



Commission for  
**Communications Regulation**

## Response to Consultation

### **Use and Development of Radiocommunications Services in the 2500 – 2690 MHz Bands - Responses to Consultation Document 03/70**

<b>Document No:</b>	<b>03/105</b>
<b>Date:</b>	<b>29 August 2003</b>

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## **1 Foreword**

On behalf of ComReg, I am pleased to present the results of the consultation on ComReg Document 03/70 on Use and Development of Radiocommunications Services in the 2500 – 2690MHz (2.5 GHz) band which was issued in June 2003. The purpose of the consultation was to initiate a debate on a future strategy for the band 2.5 GHz band in the light of developments within both MMDS services and in 3G mobile communications. In the former case the MMDS operators are transitioning customers to digital services to improve the quality and range of services on offer and in the latter case the band has been identified within Europe as the main expansion band for 3G services from 2008.

Ireland is one of a small number of countries in Europe with MMDS services deployed in the 2.5 GHz band. High quality, leading edge, mobile infrastructure and services are essential to Ireland's competitiveness. Therefore it is essential that ComReg and the industry develop a coherent strategy which will facilitate the development of 3G services in line with market demand and also seek to accommodate the requirements of MMDS operators and their customers.

I wish to thank the 6 respondents who provided a wide range of views. A summary of the responses is presented in this paper, together with ComReg consideration of those responses, the Commission's position on the issues and the next steps in the development of a strategic plan for the 2.5 GHz band.

**Etain Doyle,  
Chairperson.**

## **2 Introduction**

This paper is the Commission's response to the Consultation Document 03/70 of June 2003 addressing the issue of the "Use and Development of Radiocommunications Services in the 2500 – 2690MHz Bands". The purpose of the consultation was to obtain views on current and potential future spectrum utilisation by MMDS and 3G mobile services and the implications for the future use of the 2500 – 2690MHz band.

The consultation addressed three specific issues, namely:

- options for development of MMDS and 3G mobile services,
- compatibility and frequency sharing between MMDS and 3G networks,
- a possible approach to co-existence between mobile and MMDS services in the 2500 – 2690 MHz band.

### **3 Background**

The current MMDS spectrum allocation is 22 x 8MHz channels in the frequency range 2500 – 2676 MHz divided equally between analogue and digital services. In 2005 the MMDS operators will have to vacate the channels occupying the 2500 – 2520 MHz and 2670 – 2690 MHz part of the band, to accommodate the satellite component of UMTS/IMT-2000, leaving 18 x 8 MHz channels. Both Chorus and NTL are in the process of rolling out their digital services. When roll out is complete the unused analogue spectrum could be available for reassignment.

CEPT has designated the 2500 – 2690 MHz as the main expansion band for UMTS/IMT-2000 services (also known as 3G). Detailed frequency arrangements for the band either as a stand-alone 3G band or in conjunction with the ‘core’ band at 1900/2000MHz have yet to be determined by CEPT, so for the moment it is unclear exactly how UMTS/IMT-2000 will be deployed (e.g., FDD only, TDD only, etc). Under an European Commission mandate, CEPT has been requested to make a decision upon this spectrum on these frequency arrangements by the end of 2004. At this point in time it is unclear how much of this spectrum would be required by Irish mobile telecom operators to provide additional capacity in urban (hotspot) areas for UMTS/IMT-2000.

Interested parties were invited to submit their comments on a number of questions posed at the end of Document 03/70. This document summarises the responses received to 03/70, coupled with brief outlines of the Commission’s position on the various issues raised. A wide range of comments were received from the respondents. All responses were very welcome, giving the Commission a range of views – from both fixed and mobile operators, to equipment providers and consultants. The written comments of all respondents, except those marked “confidential”, are available for inspection at the Commission’s Offices in Dublin.

#### **4 List of Respondents**

In total, six responses to the Consultation Document were received. The Commission would like to thank all the respondents for their time and effort and the valuable information and views provided on the issues raised in the document.

**Respondents:**

- Chorus Communications
- Ntl
- Ireland Offline
- Irish Broadband
- O2
- Brent Smith

The responses are available for inspection at the ComReg Office, excluding confidential material that respondents have specifically asked to be withheld.

