



Submissions to Consultation

Award of available UHF spectrum in the urban areas of Cork, Dublin, Galway, Limerick and Waterford

Mobile TV Wireless Telegraphy Licence Award

Submissions received from respondents

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1 Arqiva Ltd.



Q1 Do you agree with ComReg's proposal that its auction should be exclusively for a Mobile TV Wireless Telegraphy Licence using the available spectrum? If not, please support your answer with reference, in particular, to the considerations given in Section 4.5 of this document or any other supporting evidence

Arqiva agrees with the proposal that the spectrum should be auctioned exclusively for Mobile TV. Whilst there are other contenders for this spectrum, apart from DTT whose needs have been satisfied in the short term, Mobile TV is the only one where consumer trials have underpinned a business case.

A key element of that business case is access to sport wherever the consumer is, and certainty around the availability of spectrum for Mobile TV should reduce the risk that Irish consumers may not have access to Mobile TV in time for the 2010 World Cup.

Although DVB-H is the preferred EU standard for Mobile TV, as noted in 4.5 it is not the only one and other technology standards have offered advantages to some operators for a variety of reasons. At this stage it is unclear which of the alternatives will be the most successful commercially across Europe or the best suited for Ireland and therefore, although Arqiva believes that this spectrum should be offered for mobile TV, it does not believe that DVB-H should be mandated.

Q2 Do you consider there to be sufficient interest in the market for the available 8MHz of spectrum on a technology neutral basis, having regard to the issues discussed in Section 4.5.3? If so, what services and applications do you consider could avail of this spectrum?

There are other applications for this spectrum including wireless broadband. The important consideration is that the spectrum being released is for city areas which are already served by broadband. Had the spectrum been for rural areas, these other applications would have been more relevant. Arqiva believes that Mobile TV represents the use for this spectrum that is most likely to be commercially viable in city areas and to offer Irish consumers something genuinely new.

Q3 Do you consider that ComReg's auction should be for a licence awarded on a service and technology neutral basis subject to the qualification that it may not be used to provide DTT services? Please support your argument.

As noted above, Arqiva believes that this block of spectrum should be auctioned for Mobile TV but not mandated as DVB-H. Arqiva believes that DTT should be excluded on the basis that a significant amount of this prime spectrum has been allocated to DTT to provide four national multiplexes with provision for a further four at analogue switch-off. This transition from analogue to DTT will release spectrum, at which stage, Arqiva will support the introduction of new technologies and new applications.



Q4 Do you consider that the licence conditions for Mobile TV, on dedicated terrestrial networks in Ireland, should build on those set down for fixed and portable reception of DTT multiplexes? If not please explain what alternative methods should be used to develop licence conditions for Mobile TV services in Ireland in the context of the dedicated terrestrial network approach.

Arqiva believes the licence conditions for DTT form a suitable basis for Mobile TV. The main differences will be in the technical specifications and obligations on coverage (see Q9)

Q5 Do you consider that the above types of licence conditions would provide the necessary regulatory certainty to the market for the provision of Mobile TV Services using the dedicated terrestrial network approach in Ireland? If not please specify any additional licence conditions that should apply.

Yes, Arqiva believes that the licence conditions would provide the necessary regulatory certainty.

Q6 Do you consider that the proposed length of the Mobile TV Wireless Telegraphy Licence is appropriate? If not how long should the licence period be for? Please give reasons for your proposal.

Setting up the service represents a considerable investment in infrastructure by the licensee as well as investment in reception devices by the public. It is important that the licensee recovers that investment and that the service is seen to be long term in order to encourage its adoption. Arqiva believes that 10 years represents the absolute minimum term, but this is considerably shorter than recent spectrum licences offered by Ofcom in the UK and proposed by Ofcom for the UK's digital dividend. To reduce the risk to an operator of Mobile TV in Ireland, Arqiva would suggest that either a term of 15 years be offered, or that the 10 year licence term be measured from completion of full network rollout rather than licence award and that there is provision for renewal for a second term.

Q7 Do you consider that other factors might also need to be considered in determining the length of the licence?

No

Q8 Do you consider that the Mobile TV service should be accessible by end-users in the five urban areas within 24 months of the licence award? If not, what rollout schedule should apply?

Yes, although it must be recognised that the rollout will be entirely dependent upon access to RTENL sites on reasonable terms and their ability to make the infrastructure available at a time when they are heavily committed to the DTT rollout. It is important that the licensee is not penalised for factors beyond its control.

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Q9 Do you consider, as a means of measuring end-user accessibility, that the main transmitter sites should be commissioned, on-air and transmitting the multiplex offering in accordance with effective radiated power characteristics as would be set down in the technical schedule to the licence? If not, please explain how should rollout conditions be set and measured for compliance?

Arqiva believes that confirmation of the transmitted parameters is the only effective measurement method for mobile TV. For DTT it is usual to specify a coverage area; however coverage is measured at 10m height and does not take building penetration onto account. In contrast mobile telephony is intended to penetrate buildings and dense urban areas, but to the extent to which this is not sufficiently predictable for coverage to be measured for compliance..

Q10 Do you see merit in licence obligations that would seek to ensure wholesale service is provided on fair, reasonable and non-discriminatory terms? Do you consider that wholesale service is effectively provided? If not, what obligations may be required?

In that a single licence is being issued at this stage, Arqiva understands the reasons to have wholesale access obligations; however these should not be so stringent as to preclude the successful growth of the business.

Q11 Do you see merit in some multiplex capacity being reserved for providers of distribution services to end –users? In your opinion how many programme services should be reserved? Please refer to bit-rate compression and other relevant technical data in your response

Arqiva agrees with the ComReg view that most of the programme material will be common between providers and those individual providers will also want a unique channel to differentiate themselves. Arqiva believes that these issues are the subject of commercial negotiation between the wholesaler and the provider and do not need to be defined by regulation. There is a natural check and balance in that too little differentiation will be to the detriment of the platform, as will be too much.

Q12 Do you consider that the proposed mobile TV Wireless Telegraphy Licence fee to be appropriate? If not, please provide reasons for your view

The licence fee of €340,000 has been proposed on the basis of the predicted profitability of the service taking into account likely costs. If this methodology is to be used, Arqiva feels that this is an over optimistic figure and that other factors, including, but not limited to churn, a percentage of actual profitability, competition, price elasticity etc. need to be taken in to consideration.



Q13 Do you consider that the proposed length of the Service Neutral Wireless telegraphy Licence is appropriate? If not, how long should the licence period be for? Please give reasons for your proposal

Consistent with the answer to Q6, Arqiva would see 10 years as a minimum on the basis that any other service to cover a similar area would need similar infrastructure costs.

Q14 Do you consider other factors might also be considered in determining the length of the licence

No

Q15 Do you consider the statement of authorised apparatus should include any additional information

No

Q16 Do you consider that the Service Neutral Wireless telegraphy licence should attract a higher fee than proposed for the Mobile TV Wireless Telegraphy Licence? What other considerations should be taken into account in setting the licence fee for any Service Neutral Wireless telegraphy Licence fee?

The approach for setting the licence fee of €650,000 per annum is based on a perceived value of the spectrum and is the only method available to ComReg where the application is not known. Arguably, ComReg has set a lower fee for Mobile TV as it is possible to form a view of the success of the specific application. Arqiva believes that the spectrum value approach is correct, but that ComReg should always be able to reduce this figure to encourage innovative use of the spectrum which has social benefit rather than large profitability in the early years.

Q17 Do you consider the proposed annual fee for a Service neutral Wireless Telegraphy licence to be adequate? If not please provide an alternative suggestion outlining your considerations

Yes, covered in answer to Q16



Q18 Would you be interesting in participating in a single sealed bid first price auction with a reserve price of €100,000 to assign either a Mobile TV Wireless telegraphy Licence or a Service neutral Wireless telegraphy licence. Please indicate which award option would be your preference.

The considerable risk of a "winner's curse" resulting from a sealed bid, first price auction would likely discourage bidding and depress prices. Arqiva would strongly support either a sealed bid, second price auction or a transparent multi-round auction design. Arqiva would be far more likely to participate in an auction with either of these designs.

In terms of type of licence, Arqiva believes that a Mobile TV Wireless telegraphy Licence would be more likely in the short-medium term to encourage investment, given the strong evidence of consumer demand and the window of opportunity to establish the service in the minds of Irish consumers in the run-up to the 2010 World Cup.

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2 Hutchinson 3 G Ireland Ltd



Response by Hutchison 3G Ireland Limited
in respect of ComReg Doc. No. 08/44
*"Award of available UHF spectrum in the urban areas of Cork, Dublin, Galway,
Limerick and Waterford and related licensing options"*

29 July 2008



ANNEX – CONSULTATION QUESTIONS

Q. 1. Do you agree with ComReg's proposal that its auction should be exclusively for a Mobile TV Wireless Telegraphy Licence using the available spectrum? If not, please support your answer with reference, in particular, to the considerations given in Section 4.5 of this document and any other supporting evidence

Yes.

Q. 2. Do you consider there to be significant interest in the market for the available 8 MHz of spectrum on a technology and service neutral basis, having regard to the issues discussed in Section 4.5.3? If so, what services and applications do you consider could avail of this spectrum?

No.

Q. 3. Do you consider that ComReg's auction should be for a licence awarded on a service and technology neutral basis subject to the qualification that it may not be used to provide DTT services? Please support your argument

No. Please see answers to questions 1 and 2.

Q. 4. Do you consider that the licence conditions for Mobile TV, on dedicated terrestrial networks in Ireland, should build on those set down for fixed and portable reception of DTT Multiplexes? If not, please explain what alternative methods should be used to develop licence conditions for Mobile TV services in Ireland in the context of the dedicated terrestrial network approach.

H3GI agrees with ComReg's proposed approach. However, it believes that ComReg should only impose conditions where necessary and appropriate.

Q. 5. Do you consider that the above types of licence conditions would provide the necessary regulatory certainty to the market for the provision of Mobile TV Services using the dedicated terrestrial network approach in Ireland? If not, please specify any additional licence conditions that should apply.

Q. 6. Do you consider that the proposed length of the Mobile TV Wireless Telegraphy Licence is appropriate? If not, how long should the licence period be for? Please give reasons for your proposal

Yes.



Q. 7. Do you consider that other factors might also need to be considered in determining the length of the licence?

Q. 8. Do you consider that the Mobile TV Service should be accessible by end-users in the five urban areas within 24 months of the licence award? If not, what rollout schedule should apply?

H3GI agrees with ComReg's proposed approach. However, it believes that ComReg should review same in the light of commercial experience.

Q. 9. Do you consider, as a means of measuring end-user accessibility, that the main transmitter sites should be commissioned, on-air and transmitting the multiplex offering in accordance with effective radiated power characteristics as would be set down in the technical schedule attached to licence? If not, please explain how should rollout conditions be set and measured for compliance?

Yes.

Q. 10. Do you see merit in licence obligations that would seek to ensure wholesale service is provided on fair, reasonable and non-discriminatory terms? Do you consider that these obligations would ensure that wholesale service is effectively provided? If not, what additional obligations may be required?

Yes. '*Reasonableness*' is a preferable concept to 'fairness'. In the absence of a definition eg Council Directive 93/13/EEC of 5 April 1993 on unfair terms in consumer contracts, fairness is uncertain and ineffective.

Q. 11. Do you see merit in some multiplex capacity being reserved for providers of distribution services to end-users? In your opinion how many programme services should be reserved? Please refer to bit-rate, compression and other relevant technical data in your response

Yes. Sufficient programme services should be reserved to ensure that competition in mobile services is promoted and preserved. At a minimum, ComReg should reserve four programme services, one for each of the mobile network operators.

Q. 12. Do you consider the proposed Mobile TV Wireless Telegraphy Licence fee to be appropriate? If not, please provide reasons for your view

No. The proposed licence fees are too high. They do not reflect the risk involved in the provision of Mobile TV services.

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Q. 13. Do you consider that the proposed length of the Service Neutral Wireless Telegraphy licence is appropriate? If not, how long should the licence period be for? Please give reasons for your proposal.

Please see answers to questions 1 and 2.

Q. 14. Do you consider that other factors might also need to be considered in determining the length of the licence?

Please see answers to questions 1 and 2.

Q. 15. Do you consider that the statement of authorised apparatus should include any additional information?

Please see answers to questions 1 and 2.

Q. 16. Do you consider that the Service Neutral Wireless Telegraphy Licence should attract a higher licence fee than that proposed for the Mobile TV Wireless Telegraphy Licence? What other considerations should be taken into account in setting the licence fee for any Service Neutral Wireless Telegraphy Licence fee?

Yes.

Q. 17. Do you consider the proposed annual fee for a Service Neutral Wireless Telegraphy Licence to be adequate? If not, please provide an alternative suggestion outlining your considerations

Please see answers to questions 1 and 2.

Q. 18. Would you be interested in participating in a single sealed bid first price auction with a reserve price of €100,000 to assign either a Mobile TV Wireless Telegraphy Licence or a Service Neutral Wireless Telegraphy Licence. Please indicate which award option would be your preference.

H3GI would be interested in participating in an appropriate single sealed bid first price auction to assign a Mobile TV wireless telegraphy licence. The proposed reserve price is too high. It does not reflect the risk involved in the provision of Mobile TV services.

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3 Irdeto

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The Irdeto logo consists of the word "irdeto" in a lowercase, sans-serif font. The letters "i" and "d" are purple, while "r", "e", "t", and "o" are yellow. There are small yellow squares above the "i" and "d", and a small purple square above the "t".

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Ms. Sinead Devey
Commission for Communications Regulation
Irish Life Centre
Abbey Street
Freepost
Dublin 1
Ireland

23 July 2008

Reference: Submission re ComReg 08/44

Dear Ms Devey,

Irdeto are a world leading supplier of content protection systems for Digital TV, IPTV, and Mobile networks. We have been providing solutions for Mobile TV networks since 2005 and count the world's largest Digital and Mobile TV operators amongst our customers.

Our content protection solutions allows network operators to maximize revenue from the sale of valuable content and our security strategies are proven successful in a world of intense attack on pay media networks.

Irdeto products are driven by open standards including those specified by the Digital Video Broadcasting (DVB) project and the Open Mobile Alliance (OMA).

On the basis of our experience in the subject, Irdeto wishes to provide input to your consultation Comreg 08/44 in respect of Mobile TV in Ireland. Our comments are in 2 sections marked "Confidential" and "Non Confidential".

All our comments are referenced to the paragraph or section in the original consultation document.

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2.1) Comreg 0844b Appendix 4 : section 2.3.2: The appropriate standards are:

DVB OSF solutions compliant with the following specifications:

- ETSI EN 302 304 (Transmission system for handheld Terminals DVB-H)
- ETSI TR 102 469 (IP Datacast over DVB-H)
- ETSI TS 102 474 , Annex A (IP Datacast over DVB-H: Service Purchase and Protection)
- ETSI TS 103 197 (Head-end implementation of DVB SimulCrypt)

OMA BCAST SCP specifications.

1. OMA-ERP-BCAST-V1_0-20080609-C
2. OMA-TS-BCAST_Service_Guide-V1_0-20080609-C
3. OMA-TS-BCAST_Services-V1_0-20080609-C
4. OMA-TS-BCAST_Distribution-V1_0-20080609-C
5. OMA-TS-DRM_XBS-V1_0-20080609-C
6. OMA-TS-BCAST_SvcCntProtection-V1_0-20080609-C
7. OMA-TS-BCAST_DVB_Adaptation-V1_0-20080609-C
8. OMA-TS-BCAST_MBMS_Adaptation-V1_0-20080609-C
9. OMA-SUP-XSD_bcast_sg_fragments-V1_0-20080609-C

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10. OMA-SUP-XSD_bcast_roaming_frontend-V1_0-20080609-C
11. OMA-SUP-XSD_bcast_roaming_backend-V1_0-20080609-C
12. OMA-SUP-XSD_bcast_pr_orderqueries-V1_0-20080609-C
13. OMA-SUP-XSD_bcast_nt_message-V1_0-20080609-C
14. OMA-SUP-XSD_bcast_sg_sgdd-V1_0-20080609-C
15. OMA-AD-BCAST-V1_0-20080609-C
16. OMA-ERELD-BCAST-V1_0-20080609-C

Please keep in mind that the standards are not finalized yet, so the document version numbers provided above are not the released versions.

Summary

We trust that the above information will assist in the award process, however should you have any further questions on content protection in mobile TV networks, please feel free to contact me
:

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Yours Sincerely



Martin Altham

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4 Meteor Mobile Communications Ltd

Submissions Received, Award of available UHF spectrum in the urban areas of Cork, Dublin, Galway, Limerick and Waterford

meteor⁺[™]

Meteor response to ComReg 08/44

meteor⁺[™]

Meteor Mobile Communications Ltd.

