



Office of the Director of
**Telecommunications
Regulation**

Extending Choice...
**Opening the market for Fixed Wireless Point to
Multi-point Access services**

Response to the Consultation

Document No. ODTR 98/61

4 DECEMBER, 1998

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**Response by the Director to the
Consultation Document
"Opening the market for Fixed Wireless Point to
Multi-point Access services"**

1. Foreword by the Director

I would like to thank all those who responded to the consultation on fixed wireless point to multi-point access (FWPMA). My Office has received a total of 28 responses, representing among others, potential operators, end-users and equipment manufacturers. This has provided a broad range of constructive comment upon which we have developed our proposals.

This paper highlights the main proposals arising from our review of the responses to the consultation.

The proposals described in this paper are for guidance only and will be finalised in the tender documents to be released early next year.

Etain Doyle

Director of Telecommunications Regulation

2. Introduction

Fixed Wireless Point to Multi-Point Access (FWPMA) services, (sometimes described as wireless local loop services), offer telecommunications operators unique opportunities for low cost entry to the market and rapid deployment. They also avoid much of the social disruption inevitable when laying new cable or optical fibre for access. Such services can provide the vital 'missing link' of local distribution in the development of comprehensive telecommunications competition. The Director believes that FWPMA services will have a vital role in the Ireland's response to both the opportunities and threats posed by the burgeoning growth of the Internet and electronic commerce. Universal access to high quality communications will be a prerequisite for success in the Information Age.

This paper is the ODTR's response to a consultation process based on a Consultation Paper (ODTR98/32 - 27 August, 1998), issued in the context of the full liberalisation of the telecommunications market on 1st December 1998. The Consultation Paper sought views on a proposed framework for the early licensing and introduction of FWPMA services.

This paper is not a legal document and does not constitute legal, commercial, or technical advice. The Director is not bound by it. The response is without prejudice to the legal position of the Director or her rights and duties under relevant legislation and does not form part of any formal tender process.

3. Structure of the paper

This paper is structured in a number of main sections as follows:

- section five outlines the two market segments for which competitive licences will be offered;
- section six identifies the general principles which are likely to apply to all FWPMA service licences;
- section seven describes the nature of the licences to be offered by competition in each segment; and
- section eight outlines the licensing process, highlighting key areas where information is likely to be sought from applicants.

4. Consultation procedures and timetable

The Director appreciates the range of responses received and has considered all the issues raised in preparing this paper. A short summary of the responses, focusing on those areas not explicitly addressed in the proposals made here is provided at Appendix One. A list of the respondents is provided at Appendix Two. This phase of the consultation process is now closed.

5. Segmentation of the fixed wireless access services market

Having considered the views expressed in the consultation process, it is proposed to segment the market into two groups based on narrowband and broadband services. The segmentation to be used is based on two guiding principles:

- Making the optimum use of the frequency bands available from the point of view of efficiency and effectiveness
- The desire to facilitate access to advanced telecommunications and ‘Information Society’ facilities throughout both the rural and urban areas of the State.

In the narrowband licence a basic rate (144 kbits/sec) ISDN interface to the end user must be included among the available service offerings at a competitive price. Lower bit rates may be included as appropriate to meet market demand. There will be no limit on the maximum bit rate to be made available other than the maximum rate inherent in the quantity of spectrum allocated to the licensee.

In the broadband licence, not less than a 2 Mbits/s interface shall be presented to the end user. As for the narrowband segment, there will be no limit on the maximum bit rate to be made available other than the maximum rate inherent in the quantity of spectrum allocated to the licensee.

6. General principles of licensing to be applied

Each licensee will require two types of licence: a telecommunications service licence according to Section 111 of the Postal and Telecommunications Services Act, 1983, as amended; and the relevant licences issued under the Wireless Telegraphy Acts, 1926 to 1988.

6.1 Number of licences to be issued

In the interests of ensuring the efficient use of radio spectrum, the Director proposes to issue a maximum of four broadband licences and a maximum of four narrowband licences in the competition at this time.

6.2 Standard licence structure and terms

6.2.1 Licence duration

Taking account of the comments received, the service licence will be valid for a period of ten years subject to the licence conditions and shall then expire. Upon the cessation of the Licence (whether by expiration or revocation), the Licensee shall not be automatically entitled to the grant of another licence.

