



## Response to Consultation

### Licensing Digital Terrestrial Television

#### Digital Terrestrial Television (DTT) Multiplex Conditions

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## 1 Foreword by the Chairperson

ComReg is very pleased to set out below the licensing framework for Digital Terrestrial Television (DTT) services in Ireland. This is a major step forward in enabling the provision of DTT services in Ireland which ultimately will benefit Irish consumers. The success of DTT will require that appropriate stakeholders develop public awareness and understanding of the benefits it can bring.

DTT services represent one of the most significant developments for spectrum usage generally and specifically in the frequency range 470 to 862 MHz as it creates the potential for more programme services, greater interactivity and an overall enhanced television viewing experience. Moreover, the technology behind DTT provides for significant spectrum efficiency and thus has the potential to create sufficient capacity for further electronic communications networks, services and associated applications to be deployed in this frequency band. Such opportunities will crystallise once the spectrum requirements for DTT services have been met in accordance with the Broadcasting (Amendment) Act 2007.

The regulatory framework for DTT therefore is an important body of work towards technological convergence in broadcasting, media and telecommunications.

Interoperability of digital interactive television services and consumer digital television equipment are important objectives of the EU Regulatory Framework for Electronic Communications Networks and Services. ComReg encourages and supports cooperation between relevant market players to help achieve this interoperability.

In Ireland to date digital television services have been widely available to Irish consumers via cable, MMDS and satellite, and to a lesser extent, but an ever increasing one, via the internet. The introduction of DTT services will provide Irish consumers with as broad a range of viewing options as is available in other European countries.

This paper is the response to a consultation which issued on 31 August 2007 on Digital Terrestrial Television Licence Conditions. Gauging from the level and detail of responses received from interested parties, DTT is a valued segment of digital broadcasting in Ireland. In total, twenty responses were received and I would like to express the appreciation of the Commission to all of those who responded.

**Mike Byrne,  
Chairperson**

## 2 Executive Summary

Having consulted in relation to its proposals for licensing DTT (07/65), and having considered the submissions received carefully, ComReg sets out in Section (4) of this document the terms of the licences it intends to issue to RTÉ and the Broadcasting Commission of Ireland (BCI) in respect of DTT multiplexes. ComReg's position on the DTT Multiplex Licence Conditions are also set out in Section (4) and includes the following specific points:-

- Licence duration of 12 years;
- Annual licence fees with phased implementation in the start up phase of DTT, including a 50% discount in the early years of the DTT licences, with the following structure:-
  - Initial annual licence fees of €57,000 in the period from the award of the DTT licences up to 1 July 2012;
  - Thereafter, an annual licence fee of €14,000 indexed to inflation, using CPI, for the remainder of the licence period;
  - The first indexation will take place with effect from 1 July 2013 based on the increase, if any, in CPI in the period 1 July 2012 to 30 June 2013.
- Rollout obligations, in each of the licences issued to the BCI, such that these licences reflect the rollout agreed by the BCI with its multiplex contractor to whom the rights and obligations of the multiplex licence will be passed on.
- Sanctions for non-compliance with licence conditions, including:-
  - licence revocation, suspension, term reduction, reduction of geographical coverage area and re-allocation of spectrum thus recovered;

and,

- Technical conditions related to the operation of the transmission networks that will be used to carry the DTT multiplexes.

## 3 Introduction

### 3.1 Background

This document is ComReg's report on the consultation on DTT Multiplex Licence Conditions (07/65) which issued on 31 August 2007. The consultation paper focused on the regulatory regime within which ComReg intended to licence and regulate DTT multiplexes, taking account of the requirements imposed by legislation and the conditions that ComReg considered appropriate to enable DTT services to be launched efficiently and effectively. The process involved consulting on a range of licence provisions.

This document sets down the position, arrived at by ComReg after careful consideration of the points made by the respondents and after internal review of the consultation issues.

A number of submissions received referred to issues additional to those on which ComReg had set down questions. In the interests of completeness, ComReg considers it appropriate to address those comments below.