Response to the ComReg Consultation Paper on
Award of available UHF spectrum in the urban areas of Cork, Dublin, Galway,
Limerick and Waterford and related licensing options

Reference: Submission re ComReg 08/44

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ComReg 09/63s

Submissions Received, Award of available UHF spectrum in the urban areas of Cork, Dublin, Galway, Limerick and Waterford



Meteor response to ComReg 08/44

1. Do you agree with ComReg's proposal that its auction should be exclusively for a Mobile TV Wireless Telegraphy Licence using the available spectrum? If not, please support your answer with reference, in particular, to the considerations given in Section 4.5 of this document and any other supporting evidence.

Meteor agrees with ComReg's proposal that the award should be exclusively for a Mobile TV Wireless Telegraphy Licence. We believe there is sufficient justification to proceed on a service specific basis in respect of this award taking into account the particular circumstances. The proposed approach is:

- Consistent with the European Commission's initiatives to strengthen the internal market for Mobile TV services
- Consistent with ComReg's objectives to promote choice for consumers and effective management of radio frequencies
- Consistent with ComReg's objective to promote competition by the inclusion of wholesale obligations
- Subject to our comments to question 6, the proposed award has the potential to be consistent with ComReg's objective to encourage investment in infrastructure.

We note ComReg's views (section 4.6 of the consultation) regarding spectrum trading. We would agree that the progression of this award should not be delayed in the absence of spectrum trading. We would welcome clarification as to when the necessary primary legislation will be brought forward to create a basis for secondary trading in Ireland. We would also welcome an indication as to whether it would be ComReg's intention to vary the Mobile TV Wireless Telegraphy Licence to allow for secondary trading when the legislative process is complete.

2. Do you consider there to be significant interest in the market for the available 8MHz of spectrum on a technology and service neutral basis, having regard to the issues discussed in Section 4.5.3? If so, what services and applications do you consider could avail of this spectrum?

We do not believe it would be appropriate to make the award on a technology and service neutral basis.

3. Do you consider that ComReg's auction should be for a licence awarded on a service and technology neutral basis subject to the qualification that it may not be used to provide DTT services? Please support your argument.

We do not believe it would be appropriate to make the award on a technology and service neutral basis.

4. Do you consider that the licence conditions for Mobile TV, on dedicated terrestrial networks in Ireland, should build on those set down for fixed and portable reception of DTT multiplexes? If not, please explain what alternative methods should be used to develop licence conditions for mobile TV services in Ireland in the context of the dedicated terrestrial network approach.

Meteor has reviewed the technical conditions relating to fixed and portable reception of DTT multiplexes, as set down in Appendix A of ComReg 07/90b, and we believe it is indeed appropriate that the Mobile TV licence conditions should adhere to similar parameters.

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Meteor response to ComReg 08/44

5. Do you consider that the above types of licence conditions would provide the necessary regulatory certainty to the market for the provision of Mobile TV Services using the dedicated terrestrial network approach in Ireland? If not, please specify any additional licence conditions that should apply.

The proposed types of licence conditions, with the possible exception of coverage (see below) should, if constructed correctly provide sufficient regulatory certainty. Detailed comments on specific licence condition proposals are provided below.

6. Do you consider that the proposed length of the Mobile TV Wireless Telegraphy Licence is appropriate? If not, how long should the licence period be for? Please give reasons for your proposal.

Meteor does not agree that the proposed licence duration of 10 years is appropriate. ComReg offers no reasoning in the consultation as to why 10 years is a reasonable balance between the factors listed in section 6.1.1 of the consultation. Given the embryonic nature of mobile TV services Meteor acknowledges that it is difficult to predict the appropriate licence duration. Based on our own analysis we do not consider that 10 years is sufficient time to, inter alia, allow for a sufficient return on investment.

In line with the general move towards a market oriented and flexible approach to spectrum management we believe that consideration should be given to moving away from the licensing of spectrum in Ireland with finite licence durations. The presumption should be that so long as the spectrum is efficiently utilised there should be no hard end-date to the licence thereby providing market players with more certainty in terms of ongoing access to spectrum. One possible approach, as adopted in the UK licensing environment, would be to establish a minimum term for spectrum licences (for example 10 years in the case of the proposed Mobile TV spectrum award), followed by a rolling term subject to a reasonable notice period.

7. Do you consider that other factors might also need to be considered in determining the length of the licence?

See response to question 6.

8. Do you consider that the Mobile TV service should be accessible by end-users in the five urban areas within 24 months of the licence award? If not, what roll-out schedule should apply?

We agree that the service should be accessible within two years of licence award. However we do not agree that there is a need to specify this in a licence condition. The spectrum is being awarded through an open competition and consequently the winning commercial bidder will have every incentive to commence commercial service as soon as practical and to the maximum extent possible.

9. Do you consider, as a means of ensuring end-user accessibility, that the main transmitter sites should be commissioned, on-air and transmitting the multiplex offering in accordance with effective radiated power characteristics as would be set down in the technical schedule attached to licence? If not, please explain how should rollout conditions be set and measured for compliance?

Meteor is content with the characteristics that would be set down in the technical schedule. The allowed Effective Radiated Power would be sufficient to achieve sufficient signal level ensuring good accessibility for end-users.

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Meteor response to ComReg 08/44

- 10. Do you see merit in licence obligations that would seek to ensure wholesale service is provided on fair, reasonable and non-discriminatory terms? Do you consider that these obligations would ensure that wholesale service is effectively provided? If not, what additional obligations may be required?**

Given that there is only sufficient spectrum for one licence to be awarded and there is significant uncertainty as to the availability of additional licences over the next few years we agree there is justification for obligations in respect of wholesale service provision to be included in the licence. However the justification for the obligation should be reviewed as and when additional equivalent spectrum is placed on the market, for example arising from the digital dividend. When the circumstances for competing platforms are created there is likely to be little justification for wholesale obligations to be imposed.

In terms of the specific obligations we believe that flexibility is required in respect of the definition of access. The proposals listed at section 6.1.3 of the consultation propose a business model whereby common content channels are wholesaled. In this model the licensee would be responsible for content management (save for the proposed programme channel for service provider differentiation).

An alternative business model would be to wholesale Mobile TV transmission capacity to service providers. In this model the service providers would be responsible for all subscriber and content management over the wholesaled broadcast network. There should be sufficient flexibility in the wholesale obligations to permit this and allow the market to determine the appropriate business model.

- 11. Do you see merit in some multiplex capacity being reserved for providers of distribution services to end-users? In your opinion how many programme services should be reserved? Please refer to bit-rate, compression and other relevant technical data in your response.**

We believe there is merit in some capacity being reserved to allow service providers to differentiate their service offering. In order to provide sufficient competitive differentiation we believe that capacity to support up to four alternative channels should be permitted. It is likely that programme services could be subject to different transmission quality depending on the content type. For example a News channel could suffice with circa 100Kbps whereas an active sports channel may need up to 300Kbps, with other content types, such as a music channel requiring capacity in the region of 200Kbps. Consequently we believe that capacity of up to 1,000Kbps should be reserved for each service provider seeking competitive differentiation.

- 12. Do you consider the proposed Mobile TV Wireless Telegraphy Licence fee to be appropriate? If not please provide reasons for your view.**

Meteor does not consider the proposed Licence fee to be appropriate. It is proposed that the spectrum will be awarded by way of a single round, sealed bid, first price auction. Awarding spectrum on this basis, assuming the auction type selected is the most efficient for this particular award, means that a market valuation of the spectrum will be achieved. Meteor contends that the recurring annual fee should therefore be set only on the basis of the ongoing administrative cost to ComReg. However ComReg is proposing to set annual fees based on anticipated revenue streams derived from the mobile TV broadcast service. There is no justification for this and this proposal, in the context of a competitive auction, amounts to little more than an additional tax on the commercial service.



Meteor response to ComReg 08/44

We also observe that some of the market assumptions considered by ComReg in section 6.1.11 of the consultation are optimistic, particularly in respect of subscriber willingness to pay.

13. Do you consider that the proposed length of the Service Neutral Wireless Telegraphy licence is appropriate? If not, how long should the licence period be for? Please give reasons for your proposal.

We do not believe it would be appropriate to make the award on a technology and service neutral basis.

14. Do you consider that other factors might also need to be considered in determining the length of the licence?

We do not believe it would be appropriate to make the award on a technology and service neutral basis.

15. Do you consider that the statement of authorised apparatus should include any additional information?

We do not believe it would be appropriate to make the award on a technology and service neutral basis.

16. Do you consider that the Service Neutral Wireless Telegraphy licence should attract a higher licence fee than that proposed for the Mobile TV Wireless Telegraphy Licence? What other considerations should be taken into account in setting the licence fee for any service Neutral Wireless Telegraphy Licence fee?

We do not believe it would be appropriate to make the award on a technology and service neutral basis.

17. Do you consider the proposed annual fee for a Service Neutral Wireless Telegraphy Licence to be adequate? If not, please provide an alternative suggestion outlining your considerations?

We do not believe it would be appropriate to make the award on a technology and service neutral basis.

18. Would you be interested in participating in a single sealed bid first price auction with a reserve price of €100,000 to assign either a Mobile TV Wireless Telegraphy Licence or a Service Neutral Wireless telegraphy Licence? Please indicate which award option would be your preference.

Meteor is interested in a Mobile TV specific award.

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5 O2 (Telefonica O2 Ireland Ltd)

Introduction

Over the past decade we have seen the effect of convergence between the traditionally separate services of Broadcasting, Telecoms, and IT into what is now generally called electronic communications services. We have also seen the growth in use of personal devices, whether they be MP3 players, game consoles, or mobile phones (mobile population penetration has reached 120% in Ireland). These changes have been enabled by technology advances, but have been driven by consumer demand to be able to access the services they want, when and where they want them.

The world-wide trend now is to move to digital broadcasting, and most countries plan to have Analogue Switch-Off by 2012. This switch to more efficient digital broadcasting will allow a broader choice of content to be transmitted over terrestrial broadcasting networks and will release spectrum for additional use. At the same time, developments in mobile/handset devices and mobile broadcasting technology have meant that it is now feasible to provide a mobile broadcast service with sufficient quality and content for mass-market consumption.

Telefonica O2 Ireland (O2) has carried out a trial of Mobile TV services in the Dublin area, and believes there is a consumer demand for Mobile TV service in Ireland. We welcome this consultation from ComReg and look forward to the licensing of UHF spectrum for this purpose. The following document includes some general points in response to ComReg's consultation, followed by individual answers to the questions raised.

General Comments

O2 has carried out a trial of Mobile TV in Ireland using ComReg's Test and Trial Licensing Scheme. The main consumer trial was carried out in 2007, and aimed to examine a number of aspects of Mobile TV ranging from technical aspects to user reaction. The trial was extremely successful in that it provided extensive data regarding both technical aspects of service provision, and user preferences and behaviour.

The trial also revealed a number of other very informative aspects of user requirements, including the requirement for in-building penetration, and the importance of end user devices. Handsets must be practicable in everyday use, they must be affordable, and there must be a reasonable range to choose from.

Based on the trial, O2 believes there is a demand for a Mobile Broadcasting service in Ireland. We also believe that a spectrum allocation in the UHF band would be optimal from a service point of view, and that an allocation for mobile TV from bands IV or V is appropriate from a spectrum management point of view. Mobile TV is compatible with existing broadcasting services in these bands.

While O2 generally supports service and technology neutrality, in this case O2's preference is for ComReg to make the spectrum allocation specifically for a mobile TV service rather than on a service neutral basis. We believe the future use of the "Digital Dividend" is a significant strategic issue for Ireland, and one that will require consideration and planning. This planning will be carried out in the context of broader Europe-wide or regional planning which will ensure that there is a broad availability of network and end-user equipment but also that compatibility analysis is completed. O2 believes that the case exists for making an allocation of UHF spectrum for mobile TV, but there is a risk that if ComReg awards the licence on a service neutral basis it may be taken for other purposes and may not be used to provide mobile TV services.

O2 has serious concerns about ComReg's proposed approach to setting the spectrum fees, and in addition the proposal to use an auction as the allocation mechanism. A mobile TV service has many similarities with Digital Terrestrial Television (DTT), however mobile TV requires greater network investment to service a lower

population base. This is because mobile TV must be available to handheld devices indoors, whereas DTT is generally received by an external outdoor antennae or a fixed external set-top box antenna. O2 believes ComReg has underestimated the investment and overestimated the service revenue in developing proposals for annual spectrum fees. Our preference would be for ComReg to set annual fees by reference to the annual spectrum fees for other broadcasting services, which would be approximately €50,000 per annum by reference to the DTT fees.

The proposal to use an auction as the selection mechanism is a cause of concern to O2. We have a detailed understanding of the market and business case for mobile TV in Ireland, and believe there is a significant risk that the service provider who would bring the best service to Irish consumers would be out-bid in an auction by a party who has overvalued the licence. There is only one licence, so this could lead to situation where the best provider is simply out-bid with no other option to provide a service. While there are cases where auctions are the best allocation mechanism, O2 believes in this case that a "Beauty Contest" is most appropriate.

Further detailed comments are given below in response to the specific questions asked.

Response to Consultation Questions

Q. 1. Do you agree with ComReg's proposal that its auction should be exclusively for a Mobile TV Wireless Telegraphy Licence using the available spectrum? If not, please support your answer with reference, in particular, to the considerations given in Section 4.5 of this document and any other supporting evidence.

O2 agrees that the licence award should be exclusively for a Mobile TV Wireless Telegraphy Licence:

- This is broadcasting service, compatible with the current allocation of bands IV and V.
- Mobile TV is compatible with existing and future services planned for the band, in particular DTT
- O2 has conducted a trial of mobile TV in Ireland, and believes that trial has shown a justified demand for a mobile TV spectrum allocation
- While the spectrum assignment is justified on the basis of mobile TV, in a service neutral licence
- there is no guarantee that a mobile TV service would be provided at all.

Q. 2. Do you consider there to be significant interest in the market for the available 8 MHz of spectrum on a technology and service neutral basis, having regard to the issues discussed in Section 4.5.3? If so, what services and applications do you consider could avail of this spectrum?

There may be other applications that could use the spectrum, however O2 is not aware of any that would be more beneficial to consumers. In general we would be of the view that non-broadcast communications services would require a larger bandwidth allocation to deliver a service with significant consumer benefits. This is an issue that will be considered in the wider Digital Dividend debate. As described above under our general comments, there is a risk that a service and technology award could mean that no mobile TV service is provided at all.

Q. 3. Do you consider that ComReg's auction should be for a licence awarded on a service and technology neutral basis subject to the qualification that it may not be used to provide DTT services? Please support your argument.

Subject to the comments above in response to question 2, the discussion of whether the licence is offered as a specific Mobile TV Wireless Telegraphy Licence or a service and technology neutral one is of relevance for the spectrum fees and wholesale access obligations associated to each licence type.

It is the considered view of O2 that due to the network costs, multiplexing & content costs, and customer acquisition costs there is no reasonable alternative but for the licensee to acquire additional wholesale customers for the network to ensure commercial viability. Therefore it would appear prudent that the spectrum be awarded under the lower cost regime of a specific Mobile TV Wireless Telegraphy Licence. As there will be a single licence only, O2 believes it appropriate that wholesale access obligations are imposed.

Q. 4. Do you consider that the licence conditions for Mobile TV, on dedicated terrestrial networks in Ireland, should build on those set down for fixed and portable reception of DTT Multiplexes? If not, please explain what alternative methods should be used to develop licence conditions for Mobile TV services in Ireland in the context of the dedicated terrestrial network approach.

O2 agrees that a dedicated terrestrial network for mobile TV services utilising existing transmission sites where possible is appropriate for the deployment of a quality mobile TV service. Mobile TV uses the same 8 MHz UHF channels as DTT to broadcast equivalent television content. Therefore it is reasonable to assume that similar conditions both licence and regulatory, should exist between the mobile TV and the DTT multiplex licences. However it should be noted that the site location and broadcast power requirements for a DVB-H network will differ in some locations to those required for a DTT network as the DVB-H signal must reach a high proportion of mobile devices in an indoor environment within the geographic coverage area.

Q. 5. Do you consider that the above types of licence conditions would provide the necessary regulatory certainty to the market for the provision of Mobile TV Services using the dedicated terrestrial network approach in Ireland? If not, please specify any additional licence conditions that should apply.

O2 is of the opinion that the stated licence condition categories are appropriate.

Q. 6. Do you consider that the proposed length of the Mobile TV Wireless Telegraphy Licence is appropriate? If not, how long should the licence period be for? Please give reasons for your proposal.

