



Consultation Paper

Digital Dividend in Ireland

A new approach to spectrum use in the UHF Band

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All responses to this consultation should be clearly marked: "Reference: Submission re ComReg 09 / 15" as indicated above, and sent by post, facsimile, e-mail or on-line at www.comreg.ie (current consultations), to arrive on or before 5pm, 7 May to:

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1 Foreword

The switch from analogue to digital broadcasting and the efficiencies this provides, gives rise to a spectrum dividend, called the “digital dividend”, and also drives a once in a generation opportunity for Ireland. This digital dividend has the facility not only to support new types of broadcasting products and services but also, in freeing up significant amounts of ultra high frequency (UHF) spectrum, to enable new and innovative communications products and services for the benefit of the citizens of Ireland. The first step on this journey will take place with the launch of digital terrestrial television (DTT) in 2009.

Given the importance of this unique opportunity for Ireland, the Commission for Communications Regulation (ComReg) believes it is critical that all the major opportunities and challenges are identified and considered by the appropriate stakeholders in a timely manner so as to ensure that the citizens of Ireland benefit as fully and as quickly as possible. In this context ComReg is today launching a consultation on some of the key high level strategic options that it believes need to be considered. The purpose of this consultation is to advance the debate on Ireland’s digital dividend which was initiated at our 2008 National Annual Conference.

The digital dividend will have a lasting and beneficial impact on the electronic communications sector in Ireland and it is therefore critical that all the relevant stakeholders are engaged as early as possible in the process. We look forward to working with Government, other relevant state agencies, and our European partners to ensure that Ireland can maximise the benefits from its digital dividend.

In this regard, ComReg very much welcomes comments and contributions in response to this consultation paper from the public, spectrum users and industry, state agencies, interest groups, and Government.

**Mike Byrne,
Commissioner**

2 Executive Summary

The purpose of this consultation document is to assist ComReg to identify and address the key issues that will enable Ireland to maximise the benefits from its digital dividend. In drafting the consultation, ComReg was conscious of the contributions to ComReg's 2008 National Conference, the key findings from a report by European Economic Research Ltd (Europe Economics), the Department for Communications, Energy and Natural Resources' paper on the Development of a National Policy Framework for identifying spectrum for the Digital Dividend in Ireland, and the international context for digital dividend.

ComReg intends that this consultation, together with future consultations on other aspects of the digital dividend, will help it to develop strategic options in relation to Ireland's digital dividend. ComReg considers that identifying an appropriate roadmap will help ensure that Ireland best benefits from its digital dividend.

In this consultation document ComReg sets out and invites views on the following high level issues:

- the concept of a “mixed” approach to spectrum allocation in the UHF band to maximise the benefits of Ireland's digital dividend;
- the use of digital dividend spectrum for non-broadcasting services, including:
 - types of services;
 - spectrum requirements of the applications and services identified;
 - value of those services to Irish consumers and citizens; and
 - impact of those services in terms of competition to existing products and services;
- the use of digital dividend spectrum for experimentation and innovation purposes;
- frequency harmonisation issues, including:
 - a proposed harmonised sub-band from 790 to 862 MHz (“the 800 MHz sub-band”);
 - the potential for further harmonised digital dividend sub-bands; and
- the concept of accelerating access to digital dividend sub-band(s) including the timeframe for holding licence competitions for digital dividend spectrum.

The scope and the contribution of the various elements in this consultation towards building a roadmap for digital dividend in Ireland are summarised in Figure 1.0 below.