## **5 Consultation Topics**

In the concluding chapter of the Consultation Document “Use and Development of Radiocommunications Services in the 2500 – 2690 MHz Bands” comments were invited from interested parties on the issues raised in the paper. A number of specific questions were posed and in the following sub-section the respondents’ views are addressed under the question headings.

### **5.1 Options for Development of MMDS and 3G Mobile Services**

#### *5.1.1 Summary of Consultation Issues*

There are currently two MMDS operators offering services in the 2500 – 2690 MHz band. These operators are currently in the process of migrating to an all-digital service. When this is complete there will no longer be a requirement to continue simulcasting on both analogue and digital channels. Upon analogue switch-off some of this spectrum may be available to facilitate other services. In the consultation document ComReg anticipated that for the provision of a cable equivalent all-digital MMDS service, operators will require eleven 8 MHz channels. Depending on the long term demand for 3G mobile services, the Commission has not ruled out that some or all of the remaining eleven channels could be used for the delivery of additional or enhanced digital television or broadband services.

The current cable and MMDS regulations prohibit connection of a subscriber to the MMDS service in areas where a cable licence is in place. ComReg is aware that only a limited proportion of cable networks have been upgraded to the extent necessary to provide other communications services in addition to television distribution. It also notes that Article 2 of the EC Directive 2002/77/EC introduced new provisions in relation to broadcasting. This article requires Member States not to grant or maintain exclusive or special rights for the establishment of electronic communications services subject to conditions set out in the Authorisation Directive.

ComReg put forward the view that, in the interests of efficient spectrum management, some restrictions may be required to facilitate the use of the band by 3G services. ComReg anticipates that the greatest demand for 3G mobile services will be in the main urban areas, notably Dublin, Cork, Limerick, Galway and Waterford. In the Consultation Document the Commission stated that it is therefore minded to maintain the restriction prohibiting MMDS services in those areas, as it considers that these are the likely areas where 2.5GHz spectrum will be required to allow for the expansion of 3G in the main urban areas detailed above.

There were three questions posed on the issue as follows.

- Q. 1. Do you agree with the assumption that delivery over a digital MMDS network of the digital television services currently provided over cable networks in Ireland would require eleven 8 MHz channels? If no, please provide supporting arguments to explain why more or less spectrum is required.**
- Q. 2. Do you have a view on how the remaining channels might be used, and how many channels would be required for each identified use? Please provide supporting arguments.**
- Q. 3. Do you agree with the decision to continue the restriction on the provision of MMDS services in the main urban licensed areas, notably Dublin, Cork Limerick, Galway and Waterford?**

#### *5.1.2 Views of the Respondents*

Four responses to Question 1 were received. Neither of the MMDS operators agreed with the assumption that eleven 8MHz channels would be sufficient to provide digital television services. They were of the opinion that in order for them to compete effectively with the digital satellite platform they would continue to require their full allocation of eighteen 8MHz channels after 01 January 2005. A third respondent had no comment to make on the technical requirements but stated that spectrum allocated to MMDS TV services should be used exclusively for that purpose. The fourth respondent was of the opinion that only ComReg and the two licensees could answer this question as only they know the details of the licence conditions.

There were six responses to Question 2. One respondent was of the view that the band offers potential for use by non-line of sight broadband wireless systems and that 15 MHz to 20 MHz of spectrum would be required to deploy a high quality technology. A second respondent (a mobile operator) expressed the opinion that at this early stage there was no solid argument for going down either the TDD or FDD route in this portion of the spectrum until it is clearer what the likely demand for 3G services will be. A third respondent felt that the spectrum would be better used for broadband FWA services as is the case in the United States of America. A fourth respondent felt that 24 MHz of spectrum would be the optimum amount of spectrum to provide a viable broadband data service. Both of the MMDS licensees were of the view that the provision of a competitive digital TV service would leave a limited amount of spectrum available and that they have been investigating the possibility of providing a broadband service with the remaining spectrum.