#### 3.1.1 Objectives of ComReg for competition

Central to ComReg's objectives as set down in legislation is the promotion of competition in relation to the provision of electronic communications networks, electronic communications services and associated facilities. ComReg is required to take *reasonable measures* which are aimed at achieving its objectives<sup>1</sup> and the introduction of DTT services has the potential to enhance competition between digital TV platforms.

ComReg's proposed regulatory regime for the introduction of DTT services in Ireland is in line with its statutory remit and the obligations placed on it by the Broadcasting (Amendment) Act 2007<sup>2</sup>.

#### 3.1.2 Objectives of ComReg for digital dividend

ComReg's statutory objectives also require it to contribute to the development of the internal market in Europe and to promote the interests of users within the Community<sup>3</sup>.

ComReg is aware of, and participates in, ongoing work at a European level to identify and agree frequencies which could be harmonised to provide a digital dividend. ComReg, in allocating spectrum for DTT, intends in so far as possible, to avoid allocating frequencies which are intended to form part of the harmonised European sub-band of digital dividend spectrum.

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<sup>1</sup> Section 12 (2) Communications Regulation Act 2002 as amended

<sup>2</sup> Section 5 of Broadcasting (Amendment) Act 2007

<sup>3</sup> Section 12 (2) Communications Regulation Act 2002 as amended

ComReg aims to balance the current legislative obligation to provide spectrum for the initial launch of DTT services with its forward thinking in relation to the provision of spectrum for additional DTT multiplexes as required and the achievement of a digital dividend.

### 3.1.3 Objectives of Regulatory Framework on Interoperability of digital interactive television services and related consumer equipment

Interoperability of digital interactive television services is an important objective of the Framework Regulations (S.I. No. 307 of 2003, ref. section 28). In addition, interoperability of consumer digital television equipment is an important objective of Universal Service and Users' Rights Regulations (S.I. No. 308 of 2003, ref. section 20).

The multiplex licensee, or in the case where the benefits of a licence have been passed on to a third party, the third party, will consequently be operating in a regulatory framework which promotes and encourages interoperability through the use of open standards. ComReg fully supports the concept of interoperability and recognises the need for flexibility and consensus between RTÉ, BCI Multiplex Contractor(s) and other relevant market players so that effective interoperability can be achieved for the benefit of the end consumer.

Where standards are mandated in our technical conditions, the conditions specified may be revised and or added to as necessary.

### 3.1.4 Intentions of ComReg for mobile TV

ComReg will initially identify and licence spectrum to enable the operation of up to four DTT multiplexes and the simulcasting of current free-to-air analogue TV services prior to Analogue Switch-Off (ASO), which is expected to be no later than 2012. In addition, ComReg expects to licence spectrum in 2008 that could potentially be used to facilitate mobile TV. This spectrum may not necessarily be national in extent.

Interleaved spectrum and/or surplus spectrum which may arise from the use of Single Frequency Networks (SFNs) in the construction of the transmission network(s) for DTT will be considered by ComReg in this context. ComReg expects to identify this spectrum over the next few months.

ComReg recognises there is a demand for a mobile TV service in Ireland and intends to consult in the first quarter of 2008 on licence conditions which could be applied to mobile TV.

### 3.1.5 Usage of the spectrum bands: Band III, IV and V

Ireland obtained a number of GE-06 Plan entries in Band III (174 to 230MHz) at the Geneva Planning Conference (Geneva 2006 Treaty) such that, in addition to the

eight planned multiplexes in Bands IV and V (470 to 862MHz), Ireland can support DVB-T services in a multiplex in Band III<sup>4</sup>.

ComReg's consultation paper acknowledged the existence of this Band III multiplex layer. ComReg's immediate intention, however, is to licence DTT services using Band IV and V spectrum only. Initial co-ordination has been carried out with Ofcom on the basis of four multiplexes using Band IV and V spectrum. ComReg's forward thinking in relation to the use of Band III provides for other scenarios including studying the conversion of the Band III DVB-T multiplex into additional Band III T-DAB multiplexes or retaining the current mixture of DVB-T and T-DAB.

