



Consultation Paper

Regional DVB in the UHF Band

Consultation and Request for Expressions of Interest

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All responses to this consultation should be clearly marked:-
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and sent by post, facsimile, e-mail or on-line at www.comreg.ie
(current consultations), to arrive on or before [5.00 pm, Thursday
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Please note ComReg will publish all respondents submissions
with the Response to this Consultation, subject to the provisions
of ComReg’s guidelines on the treatment of confidential
information – ComReg 05/24

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1 Foreword [by the Chairperson]

ComReg is aware that throughout Europe there is a move towards digital technology in broadcasting, particularly in television and that at a European level the debate is ongoing in relation to the switch off of analogue terrestrial television services. Digital technology offers the opportunity of additional services, better quality picture and sound and potentially, the availability of converged broadcasting, telephony and data services using a single device.

In Ireland digital television services have to date been available only via satellite, cable and MMDS. The Department of Communications, Marine and Natural Resources is considering options in relation to the introduction of digital terrestrial television on a national basis.

ComReg considers that there may be at this point in time an opportunity to promote competition in the delivery of digital television by making licences available for terrestrial services at a local or regional level. In addition, it considers that it is appropriate to facilitate the provision of converged television, telephony and data services on hand held devices. It wishes to consult in relation to a proposal to introduce a licensing scheme for local and regional services and possibly on a broader scale for hand held devices. It also seeks views as to whether standards for hand held devices other than DVB-H should be licensed in the future. In addition it is seeking expressions of interest in the provision of services under any scheme which would result from the consultation process.

I would encourage readers to let ComReg have their views on the proposal and look forward to engaging with interested parties in relation to the development of digital terrestrial television in Ireland.

Isolde Goggin
Chairperson

2 Executive Summary

The purpose of this consultation is primarily to seek views on the launch by ComReg of a scheme to issue licences for local or regional Terrestrial Digital Video Broadcasting (DVB) in the UHF Band using the standards applicable to DVB-T or DVB-H. Regional DVB, subject to spectrum availability and the choice of programming provided, could be a compliment to National Digital Terrestrial Television (DTT). DVB-H opens up the possibility of the mobile availability of converged TV, radio, telephony and data services on a hand held device. The consultation also seeks expressions of interest in applying for licences for the provision of services using either standard.

The proposed scheme could facilitate competition at a local or regional level by enabling local operators to deliver DVB. Regional DVB would offer consumers an increased choice of digital TV providers and could encourage variety in service offerings. The proposed scheme would also allow for innovative new services such as Digital Video Broadcasting over handheld devices.

This consultation paper seeks to establish what interest exists in providing DVB services on a regional or local basis and also seeks views on the appropriate licensing process. It is proposed that the initial duration of the regional licences would be set for up to 5 years. Licences issued under the scheme would be secondary to National DTT, when it is launched and would be amended or terminated on the introduction of national DTT, if the spectrum is required for the national service. In cases where the spectrum licensed for regional or local provision were to be required for the roll out of national DTT, ComReg would consider proposals from the affected licensee for alternate frequencies for the regional DVB service.

ComReg launched a revised licensing scheme for test and trial licences earlier in 2005 (see ComReg document No. 05/35 for Application Guidance Notes). It is willing to facilitate a trial or trials of DVB-H technology or other standards to deliver services to handheld devices, and would, therefore, be anxious to hear from potential participants in a trial. In addition, ComReg is prepared to facilitate parties interested in co-operating in a trial, if this is considered helpful.

3 Introduction

Throughout Europe there is a migration from analogue to digital broadcasting across all platforms. There are benefits for both the broadcasters and consumers arising from the adoption of digital technology. For the broadcasters, digital is significantly more efficient than analogue broadcasting in terms of spectrum usage. With a switch from analogue to digital more broadcasting services can be carried on a given amount of spectrum and converged services are possible (potentially combining telephony and data services with broadcasting services). For the consumer the benefits of digital broadcasting can include more TV and radio channels, improved picture quality, better sound, enhanced programme and interactive services. They also include the possibility of converged broadcasting, data and telephony services being available on a single platform. Digital Terrestrial Broadcasting can offer the additional benefits of portable and mobile reception.