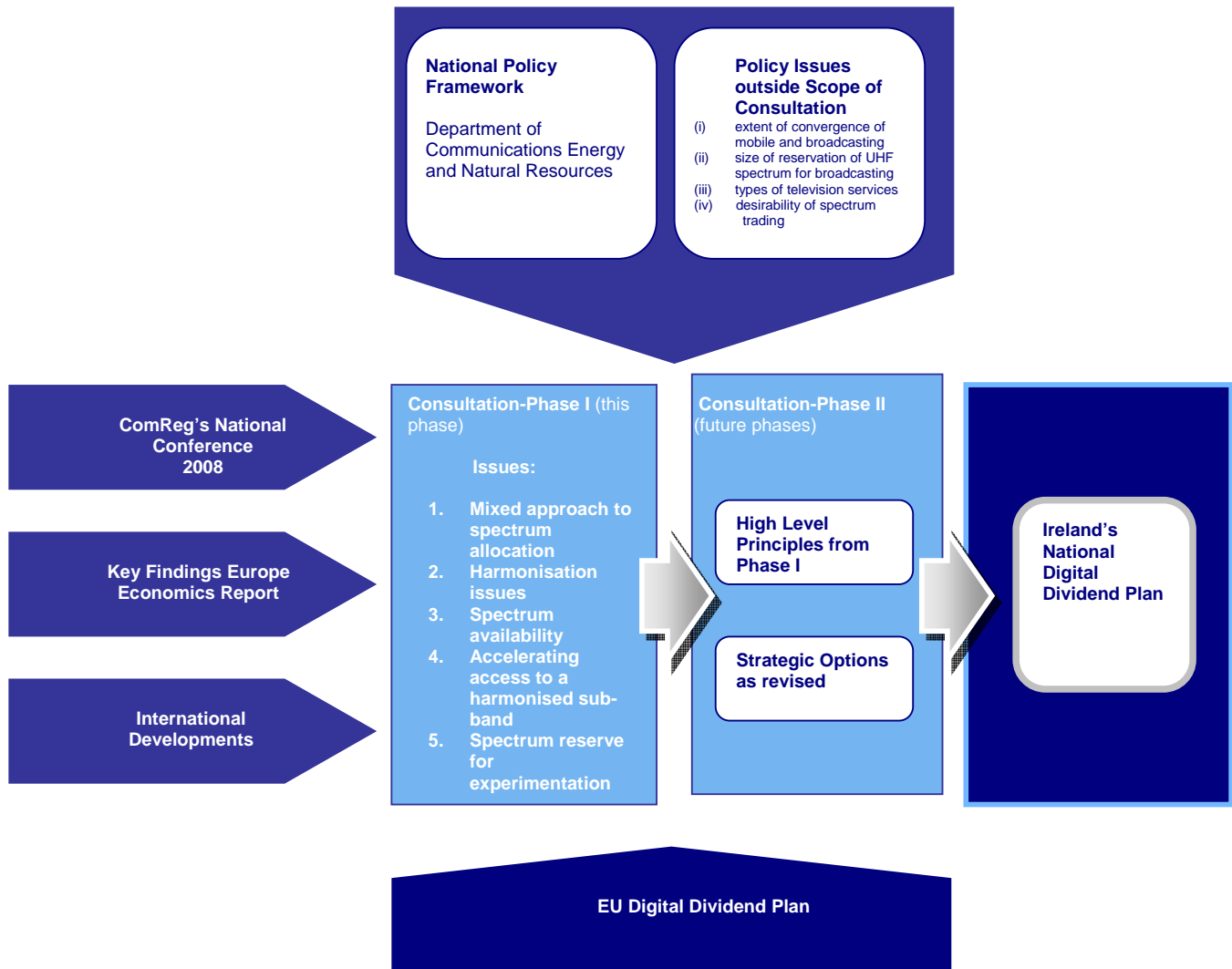


Figure 1.0 The scope and contribution of various elements in this consultation towards building a roadmap for digital dividend in Ireland.

As part of its report to ComReg's National Conference, Europe Economics identified other strategic issues which it considered should be further explored. While ComReg considers these issues to be of importance it recognises they are outside the scope of its current remit, and accordingly are not considered in this consultation. Such issues include:

- the extent and impact of convergence of mobile and broadcasting services;
- the level of radio spectrum reserved for broadcasting services. Under the Broadcasting (Amendment) Act 2007 ("the 2007 Act") at least six (from 8) national multiplexes are reserved for broadcasting;
- what television services and types of content might be used to comprise and justify this reserved broadcasting capacity; and
- the potential for, and desirability of, spectrum trading.

3 Introduction

ComReg held its National Conference in October 2008 to discuss Ireland's digital dividend and the amount of spectrum which could be released for other services following the switchover of Irish terrestrial television services from analogue to digital. ComReg commissioned Europe Economics to prepare a report and make a presentation at the National Conference outlining its key findings on how Ireland could maximise the benefits of its digital dividend.

The purpose of this consultation document is to seek the views of interested parties as to how Ireland can best benefit from its digital dividend, using Europe Economics' findings as a starting point for further discussion. ComReg believes that this consultation is fundamental to the development of an appropriate roadmap for the digital dividend.

ComReg considers that it would also be necessary to carry out further public consultations as the situation in relation to digital dividend develops. ComReg believes that an approach, to which this consultation will contribute, which allows for a mix of broadcasting and non-broadcasting services to use the UHF frequency band will be central in allowing Ireland maximise the benefits from its digital dividend. This so called mixed approach will allow the widest variety of broadcasting services to be introduced while facilitating the greatest efficiency in the use of the digital dividend spectrum for new non-broadcasting services. .

Ireland's digital dividend can boost Ireland's digital economy and for this reason ComReg believes it to be essential to optimise the amount of digital dividend spectrum available to Ireland. ComReg is conscious of the proposal at European level for a harmonised non-mandatory sub-band from channels 61 to 69 ("the 800 MHz sub-band"), for non-broadcasting applications and of the requirement under the 2007 Act to provide spectrum for the carriage of 6 multiplexes for digital terrestrial television (DTT) broadcasting. It intends, nevertheless, to explore the benefits for Ireland through the identification of an additional digital dividend sub-band(s). For instance, a sub-band within the UHF channel range 21 to 60. In particular, ComReg wishes to explore what opportunities channels 36 and 38 might present for Ireland as these, along with channel 69, were identified in the Europe Economics report as possible additional digital dividend spectrum.

Over time and subject to appropriate technical constraints, ComReg considers that greater access to the UHF band can be facilitated on a service and technology neutral basis. ComReg acknowledges that such access must take account of the existing DTT licensing regime, which requires ComReg to licence Radio Telefís Éireann (RTÉ) and the Broadcasting Commission of Ireland (BCI).

In this consultation document three main digital dividend spectrum proposals are explored:

- adoption of mixed usage, involving broadcasting and non broadcasting applications, of the UHF band in reaping the digital dividend;

- creation of a sub-band in the UHF channel range 61 to 69 (the 800 MHz sub-band) for use by non-broadcasting services on a service and technology neutral basis; and
- exploration of the possibility of creating another sub-band(s), within the UHF channel range 21 to 60, based for example, around UHF channels 36 and 38, on a service and technology neutral basis.

In developing these proposals for consultation, ComReg has had regard to:

- presentations made at the National Conference;
- the Department of Communications Energy and Natural Resources' (DCENR) publication on the Development of a National Policy Framework for identifying spectrum for the Digital Dividend
- international developments;
- ComReg's functions and objectives in relation to Ireland's radio spectrum; and
- the key findings and strategic issues identified in the Europe Economics report.

3.1 ComReg's 2008 National Conference

The key objective of ComReg's National Conference was to begin the debate among spectrum users and stakeholders regarding the possible uses and extent of Ireland's digital dividend.