ComReg anticipates that the potential uses of spectrum in Band III will become clearer as progress is made in relation to ASO.

### 3.2 List of Respondents

ComReg thanks the following twenty respondents, listed alphabetically below, who submitted comments and suggestions on the consultation (07/65) and looks forward to working with them towards the successful launch of DTT services in Ireland:-

1. B. Bonsal Communications Ltd;
2. Broadcasting Commission of Ireland;
3. BT and Arqiva;
4. Central Remedial Clinic;
5. Digital Radio;
6. Disability Federation of Ireland;
7. eircom;
8. Enasc Éireann Teoranta (e-net);
9. Ericsson;
10. Gerry Ellis (Feel the Benefit);
11. Irish Broadband;
12. National Disability Authority;
13. O2;
14. RTÉ and RTÉNL;
15. Silicon and Software (S3);
16. Sky;
17. TG4;
18. TV3;
19. UPC; and,
20. Vodafone.

### 3.3 Format of Document

Section 4 revisits the main consultation issues. The key points raised by respondents in relation to those issues are summarised and ComReg's final position, arrived at

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<sup>4</sup> The Band III multiplex however, has a bandwidth of 7MHz whereas the bandwidth of the Band IV and V multiplexes is 8MHz.

after careful consideration of those points and after internal review, is set out. All responses to this consultation will also be published at [www.comreg.ie](http://www.comreg.ie).

Document 07/90a, appended hereto sets out the provisions of ComReg's DTT Multiplex Licence.

Document 07/90b, appended hereto sets out ComReg's technical conditions having reviewed the earlier draft conditions and having considered the points made by respondents who commented on them.



## 4 Consultation Issues

### 4.1 Licence Duration

ComReg considered that a DTT Multiplex Licence duration of between 10 and 12 years would be appropriate and consulted on the following matters:-

#### 4.1.1 Consultation Questions

- Q. 1. Do you consider that the length of the licence period is appropriate? If not, how long do you consider the licence period should be for? Please give reasons for your proposal?**
- Q. 2. Do you consider that factors other than those included above should be taken into account in deciding the licence duration? If so, indicate what they are and give reasons for your proposal?**

#### 4.1.2 Views of Respondents

Fifteen responses were received on the issue of licence duration. These can be separated into three sub-groups:-

- the first sub-group, consisting of four respondents, advocated a licence period longer than ComReg's proposal. Specifically one suggested 15 years, a second suggested *as long as possible*, a third suggested that 12 years may be too short if there are frequency management channel changes required; and a fourth suggested that 12 years might be appropriate if coupled with an option to renew for a further 12 years;
  - the second sub-group consisting of another three respondents advocated a licence duration slightly less than the first sub-group and not so dissimilar to ComReg's original proposal. In particular two respondents advocated a licence period in the range of 12 to 15 years and one a minimum licence duration of 12 years once commercial operation commenced;
- and,
- the third and final sub-group, consisting of nine respondents, agreed in principle with ComReg's proposal. Four of these respondents suggested a licence duration of 10 years while the other five agreed with ComReg's proposed range of between 10 and 12 years for licence duration. One of these respondents suggested that licensees that do not invest in network build-out should have a shorter licence period (4 years). Finally, another respondent indicated its agreement with ComReg's proposal but contended

that a BCI Multiplex Contract would be determined as a matter of BCI policy.

Respondents suggested a number of additional factors which they felt should be considered in setting a licence duration including:-

- issues in relation to ASO, which is assumed will occur no later than 2012 in Ireland, and its impact on build-out of a DTT network;
- potential future changes on spectrum allocations and the need for an appropriate rate of return on investment;
- comparisons with DTT licence durations in other jurisdictions e.g. UK and Norway;
- the significance of barriers to market entry, in the DTT market in Ireland, and the risk profile of short versus longer licences;
- the high likelihood of a multiplex operator depending on third parties for development of a transmission network / infrastructure;
- potential phasing of the introduction of DTT;
- the opportunity afforded by the licence duration for enabling relevant technical advancements; and,
- solvency and track record in the provision of audiovisual services.