In the context of the Director’s ongoing responsibility to ensure the efficient and effective management of the spectrum, a review of spectrum use, technology and market development will be carried out after a period of five years from issue for each licensee.

On the basis of the findings of such a review, the Director may take such measures as she considers appropriate, including without limitation, the amendment, suspension or revocation of the licence.

6.2.2 Coverage and roll out timetable

The Director places great importance on both the early introduction of services and their rapid deployment. The Director does not wish to be unnecessarily prescriptive concerning the form of the roll out and coverage requirements.

However, coverage and roll out will be among the evaluation criteria. During the tender evaluation process, the offerings proposed by the applicant will be considered and may be included in the licence conditions. Provision will be made to ensure the appropriate and early use of spectrum assigned to licensees which may include the use of performance guarantees and penalties in the event of non-compliance.

6.3 Equipment standards

The Director favours a light handed approach to regulation and would thus prefer, within the limits imposed by European legislation¹, to remain neutral on the technologies that might be deployed to provide FWPMA services. Licensees could choose, for example, to operate different technologies adjacent to each other within the same overall spectrum allocation provided that a significant degradation in spectral efficiency did not result. Guard bands will be required between licensees to minimise compatibility issues arising from users occupying adjacent spectrum. Any guard bands that are required will have to come from the spectrum allocated to the licensees.

6.4 Code or sequence sharing

In view of the comments received, the Director does not propose to mandate code or sequence sharing.

6.5 Applying geographic limits to services

All licences will be nation-wide, cf. section 7.2.

6.6 Fee structure envisaged

The fee structure has not yet been determined. It will be outlined in the tender documents, but is likely to be based on: the administrative cost of running the competitions, the likely costs of ongoing regulation of the proposed licences and fees designed to ensure the optimum use of the quantity and quality of spectrum allocated.

6.7 Managing spectrum as services develop

As new markets for FWPMA services develop the Director will, at regular intervals, review the number of licences issued and may, where appropriate and having regard to the need to maximise benefits to end-users and to encourage development of competition, increase the number of licences in issue or alter the bandwidth available to

¹ The European Telecommunications Standards Institute (ETSI) establishes standards for telecommunications equipment and services within the European Union. It is not open to Member States to licence services using standards conflicting with those published by ETSI, or in areas where ETSI has a programme of standardisation in progress.

licensees.

Among the factors which may be taken into account by the Director in the future in this regard will be the potential increasing viability of reuse of spectrum arising out of improvements in the spectral efficiency of radio systems and reduction in the cost of equipment.

The Director has carried out an analysis of the spectrum available for allocation to FWPMA services and, based on this analysis, proposes to make spectrum allocations as set out in section seven of this document. These allocations are proposed with a view to ensuring efficient use of radio frequencies.

7. Licences to be offered

7.1 Broadband licences

At this stage the Director intends to issue up to four national licences, each comprising 2x56 MHz, in the 26 GHz band. A further 2x56 MHz may be made available to each broadband licensee at a later date where, subject to commercial demand, the Director considers that this would be consistent with the effective and efficient management of the radio spectrum. The use of the 28 GHz band for FWPMA services cannot be progressed until sharing issues with the Satellite service have been resolved.

7.2 Narrowband licences in the 2.0, 2.4, 3.5 and 10.5 GHz bands

The Director proposes to issue up to four narrowband licences as follows:

- i) two combined licences, each with 2x25 MHz spectrum in the 3.5 GHz band combined with 2x10 MHz within the band 2.0-2.3 GHz²;
- ii) one licence of 60 MHz to operate between 2423 and 2483 MHz³; and
- iii) one licence of 2x30 MHz in the 10.5 GHz band⁴.

In the 3.5GHz band and below, the Director wishes to prioritise the roll out of services in rural areas and will impose conditions to this effect on the licensees. This is to ensure efficient and effective use of spectrum in this frequency range. For the 2.4 GHz licence, the Director will wish to see clear evidence of the technical viability and sustainability of the services proposed.

No licences will be granted in the 2.3 – 2.4 GHz band for FWPMA at present due to other potential uses.

² The spectrum in this band is currently used by a small number of fixed point to point links. These links will be removed in the near future.

³ This licence would require the use of technology which does not need split spectrum and is robust against the potential high level of interference from other users in this ISM band.