The National Conference, which was attended by over 180 delegates, drew together key stakeholders from the broadcasting and telecommunications sectors. Some of the key assessments of digital dividend in Ireland put forward by the invited speakers included:

- the need for, and benefits of, a national policy framework for digital dividend (Section 3.2);
- the merits of a co-ordinated approach to digital dividend between EU Member States;
- the merits and societal benefits of DTT broadcasting services;
- the benefits of a market-led approach to spectrum assignment where the regulator's role is to provide regulatory certainty so that competition may flourish;
- the benefits and opportunities that the digital dividend presents for innovation and inward investment in Ireland; and
- the benefits of developing digital dividend radio spectrum in the furtherance of mobile broadband services, including potentially enhanced rural broadband services.

Copies of all presentations from the National Conference are available on ComReg's website.¹

¹ See ComReg documents: *CP50a*, *CP50b*, *CP50c* & *CP50d*.

A feature of the National Conference was a report, prepared by Europe Economics², setting out how Ireland can best benefit from its digital dividend (“The Report”). The Report communicates some key findings regarding digital dividend in Ireland and suggests a number of issues that should be considered by stakeholders.

The National Conference also served to highlight the requirement for a balance between the various opportunities that digital dividend may present and the choices that stakeholders, including ComReg, will have to make. The National Conference helped raise the awareness of what choices might exist and looked critically at what opportunities these choices might present for Ireland.

A constant theme at the National Conference was the need to balance and ground any digital dividend opportunities against market realities and the societal needs of citizens. One of the goals of this consultation document is therefore to understand how best this balance can be achieved and to gather information to develop a roadmap towards digital dividend in Ireland.

This consultation document builds on the key assessments from the presentations at the National Conference and the key findings from The Report. This document also acknowledges the ongoing work at an international level in the area of digital dividend spectrum and it also sets out the issues that will need further consideration going forward.

3.2 National Digital Dividend Policy Framework

ComReg considers that as a general principle it should not try to pick winners in terms of the technologies or services which will be successful in the market. It believes that this is a function of the market itself and accordingly, in terms of the implementation of regulatory frameworks, ComReg considers that service and technology neutrality should be a cornerstone of its approach to licensing digital dividend spectrum in Ireland.

It believes that such a policy is complementary to the DCENR’s National Policy Framework³, which involves balancing the competing demands of different, though converging, sectors and identifying the timescales for the work involved.

The National Policy Framework recognises that without some revision to the planned use of broadcasting in the UHF band, the digital dividend spectrum released for other uses could be fragmented across the band. Clearly, this scenario would be inefficient from both spectrum management and consumer perspectives. The National Policy Framework also emphasises the need for Ireland to be aware of the

² The Europe Economics report is available on the ComReg web-site (*ComReg Doc. No. CP50e*).

³ The Development of a National Policy Framework for identifying spectrum for the Digital Dividend is available from the Department of Communications Energy and Natural Resources website at <http://www.dcenr.gov.ie/Communications/Business+and+Technology/Spectrum+Policies+and+the+Digital+Dividend.htm> .

international context (see Section 3.3), where in parallel with developments at a European level, other Member States are developing their plans for identifying spectrum in the UHF band for digital broadcasting as well as for other uses.

ComReg considers that the identification of digital dividend spectrum, and the adoption of the National Policy Framework are key to delivering benefit for Ireland's digital economy and meeting the critical societal needs in this area.

3.3 International developments since the National Conference 2008

To-date, Finland, Sweden, France and Switzerland have decided to release the whole 800 MHz band as their respective digital dividend spectrum. Most recently the United Kingdom decided to consult on changing the configuration of its digital dividend spectrum to make available the whole 800 MHz band⁴ for uses other than broadcasting. ComReg understands that a number of other countries, including Germany, are also likely to identify the 800 MHz band as their digital dividend spectrum. The plans by countries to release lower band spectrum as part of a digital dividend sub-band are much less clear.

Analysys Mason and its partners DotEcon and Hogan and Harston have been recently contracted by the European Commission (EC) to carry out a study on a European approach to exploiting the digital dividend. The study will be used to assist the EC identify and assess the options and possible scenarios to achieve co-ordination of digital dividend across the EU.

The Radio Spectrum Policy Group (RSPG), an advisory group on spectrum issues set up by the EC in 2002, is also re-visiting one of its opinion papers on the spectrum policy implications of digital dividend, RSPG Opinion-07-161, in light of developments in technology and applications in electronic communications services. The RSPG review will examine how the digital dividend can be used on a technology and service neutral basis, while promoting new and innovative applications and services. It will also input to the EC to assist it in defining a digital dividend roadmap for Europe.

The concept of developing a roadmap towards digital dividend in Ireland is therefore a key priority for ComReg.

3.4 ComReg's function and objectives in relation to Ireland's radio frequency spectrum

ComReg's statutory functions and objectives are set out in sections 10 and 12 of the Communications Regulation Act 2002 ("the 2002 Act"), respectively. One such function is the management of Ireland's radio frequency spectrum.⁵

⁴ <http://www.ofcom.org.uk/consult/condocs/800mhz/>

⁵ Section 10(1) (b) of the 2002 Act.

Annex A to this document outlines in greater detail ComReg's relevant functions and objectives with respect to the radio frequency spectrum.⁶ In summary, ComReg's objectives in carrying out this function are to:⁷

- ensure the efficient management and use of the radio frequency spectrum in Ireland⁸;
- promote competition⁹;
- contribute to the development of the internal market⁷; and
- promote the interests of users within the Community⁸.