#### 4.1.3 ComReg's Position

ComReg intends to proceed with a licence duration of 12 years. ComReg is satisfied that this licence duration is appropriate given the broad level of support by respondents for a licence duration in excess of the minimum initially proposed in the consultation paper.

ComReg is also satisfied that a 12 year licence should give prospective multiplex operators the security to invest in DTT networks. It should be remembered that the licences will be issued to RTÉ and to the BCI and in the case of licences issued to the BCI, the benefit of the licences will be passed on to those parties with whom the BCI enters into multiplex contracts. The duration of those contracts will be a matter for the BCI.

#### 4.2 Wireless telegraphy licence fees

ComReg intended to base its Wireless Telegraphy Licence Fee for the DTT multiplexes on the fee (formula) for radio spectrum licensed for MMDS, such that the initial annual cost in 2008 would be €14,000 per multiplex licence. ComReg stated that it would review the licence on a yearly basis and index-link the licence fee using the consumer price index (CPI), as a proxy for the rate of inflation. ComReg consulted on the following matters:-

## 4.2.1 Consultation Questions

- Q. 3. Do you consider the proposed licence fee to be reasonable? If not indicate an alternative fee and give the reasons for your proposal?**
- Q. 4. Do you consider that other factors, in addition to the range identified, should be taken into account in deciding the licence fees? If so, indicate what they are and give the reasons for you proposal?**
- Q. 5. Do you agree with the principle of reviewing and indexing the licence fee using CPI as a proxy for inflation? What alternative methods could be used in reviewing the licence fee?**

## 4.2.2 Views of Respondents

Twelve responses were received on the issue of the Wireless Telegraphy Licence Fee for DTT Multiplex Licences.

One third of respondents on this issue favoured a phased implementation of any such fees. In particular the following proposals were provided in relation to how the fees might be varied:-

- The maximum fee should be €14k but should reflect the economic benefit derived by the licensee and therefore fees should be suspended during rollout (i.e until commercial transmissions commence) and for the first 5 years should be set at a variable rate in proportion to the multiplex operators revenues (up to the maximum level);
- A sliding scale would take into account regional roll-out of DTT infrastructure given the constraints imposed until ASO is achieved;
- A slowly increasing fee would help to ensure the establishment of a viable platform; and,
- More efficient spectrum use should be subjected to a slower rate of increase or appropriate incentive.

It was suggested by two of these respondents that the fee:-

- should be set so as to encourage deployment of technologies so that future efficiencies are created; and,
- as currently proposed, the fee may not encourage or promote spectrum efficiency.

In addition, respondents suggested a number of other factors that may need to be taken into account in deciding licence fees:-

- the phasing of rollout as an excessive fee could be counterproductive to rollout;
- for licences operated on a regional basis, an adjustment based on the approximate population coverage;
- construction period where significant financial outlays will have to be incurred;
- fee should encourage and not inhibit technical progression; and,
- provide an incentive for efficient spectrum use and technology progression, (i.e. SFNs);

All of these respondents agreed with ComReg's proposal to apply an annual increase using the Consumer Price Index (CPI) as a proxy for inflation. However, one respondent indicated that while index linking the fee using CPI might be appropriate an additional annual review may be an "aspiration". Another respondent proposed that CPI would act as a ceiling on any given fee increase. This respondent proposed that ComReg retain the flexibility to increase the fee by less than CPI if the situation would merit it.

One respondent however, also questioned whether adequate attention had been paid to the true opportunity cost of granting so much spectrum for this purpose. Furthermore this respondent questioned whether the allocation of a scarce and valuable natural resource at an undervalued rate raises State aid issues.

