this context, we hope you can understand how disappointing the lack of progress on the novice license is a key aspect outlined in the 2022-2024 strategy document[1] especially to our youth members.

While we understand that resourcing is required, we believe that the consultation phase on introducing a novice license should begin without delay.

Thank you for considering our feedback. We look forward to your response.

Yours sincerely,

_____

Katie Wilkie
Group Leader
10th Kilternan Scout Group

[1] https://www.comreg.ie/media/2022/07/ComReg-21-136-Radio-Spec-Management-Sp-Statement.pdf

Submissions to ComReg Document 24/65

The Limerick Clare Amateur Radio Club (LCARC) endorses ComReg's proposed comprehensive review of the 24/65 Radio Spectrum Management Operating Plan 2025-2028. We firmly believe that this thorough examination is essential to ensure that Ireland's radio spectrum regulations remain adaptable to the dynamic landscape of radio communications, while safeguarding the spectrum's integrity and fostering responsible usage.

To contribute to this important review, we would like to highlight several key areas that we believe warrant particular attention.

Radio Frequency Interference Investigations (ComReg 24/65: 3.2.1)

The LCARC is concerned about the increasing number of complaints regarding Radio Frequency Interference (RFI) caused by poorly installed solar energy systems. Such systems can emit spurious emissions that disrupt legitimate radio communications including those used for emergency services, air traffic control, and amateur radio.

We urge ComReg to take proactive steps to address this issue such as:

(a) ComReg should strengthen its enforcement efforts to ensure that solar installers comply with relevant regulations and standards regarding RFI emissions.
(b) Raising public awareness about the potential for RFI from solar installations can help consumers make informed choices when selecting installers and equipment.
(c) ComReg could provide technical guidance to solar installers on how to minimise RFI emissions, such as through proper installation practices and the use of compliant equipment.

Through such measures, ComReg can help to protect the integrity of the radio spectrum and ensure that solar energy installations are installed in a manner that does not interfere with essential communications services.

Novice licencing (ComReg 24/65: 3.71 (c), 6.58, 6.59 and 6.61)

Regarding the introduction of a novice licensing framework, we urge caution. While we understand the desire to attract new entrants to amateur radio, we believe that it is crucial to maintain the integrity of the amateur service. A novice licence should not be seen as a substitute for the Harmonised Amateur Radio Examination Certificate (HAREC).

If a novice licence is introduced, we propose that it be time-bound and tied to an attempt at the full HAREC licence exam within a period of two years. This would ensure that individuals who obtain a novice licence are motivated to progress and acquire the necessary skills and knowledge to become fully qualified amateur radio operators.

The recent success of the National ShortWave Listeners Club (NSWLC) online courses in Ireland have demonstrated that the HAREC licence is very achievable with the right resources and dedication. By providing accessible training and support, we can encourage more people to pursue the HAREC qualification and contribute to the vibrant and diverse amateur radio community in Ireland.

Regarding point 6.59, we are in agreement with ComReg's assessment. The absence of a novice licensing regime does not currently impede anyone from learning about electronics or radio propagation. There are numerous opportunities for individuals to explore these fields through other means, including the online courses of the NSWLC.

We believe that a well-structured novice licensing framework, if implemented, should complement these existing opportunities and provide a clear pathway for individuals who wish to become involved in amateur radio. However, it is essential that such a framework does not compromise the standards and requirements for obtaining a full HAREC licence.

Increase in permissible power (ComReg 24/65: 3.71 (d), 6.62)

The LCARC urges caution regarding the consideration of a general increase in permissible power for all licensees. While we understand the desire for greater flexibility and the potential benefits of higher power levels, we believe it is essential to carefully weigh the potential downsides. A race to the top in terms of power could have several negative consequences:

(a) Higher power levels can lead to increased interference on the bands, making it more difficult for operators, particularly those using low-power equipment, to communicate effectively.
(b) The practice of low-power operation (QRP) is an integral part of amateur radio, offering unique challenges and opportunities. Increasing the permissible power could discourage QRP operators and limit the diversity of amateur radio.
(c) While the risk of injury from exposure to Radio Frequency (RF) radiation is generally low, operating at higher power levels can increase the potential for exposure. It is essential to ensure that any increase in permissible power is accompanied by appropriate safety guidelines and regulations. Additionally, the possibility of inexperienced licensees electrocuting themselves when experimenting with linear amplifiers should be addressed. While linear amplifiers can be a valuable tool for many operators, they require careful handling and a sufficient understanding of electrical safety principles. It is essential to provide adequate education and training to ensure that licensees are aware of the risks and can operate their equipment safely. We believe that the current 400W limit for most High Frequency (HF) communications is sufficient for the vast majority of amateur radio operators.

By maintaining a balanced approach to power levels, we can ensure that the amateur bands remain accessible to operators of all skill levels and backgrounds, while minimising the potential negative impacts of excessive power levels.

Portable operation (ComReg 24/65: 6.3)

The LCARC is supportive of adding the suffix **/P** to a call sign to signify portable operation. Mobile and low power operation (QRP) is a specific area within amateur radio and is a popular activity among many amateur operators. This practice allows for greater flexibility and convenience, as it enables amateur operators to operate from various locations without the need for a fixed station. QRP enthusiasts often enjoy the challenge of making contacts with minimal power, and they appreciate the portability that **/P** suffixes afford.
The LCARC also welcomes ComReg consideration of the limitations applicable to mobile operations; and the limitations applicable to maritime-mobile operations.

By addressing these issues, ComReg can help to ensure a thriving and sustainable radio communications environment in Ireland for years to come.

On behalf of the Limerick Clare Amateur Radio Club.

Dr Diarmuid Ó Briain
Chartered Engineer

Callsign: [redacted]

Reference: Submission regarding ComReg 24/65

Dear Comreg.

On behalf of the 17 Meath, Longwood Scout group, we welcome this opportunity to provide input regarding the Radio Spectrum management operating plan for 2025 – 2028 consultation.

The 17th Meath, Longwood scout group as an affiliated member of scouting Ireland. Through our various youth-led programmes, we deliver a range of opportunities for young people to develop their skills, talents and leadership potential through outdoor adventure. Our programmes focus' on a system of progressive self-education, known as the Scout Method, which aims to nurture the mental, physical and holistic growth and development of young people of all ages.

Over the last number of years our program has included STEM related activities including amateur radio. This culminates every year in a global meeting of scouts via JOTA-JOTI, Jamboree on the air.

After every JOTA-JOTI event we have a number of scouts and Scouters (scout leaders) who express an interest in becoming amateur radio operators. While a few scout leaders have made the cut and are now licensed operators, none of our scouts have made it. This is primarily because the current licensing requirements are too demanding/time consuming, especially when youth members are so under pressure to perform and get results in their school setting.

We are disappointed that Comreg have not implemented a novice license framework following input provided in consultation reference 21/90, we would welcome Comreg taking action to put this novice licensing framework in place as early as possible during the 2025-2028 operation plan

Yours Sincerely

Niall Duignan

Group Leader 17th Meath, Longwood scout group.

Not Confidential

MARCONI RADIO GROUP

Strongfort Weir, Creggaun, Craughwell, Co. Galway, H91 N6EC

20th August 2024

Ref: Spectrum Management Operating Plan for 2025 – 2028 – ComReg 24/65

Dear Sirs,

The Marconi Radio Group request that you consider some changes to the frequency allocations in the 5.000 – 5.500 MHz band, fully acknowledging that priority must always be given to commercial licensed operations.

Having operated on this band since it became available there are a few points we feel worth making as follows:-

The Irish Power level 200 watts -23 dBW seems adequate at present though ambient noise levels sometimes make communications impossible for distant receiving stations.

Extraneous Digital and RTTY emissions nearby the spot frequencies 5.405 MHz and 5.400 MHz frequently wipe out the possibility of communications these frequencies. These frequencies are also shared by American and Canadian radio Amateurs and when interference is experienced communication becomes impossible with these stations.

The Canadian, USA and UK stations have a further common spot frequency that would also work for Irish stations in these conditions, when communicating transatlantic. That spot frequency is **5.373 MHz**, even as an interim solution for this situation.

Many countries now allow full use unrestricted across the band in all modes.

We would request that a full open band for all modes would be considered, this would be highly desirable as it is then easier to locate an available clear frequency thus avoiding other operators and extraneous digital/RTTY emissions.

Some of these countries allow power up to 1 KW or 30 dBW across the whole band with no reports of interference with commercial or other operations.

An example extract of these countries is listed below:

Iceland	Norway
Denmark	Sweden
Somalia	Barbados
Samoa	

On behalf of the Marconi Radio Group,

Michael Higgins [redacted]

Steve Wright [redacted]

Not Confidential

MARCONI RADIO GROUP

Strongfort Weir, Creggaun, Craughwell, Co. Galway, H91 N6EC

20th August 2024

Ref: Spectrum Management Operating Plan for 2025-2028 - ComReg 24/65 Section 6.62

Dear Sirs,

The Marconi Radio Group welcomes the progress being made in with respect to a general power increase for all licensed amateurs/experimenters concerning our submission , a copy of which is attached for ease of reference.

We have received feedback from Comm Reg and responded to same. In addition, from time to time we have followed up these responses to follow progress and offered any additional information, as requested, that may assist in progressing this application.

See attachment A.

We are delighted to see that Comm Reg are looking favourably towards granting the power sought and good progress is being made.

Our hope is that the power levels as requested on our submission will be granted, and where we have already proven in our operations, " contests" etc, that no adverse issues have arisen.

Table from our submission included separately as an attachment. **See attachment B.**

After much discussion within the Group, we made the application on behalf of all licensees, experimenters/amateurs, in fairness to everyone, and not just the Marconi Group. We received tremendous support from named licensees and many radio experimenter and amateur clubs and groups. Of course, we are aware that not everyone will avail or be able to avail of higher power due to location, antenna height restriction, and other factors allowing full compliance with ICNIRP guidelines and recommendations. We have made ourselves and our group highly aware of these limitations, guidelines , antenna distances and heights relative to power and safety and we trust demonstrated our ability in this regard.

Most suppliers of Higher Power RF Amplifiers provide an easy reference table to assist operators in compliance. **See attachment C**

Higher power means higher responsibility, results in clearer signals reaching distant receivers, imposes responsibility on the operator to be additionally careful in terms of bandwidth, modulation, awareness of over-driving amplifiers and more. Experienced operators understand this well. All members and associates of the Marconi Radio Group are long licenses operators , having been granted their licenses as experimenters , back then most building their own equipment, many are ex Radio Officers, Army Signals members or ex members, Coast Radio ex operators, ATC operators, many more are from the professional communication industry. Nowadays these members are operating state of the art radio equipment. The Marconi Radio Group members regularly assist any amateur/experimenters in solving problems in many areas regarding their stations, antennas and more. We are very aware of keeping the good name

of Ireland and Irish radio operators in the best tradition of friendship, helpfulness and courtesy when "ON AIR".

Higher power is necessary in the present era to overcome the ambient noise levels that have built up over the years through industrialism , power lines, inverters, Christmas lights, modems, and other electronic emitters. The noise threshold is now several times greater that when many of us were granted our experimenter licenses .The permission higher power does not necessarily result in an operator using more power than is necessary, what it does allow is a modest increase sufficient to get over the noise where say a 26db transmitted signal is level pegging with the local noise at a distant receiver, and by increasing this power one can make the desired communication possible.

Ireland was at the forefront of pioneering radio communications back in the 1890s and onward , hopefully the radio signals, voice, morse and digital , from Irish radio experimenters and amateurs will be heard loud and clear into the future.

