



Commission for
Communications Regulation

Information Notice

3.5 GHz Local Area Fixed Wireless Access: Response to Expressions of Interest and Planned Approach to Licensing

Document No:	03/92
Date:	30 July 2003

An Coimisiún um Rialáil Cumarsáide

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Contents

Foreword.....	2
1 Introduction.....	3
2 Responses to Request for Expressions of Interest	5
2.1 Scope of Information Requested.....	5
2.2 Overview of Responses.....	5
2.2.1 Type of services	6
2.2.2 Amount of Spectrum.....	6
2.2.3 Type of Equipment / Technical Characteristics of System.....	6
2.2.4 Proposed Network Architecture.....	6
2.2.5 Location of Base Stations and Coverage Area	7
3 Proposed Approach to Licensing FWALA services in the 3.5 GHz band.....	7
3.1 Introduction.....	7
3.2 Minimum Admittance Criteria.....	8
3.3 Competitive Selection Procedure.....	9
3.4 Fees for Licences	10
4 Next Steps	11

Foreword

This Information Notice provides an update on ComReg's proposed introduction of a licensing scheme for fixed wireless access local area (FWALA) services in the 3.5 GHz band. The Commission was encouraged by the comments made and the enthusiastic response from potential operators to the recent request for Expressions of Interest in the provision of 3.5 GHz FWALA services in this band which was published on 19 March 2003. In consideration of these responses and in view of the spectrum made available following the expiration of Chorus Communications' Fixed Wireless Point to Multipoint Access (FWPMA) Narrowband licence, a licensing scheme for this band will be introduced on 11 August 2003. This document provides an overview of the responses received to the request for expressions of interest and further information on ComReg's proposed licensing scheme in this band, in order to assist potential applicants in developing their submissions when the licensing scheme is launched.

Etain Doyle

Chairperson

Commission for Communications Regulation

1 Introduction

Two FWPMA licences, permitting operation in the 3.5 GHz band, were awarded in 1999 to eircom and Princes Holdings, now trading as Chorus Communications Ltd. Each operator was originally licensed a paired spectrum block of 2 x 25 MHz.

Following an extended review of the FWPMA licences and the conditions attached to these licences it became apparent that some of the conditions in the licences were not being complied with.

The Decision to amend eircom's licence was published in ComReg Document 03/30. In summary eircom requested and were granted amendments to their licence. These amendments reflected technological advances and facilitated FWPMA coverage and rollout.

In December of 2002, in view of the serious breaches of licence conditions and undertakings, ComReg notified Chorus Communications Ltd that it intended to amend Part 5 of the company's General Telecommunications Licence with effect from 15 June 2003. The consequence of the notified amendment was that the company's licence to provide FWPMA services at 3.5 GHz expired on that date. Chorus availed of its statutory right to appeal the decision to the High Court. The appeal was withdrawn on 25 July 2003.

On 26 March 2003, ComReg issued a request for expressions of interest in the provision of broadband fixed wireless access local area (FWALA) services using spectrum in the 3.5 GHz frequency band¹.

ComReg has now considered the responses to the request for expressions of interest and has developed in broad terms its proposed licensing approach in the light of those responses. Following withdrawal of the Chorus appeal ComReg intends to proceed with the FWALA licensing scheme. This document provides an overview of the responses received to the request for expressions of interest and describes the proposed licensing approach including the selection criteria.

¹ ComReg document 03/32, "Request for Expressions of Interest – 3.5 GHz Local Area Licences for Wireless Broadband"

3.5 GHz Fixed Wireless Access Local Area

The proposed 3.5 GHz FWALA scheme complements the recent ComReg initiative to license FWALA services in the 10.5 GHz and 26 GHz bands. Although the latter two bands have advantages in terms of the amount of spectrum available and hence the capacity to offer broadband services, ComReg recognises that the 3.5 GHz band provides the benefit of lower equipment costs and more favourable coverage, especially in suburban or rural areas. This makes the band particularly attractive for the delivery of broadband FWALA services in the short to medium term. ComReg is reviewing spectrum availability for the scheme and intends to publish details of the spectrum available with the invitation to submit applications which will be issued on 11 August 2003.

Guidelines have been provided for the applicants for FWALA licences in the 10.5 GHz and 26 GHz bands and the approach to be taken to licensing the 3.5 GHz band will be broadly similar. However the more limited availability of spectrum and the need for close co-ordination with existing FWPMA and other services will require a number of further conditions to be met. Details of the proposed licensing scheme and selection criteria for licensing FWALA in the 3.5 GHz band are presented in section 3 of this information notice.

This document is without prejudice to the legal position or the rights and duties of ComReg to regulate the market generally. Any views expressed are not binding and are without prejudice to the final form and content of any decisions that ComReg may make.

2 Responses to Request for Expressions of Interest

2.1 Scope of Information Requested

The request for Expressions of Interest in 3.5 GHz FWALA services requested information in a number of areas, including:

- A description of the proposed services, including maximum and committed data rates;
- The amount of spectrum required based on the proposed services;
- The type of equipment that would be deployed;
- The proposed network architecture;
- The location of the central base station and the proposed coverage area. This is particularly relevant to coverage in the Dublin area;
- The target customer base;
- The technical characteristics of the system;
- Details of the spectral efficiency of the technology proposed.