#### 4.2.3 ComReg's Position

ComReg agrees that a phased implementation of the licence fee would be appropriate in the start up phase of the DTT platform.

In recognition of the start up phase of DTT services ComReg is prepared to apply a 50% discount on the proposed fee in early years of the licences. Accordingly, ComReg intends to implement an annual licence fee of €7,000 per multiplex licence in the period from the award of the DTT licences up to 1 July 2012. Thereafter, ComReg proposes to apply an annual licence fee of €14,000 per multiplex licence, indexed to inflation using CPI, for the remainder of the licence period. The first indexation will take place with effect from 1 July 2013 based on the increase, if any, in CPI in the period 1 July 2012 to 30 June 2013.

ComReg is satisfied that this fee establishes the principle of charging for spectrum used for broadcasting services in the band 470 to 862MHz. Given the level of support by respondents ComReg is also satisfied that the level of fee as proposed is appropriate for the introduction of DTT services.

#### 4.3 Rollout obligations

ComReg noted that it did not see a necessity to set rollout obligations on RTÉ as these were set down in the Broadcasting (Amendment) Act 2007. ComReg intended to reflect as a condition in each licence issued to the BCI, the level of rollout agreed between the BCI and the contractor to whom the BCI will assign the benefits and

obligations of its licence, in order to ensure that licensed spectrum was used efficiently. ComReg consulted on the following matters:-

#### 4.3.1 Consultation Questions

- Q. 6. Do you agree with the concept of rollout obligations in relation to effective frequency spectrum use? If not, indicate an alternative concept and give the reasons for your proposal?**
- Q. 7. Do you consider it appropriate in the case of licences issued to the BCI, for ComReg to set rollout obligations aligned to those resulting from the BCI competition for multiplex contracts?**

#### 4.3.2 Views of Respondents

Fifteen responses were received on the issue of rollout obligations. Six of these responses communicated the need for flexibility for the rollout of commercial multiplexes.

These six respondents proposed the following mechanisms to achieve the proposed flexibility for the rollout of commercial multiplexes:-

- Rollout criteria should be more general by referring to minimum coverage requirements in terms of number of geographical locations to be served or coverage cells;
- Allow various / multiple multiplex operators to become “organised” in the event that a single transmission platform is to be used;
- Allow a process to be defined in the regulations so that such “organisation” can be facilitated. Ongoing dialogue between ComReg and various participants during the rollout should also feature so that changes in market conditions can be reflected in rollout using an appropriate appeal/arbitration process;
- Minimum rollout should be set in advance of the BCI process so that BCI would have flexibility to determine additional conditions that should / need be applied;
- Rollout obligations should not consequently imply the use of existing infrastructure as a requirement; and,
- The multiplex operator should be afforded the opportunity to discuss enhanced or modified rollout during the term of a BCI multiplex contract.

Two respondents put forward specific proposals for the rollout obligation for licences issued to the BCI in terms of coverage targets. The suggested coverage targets ranged from 70 to 90% population coverage.

One respondent was not in favour of the multiplex contractor being afforded the opportunity to negotiate rollout where no minimum coverage target applied.

One respondent agreed with the concept of rollout but proposed that rollout obligations should be no more restrictive than those applied currently to MMDS, Cable or Digital Satellite.

A further respondent communicated that the use of certain frequency channels for Irish DTT, which may be part of a harmonised sub-band within the EU market, should be avoided. This respondent suggested that licensees should be made aware of any channel changes as a licence condition accordingly.

Four respondents expressed opinions regarding the equivalence of licence conditions; two referred specifically to the need for equivalence of the rollout of networks and accessibility services between multiplex licences issued to RTÉ and the BCI.

Finally on the issue of rollout obligations, three respondents suggested the need for such obligations to extend to the provision of services on the DTT multiplexes, in particular in relation to the rollout of accessibility services for people with disabilities.