O2 considers the proposed licence duration to be inadequate and that it should be increased to 15 years. For mobile TV, the cost of network roll out and head-end infrastructure is greater for any addressable population that would be the case for other broadcasting services, therefore more time should be provided to the licensee to recover the capital and operational investment.

In addition, ComReg states in section 4.1 that additional spectrum may be awarded to the licensee in the future. If this were the case, the licensee must have time remaining under their licence term to recover the additional investment required to expand the network. It is unlikely that a 10 year licence would facilitate the recovery of capital expenditure should additional frequencies be allocated as part of the Analogue Switch Off and Digital Dividend. In order to facilitate the rapid network extension and to reduce the digital divide additional spectrum should be awarded at no additional cost to the licensee – this would be comparable with the conditions for DTT licenses.

A Mobile TV Wireless Telegraphy licensee (option one) is obliged to offer wholesale access on fair, reasonable and non-discriminatory terms. This will ensure retail access to the service is available and should mitigate concerns about retail competition – removing this as a reason for a shorter license duration.

Q. 7. Do you consider that other factors might also need to be considered in determining the length of the licence?

See comments in response to question 6.

Q. 8. Do you consider that the Mobile TV Service should be accessible by end-users in the five urban areas within 24 months of the licence award? If not, what rollout schedule should apply?

Yes, O2 considers the rollout schedule to be appropriate.

Q. 9. Do you consider, as a means of measuring end-user accessibility that the main transmitter sites should be commissioned, on-air and transmitting the multiplex offering in accordance with effective radiated power characteristics as would be set down in the technical schedule attached to licence? If not, please explain how should rollout conditions be set and measured for compliance?

O2 agrees with the proposed means of measuring end-user accessibility.

Q. 10. Do you see merit in licence obligations that would seek to ensure wholesale service is provided on fair, reasonable and non-discriminatory terms? Do you consider that these obligations would ensure that wholesale service is effectively provided? If not, what additional obligations may be required?

Yes, O2 agrees that wholesale access to the service should be provided to access seekers on a fair, reasonable and non-discriminatory basis. There are a number of constraints that mean only one mobile TV network will be built in Ireland, so wholesale access obligations are appropriate. There are some practical considerations that need to be taken into account, e.g. due to capacity constraints, a maximum of four access seekers should be able to avail of an individual channel exclusive to their retail customer base. Where technically feasible, the licensee should facilitate the wholesale customer in the differentiation of their service through branded service guides and inter-working with other mobile video services, e.g. 3G streaming.

Q. 11. Do you see merit in some multiplex capacity being reserved for providers of distribution services to end-users? In your opinion how many programme services should be reserved? Please refer to bit-rate, compression and other relevant technical data in your response.

Further to comments under question 10 above, O2 considers there is merit in offering capacity for an exclusive channel to a maximum of four retail providers. The available capacity on the multiplex for broadcast services will be dependent on the platform selected and the possible use of statistical multiplexing to increase capacity through dynamic bit-rate assignment.

Q. 12. Do you consider the proposed Mobile TV Wireless Telegraphy Licence fee to be appropriate? If not, please provide reasons for your view.

No, O2 considers the Mobile TV Wireless Telegraphy Licence fee to be excessive and inappropriate. The proposed fee of €340,000 per annum for a regional mobile TV multiplex when compared to the annual licensing fees and spectrum allocation for a DTT multiplex does not appear reasonable. A DTT multiplex licensee will pay a spectrum fee of €57,000 per annum until 2012, and €112,000 for each year thereafter. However the MFN carrying a DTT multiplex is co-ordinated nationally on a primary basis for circa 90% of the population versus the secondary, local networks which the mobile TV licensee will use to deliver its service to circa 40% of the population.

In addition, despite the difference in rollout obligations between DTT and mobile TV, the overall network costs for a DTT multiplex licensee will be similar to the network costs of the mobile TV licensee as the mobile TV signal is not designed for roof-top or fixed STB antenna but instead must be delivered to a mobile device with an internal antenna with the receiver being located deep indoors. This will require several in-fill sites forming local SFNs in Dublin, Cork, Waterford and Limerick.

The DTT multiplex licensee will also benefit from synergies gained through using the same network for all 3 commercial multiplexes. As the mobile TV licensee is only operating a single multiplex with different network topologies they cannot gain from the synergies of multiple multiplexes all located at the same sites.

The business case used by ComReg in the development of the proposed annual fee is unrealistic. Market data from Europe illustrates that €10

per month is not achievable as an average revenue per customer per month. In addition, the ComReg business case does not include any price erosion while it does include VAT. Significant price erosion has occurred in Italy where mobile broadcast TV services were first launched in 2006. An assumed monthly income of €10 per month per customer for the duration of the licence is injudicious and in no way should be used in the calculation for the annual license fee.

The subscriber acquisition rate of 20% as predicted is extremely aggressive and could only be reached in later years through a combination of factors including significant price erosion, adoption of DVB-H receivers as standard in handsets and significant investment in marketing and promotions. None of these factors are recognised in the modelling exercise used by ComReg.

In this particular case, O2 is of the view that a Beauty Contest is the most appropriate means to award the licence. Without prejudice to this view, O2 considers it inappropriate to award a licence through an auction process while also charging a large annual fee. Any potential entrant into an auction will consider the annual fees, capital and operating costs, and in addition the auction reserve price when deciding whether to bid. O2 believes that ComReg has set the cost floor too high, and this will deter potential bidders from entering.

In the case of DTT, annual fees are levied in the absence of an additional auction fee as the BCI has employed a beauty contest to determine the licensee. ComReg propose awarding the licence via an auction and in addition charging the licensee a significant annual fee. O2 believes that the consumer will inevitably pay higher rates in this case, as those costs must be recovered by the licensee.

Spectrum is a national resource which should be used to the benefit of the consumer, industry and the Irish economy. An auction combined with significant annual licence fees should be viewed as excessive particularly when the service deployed will generate significant taxation income for the exchequer. Any additional annual fee when combined with an auction is inappropriate.

ComReg also proposes to charge the licensee an additional spectrum fee for future spectrum awards to facilitate network extension. Although

coverage extension would be desirable, the licensee will need to invest further in network equipment and incur increased operational costs to provide coverage to less populous areas. If such spectrum were to be made available the licensee should not also be penalised through an additional annual licence fee which could have the effect of reducing the desirability of the spectrum and its associated coverage obligations potentially resulting in aggravating the digital divide for service delivery.

If ComReg is determined to hold an auction then there should be no additional annual licence fee – this simply acts to raise the effective reserve price for entry to the auction.

Q. 13. Do you consider that the proposed length of the Service Neutral Wireless Telegraphy licence is appropriate? If not, how long should the licence period be for? Please give reasons for your proposal.

Subject to previous comments explaining why O2 believes ComReg should choose option 1, O2 considers the proposed licence duration should still be 15 years. We do not know what service would be offered under option 2, however if it was a mobile TV service, then similar considerations will apply as stated in response to question 6.

Q. 14. Do you consider that other factors might also need to be considered in determining the length of the licence?

See response to questions 13, 6, and 7.

Q. 15. Do you consider that the statement of authorised apparatus should include any additional information?

Yes, O2 agrees with the content of the proposed statement of authorised apparatus.

Q. 16. Do you consider that the Service Neutral Wireless Telegraphy Licence should attract a higher licence fee than that proposed for the Mobile TV Wireless Telegraphy Licence? What other considerations should be taken into account in setting the licence fee for any Service Neutral Wireless Telegraphy

Licence fee?

Subject to our preference for option 1 and a Beauty Contest, in this case O2 believes ComReg should not charge an annual licence fee for either a Mobile TV Wireless Telegraphy Licence or a Service Neutral Wireless Telegraphy Licence if it also intends to award such a licence via an auction mechanism.

If a comparative beauty contest similar to that used to award the DTT multiplex licences were to be used for this licence then an annual licence fee would be appropriate. In such a case, O2 would agree that the Service Neutral Wireless Telegraphy Licence could demand an increased annual fee due to the flexibility it provides in relation to service deployment, rollout and wholesale obligations.

Q. 17. Do you consider the proposed annual fee for a Service Neutral Wireless Telegraphy Licence to be adequate? If not, please provide an alternative suggestion outlining your considerations.

Assuming that the primary service would be mobile TV, O2 considers the Mobile TV Wireless Telegraphy Licence fee to be excessive and inappropriate. The proposed fee of €650,000 per annum for a regional mobile TV multiplex when compared to the annual licensing fees and spectrum allocation for a DTT multiplex does not appear reasonable. A DTT multiplex licensee will pay a spectrum fee of €57,000 per annum until 2012, and €112,000 for each year thereafter. However the MFN carrying a DTT multiplex is co-ordinated nationally on a primary basis for circa 90% of the population versus the secondary, local networks which the mobile TV licensee will use to deliver its service to circa 40% of the population.

In addition, despite the difference in rollout obligations between DTT and mobile TV, the network costs for a DTT multiplex licensee will be similar to the network costs of the mobile TV licensee as the mobile TV signal is not designed for roof-top or fixed STB antenna but instead must be delivered to a mobile device with an internal antenna with the receiver being located deep indoors. This will require several in-fill sites forming local SFNs in Dublin, Cork, Waterford and Limerick.

The DTT multiplex licensee will also benefit from synergies gained through using the same network for all 3 commercial multiplexes. As the mobile TV licensee is only operating a single multiplex with different network topologies they cannot gain from the synergies of multiple multiplexes all located at the same sites.

The business case used by ComReg in the development of the proposed annual fee is unrealistic. Market data from Europe illustrates that €10 per month is not achievable as an average revenue per customer per month. In addition, the ComReg business case does not include any price erosion while it does include VAT. Significant price erosion has occurred in Italy where mobile broadcast TV services were first launched in 2006. An assumed flat monthly income of €10 per month per customer for the entire duration of the license is unrealistic and in no way should be used in the calculation for the annual license fee.

The subscriber acquisition rate of 20% as predicted is extremely aggressive and could only be reached in later years through a combination of factors including significant price erosion, adoption of TV receivers as standard in handsets and significant investment in marketing and promotions. None of these factors are recognised in the modeling exercise used by ComReg.

In this particular case, O2 is of the view that Option 1 rather than Option 2 is preferable, with a Beauty Contest as the most appropriate means to award the license. Without prejudice to this view, O2 considers it inappropriate to award a licence through an auction process while also charging a large annual fee. Any potential entrant into an auction will consider the annual fees, capital and operating costs, and in addition the auction reserve price when deciding whether to bid. O2 believes that ComReg has set the cost floor too high, and this will deter potential bidders from entering.

In the case of DTT, annual fees are levied in the absence of an additional auction fee as the BCI has employed a beauty contest to determine the licensee. ComReg propose awarding the licence via an auction and in addition charging the licensee a significant annual fee. O2 believes that the consumer will inevitably pay higher rates in this case, as those costs must be recovered by the licensee.

Spectrum is a national resource which should be used to the benefit of the consumer, industry and the Irish economy. An auction combined with significant annual license fees should be viewed as excessive particularly when the service deployed will generate significant taxation income for the exchequer. Any additional annual fee when combined with an auction is inappropriate.

ComReg also proposes to charge the licensee an additional spectrum fee for future spectrum awards to facilitate network extension. Although coverage extension would be desirable, the licensee will need to invest further in network equipment and incur increased operational costs to provide coverage to less populous areas. If such spectrum were to be made available the licensee should not also be penalised through an additional annual license fee which could have the effect of reducing the desirability of the spectrum and its associated coverage obligations potentially resulting in aggravating the digital divide for service delivery.

If ComReg is determined to hold an auction then there should be no additional annual license fee – this simply acts to raise the effective reserve price for entry to the auction.

Q. 18. Would you be interested in participating in a single sealed bid first price auction with a reserve price of €100,000 to assign either a Mobile TV Wireless Telegraphy Licence or a Service Neutral Wireless Telegraphy Licence? Please indicate which award option would be your preference.

O2 has made clear in earlier responses to questions in this consultation, that it holds significant concerns over the appropriateness of ComReg combining an auction fee and annual licence fees payable by the licensee. O2's preference is for a comparative beauty contest for a Mobile TV Wireless Telegraphy Licence (option 1) with the licensee paying an annual spectrum fee.

A comparative beauty contest mechanism has been chosen by the Broadcasting Commission of Ireland for the award of DTT multiplex licences. Should ComReg pursue the auction mechanism for the award of a mobile TV licence they will be the first regulator in Europe to do so. Germany, Austria, Switzerland, France, Finland and The Netherlands all

used a comparative beauty contest process to award a mobile TV licence in the UHF spectrum band. Poland, Hungary and the Czech Republic all plan to run beauty contests during 2008 to award mobile TV licences.

ComReg has stated in its market consultation that it plans to select a single round sealed bid auction whatever the final formulation of the regulatory regime and licence to be issued. O2 contends that ComReg should first define the licence and regulatory regime and then determine the most appropriate mechanism for the licence award. O2 is particularly concerned that a "first-price" rule is proposed in this case. While a first-price auction would raise the revenue through auction fees, it does not deliver the most beneficial outcome. The purpose of an auction should be to select the bidder who will generate the greatest utility from the license (highest bidder), but also the amount necessary for them to eliminate all other bidders (second price). Any fee paid above this amount is an unnecessary additional cost that must be recovered from consumers.

6 Qualcomm Europe Inc.

Reference: Submission re ComReg 08/44

Qualcomm response to ComReg's consultation on the award of available UHF spectrum in the urban areas of Cork, Dublin, Galway, Limerick, and Waterford and relating licensing options.

Dear Ms Devey

Qualcomm welcomes the opportunity to respond to ComReg's public consultation on *the award of 8 MHz of UHF spectrum in the urban areas of Cork, Dublin, Galway, Limerick, and Waterford and relating licensing options*. Qualcomm, a leading developer and innovator of advanced wireless technologies and mobile data solutions, and is in particular at the forefront of delivering mobile multimedia broadcast products and services. Therefore we are pleased to share our views with ComReg on the above mentioned consultation related to the possible introduction in Ireland of new services such as Mobile TV in the UHF spectrum.

Qualcomm has been instrumental in the development of MediaFLO, a global mobile entertainment platform, enabling broadcasting of high-quality video, audio, Clipcasting™ media and IP datacasting streams to mobile handsets. FLO™ is an open, globally recognized air interface technology that is utilized by the MediaFLO platform. FLO has been standardized by the Telecommunications Industry Association (TIA) and recommended by ITU-R for the broadcasting of multimedia and data applications. The standardization of FLO is also currently a work item in ETSI. FLO is designed to maximise capacity and coverage in a mobile environment, thereby reducing the cost of multimedia content delivery to mobile devices.

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Qualcomm has also been instrumental in driving the adoption of mobile broadcast in general, and has created a single chipset that enables economies of scale for mobile broadcast across disparate geographies and service models. This "Universal Broadcast Modem"¹ is an integrated multi-standards solution supporting DVB-H, ISDB-T and MediaFLO. Commercial demonstrations have already occurred,² and production is underway.

As mentioned in the Consultation, UHF has been primarily used by broadcasting technologies and applications and therefore such frequencies are particularly well-suited to accommodate new services such as a mobile multimedia broadcasting service (hereafter described as "Mobile TV"). It is also important to note that two parallel trends are ongoing in Europe and across the world: while commercial Mobile TV networks are being launched, governments are also considering the future usage of the UHF Digital Dividend to enable the cost efficient deployment of a range of innovative and convergent audiovisual and mobile services such as Mobile TV, 3G and future wireless technologies such as LTE.

- Related to Mobile TV, there are a few commercial roll-outs – Italy, US, Japan, and Korea being the most advanced – and as with any new ground-breaking service launch, the services are still evolving and wide-spread consumer adoption and sustainable operational profits have not yet been attained by these service retailers. The business approaches vary in these markets, as do the associated regulations. One of the major challenges facing all players wishing to enter this market is the complexity and the uncertainty around the regulatory and licensing environment which impacts the business model and the adoption of Mobile TV.
- Regarding the Digital Dividend, the European Commission is currently consulting on this topic with the Council of the EU and the European Parliament, with the technical support of CEPT. As pointed out by ComReg, the Commission has initiated a more flexible approach to spectrum. This is in the context of the WAPECS mandate³ to CEPT, and the Commission Recommendation on the non-technical conditions attached to the rights of use for radio frequencies under the regulatory framework for electronic communications in the context of WAPECS and the UHF band, namely 470-862 MHz is currently listed as a candidate frequency band. These frequencies will be subject to further consideration in the light of the Commission Communication entitled *"Reaping the full benefits of the digital dividend in Europe: A common approach to the use of the spectrum released by the digital switchover"* and in close cooperation with the Member States.