Ireland has a high take up of digital TV services compared to many EU Member States. At the end of September 2005 there were 563,000 digital subscribers. This represented approximately 42% of all TV households. Digital services are provided via satellite, cable and MMDS¹. They are not currently available, in Ireland, on the off-air terrestrial platform.

The 2001 Broadcasting Act provided for the introduction of national Digital Terrestrial Television (DTT) in Ireland using 6 multiplexes. The legislation put in place the framework for introducing DTT on a commercial basis. It also provided that the national programme services were to be given multiplex capacity in order to ensure that they would be available digitally on a universal basis. A process undertaken following the enactment did not result in a successful bid for the multiplexing licence and the DTT network was not rolled-out. The Department of Communications, Marine and Natural Resources is currently looking at fresh options for the introduction of free-to-air digital television in Ireland. In this regard it has announced in June of this year that it intended to conduct a DTT pilot in order to develop interest and momentum in the DTT platform. Initial transmissions are planned from the Three Rock site in Dublin and the Clermont Carn site in Louth. ComReg will make frequencies available for the trials at those sites.

The Broadcasting Act, 2001 also included a provision that empowered ComReg to issue licences under the Wireless Telegraphy Acts for additional digital multiplexes above and beyond the 6 reserved for national DTT. Similarly, the 2001 Act allows for the Commission to issue further licences to other entities in respect of transmission facilities.

The purpose of this consultation is to seek views on the launch by ComReg of a scheme to issue licences for local or regional Digital Video Broadcasting (DVB) in the UHF Band or potentially on a wider scale in the case of DVB-H. Regional DVB, subject to spectrum availability, could be a compliment to National DTT, when the

¹ ComReg Document 05/92: [Irish Communications Market: Quarterly Key Data Report](#), December 2005

latter gets underway. Expressions of interest are sought for the provision of local or regional services. The proposed scheme could facilitate competition at a local or regional level by enabling local operators to deliver digital terrestrial television. Regional DVB has the potential to offer consumers an increased choice of digital TV providers and could encourage variety in service offerings.

This consultation seeks to establish what interest exists in providing DVB services on a regional or local basis and also seeks views on the appropriate licensing process. The lead-up to national DTT being available may be relatively short, and, potentially, the regional scheme could run in tandem with the national service depending on the available spectrum in the UHF television bands that is not being used for national DTT. It is envisaged that the initial duration of the regional licences would be set for a maximum of 5 years. Licensees would be required to identify and nominate the frequencies they wish to use to deliver services. Licences, however, would be amended or terminated on the introduction of national DTT, if the spectrum nominated and licensed to a regional operator is required for the national service. Where the spectrum licensed to a regional operator is subsequently required for national DTT, ComReg would consider proposals from the affected licensee for the licensing of alternative frequencies identified by the licensee, for the regional DVB service.

4 Proposals to Licence Regional DVB in the UHF Band

4.1 Spectrum Priorities

The Communications Regulation Act 2002 requires ComReg to ‘ensure the efficient management and use of the radio spectrum’. The current proposal is to accommodate Regional DVB in the UHF Television Band. This is the same band that is already used by the 4 national analogue terrestrial TV channels (RTÉ One, RTÉ Two, TV3 and TG4) and in certain parts of the country it is also currently used by deflector operators to retransmit UK terrestrial channels (BBC1, BBC2, ITV and Channel 4). It is also planned to accommodate National DTT in the UHF band. Due to the relatively small amount of spectrum available in VHF Band III, ComReg does not consider it appropriate, at present, to offer regional or local licences for systems such as DVB-T requiring channel bandwidths of 6-8 MHz in this band.

The national analogue terrestrial TV channels and the national DTT services will take priority over regional DVB and analogue deflector services. The existing analogue deflector licences are of one year duration and were issued on the basis that such operations should not compromise the development of DTT services. ComReg seeks expressions of interest from anyone interested in applying for digital licences under the proposed Regional DVB scheme. However, a licensee will not be allowed to hold both an analogue deflector and regional DVB licence in the same area. ComReg is not seeking licence applications at this time. Accordingly, respondents do not need to make an application or nominate frequencies.