#### 4.3.3 ComReg's Position

ComReg understands that operators applying for multiplex contracts from the BCI will have to make commercial decisions which may include the rollout of their “national” networks. ComReg proposes that it will be a matter for the BCI to achieve the best practicable network coverage as part of its contract award process in respect of the independent DTT multiplexes. ComReg, as the national spectrum management agency, intends to reflect as a condition in each licence issued to the BCI, the level of rollout agreed between the BCI and the contractor to whom the BCI will assign the licence. ComReg considers also that the inclusion of conditions in relation to access for people with disabilities to content on multiplexes licensed to the BCI is a matter for inclusion in any contract negotiations in relation to multiplex content. Similar access to content on the RTÉ multiplexes will be a matter for the RTÉ Authority.

ComReg acknowledges that the extent of the rollout of the RTÉ DTT networks is set down in primary legislation and therefore it does not intend to make rollout a licence condition in the case of RTÉ.

#### 4.4 Sanctions for non-compliance with licence terms

ComReg stated that it would reserve the right to revoke, suspend, reduce the geographical area of the licence and re-use spectrum thus released and / or reduce the term of the national DTT multiplex licence in the event of non-compliance.

ComReg also considered the use of voluntary sanctions and welcomed suggestions in relation to other suitable sanctions and consulted on the following matters:-

## 4.4.1 Consultation Question

**Q. 8. Do you see merit in seeking voluntary sanctions for non-compliance with licence conditions for example, failure to meet rollout obligations set down in the licence? If yes, please indicate what sort of voluntary penalties might be appropriate and give reasons for your answer?**

## 4.4.2 Views of Respondents

Twelve responses were received on the issue of sanctions for non-compliance with licence terms including voluntary sanctions.

Four respondents communicated the need for sanctions to be proportionate to the particular breach of the licence and the following suggestions were put forward:-

- the licensee in breach of its licence could be required to compensate those adversely affected commensurate with the harm caused;
- alternative sanctions should be an important influence on the overall decision regarding the appropriate penalties for specific breaches;
- the application of any sanction must be undertaken in a manner which is transparent, proportionate and targeted only at cases where intervention is justified; and,
- a set of proportionate sanctions should be set by ComReg;

Three respondents were unclear as to how “voluntary sanctions” would be implemented.

Two respondents suggested the need for sanctions to be common in the licences issued to RTÉ and the BCI.

Three respondents opposed ComReg’s proposal regarding voluntary sanctions. One respondent did not see merit in a voluntary sanction mechanism but agreed that ComReg should have the right to impose sanctions for non-compliance while another respondent argued against all forms of sanctions. The following reasons were given:-

- DTT licensees will be late entrants into a saturated market;
- sanctions could act as additional barriers to entry;
- criteria associated with voluntary sanctions could be undermined by changes in technology and the passing of time;
- voluntary sanctions could be iniquitous where one operator has agreed to a particular set of conditions that are less demanding than those conditions agreed by another i.e. a common set of sanctions should apply to BCI DTT multiplexes;

However it was noted by one of these respondents that:-

- there may be merit in ComReg and BCI setting out in advance a list of service characteristics against which penalties may be applied, and quantifying the penalty.

Two other respondents also communicated a need for sanctions in relation to rollout of services and proposed the following:-

- a service review after 3 years in order to ensure effective and prompt rollout of services; and
- that sanctions be a real deterrent from failing to rollout accessibility services.

#### 4.4.3 ComReg's Position

In so far as the issue of voluntary sanctions is concerned, ComReg does not intend to put into its licence, as a licence condition, a provision for voluntary sanctions. ComReg considers that the proposal and acceptance of voluntary sanctions should, in the case of the independent sector, be a contractual issue for the BCI and bidders for multiplex contracts. Third party voluntary penalties would be difficult to incorporate into a licence issued by ComReg to the BCI and in addition would be difficult for ComReg to enforce against its licensee, the BCI.

ComReg strongly urges the BCI to consider for inclusion as part of its contract award process, in respect of the independent DTT multiplexes, a provision for voluntary sanctions in the event of failure by a contractor to meet its contractual obligations.