⁴ The 10.5 GHz band is shared with a number of other uses including low power devices, radars and the amateur service.

8. Licensing process proposed

8.1 Competition context

The Director will hold two separate competitions, one for broadband licences and one for narrowband licences.

In each case a standard process will be established comprising, inter alia,

- publishing details of the tender conditions and of the competition terms (the so-called tender documents);
- shortly after the publication, an information meeting will be held and all interested parties are welcome to attend;
- the potential applicants will be given the opportunity to pose written questions about the tender document and the competition before the submission of the applications. Answers to these questions will be distributed to all interested parties;
- applications are to be delivered to the ODTR;
- ODTR will evaluate the applications together with Andersen Management International of Copenhagen;
- awarding licences to the highest ranked applications subject to agreement on the licence conditions.

The full process is likely to extend over four to five months for both the broadband and the narrowband licence type, but it is expected that the competitions will be held to some degree in parallel.

It is expected that the tender document pertaining to the broadband and narrowband licences will be released in January/February 1999.

The Director does not wish to restrict applications from interested parties, but wishes to ensure that the assignment of new licences promotes effective competition. There are likely to be restrictions on connected undertakings acquiring more than one licence in each competition.

Applicants may apply for all types of narrowband licence and should state their preference.

The Director reserves the right to determine the number of licences to be awarded arising from these competitions consistent with the efficient and effective use of the radio spectrum.

8.2 Structure of the competitions

The tender documents will describe the tender procedure and the application process. Furthermore, the tender documents will describe the required structure of the applications and provide guidance for preparing the applications.

The evaluation phase of each competition will be conducted in two stages, namely an admittance procedure and the evaluation itself.

The tender documents will comprise a number of formal requirements which must be fulfilled in order to pass on to the evaluation phase, such as, but not limited to:

- correct and timely delivery of the application;
- attachment of statements, such as the period for which the application is valid;
- presentation of a business case in compliance with the structure laid down in the tender document.

Only applications that fulfil the minimum requirements will be further evaluated.

8.3 Key decision criteria

Eligible applications will be subjected to a comparative evaluation on the basis of evaluation criteria laid down in the tender document, including but not limited to:

- marketing criteria (such as the impact on end-user tariffs, the development of the Irish market, and the proposed contribution to the development of services);
- technical criteria (such as coverage, roll out, site acquisition, quality of service, spectrum efficiency, etc.);
- financial and management criteria (such as solidity and experience);
- performance criteria (such as performance guarantees).

9. Implications for existing operators

The Director's proposals offer scope for:

- those who have, or plan to install, digital trunk capacity between towns and cities to add local distribution providing new opportunities for end to end service management and delivery; and
- subject to success in the narrowband competition, Telecom Eireann to redevelop and extend their important RURTEL service to rural communities avoiding the prospect of growing interference from licence exempt services.

10. Consequences for other services

10.1 Broadcast Television Services

It is not intended that the FWPMA licenses will be deployed for the delivery of broadcast television services.

10.2 Amateur service

The Director's decision to use spectrum in the 10.5 GHz band for one operator, will impact the secondary allocation of spectrum between 10 and 10.5 GHz for experimenters operating in the Amateur service.

Consideration will be given to improving the status of amateurs in a portion of this band, whilst the overall secondary allocation to the amateur service will be reduced.

10.3 Use of higher bands

The use of the higher bands (such as 40 GHz) will not form part of this FWPMA competition.

Appendix One – Short summary of responses

A1.1 Market segmentation

From the responses received, a consensus for change from the position proposed in the consultation document on market segmentation was clear in three areas:

Recognising the increasing importance of bandwidth on demand

Allowing flexibility on instantaneous service bit rate, to reflect the use of packet techniques and in particular ATM.

Reducing the number of segments

Reducing the segmentation from three to two, (thus reducing the number of competitions), with a broadband services segment (sustained bit rates of 2 Mbits/sec and above) and a narrow band segment (sustained bit rates of 144 kbits/sec and above).

Offering only national licences

Whilst it was never the Director's intention to stop the deployment of broadband services outside urban centres and 2 Mbits/sec service beyond rural towns, this was evidently misunderstood by some respondents. It is however appropriate to deploy spectrum optimised for rural coverage (e.g. 2 and 2.4 GHz) preferentially in those areas.