For the Marconi Radio Group,

Steve Wright - Admin & Secretarial [redacted]

Michael Higgins - Founder Member (Ex Cellcom Radio Network & Wescom Ireland) Tech Articles [redacted]

Rory O Brien - Founder Member (Procom Ireland), Ex R.O. & Technical Admin [redacted]

Michael Burke - Technical advisor - Ex-Army Signals [redacted]

Tom Mc Dermot - (ex-Eastern Communications) Antenna Construction advisor [redacted]

Michael Higgins [redacted]

Stephen Wright [redacted]

[redacted]

Date 26/08/2024

Via email to marketframeworkconsult@comreg.ie by 17:00 30/8/24

Re: Radio Scouting Ireland Submission to ComReg Document 24/65

Dear Sir/Madam,

Radio Scouting Ireland greatly appreciate the opportunity to provide feedback on the "Proposed Radio Spectrum Management Operating Plan for 2025 – 2028" published recently by ComReg. Please find below our submission.

Policy & Regulatory Background

The importance of Amateur radio is recognised within the context of global and EU regulations and communications in the following policy areas:

European Commission's Digital Agenda:
In communications about the Digital Agenda for Europe, the European Commission has highlighted the importance of broadband and electronic communications in promoting societal and economic benefits. Within such frameworks, amateur radio is noted for its role in promoting technical literacy and fostering a community skilled in communications technology.

EU Disaster Risk Management:
EU policies on disaster risk management emphasize enhancing the resilience of communication infrastructures. In this context, amateur radio is noted as an important backup communication system during emergencies. While the EU Cyber Resilience Act does not explicitly mention amateur radio, the principles and goals of the Act—ensuring robust, secure, and resilient communication systems across the EU—align with the capabilities and uses of amateur radio, especially in scenarios where digital infrastructures are compromised.

European Parliament Spectrum Policy:
Discussions in the European Parliament about spectrum policy touch on the need to balance commercial demands with public interest uses of the spectrum, including amateur radio. These discussions often emphasize the importance of preserving spectrum for services that provide societal value, which includes educational and emergency services provided by amateur radio operators. The EU in collaboration with international bodies like the International Telecommunication Union (ITU) supports maintaining specific frequency allocations for amateur radio, recognizing its global importance for non-commercial communication, especially in times of crisis.

The European Conference of Postal and Telecommunications Administrations (CEPT) has acknowledged the importance of Amateur radio in various contexts:

Education and Technical Skills Development: CEPT recognizes that amateur radio plays a significant role in promoting technical literacy. It serves as an educational tool, helping individuals, especially young people, to develop skills in electronics, communications technology, and radio theory. This fosters a deeper understanding of and interest in science and technology fields.

Emergency Communications: One of the most significant aspects highlighted by CEPT regarding amateur radio is its capability to provide reliable communications during emergencies and disasters. Amateur radio operators are often some of the first to establish communications in affected areas, proving essential in times when conventional communication networks are down.

Spectrum Management: CEPT has frequently discussed the need to protect the spectrum allocated to amateur radio services. This recognition comes from understanding that amateur radio not only serves as a hobby but also fulfils critical social functions such as emergency communications and technical education. Ensuring that amateurs have access to necessary spectrum resources is a recurrent theme in CEPT's statements and policies.

International Cooperation and Harmonization: CEPT works towards harmonizing the use of the radio spectrum across Europe and often acknowledges the role of amateur radio in fostering international goodwill and cooperation. Through various agreements, such as the Harmonised Amateur Radio Examination Certificate (HAREC), CEPT facilitates the ease of licensing across different countries, promoting cross-border communication and cooperation among amateurs.

Innovation and Experimentation: CEPT also notes the role of amateur radio in fostering innovation. Amateurs frequently contribute to technological advancements by experimenting with new modes of digital communication, software-defined radio technologies, and satellite communications, pushing the boundaries of what is technically possible in radio communications.

These references and acknowledgments by CEPT and other institutions underline the continued relevance and importance of amateur radio not just as a hobby, but as a vital component of telecommunications infrastructure and technical education within Europe.

ComReg Consultations

In September of 2021, the Irish regulator ComReg issued a document titled *"Proposed Strategy for Managing the Radio Spectrum 2022 to 2024"*. The consultation was widely well received and in response to this document, COMREG received 26 submissions related to amateur radio. ComReg recognised wide support for a form of entry-level or novice-level licensing and ComReg stated in Section 4.61 of ComReg-21136a.pdf, that:

"Taking into account the support expressed for entry-level or novice-licensing and the strong justifications given above, ComReg will seek, in the timeline of this strategy statement (2022-2024) and subject to resources, to put in place a framework for novice licensing in Ireland."

ComReg further stated in paragraph 4.62*, "It is envisaged that to achieve this, ComReg will need to:*

- *Consult on its proposals;*
- *Make new Regulations, with the consent of the DECC Minister under Section 6 of the Wireless Telegraphy Act ,1926, as amended; and*
- *tender for an external party to run any examination that may be required.*
- *At this time ComReg would consider if that examination is best offered online and, as a consequence, can be taken at any time."*

While it is very disappointing that ComReg has failed to put in place a framework for novice licensing in Ireland within the timeline of their strategy statement (2022-2024) as it intended, we note that it is included in latest strategy consultation, ComReg-24/65.

ComReg states it intends to begin a comprehensive review of the Amateur Service licensing regime (including a proposed novice licensing framework) during the 2025-2028 period. It is of great concern that this may just be aspirational as work will only commence "once project resourcing is identified". Given we are years behind many countries in Europe and the world in introducing a Novice license regime, Radio Scouting Ireland would contend that it is not necessary to complete a 'comprehensive review' and would ask ComReg to identify the minimum resources required to focus on the main tasks identified in their last strategy statement, namely the Novice license and power levels consultations.

It is also concerning that in ComReg's latest strategy consultation, ComReg-24/65, that ComReg's position as stated in section 6.59;

"notes that the absence a novice licensing regime not currently impeding anyone from learning about electronics or radio propagation. For example, PMR446, CB, LoRa, etc. can be accessed on a licence-exempt basis. Online propagation tools are also available to assist in learning about radio propagation, for example:
https://rsgb.org/main/technical/propagation/on-line-propagation-tools/ and
https://www.itu.int/en/ITU-R/study-groups/rsg3/Pages/iono-tropo-spheric.aspx"

1.) This text would seem to be at odds with CEPT recommendations in ECCREP089 where CEPT state "Access to HF frequencies is crucial to the success of the entry-level licence" and

2.) This text would also seem to indicate a gap in understanding the vast difference between UHF (PMR446 & LoRa) and upper HF (CB) frequencies in terms of propagation, licenced uses, power and modes.

The basis for a Novice license for EU countries is set out by CEPT in the recommendation document ECCREP089 - **A Radio Amateur Entry Level Examination & Licence.**

The CEPT list of countries that have implemented ECC/REC/(05)06 Novice license is currently out of date, however of 47 countries in Europe 32 have either a CEPT recommendation ECC/REC/(05)06 novice license implemented or have a similar novice license option available as follows:

Albania**, Andorra, **Austria**, Azerbaijan, **Belarus*, Belgium, Bosnia and Herzegovina**, Bulgaria, **Croatia**, Cyprus, **Czech Republic, Denmark, Estonia, France, **Finland**, **Georgia, Germany**, Greece, **Hungary, Iceland**, Ireland, Italy, **Latvia, Liechtenstein, Lithuania, Luxembourg**, Malta, **Moldova, Monaco, Montenegro*, Netherlands, Republic of North Macedonia***, **Norway**, **Poland, Portugal, Romania**, San Marino, Serbia, **Slovak Republic, Slovenia**, Spain, Sweden, **Switzerland**, Türkiye, **Ukraine*, United Kingdom****, Vatican.*

*ECC/REC/(05)06 Novice license implemented according to national amateur radio regulations, but country not included in the List of CEPT Countries (ECC/REC/(05)/06, Annex 2)
**ECC/REC/(05)06 Novice license implemented but a novice license regime in existence

Our members regularly attend and support Irish and international camps and Jamboree's and our youth, and indeed our country, is losing out to compared to many other countries in terms of education, fun and preparedness.

Other countries have developed comprehensive training programs and Radio Scouting Ireland have invested over 200 man hours in developing a scout & guide training program in anticipation of an Irish Novice license. This program was targeted for rollout to scout troops across the country in 2025 and is now delayed.

Radio Scouting Ireland would urge ComReg to prioritise the introduction of a novice licensing scheme in Ireland similar to other countries as per the CEPT recommendations.

Yours sincerely,

_____

Declan McGuire

Chairperson
Radio Scouting Ireland

Shannon Basin Radio Club

www.sbrc.ie

admin@sbrc.ie

Date: 27 August 2024

Reference: **Submission re ComReg 24/65**

Dear ComReg,

On behalf of Shannon Basin Radio Club, we welcome this opportunity to provide input regarding the Radio Spectrum Management Operating Plan for 2025 – 2028 consultation.

Shannon Basin Radio Club is an amateur radio club with over fifty current members from across the midlands and western counties of Ireland.

We are disappointed that the novice licence framework has not yet been put in place following input provided as part of consultation reference 21/90. However, we support and are confident that ComReg will take action to put the novice licencing framework in place as part of the strategy emerging from this current consultation.

We thank you in advance for your consideration and look forward to the outcomes of this consultation.

Yours sincerely,

Patrick O'Connor [redacted]

Owen O'Reilly [redacted]

Keith Nolan [redacted]

[redacted]

Via email to marketframeworkconsult@comreg.ie

Tuesday 27 August 2024

Re: Submissions to ComReg Document 24/65

Dear Sir/Madam,

I appreciate the opportunity to provide feedback on the 'Proposed Radio Spectrum Management Operating Plan for 2025 – 2028'.

- **Novice licence and examinations**
    - It is heartening to see the increase in the number of Amateur licences issued in recent years. However, it is disappointing to see that no progress has been made on a novice licence and I would urge ComReg to begin consultations on this immediately and publish a plan to resource this project, so it is in place by the end of this strategy. This does not need to be delayed into a review of the entire amateur service. CB, LoRa etc. do not meet the aims of the CEPT entry licence.
    - A novice licence would particularly suit younger people in schools, youth groups, and scouts etc. to gain a real-world qualification which is attainable in the confines of extracurricular study. Such a course could be taught in schools and clubs with the assistance of licenced amateurs and perhaps video tutorials, which would give the students sufficient technical and operational knowledge to take to the airwaves.
    - I would support the idea that examinations should be offered online and could be taken at any time. This would encourage more to take up the amateur service and allow those who need to repeat the exam the opportunity to do so when they feel they are ready and not have to wait for the next bi-annual in person exam. Alternatively, exams could be taken at local third part test centres or via remote assessment.
- **Other matters**
    - Clarification on portable operation would be appreciated, currently the only defined ways to operate a station outside of the registered address are mobile (/M) or maritime mobile (/MM). Amateur Radio "sub-hobbies" of Summits on the Air (operating on certain mountain summits) and Parks on the Air (operating with national parks and special areas of conservation) are growing in popularity in Ireland and Worldwide and clarity that we can or should use /P would be appreciated.
    - I also support the introduction of increased power limits to bring us more in line with other European countries.