2.2 Overview of Responses

A total of thirteen expressions of interest were received:

Airspeed Communications
AlphaTel Ltd
AVA Systems Ltd
Brent Smith
Chorus Communications Ltd
Digiweb
Irish Broadband
Last Mile Ltd
Leap Broadband
Network Solutions Ltd
NTL
Technico Ltd
WBN Communications & Dotser Ltd

The following summary provides an overview of the responses with regard to key service characteristics as indicated in section 2.1 above.

3.5 GHz Fixed Wireless Access Local Area

2.2.1 *Type of services*

A variety of business (public and private sector) and residential services were proposed. These included Internet service provision, private intranet access, educational services and other data delivery services. Committed data rates proposed were typically between 1 and 2 Mbit/s for business users but with the potential of, in some cases, maximum rates up to 12 Mbit/s. Data rates proposed for residential users were typically lower than those for businesses, typically in the range 128 to 512 kbit/s. Similarly, various contention ratios were proposed, ranging from 4:1 to 25:1 for business customers and 8:1 to 50:1 for residential customers. These values are comparable to those currently offered by DSL providers in Ireland and elsewhere.

2.2.2 *Amount of Spectrum*

The amount of spectrum identified by respondents as necessary to provide services varied considerably. For low population density areas the requirement ranged between 2 x 5 MHz and 2 x 20 MHz, whilst for high-density areas the requirement ranged between 2 x 12 MHz and 2 x 36 MHz. The precise amount of spectrum depends on the proposed technology and channel plans. The majority of respondents were proposing to use sectored base stations, some up to 6 sectors, to provide the required coverage and capacity for users.

By comparison, the original 3.5 GHz FWPMA licensees had 2 x 25 MHz of spectrum, within which any necessary guard bands were also accommodated.

2.2.3 *Type of Equipment / Technical Characteristics of System*

A range of equipment types and technologies were proposed by respondents, including time division duplex (TDD) and frequency division duplex (FDD) configurations. TDD can be more flexible in terms of the radio spectrum required, as it does not need “paired” transmit and receive frequencies, however it may be more difficult to co-ordinate with existing services, which use FDD technology.

2.2.4 *Proposed Network Architecture*

All the respondents proposed to deploy point to multipoint solutions, although one suggested that this might evolve into a mesh-based architecture. The possibility of backhaul provision within the band was also mentioned by one respondent.

3.5 GHz Fixed Wireless Access Local Area

2.2.5 Location of Base Stations and Coverage Area

Seven of the respondents propose to provide coverage in the Dublin area. The number of base stations proposed to serve the Dublin area varied significantly, most respondents requiring between four and ten base stations but others requiring as few as one or as many as thirteen. Nine of the respondents planned to provide coverage outside Dublin, with four of these aspiring to national coverage.

3 Proposed Approach to Licensing FWALA services in the 3.5 GHz band.

3.1 Introduction

The expressions of interest received confirm that there is a substantial demand for access to radio spectrum at 3.5 GHz to provide FWALA services, particularly in and around the Dublin area. ComReg will endeavour to make available as much radio spectrum for FWALA services as possible. However, due to spectrum limitations, it is unlikely to be possible to accommodate all of the proposed systems within the current 3.5 GHz band. Where the demand for spectrum in a particular area exceeds that available it will be necessary to limit the number of licences that can be granted, using procedures in accordance with Article 7 of the EU Authorisation Directive 2002/20/EC.

Due to the limited spectrum available in the 3.5 GHz band and the substantial demand for this spectrum, ComReg will introduce a method to comparatively evaluate licence applications. All licence applications for 3.5 GHz FWALA will be required to meet a set of minimum admittance criteria and be subject to a competitive selection procedure. The minimum admittance criteria are outlined in section 3.2 and the competitive selection procedure is outlined in section 3.3.

In order to accommodate the anticipated high initial demand for licences in the 3.5GHz band, ComReg will invite applications to be submitted from 11 August 2003 until 5.00pm on 5 September 2003. All applications received in that period will be opened only after 5 September and will be treated as if they had arrived on the same day and if they meet the minimum admittance criteria in section 3.2 will be evaluated in accordance with the evaluation criteria set down in section 3.3. Following this initial phase, applications will be evaluated in order of arrival, with applications received on any one day being evaluated in parallel and in accordance with the competitive selection procedure.

3.5 GHz Fixed Wireless Access Local Area

Applicants may submit applications for adjacent coverage areas, however these will be treated individually for licensing purposes and will each individually be subject to the competitive selection process.

All FWALA licences will be issued in accordance with the relevant regulations (S.I. 79 of 2003) and will be subject to renewal on an annual basis up to a maximum of 7 years. Renewal will be subject to continued compliance with the conditions attached to the licence, and any spectrum management requirements. In order to promote competition, ensure the efficient use of the radio spectrum and to maximise the benefit to end users, holders of current National FWPMA licences operating in the 3.5 GHz band will not be granted FWALA licences.