¹ http://www.qualcomm.com/press/releases/2006/060526_worlds_first_universal.html#top

² http://www.qualcomm.com/news/releases/2008/080512_Qualcomm_Demonstrates_MediaFLO_and_International.html

³ Mandate to CEPT to develop least restrictive technical conditions for frequency bands addressed in the context of WAPECS, 5 July 2006

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Qualcomm is closely monitoring these discussions and is actively contributing to the spectrum technical studies as well as to the business dialogue on Mobile TV. Qualcomm believes that Mobile TV represents a great opportunity internationally and in Ireland, and that its introduction should follow a sound UHF spectrum policy framework based on technology neutrality, application neutrality, regulatory flexibility and the respect of spectrum usage rights. In view of the dynamic, and evolving mobile multimedia environment, only such a licensing policy approach will create the necessary conditions to allow businesses to innovate, invest and be successful to the ultimate benefit of consumers and society in terms of choice, cost, service quality, etc.

Qualcomm believes that the imposition on the UHF licensee to only provide a wholesale service under the first proposed award option is too restrictive at this stage of Mobile TV (or other new service) adoption. However, since only one single license is being made available at this stage in Ireland, we fully agree with ComReg that the Mobile TV service provider should provide the service to interested retailers in a transparent and non-discriminatory manner. However, depending upon market conditions and evolution, the Mobile TV service provider should not be restricted from retailing its service directly to consumers. This would enable "non-connected devices", such as in-vehicle receivers, portable media players or other similar devices to be retailed to consumers and help drive the mobile TV market adoption and take up. It would also restrict the ability for television brands to offer the service, and leverage their established brands (such as "UPC/Chorus", "ntl", "Sky", etc.) to drive demand for and understanding of the Mobile TV service.

Another important consideration relates to the long term regulatory framework on future UHF spectrum licenses. Qualcomm agrees with ComReg views that any UHF spectrum allocation for new services (non-DTT) should be considered in concert with the larger EU regulatory framework and spectrum reform. These initiatives are currently under consideration at the EU level and are specifically addressing the Digital Dividend which is likely to fall under more flexible mechanisms (WAPECS). In view of the proximity of the timeline (2011-2012) envisioned by the European Commission for the analog television switch-off and the allocation/award of the Digital Dividend spectrum, Qualcomm believes that it would be appropriate for ComReg to adopt a flexible award auction process.

In conclusion, Qualcomm strongly recommends the adoption of the second award option based on a "Service Neutral Wireless Telegraphy License", as it is the most suited licensing option to create future market opportunities and for the development and adoption of new innovative services such as Mobile TV in Ireland. Such approach is also fully aligned with ongoing policy initiatives at the EU level regarding the UHF Digital Dividend spectrum.

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Qualcomm views regarding the licensing options put forward by ComReg in its consultation paper for the award of a single 8 MHz UHF spectrum channel in the urban areas of Cork, Dublin, Galway, Limerick and Waterford are further detailed in the Annex.



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ANNEX

Qualcomm views on ComReg's award of UHF spectrum

Qualcomm welcomes ComReg's proposal to allocate a license in UHF for a new mobile multimedia services such as Mobile TV. As noted by ComReg, indicators are that there is market demand for Mobile TV in Ireland. Therefore, Qualcomm believes that this licensing should be done as soon as possible, Qualcomm is pleased to contribute to this consultation regarding the license conditions which could be applied to the licensing of the UHF spectrum for new innovative applications and services such as Mobile TV.

Q. 1. Do you agree with ComReg's proposal that its auction should be exclusively for a Mobile TV Wireless Telegraphy Licence using the available spectrum? If not, please support your answer with reference, in particular, to the considerations given in Section 4.5 of this document and any other supporting evidence.

For the reasons further outlined below, Qualcomm believes that ComReg should adopt the second award auction scenario namely the "Service Neutral Wireless Telegraphy License" as it would provide appropriate flexibility regarding the business model approach while ensuring sufficient technical certainty and interference protection based on the Geneva 2006 plan for a Mobile TV platform to be deployed.

Service regulation as well as spectrum management will have an important role in creating a robust licensing framework triggering incentives for stakeholders to invest and long term sustainable economics for such new service. In the area of spectrum allocation, predictability and efficient use are of critical importance and the licensing framework should enable healthy market competition, innovation, and flexibility for businesses to adapt to the highly dynamic consumer behavior and to the increasing global mobile multimedia market in Europe and beyond.

Mobile TV is largely considered today to be a nascent and evolving new service and many challenges remain with regard to the most appropriate business model. Flexibility in the business model is crucial to enabling revenues to the value chain stakeholders and ensuring successful consumer take-up. Italy, the United States, Japan and Korea are often viewed as the most advanced commercial deployments in the area of Mobile TV. Each of these markets uses different technology platforms and follows different spectrum and regulatory conditions as well as market structure. While the "free Mobile TV model" – under regulatory requirements has triggered much interest in Japan and Korea, questions remain about how the

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service providers can generate revenues. In Italy, two networks co-exist with different value chain structure (wholesale vs retail), as well as different offerings (pay-model only vs hybrid free-pay model). In the United States, Qualcomm has created an operating entity MediaFLO USA which, as of today, exclusively wholesales to the two major 3G wireless carriers Verizon Wireless and AT&T. In all cases, it is important to note that questions continue to arise regarding the most appropriate value proposition in order to increase market take-up and sustain favorable economics for all investors of this Mobile TV market. It is not excluded, as recently announced in Italy, that the various Mobile TV service provider may further adapt dynamically to meet the market demand overtime (as an example, 3 Italy recently changed from an exclusively-Pay TV service offering to a hybrid Pay/Free To Air service offering⁴). Both the Italian and the US market benefits from a flexible service regulation which enable the player to do so. In Korea and Japan, where service providers have been prevented from changing their service models due to regulatory conditions, it is not excluded, based on recent activities, that service providers may adopt new commercial practices in the near future in order to address the need to increase profitability⁵ and make the service viable economically.

Qualcomm believes that the imposition on the UHF licensee to provide only a wholesale service under the first proposed award option is too restrictive at this stage of Mobile TV adoption. While we acknowledge the reasons leading ComReg to forbid the Mobile TV service provider from acting as a retailer in the Irish market, the arguments above provide a rationale to increase the addressable Mobile TV market and enables a more efficient Mobile TV market adoption and take-up as well as consumer benefits in terms of choices and prices. That being said, Qualcomm also acknowledge the fact that only one license is being made available at this stage in Ireland. Therefore, we agree with ComReg that the Mobile TV service provider should provide the service to all interested retailers in a transparent and non-discriminatory manner; however we recommend that the service provider be free to determine the best business model (whether the service is Free To Air, Pay TV or a hybrid of those two models, and whether the service is based upon a wholesale or retail model) and distribution strategy (to enable the service provider to utilize all relevant means of distribution).

Another important consideration is the long term regulatory framework of future UHF spectrum licenses. Qualcomm agrees with ComReg that any UHF spectrum allocation for new services (non-DTT) should be considered in coherence with the larger EU regulatory framework and spectrum reform currently under consideration at the EU level. These discussions also imply that the Digital Dividend which is likely to fall under more flexible mechanisms (WAPECS). In view of the proximity of the timeline (2011-2012)

⁴ <http://www.dvb-h.org/Services/services-Italy-3Italia.htm>

⁵ http://techdigest.tv/2007/10/koreajapan_week_9.html

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envisioned by the European Commission for the analog television switch-off and the reallocation/award of the Digital Dividend spectrum for new services, Qualcomm believes that it would be appropriate for ComReg to adopt a flexible award auction process.

Qualcomm fully acknowledges and embraces the initiatives of the European Commission mentioned by ComReg related to Mobile TV as well as spectrum flexibility.

- With regard to Mobile TV, it is important to recall the Council Conclusions on the European Commission Communication "*Strengthening the Internal Market for Mobile TV*" which embrace the essential principle of technology neutrality and a market-led approach toward the development of a family of Mobile TV standards. The Member States in particular emphasises that Mobile TV is an emerging market and represent a significant opportunity for growth, technology and service innovations as well as for bringing significant consumer benefits. In view of the nascent nature of the Mobile TV market, technology neutrality and a market-led approach will enable the service provider to be flexible, and will provide consumers with more, better choices at attractive price points.
- With regard to the spectrum, as clearly noted by ComReg, the European Commission has proposed, under the new regulatory framework for electronic communications, a strategic initiative leading to a more flexible and efficient usage of spectrum via market-based mechanisms, with the objective to facilitate a "level playing field" in an environment of converging services. The spectrum management reform is currently under consideration in the context of the WAPECS and will apply to various frequency bands, subject to such flexible conditions as stated in the Radio Spectrum Policy Group (RSPG) Opinion. As mentioned earlier in this document, UHF is listed under the WAPECS approach and is under further consideration by CEPT in light of the Commission Communication and in close cooperation with the Member States on "*Reaping the full benefits of the digital dividend in Europe: A common approach to the use of the spectrum released by the digital switchover*".

In conclusions, Qualcomm believes that ComReg proposed second award auction scenario ("Service Neutral Wireless Telegraphy Licence") is fully aligned with the European Commission proposals and the position of the Member States. It also addresses ComReg's concerns identified in Section 4.4. in terms of efficient spectrum use, consumer choices, and protection of existing and future DTT services.

- It embraces the principle of full technology neutrality as well as "flexible and quality spectrum" use in accordance with the RSPG opinion as well as the ITU radio regulations and the GE-06 plan in

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terms of "the envelope concept" and interference protection requirements for both existing and future services (enabling compatibility between new services and preexisting/planned DTV).

- It provides the possibility of spectrum trading in concurrence with the European Commission strategic initiative on the Digital Dividend.
- It provides sufficient flexibility to develop a robust value chain and a successful business structure for Mobile TV that can adapt to an emerging and dynamic multimedia market. As further detailed below, wholesale obligations could diminish significantly stakeholders' interest in acquiring this UHF license. As mentioned above, Qualcomm acknowledge the impact of spectrum scarcity on competition and agree that "fair and non-discrimination rules" could be ensured by other various mechanisms other than a wholesale obligation.

Q. 2. Do you consider there to be significant interest in the market for the available 8 MHz of spectrum on a technology and service neutral basis, having regard to the issues discussed in Section 4.5.3? If so, what services and applications do you consider could avail of this spectrum?

Q. 3. Do you consider that ComReg's auction should be for a licence awarded on a service and technology neutral basis subject to the qualification that it may not be used to provide DTT services? Please support your argument.

Qualcomm believes that the telecoms/television industries are moving forward with Mobile TV, but that many key players remain "interested skeptics" due to the evolving nature of the service offerings (and what is permitted by the relevant regulatory bodies), device proliferation and prices, and the timelines for the availability of appropriate spectrum. Qualcomm has worked and will continue to work with key industry players to drive "convergence on the handset" of various technologies and enable economies of scale for the benefits of device proliferation at attractive price points and to enable a best-in-class Mobile TV user experience based on MediaFLO.

In Qualcomm's experience, the market's interest in UHF spectrum in Ireland (or in any other EU Member State) for the provision of Mobile TV services is very much dependent upon the characteristics of the proposed frequencies in terms of coverage requirements, spectrum usage rights, the price of the license, and type(s) of business models allowed in conjunction with that spectrum.

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While the UHF spectrum allocation proposed by ComReg in its public consultation is more suited for broadcast-like networks such as Mobile TV, Qualcomm believes that ultimately, the UHF, and in particular in the context of the Digital Dividend, represents also a great opportunity for services such as wireless broadband or other innovative applications such as peer-to-peer.

As ComReg points out, market players will be in the best position to decide what services would be the most suited for such spectrum allocation – hence in view of the ongoing discussions related to the Digital Dividend at the EU level, our recommendation to ComReg to allocate this UHF 8 MHz frequency channel under a Service Neutral Wireless Telegraphy Licence for services other than traditional DTT, while ensuring full compatibility with terrestrial broadcasting services (DTT). It will also be important to clarify further details on the DTT plan in Ireland prior to the making available of this UHF license for new services in order to provide the future licensee with certainty and regulatory flexibility in order to increase the value of the license.

Q. 4. Do you consider that the licence conditions for Mobile TV, on dedicated terrestrial networks in Ireland, should build on those set down for fixed and portable reception of DTT Multiplexes? If not, please explain what alternative methods should be used to develop licence conditions for Mobile TV services in Ireland in the context of the dedicated terrestrial network approach.

In addition to our recommendation to ComReg for the adoption an award procedure under a Service Neutral Wireless Telegraphy Licence, we strongly believe that Mobile TV is a new digital multimedia service as opposed to an extension or a substitute to television services (DTT) for fixed and portable reception. Therefore the licence conditions should not be built on such usages. The main reasons relate to both technical and business aspects. First, we fully agree that Mobile TV would greatly benefit from a dedicated terrestrial network approach based on technical spectrum considerations as Mobile TV is intended for indoor, mobile and low height reception on physically constrained devices. Second, the Mobile TV experience is likely to be drastically different from the viewing behavior for DTT services, mobile devices being by nature an interactive and personalized medium to watch multimedia content not limited to television but suitable for other applications such as audio, digital print media, emergency alerts (e-education, e-government, etc.).

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Q. 5. Do you consider that the above types of licence conditions would provide the necessary regulatory certainty to the market for the provision of Mobile TV Services using the dedicated terrestrial network approach in Ireland? If not, please specify any additional licence conditions that should apply.

As mentioned above, Mobile TV is a nascent market which will benefit from the greatest flexibility in terms licensing and regulatory conditions. There are still today many commercial challenges for the Mobile TV value chain to overcome e.g. in terms of content (selection, packaging, rights, etc.), network build-out (CapEx, OpEx, etc.), service proposition (wholesale vs. retail, "Free to Air" vs "Pay TV" vs "Hybrid" subscription model, devices, prices, etc.), and others. While the technical requirements are important and valued in particular interference considerations or variation of license in terms such as spectrum trading or license duration, others obligations related to the business aspects should be considered just as carefully (roll-out or license duration commitments) and possibly avoided (the proposed constraint to a "wholesale-only" model).

Q. 6. Do you consider that the proposed length of the Mobile TV Wireless Telegraphy Licence is appropriate? If not, how long should the licence period be for? Please give reasons for your proposal.

Q. 7. Do you consider that other factors might also need to be considered in determining the length of the licence?

Qualcomm believes that license duration should be carefully balanced and dependent on the licensing obligations – especially with regard to the sanctions for non-compliance. For example, if the terms and conditions of the license were to allow spectrum trading, a long-term license beyond 10 years may be appropriate. However, if the license requirements are overly specific then a shorter license duration should be considered to balance commercial uncertainty (e.g. market maturity, infrastructure build-out, expenses vs. return on investments, market competition factors, etc.) which could be triggered by inappropriate regulatory obligations on the licensee.

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Q. 8. Do you consider that the Mobile TV Service should be accessible by end users in the five urban areas within 24 months of the licence award? If not, what rollout schedule should apply?

Q. 9. Do you consider, as a means of measuring end-user accessibility, that the main transmitter sites should be commissioned, on-air and transmitting the multiplex offering in accordance with effective radiated power characteristics as would be set down in the technical schedule attached to licence? If not, please explain how should rollout conditions be set and measured for compliance?

Qualcomm believes that coverage roll-out obligations should be carefully considered in the case of a new service such as Mobile TV or others, especially in view of the spectrum technical characteristics of the 8 MHz multiplex currently envisioned by ComReg and its impact on the coverage requirements (e.g. level of mobile indoor coverage). While mobile broadcast technologies are best suited to co-exist with DTT services in terms of network configuration, early experiences in Europe and elsewhere have shown the technical and expense challenges to reach quality reception for indoor mobile reception under the current GE-06 framework under a specific time schedule. As opposed to roll-out requirements, consumer take-up and/or market value (e.g. revenues) should be instead considered and balanced with the spectral technical conditions of the license.

With regards to transmission power characteristics, network planning practices for Mobile TV or other wireless networks have shown that deployment configurations requires fine-tuning and its adaptation to consumer usage in terms of time and location.

In conclusion, we recommend the adoption of the award scenario of a "Service Neutral Wireless Telegraphy License" which does not include such obligations and leave sufficient flexibility for the license holder to deploy in the best commercial interest for the consumer benefits while balancing its investments.

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Q. 10. Do you see merit in licence obligations that would seek to ensure wholesale service is provided on fair, reasonable and non-discriminatory terms? Do you consider that these obligations would ensure that wholesale service is effectively provided? If not, what additional obligations may be required?