Best Wishes,

Albert White [redacted]

[redacted]

From: Ana Cañizares Bejarano [redacted]
Sent: Friday 30 August 2024 14:58
To: Market Framework Consult
Subject: 'Submissions to ComReg Document 24/65'

Dear Mr/Mrs,

As a radio amateur in Ireland, STEM Outreach Officer, and current IRTS Youth Coordinator, I am grateful for the opportunity to provide feedback on the "Proposed Radio Spectrum Management Operating Plan for 2025–2028," recently published by ComReg (ComReg24/68).

The significance of Amateur Radio is widely recognized within the framework of global and EU regulations, as well as across various policy areas. CEPT and other authorities emphasize its role in fostering innovation, as radio amateurs frequently contribute to technological advancements through experimentation with digital communication modes, software-defined radio technologies, and satellite communications. These efforts push the boundaries of what is technically achievable, not only in radio communications but also within the broader STEM fields.

In addition, Amateur Radio has repeatedly demonstrated its potential to spark interest in STEM fields, particularly among young people. For instance, the 2023 Irish ARISS contact was a remarkable success, engaging more than 3,000 people simultaneously, most of whom were students under 18 years of age from DEIS schools. This event, along with other successful initiatives like the launch and reception of beacon signals from EIRSAT, Ireland's first satellite, and the Youngsters on the Air and JOTA-JOTI initiatives, underscores the immense potential of amateur radio to inspire the next generation of engineers, scientists, and technologists. Additionally, with the increasing global focus on space exploration, the promotion of radio technologies is becoming even more crucial.

In line with this I would like to note that in September 2021, ComReg issued the "Proposed Strategy for Managing the Radio Spectrum 2022 to 2024, "which led to 26 submissions related to amateur radio" (62% of which came from prior consultations in clubs and amateur radio organizations). In response to this feedback, ComReg acknowledged significant support for an entry-level or novice-level licensing framework and **committed** to establishing such a framework within the timeline of the strategy statement, subject to resources. Unfortunately, ComReg has not yet fulfilled this commitment.

While we acknowledge that resourcing issues may still be ongoing, it is concerning that a detailed action plan to better prioritize available resources to complete this work was not put in place after the first consultation. No additional consultations regarding the novice license were conducted during the original strategy statement period (2022-2024), nor has there been any indication of plans for such consultations taking place during this current period, leaving us exactly where we started.

Thus, I urge ComReg to:

1. **Establish a concrete roadmap/action plan** that prioritizes the introduction of a novice licensing scheme in Ireland, similar to those in other countries as per CEPT recommendations.
2. **Establish a concrete roadmap/action plan** for consultation with the radio amateur community as part of the above process.

3. **Recognize** that implementing a scaffolded examination system is not a matter of reinventing the wheel; such systems have been successfully implemented in many other countries within IARU Regions 1, 2, and 3.
4. **Understand** that further delays in carrying out this work place Ireland at a disadvantage compared to the rest of Europe (and the world), particularly in terms of STEM promotion and innovation. Implementing a novice license would align with national policies aimed at establishing Ireland as a leader in STEM and would broaden access to amateur radio, fostering inclusivity and diversity of thought, which are critical to meeting the growing demand for STEM professionals and innovators.
5. **Advocate** for the introduction of proctored online examinations and/or more frequent in-person exams at local venues across the country. The current system of single-test, biannual examinations is wholly insufficient, creating undue stress and barriers for candidates, which leads to increased gatekeeping of knowledge and technology, and increasing inequality in this area due to: a. Candidates being faced with a "all or nothing" situation when considering examination. b. Long (6-month) waiting periods in case of missing the date or failing the exam, which quite often acts as a deterrent for all but those with higher STEM capital (which research has shown are usually individuals from wealthier socioeconomic backgrounds).

Furthermore, I wish to emphasize the detrimental effect that delaying the introduction of a novice licensing scheme may have on renewing Ireland's rapidly aging radio amateur population. Without an influx of new, younger radio enthusiasts, the community risks shrinking, losing valuable knowledge and expertise that could otherwise be passed down to future generations. This decline threatens not only the survival of amateur radio in Ireland but also the broader potential of radio as a tool for engaging young people in STEM.

Thank you for considering my feedback. I look forward to seeing ComReg take decisive action on this important matter.

Ana Canizares

[redacted]

From: Brian Keating [redacted]
Sent: Monday 26 August 2024 23:14
To: Market Framework Consult
Subject: Amateur Radio

Brian Keating
[redacted]
Date 27/08/24

Re: Submission to ComReg Document 24/65

Dear Sir/Madam,

I appreciate the opportunity to provide feedback on the "Proposed Radio Spectrum Management Operating Plan for 2025 – 2028" recently published by ComReg.

The importance of amateur radio is widely recognised within the context of global and EU regulations, impacting various policy areas. The European Conference of Postal and Telecommunications Administrations (CEPT) also highlights the role of amateur radio in fostering innovation. Amateur radio operators frequently contribute to technological advancements by experimenting with new modes of digital communication, software-defined radio technologies, and satellite communications, pushing the boundaries of what is technically possible in radio communications.

In September 2021, ComReg issued the "Proposed Strategy for Managing the Radio Spectrum 2022 to 2024." The consultation was well received, with ComReg receiving 26 submissions related to amateur radio. ComReg acknowledged broad support for an entry-level or novice-level licensing framework, stating in Section 4.61 of ComReg-21136a.pdf that there was intent to pursue this initiative.

It is disappointing that ComReg has not implemented a novice licensing framework in Ireland within the timeline outlined in their strategy statement (2022-2024). While it is mentioned in the latest strategy consultation (ComReg-24/65), no specific resources have been allocated to complete this work.

I strongly urge ComReg to prioritise the introduction of a novice licensing scheme in Ireland, similar to those in other countries, that is in line with CEPT recommendations.

Exams: I recommend introducing online and in-person examinations, which could be scheduled at the student's convenience at local venues, such as Prometric centres across the country. Currently, the twice-yearly exams are helpful, but they fall short for many students who cannot travel or attend the scheduled dates. These individuals then face a further six-month wait, often losing interest or confidence in taking the next exam.

Portable Operation: I also urge ComReg to reinstate the use of the /P suffix in licensing conditions, as many amateur radio enthusiasts enjoy operating "portable" from parks (POTA) and mountain tops

[redacted]

From: Clive Leinster [redacted]
Sent: Thursday 29 August 2024 21:43
To: Market Framework Consult
Subject: New regs

Clive Leinster
[redacted]

Dear Sir/Madam,

We appreciate the opportunity to provide feedback on the "Proposed Radio Spectrum Management Operating Plan for 2025 – 2028" recently published by ComReg.

The importance of amateur radio is widely recognised within the context of global and EU regulations, impacting various policy areas. The European Conference of Postal and Telecommunications Administrations (CEPT) also highlights the role of amateur radio in fostering innovation. Amateur radio operators frequently contribute to technological advancements by experimenting with new modes of digital communication, software-defined radio technologies, and satellite communications, pushing the boundaries of what is technically possible in radio communications.

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Portable Operation: We also urge ComReg to reinstate the use of the /P suffix in licensing conditions, as many amateur radio enthusiasts enjoy operating "portable" from parks (POTA) and mountain tops (SOTA).

Power Levels: Finally, we advocate for increasing the power limit for amateur radio operators in Ireland to align with the standards of our UK and EU counterparts.

Thank you for considering these suggestions. We believe they will significantly enhance the development of amateur radio in Ireland.

Yours sincerely,
clive Leinster

Máire Fitzgerald

From: Crevan Lenaghan [redacted]
Sent: Thursday 29 August 2024 21:37
To: Market Framework Consult

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

Name, crevan Lenaghan

[redacted]

Date]29/8/24

Dear Sir/Madam,

We appreciate the opportunity to provide feedback on the "Proposed Radio Spectrum Management Operating Plan for 2025 – 2028" recently published by ComReg.

The importance of amateur radio is widely recognised within the context of global and EU regulations, impacting various policy areas. The European Conference of Postal and Telecommunications Administrations (CEPT) also highlights the role of amateur radio in fostering innovation. Amateur radio operators frequently contribute to technological advancements by experimenting with new modes of digital communication, software-defined radio technologies, and satellite communications, pushing the boundaries of what is technically possible in radio communications.

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It is disappointing that ComReg has not implemented a novice licensing framework in Ireland within the timeline outlined in their strategy statement (2022-2024). While it is mentioned in the latest strategy consultation (ComReg-24/65), no specific resources have been allocated to complete this work.

We strongly urge ComReg to prioritise the introduction of a novice licensing scheme in Ireland, similar to those in other countries, that is in line with CEPT recommendations.

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Power Levels: Finally, we advocate for increasing the power limit for amateur radio operators in Ireland to align with the standards of our UK and EU counterparts.

Thank you for considering these suggestions. We believe they will significantly enhance the development of amateur radio in Ireland.

Yours sincerely,
Crevan [redacted]

Derek Kelleher
[redacted]

30/08/2024

Re: Submissions to ComReg Document 24/65

Dear Sir/Madam,

I appreciate the opportunity to provide feedback on the 'Proposed Radio Spectrum Management Operating Plan for 2025 – 2028 'published recently by ComReg.

The introduction of a novice/ entry-level license by 2024 as planned by ComReg would have brought Ireland in line with many other countries in Europe and around the world. It would have opened up more opportunities for Irish youth to engage with radio technology activities in a more meaningful way.

It is now very disappointing to learn that this is now not going to be delivered and worse still that resources have not even been identified to deliver in 2025 or soon thereafter.

While it is understandable that resources are required to complete this work, it is important to acknowledge we are far behind many other countries around the world and in Europe. I would strongly urge ComReg that the consultation phase on the introduction of a novice license should begin without any further delay.

Thank you for the opportunity to give feedback.

We look forward to ComReg progressing the novice license as a matter of urgency.

Yours sincerely,

Derek Kelleher

[redacted]

[redacted]

From: [redacted]
Sent: Monday 26 August 2024 22:58
To: Market Framework Consult
Subject: Response to the "Proposed Radio Spectrum Management Operating Plan for 2025 – 2028" consultation

Dear Sir/Madam,

I write in response to the *"Proposed Radio Spectrum Management Operating Plan for 2025 – 2028"* consultation published on 1 August 2024 by ComReg.

As a licensed amateur radio operator, my specific interest relates to the amateur radio aspects of the consultation document.

On foot of prior consultations, ComReg has acknowledged the wide support for novice or entry level Amateur radio license in Ireland, in line with best practice elsewhere in Europe.

Lowering the barrier for entry to the Amateur radio hobby by means of a novice license is of particular interest to those of us working with young people in STEM (Science, Technology, Engineering and Mathematics). While the existing HAREC syllabus is indeed excellent, it is a very high bar for any young person in terms of the time needed to complete the syllabus and take HAREC exam, financial cost notwithstanding.

While acknowledging the specific difficulties with resourcing faced by ComReg, and indeed the challenges inherent in drafting suitable legislation to accommodate any new novice licensing regime, I believe it imperative that work commences on the novice license proposals without delay.

Further, the introduction of online examination, or perhaps in person examinations held, for example, at prometric centres like the existing driver theory tests, would help streamline the process.

No doubt there will be many and varied views on this topic, however I believe ComReg has the expertise and the experience to bring a working proposal to the consultation stage and in my view this must be done in the 2025 to 2028 time frame if we are to fully realise the benefits, tangible and intangible, that can accrue from a broader and more diverse Amateur radio community.

Accordingly, I would like to submit that work on a proposal for a novice or entry-level amateur radio license commence without further delay.