3.2 Minimum Admittance Criteria

Any commitments made by applicants will be reflected in the conditions attached to the Wireless Telegraphy licence, where awarded.

Mandatory Requirements

- Licence application form completed correctly and in accordance with any guidelines developed;
- A single base station/central station (Base station intended to operate with repeaters) per application;
- A single geographic service area per submission;
- A justified requirement for a FWALA licence;
- Technical details must also be provided; in particular applicants must demonstrate clearly that any interference limits specified in the licensing scheme will be complied with and by what methods compliance will be ensured. Further details will be given in the application documents.

Additional Voluntary Commitments

- A commitment to enter a performance bond up to the value of €15,000. The value of performance bond committed to will be used as a competitive selection process criterion for the procedure outlined in section 3.3. In the event that the licence application is successful, the applicant must enter the performance bond as committed to, prior to the licence being awarded. The performance bond will be held by ComReg for either a period of 12 months from licence issue or, where a

3.5 GHz Fixed Wireless Access Local Area

commitment is made in respect of tariffs, for a period of 2 years from the launch of the service.

- A commitment, as a minimum, to the provision of a ‘stand alone’ data service equivalent to currently available consumer asymmetric digital subscriber line (ADSL)² services and the maximum monthly tariff to be associated with this service. Applicants are invited to offer this level of tariff for two years from the launch of the service, subject to the renewal of the licence. The value of the tariff for this service will be used as a competitive selection process criterion for the procedure outlined in section 3.3.

The offerings in respect of the competitive selection process criteria, described in section 3.3 below, are voluntary. However, it should be noted that applications will be judged on their competitive offerings as per section 3.3.

As stated previously, any commitments made by applicants will be reflected in the conditions attached to the Wireless Telegraphy licence, where awarded. Non-compliance with any of the licence conditions may result in the forfeit of the performance bond and the enforcement of any other relevant licence conditions.

3.3 Competitive Selection Procedure

Voluntary offerings will be evaluated where there are two or more valid applications received for the same or overlapping area. This competitive selection procedure will be based on the amount of the performance bond to which the applicant commits and the applicant’s proposed monthly tariff (including installation cost and equipment rental) which must be the maximum price charged for the service for a 2 year period. In addition, in major urban areas, selection procedure relating to spectrum efficiency may be utilised.

In relation to tariffing, the tariff(s) must be offered on a ‘stand alone’ unbundled basis for one or other or both of the following data service offerings:

² with the following characteristics: 512 kbit/s downstream data rate, 128 kbit/s upstream data rate, maximum 48:1 contention ratio, minimum 4 GByte / month minimum inclusive data allowance. These values are subject to change.

3.5 GHz Fixed Wireless Access Local Area

- Residential ADSL equivalent service (512 kbit/s downstream, 128 kbit/s upstream, 48:1 contention ratio, 4 GByte / month minimum inclusive allowance) as referred to in section 3.2;
- Business ADSL equivalent service (1 Mbit/s downstream, 256 kbit/s upstream, 20:1 contention ratio, unlimited data volume);

The tariff quoted for these service offerings will be compared with competing FWALA licence applications. Where a tariff is quoted for only one of these service offerings no marks shall be awarded to the non-quoted service offering for the purpose of the competitive selection procedure. Any once-off installation charge and/or equipment rental will be amortised over a period of five years and added to the monthly service charge for comparative purposes.

Applicants must commit to make available to any customer(s) within the FWALA service area on request, whichever of the above service offerings their quoted tariff(s) relate to for a period of 2 years from the date of service launch. The quoted tariff(s) must not be exceeded during that period. Applicants will however be free to offer additional services beyond those to which their quoted tariff(s) relate.

On the basis of this competitive selection procedure, a licence will be offered to the applicant who meets the minimum admittance criteria and is ranked highest on the basis of the performance bond proposed and commitments to the most favourable tariff offerings. Any remaining licence in that area will then be offered to the next highest ranked, eligible applicant and so on. In the event that a successful applicant does not accept a licence, the licence will be offered to the next highest ranked applicant and so on.

In the unlikely event that two or more FWALA licence applications cannot be differentiated by this competitive selection procedure, the licences shall be awarded by draw of lots.

3.4 Fees for Licences

Fees for licences for radio frequencies for FWALA services in the 3.5 GHz band will reflect those in the 10.5 GHz and 26 GHz band, i.e.:

3.5 GHz Fixed Wireless Access Local Area

Licensed Bandwidth	Annual Licence Fee (€)
Up to 7MHz	1500
Over 7MHz and up to 14MHz	2000
Over 14MHz and up to 28MHz	2800

Where a licence is granted for a portion of a year the licence fee to be paid by the licensee shall be calculated as follows:

$$A \times (B/12) = C$$

Where A is the relevant annual licence fee set out in the table above; B is the number of whole months for which the licence is granted (if a licence is granted for a period of less than one month then, for the purpose of these calculations only, the licence shall be considered as a licence granted for a period of one month); and C is the appropriate licence fee to be paid.

4 Next Steps

Further details of the licensing process and a licence application form for 3.5 GHz FWALA services will be issued on commencement of the licensing scheme on 11 August.