ComReg is also obliged to promote the harmonisation of use of radio frequencies across the European Community.⁹

3.5 Key findings and strategic issues for Ireland to address according to the research by Europe Economics

The four key findings of The Report were:

1. Once the initial benefits associated with broadcasting are guaranteed there is little scope for increasing the value to consumers by assigning larger amounts of spectrum to broadcasting use;
2. A mixed approach to the allocation of UHF spectrum is central to Ireland's ability to achieve greatest benefit from its digital dividend;
3. The amount of spectrum assigned to alternative uses could be in the region of 80 to 120 MHz; and
4. Any re-allocation of spectrum currently earmarked for broadcasting under current legislation, is likely to require amending legislation.

The Report also highlighted a number of strategic issues which it considered needed to be address, including:

- the need to devise and implement a detailed digital dividend frequency plan;

⁶ This section does not, however, purport to be an exhaustive discussion of all legal provisions relevant to ComReg's functions and objectives.

⁷ In line with Article 9 of Regulation 23(2) of the Electronic Communities (Electronic Communications Networks and Services (Framework) Regulations) 2003 (the "Framework Regulations")

⁸ Section 12(1) (b) of the 2002 Act.

⁹ Section 12(1) (a)(i) of the 2002 Act.

⁷ Section 12(1) (a)(ii) of the 2002 Act.

⁸ Section 12(1) (a)(iii) of the 2002 Act.

⁹ Regulation 23(2) of the Framework Regulations.

- the need to reach agreement with neighbouring administrations in relation to spectrum allocation;
- support for the principle of a harmonised sub-band at a European level for non-broadcasting services;
- the priorities to be applied to increased communications capacity;
- how spectrum allocation should be performed; and
- what demands for spectrum may arise in the future and whether such demands would exceed supply.

This consultation document explores these issues building on the key findings from The Report.

3.6 Ireland's broadcasting services and the digital dividend

ComReg recognises that broadcast services have much more than economic and entertainment values. This is acknowledged by the reservation of the major part of the spectrum in the band for broadcasting services and by the legislative provision, discussed in Section 3.7, requiring the licensing of 6 multiplexes for broadcasting services. The increased capacity available for broadcast services will enable additional free to air services as well as subscription services to be made available, which will in turn enable a richer bouquet of services to be made available terrestrially off air than has heretofore been possible.

In terms of consumers it is an accepted view that broadcasting services can deliver high levels of social value because it can be enjoyed by every segment of society. For instance, according to the digital dividend review consultation document published by the UK Office of Communications (Ofcom), broadcasting also provides public value for society as a whole through the following:

- access and inclusion;
- quality of life;
- educated citizens;
- informed democracy;
- cultural understanding; and
- belonging to a community.

3.7 Reservation of UHF spectrum for digital broadcasting under the 2007 Act

The 2007 Act, which reserves a large portion of UHF spectrum for broadcasting services (between 272 to 312 MHz) specifically for DTT, though radio services may also be carried on the DTT multiplexes and it is envisaged that related services such as mobile TV and programme making and special events (PMSE) will also be accommodated in that spectrum.

In particular, it allows for 2 multiplexes to be licensed by ComReg to RTÉ for the carriage of the public service programme services and for 4 to be licensed by ComReg to the Broadcasting Commission of Ireland, which will in turn enter into contractual arrangements with independent multiplex operator(s) who will establish, maintain and operate those national television multiplexes.

In light of this spectrum reservation and these specific licensing regimes for DTT¹⁰ (and digital radio), ComReg considers that any rights of use to remaining UHF spectrum comprising the digital dividend should exclude the ability to provide DTT and other services explicitly provided for under the 2007 Act.

ComReg may consult in the future on mechanisms that could be employed to exclude DTT services from spectrum rights of use. Nevertheless, it welcomes any preliminary views respondents may have on such mechanisms.

In addition, should spectrum demand for the provision of DTT services not in fact meet the level envisaged in the 2007 Act, ComReg considers that it should be possible to review the amount of spectrum reserved for broadcasting. It also considers that such a review should be carried out following analogue switch-off of television services in the UHF spectrum band.¹⁴ ComReg considers that this review need not be influenced by the situation regarding the switch-off of analogue television services in the very high frequency (VHF) band. That band does not form part of this consultation.

¹⁰ ComReg's role in this licensing scheme is also set out in the 2007 Act and its licensing regime is set out in ComReg Document numbers: 07/90, 07/90a and 07/90b.

¹⁴ ComReg notes that legislative change would likely be required to affect the level of spectrum reservation for DTT services in the 2007 Act.

4 Consultation issue: Value and use of spectrum for non-broadcasting services

In light of the reservation of UHF spectrum for DTT and other digital broadcasting services provided for in the 2007 Act, it is appropriate to consider the potential uses of digital dividend spectrum for non-broadcasting uses and the value of such services to Irish citizens, consumers and the Irish digital economy. In this regard, the Report noted that the experimentation and spectrum innovation sector, or the public sector, could yield high levels of value but have quite different specific requirements for digital dividend radio spectrum.

4.1 Views regarding the value to Irish society, consumers and Ireland's digital economy of non-broadcasting services

The UHF spectrum band is considered to be valuable spectrum due to its advantageous propagation characteristics. Such favourable propagation characteristics allow for wide area coverage, reasonable building penetration and high capacity bandwidth.

ComReg considers that digital electronic communications networks should not be restricted to carrying particular types of applications and services. However any spectrum options which may arise as part of the digital dividend roadmap might require ComReg to have regard to the new applications and services likely to arise.

In order to best inform its considerations regarding value of non-broadcasting services ComReg would welcome input on the potential levels of value, including any social value which may be produced for Irish consumers and citizens and Ireland's digital economy, arising from non-broadcasting uses in the digital dividend spectrum.

Q. 1. What would you consider to be the levels of value and benefits, including any social value which may be produced for Irish consumers / citizens and Ireland's digital economy arising from non-broadcasting uses of the digital dividend?