Kind regards,

[redacted]

[redacted]

From: Damien Mc Shane [redacted]
Sent: Thursday 29 August 2024 23:02
To: Market Framework Consult
Subject: Proposed Radio Spectrum Management Operating Plan

Date 29/08/2024

Dear Sir/Madam,

We appreciate the opportunity to provide feedback on the "Proposed Radio Spectrum Management Operating Plan for 2025 – 2028" recently published by ComReg.

The importance of amateur radio is widely recognised within the context of global and EU regulations, impacting various policy areas. The European Conference of Postal and Telecommunications Administrations (CEPT) also highlights the role of amateur radio in fostering innovation. Amateur radio operators frequently contribute to technological advancements by experimenting with new modes of digital communication, software-defined radio technologies, and satellite communications, pushing the boundaries of what is technically possible in radio communications.

In September 2021, ComReg issued the "Proposed Strategy for Managing the Radio Spectrum 2022 to 2024." The consultation was well received, with ComReg receiving 26 submissions related to amateur radio. ComReg acknowledged broad support for an entry-level or novice-level licensing framework, stating in Section 4.61 of ComReg-21136a.pdf that there was intent to pursue this initiative.

It is disappointing that ComReg has not implemented a novice licensing framework in Ireland within the timeline outlined in their strategy statement (2022-2024). While it is mentioned in the latest strategy consultation (ComReg-24/65), no specific resources have been allocated to complete this work.

We strongly urge ComReg to prioritise the introduction of a novice licensing scheme in Ireland, similar to those in other countries, that is in line with CEPT recommendations.

Exams: We recommend introducing online and in-person examinations, which could be scheduled at the student's convenience at local venues, such as Prometric centres across the country. Currently, the twice-yearly exams are helpful, but they fall short for many students who cannot travel or attend the scheduled dates. These individuals then face a further six-month wait, often losing interest or confidence in taking the next exam.

Portable Operation: We also urge ComReg to reinstate the use of the /P suffix in licensing conditions, as many amateur radio enthusiasts enjoy operating "portable" from parks (POTA) and mountain tops (SOTA).

Power Levels: Finally, we advocate for increasing the power limit for amateur radio operators in Ireland to align with the standards of our UK and EU counterparts.

Thank you for considering these suggestions. We believe they will significantly enhance the development of amateur radio in Ireland.

Yours sincerely,

Damien Mc Shane [redacted]

[redacted]

From: [redacted]
Sent: Tuesday 27 August 2024 07:12
To: Market Framework Consult
Subject: Submission to ComReg Document 24/65

Daithi Roe
[redacted]

27/12/2024

Re: Submission to ComReg Document 24/65

Dear Sir/Madam,

I appreciate the opportunity to provide feedback on the "Proposed Radio Spectrum Management Operating Plan for 2025 – 2028" recently published by ComReg.

The importance of amateur radio is widely recognised within the context of global and EU regulations, impacting various policy areas. The European Conference of Postal and Telecommunications Administrations (CEPT) also highlights the role of amateur radio in fostering innovation. Amateur radio operators frequently contribute to technological advancements by experimenting with new modes of digital communication, software-defined radio technologies, and satellite communications, pushing the boundaries of what is technically possible in radio communications.

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It is disappointing that ComReg has not implemented a novice licensing framework in Ireland within the timeline outlined in their strategy statement (2022-2024). While it is mentioned in the latest strategy consultation (ComReg-24/65), no specific resources have been allocated to complete this work.

I strongly urge ComReg to prioritise the introduction of a novice licensing scheme in Ireland, similar to those in other countries, that is in line with CEPT recommendations.

Exams: I recommend introducing online and in-person examinations, which could be scheduled at the student's convenience at local venues, such as Prometric centres across the country. Currently, the twice-yearly exams are helpful, but they fall short for many students who cannot travel or attend the scheduled dates. These individuals then face a further six-month wait, often losing interest or confidence in taking the next exam.

Portable Operation: I also urge ComReg to reinstate the use of the /P suffix in licensing conditions, as many amateur radio enthusiasts enjoy operating "portable" from parks (POTA) and mountain tops (SOTA).

Power Levels: Finally, I advocate for increasing the power limit for amateur radio operators in Ireland to align with the standards of our UK and EU counterparts.

Thank you for considering these suggestions. I believe they will significantly enhance the development of amateur radio in Ireland.

Yours sincerely,
Daithi Roe

Máire Fitzgerald

From: David McMullan [redacted]
Sent: Monday 26 August 2024 19:05
To: Market Framework Consult
Subject: Submission to ComReg Document 24/65

David McMullan
[redacted]

Date [26/08/24]
Re: Submission to ComReg Document 24/65
Dear Sir/Madam,
I greatly appreciate the opportunity to provide feedback on the "Proposed Radio Spectrum Management Operating Plan for 2025 – 2028" published recently by ComReg
The importance of Amateur radio is recognised within the context of global and EU regulations and communications across many policy areas. CEPT also notes the role of amateur radio in fostering innovation. Amateurs frequently contribute to technological advancements by experimenting with new modes of digital communication, software-defined radio technologies, and satellite communications, pushing the boundaries of what is technically possible in radio communications.
In September of 2021, the Irish regulator ComReg issued a document titled... "Proposed Strategy for Managing the Radio Spectrum 2022 to 2024". The consultation was widely well received and in response to this document, COMREG received 26 submissions related to amateur radio. ComReg recognised wide support for a form of entry-level or novice-level licensing and ComReg stated in Section 4.61 of ComReg-21136a.pdf, that
It is very disappointing that ComReg has failed to put in place a framework for novice licensing in Ireland within the timeline of their strategy statement (2022-2024) as it intended, I note that it is included in latest strategy consultation, ComReg-24/65, however no resources have been identified to complete this work.
I would urge ComReg to prioritise the introduction of a novice licensing scheme in Ireland similar to other countries as per the CEPT recommendations.
Your sincerely,
David McMullan
[redacted]

[redacted]

From: fran o mara [redacted]
Sent: Wednesday 28 August 2024 10:18
To: Market Framework Consult
Subject: Submission

Fran o mara
[redacted]

Re: Submission to ComReg Document 24/65

Dear Sir/Madam,

I appreciate the opportunity to provide feedback on the "Proposed Radio Spectrum Management Operating Plan for 2025 – 2028" recently published by ComReg.

The importance of amateur radio is widely recognised within the context of global and EU regulations, impacting various policy areas. The European Conference of Postal and Telecommunications Administrations (CEPT) also highlights the role of amateur radio in fostering innovation. Amateur radio operators frequently contribute to technological advancements by experimenting with new modes of digital communication, software-defined radio technologies, and satellite communications, pushing the boundaries of what is technically possible in radio communications.

In September 2021, ComReg issued the "Proposed Strategy for Managing the Radio Spectrum 2022 to 2024." The consultation was well received, with ComReg receiving 26 submissions related to amateur radio. ComReg acknowledged broad support for an entry-level or novice-level licensing framework, stating in Section 4.61 of ComReg-21136a.pdf that there was intent to pursue this initiative.

It is disappointing that ComReg has not implemented a novice licensing framework in Ireland within the timeline outlined in their strategy statement (2022-2024). While it is mentioned in the latest strategy consultation (ComReg-24/65), no specific resources have been allocated to complete this work.

I strongly urge ComReg to prioritise the introduction of a novice licensing scheme in Ireland, similar to those in other countries, that is in line with CEPT recommendations.

Exams: I recommend introducing online and in-person examinations, which could be scheduled at the student's convenience at local venues, such as Prometric centres across the country. Currently, the twice-yearly exams are helpful, but they fall short for many students who cannot travel or attend the scheduled dates. These individuals then face a further six-month wait, often losing interest or confidence in taking the next exam.

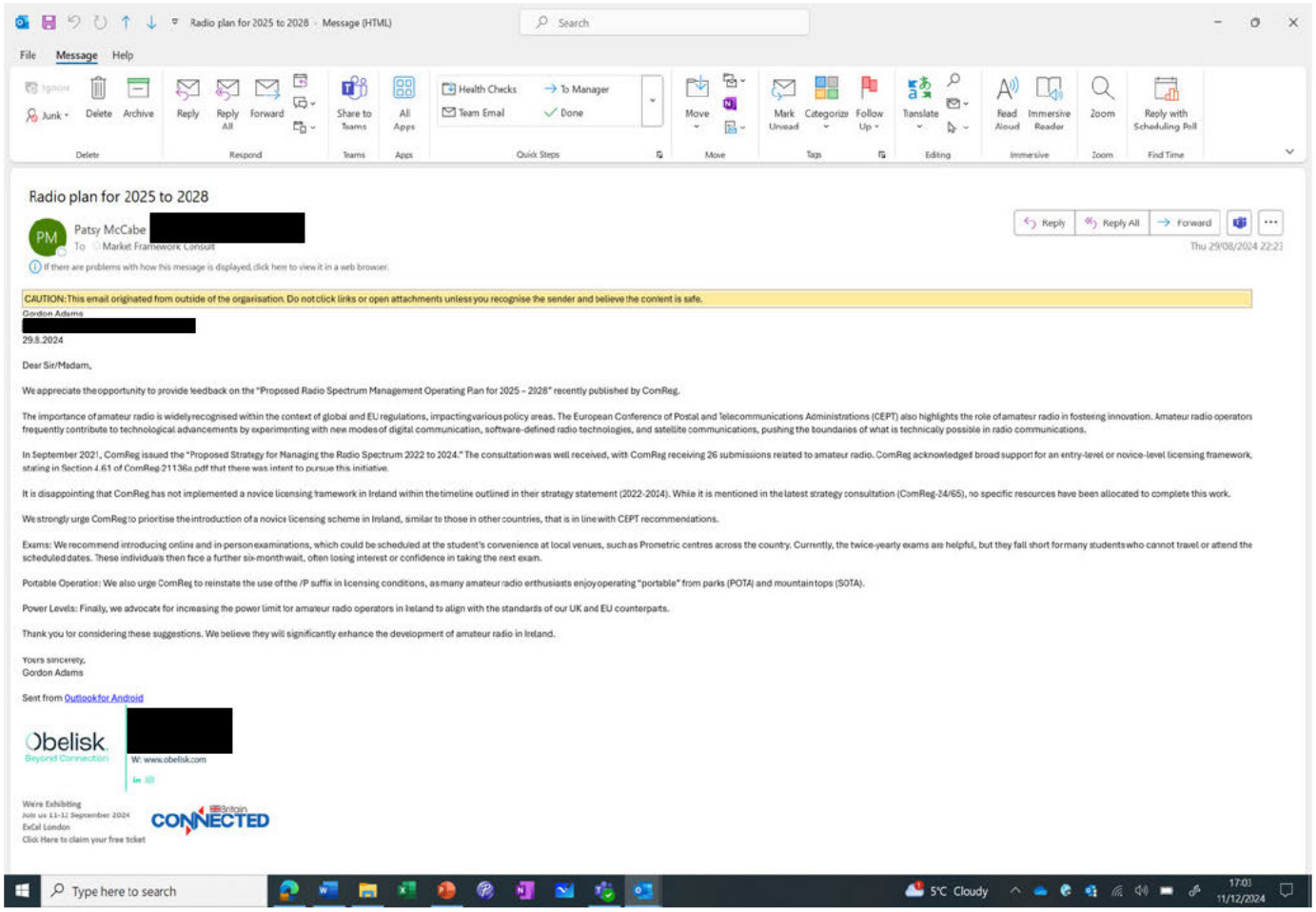
Portable Operation: I also urge ComReg to reinstate the use of the /P suffix in licensing conditions, as many amateur radio enthusiasts enjoy operating "portable" from parks (POTA) and mountain tops

(SOTA).

