



Office of the Director of
**Telecommunications
Regulation**

Licensing Digital Terrestrial Television

Consultation Paper

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This consultation paper does not constitute legal, commercial or technical advice. The Director is not bound by it. The memorandum is without prejudice to the legal position of the Director, or her rights and duties under the legislation.

Foreword by Director

The application of digital technology to television broadcasting has changed the broadcasting environment significantly. For the consumer, the potential benefits include increased quantity of viewing options and quality of service. It is essential that these services are available on a universal basis. It is also essential and feasible to provide choice of supplier to almost all consumers. The licensing of digital terrestrial television is key to meeting this objective.

Earlier this year, regulations for digital cable and MMDS licences were published and licences issued to four of the largest operators. The purpose of this Consultation Paper is to outline the issues being considered in providing for the licensing of digital terrestrial television and I look forward to hearing what you have to say on the matter.

The proposals outlined in this document are intended to ensure that a suitable balance is provided for regulating for the television service the consumer dreams of today and demands tomorrow.

Etain Doyle
Director of Telecommunications Regulation

1 Background

- 1.1 In July 1998, the Director published “The Future of TV Transmission in Ireland- The Way Forward” (Document No. ODTR 98/20), which outlined proposals for the introduction of digital television services. That document followed on from the Nera/Smith Study (Document No. ODTR 98/06), which examined options in relation to digital broadcasting transmission. Document No. ODTR 98/20 identified the potential of all broadcasting platforms in a digital environment, indicated the Director’s intention to provide for Digital Terrestrial Television (DTT) and outlined her approach towards regulation of all digital platforms.
- 1.2 This Consultation Paper sets out the framework within which the Director intends to license and regulate DTT. The licences will issue under the Wireless Telegraphy Act, 1926, and, in conjunction with the cable and MMDS licences, will promote nationwide competition in the delivery of television programme services.
- 1.3 The Minister for Arts, Heritage, Gaeltacht and the Islands, Ms. Síle de Valera T.D., presented the Broadcasting Bill, 1999 to Dáil Eireann on 27 May, 1999. The Bill provides additional detail in relation to the regulation of digital broadcasting on all platforms, i.e. terrestrial broadcasting, cable/MMDS and satellite. The ODTR has had contact with the Department about the Bill. Appropriate amendments to the licensing regime will be made in the light of enacted legislation.

Why Digital?

- 1.4 Digital technology has been affecting our lives for a number of years. It is widely used in computers, telephone systems, compact and mini disk technology, photography and video. It is now intended that digital broadcasting would begin to replace the current means of transmitting television programmes. Within the next few years, most people will be able to access digital services via terrestrial means (by conventional aerial), cable, MMDS or satellite.
- 1.5 Digital technology, at its current stage of development, makes more efficient use of the available spectrum, by enabling up to five programme services to be compressed

into the space currently required to transmit one analogue service, all with the possibility of high quality sound and vision.

- 1.6 The introduction of digital technology in terrestrial television broadcasting offers the consumer a number of benefits, including an increase in the number of TV channels that can be transmitted and the possibility of new interactive multimedia applications.

Introduction of DTT

- 1.7 DTT is the replacement for the current analogue television transmission system. It is based on a group of common European Standards ratified by ETSI¹, IEC² and CENELEC³. These were arrived at by the co-operation of the companies and organisations involved in the DVB (Digital Video Broadcasting) group in Europe.

- 1.8 In Document No. ODTR 98/20, the Director outlined policy considerations in relation to broadcasting transmission platforms. Following from those, the relevant policy goals relating to the introduction of digital television include:

- Universal availability of national television services.
- Provision, as far as possible, of universal access to re-transmission of UK television services.
- Competitive development of communications infrastructure and multi-media services.
- Minimisation of disruption to the public as a result of any changes in transmission technologies, or spectrum use.

The pursuit of these objectives is constrained by the need to provide an environment in which services can be commercially viable.

- 1.9 Digital TV services may be provided by: -

- Digital Cable;
- Digital Multipoint Microwave Distribution System (MMDS);
- Digital Terrestrial Television (DTT);
- Digital Satellite.