Q. 1. Do you agree with ComReg’s assessment of spectrum priorities in the UHF television bands? If not, please give your reasons.

Two of the factors to be taken into account by ComReg in deciding whether and how to initiate a regulatory regime for regional DVB are the availability of spectrum for the scheme and the likelihood of interference to existing or other proposed services. ComReg must decide whether these factors either preclude the proposal altogether, if insufficient spectrum is available, or mean that a licensing regime would be appropriate, where the amount of available spectrum is limited, or there is the potential for harmful interference.

As already stated, the available spectrum in the UHF band is finite and already used for national analogue terrestrial broadcasting services and deflectors. In the future it will also be used for national DTT. The Irish terrestrial Broadcasters provide important services which are public service in nature and designed to meet social, democratic and cultural objectives. It is therefore especially important that these services, which currently and for the medium term future will be broadcast in analogue format, do not suffer interference from unlicensed services. It is also important that the proposed national DTT service does not suffer interference. ComReg is of the opinion (see Appendix A) that, for the effective and appropriate management of the radio spectrum, regional DVB transmissions should be licensed.

It intends to issue such licences in accordance with section 5 of the Wireless Telegraphy Act, 1926

Q. 2. Do you agree that there could be a significant risk of harmful interference to the signals of other authorised users of radio spectrum and that the effective and appropriate management of the radio spectrum requires that the relevant apparatus be licensed? If you do not agree, please give reasons for your answer.

4.2 Spectrum Availability

The available spectrum for services additional to existing analogue and future national digital services is not evenly distributed in all areas. Frequencies used for terrestrial television transmission are largely dependent on line of sight and areas with hills and valleys place greater demands on spectrum resources. Such areas frequently require a dedicated fill in transmitter to ensure that adequate signal strength can be delivered. A further complicating factor in spectrum planning is the variation in signal level that can occur for small percentages of time. As a result the spectrum demands presented by the national services are not equal in all parts of the country.

The scope for licensing regional or local DVB in any particular area will be dependent on the use of spectrum for national services in that area and adjoining areas. This in turn is largely dependent on the power and location of transmitters used to provide such services. It is not anticipated that portable reception of regional DVB would be possible in all areas. Furthermore, before licensing any transmission facilities, ComReg is obliged under international treaties to seek international agreement where signals from Ireland might cause interference to services in neighbouring countries. ComReg estimates that in most areas prior to the launch of national DTT up to 4 frequencies could be available for regional DVB. The requirements of the Department of Communications, Marine and Natural Resources pilot project will make it unlikely that there will be any frequencies for regional DVB in areas served from the Three Rock or Clermont Carn sites.

ComReg considers that, in most areas, it should be possible to facilitate a service utilising the DVB-H standard. Such a service could involve provision of a multiplex for mobile digital video and radio, which could be associated with data services and telephony to a single hand held device. Provision of such services using other systems may also be possible.

It is proposed that the initial duration of the regional licences would be for a maximum of 5 years. The term of the licence may be amended or terminated in particular instances, on the introduction of national DTT, if the spectrum nominated by a regional operator is subsequently required for national DTT. In such cases, ComReg will consider proposals from the affected licensee for alternative

frequencies for the regional DVB service. If the frequencies set out in a regional licence are not required by the national service during the period of that licence, the regional scheme could run in tandem with the national service.

ComReg is anxious to assess the level of interest in the provision of portable/mobile services on a local, regional or broader scale and seeks views on whether provision of such services other than by DVB-H should be licensed in the future.

ComReg considers that where services are to be provided to handheld devices, the use of high powers from high sites may not represent effective and efficient management of the spectrum. ComReg is minded to require such services to be transmitted by networks involving a number of lower sites operating as part of a Single Frequency Network. As it is expected that handheld devices would incorporate GSM or UMTS mobile telephones and as services would utilise uplink return path communications using such GSM/UMTS networks, ComReg considers that commercial arrangements will probably be in place with GSM/UMTS service providers and that the provision of access to GSM/UMTS base station sites should therefore be negotiable. Such a spectrum management approach will maximise the spectrum available for such services whilst reducing interference to neighbouring territories.