Power Levels: Finally, I advocate for increasing the power limit for amateur radio operators in Ireland to align with the standards of our UK and EU counterparts.

Thank you for considering these suggestions. I believe they will significantly enhance the development of amateur radio in Ireland.

Yours sincerely,
Fran


Radio plan for 2025 to 2028 - Message (HTML)
Search
File
Message
Help
Ignore
Junk
Delete
Archive
Reply
Reply All
Forward
Share to Teams
All Apps
Health Checks
To Manager
Team Email
Done
Move
Mark Unread
Categorize
Follow Up
Translate
Read Aloud
Immersive Reader
Zoom
Reply with Scheduling Poll
Delete
Respond
Teams
Apps
Quick Steps
Move
Tags
Editing
Immersive
Zoom
Find Time
Radio plan for 2025 to 2028
PM
Patsy McCabe
[redacted]
To Market Framework Consult
If there are problems with how this message is displayed, click here to view it in a web browser.
Reply
Reply All
Forward
Thu 29/08/2024 22:23
CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and believe the content is safe.
Gordon Adams
[redacted]
29.8.2024
Dear Sir/Madam,
We appreciate the opportunity to provide feedback on the "Proposed Radio Spectrum Management Operating Plan for 2025 – 2028" recently published by ComReg.
The importance of amateur radio is widely recognised within the context of global and EU regulations, impacting various policy areas. The European Conference of Postal and Telecommunications Administrations (CEPT) also highlights the role of amateur radio in fostering innovation. Amateur radio operators frequently contribute to technological advancements by experimenting with new modes of digital communication, software-defined radio technologies, and satellite communications, pushing the boundaries of what is technically possible in radio communications.
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Power Levels: Finally, we advocate for increasing the power limit for amateur radio operators in Ireland to align with the standards of our UK and EU counterparts.
Thank you for considering these suggestions. We believe they will significantly enhance the development of amateur radio in Ireland.
Yours sincerely,
Gordon Adams
Sent from Outlook for Android
[redacted]
Obelisk
Beyond Connection
W: www.obelisk.com
We're Exhibiting
Join us 11-12 September 2024
ExCel London
Click Here to claim your free ticket
Britain CONNECTED
Type here to search
5°C Cloudy
17:03
11/12/2024

[redacted]

From: Hugh O Donnell [redacted]
Sent: Wednesday 28 August 2024 01:24
To: Market Framework Consult
Subject: Re:- Submissions to Comreg Document 24/65

[redacted]

27th of August 2024

Dear Sir/Madam

As the current holder of an Amateur Radio Licence [redacted] CEPT Class 1, and [redacted] CEPT 2 before that, I appreciate this opportunity to submit my feedback to you on the 'Proposed Radio Spectrum management Operating Plan for 2025 - 2028'.

It is my opinion that a Novice/ Entry Level licence should not be introduced here in Ireland. In general, I feel that there are certain high standards that need to be maintained within our licencing system by Comreg. Having been licenced for over 35yrs, I have seen a huge demise in operating procedures and general radio etiquette on our Ham Radio Spectrum since the introduction of an Entry Level licence Internationally.

I am going to use the example of our near neighbours in the UK to explain my reason for not introducing this Entry level. Ofcom (UK Licencing Authority) introduced a Foundation licence (Entry Level) in January 2002. For this level, all licence holders were allowed onto the HF Spectrum with a 10 watt power limit for all transmission modes. It is now 22 years later since its introduction and many of these licence holders have not advanced or upgraded to the Intermediate or Full level of licence in all that time. Many by their own admission, transmit the full 100 watts power that their radios can produce because it cannot be policed by the Licencing Authority there. Some own and use Linear Amplifiers to give them a few hundred watts output to their antennae and openly admit to doing so when I have spoken to them. Many do not know the phonetic alphabet and I have heard them recently transmit outside the Amateur Band Plan. There is no incentive for the Foundation level licence holder to upgrade to a higher level because they know they do not need to as it is not policed and the power limitations are not enforced.
The Foundation level was introduced in the UK to make amateur radio more attractive to time-strapped newcomers and get them onto the 'first rung of the ladder' which would in time lead them to getting a Full level licence. But this system of licensing has not worked and it has in fact made a mockery to all those who did make the effort of upgrading over there. It is my opinion that it is better to have 'Quality over Quantity ' here in Ireland and that we (the licence holders) are ambassadors for our country on the HF Frequencies. For that reason I feel that a certain high standard should be maintained and the current level be continued without any need for an Entry level licence.

Having said all that, I could see the benefit of having a one year (or a 2 year) Entry level licence permitting them to use up to10 watts on the VHF and UHF Spectrum only. That way they could get to learn radio procedure and radio etiquette from the more experienced Irish licencees by speaking to

them on the 145mhz and 433mhz FM Repeaters etc. I would strongly stress that this type of Entry level licence should have a short time limit so that they upgrade to a higher Full level before its expiration. There has to be an incentive to upgrade and learn unlike the licencing system in place in the UK. It would be self policing and easily monitored. Giving an Entry level access on the HF Spectrum without proper training and experience would only add to the licencing mayhem that in my opinion already exists in other countries. I know Comreg have very limited resources and staff but I also know that they cannot police power limitations if an Entry Level licencee was given full access to the HF Spectrum. The callsign I propose for a said Entry level on VHF/UHF bands would end with the letter 'E' for Entry, for example EI2AAE EI2ABE, EI2ACE etc etc.

I also wish to make a submission in relation to Paragragh 3.70(d) of the Document which relates to the Permissible Power Increases. It is my opinion that this is also very unnecessary. The use of Linear Amplifiers to increase the power from the standard 100 watts that a radio can produce has already caused much inference on the Spectrum. This is due to the poor operating of the said amplifiers and not using them correctly. The current power limit of 400 watts is already not being adhered to as most already run higher levels that most amplifiers can produce. I would have very grave concerns about the EMI and RFI that the increase of such power levels will cause. I also feel there would be Health and Safety issues. as the dangers of such power being transmitted into antennae that cannot handle same. It is my opinion that 100watts is more than suffice, as more emphasis should be placed in having a more efficient feed line and antennae. I already see licencees try to compensate for a poor antenna by purchasing amplifiers which I consider to be very dangerous and unnecessary. So I think that the power limitations should not be increased and left as they are.

So to conclude, I do not feel there is a need for an Entry level licence as it is important to maintain the standards we have with the resources currently available. But if Comreg felt the need to introduce an Entry level licence then I strongly stress that it be limited to the VHF/UHF Spectrum only and have a time limit to encourage the upgrade to the Full CEPT 1 or CEPT 2 licence.
It is also my opinion that the power levels for Full licencees should not be increased for the said safety reasons as well the EMI and RFI issues.

Yours Sincerely

Hugh O'Donnell [redacted]

[redacted]

From: IRISH ELF [redacted]
Sent: Thursday 29 August 2024 22:49
To: Market Framework Consult
Subject: Operating Plan for 2025 – 2028

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

marketframeworkconsult@comreg.ie

Thu 29/08/2024 22:04
Club Name Irish Elf. [redacted]

[redacted]

Date 29/08/2024

Dear Sir/Madam,

We appreciate the opportunity to provide feedback on the "Proposed Radio Spectrum Management Operating Plan for 2025 – 2028" recently published by ComReg.

The importance of amateur radio is widely recognised within the context of global and EU regulations, impacting various policy areas. The European Conference of Postal and Telecommunications Administrations (CEPT) also highlights the role of amateur radio in fostering innovation. Amateur radio operators frequently contribute to technological advancements by experimenting with new modes of digital communication, software-defined radio technologies, and satellite communications, pushing the boundaries of what is technically possible in radio communications.

In September 2021, ComReg issued the "Proposed Strategy for Managing the Radio Spectrum 2022 to 2024." The consultation was well received, with ComReg receiving 26 submissions related to amateur radio. ComReg acknowledged broad support for an entry-level or novice-level licensing framework, stating in Section 4.61 of ComReg-21136a.pdf that there was intent to pursue this initiative.

It is disappointing that ComReg has not implemented a novice licensing framework in Ireland within the timeline outlined in their strategy statement (2022-2024). While it is mentioned in the latest strategy consultation (ComReg-24/65), no specific resources have been allocated to complete this work.

We strongly urge ComReg to prioritise the introduction of a novice licensing scheme in Ireland, similar to those in other countries, that is in line with CEPT recommendations.

Exams: We recommend introducing online and in-person examinations, which could be scheduled at the student's convenience at local venues, such as Prometric centres across the country. Currently, the twice-yearly exams are helpful, but they fall short for many students who cannot travel or attend

the scheduled dates. These individuals then face a further six-month wait, often losing interest or confidence in taking the next exam.

Portable Operation: We also urge ComReg to reinstate the use of the /P suffix in licensing conditions, as many amateur radio enthusiasts enjoy operating "portable" from parks (POTA) and mountain tops (SOTA).

Power Levels: Finally, we advocate for increasing the power limit for amateur radio operators in Ireland to align with the standards of our UK and EU counterparts.

Thank you for considering these suggestions. We believe they will significantly enhance the development of amateur radio in Ireland.

Yours sincerely, Reuben Forde

[redacted]

From: John Holland [redacted]
Sent: Monday 26 August 2024 22:23
To: Market Framework Consult
Subject: Re: Submission to ComReg Document 24/65

[Name]
[Address]

Date [DD/MM/YY]

Via email to marketframeworkconsult@comreg.ie by 17:00 30/8/24

Re: Submission to ComReg Document 24/65

Dear Sir/Madam,

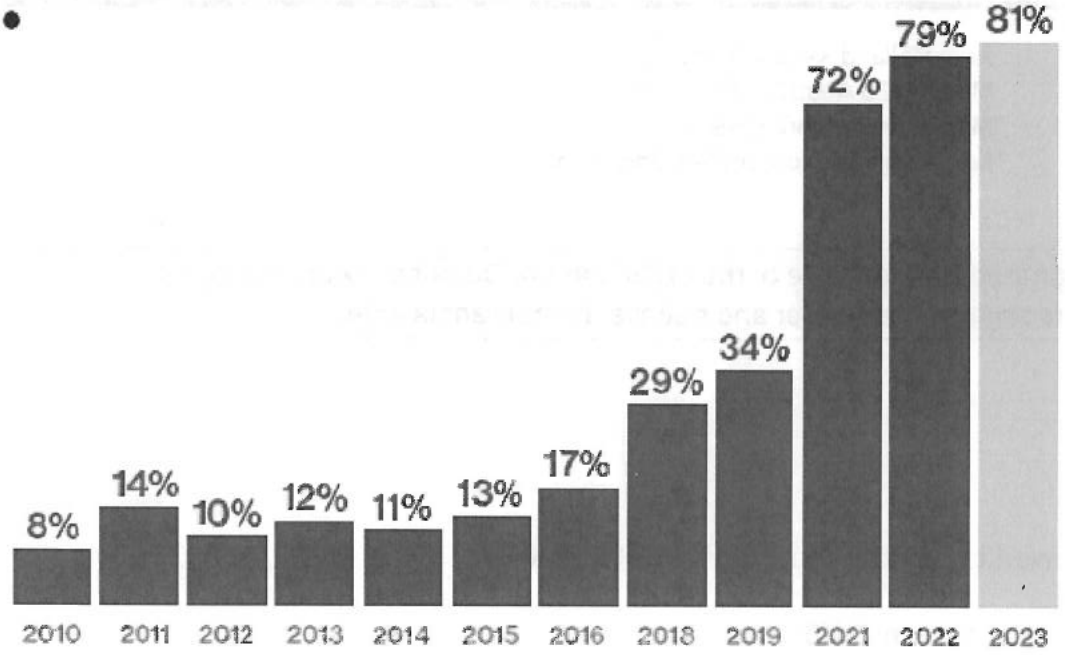
I greatly appreciate the opportunity to provide feedback on the "Proposed Radio Spectrum Management Operating Plan for 2025 – 2028" published recently by ComReg

In September of 2021, the Irish regulator ComReg issued a document titled... "Proposed Strategy for Managing the Radio Spectrum 2022 to 2024". The consultation was widely well received and in response to this document, COMREG received 26 submissions related to amateur radio. ComReg recognised wide support for a form of entry-level or novice-level licensing and ComReg stated in Section 4.61 of ComReg-21136a.pdf, that

"Taking into account the support expressed for entry-level or novice-licensing and the strong justifications given above, ComReg will seek, in the timeline of this strategy statement (2022-2024) and subject to resources, to put in place a framework for novice licensing in Ireland."