Q. 2. How in your view could various industry sectors, for example transport, healthcare, education or other public sector industries, benefit from utilising digital dividend spectrum? Please include details of the potential spectrum requirements of the industry in your answer.

4.2 Views on applications and services likely to arise with non-broadcasting use of spectrum

ComReg must provide for the use of digital dividend spectrum in the State on an equitable basis in the interests of Irish consumers. This will require a clear understanding of the needs of the digital economy as a whole by ensuring access to digital dividend services everywhere in the State.

To gain a deeper understanding of the spectrum requirements associated with non-broadcasting use of spectrum, ComReg would value input from respondents on the following key issues:

- types of applications and services envisaged;
- possible spectrum requirements for such applications and services;
- timeframes for making available rights of use to digital dividend spectrum; and
- the potential levels of competition which could result whether in existing or new products and services markets.

Q. 3. Please outline your views regarding (i) the types of applications and services which you consider the digital dividend should be used for; (ii) possible spectrum requirements of those applications; (iii) timeframes for making available rights of use for digital dividend spectrum; and (iv) the potential levels of competition which may result in existing or new products and services markets.

Q. 4. Would you consider there to be other key issues which should be considered in terms of gaining a deeper understanding of the spectrum requirements of new applications and services? If so, what are they and please elaborate.

5 Consultation issue: Reservation of spectrum for experimental purposes

An interesting consideration raised by the Report relates to the concept of reserving some digital dividend spectrum for experimental purposes to encourage inward investment and innovation in Ireland.

To help encourage and maximise the use of radio spectrum for the benefit of industry and research in Ireland ComReg already operates a wireless initiative to make spectrum available for testing and trialling of innovative radio systems and services. Facilitating access to radio spectrum, particularly for innovative technologies and services, is a key objective of ComReg's spectrum management strategy¹¹ and ComReg is committed, where possible, to giving spectrum users access to the spectrum for such purposes.

Ireland possesses some unique advantages compared to its European neighbours. Ireland's position on the western edge of Europe and its low population density means that radio frequency spectrum is relatively un-congested in some frequency bands. Ireland has a well developed high-tech sector including many global ICT companies that use radio spectrum to conduct their global businesses. Ireland's natural advantages mean that it is well positioned as a test-bed for companies seeking to test and develop new products and services using radio spectrum.

ComReg is keen to ascertain where and how much demand exists for reserving dividend spectrum for experimentation and innovation. The consideration of such a reserve needs to be explored in terms of the proposal to clear a sub-band in the UHF spectrum channels 61 to 69 or in terms of potential other sub-band(s) in the UHF spectrum channels 21 to 60.

Q. 5. What are your views regarding the level of demand for Ireland to reserve UHF spectrum for innovation and experimentation? Please support your views with consideration to the availability of UHF spectrum.

¹¹ ComReg's spectrum management strategy for 2008 to 2010 was published on 1 July 2008, see *ComReg Doc. No. 08/50*.

6 Consultation issue: Mixed approach to spectrum allocation in the UHF band

In its report Europe Economics concluded that the majority of benefits from broadcasting associated with the digital dividend come from the migration of existing analogue services to high definition digital and that assigning additional spectrum to broadcasting yields decreasing overall benefits. The Report also maintained that the economic value of combining broadcasting and other applications in the band in a mixed approach was greater than that of broadcasting alone as, following the migration of existing analogue services to digital, the incremental value of using part of the spectrum for non broadcasting services was greater than that of using it for broadcasting only

It therefore considered that a “mixed approach”, whereby spectrum would be assigned to both broadcasting and other services rather than for one use only, would be central to Ireland’s ability to achieve greatest benefit from its digital dividend.

ComReg wishes to gain the views of stakeholders on the argument that a mixed approach would yield a better economic return than a pure broadcasting approach and whether the concept of a mixed approach to spectrum allocation would be appropriate for Ireland’s digital dividend.

Q. 6. In light of your views on non-broadcasting services, do you consider that a mixed approach to spectrum allocation in the UHF spectrum band should be adopted? Please provide reasons for your view.

It would also seem to ComReg that the initial level of broadcasting and non-broadcasting services within the digital dividend spectrum is, to some extent, determined by the interplay of the 2007 Act, which reserves a large portion of UHF spectrum for broadcasting services (between 272 to 312 MHz), and ComReg’s view that spectrum rights of use to remaining UHF spectrum (80 to 120 MHz) should exclude the ability to provide DTT services.

As discussed in Section 3.7, ComReg considers that in the event spectrum demand for the provision of DTT and other broadcasting services not meeting the level envisaged in the 2007 Act, this initial level should be reviewed. It was also considered that such a review should be carried out following analogue switch-off of television services in the UHF spectrum band, and furthermore that this review need not be influenced by the situation regarding the switch-off of analogue television services in the very high frequency (VHF) band.

Q. 7. Do you agree with ComReg's assessment regarding the initial mix between broadcasting and non-broadcasting services? Please answer in terms of your views regarding the initial mix between broadcasting and non-broadcasting services and any other considerations that you consider relevant.

Q. 8. Do you consider that, if the spectrum demand for the provision of DTT services does not meet the level envisaged by the 2007 Act, a review of the initial mix should be carried out following analogue switch-off of television services in the UHF spectrum band? If so, please provide reasons for your view and also indicate which stakeholder(s) should participate in such a review. If not, please provide reasons for your view.

7 Consultation issue: Frequency harmonisation issues

The EC considers early progress on identifying the digital dividend spectrum for services other than broadcasting to be an important step in unlocking the benefits from this radio spectrum. It is also conscious of providing certainty regarding the digital dividend frequencies in Europe as soon as possible given the lead time associated with bringing new electronic communications networks and services to market.