Q. 11. Do you see merit in some multiplex capacity being reserved for providers of distribution services to end-users? In your opinion how many programme services should be reserved? Please refer to bit-rate, compression and other relevant technical data in your response.

As mentioned in our answer to the first question, we believe that imposition on the licensee to only provide a wholesale service is too restrictive at this stage of Mobile TV adoption and possibly also for other new services. As the Mobile TV service provider is likely to be the entity making the majority of the investment in building the Mobile TV network and possibly in making the investment to market the service, it is important for the license conditions not to limit the addressable market.

Therefore, Qualcomm believes that the imposition on the UHF licensee to only provide a wholesale service under the first proposed award option is too restrictive at this stage of Mobile TV (or other new service) adoption. However, since only one single license is being made available at this stage in Ireland, we fully agree with ComReg that the Mobile TV service provider should provide the service to all interested retailers in a fully transparent and non-discriminatory manner. In addition, depending on market conditions and evolution, the ability of the Mobile TV service provider to retail the service directly to consumers could enable to increase competition in the retail market therefore may benefit consumers and help drive the mobile TV market adoption and take up. For example, if a popular media brand is part of the Mobile TV operator, its ability to leverage their consumer brand influence may attract consumers more efficiently. Finally it could also enable the Mobile TV service provider to effectively address the unconnected devices market.

In terms of the exact multiplex capacity division between the wholesale and retail directly to consumers, this should be left to the value chain stakeholder to decide as it will be highly dependent on the consumer take-up of the Mobile TV service.

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Q. 12. Do you consider the proposed Mobile TV Wireless Telegraphy Licence fee to be appropriate? If not, please provide reasons for your view.

No comment

Q. 13. Do you consider that the proposed length of the Service Neutral Wireless Telegraphy licence is appropriate? If not, how long should the licence period be for? Please give reasons for your proposal.

Q. 14. Do you consider that other factors might also need to be considered in determining the length of the licence?

As mentioned in Questions 6 and 7, Qualcomm believe that the license duration should be balanced and dependent on the license obligations. In the case of the "Service Neutral Wireless Telegraphy" licensing option, Qualcomm believes that the terms and conditions of such license are flexible enough to allow for the license duration of at least 10 years. We also recommends that in the case where such spectrum award auction was chosen, ComReg should allow the possibility to renew the license at the end of its duration, based on market status and service usage considerations.

Other factors may also influence this license duration. As we mentioned in the first section, the UHF band is under consideration at the European level (and beyond) with regard to the usage of the Digital Dividend as well as increased flexibility of spectrum usage. In order to remain consistent and aligned with these considerations, we believe that ComReg should adopt a policy framework which will not interfere with future spectrum and regulatory decisions at the EU and Member States level.

Q. 15. Do you consider that the statement of authorised apparatus should include any additional information?

Qualcomm fully agrees with ComReg that the future licensee should comply with interference requirements as defined in GE-06 Plan. We also believe that technical compliance with the "Geneva 2006" plan should be maintained whether the license is awarded under option 1 or option 2. Transmitter

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location and power characteristics defined for the GE-06 assignments, originally planned for DTT services, may not serve the purpose of either Mobile TV or other services. Additional/alternate sites should be allowed in respect of interference protection requirements set in GE-06, since in-building penetration considerations, population and target-market distribution considerations, and other factors differ significantly from DTT service coverage requirements. Strict assignments would directly impact coverage and therefore the cost and take-up of these new services. Therefore, we recommend ComReg provide such technical characteristics only as a reference and to retain the spectrum mask concept and interference requirements as an integrated part of the licensee obligations.

Regarding the statement of authorized apparatus along with the technical details listed by ComReg, Qualcomm fully understands and supports the importance of such document as it will allow ComReg to ensure "quality usage" of spectrum and provide certainty for the various UHF license holders. We would also recommend ComReg to allow the industry to decide on some of the technical criteria especially regarding receiver sensitivity.

Q. 16. Do you consider that the Service Neutral Wireless Telegraphy Licence should attract a higher licence fee than that proposed for the Mobile TV Wireless Telegraphy Licence? What other considerations should be taken into account in setting the licence fee for any Service Neutral Wireless Telegraphy Licence fee?

Q. 17. Do you consider the proposed annual fee for a Service Neutral Wireless Telegraphy Licence to be adequate? If not, please provide an alternative suggestion outlining your considerations.

For the reasons exposed above, Qualcomm supports the adoption of the Service Neutral Wireless Telegraphy License proposed by ComReg, in line with the Digital Dividend approach under consideration by the European Commission.

First, we fully acknowledge the advantage of this licensing framework as it would avoid the imposition of rollout obligations and an exclusive wholesale model. However, while Service Neutral Wireless Telegraphy License would provides greater flexibility on the type of services to be deployed, the spectrum configuration and associated technical rules envisioned by ComReg are similar to the Mobile TV Wireless Telegraphy License since the new service will need to comply with the GE-06 plan including emission mask and interference requirements which are derived from DTT (DVB-T) technical radio frequency

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characteristics. As rightly pointed-out by ComReg, a service deployed in an 8 MHz multiplex interleaved with DTT services will have to bear specific interference requirements making the usage more suited for Mobile TV than, for example, two-way communications.

Second, using a benchmark which leverages information from markets which have implemented contiguous national UHF spectrum blocks may not be fully appropriate in the case of Ireland, unless the single 8 MHz allocation is indeed a unique frequency used across the country ("SFN", or Single Frequency Network).

In conclusion, while Qualcomm agrees that the second service neutral award options is more flexible, we also think that the higher pricing (almost doubled) may not be fully appropriate for the spectrum license envisioned by ComReg.

Q. 18. Would you be interested in participating in a single sealed bid first price auction with a reserve price of €100,000 to assign either a Mobile TV Wireless Telegraphy Licence or a Service Neutral Wireless Telegraphy Licence. Please indicate which award option would be your preference.

No comment.

8 RTÉ

**RTÉ Response to the
ComReg Consultation Document 08/44
Award of available UHF spectrum in the urban
areas of Cork, Dublin, Galway, Limerick and
Waterford and related licensing options**

30th July 2008



Introduction

RTÉ, Ireland's primary Public Service Broadcaster (PSB), welcomes this opportunity to participate in this Response to ComReg's *Consultation Document on the Award of available UHF spectrum in the urban areas of Cork, Dublin, Galway, Limerick and Waterford and related licensing options*. Radio spectrum is a significant national asset, and RTÉ has in recent years engaged with ComReg, DCENR and the EU Radio Spectrum Policy Group regarding the potential 'digital dividend' arising from the switchover from analogue to digital broadcasting. The potential availability of spectrum below 1 GHz would allow opportunities for additional electronic communications networks and services, such as mobile multimedia services, in particular, mobile television.

RTÉ recognises the importance of innovation in the development and testing of new digital technologies, and as it stated in its *RTÉ Response to ComReg Consultation Paper 04/85, 24th September 2004, on the Opportunities for Trialling Wireless Services and Technologies in Ireland*, "to achieve the 'digital dividend' and consolidate the 'information society', freeing up spectrum for other purposes could be crucial to the digital strategies of the EU Member States."

In this *Consultation Document*, ComReg states that:

The international regulatory and technical frameworks for digital terrestrial broadcasting in the UHF band are established under the Geneva 2006 Treaty (GE-06 Treaty). The GE-06 Treaty is optimised for digital terrestrial broadcasting in the UHF band through the creation and agreement of harmonised DVB-T planning and technical criteria by the Treaty signatories.¹

The GE-06 Treaty facilitates effective and flexible spectrum regulation. However, as underlined by the ITU² in their definition of 'guiding principles' in this regard, the establishment of an efficient system of spectrum regulation is complex, and it must be remembered that *'the public interest, something ignored in purely commercial transactions, also plays a part; there must be sufficient spectrum available for public broadcasting and military usage, for example.'*³

In the RTÉ Response to the Radio Spectrum Policy Group's (RSPG) draft Opinion on *"EU Spectrum Policy Implications of the Digital Dividend, 15th December 2006*, RTÉ stated the following:

Public Service Broadcasting exists to ensure cultural diversity, media pluralism and balanced information and debate in society. RTÉ believes that the fundamental democratic principle of ensuring social inclusiveness as demonstrated by a 'one-to-many' (or point to multipoint) broadcast paradigm will continue to be important for citizens and for policy makers, and that this principle must be safeguarded even more so in this era of convergence and

¹ ComReg *Consultation Document 08/44*, p. 8.

² ITU (2006) "The Regulatory Environment for Future Mobile Multimedia Services – Towards More Flexible Spectrum Regulation and Its Relevance for the German Market" available at http://www.itu.int/osg/spu/ni/multimobile/papers/MMS_flexiblespectrumstudy_060606.pdf

³ *Ibid.*, page 4.

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technological complexity. In addition, Public Service Broadcasters have the obligation to achieve as near as possible "universal coverage": it should be noted in this regard that to achieve this near-"universal" coverage requires significant allocations of spectrum.

Furthermore, RTÉ stated:

In many areas of this spectrum dividend discussion, and arising from the deliberations of RRC '06, it is apparent that further studies are urgently required in terms of the implications of sharing spectrum between broadcasting and other services, such as fixed/mobile services, before any decisions can be made in terms of releasing (or sharing) spectrum for these purposes.

While RTÉ supports the need to ensure that spectrum is managed as efficiently and flexibly as possible, it wishes to re-state its concerns about potential interference issues arising where the sharing of spectrum among different services is proposed. ComReg refers to the use of the "spectrum mask" and "envelope concept", widely debated at GE-06, but RTÉ would be interested to see proof of these concepts in real-life implementations. The priority for Ireland, as acknowledged by ComReg, must be the introduction of national DVB-T (DTT) services in the UHF frequency band in the first instance. For Irish broadcasting, the growth potential of DTT in Ireland must also be acknowledged, and any proposals for new spectrum usage must be evaluated in this context.

RTÉ notes that the DVB-T network in Germany is currently providing *de facto* mobile television services without the implementation of a DVB-H network, *per se*, and, although there are differences between the two transmission standards particularly in regard to high speed reception, suggests that ComReg examine this development further.⁴

Therefore, given the current regulatory landscape in Europe, and cognisant of the debates which have been occurring in the UK⁵ and elsewhere about the realisation of the 'digital dividend', RTÉ proposes that ComReg consider establishing a regular review mechanism regarding the efficient use of spectrum, as ongoing changes in technology mean that a commitment to engage with broadcasters would ensure continuing debate and would open the possibility of introducing new technologies within a consultation framework. Such a commitment from ComReg would be greatly welcomed by all sectors and stakeholders, and would also ensure the participation of all interested parties in the development of Ireland's spectrum strategy.

⁴ In May 2008, German mobile operators launched DVB-T to mobile receiver handsets, see for example, http://www.telegeography.com/cw/article.php?article_id=22903&email=html; http://shop.vodafone.de/Shop/product_details.jsp?shopid=200&memKey=1038&propositionId=prod230468

⁵ See for example <http://www.ofcom.org.uk/consult/condocs/ddr/statement/>

Discussion

In their discussion of the legislative background, and ComReg's empowerment in this regard, the *Consultation Document* states:

The Broadcasting (Amendment) Act 2007 ("2007 Act") sets out the legislative framework for future licensing of digital broadcasting services, in particular DTT services, and provides a mechanism for ASO in Ireland.

The 2007 Act provides for the licensing of two national digital multiplexes to Radio Telefis Éireann (RTÉ) and four to the Broadcasting Commission of Ireland (BCI). A licence in respect of one digital multiplex was issued to RTÉ in December 2007. It is intended, if requested by the BCI, that ComReg will issue three national multiplex licences to the BCI prior to ASO. The benefits and obligations of these licences will be passed on to third parties in multiplex contracts offered by the BCI via a competitive process which launched on 7 March 2008.

Additionally, ComReg is empowered under the 2007 Act to issue, under the Wireless Telegraphy Acts, 1926 to 1988 ("Wireless Telegraphy Act"), multiplex licences, other than the six national licences specified for RTÉ and BCI identified above, following consultation with the Minister for Communications, Energy and Natural Resources and the BCI.⁶

RTÉ wishes to state that it is entitled to sufficient and adequate spectrum for the carrying out of its obligations as the national Public Service Broadcasting organisation. The quality and availability of that spectrum available to RTÉ to fulfil its obligations of national, free-to-air and universal access services must be safeguarded to ensure that the quality of that resource cannot be degraded in any way. RTÉ has concerns about the proposal to initiate sharing of spectrum in the UHF band at this early stage in the progress towards a national DVB-T network for Ireland. RTÉ, therefore, must preserve any and all of its rights relevant to the future allocation of spectrum which would in any way affect its rights and entitlements.

ComReg cites the above as part of the enabling legislation to allow ComReg to now make:

A single 8MHz channel between 470 MHz to 750 MHz available in each of the urban areas of Cork, Dublin, Galway, Limerick and Waterford ("the available spectrum") for which a single multiplex licence could be issued.⁷

This "available spectrum" is now to be made available by ComReg through an auction prior to analogue switch off. RTÉ notes that ComReg insists that such an allocation of "available spectrum" will not "materially degrade reception of existing or future planned DTT services for viewers".⁸

⁶ ComReg Consultation Document 08/44, p.12.

⁷ *Ibid.*, p. 12.

⁸ *Ibid.*, p.12-13.

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In Section 4.5 of the *Consultation Document*, ComReg discusses its “relevant considerations” in forming its proposals for the introduction of Mobile TV services in the UHF spectrum in Ireland. ComReg recognises that there are currently a number of possible technical standards and technologies available, ranging from T-DMB (DAB-IP), Media-FLO, ISDB-T to DVB-SH. Yet ComReg states that “if DVB-H becomes the ‘de facto’ standard” that there would be “scope for economies of scale potential for spectrum harmonisation”.⁹ The European Commission’s initiatives on mobile television as well as EU regulatory mechanisms, specifically the Electronic Communications Networks and Services (Framework), and to a lesser extent, the Audio-Visual Services Media Directive are also referenced in terms of the need for harmonisation across Europe. In Section 4.6, RTÉ notes and welcomes the fact that ComReg is not providing for spectrum trading in this award, given, as it states in the *Consultation Document*, that “use of spectrum trading needs to be underpinned by primary legislation which is not yet the case in Ireland”.¹⁰

In addition, ComReg states that there is potential for “other services” to be provided in this “available spectrum”, such as for example “new peer-to-peer services” and states:

ComReg therefore, considers that market players would be in a better position to decide on potential services than it would. Accordingly, the possibility of issuing the licence on a service and technology neutral basis is being considered subject to the following qualification:

ComReg notes the available spectrum is suitable for DTT services or other applications planned using the DVB-T technical standard. In this regard, the BCI is currently holding a competition for national multiplex contracts to provide DTT services on a fixed and portable reception basis (excluding DVB-H). In light of this, ComReg considers that the available spectrum should be used for other applications, which could include broadcasting services targeted at mobile devices on a mobile reception basis (i.e. Mobile TV services) but which exclude broadcasting services targeted at fixed and portable devices on a fixed and portable reception basis (i.e. DTT services).¹¹

Regarding the BCI tender process mentioned above, namely the “competition for national multiplex contracts to provide DTT services on a fixed and portable reception basis (excluding DVB-H)”, which is still underway, it would seem to be premature for ComReg to reach any definitive decisions until there is clarity as to how DVB-T will actually be deployed on a national basis in Ireland.

ComReg then refers to studies now completed regarding the sharing of services in the UHF band and says that prevention of interference “will be set as a licence condition”.¹² The ITU in 2006 discussed various regulatory models, and in regard to the ‘commons model’ which facilitates spectrum sharing remarked that:

Although open access would be desirable as a means of liberalising the market, there are technical and economic limits on how far it can be

⁹ *Ibid.*, p.15.

¹⁰ *Ibid.*, p. 18.

¹¹ *ComReg Consultation Document 08/44*, p.16.

¹² *Ibid.*, p.17.

