



Office of the Director of
**Telecommunications
Regulation**

RESPONSE TO CONSULTATION

New Opportunities in the Radiocommunications Market: Fixed Wireless Access (FWA)

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Foreword by The Director

Thank you to all those who responded to the consultation on New Opportunities in the Radiocommunications Market for Fixed Wireless Access (FWA). My Office received sixteen responses representing the views of current and potential FWA operators and equipment suppliers. The responses have proved very helpful in developing the next steps for expanding FWA provision in Ireland, which will include the possible offering of a further broadband licence, depending on the outcome of a detailed study to be conducted by my Office. The response document also outlines my position on regional FWA licensing, confirms the availability of the 2.4 GHz and 5 GHz bands for short range public access services, and the status of the 40 GHz frequency band.

The document summarises the responses received to each of the issues and proposals raised in the Consultation and outlines the actions we now propose to take.

Etain Doyle,

Director of Telecommunications Regulation.

1 INTRODUCTION

This paper is the ODTR's response to the consultation document addressing New Opportunities in the Radiocommunications Market for Fixed Wireless Access (FWA) (ODTR document 01/43 of June 2001). A total of sixteen responses were received, from the following organisations:

- Albera Networks
- Broadband Access
- Broadband Ireland
- Broadband Solutions
- Chorus Communications Ltd
- Eircell
- Ensemble Communications
- Giant Wireless Partnership
- Hyper-Lan Ltd
- Mobius Technologies Ltd
- Ogier Electronics Ltd
- Radiant Networks PLC
- Southern Health Board
- Visitor Based Networks
- Esat Telecommunications Ltd
- Off Air Electronics

The Director wishes to express her thanks to everyone who contributed to the consultation. With the exception of material marked confidential, the written comments of respondents are available for inspection at the ODTR's office in Dublin.

In the light of the responses and other considerations referred to in the following sections, the director has decided to take the following actions:

- i) to carry out a full review to identify the best basis for future licensing of FWA, prior to licensing any further FWA spectrum;
- ii) to permit the provision of short range public access services in the 2.4 GHz and 5 GHz bands using technologies which are exempt from wireless telegraphy licensing, subject to compliance with relevant European specifications and the holding of either a Basic or General Telecommunication Service licence;

- iii) to proceed with the re-allocation of the 28 GHz band to point-to-point fixed links, which will be subject to the standard ODTR licensing process and spectrum charges for such links.

This response paper 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.

2 BACKGROUND

A public consultation on FWA was undertaken in the latter half of 1998¹. Following this consultation, it was considered that issuing national FWA licences was the best approach in achieving the overall objective of facilitating increased competition in the telecommunications sector. In 1999 a competition offering four broadband² licences and four narrowband³ licences was conducted.

The objective of the 1999 competition and subsequent issuing of licences was to facilitate increased competition and choice so that the Irish consumer would benefit from lower tariffs and the availability of high quality services. It was felt that the issuing of FWA licences would further contribute to increased competition in the Irish telecommunications market introduced by the full liberalisation of voice telephony on the 1st December 1998. Pursuant to that competition, the following FWA licences were issued:

- Broadband: *eircom* plc., Esat Telecom, Chorus Communication (Previously Princes Holdings) and Formus Communications.
- Narrowband: *eircom* plc., Chorus Communication (Previously Princes Holdings).

A second competition was held last year, but there were no applications.

This latest consultation was conducted in the light of the recent voluntary liquidation of Formus Communications, which led to the revocation of that operator's licence, and the broader downturn in the FWA market in Europe and worldwide. The consultation put forward a number of proposals intended to stimulate the FWA market in Ireland.

Further background information on the current FWA licences may be found in documents ODTR 98/32 (Opening the Market for Fixed Wireless Access Point to Multipoint Services, Consultation Paper) and ODTR 98/61 (Response to the Consultation) as well as ODTR 00/47 (Expanding the Market for Fixed Wireless Access) and ODTR 00/81 (Response to the Consultation). All documents are available on the ODTR web site at www.odtr.ie.