There were six responses to Question 3 with four respondents supporting the restriction on the provision of MMDS services in Dublin, Cork, Limerick, Galway and Waterford. Two respondents were of the opinion that the spectrum could be better utilised for the provision of fixed wireless services in the five urban areas mentioned. One respondent (a MMDS operator) believed that the current restrictions are reasonable and foster the effective use of bandwidth within broadband wired networks. However, this respondent did not wish to see an extension of the restriction beyond the urban areas as currently implemented. The fourth respondent (a mobile operator) who was supportive of the proposal expressed concern that if MMDS services were allowed within urban areas there may be the possibility of mutual interference between cellular base stations and MMDS stations in close proximity to each other.

One of the respondents who did not agree with the restriction saw it as a distortion of a company's ability to compete and argued that it was neither technologically nor geographically neutral. The second respondent (a MMDS operator) viewed the ban as a discriminatory measure distorting competition in the TV redistribution market and that there was no evidence to date that the current ban had actually encouraged the roll-out of cable infrastructure.

#### *5.1.3 Commission's Position*

Although there was general agreement that the extent of the demand for 3G services is as yet unproven it is important that the Commission takes a flexible approach when considering the possible future requirements for mobile communications services and infrastructure which can bring significant economic and competitive benefits to Ireland. It should be noted that failure to plan and provide for future mobile spectrum needs may have a negative effect on Ireland's competitiveness. Therefore the Commission has a key role to play in the creation of an appropriate regulatory environment to ensure that Ireland will not fall behind other European countries in the provision of mobile services and infrastructure.

The Commission acknowledges the concerns raised by the MMDS operators that they should retain the continued use of the remaining 18 channels licensed to them after 01 January 2005 in the 2.5 GHz band in order to provide a competitive digital service. However, it is also important that the Commission ensures that the radio spectrum is used as efficiently as possible. The Commission is currently of the opinion that the equivalent of eleven 8 MHz channels is sufficient for MMDS operators to provide a full digital service to their customers and that the provision of further frequencies for additional or enhanced digital television would be subject to review on a three yearly basis following an initial review next year. Any agreement would be conditional on a guaranteed usage basis within a timescale agreed with ComReg. If the timescale was not met then operators would automatically lose their entitlement to use their allocated spectrum. Meanwhile, MMDS operators should present a case to ComReg by 30 June 2004 detailing the extent of their requirements for continuing use of the 2.5 GHz band.

As stated in the consultation document, CEPT has decided that the band 2500 – 2690MHz should be made available for UMTS/IMT-2000 services by 2008, subject to market demand. It is too early at this stage to predict precisely the extent of the longer term requirements for 3G expansion spectrum. As with MMDS, ComReg intends to conduct a three yearly review of the 3G expansion band spectrum requirements in order to promote efficient and equitable access to 2.5GHz spectrum. Once again the exact timing and extent of this requirement should become clearer when some experience has been gained from 3G deployment.

Bearing in mind that no decision will be made at the European level on the detailed frequency arrangements for UMTS/IMT-2000 in the 2500 – 2690MHz band until the end of 2004, and the need to maintain a flexible approach in relation to the 3G expansion spectrum, the Commission is minded to maintain the current prohibition on the provision of MMDS services in the main urban areas of Dublin, Cork, Limerick, Galway and Waterford. Following the decision by CEPT on the detailed frequency arrangements for the 2500 – 2690 MHz band the Commission will then review the spectrum requirements and may hold a further consultation on the future use of the band. Further ongoing reviews would be carried out on a three-yearly basis. It should be noted that these proposals are without prejudice to ComReg's legal position or rights and duties to regulate the market.

## **5.2 3G Mobile**

### *5.2.1 Summary of Consultation Issues*

ComReg anticipates a phased approach to the expansion of 3G services in Ireland, with the allocation of any additional spectrum only when there is a clear and demonstrable need after the spectrum review indicated previously in section 5.1 of this document. In addition to the 2500 – 2690 MHz spectrum there is currently one licence block in the “core” 3G band, namely licence B1 that remains unassigned. There is also 2 x 26MHz of spectrum in the GSM 1800 MHz band that is also unassigned and which has been identified internationally as future expansion spectrum for 3G mobile services. However as yet there is no indication of the timeframe for availability of 3G network equipment and handsets in the 1800 MHz band. This remaining spectrum could be used to provide for further expansion of GSM mobile services or, in the longer term, to provide expansion spectrum for 3G services. Should this spectrum be made available for second generation services, it could be done on a time-limited basis to provide for future 3G expansion as demand arises and the necessary equipment becomes available. ComReg considers that a notice period of around 12 months for vacation of the band by second generation services would provide sufficient flexibility to meet changing market requirements.