¹ The European Technical Standards Institute

² The International Electrotechnical Commission

³ The European Committee for Electrotechnical Standardisation

- 1.10 No one transmission medium meets all the policy objectives set out above when considered alone. For instance, it may be considered that DTT provides a limited range of services compared with cable. However, DTT has potential to reach almost all of the population, compared with the somewhat less universal coverage of cable/MMDS and consumers should have a choice of supplier.
- 1.11 DTT has an important role, in conjunction with other digital platforms, in ensuring that digital television will be available at a comparable level to present analogue coverage, enhancing consumer choice and providing new value added services. It is expected that, using six multiplexes, between 24 and 30 channels will be provided. Using current technology, the picture quality will be impaired if more than 30 channels are carried.
- 1.12 Following the introduction of DTT, current services will be “simulcast” in digital and analogue modes for a transitional period. It is difficult to predict how long this transitional period will last, but the release of spectrum formerly used to provide analogue services could, when it happens, facilitate expansion of digital programme services, perhaps, or the provision of other services such as mobile telephony. A number of factors will need to be considered before a decision is made to fully “switch-off” analogue television services, including
- the speed at which digital services are made available by suppliers, i.e. the proportion of the population who are able to receive digital signals
 - the extent digital services are subscribed to by customers, i.e. the proportion of the population who have digital equipment in the home
 - the cost of digital equipment relative to consumers’ ability to pay
 - international level agreements and requirements
 - spectrum needs for other uses.

Q1.12a When, specifically, should analogue broadcasting cease, in your view?

Regarding the factors to be considered in deciding on an appropriate time for ending analogue services:

Q 1.12b Are the factors listed above appropriate? Sufficient? Specific enough –i.e. should a target level of coverage be set, such as 95% of the total population being able to receive a digital signal? If so, what levels would be appropriate, in your view?

Q 1.12c Please list any other factors which you feel should be considered, and the reasons for your views.

Considerations in licensing DTT

1.13 In licensing DTT, the Director is anxious to establish fair competition between competing platforms. The Wireless Telegraphy (Programme Services Distribution) Regulations 1999 (S.I. No. 73 of 1999) provided the regulatory framework for licensing digital cable and MMDS programme service distribution.

1.14 The Broadcasting Bill, as published, envisages the transfer to the designated company of the benefits of certain broadcasting and related licences which have been granted to RTE, including the licence which authorises the operation of the transmission network. As the designated company will have responsibility for the DTT transmission network in addition to the analogue network, the possibility of licensing DTT transmission through an amendment to the existing licence was considered. This option was rejected for various reasons which will be discussed later in this document at section 3.1, and the Director has decided that a separate licence, confined to DTT transmission activities, will be required.

1.15 Therefore, in order to clarify the processes involved in DTT, and to establish a suitable framework for future developments in digital delivery of services, the Director proposes to provide for two separate licences under the Wireless Telegraphy Act, 1926, i.e

- A Programme Services Multiplex Licence, which allows a multiplex provider to combine broadcasters' digital signals into a programme service multiplex

- A Transmission Licence, which allows a DTT transmission service provider to modulate the programme service multiplex and to transmit it in the television broadcasting bands.

2 Programme Services Multiplex Licence

- 2.1 The licence to be issued by the Director will authorise the operation of six multiplexes. Activities which will be authorised include encoding audio and video signals, combining these with programme associated data, the operation of a statistical multiplexer and the operation of a conditional access system.
- 2.2 As described in Section 1, the Director intends to provide for a multiplex licence which will include the features set out in this section. The Director also intends that the multiplex licence would provide the framework for any future licensing of regional or local multiplexes.
- 2.3 The purpose of the multiplex licence is primarily to provide for the preparation of television programme services for transmission. Programme services which may be distributed are:
- (a) television broadcasts that originate in another Member State of the European Communities and that fall within the fields co-ordinated by Council Directive 89/552/EEC of 3 October 1989 as amended by Council Directive 97/36/EEC of 30 June 1997;
 - (b) television programme services that originate in a state (other than a Member State of the European Communities) being a party to the European Convention on Transfrontier Television agreed at Strasbourg on the 5th day of May 1989 and that complies with the terms of the Convention, and
 - (c) programme services that originate in the State, authorised, for the time being, by law (currently RTE1, Network 2, TG4, and TV3).
- 2.4 In order to provide services on a wide basis, the licence shall prohibit the licensee from refusing to supply services to a member of the public if, in the opinion of the Director, the refusal is unreasonable.
- 2.5 Prior approval and relevant licences must be obtained from the Director for any additional services, other than those included in the licence, that are included within a

programme service multiplex, e.g. interactive broadcast services. It should be noted that the scope of the licence will not extend to telecommunications services, and any new services to be offered will be subject to the Director's prior approval, in accordance with relevant licensing requirements. It is not intended to be restrictive in allowing new services, but the terms of the EU and national law, on licensing telecommunications in particular, must be respected.