¹ ODTR Document Number 98/32, "[Opening the market for fixed wireless point to multi-point access services - Consultation Paper](#)"

² Broadband FWA caters for the needs of medium to large users of telecommunications services, and enables services such as PABX connection, broadband Internet access, multi-media, bandwidth on demand, and fast file transfer.

³ Narrowband FWA is an alternative to copper in the local loop, which at present connects the majority of residential and business customers to their local exchange, and will offer mainly basic telephony, Internet and ISDN connections, and is especially suited to rural areas.

3 CONSULTATION ISSUES

This section describes the main consultation issues, the views of respondents on these issues and the position of the Director.

3.1 A New National Broadband FWA Licence (Questions 1 - 3)

3.1.1 *Summary of the Consultation Topic*

The Director's decision to revoke the licences of Formus Ltd, following the company's voluntary liquidation in March 2001, provided an opportunity to make available a further national broadband FWA licence to the Irish market, restoring the number of competing national operators to the original four. To increase the attractiveness of the licence, the Director proposed to offer additional spectrum in the 10 GHz band as part of the licence, where the successful applicant could demonstrate a need for this. Views were sought on these two proposals and respondents were invited to submit firm expressions of interest in submitting an application for the proposed licence.

3.1.2 *Views of Respondents*

Of the eight respondents who expressed a view, six were in favour of a new licence being offered, although two of these felt the proposed obligations were excessive, while another was concerned that the new licence should not confer any unfair competitive advantage relative to existing operators. Of the two respondents who did not support the proposal, one felt there was no demand and suggested that an objective evaluation should take place of any expressions of interest received, whilst the other felt that utilisation efficiency would be improved by assigning additional spectrum to existing operators instead of to a new licence, thus reducing the impact of guard bands.

There were two expressions of interest in applying for a new national FWA licence. One of these requested more information on the licence conditions, and the other related to the use of 10.5 GHz for backbone support to an access network using 2.4 GHz or 5 GHz spectrum.

Four of the seven respondents who expressed a view supported the offering of 10.5 GHz spectrum with the new licence, although two expressed concern about equipment costs and availability and problems associated with dual-band operation. One respondent suggested that 10.5 GHz spectrum could facilitate rollout in rural areas, allowing 26 GHz to be concentrated on urban provision. One respondent suggested that it would be better

to allocate additional spectrum in the current frequency bands to provide greater capacity. Another respondent felt that any allocation should be on the basis of demonstrable need and perhaps the band would be better suited for point to point links. One respondent was of the opinion that the proposal to offer 'dual band' FWA licences was anti-competitive and might restrict the potential for new entrants to enter the market using only 10.5 GHz spectrum.

3.1.3 Position of the Director

The responses confirm that there is interest in the offering of a further FWA licence, but for a variety of different reasons would wish to see modifications in the offering. In addition, the Director notes respondents' concerns about the 10 GHz band, including the limited availability and high cost of equipment at 10 GHz, the potential for alternative use of this band (e.g. point to point links) and the desire for cost effective equipment in rural areas. She is also aware that there is currently very little use of the 10 GHz band for FWA in Europe, relative to the 3.5 GHz and 26 GHz bands (only three EU countries have licensed spectrum in the 10 GHz band to date, whereas eleven have licensed the 3.5 GHz and 26/28 GHz bands). There may be potential for more spectrum to be made available for FWA in the 3.5 GHz region, however this needs to be studied closely as it needs to be balanced against the future requirement for spectrum for broadband point to point links.

In the light of the responses, the Director intends to carry out a full review urgently to identify the best basis for future licensing of FWA.

3.2 Existing FWA Licensees (Questions 4 & 5)

3.2.1 Summary of Consultation Topic

In view of her proposal to offer 10.5 GHz spectrum as part of a new broadband FWA licence, the Director proposed also to offer similar 10.5 GHz spectrum to existing FWA licensees, on a similar "demonstrable need" basis. Views were sought on this proposal and existing licensees were invited to submit firm expressions of interest in applying for such additional spectrum.