A1.2 Amount of spectrum initially allocated

The Director has a duty to seek the most efficient use of the scarce spectrum resource. The consensus of responses however sought stronger assurances on the availability of spectrum to sustain long-term commercial service.

Broadband service

In accordance with CEPT practice, and as suggested by several respondents, the Director proposes to allocate 26 GHz as the primary band with 28 GHz held in reserve subject to sharing studies with satellite services. The amount of spectrum potentially available to each licensee has been doubled.

Narrowband service

The Director has sought to make the maximum spectrum available, subject to realistic availability of equipment for operators to deploy in the designated allocations. Recent developments in CEPT, seeking to identify future expansion spectrum for third generation mobile services, make the use of the 2.3 GHz band inappropriate. New paired spectrum has been identified in the 2 GHz band; however a small number of fixed point to point links are required to be moved to adjacent spectrum in order to make this available.

A1.3 Licence duration and terms

There was a strong consensus in favour of a licence term between eight and fifteen years rather than the five years originally proposed. The Director has accepted this point, extending the proposed duration to ten years, subject to the need to remain compliant with spectrum management decisions made at the European and Global level.

A1.4 Sharing of masts and facilities

Most respondents who expressed a view on this point favoured sharing in principle but highlighted a range of challenges to successful implementation. This subject will be addressed again in the light of the forthcoming legislation on telecommunications infrastructure.

A1.5 Universal Service Obligation

Nearly all respondents who commented did not desire a link between USO and the issuing of FWPMA licences, in order not to distort the delivery of services in the most cost effective manner responsive to market demands. The issue of USO is under review.

Appendix Two – List of respondents

Company	Address
Telecom Eireann	St Stephen's Green West Dublin 2
ATS Broadcast Information Services	No. 3 Sandyford Office Park Blackthorn Avenue Dublin 18
Eircell Ltd	Unit 9 Richview Office Park Clonskeagh Dublin 14
Esat Telecommunications Ltd	The Malt House Grand Canal Quay Dublin 2
WorldCom (IRL) Ltd	TCL Telecom 30 Sir John Rogerson's Quay Dublin 2
Ocean Communications Ltd (formally Foldennig Ltd)	16 St Stephen's Green Dublin 2
NTL (UK) Group, Inc.	Bristol House 1 Lakeside Road Farnborough Hampshire GU14 6XP England
Formus Communications	Europe B.V. Stureplan 4C, 4 tr, S-114 35 Stockholm, Sweden.

Highway One Holdings Ltd.,	7 Oasis Park, Eynsham, Oxford, Oxon OX8 1TP, England.
Kilroys Solicitors,	69 Lower Leeson Street, Dublin 2.
People Finder	102 Slaney Road, Dublin Industrial Estate, Glasnevin, Dublin 11.
European Access Providers Ltd.,	168 Walkinstown Road, Dublin 12.
Mercury Engineering Ltd.	Mercury House, Sandyford Industrial Estate, Foxrock, Dublin 18.
TeleSource Corporation Ltd.,	Moyne Park, Tuam, Co. Galway.
Cable Management Ireland Ltd.,	70 Capel Street, Dublin 1.
Cablelink Ltd.,	10 Pembroke Place Ballsbridge Dublin 4
Irish Multichannel	C/o Princess Holdings Corporate House Mungret St. Limerick
Nortel	Maidenhead Office Park, Westacott Way, Maidenhead, Berkshire, England. SL6 EQH.

Alcatel Telecom	11, Adelaide Road, Dublin 2.
Lucent Technologies,	Europa House, The Southwood Crescent, Farnborough, Hampshire GU14 ONR, United Kingdom.
Technico Ltd.	162 Clontarf Road, Dublin 3.
Siemens	8 Raglan Road, Dublin 4.
Mr. M. Healy	1 Mather Road North, Mount Merrion, Co. Dublin.
Irish Radio Transmitters Society	P.O. Box 462, Dublin 9.
Western Development Commission,	Pound Street, Ballaghaderreen, Co. Roscommon.
Wireless Communications Association International	1140 Connecticut Avenue, NW Suite 810 Washington, DC 2003 USA
IBM Ireland Ltd	2, Burlington Road Dublin 4
Information Society Commission	An Comisiun um Scochai an Eolais, State Apartments, Dublin Castle, Dublin 2.