Licence Duration

2.6 The licence period will be set so as to provide a balance between the need for infrastructure investment, for a return on that investment and for ensuring continuity of service to the consumer. The Director proposes to provide for a licence period of fifteen years.

Q 2.6a Do you consider that other factors should be taken into account in deciding licence duration?

Q 2.6b Do you consider that the licence period is appropriate? If not, how long should it be for? Please state the reason for your answer.

Licence Fees

2.7 The licensee will be required to pay fees calculated on the basis of 3.5% of gross revenue arising from the provision of licensed services. The licence fee will be payable on a quarterly basis. The calculation of the fee and the timing of payments is on the same basis as the Director provided for in the case of digital cable and MMDS. In the interests of maintaining fair competition between competing platforms, it is proposed to maintain that approach.

Q. 2.7 Do you consider the proposed licence fee to be reasonable? If not, please state your reasons.

Interest on late payments

2.8 If a fee, or any part thereof, payable by the licensee is not paid within 7 days of the date on which it falls due, then interest shall be payable. In common with the

provisions applying to digital cable and MMDS licences, the interest rate shall be the rate specified for the time being in section 26 of the Debtors (Ireland) Act, 1840.

Technical Standards

2.9 Technical conditions, which the Director intends to attach to the licence, are included as Appendix 3 to this document. These conditions will ensure that the appropriate technical standards are adopted.

Key Issues

2.10 A summary of the key issues in the technical conditions is as follows:

- The minimum encoding standard for video is specified to allow for the introduction of High Definition television (HDTV).
- The minimum picture quality for original source programming has been set at a standard above that normally available in Ireland to date. This has been done to ensure a higher standard of service than currently provided.
- The ODTR will re-examine the encoding standards as technology advances.
- The minimum audio quality has been set to provide at least as good a service as is available by the current NICAM service. However, the licensee may specify the use of surround sound, if desired.
- A minimum set of Programme Specific Information has been specified to ensure that services, such as electronic programme guides, function correctly.

Q 2.10 Do you agree with the technical conditions? If not, please indicate which sections of the technical conditions you disagree with, if any, your reasons for disagreeing and your proposed solution.

Inclusion of non programme data

2.11 The Digital Video Broadcasting (DVB) standards are primarily intended to allow the transmission of digitised video. Telecommunication services are governed by EU and national legislation. In the light of these, the Director considers that priority has to be given to the transmission of programme services under this licence.

2.12 However, it would be appropriate, and useful, to provide for capacity for the carriage of advanced data services in addition to programme services. These would best be stated in a flexible formulation. Bearing in mind the constraints imposed by international spectrum obligations as decided at the World Radio Conferences and by the EU licensing directive, the Director proposes to specify the residual capacity of the multiplex which may be used for the delivery of non-programme services. Accordingly, non-programme services will be restricted to an aggregated maximum of 10% over a 24-hour period, subject to a maximum of 15% at any one time. All programme services must still be provided at the minimum technical standards, as specified in the Technical Conditions attached as Appendix 4 to this document.

Q 2.12 Do you agree with the proposed arrangements for capacity that may be used for non-programme services? If not, please state your reasons and suggest any alternative approach which will not conflict with the legal obligations of the ODTR.

Conditional Access

2.13 Conditional Access is the means by which a viewer can access services provided by DTT. This involves the use of a “smart card” containing the relevant authorisation, which is inserted into the set-top box, or into an integrated digital television (iDTV). Where a consumer wishes to use an iDTV, the licensee must provide a Common Interface (CI) module capable of decoding their service. The conditional access technical conditions are appended to this document as Appendix 5 and will be a part of the licence.