Four questions addressed relevant aspects of these issues.

- Q. 4. Do you agree that 3 – 5 years is a reasonable time period to allow a fourth operator to enter the market? If no please provide an alternative time period and an explanation as to why this is more appropriate.**
- Q. 5. Do you agree that the unassigned 2 x 26 MHz of GSM 1800 spectrum should in the longer term be used for 3G services?**
- Q. 6. Do you have a view on the timescales when 3G equipment might become commercially available for the GSM 1800 band? If so what are your expected timescales and why?**
- Q. 7. Do you consider that there is likely to be a requirement for further spectrum to expand existing 2G mobile (GSM) services, and if so, how much and in what timescale? Please provide supporting data.**

#### *5.2.2 Views of the Respondents*

There were six responses to Question 4. Two respondents considered that a 3 - 5 year timeframe was reasonable given the uncertainty regarding the take up of 3G services. Two of the four respondents that did not agree with the proposed timeframe were of the opinion that it was too long when the spectrum could be used for provision of data services immediately. Another of the respondents did not envisage the Irish market being able to support any more than three 3G operators. The sixth respondent considered the fact that there was still a 3G license unassigned as evidence of a lack of interest by 3G mobile operators in the Irish market and that only MVNOs have shown an interest in the Irish mobile market.

There were six responses to Question 5 concerning the GSM1800 spectrum. One respondent was not in favour of assigning the unused 2 x 26 MHz for 3G services. Two respondents (both MMDS operators) recommended that the GSM 1800MHz spectrum be made available to both fixed and mobile broadband operators. The fourth respondent was of the view that the spectrum should be made available for 3G services now rather than in the long term. The fifth respondent considered the allocation of further spectrum for 3G services inappropriate at this time as the demand for 3G services is unproven, and that the spectrum would be better utilised for non-line of sight fixed wireless services. The sixth respondent (a mobile operator) was of the opinion that consideration should be given to using the whole of the 1800 MHz band for 3G services subject to demand and equipment availability and that the use of the 1800 MHz band for 3G services should be restricted to 3G licensees.

Three responses to Question 6 were received, however, with one exception, none of the respondents had any information regarding the availability of 3G equipment for the GSM 1800 MHz band other than that it is likely to be beyond 2005 before UTRAN equipment is available. The one exception to this said that 3G equipment for operation in this band had been available for over a year with several countries rolling out 3G networks in this band.

Of the three responses to Question 7, two of the respondents (both MMDS operators) were of the opinion that there is ample capacity available within the “core” 3G spectrum band to facilitate the rollout of 3G services as well as maintaining existing 2G services. They went on to say that the 2.5 GHz band should only be made available for 3G services subject to demonstrable need and when the entire core band spectrum is fully used. The third respondent (a mobile operator) considered that the lack of capacity with the current frequency assignments in the 900 MHz band would seriously affect the rollout of EDGE technology and if an operator wished to rollout an EDGE service it would be beneficial to have additional 900 MHz spectrum.

### *5.2.3 Commission’s Position*

The full scale of the longer term requirements for 3G expansion spectrum has yet to be established and, as stated in the Consultation Document, there is currently one unassigned licence in the 3G “core” band. Having taken into consideration the responses received and given the early stage in the deployment of 3G networks and services the Commission is minded to continue to adopt a “wait and see” approach in relation to the unassigned B1 licence with the intention of reviewing the situation within the next 3 years. This strategy is consistent with the three yearly 2.5GHz spectrum review proposed in section 5.1 of this document

It is likely that CEPT will designate the GSM 1800MHz band for use by 3G services in the longer term. This will be dependent on a number of factors including 3G take-up and continuing GSM usage but there is a high likelihood that GSM networks will gradually migrate to 3G as 3G applications and services become part of the everyday mobile user experience.