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*implemented in practice. The regulatory authority should therefore think very carefully before deciding to open a frequency band for general usage. Once a band has been released for all users, it is difficult to reverse this decision.*¹³

On the issue of service and technology neutrality, the ComReg Consultation Document states:

The Radio Spectrum Policy Group (RSPG), which draws its membership from the European Member States, supports the concept of service and technology neutrality as the prevailing way forward for spectrum management. It has adopted an Opinion on Wireless Access Policy for Electronic Communications Services (WAPECS) which proposes service and technology neutrality as a means of:

*ensuring effective and efficient spectrum use;
facilitating converged services; and
fostering future innovation and growth.*

*Cognisant of the twin objectives at a European level of promoting mobile reception of television services and of supporting service and technology neutrality, ComReg is considering two alternative licence types...*¹⁴

In its discussion in Section 7.1.9 of the *Service Neutral Wireless Telegraphy Licence Fees*, ComReg cites "one research paper" from 2006, saying:

*although there are no licence fees for digital dividend spectrum calculated on a service and technology neutral basis in other countries with which to benchmark, ComReg notes that one research paper has suggested that the minimum social benefits per person from re-allocating 200MHz of spectrum in the UHF frequency band to non-broadcasting applications in Ireland would be US\$1,334 per capita annually.*¹⁵

Therefore, in this Consultation Document, ComReg is consulting on two award options in order to provide "interested parties with a broad scope to best create future market opportunities".¹⁶

- *The first award option is exclusively based on the award of a Wireless Telegraphy Licence for Mobile TV apparatus ("Mobile TV Wireless Telegraphy Licence").*
- *The second award option is based on the award of a Wireless Telegraphy Licence on a service neutral basis ("Service Neutral Wireless Telegraphy Licence")...*

¹³ Reference from ITU (2006) "The Regulatory Environment for Future Mobile Multimedia Services – Towards More Flexible Spectrum Regulation and Its Relevance for the German Market" available at http://www.itu.int/osg/spu/ni/multimobile/papers/MMS_flexiblespectrumstudy_060606.pdf, p. 7.

¹⁴ ComReg Consultation Document 08/44, p. 9.

¹⁵ *Ibid.*, p. 32.

¹⁶ *Ibid.*, p. 4.

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Each of these two award option have specific associated licence conditions.

RTÉ questions why ComReg is adopting this particular approach, and notes that ComReg states that:

ComReg is therefore minded to award a Mobile TV Wireless Telegraphy Licence, based on an ETSI-approved technical standard, with the available spectrum.

An alternative to this award approach would be one based on the principles of service and technology neutrality, which would, in ComReg's opinion, provide an alternative set of merits to it. In particular, it would represent a further step by ComReg towards increasing the level of service and technology flexibility available to radio spectrum users.

ComReg therefore wishes to elicit from the market whether there is interest in the available 8 MHz spectrum on a technology and service neutral basis and would consider awarding a Service Neutral Wireless Telegraphy Licence.

[Footnote: ComReg acknowledges that potential Mobile TV Service provider(s) may also be interested in a Service Neutral Wireless Telegraphy Licence option given that such a licence would not contain specific rollout or wholesale service obligations.]¹⁷

The footnote quoted above is very relevant here, as it would therefore appear that by adopting this particular approach, ComReg is opening the possibility of exactly this scenario arising.

Response to Consultation Questions

Q. 1. Do you agree with ComReg's proposal that its auction should be exclusively for a Mobile TV Wireless Telegraphy Licence using the available spectrum? If not, please support your answer with reference, in particular, to the considerations given in Section 4.5 of this document and any other supporting evidence

Response: Assuming that the proposed use of "available spectrum" in the UHF band can be guaranteed by ComReg not to cause interference with the planned national DVB-T network, RTÉ agrees with ComReg's proposal that its auction should be exclusively for a Mobile TV Wireless Telegraphy Licence using the available spectrum.

*Q. 2. Do you consider there to be significant interest in the market for the available 8 MHz of spectrum on a technology and service neutral basis, having regard to the issues discussed in Section 4.5.3? If so, what services and applications do you consider could avail of this spectrum?
and*

¹⁷ *Ibid*, p.18.

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Q. 3. Do you consider that ComReg's auction should be for a licence awarded on a service and technology neutral basis subject to the qualification that it may not be used to provide DTT services? Please support your argument.

Response: RTÉ considers this option to be too open and insufficiently articulated – what specific services in what specific circumstances would need to be known in advance of any such award. Under no circumstances should any new service be allowed to interfere in any way with the forthcoming new DTT services.

The fact that a Service Neutral Wireless Telegraphy Licence would not contain specific rollout or wholesale service obligations is also a matter of concern.

Q. 4. Do you consider that the licence conditions for Mobile TV, on dedicated terrestrial networks in Ireland, should build on those set down for fixed and portable reception of DTT Multiplexes? If not, please explain what alternative methods should be used to develop licence conditions for Mobile TV services in Ireland in the context of the dedicated terrestrial network approach.

Response: RTÉ considers that the licence conditions for Mobile TV, on dedicated terrestrial networks in Ireland, should build on those set down for fixed and portable reception of DTT Multiplexes.

Q. 5. Do you consider that the above types of licence conditions would provide the necessary regulatory certainty to the market for the provision of Mobile TV Services using the dedicated terrestrial network approach in Ireland? If not, please specify any additional licence conditions that should apply.

Response: RTÉ believes that the above types of licence conditions should provide the necessary regulatory certainty to the market for the provision of Mobile TV Services using the dedicated terrestrial network approach in Ireland.

Q. 6. Do you consider that the proposed length of the Mobile TV Wireless Telegraphy Licence is appropriate? If not, how long should the licence period be for? Please give reasons for your proposal.

Response: RTÉ considers the proposed length of the Mobile TV Wireless Telegraphy Licence is appropriate.

Q. 7. Do you consider that other factors might also need to be considered in determining the length of the licence?

Response: RTÉ considers that the scheduling of infrastructure construction should be taken into consideration also, given that DTT services will be rolled out on many of the high transmission sites in Ireland over the coming years.

Q. 8. Do you consider that the Mobile TV Service should be accessible by end-users in the five urban areas within 24 months of the licence award? If not, what rollout schedule should apply?

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Response: RTÉ considers that the Mobile TV Service should be accessible by end-users in the five urban areas within 24 months of the licence award, but only when sufficient assurances can be given by the licensees to ComReg that no interference with the national DTT network will arise.

Q. 9. Do you consider, as a means of measuring end-user accessibility, that the main transmitter sites should be commissioned, on-air and transmitting the multiplex offering in accordance with effective radiated power characteristics as would be set down in the technical schedule attached to licence? If not, please explain how should rollout conditions be set and measured for compliance?

Response: This seems reasonable, given the caveat that no interference with the national DTT network arises.

Q. 10. Do you see merit in licence obligations that would seek to ensure wholesale service is provided on fair, reasonable and non-discriminatory terms? Do you consider that these obligations would ensure that wholesale service is effectively provided? If not, what additional obligations may be required?

Response: RTÉ believes that licence obligations should seek to ensure wholesale service is provided on fair, reasonable and non-discriminatory terms.

Q. 11. Do you see merit in some multiplex capacity being reserved for providers of distribution services to end-users? In your opinion how many programme services should be reserved? Please refer to bit-rate, compression and other relevant technical data in your response.

Response: RTÉ does not see how merit in some multiplex capacity being reserved for providers of distribution services to end-users can be ascertained in the absence of specific proposals as to the nature of such services.

Q. 12. Do you consider the proposed Mobile TV Wireless Telegraphy Licence fee to be appropriate? If not, please provide reasons for your view.

Response: RTÉ seeks clarification as to exactly how these fees have been configured. The ITU (2006), in considering the economic pricing of spectrum usage rights suggested that the model to be adopted should conform to various conditions, including that:

The spectrum charge should be calculated so as to recover the costs of spectrum regulation. Spectrum pricing should not seek to maximise revenue for the government.¹⁸

¹⁸ ITU (2006) "The Regulatory Environment for Future Mobile Multimedia Services – Towards More Flexible Spectrum Regulation and Its Relevance for the German Market" available at http://www.itu.int/osg/spu/ni/multimobile/papers/MMS_flexiblespectrumstudy_060606.pdf, p. 9.

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Q. 13. Do you consider that the proposed length of the Service Neutral Wireless Telegraphy licence is appropriate? If not, how long should the licence period be for? Please give reasons for your proposal.

and

Q. 14. Do you consider that other factors might also need to be considered in determining the length of the licence?

Response: RTÉ does not consider that sufficient information exists to provide an adequate response regarding the proposed Service Neutral Wireless Telegraphy licence.

Q. 15. Do you consider that the statement of authorised apparatus should include any additional information?

Response: That seems sufficient.

Q. 16. Do you consider that the Service Neutral Wireless Telegraphy Licence should attract a higher licence fee than that proposed for the Mobile TV Wireless Telegraphy Licence? What other considerations should be taken into account in setting the licence fee for any Service Neutral Wireless Telegraphy Licence fee?

and

Q. 17. Do you consider the proposed annual fee for a Service Neutral Wireless Telegraphy Licence to be adequate? If not, please provide an alternative suggestion outlining your considerations.

Response: As already stated, the proposed Service Neutral Wireless Telegraphy licence is expressed only in vague terms and therefore it is not possible to adequately respond to this question. If such an experimental service licence were to be provided it would, however, be reasonable to expect that the licensee would have higher costs and more stringent licence conditions that that to be expected for the proposed Mobile TV Wireless Telegraphy Licence.

Q. 18. Would you be interested in participating in a single sealed bid first price auction with a reserve price of €100,000 to assign either a Mobile TV Wireless Telegraphy Licence or a Service Neutral Wireless Telegraphy Licence? Please indicate which award option would be your preference.

Response: No.

RTÉ, 30th July 2008.

9 Sky Television (BSkyB Ltd)

COMREG Consultation Paper – Mobile TV or other services (Document No: 08/44)

Sky Response

Introduction

Sky enjoys considerable experience in the provision of mobile TV services across the UK and Ireland. In conjunction with the main mobile network operators using 3G networks, Sky Mobile TV offers customers up to 30 channels comprising 3 packages of news and sports, entertainment and music. At the same time, Sky has engaged in extensive research on mobile broadcast TV to assess its potential as a means to provide a broad range of quality services to UK and Irish consumers. A number of key learnings have emerged:

- the business case for mobile broadcast TV is challenging and risky. Operators willing to invest in the establishment and rollout of mobile TV services should retain maximum flexibility in how they address the consumer market;
- the choice of the most appropriate technology to ensure the provision of quality services should be market driven and is best left to market operators. For example, Sky has carried out extensive tests to evaluate the relative merits of DVB-H and MediaFLO and considers both technologies to enjoy advantages and disadvantages over each other depending on the circumstances of their deployment;
- the role of mobile network operators plays a crucial part in the potential success of mobile TV and a limited period of exclusivity may help stimulate market demand for the services;
- licence fees should recognise the level of risk incurred and be set at a rate which reflects the differences between such services and other services provided over different networks e.g. DTT.

Q. 1. Do you agree with ComReg's proposal that its auction should be exclusively for a Mobile TV Wireless Telegraphy Licence using the available spectrum? If not, please support your answer with reference, in particular, to the considerations given in Section 4.5 of this document and any other supporting evidence

Whilst Sky's interest in the available spectrum is for the purposes of mobile broadcast TV, Sky considers that a service and technology neutral approach is the most appropriate.

Sky is optimistic about the prospects for mobile broadcast TV even if it is a new and unproven service. If such a service were to be deployed in Ireland it would be a notable addition to the range of services that are being, or may be, introduced around Europe and the Rest of the World.

Sky's experience to date as one of the largest European mobile TV operators (over 3G data networks rather than broadcast mobile technology) and its participation in mobile broadcast TV trials in both the UK and Ireland leads us to believe that broadcast mobile TV services could, under the right market and regulatory conditions, prove popular with the public.

It is, however, hard to predict what will prove to be the most popular type of service with consumers and which will be the most effective means of creating a commercially successful service. Therefore, we suggest that the platform be allowed necessary freedom to choose and subsequently evolve the overall service that is made available on the market. For instance, were the spectrum to be used for a broadcast mobile TV service we suggest that

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the operator of the service should be placed in a situation whereby the applicable regulatory conditions do not preclude it from innovating freely with regard to, amongst other factors:

- The distribution relationships for the service: these relationships e.g. those between the service provider and the network operators will be fundamental to its success. It is likely that any service provider would inherently be incentivised to seek broad distribution for their service with as many engaged and active distributors as possible, and so should be afforded the greatest flexibility to decide how best to make their service available to consumers. For example, the interests of end-users and development of competition may best be served through differentiation between network operators, without which their inclination to market and promote the service to their customers proactively may be reduced. The imposition of an obligation to supply the service on a wholesale basis would preclude such an approach and therefore risks hindering the successful deployment of the service. ComReg should not therefore include such wholesale obligations in the licence without full consideration of its potential impact: given the intrusive, interventionist nature of wholesale obligations, and the harm that they could cause, such ex ante regulation must first be justified as being necessary and proportionate. The case for such interventionist ex ante regulation has not been made by ComReg;
- The nature of the service offered: this will likely evolve over time and might contain some combination of content delivered live over broadcast, content that is pushed to storage on the handheld device (e.g. a phone or a multimedia player) or content that is selected by the viewer and which might be transmitted over broadcast or a one-to-one wireless data connection;
- The technology standard deployed: this should be decided by the market on the basis of the best possible consumer experience, taking into account all relevant factors such as the infrastructure cost, running cost and handset cost and range associated with each option;
- The format of content offered: these may alter over time as it is better understood whether customers want access to long-form or short-form content and whether that content is made available on-demand from storage within the device or via live channels;
- The nature of the content offered: this should be capable of being revised to take account of the actual appeal of certain genres of content as well as the fluctuating fortunes of various channel or content providers within those genres.

As such, whilst we are positive about the opportunities offered by mobile broadcast TV, we think that it stands the best possible chance of success if it is allowed to develop in the lightest-touch regulatory environment possible. Therefore, Sky supports the technology and service neutral licence (Option 2). Were ComReg nonetheless to opt for Option 1, Sky would prefer to see some sort of combination of a mobile TV wireless telegraphy licence (Option 1) and a technology and service neutral licence (Option 2) specifying mobile broadcast TV as a purpose but not being prescriptive about the means under which it would operate (and notably not including the proposed wholesale obligations).

Q. 2. Do you consider there to be significant interest in the market for the available 8 MHz of spectrum on a technology and service neutral basis, having regard to the issues discussed in Section 4.5.3? If so, what services and applications do you consider could avail of this spectrum?

As per our response in Question 1, Sky considers that a service and technology neutral approach is the most appropriate and Sky envisages using the spectrum for mobile broadcast TV.

As outlined in Section 4.5.3, Sky notes ComReg's view that many other potential uses of the proposed available spectrum may be better deployed using different spectrum and mobile broadcast TV remains the best candidate for deployment in the proposed spectrum to be made available. Sky supports ComReg's view that 'market players would be in a better position to decide on potential services than it would'.

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If ComReg opts for the licensing of spectrum on a technology and service neutral basis, Sky welcomes ComReg's recognition in Section 7.1.9 that "the Service Neutral Wireless Telegraphy licence could be used to provide a mobile TV service in Ireland without the proposed wholesale obligations".

Q. 3. Do you consider that ComReg's auction should be for a licence awarded on a service and technology neutral basis subject to the qualification that it may not be used to provide DTT services? Please support your argument.

As set out above, Sky believes that the potential for mobile TV broadcast services in Ireland is considerable and would deliver significant benefits to Irish consumers but comes with significant risk. For the reasons set in the answer to question 1, Sky (like ComReg) believes that the market should be allowed to decide the nature of the service and how the opportunity represented by mobile TV should best be operated. We believe that the proposed spectrum allocation is well suited to the launch of mobile broadcast TV services and have no issue with the qualification over DTT services subject to reviewing any proposed wording in the licence that would seek to define the differences between the two types of services.

Q. 4. Do you consider that the licence conditions for Mobile TV, on dedicated terrestrial networks in Ireland, should build on those set down for fixed and portable reception of DTT Multiplexes? If not, please explain what alternative methods should be used to develop licence conditions for Mobile TV services in Ireland in the context of the dedicated terrestrial network approach.

Sky agrees that a dedicated network will be required for mobile broadcast TV and has conducted extensive analysis in the UK into the most cost effective way to deploy a mobile broadcast TV network. Three types of sites can be used to create a mobile TV infrastructure: high and medium power sites (which will often be common with those used for digital terrestrial television) and low power sites (which will often be common with those used by mobile network operators for 2/3G transmissions or which may be new sites created to fill gaps in the network). As a starting point for any proposed licence conditions for mobile TV, the licence conditions for the DTT multiplex licences could prove informative, given the dedicated mobile TV network is likely to use part of the basic infrastructure of the existing DTT transmission network, but this cannot be at the expense of a proper assessment of the appropriateness of each condition intended to be imposed on the user of this spectrum (importing such conditions wholesale across into a new licence without further assessment would clearly be inappropriate). However, these conditions should provide the level of commercial and technical flexibility outlined in our response to Question 1.

Q. 5. Do you consider that the above types of licence conditions would provide the necessary regulatory certainty to the market for the provision of Mobile TV Services using the dedicated terrestrial network approach in Ireland? If not, please specify any additional licence conditions that should apply.