Q. 3. Do you agree with the proposed duration of the licence and the proposed course of action in the event that national DTT requires access to spectrum in an area served by regional DVB? Please give reasons for your answer.

Q. 4. Do you concur with ComReg's view that a DVB-H service could/should be provided? What other technologies should be considered for provision of services to handheld devices?

Q. 5. Do you agree with ComReg's proposed spectrum management approach in relation to the provision of services to handheld devices? If you do not agree, please give reasons for your answer and suggest an alternative approach.

4.3 Compression Techniques

The amount of spectrum required for regional DVB services will vary according to the service offered and compression technologies used. Currently most DVB services use MPEG2² compression techniques which would allow up to 5 programme services in one 8 MHz DVB-T multiplex. With the introduction of MPEG4 and improved compression techniques, one 8 MHz frequency, which is currently used to transmit one analogue TV programme service, could transmit 3

² MPEG audiovisual compression standards are developed by the Motion Pictures Expert Group

High Definition digital television programme services or 8-10 standard definition digital television programme services using DVB-T. 20-40 digital TV programme services for a handheld or mobile device could be transmitted using a DVB-H multiplex. Radio programme services and data could also be transmitted.

Q. 6. Should the use of MPEG4 compression be required on regional DVB-T multiplexes?

Q. 7. Which service offerings would best introduce innovation and or competition into the market? Please give reasons for your answer.

4.4 Expressions of Interest

Expressions of interest are invited from potential operators interested in providing regional DVB in the UHF band using the standards applicable to DVB-T or DVB-H. If you wish to submit an expression of interest please provide the information requested in **Appendix C** as part of your response to this consultation. It should be noted that the submission of an Expression of Interest at this stage will not confer any priority on applicants if/when licensing commences and will not take the place of a licence application.

4.5 Licence Award Process

ComReg proposes to issue regional DVB licences on a first come first served basis. Any licence issued would contain a “use it or lose it” provision. Any one applicant could nominate and apply for up to four frequency channels at any one transmission site. In the initial application process, however, a competitive evaluation will apply where the demand for spectrum exceeds availability.

In the event of there being more applicants than available frequencies in any one area, ComReg proposes to award the licence to the applicant who scores best on the following criteria:

- Speed of Service Introduction
- Population Coverage
- Geographic Coverage
- Service Innovation
- Potential to Increase Competition

If the competing applicants for any one frequency channel are equally scored, ComReg would first explore with the parties if their applications could be modified to accommodate all applicants. Failing this the licence for that frequency channel would then be awarded such as to increase the diversity of service providers or, if

that criterion does not discriminate between applicants, to the applicant offering the most innovative service.

Q. 8. Do you agree with the proposed Licence award process? Please give reasons for your answer

Q. 9. Do you have suggestions for selection criteria other than those listed above?

4.6 Trial of services to mobile/handheld devices

ComReg introduced a revised licensing scheme of test and trial licences earlier this year intended to support research and development activities. A trial licence can be issued for a maximum period of one year at a cost of €500 (see ComReg document 05/35 for detailed Application Guidance Notes). ComReg is interested in facilitating a trial of technologies (including DVB-H) for the provision of services to mobile/hand held devices or particular aspects of it and would be willing to consider an application from a prospective participant or participants. It is also willing to facilitate parties who may be interested in co-operating with others in such trials.

4.7 Licence Fees and Levy

ComReg proposes, in line with licence fees payable by MMDS platforms, that an annual licence fee is calculated according to the number of homes in the licensed area as a proportion of all TV homes in the State multiplied by the amount of licensed spectrum (€1905 per MHz)³. For example the fee for a regional DVB service using 4 frequencies covering County Mayo would be calculated using the following formula:

$$X/Y \times (\text{€}1,905 \times N \times \text{BW}) = \text{€}1,777.05$$

Where:

X= the number of homes in the licensed area = 39,354 private households in Co Mayo according to Central Statistics Office

Y= the number of homes having one or more televisions in the State as estimated by the CSO current estimate = 1,350,000 TV homes

N= the number of approved frequency channels = 4

BW= the amount of spectrum used by each frequency channel measured in megahertz (MHz) = 8