Applications from licensed GSM mobile operators for additional spectrum in the 900 MHz or 1800 MHz bands will be considered on the basis of demonstrable need.

## **5.3 Compatibility and Frequency Sharing**

### *5.3.1 Summary of Consultation Issues*

Preliminary studies have been carried out by ComReg investigating the extent to which existing MMDS services and future UMTS/IMT-2000 services could co-exist in the 2500 – 2690 MHz band. The results to date indicate a guard band in the order of 10 MHz would be required between the two services if they were both operating in the same geographical area. Assuming that MMDS would require eleven 8 MHz channels to provide an all-digital service there would be up to 50 MHz remaining for terrestrial UMTS/IMT-2000 services. By the end of 2004 CEPT and the European

Commission are expected to make a decision on whether the allocation of 2 x 20 MHz spectrum at the upper and lower end of the band for satellite IMT-2000 services should be maintained or allocated instead to terrestrial 3G services.

ComReg expects the highest demand for 3G mobile services to be concentrated in the main urban areas, notably Dublin, Cork, Limerick, Galway and Waterford. Initial studies conducted by ComReg investigating the possibility of co-frequency sharing have indicated that a separation distance of up to 60 km may be required to prevent interference to MMDS receivers from high power 3G macrocell base stations, but that a separation of 15 km may be adequate in the case of lower power microcells or picocells.

ComReg anticipates that requirements for macrocell coverage will largely be met within the core 3G mobile spectrum and that expansion spectrum will be predominantly used for expanding capacity by means of micro- and picocells in “hotspot” areas. ComReg therefore proposes that deployment of 3G mobile in the 2500-2690 MHz band should be restricted to micro- and picocells.

Questions 8 to 10 addressed these issues.

**Q. 8. Do you agree with the principle of co-existence in the 2500-2690 MHz band between MMDS and UMTS/IMT-2000 networks on the basis of either:-**

**frequency separation within the same geographic area (preliminary studies indicate that a frequency separation of 10 MHz may be required),**

**or**

**geographic separation where co-frequency MMDS and 3G mobile services, are operated (preliminary studies show that this may be of the order of 15 km for microcell deployment)?**

**Q. 9. Do you agree with the proposal to restrict 3G deployment in the 2500-2690 MHz band to micro and pico cells?**

**Q. 10. Do you agree with the assumption that future demand for 3G mobile services (and hence for additional 3G mobile spectrum) is likely to be concentrated in the main urban areas, notably Dublin, Cork, Limerick, Galway and Waterford?**

### *5.3.2 Views of the Respondents*

There were five responses to Question 8. One respondent did not agree with the principle of co-existence between MMDS and UMTS/IMT-2000 in the 2500 – 2690 MHz band. The second respondent considered frequency separation as the only workable solution as there was too much room for ambiguity and error in defining a specific category of geographic area. They went on to point out that any frequency arrangements may be restricted as a result of the work being carried out by CEPT and the European Commission to define the detailed frequency arrangements for this band. The third respondent considered that the proposed solution to co-existence between the two services was not technologically neutral and that this would have consequences as a result of restricting new technologies that will have improved filtering and encoding schemes which will make the proposed geographic and frequency separation guard band redundant. They also proposed that any new operators to the band should be obliged to ensure that their services did not interfere with the existing services in the band. Two of the respondents (MMDS operators) were strongly opposed to the co-existence of MMDS and UMTS/IMT-2000 in the 2500 – 2690 MHz band. Both considered the suggested scheme for geographic separation to be unworkable as it is not possible to tailor the coverage of existing transmitters without a major disruption to existing services at considerable cost.

There would also be potential disruption to their services if there are other transmitters using the same frequency as the MMDS transmitters. One of the two considered it likely that any new services in or near this band would cause interference, most notably in respect of overloading on the receiver down-converters (which currently cover the whole band). They also proposed that any new operators to the band should be required to ensure that no interference is caused to existing services.