EC committees, such as the RSPG, and committees within the European Conference of Postal and Telecommunications Administrations (CEPT), including the Electronic Communications Committee Task Group 4 (ECC TG4), on foot of mandates from the EC, are studying radio spectrum that could be released for use by non-broadcasting services. Together with the changes made to the international radio regulations at the World Radio Conference 2007 (WRC07) there is support for the use of 800 MHz sub-band (UHF channels 61 to 69) for uplink and downlink electronic communications networks and services.

7.1 800 MHz sub-band proposal: UHF channels 61 to 69

ComReg is conscious that the Irish market is limited in size as compared to the markets in other European Member States. In such circumstances, there is likely to be considerable benefit to Irish consumers and the digital economy, through economies of scale arising from the availability to operators and consumers in Ireland of apparatus and customer equipment produced for a mass market rather than specifically for the Irish market where Ireland's digital dividend is harmonised with larger European markets.

In this context, ComReg sees considerable merit in the 800 MHz sub-band being reserved for uses other than broadcasting on a potentially service- and technology-neutral basis. Figure 2.0 shows a channel plan illustrating this spectrum after broadcasting has been moved into the lower end of the band.

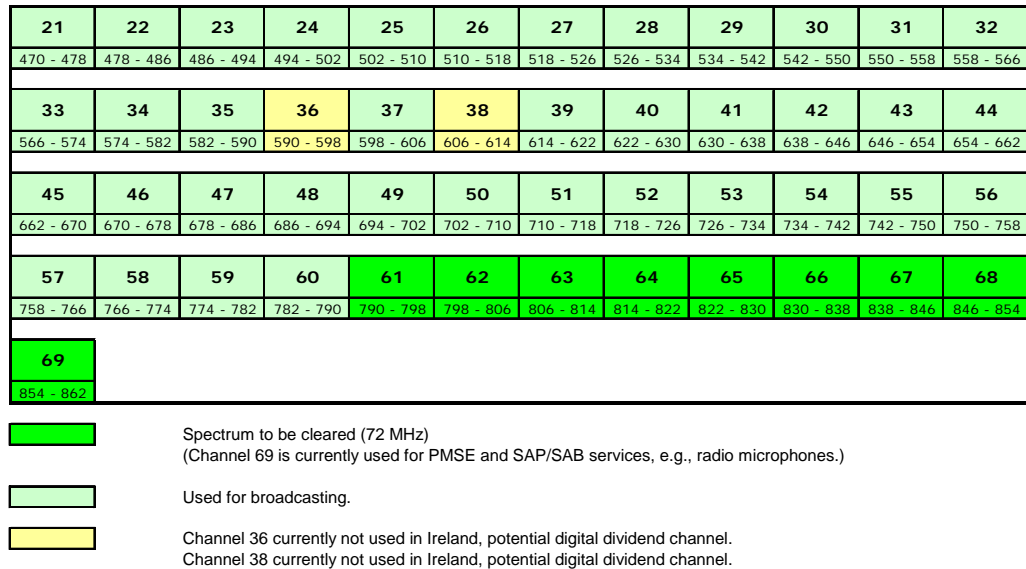


Figure 2.0 Channel plan showing the 800 MHz sub-band if cleared in Ireland.

Q. 9. Do you consider that the 800 MHz sub-band should be reserved for services other than broadcasting? Please provide reasons for your view.

Q. 10. How do you consider that the current uses of channel 69 in Ireland, for example Programming Making and Special Events (PMSE) uses, would be impacted by reserving the 800 MHz band for non broadcasting services? Please provide your view on how PMSE uses could be accommodated if such uses were to be displaced from channel 69.

7.2 Potential additional sub-band

With some modifications to Ireland’s digital broadcasting plan ComReg considers that it might be possible to create and clear a second sub-band lower in the UHF band. Some countries may also release a lower sub-band but such proposals are unclear at present except for those recently put forward by the UK where a proposal has been put forward to clear a lower sub-band from UHF channels 31 to 37. ComReg believes that there could be benefit to Ireland arising from the creation of a second sub-band which could be used for non broadcasting services as part of the digital dividend. The creation of a second subband would require a further adjustment of the spectrum reserved for broadcasting and the technical and economic merits of the proposal would need to be discussed before any final decision was made. Decisions made by other administrations which would influence the availability of equipment in a lower sub-band for non broadcasting applications would also be critical.

Nevertheless, ComReg considers that scope for the identification of further UHF spectrum channels as part of the digital dividend should be explored. For example, UHF spectrum channel 36 and 38 could be available for implementation in Ireland subject to agreement with neighbouring administrations.

- Q. 11. Do you consider there to be merits in the identification of additional sub-band(s)? If so, please provide details in terms of timing and any other details which you consider relevant and reasons for your view. If not, please provide details and reasons for your view.**
- Q. 12. What type of channel configurations would you consider would deliver most economies of scale in terms of availability of equipment and tuning / roaming of equipment? Please explain in terms of an indicative channel plan of frequencies, see for example Figure 2.0, and if you propose a channel configuration please give details of how this might impact broadcasting use of the band?**

8 Consultation issue: Accelerating access to a sub-band

The 2007 Act includes provisions for ComReg to issue other multiplex licences following consultation with the Minister and the BCI.

Bearing in mind the typical lead times involved in bringing new electronic communications services to market, ComReg wishes to ascertain whether there is interest in spectrum rights of use for some cleared spectrum prior to analogue switch-off of television services in the UHF band.