It is very disappointing that ComReg has failed to put in place a framework for novice licensing in Ireland within the timeline of their strategy statement (2022-2024) as it intended. While I note that it is included in latest strategy consultation, ComReg-24/65, I also note thatno resources have been identified to complete this work.

Amateur radio is far more than just a hobby. It is a an educational area of great benefit to society and industry. There is worsening skills shortage in Ireland, particularly in STEM as illustrated by the following news articles and statistics. Amateur Radio and Radio Scouting ignites the interest in science and technology. A large percentage of amateur radio enthusiasts choose a career in engineering, IT, space and telecom and '*The amateur radio community have made astounding contributions to science, engineering and industry" – IEEE.*



- 94% of firms facin https://www.in skills-shortage a1611605667.
- https://www.rt shortage-talen
- Kormferry – by 20 people. https://www.lin radley-james/
- 81% of companies https://www.ma of-companies-i talent?source=c

I would urge ComReg to commit resources and prioritise the introduction of a novice licensing scheme in Ireland as per the CEPT recommendations similar to other countries

Your sincerely,

John Holland

[redacted]

From: John Kelly [redacted]
Sent: Tuesday 27 August 2024 13:39
To: Market Framework Consult
Subject: Fwd: Submission to ComReg Document 24/65

Importance: High

Re: Submission to ComReg Document 24/65
Dear Sir/Madam,
I would like to take this opportunity to provide feedback on the "Proposed Radio Spectrum Management Operating Plan for 2025 – 2028" published recently by ComReg.

- I strongly urge ComReg to prioritize the introduction of a novice licensing scheme in Ireland, following CEPT recommendations and aligning with similar initiatives in other countries.

Such a scheme would greatly enhance the accessibility and growth of amateur radio in Ireland, fostering innovation and supporting the next generation of radio enthusiasts and technologists.

We as Amateur Radio operators see the growth in the hobby In Ireland, with lots of interest from schools, scout groups, in particular school contacts with the International Space Station.https://www.youtube.com/live/2E8wZd2gBoo?si=prP8ucD3qAsXb4xg.
where students from 6 Dublin primary Schools participating in TU Dublin's STEM project, spoke with astronaut Jasmin Moghbeli as she orbited over Europe in the International Space Station.
The contact was done via Amateur Radio at 14:11 Irish Time on the 6th of October 2023.
This activity is part of the ARISS (Amateur Radio on the International Space Station) Program, which promotes links between Schools and radio amateurs around the world with ISS astronauts to promote STEM with an emphasis on amateur radio.

Also worth noting is the YOTA (Youngsters on the Air) programme in Ireland, https://www.facebook.com/profile.php?id=100027269814068 . The purpose of this group is to generate ideas for involving young people and ultimately to show young people how great this hobby is!
YOTA is a quickly growing group of young radio amateurs from IARU Region 1 with a goal to get more young people interested in amateur radio and grow the amateur radio community, the novice licence would be a great stepping stone to getting this exposure.

- Additionally, I would NOT advocate for the introduction of an increased power limit for amateur radio operators in Ireland, beyond current limits.
- Furthermore, I support ComReg not making any changes to the 23cm band.

Reference CEPT - ECC Report 359 document, section 6.3, the study presents results from a simulation methodology, to quantify the impact of amateur station emissions on a deployment of a large number of co-frequency Galileo RNSS (space-to-Earth) receivers.
Thank you for your consideration of these matters.
John Kelly - [redacted]

[redacted]

From: John Ronan [redacted]
Sent: Friday 30 August 2024 13:24
To: Market Framework Consult
Subject: Submissions to ComReg Document 24/65

To whom it may concern,

As the current holder of an Amateur Radio Licence, I am of the opinion that introduction of a novice level licence would need careful implementation to avoid the current situation in the United Kingdom happening here.

Self-education and peer pressure are cited within the CEPT documents as motivations to progress through the three licence classes.

With all due respect to our near neighbours in the United Kingdom, this has largely failed, and has produced a cohort of operators that are now knowingly operating in contravention of their licence conditions, and, in many cases, in breach of RF EMF guidelines in the knowledge that there is unlikely to be any enforcement.

The above scenario would not serve the interests of either the regulator or the Amateur Radio Service in Ireland.

There is definitely merit in having an entry level licence of some sort with a time limit of somewhere between 12 and 36 months, where a person could operate both independently and as part of a club or group which would give them experience of operating and experience within the hobby so as to make an informed decision to pursue a full HAREC licence.

To achieve this would require both enforcement and a simple mechanism to allow any callsign be easily and quickly checked that it is a valid and issued callsign, both of which will need to be effectively resourced from the regulators point of view.

Yours Sincerely
John Ronan [redacted]

[NAME] john tubbritt [redacted]

Dear Sir/Madam,

I appreciate the opportunity to provide feedback on the 'Proposed Radio Spectrum Management Operating Plan for 2025 – 2028 'published recently by ComReg.

The introduction of a novice/ entry-level license by 2024 as planned by ComReg would have brought Ireland in line with many other countries in Europe and around the world. It would have opened up more opportunities for Irish youth to engage with radio technology activities in a more meaningful way.

It is now very disappointing to learn that this is now not going to be delivered and worse still that resources have not even been identified to deliver in 2025 or soon thereafter.

While it is understandable that resources are required to complete this work, it is important to acknowlege we are far behind many other countries around the world and in Europe. I would strongly urge ComReg that the consultation phase on the introduction of a novice license should begin without any further delay.

Thank you for the opportunity to give feedback.

We look forward to ComReg progressing the novice license as a matter of urgency.

Yours sincerely,

_____john tubbritt_____

[redacted]

From: Keith Wallace [redacted]
Sent: Thursday 29 August 2024 21:59
To: Market Framework Consult
Cc: [redacted]
Subject: Proposed Radio Spectrum Management Operating Plan 2025-2028

Dear Sir/Madam,

I appreciate the opportunity to provide feedback on the 'Proposed Radio Spectrum Management Operating Plan for 2025 – 2028' published recently by ComReg.

Having made a submission in the previous consultation I wish to make the following observations regarding the 2025-2028 plan.

In relation to Novice Licensing

3.70 (c) Seek to put in place a framework for Novice licensing in Ireland.

3.71 (c) This has not happened as per the previous plan and now states that this will happen sometime in the 2025-2028 period provided project resourcing is identified.

I am very disappointed to learn this. Resources need to identified/allocated immediately and at the very least a consultation with the relevant parties should begin urgently.

6.57 States that there has been an uptake in the number of HAREC Licences post Covid.

Primarily due to people having more time on their hands to study a technical subject.

The current HAREC Examination is a regulatory and technical examination which is not easily passed by someone who does not already have a technical background.

Other Regulatory bodies have introduced a phased examination/licensing schemes to allow the licensee to build on their technical and regulatory knowledge over a period of time.

With the HAREC exam it's an all or nothing.

The IRTS (Irish Radio Transmitters Society) have in the past been against a Novice Licence but as can be seen from the last consultation document there is now an appetite for change.

The more progressive Radio Clubs in Ireland and Radio Scouting Ireland have been instrumental in re introducing radio communication to the scouting programme which has been a part of scouting since 1918. The biggest scouting and guiding event every year is a virtual jamboree called JOTA-JOTI where between 800k-1.2m scouts and guides contact each other via amateur radio as part of a virtual Jamboree each year.

Scouts/Guides get the chance to communicate with others worldwide but it stops there, as the HAREC examination is a complete stumbling block to youth members taking it further.

There has been a massive growth in this event type in Ireland in the past few years with Clubs becoming increasingly active but the stumbling block to attracting younger members is the HAREC examination.

Yes there are a few very young licensed members in Ireland but these tend to be family members of current licence holders who can provide full support studying for the HAREC Exam.

6.59 States that those wishing to learn should look at PMR446, CB, LoRa etc or online propagation tools.

I completely disagree with this statement.

The issue with this is they need to taught in the first instance.

Introducing a Novice license would allow for training at a suitable level to be determined during the consultation.

Access to the spectrum, power levels time frames for advancement etc can all be determined during the proposed consultation.

6.62 I urge Comreg to consider the alignment of power levels allocated to Irish Licensees to bring us in line with our European and UK counterparts thus creating a more level operating environment.

As a Licensed Amateur I thank you for the opportunity to comment on this "Proposed Radio Spectrum Management Plan 2025-2028".

I look forward to your response.
Yours sincerely,

Keith Wallace

[redacted]

Keith Wallace

[redacted]

[redacted]

[redacted]

From: [redacted] Leonard [redacted]
Sent: Monday 26 August 2024 21:52
To: Market Framework Consult
Subject: Submission to ComReg Document 24/65

Leonard McDonnell [redacted]
[redacted]
26/08/2024

Dear Sir/Madam,
I greatly appreciate the opportunity to provide feedback on the "Proposed Radio Spectrum Management Operating Plan for 2025 – 2028" published recently by ComReg
The importance of Amateur radio is recognised within the context of global and EU regulations and communications across many policy areas. CEPT also notes the role of amateur radio in fostering innovation. Amateurs frequently contribute to technological advancements by experimenting with new modes of digital communication, software-defined radio technologies, and satellite communications, pushing the boundaries of what is technically possible in radio communications.
In September of 2021, the Irish regulator ComReg issued a document titled... "Proposed Strategy for Managing the Radio Spectrum 2022 to 2024". The consultation was widely well received and in response to this document, ComReg received 26 submissions related to amateur radio. ComReg recognised wide support for a form of entry-level or novice-level licensing and ComReg stated in Section 4.61 of ComReg-21136a.pdf, that
It is very disappointing that ComReg has failed to put in place a framework for novice licensing in Ireland within the timeline of their strategy statement (2022-2024) as it intended, I note that it is included in latest strategy consultation, ComReg-24/65, however no resources have been identified to complete this work.
I would urge ComReg to prioritise the introduction of a novice licensing scheme in Ireland similar to other countries as per the CEPT recommendations.
Exams: I would like to see the introduction of online examinations and or in person examinations that could be held at the students own convenience at a local venue, for example prometric centres across the country. At present the twice-yearly exams are working but they still fall short for many students who are unable to travel or make the dates offered. These people then have a further 6 months wait and often loose interest or confidence to sit the next exam.
I would also urge that /P be reinstated in the licencing conditions as many people enjoy operating "portable" from Parks (POTA) and Mountain tops (SOTA)
Power: I would urge ComReg to introduce an increased power limit, which would align Irish operators to our UK and EU colleagues.