#### 4.5 Other relevant conditions

ComReg stated that it was also minded to include a provision in relation to a *Telecoms Data Cap* such that 20 per cent of the capacity of each multiplex, at any one time, subject to a cumulative maximum of 15 per cent in any 24 hour period would apply and consulted on the following matters:-



## 4.5.1 Consultation Questions

- Q. 9. Do you agree that the concept of a “telecoms data” cap reflects the primacy of programming services, both television and radio, in DTT multiplexes?**
- Q. 10. Do you agree with the structure of the data cap as proposed? If not, what structure would be appropriate and give the reasons for your proposal**
- Q. 11. Do you consider that any other relevant conditions should apply? If so, please specify and give the reasons for your proposal?**

## 4.5.2 Views of Respondents

Fifteen responses were received on the issue of the proposed “telecoms data” cap and its structure.

Six respondents suggested that there was a need for greater flexibility in relation to ComReg’s proposal to apply a telecoms data cap. In particular the following comments were put forward:-

- Capping one form of digital data versus another could be considered contrary to objectives of technology and service neutrality;
- Telecoms data cap as proposed may become out-moded through the term of the licence, furthermore linear TV consumption is changing;
- The market / industry should determine the most efficient use of spectrum, based on consumer demand for different types of services;
- Regulations need to incorporate an ability for the licensee to update the definition of “programming services” in consultation with ComReg in order to adapt to new market and technology developments; and,
- A data cap of 25% of the capacity of each multiplex without any qualification regarding a cumulative maximum figure in any 24 hour period would be more appropriate;

Four respondents suggested there was a need for the telecoms data cap to be set aside for the delivery of accessibility information while ensuring that sufficient bandwidth is always available to transmit services required by people with disabilities.

One respondent proposed that in the case of data being carried in a DTT multiplex, it should be capped at a low level to ensure optimisation of the network. Another respondent noted that there are other technologies that may be more efficient in the delivery of telecoms data.

Five respondents proposed that a formal definition for telecoms data be used.

One respondent wholly rejected the notion of two way services in relation to RTÉ or commercial multiplexes.

One respondent agreed with ComReg's initial proposal in relation to the concept and structure of the proposed telecoms data cap.

#### 4.5.3 ComReg's Position

It is clear from the nature of the responses received regarding a telecoms data cap that, while there is broad agreement between respondents regarding the primacy of television and sound-broadcasting services in DTT multiplexes, there remains a requirement for the telecoms data cap to be formally defined in order to provide for a clear distinction between services that may be subject to the cap.

ComReg considers that the phrase telecoms data is best understood as non-programming related data. ComReg is also satisfied that, on balance, the non-programming related data cap should be 20 percent of the capacity of each multiplex at any one time, subject to a cumulative maximum of 15 percent in any 24 hour period.

Moreover, ComReg considers the following non-exhaustive list of programming related data as being currently outside the scope of the cap:-

- closed caption signing;
- audio description;
- multi-channel or alternative language audio;
- digital teletext;
- sound broadcasting audio;
- interactivity; and/or,
- enhanced content related to a given programme service.

#### 4.6 Technical conditions

The technical conditions are set down in detail in document 07/90b which is attached in Appendix 2.

Following careful consideration of the relevant points made by respondents in relation to the proposed technical conditions and after internal review, ComReg has modified its initial technical conditions and is satisfied that it will not be necessary for it to set minimum programme service bitrates on the DTT multiplexes.

While this will allow for statistical multiplexing and dynamic bitrate allocation across the multiplexes, it does place the onus squarely on the multiplex licensees to ensure that the quality / clarity of the associated picture content will be sufficiently high so as to satisfy viewers and prevent unnecessary picture degradation.

Appendix 1 – DTT Multiplex Licence – 07/90a

Appendix 2 – Digital Video Broadcasting Terrestrial (DVB-T)  
Network Technical Conditions attached to a Digital Terrestrial  
Television (DTT Licence) – 07/90b