Rate Regulation

2.14 The pricing of basic services on cable and MMDS systems is subject to the prior written approval of the Director. The basis for retaining price control of those platforms arises from the fact that the licences granted confer a period of exclusivity during which no similar platform may be licensed in the relevant areas. After the expiration of the period of exclusivity, the prior written consent of the Director shall no longer be required and the Director’s powers in relation to regulation of prices shall be restricted to investigation and subsequent direction.

- 2.15 In relation to DTT, it is not considered that detailed price control is required, arising from the fact that the platform has not been established as yet and does not have any market presence. It is also considered that, in the context of DTT competing with both cable and MMDS systems, the price control exercised in relation to those systems will, in effect, determine the upper limit at which DTT may be priced.
- 2.16 The Director will require that a common price for the service will apply, irrespective of location. The Director does not propose to require prior written approval for prices, but will retain the power of investigation and issue binding directions in relation to prices, if necessary.
- 2.17 The licensee will also be required to publish the prices, terms and conditions for distributing licensed programme services and for installing, or providing, the means necessary to receive the licensed programme services. Any changes to such prices, terms and conditions must also be published.

Q 2.17 Do you agree with the above provisions in relation to rate regulation? If you do not, please give reasons and suggest an alternative approach.

Other authorisations and responsibilities

- 2.18 The licensee will be required to obtain all other authorisations necessary, and/or fulfil other obligations in respect of the services which it plans to provide. These matters will not be covered by the ODTR licensing process and the onus will be on the licensee to obtain all such approvals, consents, licences, permissions, and authorisations required in connection with the provision of the service.
- 2.19 The licensee shall not engage in any practice, or enter into any arrangement, that has the object, or effect, of preventing, restricting or distorting competition in the distribution of licensed programme services.

Breach of Licence Terms

- 2.20 In the event of failure by the licensee to observe the conditions of the licence, the Director may impose a range of sanctions proportionate to the nature of the breach,

the ultimate sanction being the revocation of the licence. These sanctions will be similar to those provided for in relation to cable and MMDS licences.

Variation of Licence

2.21 At any time, the Director may amend, or vary, the terms of the licence, following such public consultation as she deems appropriate, provided that the licensee is given reasonable opportunity to make representations regarding the proposed amendment or variation and that the Director has considered those representations.

Access Terms

2.22 The licensee will be required to ensure that its terms for providing services to broadcasters do not contain any provisions which would impose unfair conditions on the broadcasters.

Financial Terms

2.23 The Director will reserve the right to investigate charges imposed by the licensee on broadcasters and to direct that they be modified, if necessary.

Other Conditions

2.24 In the interests of providing transparency in the operation of licensed services, and in common with the provisions in relation to cable and MMDS licences, other conditions proposed include:-

Accounting Separation

The licensee will be required to maintain separate accounts for its activities under the licence, to inhibit cross-subsidisation between its licensed operations and other operations.

Technical Audit

The licensee will be obliged to comply with such requests for information as the Director may deem necessary in this regard within 60 days of such a request. The technical audit of the system must be carried out by a person holding such qualifications as may be specified by the Director.

Provision of Information

The licensee will be required to provide information to the Director on a regular basis, in order to demonstrate compliance with the licence terms and to provide the Director with information as to the extent of the licensee's operations.

Complaint handling

In line with similar conditions in the cable/MMDS regulations, the licensee will be required to implement an appropriate code of practice for handling complaints.

Change of ownership

The licensee by itself, or through its Board of Directors, shall not act to give effect to any change in the beneficial or legal ownership of shares such as would give rise to a change in control of the licensee, or a material change in the ability of the licensee to perform the multiplex services, without the prior consent of the Director (which shall not be unreasonably withheld).

Assignment of licence

2.25 The licensee shall not, without the prior consent in writing of the Director, assign the licence, or any of the powers, duties or functions conferred by it, or lease, or let, the licence, or otherwise transfer to another person the benefits of the licence.