Subject to further discussion with ComReg on the precise terms envisaged and based on our current understanding of the plans, Sky agrees that the types of licence conditions would seem likely to provide the regulatory certainty required. Regulatory certainty comes from transparency; early publication - prior to any licensing award process - of the specific types of conditions envisaged, with an opportunity to comment/discuss with ComReg, would help provide greater certainty to potential applicants for the spectrum. As noted above, Sky favours a service and technology neutral approach and does not believe that the case has been made for wholesale obligations. However, if ComReg nonetheless opts for Option 1, as noted above the case for any wholesale obligations would need to be made, in light of the

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fact that this proposal concerns the launch of a new, innovative platform carrying new services, the demand for which remains uncertain. This would require consideration to be given to the competitive impact of such wholesale obligations (both in relation to their inclusion and their absence) and any other powers (for example ex post competition law powers) that are at ComReg's (or another regulatory authority's) disposal to address any competitive concerns.

Q. 6. Do you consider that the proposed length of the Mobile TV Wireless Telegraphy Licence is appropriate? If not, how long should the licence period be for? Please give reasons for your proposal

Whilst the take up of mobile TV services to date has been encouraging, large scale deployment of mobile broadcast TV services is very much in its infancy, and there is a considerable level of uncertainty about factors such as the capabilities of different technologies and consumer appetite and potential use of such services – particularly if they are required to pay for them. The one factor in which there is a degree of confidence is that the cost of building a mobile broadcast TV network will be substantial. Accordingly, there is a degree of uncertainty about the commercial potential for operating mobile broadcast TV services.

In addition, Sky notes that any mobile broadcast TV network whilst potentially complementary to other viewing methods, would face significant competition from traditional ways of watching live television, new methods of delivering video to viewers (e.g. via the internet), portable stored media (e.g. video transferred to iPods, portable DVD players etc.), and video delivered via 3G networks (and whatever comes beyond 3G as a technical standard).

In view of the factors set out above, in particular those associated with the cost of network build, the uncertainties surrounding the commercial potential of such a service and to ensure that those investing in the establishment and rollout of the services derive a reasonable rate of return, Sky considers that there would be considerable merits in granting rights to use spectrum which were secure and unencumbered for a duration of at least 10 years with a right of renewal for a further 10 years subject to certain conditions agreed at time of the award of the licence.

Q. 7. Do you consider that other factors might also need to be considered in determining the length of the licence ?

See above Q6 response. The duration of the licence is an essential component in the formulation of any service provider's business plan and informs projected timescales on recouping and making a return on the necessary capital and operational expenditure for the establishment and rollout of the services.

Other factors for consideration include the comparable fixed infrastructure set up costs for similar geographic coverage of different territories with dissimilar potential market sizes e.g. Ireland and the UK.

In addition, given the limited coverage of the licence at commencement (the 5 urban areas) and the likely extension of the geographical service area of the licence following ASO, the duration of the licence should allow an adequate period for the licensee to recoup capital and operational costs associated with the extended network build.

Q. 8. Do you consider that the Mobile TV Service should be accessible by end-users in the five urban areas within 24 months of the licence award? If not, what rollout schedule should apply?

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Yes. However, Section 4.3 refers to the possibility that ComReg may be required to change the frequency allocation to ensure compatibility with the national DTT plan if the latter were revised. In such a case, this factor would likely delay the rollout timetable for the proposed mobile broadcast TV service and provision should be made for such an eventuality.

Q. 9. Do you consider, as a means of measuring end-user accessibility, that the main transmitter sites should be commissioned, on-air and transmitting the multiplex offering in accordance with effective radiated power characteristics as would be set down in the technical schedule attached to licence? If not, please explain how should rollout conditions be set and measured for compliance?

No response

Q. 10. Do you see merit in licence obligations that would seek to ensure wholesale service is provided on fair, reasonable and non-discriminatory terms? Do you consider that these obligations would ensure that wholesale service is effectively provided? If not, what additional obligations may be required?

As per our response in Question 1, Sky remains unconvinced that wholesale obligations on the licensee are appropriate, or would represent the most effective means to ensure a successful mobile broadcast TV industry in Ireland.

The provision of mobile broadcast TV services would require the involvement of a range of different types of operators, with potentially different interests in developing a mobile broadcast TV proposition. These include:

- broadcast infrastructure providers;
- channel suppliers;
- retailers/ aggregators of television services;
- mobile network operators;
- handset and consumer equipment manufacturers.

Sky's view is that there would be considerable advantages to having a single content aggregator. Ideally this aggregator would supply a service either via commercial arrangements negotiated directly with entities who own customer relationships linked with the receiving device e.g. the network operators, and/or retailing directly to customers e.g. as an extension of Sky existing services in the Irish market.

Whilst being firmly of the view that the service will most likely succeed if it has broad distribution, Sky is concerned that an obligation to supply all retailers no matter what the plans of those retailers are for generating customers and a return for the service provider could, in fact, be counter-productive to ComReg's stated goals of maximising benefits to users and facilitating the development of competition. For example, it may be that a limited period of exclusivity for certain distributors would provide an attractive incentive to market and promote mobile TV and that in the long run this would be the best route to making the most of the opportunity offered by mobile TV.

Q. 11. Do you see merit in some multiplex capacity being reserved for providers of distribution services to end-users? In your opinion how many programme services should be reserved? Please refer to bit-rate, compression and other relevant technical data in your response

Sky believes that there would be considerable advantages to having a single content aggregator. There is only a limited amount of available spectrum and Sky believes that the

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editorial choice of the best possible range of service is critical. If capacity is reserved for certain distributors irrespective of editorial merit there is a danger of the content line-up appearing less compelling than it should or being fragmented or unclear to the consumer.

Q. 12. Do you consider the proposed Mobile TV Wireless Telegraphy Licence fee to be appropriate? If not, please provide reasons for your view

Sky considers the proposed licence fee for Options 1 and 2 to be significant. As previously stated (see response to question 6), there is a degree of uncertainty about the commercial potential for operating mobile broadcast TV services and significant costs associated with the establishment and rollout of the network and services. An additional high annual operating cost in the form of a licence fee (which may bear no relationship to ComReg's ongoing annual administrative costs) imposes increased pressure on the viability of the service and will likely have a knock on effect on the charges to be levied on the end consumer.

In addition, certain of the hypothesised business case projections included in Section 6.1.11 are optimistic and do not appear to be based on any evidence or research. For example, ComReg assumes that there will be a 15-20% take-up of subscription services paying €10 per month over 10 years without any potential price erosion. Many of the other assumptions may also prove optimistic and in reality, will change over the course of the licence as the nature of the service and the format and nature of the content evolves over time in the light of consumer preferences and technological developments.

Sky notes that the annual licence fee payable to the BCI for a commercial DTT MUX is €25,000 per annum for 3 years and €50,000 subsequently. Comparing channel capacity under each licence (2 DTT Muxes comprising 20 channels being the equivalent of a single mobile broadcast TV licence capacity), the proposed licence fee for a mobile broadcast TV licence reaching 40% of the population is 3 times that of the cost for the first 3 years of 2 DTT Muxes reaching over 90% of the population. Even including the fees payable to ComReg for the DTT spectrum by RTE and the BCI, the proposed mobile broadcast TV licence fees remain significantly higher than those which obtain in respect of DTT.

Sky would therefore welcome a more proportionate annual licence fee (subject to Sky comments in final paragraph re. the auction process), particularly during the early period of the licence in recognition of the significant capital and operational costs required to establish and launch the network and services, and the uncertainty of the launch of a new, innovative service for which the attractiveness to the Irish consumer is untested.

In addition, Sky believes that the licence fee should not be increased if/when ASO facilitates increased geographical coverage for the mobile broadcast TV service. Significant costs in extending the network to cover the increased geographical area will be required which will form part of addressing any digital divide which may have arisen.

However, given the likely bids under the auction process may exceed the €100,000 reserve, the requirement for an additional annual licence fee (which may bear no relationship to ComReg's ongoing annual administrative costs) is, in any case, questionable since the fee could be viewed as already incorporated in the amount the successful bidders will pay for the licence.

Q. 13. Do you consider that the proposed length of the Service Neutral Wireless Telegraphy licence is appropriate? If not, how long should the licence period be for?

See response Question 6

Q. 14. Do you consider that other factors might also need to be considered in determining the length of the licence?

See response Question 7

Q. 15. Do you consider that the statement of authorised apparatus should include any additional information?

No response

Q. 16. Do you consider that the Service Neutral Wireless Telegraphy Licence should attract a higher licence fee than that proposed for the Mobile TV Wireless Telegraphy Licence? What other considerations should be taken into account in setting the licence fee for any Service Neutral Wireless Telegraphy Licence fee?

Sky recognises that the Service Neutral Wireless telegraphy licence potentially provides a greater degree of flexibility to the licensee compared to the mobile TV wireless telegraphy licence. It may therefore be appropriate for the licence fee to reflect this (though please note our response to Question 12 above). Sky favours an approach which offers maximum commercial flexibility to ensure that a service such as this with a level of risk and unproven business model, has the best chance of being a commercial success.

Q. 17. Do you consider the proposed annual fee for a Service Neutral Wireless Telegraphy Licence to be adequate? If not, please provide an alternative suggestion outlining your considerations.

See Response Question 12.

Q. 18. Would you be interested in participating in a single sealed bid first price auction with a reserve price of €100,000 to assign either a Mobile TV Wireless Telegraphy Licence or a Service Neutral Wireless Telegraphy Licence. Please indicate which award option would be your preference.

Sky is interested in participating in bidding for a licence in order to provide mobile broadcast TV services in Ireland. Currently, in the UK, it is actively exploring opportunities with other broadcasters and MNOs which would involve the creation of a single mobile broadcast proposition. This would enable broadcasters to drive awareness of a common proposition and cross promote it and would involve the active participation of the MNOs.

ComReg's proposed single round sealed bid auction is different to the process adopted by the vast majority of other European countries which have licensed (or are in the process of licensing) UHF spectrum for mobile broadcast TV services. These countries have employed the comparative 'beauty parade' process to date. Sky would potentially be interested in assessing further the pros and cons associated with this process as a means of assessing which approach (auction or 'beauty parade') is the most appropriate.

General comments

In section 4.5.6, ComReg states 'ComReg is minded to award a Mobile TV Wireless Telegraphy Licence based on an ETSI approved technical standard'. In this regard, ComReg specifically refers to DVB-H as the European Commission's preferred technical standard for mobile TV.

In Sky's view, ComReg should adopt a technology neutral approach to licensing spectrum for a mobile broadcast TV service. The decision about which technology to use to provide

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mobile broadcast TV services is one best left to the providers of such services, as they are best placed to evaluate the merits and drawbacks of the various potential technologies available and to make the trade-offs that technology choice entails. Such operators have a strong incentive to adopt the most suitable technology that will maximise the range and quality of services available to consumers in order to drive their take-up.

DVB-H is not the only technology option as recognised in Section 4.5.2. Alternatives include DMB and Qualcomm's MediaFLO. In respect of the latter, Sky understands that Qualcomm has applied to ETSI for standardisation approval of MediaFLO and the process is ongoing. Sky is still in the process of evaluating these various options to establish the most appropriate standard for the creation of the best mobile TV platform in the UK and Ireland.

July 2008

10 Smart Telecoms Holdings Ltd

Answers to consultation questions

Q. 1. Do you agree with ComReg's proposal that its auction should be exclusively for a Mobile TV Wireless Telegraphy Licence using the available spectrum? If not, please support your answer with reference, in particular, to the considerations given in Section 4.5 of this document and any other supporting evidence

1.0 Smart Telecom find it difficult to support the view that the auction should be exclusively for mobile TV.

2.0 There are many ways in which mobile TV can be delivered as outlined by Comreg such as MediaFLO, DVB-H and L-band based technologies. More recently S-band (DVB-SH) satellite services as announced recently by Eutelsat and SES Astra are likely to come on-stream offering universal coverage from 2009.

3.0 As many of the standards above can support different spectrum bands there is no single band that may or may not be commercially viable for operators by which to provide mobile TV and by sanitizing the band for Mobile TV, it may render it useless in terms of future uses if mobile TV is provided for in a more efficient manner in other bands.

4.0 The logic that 8Mhz of non paired spectrum may not be suitable for other applications is questionable. While this may be the case today many technologies can operate in channel sizes as small as 1.25Mhz and with Bits/Hertz efficiency improving all the time it is probable that a single band of 8Mhz may be of use to other technologies in the future.

5.0 There is also the standard argument that by making the award technology neutral, Comreg are still supporting the deployment of mobile TV by default.

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Comreg should perhaps require that operators outline what services they WILL provide using the spectrum and the technology they propose for such services to avoid spectrum hoarding or squatting.

6.0 Finally given that there is no long term, proven business case, for stand alone mobile TV at this point (all existing global deployments, to our knowledge, are by mobile operators offering a range of bundled services) it is likely to bias the spectrum to mobile operators as opposed to the general market.

Q. 2. Do you consider there to be significant interest in the market for the available 8 MHz of spectrum on a technology and service neutral basis, having regard to the issues discussed in Section 4.5.3? If so, what services and applications do you consider could avail of this spectrum?

7.0 Given that spectrum under 1Ghz is considered prime spectrum in terms of propagation and reach it is likely that there will be some interest in the spectrum.

8.0 As Comreg have not defined the exact band at this point, it is difficult to say what applications could be supported and the applications will be driven to a degree by the technology employed.

9.0 That said many technologies have been enabled to support the frequencies in the band including OFDM based technologies from different vendors.

10.0 Smart agree that the specific exclusion as outlined by Comreg in 4.5.3 makes sense as it could potentially undermine the DTT business case.

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Q. 3. Do you consider that ComReg's auction should be for a licence awarded on a service and technology neutral basis subject to the qualification that it may not be used to provide DTT services? Please support your argument

11.0 Yes. Please see Question 2

Q. 4. Do you consider that the licence conditions for Mobile TV, on dedicated terrestrial networks in Ireland, should build on those set down for fixed and portable reception of DTT Multiplexes? If not, please explain what alternative methods should be used to develop licence conditions for Mobile TV services in Ireland in the context of the dedicated terrestrial network approach.

12.0 Smart telecom would support this view regardless of the license being based on WAPECS/technology neutral or Mobile TV only.

Q. 5. Do you consider that the above types of licence conditions would provide the necessary regulatory certainty to the market for the provision of Mobile TV Services using the dedicated terrestrial network approach in Ireland? If not, please specify any additional licence conditions that should apply.

13.0 No answer provided.

Q. 6. Do you consider that the proposed length of the Mobile TV Wireless Telegraphy Licence is appropriate? If not, how long should the licence period be for? Please give reasons for your proposal

14.0 Smart agree that 10 years is an appropriate license duration.

Q. 7. Do you consider that other factors might also need to be considered in determining the length of the licence?

15.0 Smart believe that some consideration should be given to the fact that this is a mobile service (TV or otherwise) in limited geographic locations.

16.0 As such site planning and controlling spectrum propagation will be important considerations and perhaps Comreg should consider allow some grace period to allow for initial network build and planning, possibly up to 12 months.

Q. 8. Do you consider that the Mobile TV Service should be accessible by end-users in the five urban areas within 24 months of the licence award? If not, what rollout schedule should apply?

17.0 Smart Telecom do not believe that the requirement should be so specific. It may be that the successful operator would have issues in terms of controlling propagation or indeed limiting the areas covered depending on the technology deployed. This again is why Smart would favour a technology neutral approach to allow for a greater degree of flexibility and matching the most appropriate application to the available spectrum

Q. 9. Do you consider, as a means of measuring end-user accessibility, that the main transmitter sites should be commissioned, on-air and transmitting the multiplex offering in accordance with effective radiated power characteristics as would be set down in the technical schedule attached to licence? If not, please explain how should rollout conditions be set and measured for compliance?

18.0 Yes, this would be a reasonable way to test for service accessibility.

Q. 10. Do you see merit in licence obligations that would seek to ensure wholesale service is provided on fair, reasonable and non-discriminatory terms? Do you consider that these obligations would ensure that wholesale Mobile television or other services consultation 37 ComReg 08/44 service is effectively provided? If not, what additional obligations may be required?

19.0 As there is no proven long term Business case for mobile TV, it is difficult to see how such an obligation could be supported. Smart however do not have strong views on this point.

20.0 Given the limited amount of available spectrum, it may be worth considering offering a "closed period" in which the winning operator would have no wholesale obligations. In this way an operator could test the viability of the business case and make a return on the original investment.