3.2.2 Views of respondents

Seven respondents expressed a view on this issue. Four, including two existing operators, were broadly in favour of 10.5 GHz spectrum being made available to existing licence holders, one suggesting it might be valuable for use in rural areas where it would

prove more economic than 26 GHz. However the third respondent also expressed a preference for more spectrum at 3.5 GHz or 26 GHz and the fourth expressed concern about the proposal to require additional financial guarantees in relation to the 10.5 GHz spectrum. Of those who were against the proposal, one felt that the band may be better used for point to point applications, one thought that more spectrum at 26 GHz should be made available instead and one thought that the spectrum should be made available on a first come first served basis, subject to demonstrable need.

One existing licence holder responded to question 5, but did not intend to apply for a licence in the 10.5 GHz bands at the present time. However depending upon future demand the respondent may consider applying for additional spectrum in the future.

3.2.3 Position of the Director

In line with her position on the proposed new licence (see section 3.1.3), the Director does not intend to offer 10.5 GHz spectrum at this stage to existing licensees, but will review the situation in following the review of the issues identified in section 3.1.3.

3.3 Future Development of FWA in Ireland (Questions 6 - 9)

3.3.1 Summary of Consultation topic

Views were sought on whether the 2.45 GHz and 5 GHz bands, which are allocated internationally to short range communication applications, should be made available for the provision of public access services. Existing FWA operators were asked if they would be interested in providing services in these bands and if so what types of services might be offered. Views were also sought on how making these bands available might relate to other FWA developments and how many licences ought to be made available in the bands.

3.3.2 Views of respondents

Respondents were divided on whether or not it was appropriate to offer spectrum in these bands for short range public access services, although a majority of those who expressed a view (8 out of 13) were broadly supportive. Two respondents felt that radiated power limits should be increased to those permitted in the USA, to facilitate successful rollout of services in these bands.

Those who opposed the proposal were of the opinion that this band should be reserved for short range device applications rather than traditional FWA type services.

Among the services that respondents thought would be provided in the bands were video on demand, voice over Internet Protocol and virtual private networks. One respondent

expressed a wish to experiment with offering commercial services using 802.11b in rural towns and villages. In general, the services that would be available in these bands were seen as complementary to services that would be offered over existing FWA networks.

Respondents were divided about the number of licences that should be issued. Three were of the view that there should be an unlimited number of licences. One suggested that a single licence to provide commercial outdoor access should be issued, with an obligation to provide wholesale airtime to resellers. Another suggested that there should be two licences issued, one regional and another in the greater Dublin area, with each licensee having a limited exclusive use of both bands in their licence area.

One respondent suggested that the number of licences issued should be dependent on the services provided, customer density and the technology to be deployed, adding that issues such as security, interference and system co-location should also be taken into account. Another suggested that if interference was the primary concern then an exclusive licence with a fixed wholesale agreement would be preferred, otherwise licensing could be carried out in a similar manner to other services, with perhaps 4 to 7 licences in total.

3.3.3 Position of the Director

In view of the likely demand for short range wireless connections to fixed access networks, the Director has decided to permit the provision of public access services in these bands, subject to compliance with relevant European specifications and, where applicable, the holding of either a Basic or General Telecommunication Service licence.

In view of the extensive use of these bands by licence exempt short-range devices and in some cases by industrial, scientific and medical (ISM) equipment, the Director does not consider it appropriate to offer individual wireless telegraphy (WT) licences for operation in these bands. However she considers that use of the bands on a WT licence exempt basis for short range public access services may usefully complement the provision of services in licensed FWA bands. Potential users should note that as the bands are non-exclusive, there may be a significant risk of interference in some locations and the bands are therefore not suitable for provision of services where quality of services is a significant factor.

The Director does not intend to make any changes to the current power limits defined for these bands, as she feels this may lead to unacceptable degradation of service quality for private users of the bands. Hence all equipment will be required to conform to the requirements of ERC Recommendation ERC/REC 70-03, Annex 3 (2.4 GHz and 5 GHz bands) and ERC Decision ERC/DEC(99)23 (5 GHz) and relevant ETSI standards.