In addition, the Communications Regulation Act, 2002 (Section 30) (Amendment) Levy Order, 2003 (S.I. No 392 Of 2003) provides for a levy to be imposed on each provider of a digital terrestrial network to cover administrative costs of ComReg insofar as the network is used for the transmission, retransmission or distribution of

³ Wireless Telegraphy (Multipoint Microwave Distribution System) Regulations 2003, S.I. No. 529 of 2003

programme services. The amount of the levy would depend on whether the network was used solely to carry free to air services or carried pay services, (see Regulation 14 (d) and (e)). A levy of 0.2% of revenue would be charged in the case of regional DVB being used to supply telecommunications services such as internet.

Q. 10. Do you agree with ComReg's proposed W.T. licence fee and administrative levy for Regional DVB?

5 Submitting Comments

All comments are welcome. It would, however, make the task of analysing responses easier if comments were referenced to the relevant question numbers from this document. The consultation period will run from [date of issue] to [closing date] during which the Commission welcomes written comments on any of the issues raised in this paper.

Having analysed and considered the comments received, ComReg will review its proposals for regional DVB and publish a report on the consultation which will, inter alia summarise the responses to the consultation.

Please note

ComReg appreciates that some 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 05/24

Appendix A – Legal Basis and Legislation

The Broadcasting Act 2001 (the 2001 Act) empowers ComReg to issue licences, under the Wireless Telegraphy Acts, authorising the combination by means of a multiplex, of programme material and related and other data in digital form, in addition to the digital multiplex licence which may be granted in accordance with the 2001 Act. Similarly, the 2001 Act empowers ComReg to issue licences, under the Wireless Telegraphy Acts, authorising the transmission, by digital terrestrial means, of programme material and related and other data in a digital form, in addition to the DTT licence which may be granted in accordance with the 2001 Act.

ComReg considers there would be a risk of harmful interference to other users of UHF spectrum resulting from the introduction of services utilising the DVB-T or DVB-H standards, which would require management of the radio spectrum. In those circumstances, ComReg is of the view that licences would be necessary for regional DVB to ensure the efficient use of radio spectrum in accordance with Regulation 9 of the Authorisation Regulations (SI No 306 of 2003). Depending on the level of interest from prospective operators in acquiring licences and based on the amount of available spectrum, ComReg may take a view that the number of licences in respect of the particular apparatus for wireless telegraphy is likely to be restricted. In such circumstances it would be required to give all interested parties the opportunity to express their views on any proposed limitation in accordance with Regulation 19 of the Framework Regulations (SI No 307 of 2003). After such consultation, if ComReg decides to limit the number of such licences, it must draw up procedures for the grant of such licences which are objective, transparent, non-discriminatory and proportionate and which give due weight to achievement of ComReg's objectives as set out in section 12 of the Communications Regulation Act 2002.

Relevant European Legislation:

- Directive 2002/20/EC of the European Parliament and of the Council on the authorisation of electronic communications networks and services, (“the Authorisation Directive”), OJ 2002 L 108/21;
- Directive 2002/19/EC of the European Parliament and of the Council on access to, and interconnection of, electronic communications networks and services, (“the Access Directive”), OJ 2002 L 108/7;
- Directive 2002/21/EC Of The European Parliament And Of The Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (“Framework Directive”) OJ 2002 L 108/33
- Directive 2002/22/EC of the European Parliament and of the Council on universal service and users’ rights relating to electronic communications networks and services, (“the Universal Service Directive”), OJ 2002 L 108/51;
- Directive 2002/58/EC of the European Parliament and of the Council concerning the processing of personal data and the protection of privacy in

the electronic communications sector, (“the Privacy and Electronic Communications Directive”), 2002 L 201/37.

National Transposing Legislation:

- European Communities (Electronic Communications Networks and Services)(Access) Regulations 2003 (S. I. No. 305 of 2003);
- European Communities (Electronic Communications Networks and Services)(Authorisation) Regulations 2003 (S. I. No 306 of 2003);
- European Communities (Electronic Communications Networks and Services)(Framework) Regulations 2003, (S. I. No. 307 of 2003);
- European Communities (Electronic Communications Networks and Services) (Universal Service And Users’ Rights) Regulations 2003 (S. I. No. 308 of 2003);
- European Communities (Electronic Communications Networks and Services)(Data Protection and Privacy) Regulations 2003, (S.I. 535 of 2003).