3. Digital Terrestrial Transmission Licence

- 3.1 The Broadcasting Bill, as published, envisages the transfer to the designated company of the benefits of certain broadcasting and related licences which have been granted to RTE. Included in this category is the licence granted to RTE under the Broadcasting Act, 1960, which authorises the operation of its transmission network. As the designated company will have responsibility for the DTT transmission network and the analogue network, the possibility of licensing DTT transmission through an amendment to the existing licence was considered. The Director has decided that this would be inappropriate, in view of the marked differences in the manner in which both networks will operate, particularly in relation to the interface between the transmission function and both broadcasters and viewers. Because of the differences between the networks, a number of licence conditions are considered necessary in the context of digital transmissions which would be superfluous in the case of the analogue network. Accordingly, the Director has decided that a separate licence, confined to DTT transmission activities, will be required.
- 3.2 The digital transmission licence will authorise the designated company to modulate the programme service multiplex and to transmit it in the TV broadcasting bands. The technical characteristics of transmitters will be set out in a schedule to the licence and may be amended from time to time.
- 3.3 Technical conditions, which will apply to the digital transmission licence, are set out in Appendix 4 and may be amended from time to time by the Director.

Responses to the Guard Interval Consultation

- 3.4 In the consultation paper “Selection of Appropriate Guard Interval Irish Digital Terrestrial Television” (Document No. ODTR 99/30), the Director proposed that a guard interval of 1/16th be used for networks with some small area localised Single Frequency Networks (SFNs), and that a guard interval of 1/8th be used for networks with large area SFNs.

- 3.5 There were two respondents to the consultation, both of whom suggested that a guard interval of $1/32^{\text{nd}}$ would be adequate. RTE, in their response, did not favour widespread use of SFNs on cost grounds. They made a case for the operation of small area SFNs, with a guard interval of $1/32^{\text{nd}}$. AIB Corporate Finance, advisors to the Project Management Group established by the Government to provide advice in relation to the establishment of a DTT transmission entity, suggested that SFNs are not planned in the first phase of transmission stations for DTT and that, if at later stage SFNs were implemented, the system could change to a different guard interval. Both respondents indicated SFNs are more expensive to implement.
- 3.6 The ODTR has reviewed the proposal, but considers that there will not be enough spectrum to provide dedicated channels to each transposer in areas of the country requiring a large number of analogue television transposers. SFNs could be used to best advantage in such areas. It is accepted that an SFN of minor transposers may not be cost effective. However, a further network option of co-channel non-synchronous transmitters exists. Options being examined would include co-channel operation with the main transmitter or major transposers, operation on a channel set shared by all minor transposers, or upgrade of a minor transposer to major transposer in an SFN.
- 3.7 Accordingly, the Director proposes to continue with DTT planning on the basis of a single channel set for the major transposers in any given region, with channels for minor transposers selected so as to provide coverage based on the efficient use of spectrum. In order to allow for the flexibility to operate SFNs, the Director intends that future spectrum planning be undertaken, based on a guard interval of $1/8^{\text{th}}$. This could be reviewed, if it were demonstrated that SFNs with a guard interval of $1/16^{\text{th}}$ could operate successfully in the same areas. This approach is reflected in the technical conditions set out in Appendix 4.

3.8 The transmission licence will also provide for a number of conditions designed to ensure that activities conducted under the licence are performed in an open and transparent fashion and on non-discriminatory terms. The following conditions are proposed:-

Accounting Separation

The licensee will be required to maintain separate accounts for its activities under the licence, to ensure transparency in its operations and to inhibit cross-subsidisation between its licensed operations and other operations.

Technical Audit

The licensee will be obliged to comply with such requests for information as the Director may deem necessary in this regard within 60 days of such a request. The technical audit of the system must be carried out by a person holding such qualifications as may be specified by the Director.

Access and Financial Terms

The licensee will be required to ensure that its terms for providing transmission services to the programme service multiplex licensee do not contain any provisions which, if a programme service multiplex licensee were a company other than the designated company, would impose unfair conditions. In the event of future additional regional or local multiplexes, this provision would ensure equal treatment of all multiplex operators, irrespective of ownership.

The Director intends to examine the issue of regulating transmission charges. The Director considers that charges should be regulated on the basis of long run incremental costs, plus a reasonable rate of return.

The Director envisages that any income derived from activities such as infrastructure sharing for telecoms purposes on the sites covered by this licence will not be subject to regulation under this licence but that, in addition to direct costs, an element of shared costs would be apportioned to such activities.

Q 3.8 Do you agree with the proposal to regulate transmission charges based on long run incremental costs plus a reasonable rate of return? If you do not agree, please explain why and suggest an alternative basis.