3.4 Regional FWA Licences (Questions 10 - 12)

3.4.1 Summary of Consultation topic

Views were sought on the appropriateness of offering regional FWA licences in Ireland, what frequency bands would be most effective for these services, and the likely level of demand for regional services.

3.4.2 Views of respondents

Of the seven respondents who expressed a view, four felt there was a good case for regional licences. Of these, two favoured use of the current licence-exempt bands (2.4 GHz and 5 GHz), one preferred 26 or 28 GHz on performance grounds and the fourth preferred 3.5 GHz, but thought broadband services should be permitted in the band. A number of points were made on how best to make regional licences attractive to potential applicants, which included the following:

- Coverage and rollout obligations should not be too onerous.
- The licence fee should not be too high.
- A framework should be put in place to minimise interference between licensees.
- Licensees should have the potential to upgrade to higher frequency spectrum to improve services.

Of the remaining respondents, one (an existing operator) expressed concern about the potential impact on national operators of regional operators without such demanding coverage obligations, one doubted the business case for regional networks outside major urban centres and the third felt that co-ordination between operators might be an issue.

Most respondents agreed that there was a growing demand for regional FWA type service to the residential market, SoHo and SMEs.

3.4.3 Position of the Director

The Director is keen to encourage the spread of competitive fixed access networks as widely as possible, and regional FWA networks may have a role to play in achieving this objective. However, within the licensable frequency bands she recognises there are practical difficulties and spectrum management issues which need to be resolved if a viable licensing regime is going to be possible. In addition, she recognises the concerns about the viability of systems serving remote areas and wishes to consider further potential impact on existing networks. The nature of any regional licences that might be

offered will therefore require further consideration. This will be addressed as part of the review discussed in Section 3.1.3.

In relation to technologies in the 2.45 GHz and 5 GHz bands for which individual wireless telegraphy licences are not required, the Director has decided that provision of short range local services to the public is permissible subject to the licensing requirements of the Telecommunications Act (see section 3.3.3).

3.5 Re-assignment of the 28 GHz frequency band to point-to-point links (Question 13)

3.5.1 Summary of Consultation topic

Views were sought on the Director's proposal to re-assign the 28 GHz band to point-to-point links in the light of the lack of interest in this band in recent FWA licensing tenders.

3.5.2 Views of respondents

There was broad support for reassigning the 28 GHz band for point-to-point links, which was seen as beneficial to the telecommunications industry. Two respondents suggested there should be flexibility in the choice of technology, allowing point-to-point or point-to-multipoint applications as required and one thought that block allocations should be available for specific operators.

3.5.3 Position of the Director

In view of the responses, the Director intends to proceed with the re-allocation of the 28 GHz band to point-to-point fixed links, which will be subject to the standard ODTR licensing process and spectrum charges for such links. She notes the comments regarding potential flexibility, including the possibility of block allocations or deployment of point-to-multipoint links in the band. However she considers that greater spectrum utilisation efficiency may be achieved by shared use and co-ordination of individual links. The issue of point-to-multipoint provision will be addressed in the light of the outcome of the study noted on Section 3.1.3.

3.6 The 40 GHz frequency band (Question 14)

3.6.1 Summary of Consultation topic

Views were sought on the suitability of the 40.5 - 43.5 GHz frequency band for FWA-type services, in view of the bands designation in Europe for Multimedia Wideband Systems (MWS).

3.6.2 *Views of respondents*

It was broadly felt among the respondents that it was too early to consider assigning this band as standardisation has not yet been completed. A few respondents commented that it was currently too expensive to deploy services in this band. All respondents were of the opinion that this band would be best suited for high bandwidth services such as streaming video, aimed at the business market, with one saying that the band could possibly be used for 3G mobile back-haul distribution.

3.6.3 *Position of the Director*

The Director welcomes the comments on potential services in this band, but accepts the broad conclusion that it would be premature to proceed with licensing spectrum in the 40 GHz band at this stage.