National Primary Legislation:

- Wireless Telegraphy Act, 1926 (No. 45 of 1926);
- The Freedom of Information Acts, 1997 and 2003
- Broadcasting Act, 2001 (No. 4 of 2001);
- Communications Regulation Act, 2002 (No. 20 of 2002);

National Secondary Legislation

- Communications Regulation Act, 2002 (Section 30) Levy Order, 2003 (S.I. No. 346 of 2003);
- Communications Regulation Act, 2002 (Section 30) (Amendment) Levy Order 2003 (S.I. No. 392 of 2003);
- Wireless Telegraphy (Multipoint Microwave Distribution System) Regulations 2003 (S. I. No. 529 of 2003);
- Wireless Telegraphy (UHF Television Programme Retransmission) Regulations 2003 (S.I. No. 675 of 2003).

Appendix B – Consultation Questions

List of Questions

- Q. 1. Do you agree with ComReg’s assessment of spectrum priorities in the UHF television bands? If not, please give your reasons. 6
- Q. 2. Do you agree that there could be a significant risk of harmful interference to the signals of other authorised users of radio spectrum and that the effective and appropriate management of the radio spectrum requires that the relevant apparatus be licensed? If you do not agree, please give reasons for your answer. 7
- Q. 3. Do you agree with the proposed duration of the licence and the proposed course of action in the event that national DTT requires access to spectrum in an area served by regional DVB? Please give reasons for your answer. 8
- Q. 4. Do you concur with ComReg’s view that a DVB-H service could/should be provided? What other technologies should be considered for provision of services to handheld devices? 8
- Q. 5. Do you agree with ComReg’s proposed spectrum management approach in relation to the provision of services to handheld devices? If you do not agree, please give reasons for your answer and suggest an alternative approach. 8
- Q. 6. Should the use of MPEG4 compression be required on regional DVB-T multiplexes? 9
- Q. 7. Which service offerings would best introduce innovation and or competition into the market? Please give reasons for your answer. 9
- Q. 8. Do you agree with the proposed Licence award process? Please give reasons for your answer 10
- Q. 9. Do you have suggestions for selection criteria other than those listed above? 10
- Q. 10. Do you agree with ComReg’s proposed W.T. licence fee and administrative levy for Regional DVB? 11

Appendix C - Expressions of Interest

Expressions of interest are invited from anyone interested in providing regional DVB in the UHF band. These should as a minimum, in addition to the contact details for the respondent, include the information listed in points 1 – 7 below and a clear reference should be made to these points in the response.

1. A description of the services to be provided
2. The number of multiplexes required, with supporting calculations based on the services to be provided
3. Geographic area to be covered
4. Estimated Population coverage (number of homes in the proposed geographic area)
5. The type of compression/DVB standard the applicant intends to use
6. Transmission site location (s)
7. Target customer base (e.g. residential, small business, etc)

Glossary

Term	Definition
DTT	Digital Terrestrial Television
DVB	Digital Video Broadcasting. A series of standards for television transmission and delivery developed in Europe by the DVB organisation, a consortium of broadcasters and manufacturers, based at the EBU building in Geneva
DVB-H	Handheld DVB standard, intended for delivery of audiovisual content to mobile terminals
DVB-T	Terrestrial DVB standard
GSM	Global system for Mobile Communications: European 2 nd generation mobile phone technology now in use worldwide
MMDS	Multipoint Microwave Distribution System (for multi-channel TV)
Multiplex	A signal (which in its baseband form is a DVB transport stream, but is a signal with a bandwidth of 8 MHz when modulated in the UHF band) containing programme services with associated other data
UHF	Ultra High Frequency (300 MHz to 3 GHz) , Band IV/V for broadcasting occupies 470-862 MHz
VHF	Very High Frequency (30 MHz to 300 MHz), Band III for broadcasting occupies 174-230 MHz
UMTS	Universal Mobile Telecommunications System: European 3 rd generation standard, part of IMT-2000 family of standards