Your sincerely,
Leonard McDonnell [redacted]

Lez Ferguson
[redacted]

Date: 27/08/24

Re: Submission to ComReg Document 24/65, Novice Licence.

Dear Sir/Madam,

Thank you for allowing me the opportunity to provide substantive feedback on ComReg's "Proposed Radio Spectrum Management Operating Plan for 2025 – 2028." I am writing not only as an educator [redacted] but also as an avid participant in the amateur radio community under the call sign [redacted]

Our recent initiative, the [redacted], serves as a vibrant centre for young learners to immerse themselves in STEM fields, engaging with advanced technologies including robotics, AI, coding, communications, engineering, project building and 3D printing. This initiative is geared towards demystifying technology and fostering a passion that steers students towards high-impact careers in engineering and technology. A special focus of our program is to enhance accessibility and interest among young girls, who are traditionally underrepresented in these areas, helping to bridge the gender gap in technical fields.

The role of amateur radio in this educational context cannot be overstated. Historically, amateur radio has been a cornerstone for experiential learning of radio science, electronics, and communication theory. It is a unique hobby that combines the joy of exploration with rigorous scientific inquiry. Radio amateurs are often at the forefront of pioneering technologies, experimenting with digital communication modes, software-defined radio (SDR) technologies, and satellite communications. These areas of amateur experimentation offer invaluable hands-on experience with real-world applications of STEM education.

Furthermore, Ireland's increasing prominence in the global space communications and technology sector underscores the value of foundational skills developed through amateur radio. [redacted] are pushing the boundaries of space technology with innovations in laser optical communications. It is essential to recognize that many of the Irish professionals contributing to these advancements began their careers influenced by early experiences in amateur radio. For instance, [redacted], cultivated his passion for space and communication technologies through amateur radio.

Despite these connections and the clear benefits presented, the advancement of a novice licensing framework for amateur radio in Ireland has languished. While the inclusion of this initiative in the latest strategy consultation (ComReg-24/65) is encouraging, the lack of allocated resources and clear implementation strategies is a significant oversight. This delay not only hampers the nurturing of tech-savvy youth but also impedes the strategic goal of cultivating a world-class technological workforce prepared for the challenges of the 21st century.

The establishment of a robust novice licensing system is pivotal. Such a framework would lower barriers to entry for amateur radio, enabling more young individuals to explore this enriching field. The direct correlation between amateur radio activities and enhanced STEM capabilities is well-documented and recognized internationally. Implementing a structured novice licensing program, as recommended by CEPT, would align Ireland with best practices globally and catalyse the development of technical competencies among Irish youth.

In conclusion, the benefits of prioritizing the amateur radio novice license in ComReg's agenda extend far beyond the amateur radio community. They touch upon national educational goals, workforce development, and Ireland's standing in high-tech industries. By fostering a regulatory environment that supports amateur radio, ComReg will contribute significantly to Ireland's technological prowess and innovation capacity.

I urge ComReg to reconsider the prioritization of the novice licensing scheme, ensuring it receives the attention and resources necessary to become a reality. This action will not only preserve but also expand Ireland's heritage of innovation and technical excellence.

Thank you for your consideration of this matter.

Yours sincerely, Lez Ferguson

Máire Fitzgerald

From: Marty Grady [redacted]
Sent: Monday 26 August 2024 21:04
To: Market Framework Consult
Subject: Conreg Consultation

Martin Grady
[redacted]

Date 26/08/24

Re: Submission to ComReg Document 24/65

Dear Sir/Madam,

I greatly appreciate the opportunity to provide feedback on the "Proposed Radio Spectrum Management Operating Plan for 2025 – 2028" published recently by ComReg

The importance of Amateur radio is recognised within the context of global and EU regulations and communications across many policy areas. CEPT also notes the role of amateur radio in fostering innovation. Amateurs frequently contribute to technological advancements by experimenting with new modes of digital communication, software-defined radio technologies, and satellite communications, pushing the boundaries of what is technically possible in radio communications.

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I would urge ComReg to prioritise the introduction of a novice licensing scheme in Ireland similar to other countries as per the CEPT recommendations.

Your sincerely,
Martin Grady

[redacted]

[redacted]

[redacted]

Date 27/08/2024

Re: Submission to ComReg Document 24/65

Dear Sir/Madam,

I greatly appreciate the opportunity to provide feedback on the "Proposed Radio Spectrum Management Operating Plan for 2025 – 2028" published recently by ComReg

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I would urge ComReg to prioritise the introduction of a novice licensing scheme in Ireland similar to other countries as per the CEPT recommendations.

Your sincerely,

[redacted]

Sent from Yahoo Mail on Android

[redacted]

From: Michael O'Connor [redacted]
Sent: Wednesday 14 August 2024 18:13
To: Market Framework Consult
Subject: Submission to ComRegs

Submission to ComRegs to Document
24/65

My opinion for a Novice licence:
Having a SWL for nearly a year now with no means of transmitting
to gain experience of any kind is a back step for members like me.
To keep members from leaving the hobby some form of license should be available after an exam to gain some experience before they attain the full exam license.
The following ideas would be a great starting point to keep members engaged in the hobby.
Period of two years, after that take the full exam. (use it or lose it)
Access to 40/20/10/8/5/4M HF/Low
VHF bands
Access to VHF/UHF/SHF including
Q0-100.
No restrictions on power levels (can't be policed, UK as example).
This would allow a novice to part take in the likes of POTA/SOTA/JOTA events, ISS activities, contests, work local and DX, as well as be able to call in and participate in the 40M weekend news,

Yours MICHAEL O'CONNOR [redacted]

[redacted]

From: [redacted]
Sent: Friday 30 August 2024 08:50
To: Market Framework Consult
Subject: Submission to ComReg Document 24/65

[redacted]

27/08/2024

Dear Sir/Madam,

I greatly appreciate the opportunity to provide feedback on the "Proposed Radio Spectrum Management Operating Plan for 2025 – 2028" published recently by ComReg.

The importance of Amateur radio is recognised within the context of global and EU regulations and communications across many policy areas. CEPT also notes the role of amateur radio in fostering innovation. Amateurs frequently contribute to technological advancements by experimenting with new modes of digital communication, software-defined radio technologies, and satellite communications, pushing the boundaries of what is technically possible in radio communications.

In September of 2021, the Irish regulator ComReg issued a document titled... "Proposed Strategy for Managing the Radio Spectrum 2022 to 2024". The consultation was widely well received and in response to this document, ComReg received 26 submissions related to amateur radio.
ComReg recognised wide support for a form of entry-level or novice-level licensing as stated in Section 4.61 of ComReg-21136a.pdf

It is very disappointing that ComReg has failed to put in place a framework for novice licensing in Ireland within the timeline of their strategy statement (2022-2024) as it intended,
I note that it is included in latest strategy consultation, ComReg-24/65, however no resources have been identified to complete this work.

I would urge ComReg to prioritise the introduction of a novice licensing scheme in Ireland similar to other countries as per the CEPT recommendations.

Exams: I would like to see the introduction of online examinations and or in person examinations that could be held at the students own convenience at a local venue, for example Prometric centres across the country.
At present the twice-yearly exams are working but they still fall short for many students who are unable to travel or make the dates offered. These people then have a further 6 months wait and often loose interest or confidence to sit the next exam.

I would also urge that /P be reinstated in the licencing conditions as many people enjoy operating "portable" from Parks (POTA) and Mountain tops (SOTA)
Power: I would urge ComReg to introduce an increased power limit, which would align Irish operators to our UK and EU colleagues.

Yours sincerely,

[redacted]

From: Paraic Nolan [redacted]
Sent: Friday 30 August 2024 13:37
To: Market Framework Consult
Subject: Feedback on ComReg Document 24/65 (Proposed Radio Spectrum Management Operating Plan for 2025 – 2028)

Dear Sir/Madam,

I would like to provide feedback on the 'Proposed Radio Spectrum Management Operating Plan for 2025 – 2028' document published recently by ComReg. I am a relatively recently licensed Amateur radio operator ([redacted]). I am an officer of the National Shortwave Listeners club (Tutor & recently elected Treasurer & Membership records officer), and I believe that this gives me insight in particular to the Novice Licensing topic. The following are my comments on the aspects of the document that are relevant to Amateur Radio:

Response to Sections 3.70 (c) and 3.71 (c) and 6.59:

I strongly encourage ComReg to make the introduction of a novice licensing scheme in Ireland a top priority, aligning with CEPT recommendations and similar initiatives across other countries. This step is crucial to expanding the accessibility and growth of amateur radio in Ireland, which plays a significant role in fostering innovation and cultivating the next generation of radio enthusiasts and technologists.

Amateur radio has witnessed increased interest in Ireland, particularly among schools and youth organizations such as scout groups. This enthusiasm is exemplified by activities like the recent communication between students from six Dublin primary schools and astronaut Jasmin aboard the International Space Station, facilitated by amateur radio. Such events are part of the ARISS (Amateur Radio on the International Space Station) Program, which highlights the educational value of amateur radio in promoting STEM fields.

Furthermore, initiatives like the YOTA (Youngsters on the Air) programme in Ireland demonstrate the potential of amateur radio to engage young people. The introduction of a novice license would serve as an essential stepping stone for these young enthusiasts, providing a pathway into the amateur radio community and supporting its growth.

It is disappointing that ComReg has not yet established a novice licensing framework within the 2022-2024 strategy period as initially intended. While I note its inclusion in the latest strategy consultation, the lack of identified resources for this project is concerning. I strongly urge ComReg to allocate the necessary resources immediately and to begin consultations with relevant stakeholders without delay.

The current HAREC licensing system presents significant barriers to entry, especially for those without a technical background. Other regulatory bodies have successfully implemented phased licensing schemes that allow individuals to gradually build their technical and regulatory knowledge. In contrast, the HAREC exam is an all-or-nothing hurdle, which can discourage potential new licensees, particularly younger individuals.

As seen in the recent consultation, there is a growing appetite for change within the amateur radio community in Ireland. The more progressive radio clubs and initiatives like Radio Scouting Ireland have played a key role in reintroducing radio communication into youth programs, a practice that has been part of scouting since 1918. The annual JOTA-JOTI event, which connects hundreds of thousands of scouts and guides worldwide via amateur radio, highlights the global reach and impact of these efforts.

However, the current licensing structure, particularly the difficulty of the HAREC exam, remains a significant stumbling block for youth participation. While there are a few young licensed members in Ireland, they often come from families with existing license holders who can provide substantial support in preparing for the exam.

I also disagree with the suggestion in Section 6.59 that those interested in learning about radio should explore alternatives like PMR446, CB, LoRa, or online propagation tools. These alternatives do not provide the same level of engagement or educational value as amateur radio. A novice license would enable structured training at an

appropriate level, with clear pathways for progression. The details of spectrum access, power levels, and advancement timelines can be determined during the proposed consultation.

Response to Section 6.63:

I fully support the introduction of the /P suffix to signify portable operation in Ireland. This addition, already in use informally and officially recognized in many other countries, would help eliminate confusion and align our practices with international standards. The /P suffix is particularly relevant for popular programs like Summits on the Air (SOTA) and Parks on the Air (POTA), which encourage amateur operators to engage in portable operations. Formalising the use of this suffix would enhance clarity and support the growing interest in these activities among Irish operators.