ComReg places importance on the non-fragmentation of the sub-band(s) but would welcome views on the impact, if any, of delayed access to this spectrum. ComReg also considers that the timing of licence awards for spectrum arising out of the digital dividend needs to be considered regardless of whether there would be early access. It therefore welcomes views on the timing of licence awards for digital dividend spectrum and whether there would be a consensus view regarding:

- The optimal timing of digital dividend licence awards (e.g. how far in advance of switch-off would be practicable); and
- The mechanisms for negotiating early access to spectrum being used by broadcasters (if this is what is desired by industry).

ComReg considers views on the following would also assist it in assessing the issue of access to the digital dividend (whether on an accelerated basis or not):

- Possible opportunity costs of delayed access;
- Benefits in terms of certainty in terms of accelerating access to digital dividend including holding early auctions;
- Time-table of analogue television switch-off in the band;
- Geographical location of potential cleared spectrum; and
- Risk of fragmentation of digital dividend radio spectrum.

- Q. 13. Do you consider there to be merits in accelerating access to a digital dividend sub-band in Ireland? If so, what considerations do you believe would need to be taken into account and how would they impact accelerating access to the digital dividend, for example (i) possible opportunity costs of delayed access; (ii) time-table for analogue television switch-off; (iii) geographic location of potential cleared spectrum bands; (iv) risk of fragmentation of digital dividend; and (v) any other risk/benefits which would need to be considered.**
- Q. 14. What would you consider to be an optimal time for holding awards for digital dividend spectrum? Please refer to the considerations outlined in question 13 above.**
- Q. 15. Please qualify your answers to questions 13 and 14 in terms of what benefits might accrue to Irish consumers and citizens and Ireland's digital economy if access to a sub-band could be made available as soon as possible.**
- Q. 16. Please also provide views on the opportunity cost of delayed access to cleared spectrum and the possibility of negotiating early access directly with broadcasting spectrum users.**

9 Other consultation issues

ComReg considers that rights of use to spectrum comprising Ireland's digital dividend should in the interest of promoting market mechanisms and lighter touch regulation generally be made available on a technology and service neutral basis. Having regard to the discussion set out in Chapter 3, in particular in Section 3.7, ComReg considers that any rights of use to remaining UHF spectrum comprising the digital dividend must, in the spirit of the 2007 Act, exclude the ability to provide DTT and other services explicitly provided for under that Act.

Q. 17. Do you consider that service and technology neutrality should generally be a key principle for spectrum rights of use arising from the digital dividend? Please provide reasons for your view.

Q. 18. Do you consider that spectrum rights of use arising from the digital dividend should exclude the ability to provide DTT services? Please provide reasons for your view.

10 Submitting Comments

All comments are welcome; however it would make the task of analysing responses easier if comments were referenced to the relevant question numbers from this document.

The consultation period will run until 7 May 2009 during which ComReg welcomes written comments on any of the issues raised in this paper.

Having analysed and considered the comments received, ComReg envisages publishing a report on the consultation which will, *inter alia*, summarise the responses to the consultation.

In order to promote further openness and transparency ComReg will publish all respondents' submissions to this consultation, subject to the provisions of ComReg's *Guidelines on the Treatment of Confidential Information* – ComReg Document 05/24. We would request that electronic submissions be submitted in an-unprotected format so that they can be appended into the ComReg submissions document for publishing electronically.

Please note

ComReg appreciates that many of the issues raised in this paper may require respondents to provide confidential information if their comments are to be meaningful.

As it is ComReg's policy to make all responses available on its web-site and for inspection generally, respondents to consultations are requested to clearly identify confidential material and place confidential material in a separate annex to their response.

Such Information will be treated subject to the provisions of ComReg's *Guidelines on the Treatment of Confidential Information* – ComReg Document 05/24.

Appendix A – Regulatory Framework

The Communications Regulation Act 2002 (the 2002 Act) sets out, amongst other things, ComReg’s functions and objectives. One such function is the management of Ireland’s radio frequency spectrum.¹⁶ ComReg’s objectives¹⁷ in carrying out this function are to:

1. ensure the efficient management and use of the radio frequency spectrum in Ireland¹⁸;
2. promote competition¹²;
3. contribute to the development of the internal market¹³; and
4. promote the interests of users within the Community¹⁴.

In carrying out its radio frequency management function, the 2002 Act requires ComReg to, amongst other things, ensure the efficient management and use of the radio spectrum and:

- ensure that any measures taken by it are proportionate having regard to the objective of ensuring the efficient management and use of the radio frequency spectrum¹⁵;
- have regard to international developments with regard to electronic communications networks and electronic communications services, associated facilities, postal services, the radio frequency spectrum and numbering¹⁶;
- 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 ECS¹⁷; and
- comply with any policy direction given to ComReg by the Minister for Communications, Energy and Natural Resources (“the Minister”) as he or she

¹⁶ Section 10(1) (b) of the 2002 Act.

¹⁷ In line with Article 9 of Regulation 23(2) of the Electronic Communities (Electronic Communications Networks and Services (Framework) Regulations 2003 (the “Framework Regulations”)

¹⁸ Section 12(1) (b) of the 2002 Act.

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

¹³ Section 12(1) (a)(ii) of the 2002 Act.

¹⁴ Section 12(1) (a)(iii) of the 2002 Act.

¹⁵ Section 12(3) of the 2002 Act.

¹⁶ Section 12 (5) of the 2002 Act.

¹⁷ Section 12 (6) of the 2002 Act.

considers appropriate to be followed by ComReg in the exercise of its functions.¹⁸

The 2002 Act requires ComReg, when exercising its functions in relation to the provision of electronic communications networks and services, to take all reasonable measures which are aimed at the promotion of competition, including:

- ensuring that users, including disabled users, derive maximum benefit in terms of choice, price and quality;
- ensuring that there is no distortion or restriction of competition in the electronic communications sector;
- encouraging efficient investment in infrastructure and promoting innovation, and
- encouraging efficient use and ensuring the effective management of radio frequencies and numbering resources.