Spectrum Usage

The licensee shall not use any frequency channels for the purpose of the system, other than frequency channels approved of by the Director.

Provision of Information

The licensee will be required to provide information to the Director on a regular basis, in order to demonstrate compliance with the licence terms, and to provide the Director with information as to the extent of the licensee's operations.

3.9 Other provisions in relation to licences will include:

Licence Duration:

The Director intends, in order to facilitate business planning and to give regulatory certainty, that the programme services multiplex licence and the digital terrestrial transmission licence to be granted would be coterminous. It should be remembered, however, that Ireland's international obligations in relation to spectrum usage are subject to ongoing review in fora such as the World Radio Conference and the E.U. Accordingly, the terms of the licence which the Director intends to grant may need to be amended from time to time to reflect such international obligations, or in the interests of spectrum management generally. The Director will also reserve the right to amend any other provision of a licence where it appears to her to be appropriate to do so (see paragraph on "Variation of Licence").

Q 3.9a Do you consider that other factors should be taken into account in deciding licence duration?

Q 3.9b How long should the licence period be for, in your view? Please state the reasons for your answer.

Rollout Obligations

In the interests of effective use of frequency spectrum, the Director intends to establish rollout obligations as a condition of the licence.

The proposed rollout obligations will require that Free to Air and basic services will be accessible by the following percentages of population:-

Launch	65% of population
After 1 year	85% of population
After 2 years	95% of population
After 4 years	99% of population

The rollout obligations will require the licensee to provide, by Year 4, for the universal availability of multichannel television services. It is recognised that universal service cannot be achieved initially, and the Director has reflected this when setting the rollout obligation above.

It should be noted that the milestones will depend, in part, on international co-ordination of multiplex frequencies.

Breach of Licence Terms

The Director reserves the right to terminate, suspend, or reduce the term of the licence in the case of non-compliance with the provisions of the licence, consistent with the terms of the digital cable/MMDS licence regulations.

Variation of licence

At any time, the Director may amend, or vary, the terms of the licence, following such public consultation as she deems appropriate, provided that the licensee is given reasonable opportunity to make representations regarding the proposed amendment or variation and that the Director has considered those representations.

Change of ownership

The licensee by itself, or through its Board of Directors, shall not act to give effect to any change in the beneficial or legal ownership of shares such as would give rise to a change in control of the licensee, or a material change in the ability of the licensee to

perform the transmission services, without the prior consent of the Director (which shall not be unreasonably withheld).

Other authorisations and responsibilities

The licensee shall not, without the prior consent in writing of the Director, assign the licence, or any of the powers, duties or functions conferred by it, or lease, or let, the licence, or otherwise transfer to another person the benefits of the licence. The licensee will be required to obtain all other authorisations necessary, and/or fulfil other obligations in respect of the services which it plans to provide. These matters will not be covered by the ODTR licensing process and the onus will be on the licensee to obtain all such approvals, consents, licences, permissions, and authorisations required in connection with the provision of the service.

Question 3.9.c

Do you agree with the above conditions? If not, please state your reasons.

Question 3.9.d

Do you consider that any other conditions should apply? If so, please specify and give your reasons.

4 Submitting comments

- 4.1 The consultation period will run to 5 November, 1999, during which the Director welcomes written comments on any of the issues raised in this paper. Having analysed and considered the comments received, the ODTR will review the issues relating to the licensing of DTT and will publish a report on the consultation. In order to promote further openness and transparency, the ODTR will publish the names of all respondents to this consultation.
- 4.2 All comments are welcome, but it would make the task of analysing responses easier if comments were referenced to the relevant question numbers from this document. The ODTR will summarise the comments received in a report on the consultation. Unless marked confidential, the ODTR will make copies of the comments available for public inspection at its offices. If possible, comments should be submitted in electronic form, by email or on diskette.
- 4.3 All responses pursuant to this consultation should be clearly marked "Reference: Submission re. ODTR 99/57 and sent by post, facsimile or e-mail to:

Mr. Stephen Blake
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Ph: +353-1-804.9692 Fax: +353-1-804.9671 Email: blakes@odtr.ie

to arrive on, or before, 5.00 p.m. 5 November, 1999.

- 4.4 The Director regrets that she will be unable to enter into correspondence with persons contributing comments on this consultation paper.