Of the six responses to Question 9 two of the respondents were not in favour of restricting 3G deployment in this band to microcells and picocells, with one favouring frequency separation as the best way to ensure co-existence between the two technologies. A third respondent proposed that the band should be considered for re-use by alternative technologies such as fixed wireless services. The fourth respondent believed that there was no technological reason to restrict the deployment of 3G services and to do so would be unnecessarily restrictive to Ireland's broadband prospects and competitiveness. The fifth respondent did not agree with any proposal to deploy 3G services in the 2500 – 2690 MHz band. The sixth respondent agreed with the proposal subject to their previous comments regarding interference.

In the case of Question 10 there were six responses. Two of the respondents were supportive of the assumption that 3G mobile service demand is likely to be concentrated in the main urban areas. A third respondent saw no justification for ComReg to reserve spectrum in this band for 3G expansion in either urban or rural areas. A fourth respondent (a mobile operator) considered it unwise to assume that urban areas outside of those listed would not require services in line with the five larger population centres. The fifth respondent did not believe that there would be a greater demand for 3G services in the cities cited rather than in the regions just because there are more people living in the named cities. The sixth respondent was of the opinion that there would be demand for 3G services outside of the urban areas mentioned but that care should be taken to ensure that 3G operators did not “cherry pick” and leave population centres without services. They considered the allocation of spectrum on the basis proposed to be discriminatory and would favour 3G operators over other operators not only in relation to non-competing services but also in relation to services such as broadband data.

### *5.3.3 Commission's Position*

It is evident from the responses received that there are concerns relating to the co-existence between MMDS and UMTS/IMT-2000 on an adjacent channel and co-frequency basis. However it should be noted that results published in the Consultation Document are preliminary and that further work is ongoing within ComReg and this is also being fed into a report on compatibility between services in the 2.5 GHz band which is being prepared by the CEPT Spectrum Engineering Working Group. It should also be noted that the possible adoption of either a frequency separation or geographical separation approach by ComReg will be dependent upon the outcome of work being carried out by CEPT on the detailed frequency arrangements for the 2500 – 2690MHz band. In the interest of maintaining a flexible approach to the spectrum management issues relating to this

band the Commission is minded to wait until work is complete in CEPT before deciding on the co-existence arrangements between MMDS and UMTS/IMT-2000 and whether to restrict the deployment of 3G in the 2500 – 2690MHz band to micro and pico cells only.

#### **5.4 A possible approach to sharing between 3G mobile and MMDS services in the 2500 – 2690 MHz band.**

As stated previously it is not possible to determine an appropriate plan for the 2500-2690 MHz band until a frequency arrangement plan for 3G expansion spectrum is agreed by CEPT. This is not expected to take place until the end of 2004. However, in the meantime it is possible to consider the type of transitional arrangement that might apply in order to facilitate the progressive introduction of 3G services into the band, whilst continuing to cater for the ongoing requirement for MMDS services.

The proposed solution would effectively divide the band 2500-2690 MHz into two sub-bands split between IMT-2000 and MMDS. The lower sub-band, comprising 50 MHz in total, would provide the initial 3G mobile expansion spectrum, commencing on or after 1<sup>st</sup> January 2008 when the ECC Decision takes effect, but subject to demonstrable need. Such use would be confined to the cities of Dublin, Cork, Limerick, Galway and Waterford. The upper sub-band would continue to be used for the delivery of MMDS services for the duration of the current licences, except within 15 km of the Dublin City area<sup>1</sup>, where the spectrum may be used to provide further 3G expansion on a demonstrable need basis (this is expected to be the area of highest demand within Ireland).

In ComReg 03/70 it was proposed that the lower sub-band could also be used by MMDS licensees for provision of additional MMDS television or broadband wireless services, but after 2007 such provision may be limited to areas where the spectrum is not required for 3G mobile expansion and potentially a 15km protection area around these areas. In determining the boundaries of such areas it would be necessary to take account of the nature of the expansion in demand for 3G services and the growth in population centres. In the event that it is decided to introduce 3G mobile services in the band, ComReg would provide at least 12 months notice to the existing users.

If it emerged at a future date that the satellite components of 3G mobile spectrum were not required for that purpose, the two lower MMDS channels (i.e. those in 2580-2600 MHz) could be transferred to the band 2670-2690 MHz. This would increase the available spectrum for terrestrial 3G mobile to 90 MHz, after allowing for a 10 MHz guard band to protect MMDS services.