The 2002 Act requires ComReg, when exercising its functions in relation to the provision of electronic communications networks and services, to take all reasonable measures which are aimed at contributing to the development of the internal market, including:

- removing remaining obstacles to the provision of electronic communications networks, electronic communications services and associated facilities at Community level;
- encouraging the establishment and development of trans-European networks and the interoperability of transnational services and end-to-end connectivity;
- ensuring that, in similar circumstances, there is no discrimination in the treatment of undertakings providing electronic communications networks and services and associated facilities; and
- co-operating with electronic communications national regulatory authorities in other Member States of the Community and with the Commission of the Community in a transparent manner to ensure the development of consistent regulatory practice and the consistent application of Community law in this field.

The 2002 Act requires ComReg, when exercising its functions in relation to the provision of electronic communications networks and services, to take all reasonable measures which are aimed at the promotion of the interests of users within the Community, including:

- ensuring that all users have access to a universal service;
- ensuring a high level of protection for consumers in their dealings with suppliers, in particular by ensuring the availability of simple and inexpensive dispute resolution procedures carried out by a body that is independent of the parties involved;

¹⁸ Section 13 (1). ComReg has had regard to the two policy directions made by Dermot Ahern T.D. then Minister for Communications, Marine and Natural Resources, on 21 February 2003 and 26 March 2004.

- contributing to ensuring a high level of protection of personal data and privacy;
- promoting the provision of clear information, in particular requiring transparency of tariffs and conditions for using publicly available electronic communications services;
- encouraging access to the internet at reasonable cost to users;
- addressing the needs of specific social groups, in particular disabled users; and
- ensuring that the integrity and security of public communications networks are maintained.

Appendix B – Consultation Questions

List of Questions

- Q. 1. What would you consider to be the levels of value and benefits, including any social value which may be produced for Irish consumers / citizens and Ireland’s digital economy arising from non-broadcasting uses of the digital dividend? 13
- Q. 2. How in your view could various industry sectors, for example transport, healthcare, education or other public sector industries, benefit from utilising digital dividend spectrum? Please include details of the potential spectrum requirements of the industry in your answer. 13
- Q. 3. Please outline your views regarding (i) the types of applications and services which you consider the digital dividend should be used for; (ii) possible spectrum requirements of those applications; (iii) timeframes for making available rights of use for digital dividend spectrum; and (iv) the potential levels of competition which may result in existing or new products and services markets. 14
- Q. 4. Would you consider there to be other key issues which should be considered in terms of gaining a deeper understanding of the spectrum requirements of new applications and services? If so, what are they and please elaborate. 14
- Q. 5. What are your views regarding the level of demand for Ireland to reserve UHF spectrum for innovation and experimentation? Please support your views with consideration to the availability of UHF spectrum. 15
- Q. 6. In light of your views on non-broadcasting services, do you consider that a mixed approach to spectrum allocation in the UHF spectrum band should be adopted? Please provide reasons for your view. 16
- Q. 7. Do you agree with ComReg’s assessment regarding the initial mix between broadcasting and non-broadcasting services? Please answer in terms of your views regarding the initial mix between broadcasting and non-broadcasting services and any other considerations that you consider relevant. 17
- Q. 8. Do you consider that, if the spectrum demand for the provision of DTT services does not meet the level envisaged by the 2007 Act, a review of the initial mix should be carried out following analogue switch-off of television services in the UHF spectrum band? If so, please provide reasons for your view and also indicate which stakeholder(s) should participate in such a review. If not, please provide reasons for your view. 17
- Q. 9. Do you consider that the 800 MHz sub-band should be reserved for services other than broadcasting? Please provide reasons for your view. 19
- Q. 10. How do you consider that the current uses of channel 69 in Ireland, for example Programming Making and Special Events (PMSE) uses, would be impacted by reserving the 800 MHz band for non broadcasting services? Please provide your view on how PMSE uses could be accommodated if such uses were to be displaced from channel 69. 19

- Q. 11. Do you consider there to be merits in the identification of additional sub-band(s)? If so, please provide details in terms of timing and any other details which you consider relevant and reasons for your view. If not, please provide details and reasons for your view.20
- Q. 12. What type of channel configurations would you consider would deliver most economies of scale in terms of availability of equipment and tuning / roaming of equipment? Please explain in terms of an indicative channel plan of frequencies, see for example Figure 2.0, and if you propose a channel configuration please give details of how this might impact broadcasting use of the band?20
- Q. 13. Do you consider there to be merits in accelerating access to a digital dividend sub-band in Ireland? If so, what considerations do you believe would need to be taken into account and how would they impact accelerating access to the digital dividend, for example (i) possible opportunity costs of delayed access; (ii) time-table for analogue television switch-off; (iii) geographic location of potential cleared spectrum bands; (iv) risk of fragmentation of digital dividend; and (v) any other risk/benefits which would need to be considered. ...22
- Q. 14. What would you consider to be an optimal time for holding awards for digital dividend spectrum? Please refer to the considerations outlined in question 13 above.22
- Q. 15. Please qualify your answers to questions 13 and 14 in terms of what benefits might accrue to Irish consumers and citizens and Ireland's digital economy if access to a sub-band could be made available as soon as possible..22
- Q. 16. Please also provide views on the opportunity cost of delayed access to cleared spectrum and the possibility of negotiating early access directly with broadcasting spectrum users.22
- Q. 17. Do you consider that service and technology neutrality should generally be a key principle for spectrum rights of use arising from the digital dividend? Please provide reasons for your view.23
- Q. 18. Do you consider that spectrum rights of use arising from the digital dividend should exclude the ability to provide DTT services? Please provide reasons for your view.23