Additionally, I welcome ComReg's consideration of the current limitations applicable to mobile and maritime-mobile operations. Addressing these limitations is crucial for ensuring that Irish amateur radio operators can fully participate in a variety of operating environments, similar to their counterparts in other countries. Making these changes would contribute significantly to the flexibility and growth of amateur radio in Ireland.

Response to Section 3.2.1 (Radio Interference Investigations):
I urge ComReg to place a stronger focus on addressing Radio Frequency Interference (RFI) caused by poorly installed solar energy systems. As the adoption of solar energy continues to grow, so too does the potential for RFI from improperly installed or non-compliant systems. This type of interference can significantly disrupt legitimate radio communications, including critical services. Ensuring that solar energy systems comply with appropriate standards and are installed correctly is essential for minimizing RFI and maintaining the integrity of radio communications across Ireland.

I look forward to seeing progress on the matters outlined above.

Regards
Paraic Nolan, [redacted]

[redacted]

From: Paraic Loughnane [redacted]
Sent: Monday 19 August 2024 22:04
To: Market Framework Consult
Subject: Re: Submissions to ComReg Document 24/65

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

Paraic Loughnane
[redacted]

Dear Sir/Madam,

I appreciate the opportunity to provide feedback on the 'Proposed Radio Spectrum Management Operating Plan for 2025 – 2028 'published recently by ComReg.

The introduction of a novice/ entry-level license by 2024 as planned by ComReg would have brought Ireland in line with many other countries in Europe and around the world. It would have opened up more opportunities for Irish youth to engage with radio technology activities in a more meaningful way.

It is now very disappointing to learn that this is now not going to be delivered and worse still that resources have not even been identified to deliver in 2025 or soon thereafter.

While it is understandable that resources are required to complete this work, it is important to acknowlege we are far behind many other countries around the world and in Europe. I would strongly urge ComReg that the consultation phase on the introduction of a novice license should begin without any further delay.

Thank you for the opportunity to give feedback.

We look forward to ComReg progressing the novice license as a matter of urgency.

Yours sincerely,
Paraic Loughnane [redacted]

[redacted]

From: Pat Baynes [redacted]
Sent: Monday 26 August 2024 23:26
To: Market Framework Consult
Subject: ComReg Submission 24/65.

Padraic Baynes

[redacted]

26/08/2024

Re: Submission to ComReg Document 24/65

Dear Sir/Madam,

I appreciate the opportunity to provide feedback on the "Proposed Radio Spectrum Management Operating Plan for 2025 – 2028" recently published by ComReg.

The importance of amateur radio is widely recognised within the context of global and EU regulations, impacting various policy areas. The European Conference of Postal and Telecommunications Administrations (CEPT) also highlights the role of amateur radio in fostering innovation. Amateur radio operators frequently contribute to technological advancements by experimenting with new modes of digital communication, software-defined radio technologies, and satellite communications, pushing the boundaries of what is technically possible in radio communications.

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Power Levels: Finally, I advocate for increasing the power limit for amateur radio operators in Ireland to align with the standards of our UK and EU counterparts.

Thank you for considering these suggestions. I believe they will significantly enhance the development of amateur radio in Ireland.

Yours sincerely,

--
Regards

Padraic Baynes [redacted]

[redacted]

[redacted]

From: Patsy McCabe [redacted]
Sent: Thursday 29 August 2024 22:17
To: Market Framework Consult
Subject: Operating plan for 2025 to 2028

Patsy McCabe [redacted]

[redacted]

29.8.2024

Dear Sir/Madam,

We appreciate the opportunity to provide feedback on the "Proposed Radio Spectrum Management Operating Plan for 2025 – 2028" recently published by ComReg.

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Yours sincerely,
[Patsy McCabe
Sent from Outlook for Android

Obelisk.
Beyond Connection

Patsy McCabe
Account Manager
[redacted]
W: www.obelisk.com

[redacted]

From: [redacted]
Sent: Tuesday 27 August 2024 08:24
To: Market Framework Consult
Subject: Consultation firmware comreg

[redacted]

Date 27-08-2024.

Re: Submission to ComReg Document 24/65

Dear Sir/Madam,

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Thank you for considering these suggestions. I believe they will significantly enhance the development of amateur radio in Ireland.

Yours sincerely,

[redacted]

[redacted]

Slán agus beannacht

[redacted]

From: Reuben [redacted]
Sent: Thursday 29 August 2024 22:05
To: Market Framework Consult
Subject: Operating Plan for 2025 – 2028

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

Name Reuben Forde [redacted]
Address
[redacted]

Date 29/08/2024

Dear Sir/Madam,

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Thank you for considering these suggestions. We believe they will significantly enhance the development of amateur radio in Ireland.

Yours sincerely, Reuben Forde

[redacted]

From: Richard Hendy [redacted]
Sent: Monday 26 August 2024 19:49
To: Market Framework Consult
Subject: Submissions to ComReg Document 24/65

Dear Sir/Madam,

I appreciate the opportunity to provide feedback on the 'Proposed Radio Spectrum Management Operating Plan for 2025 – 2028 'published recently by ComReg.
The introduction of a novice/ entry-level license by 2024 as planned by ComReg would have brought Ireland in line with many other countries in Europe and around the world. It would have opened up more opportunities for Irish youth to engage with radio technology activities in a more meaningful way.
It is now very disappointing to learn that this is now not going to be delivered and worse still that resources have not even been identified to deliver in 2025 or soon thereafter.
While it is understandable that resources are required to complete this work, it is important to acknowledge we are far behind many other countries around the world and in Europe. I would strongly urge ComReg that the consultation phase on the introduction of a novice license should begin without any further delay.
Thank you for the opportunity to give feedback.
We look forward to ComReg progressing the novice license as a matter of urgency.

Regards
Richard

[redacted]

From: [redacted]Ham Radio <[redacted]>
Sent: Tuesday 27 August 2024 11:36
To: Market Framework Consult
Subject: Submission to ComReg Document 24/65

Importance: High

Re: Submission to ComReg Document 24/65

Dear Sir/Madam,

I would like to take this opportunity to provide feedback on the "Proposed Radio Spectrum Management Operating Plan for 2025 – 2028" published recently by ComReg.

- I strongly urge ComReg to prioritize the introduction of a novice licensing scheme in Ireland, following CEPT recommendations and aligning with similar initiatives in other countries.

Such a scheme would greatly enhance the accessibility and growth of amateur radio in Ireland, fostering innovation and supporting the next generation of radio enthusiasts and technologists.

We as Amateur Radio operators see the growth in the hobby In Ireland, with lots of interest from schools, scout groups, in particular school contacts with the International Space Station.
https://www.youtube.com/live/2E8wZd2gBoo?si=prP8ucD3qAsXb4xg.
where students from 6 Dublin primary Schools participating in TU Dublin's STEM project, spoke with astronaut Jasmin Moghbeli as she orbited over Europe in the International Space Station. The contact was done via Amateur Radio at 14:11 Irish Time on the 6th of October 2023.
This activity is part of the ARISS (Amateur Radio on the International Space Station) Program, which promotes links between Schools and radio amateurs around the world with ISS astronauts to promote STEM with an emphasis on amateur radio.

Also worth noting is the YOTA (Youngsters on the Air) programme in Ireland, https://www.facebook.com/profile.php?id=100027269814068 . The purpose of this group is to generate ideas for involving young people and ultimately to show young people how great this hobby is!
YOTA is a quickly growing group of young radio amateurs from IARU Region 1 with a goal to get more young people interested in amateur radio and grow the amateur radio community, the novice licence would be a great stepping stone to getting this exposure.

- Additionally, I would like to advocate for the introduction of an increased power limit for amateur radio operators in Ireland.

Aligning the power limits with those of our UK and EU colleagues would provide a fairer and more consistent operating environment for Irish operators and help further the development of amateur radio within the country.

- Furthermore, I support ComReg not making any changes to the 23cm band.

Reference CEPT - ECC Report 359 document, section 6.3, the study presents results from a simulation methodology, to quantify the impact of amateur station emissions on a deployment of a large number of co-frequency Galileo RNSS (space-to-Earth) receivers.

Thank you for your consideration of these matters.

[redacted]
Robbie Phelan
[redacted]

Regards,

[redacted]

[redacted]

ComReg
One Dockland Central
1 Guild Street
North Wall
Dublin 1
D01 E4X0

A chara,

I refer to Document 24/65, Proposed Radio Spectrum Management Operating Plan for 2025 – 2028 of 01/08/2024.

I am the holder of amateur radio licence [redacted] since 1981, when it was then a Radio Experimenter Licence. Since then, I have seen many changes to the service and I wish to make a few comments and submissions on the proposals within Document 24/65 but specifically to Section 3.12 (Radio Amateur Services.

Paragraph 3.70 (c)

An entry-level Novice Licence is overdue in Ireland. How that will be introduced and what the requirements will need to be worked out.

It is my opinion that the purpose of a Novice Licence should be primarily to encourage more people to become interested in the hobby.

Having said that, I would like to see some requirements specified before a Novice licence is issued. I would hate to see the amateur service become dumbed down and become similar to CB or PMR radio. After all, the hobby is supposed to involve continuous self-training, and not just an on-air chat facility.

I submit that any applicant should have to show some knowledge of radio, the regulations, procedures and safety. These requirements should be basic and easily understood and not a barrier to genuinely interested applicants.

I further submit that any proposed Novice Licence should have an expiry date. I would suggest a two-year validity period.

To encourage Novice licence holders to progress, I submit that no Novice licensee be allowed to re-apply for a Novice licence for at least two years from the expiry date of the previous licence.

I further submit that there be some restrictions to power levels and HF spectrum access for Novice licencees. This would allow them to experience amateur radio, yet encourage them to progress towards taking the HAREC examination to acquire a full CEPT licence, in due course.

I submit that call-signs issued to novices should contain characters to identify the expiry date, so that other amateurs can be sure that they are in contact with legitimate Novices. For example,

EI25XX could indicate that the licence expires in 2025.

There has definitely been an increased interest in amateur radio in recent years. Some of that has been as a result of the Covid lockdowns and this needs to be encouraged. I believe that the introduction of a Novice licence will greatly facilitate this into the future.

Paragraph 3.70 (d)
In general, I would be against any across-the board increase in permissible power levels. By all means, power limits could be automatically raised for designated international and national contests, to allow Irish amateurs to compete on an equal basis with amateurs from other countries.

Conclusion
Those are my observations and submissions on the document. Below, I give my contact details.

Yours sincerely, (by email)

Antoine T. Breathnach

[redacted]

From: Trevor Mc ginnity [redacted]
Sent: Friday 30 August 2024 14:54
To: Market Framework Consult
Subject: Radio

Trevor Mcginnity
[redacted]

Date 30/08/24

Re: Submission to ComReg Document 24/65

Dear Sir/Madam,

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Thank you for considering these suggestions. I believe they will significantly enhance the development of amateur radio in Ireland.

Yours sincerely,
Trevor Mcginnity

[redacted]

From: Troy Gogan [redacted]
Sent: Tuesday 27 August 2024 17:11
To: Market Framework Consult
Subject: Submission to ComReg Document 24/65

Troy Gogan,

[redacted]

26th Aug 2024

Re: Submission to ComReg Document 24/65

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Yours sincerely,
Troy Gogan

[redacted]

From: william [redacted]
Sent: Thursday 29 August 2024 22:17
To: Market Framework Consult
Subject: Operating Plan for 2025 – 2028"

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

William Mc Guigan [redacted]
[redacted]

29.8.2024

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Sent from my Galaxy