Views were sought on this proposed approach.

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<sup>1</sup> The area bounded by the Grand Canal, Royal Canal and M50 motorway.



**Q. 11. Do you have a view on the above suggested approach to co-existence between 3G mobile and MMDS services? If you do not favour the suggested approach, what alternative would you propose? Please provide supporting arguments.**

#### *5.4.1 Views of the Respondents*

There were five responses to Question 11. One respondent supported the approach to coexistence between 3G and MMDS as outlined in the consultation document. Two respondents did not agree with the proposal. One of the two (a MMDS operator) considered that a more thorough examination of the spectrum usage within the 2GHz band was required given that the 2.2 – 2.4GHz band is under utilised. However if the proposal was to proceed their preference would be to locate the MMDS operators in the lower part of the band and the 3G operators in the upper part of the band. Furthermore, in the event of further sub-division of the MMDS band it should be organised along logical grounds with operators in different parts of the band. The second of the two who did not support the approach was of the opinion that the spectrum should be utilised for 3G services in a technology neutral manner. They considered that it is possible for MMDS and 3G services to share the spectrum without the need for geographic or frequency separation. The fourth respondent saw no reason why spectrum should be reserved for 3G services, the demand for which is unproven, when there is a very real demand for broadband services for which there is not enough spectrum available. The fifth respondent (a MMDS operator) considered that the Docsis protocol could be easily incorporated into an MMDS transmission system to provide broadband data services.

#### *5.4.2 Commission's Position*

The Commission is mindful of the need to develop spectrum management plans to accommodate growth in radiocommunications services. Development of 3G infrastructure and services is essential to Ireland's international competitiveness and to ensuring competition between mobile operators in providing high speed mobile data and services to users. MMDS plays a key role in providing users with choice in their television services and, through digitalisation of the service, should extend that choice. Technological developments are also broadening the ways in which a whole range of services can be delivered to the end user and this brings with it challenges to the regulator in facilitating new services and ensuring that a level playing field is maintained for all operators and service providers. Mindful of these requirements, the Commission is keen to find a solution that, in so far as is possible, meets the needs of all parties and provides scope for the long term development of all of the services concerned.

The suggestion to broaden the scope to consider other nearby frequency bands for expansion of services is noted and the Commission is prepared to take this into account in developing plans for the development of the relevant services, recognising that by its nature 3G mobile infrastructure is constrained to those

frequency bands identified at the international level. The Commission would also propose to review the feasibility of FWA being provided within the MMDS spectrum in the context of encouraging broadband roll-out and spectrum efficiency. It would be important not to duplicate licensing arrangements and the Commission will consider issuing a separate paper on this issue.

Taking all of the views into account, and noting that frequency plans for 3G services in the 2.5 GHz band are scheduled to be completed by the end of 2004, the Commission intends to carry out a more detailed consultation based on the proposal to divide the 2500 – 2690MHz band between UMTS/IMT-2000 and MMDS. The exact division of the band will not be decided upon until after CEPT has decided upon the detailed frequency arrangements for UMTS/IMT-2000 in the band.

## **6 Next Steps**

Decisions on the detailed frequency arrangements for UMTS/IMT-2000 in the 2500 – 2690MHz band are scheduled to be made at the European level, i.e., within CEPT and the European Commission, by the end of 2004. By that stage further information should be emerging on the nature, extent and timing of 3G requirements in the 2.5 GHz expansion band.

MMDS operators are requested to present a case to ComReg by 30 June 2004 detailing the extent of their requirements for continuing use of the 2.5 GHz band.

Therefore, for the time being, and mindful of the need to maintain a flexible approach in relation to the 3G expansion spectrum, the Commission proposes to maintain the current prohibition on the provision of MMDS services in the main urban areas of Dublin, Cork, Limerick, Galway and Waterford. When the decision by CEPT on the detailed frequency arrangements for the 2500 – 2690 MHz band is available at the end of 2004, the Commission will then undertake a review of the 2.5GHz spectrum and may hold a further consultation, early in 2005, on the future use of the band, taking into account the very useful views and information already gleaned from this consultation. It would intend to conduct this review on a three yearly basis.