21.0 A wholesale obligation, on an unproven business case would prove an extreme challenge.

Q. 11. Do you see merit in some multiplex capacity being reserved for providers of distribution services to end-users? In your opinion how many programme services should be reserved? Please refer to bit-rate, compression and other relevant technical data in your response

22.0 No answer provided.

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Q. 12. Do you consider the proposed Mobile TV Wireless Telegraphy Licence fee to be appropriate? If not, please provide reasons for your view

23.0 Smart believe that the mobile TV fee is too high based on 3 main points 1) the limited coverage area and 2) the fact there is no long term proven business case for mobile TV 3) The proposed wholesale obligation.

24.0 Smart are aware that a similar amount and type of Spectrum in the 450 & 800Mhz band was awarded for WDMDS on a technology neutral basis and at a much lower fee and would refer Comreg to this award. It should be remember that DVB-H spectrum can not be compared to, for example, 3G/UMTS spectrum where an existing business model was being adapted from 1st generation GSM/Analogue services and where existing customers were in existence.

25.0 While there are various research papers and studies as to the potential market value it is simply far too early to say that this will actually be the case in practice.

Q. 13. Do you consider that the proposed length of the Service Neutral Wireless Telegraphy licence is appropriate? If not, how long should the licence period be for? Please give reasons for your proposal.

26.0 Smart believe the license length is appropriate, however given some of the technical challenges that may arise on spectrum control and propagation, a 12 month "establishment" period should be considered prior to commercial launch.

Q. 14. Do you consider that other factors might also need to be considered in determining the length of the licence?

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27.0 Smart believe the length is sufficient as outlined

Q. 15. Do you consider that the statement of authorised apparatus should include any additional information?

28.0 Smart believe the information is sufficient as outlined

Q. 16. Do you consider that the Service Neutral Wireless Telegraphy Licence should attract a higher licence fee than that proposed for the Mobile TV Wireless Telegraphy Licence? What other considerations should be taken into account in setting the licence fee for any Service Neutral Wireless Telegraphy Licence fee?

29.0 Smart do not support the view that the Service neutral license should attract a higher fee. Again we would refer Comreg to the WDMDS license award and the fee's paid for similar spectrum amounts at similar frequencies.

30.0 If an operator did deploy a mobile TV service under a Service neutral licence, they would then be in a disadvantaged position relative to simply applying for the application based spectrum.

31.0 The value of the spectrum should not differ to any large degree under either award.

Q. 17. Do you consider the proposed annual fee for a Service Neutral Wireless Telegraphy Licence to be adequate? If not, please provide an alternative suggestion outlining your considerations

32.0 See previous answer.

11 TG4 (Telefis na Gaeilge)

Sinéad Devey, Uasal
An Coimisiún um Rialáil Cumarsáide,
Abbey Court
Irish Life Centre
Sráid na Mainistreach Theas
Freepost
Baile Átha Cliath 1

30 Iúil 2008

TG4 Response to ComReg Consultation Document 08/44

A Shinéid, a chara

Beatha agus Sláinte chugat. Seo, mar eolas, freagra TG4 ar an gcomhairliúchán thuas.

TG4 is the statutory Irish language public service television service, established by the Minister for Communications on 1 April 2007. The remit and functions of our service are set out in Section VI of The Broadcasting Act 2001. As with the other Public Service Broadcaster, RTÉ, we have a statutory obligation, laid down in that Act, to be universally available, free to air. In furtherance of that policy, you will be aware that it is proposed that TG4 will be carried on Mux 1 of the new DTT system.

Our response to Comreg consultation above is contained in this letter, offered from the perspective of the obligations outlined above. The TG4 response is succinct and does not require detailed answers to the 18 questions posed at the end of the ComReg Document 08/44:

As outlined in TG4's response last year to the ComReg Consultation on Digital Terrestrial Television Multiplex Licence Conditions (letter and

ComReg 09/63s

enclosed Consultation response from Neil Keaveney, Technical Manager, TG4 to ComReg 12 October 2007), our primary concern is that terrestrial transmissions of TG4 must be universally available.

Consequently, like the other statutory PSB, our over-riding interest in all spectrum allocation issues is to ensure that no action is taken, locally or nationally, that can have the effect of decreasing the availability of the necessary spectrum required to ensure universal coverage for TG4 on the terrestrial transmission system in use in Ireland.

It is our view that a coordinated, integrated approach is required to optimise the benefits from the so called 'digital dividend'. Accordingly, we would advocate the early establishment of an Information Forum at which all stakeholders' views could be heard and fed into policy-making.

TG4 is always available to participate in such a Forum and/or to expand on the views contained in this Response.

Is mise le meas

Pádhraic Ó Ciardha
Leascheannasaí TG4

12 Vodafone Plc



Vodafone Response to the ComReg Consultation on Award of available UHF spectrum in the urban areas of Cork, Dublin, Galway, Limerick and Waterford and related licensing options

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Award of available UHF spectrum

Introduction

Vodafone welcomes the opportunity to respond to this consultation on the award of available UHF spectrum in the urban areas of Cork, Dublin, Galway, Limerick and Waterford and related licensing options. The proposed licence options set out in the consultation provide a viable framework for the allocation of the proposed 8 MHz of spectrum in the UHF band either for the exclusive provision of Mobile TV services or on a service and technology neutral basis. Our views in relation to the details of the ComReg's licence proposals are set out fully in response to the consultation questions below.

Response to Consultation Questions

Q.1. Do you agree with ComReg's proposal that its auction should be exclusively for a Mobile TV Wireless Telegraphy Licence using the available spectrum? If not, please support your answer with reference, in particular, to the considerations given in Section 4.5 of this document and any other supporting evidence?

Vodafone supports the allocation of spectrum on a technology and service neutral basis as far as practical, subject to harmonisation and interference protection requirements being satisfied. It is therefore appropriate that ComReg has reviewed the option of allocating the proposed 8 MHz licence on this basis and is seeking expressions of interest in take up of the licence on service and technology neutral terms.

Vodafone notes the analysis of the relevant considerations in section 4.5 of the consultation document and believes that the modest amount of spectrum to be allocated, the initial restricted geographic scope of the licence, and the fact that the current proposal does not offer paired spectrum, among other factors, seriously limits the potential for use of the proposed licence for the provision of services other than Mobile TV. It must therefore be regarded as unlikely that there will be significant demand for the assignment of the proposed 8 MHz licence on a service and technology neutral basis.

In the absence of substantive expressions of interest or other evidence of significant demand for use of the proposed licence for alternative services, Vodafone considers that an exception to technology and service neutrality in regard to the terms on which the licence would be allocated would be acceptable. Under these conditions Vodafone agrees that it would be appropriate that the allocation of the licence should be on the basis that it is used exclusively for the provision of Mobile TV using any technical standard which has received approval from ETSI.

In the event that there is a demand for take-up of the proposed licence both for the provision of Mobile TV services on the part of some undertakings, and for the provision of alternative services on the part of others, Vodafone believes that some modification of ComReg's proposals for the allocation of the licence may be optimal. It is important to emphasise that allocating the proposed licence on a service and technology neutral basis would not preclude potential Mobile TV service providers from participating in a competitive licence award process. Given that only a single licence is proposed to be allocated, Vodafone believes that it is important for the facilitation of competition that if a broadcasting or communications operator intending to provide Mobile TV services were to

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be awarded the licence, conditions must be included requiring the provision of wholesale access on commercial terms where requested by other operators.

If the licence is proposed to be allocated on a basis that does not preclude its use for services other than Mobile TV, then an optimal approach may be to require participants in the licence award process to state at the outset whether they intend to use it for the provision of Mobile TV services using an ETSI standard or for the provision of other services. This statement of intended use could then be made binding on the applicant. All participants in the proposed auction process could then bid on an equal basis. If a prospective Mobile TV operator were to be awarded the licence as highest bidder in the auction then it should be required to meet the particular licence conditions relating to wholesale access obligations, licence fees, and other terms as currently proposed by ComReg for option 1, the Mobile TV Wireless Telegraphy licence. Alternatively, if an operator seeking to provide services other than Mobile TV were to be awarded the licence then it should be required to meet the particular licence conditions proposed by ComReg for option 2, the Service Neutral Wireless Telegraphy Licence.

The previous paragraph offers only the outline of a suggested approach that would ensure that competition in the provision of Mobile TV services could be readily facilitated. The key issue in Vodafone's view is that, irrespective of the particular licensing approach established by ComReg, a wholesale access condition should in all circumstances be a part of the licence where the licensee is a provider of Mobile TV services. It is quite likely that such a licence requirement will in any event align with the business plan of prospective Mobile TV service providers but the possibility that this may not be the case, in the context where only a single licence is being allocated, means that requiring wholesale access on commercial terms to the Mobile TV multiplexer should be a central feature of the licence terms.

Q2. Do you consider there to be significant interest in the market for the available 8 MHz of spectrum on a technology and service neutral basis, having regard to the issues discussed in Section 4.5.3? If so, what services and applications do you consider could avail of this spectrum?

The modest amount of unpaired spectrum to be allocated and the initial restricted geographic scope of the licence, among other factors, significantly limit the potential for use of the proposed licence for the provision of services other than Mobile TV.

Q3. Do you consider that ComReg's auction should be for a licence awarded on a service and technology neutral basis subject to the qualification that it may not be used to provide DTT services? Please support your argument.

Vodafone does not consider that ComReg's auction should be for the award of the proposed licence on service and technology neutral terms unless there is significant demand for use of the licence for the provision of services other than Mobile TV. If the licence is to be awarded on a service and technology neutral basis then it would be appropriate that the qualification as proposed by ComReg in section 4 should be included to prevent the use of the licence to provide DTT services.

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A modified auction and licensing approach, as outlined in the response to question 1, may be optimal where there is significant demand to avail of the licence both for the provision of Mobile TV services and also for the provision of other services. Vodafone considers however that given the proposed terms of the licence, it is unlikely that there will be significant demand to utilise it for the delivery of other services such as mobile broadband.

Q4. Do you consider that the licence conditions for Mobile TV, on dedicated terrestrial networks in Ireland, should build on those set down for fixed and portable reception of DTT Multiplexes? If not, please explain what alternative methods should be used to develop licence conditions for Mobile TV services in Ireland in the context of the dedicated terrestrial network approach.

Vodafone agrees that the licence conditions for Mobile TV should build on those set down for fixed and portable reception of DTT multiplexes.

Q5. Do you consider that the above types of licence conditions would provide the necessary regulatory certainty to the market for the provision of Mobile TV services using the dedicated terrestrial network approach in Ireland? If not, please specify any additional licence conditions that should apply.

Vodafone agrees that the types of licence conditions set out by ComReg in section 6.1 are appropriate and necessary to include in the proposed Mobile TV Wireless Telegraphy licence.

Q6. Do you consider that the proposed length of the Mobile TV Wireless Telegraphy Licence is appropriate? If not, how long should the licence period be for? Please give reasons for your proposal.

Vodafone believes that the proposed 10 year duration of the proposed Mobile TV licence is adequate as it is likely to provide sufficient time for an efficient licensee to complete network rollout, recover the costs of its infrastructure investment, and earn an appropriate return on that investment.

Q7. Do you consider that other factors might also need to be considered in determining the length of the licence?

The issues relevant to the decision regarding the optimal duration of the proposed licence set out in section 6.1.1 of the consultation document do not appear to omit any significant factors.

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Q8. Do you consider that the Mobile TV service should be accessible by end-users in the five urban areas within 24 months of the licence award? If not, what rollout schedule should apply?

Vodafone considers that the proposed licence requirements to meet rollout targets within 24 months of the licence award are appropriate and reasonable to ensure effective radio spectrum use and to maximise the benefits to end users.

Q9. Do you consider, as a means of measuring end-user accessibility, that the main transmitter sites should be commissioned, on-air and transmitting the multiplex offering in accordance with effective radiated power characteristics as would be set down in the technical schedule attached to licence? If not, please explain how should rollout conditions be set and measured for compliance?

Yes. The main transmitter sites should be commissioned, on-air and transmitting the multiplex offering in accordance with the effective radiated power characteristics that are proposed to set down in the technical schedule.

Q10. Do you see merit in licence obligations that would seek to ensure wholesale service is provided on fair, reasonable and non-discriminatory terms? Do you consider that these obligations would ensure that wholesale service is effectively provided? If not, what additional obligations may be required?

As only a single licence is currently proposed to be made available in the UHF spectrum for the provision of Mobile TV services, Vodafone agrees that the proposed Mobile TV Wireless Telegraphy Licence should include wholesale access obligations that ensure wholesale service provision on fair, transparent, and non-discriminatory terms.

Licence conditions requiring wholesale access to common content, transparency of terms and conditions, and non-discriminatory treatment in terms of access to capacity, as proposed by ComReg in section 6.1.3 of the consultation document, are appropriate and necessary to facilitate competition with all its associated benefits for Mobile TV end users. These obligations are likely to be sufficient to ensure that a wholesale service would be effectively provided to other potential service providers by the licensee.

Q11. Do you see merit in some multiplex capacity being reserved for providers of distribution services to end-users? In your opinion how many programme services should be reserved? Please refer to bit-rate, compression and other relevant technical data in your response.

Vodafone considers that the reservation of some multiplex capacity for up to 4 providers of distribution services to end-users would be highly beneficial for competition and consumers. Maximising the scope for Mobile TV service providers to differentiate their service offering is

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important to stimulating robust and sustainable competition as it would allow competing providers to compete on both non-price and price elements of their Mobile TV service offerings. Although practical considerations relating to finite multiplex capacity will limit the amount of capacity that can be reserved for service provider specific programme services, at least one channel should be allocated to each operator for the provision of their own customised Mobile TV programme content.

Q12. Do you consider the proposed Mobile TV Wireless Telegraphy Licence fee to be appropriate? If not, please provide reasons for your view.

Vodafone considers that the proposed annual licence fee of €340,000 is reasonable as it is based on necessarily conservative assumptions about take-up, likely subscription fees, and other relevant factors such as capital and operating costs.

Q13. Do you consider that the proposed length of the Service Neutral Wireless Telegraphy Licence is appropriate? If not, how long should the licence period be for? Please give reasons for your proposal.

Vodafone believes that the proposed 10 year duration of the proposed Service Neutral Wireless Telegraphy licence is appropriate as it is likely to provide sufficient time for an efficient licensee to recover the costs of its infrastructure and earn an appropriate return on its investment.

Q14. Do you consider that other factors might also need to be considered in determining the length of the licence?

Vodafone considers that ComReg has identified all the significant factors that should be taken into account in deciding the duration of the licence.

Q15. Do you consider that the statement of authorised apparatus should include any additional information?

Vodafone agrees that a statement of authorised apparatus and a statement of service should be required to be provided by the licensee on the basis set out by ComReg in section 7.1.5 of the consultation document. It is particularly important that the risk of harmful interference to other spectrum users in the UHF band is avoided and the proposed requirements should contribute significantly to achieving this objective.

The current proposed requirements are comprehensive and additional information does not therefore appear to be required.

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Q16. Do you consider that the Service Neutral Wireless Telegraphy Licence should attract a higher licence fee than that proposed for the Mobile TV Wireless Telegraphy Licence? What other considerations should be taken into account in setting the licence fee for any Service Neutral Wireless Telegraphy Licence fee?

The greater flexibility associated with a Service Neutral Wireless Telegraphy warrants a higher licence fee than that proposed for the Mobile TV Wireless Telegraphy Licence.

Q17. Do you consider that the proposed annual fee for a Service Neutral Wireless Telegraphy Licence to be adequate? If not, please provide an alternative suggestion outlining your considerations?

Vodafone has insufficient information to determine whether the proposed annual fee of €650,000 for the Service Neutral Wireless Telegraphy licence is optimal.

Q18. Would you be interested in participating in a single sealed bid first price auction with a reserve price of €100,000 to assign either a Mobile TV Wireless Telegraphy Licence or a Service Neutral Wireless Telegraphy Licence. Please indicate which award option would be your preference.

Vodafone notes that ComReg has not set out in the consultation document its reasoning for the proposal to allocate the licence using a sealed bid first price auction rather than other auction format options such as a single sealed bid second price auction, or a simultaneous ascending auction. A single sealed bid first price auction as currently proposed by ComReg does have the merits of low cost and simplicity, however this format does not ensure an efficient outcome to the auction process as it may lead to a situation where parties who attach the highest economic value to the spectrum do not receive a licence. A sealed bid second price auction provides the appropriate incentives for applicants to bid at or close to the full value of the licence to them and would therefore ensure that the licence would be allocated to the applicant that places the highest economic value on it. Vodafone believes that in the interests of transparency ComReg should explain its rationale for selecting a single sealed bid first price auction format for the allocation of the proposed 8 MHz licence in the UHF band rather than alternative approaches.