



Office of the Director of
**Telecommunications
Regulation**

A Review of Document ODTR 98/14 “Guidelines for Applicants for Point to Point Radio Link Licences in Spectrum Above 1GHz.”

Response to the Consultation

Document No. ODTR 00/93

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TABLE OF CONTENTS

| | |
|--|-----------|
| FOREWORD | 3 |
| 1. EXECUTIVE SUMMARY | 4 |
| 2. INTRODUCTION | 5 |
| 3. BACKGROUND | 6 |
| 3.1 LEGISLATIVE BACKGROUND | 7 |
| 3.2 THE DIRECTOR’S DUTIES | 8 |
| 3.3 FORMAT OF THIS DOCUMENT | 8 |
| 4. LINK PROPAGATION AVAILABILITY | 9 |
| 4.1 SUMMARY OF THE CONSULTATION ISSUES | 9 |
| 4.2 VIEWS OF RESPONDENTS | 9 |
| 4.3 POSITION OF THE DIRECTOR | 12 |
| 5. LINK LENGTH POLICY | 15 |
| 5.1 SUMMARY OF THE CONSULTATION ISSUES | 15 |
| 5.2 VIEWS OF RESPONDENTS | 15 |
| 5.3 POSITION OF THE DIRECTOR | 15 |
| 6. HIGH/LOW DATABASE | 16 |
| 6.1 SUMMARY OF THE CONSULTATION ISSUES | 16 |
| 6.2 VIEWS OF RESPONDENTS | 16 |
| 6.3 POSITION OF THE DIRECTOR | 16 |
| 7. USE OF AUTOMATIC TRANSMIT POWER CONTROL (ATPC) | 17 |
| 7.1 SUMMARY OF THE CONSULTATION ISSUES | 17 |
| 7.2 VIEWS OF RESPONDENTS | 17 |
| 7.3 POSITION OF THE DIRECTOR | 17 |
| 8. THE LICENCE APPLICATION FORM | 18 |
| 8.1 SUMMARY OF THE CONSULTATION ISSUES | 18 |
| 8.2 VIEWS OF RESPONDENTS | 18 |
| 8.3 POSITION OF THE DIRECTOR | 18 |
| 9. OTHER ISSUES | 19 |
| 9.1 SUMMARY OF THE CONSULTATION ISSUES | 19 |
| 9.2 VIEWS OF RESPONDENTS | 19 |
| 9.3 POSITION OF THE DIRECTOR | 19 |
| 10. CONCLUSION | 21 |

FOREWORD

I would like to thank all those who responded to the recent consultation concerning Document 98/14, "*Guidelines for Applicants for Point to Point Radio Link Licences in Spectrum Above 1 GHz.*". My Office has received a total of 14 responses representing, among others, existing and potential licensees and equipment manufacturers. This has provided a broad range of constructive comments which have been taken into account in developing and revising the Guidelines for radio link licensing. I greatly appreciate the range of responses received.

This paper summarises the main comments made by respondents to the consultation and also highlights the amendments I have made to the guidelines as a result of the review.

The revised guidelines are available on the website as Document ODTR 98/14R.

Etain Doyle
Director of Telecommunications Regulation.

1. EXECUTIVE SUMMARY

This paper is the ODTR's response to the Consultation Paper *"A review of Document 98/14 "Guidelines for Applicants for Point to Point Radio Link Licences in Spectrum Above 1 GHz."* (ODTR00/69– September 2000).

The purpose of the consultation was to review the guidelines document ODTR 98/14, in the light of software enhancement and upgrading of the links licensing process. Since document ODTR 98/14 was issued there have been further international technological developments relating to digital radio relay systems and these need to be reflected in the Guidelines. In addition, a number of licensees have expressed concerns about the Guidelines and the consultation offered licensees an opportunity to air these concerns.

In addition to requesting views on the overall content of the guidelines, specific views were requested on the following:

- Radio Link Propagation Availability.
- ODTR Link Length Policy.
- Publication of a High Low Database¹.
- Use of Automatic Transmit Power Control (ATPC).
- The Fixed Links Licence Application Form.

Having considered the responses to the consultation and recent technological developments the Director has decided to revise document ODTR 98/14.

This response document includes a summary of the responses to individual questions and the Director's proposals for a revision of document ODTR 98/14 in the light of the consultation. The revised Guidelines are available on the website www.odtr.ie (Doc. 98/14R).

This 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.

¹ Each duplex radio link channel is divided into 2 frequencies, the higher frequency is called the high frequency and the lower frequency is called the low frequency. Within that frequency band, in order to minimise interference; the ODTR divides radio sites into sites transmitting on the high frequencies (high sites) and sites transmitting on the low frequencies (low sites). Applicants will not be licensed for a high frequency on or in the immediate vicinity of a low site, and vice versa

2. INTRODUCTION

The Director of Telecommunications Regulation (“the Director”) and her Office (“the ODTR”) are responsible for the regulation of the telecommunications and radiocommunications sectors in Ireland, in accordance with National and EU legislation. The ODTR is the National Regulatory Authority (“NRA”) for the purposes of that legislation.

As part of her responsibility in the radiocommunications sector, the Director is responsible for the licensing of point to point radio links². Radio links play an important role in the provision of public utility, broadcasting, emergency and public telecommunications services in Ireland.

The guiding principles, explaining the criteria under which applicants for point to point radio link licences are licensed have to date been contained in document ODTR 98/14, “Guidelines for Applicants for Point to Point Radio Link Licences in Spectrum Above 1 GHz.”.

The Director has now undertaken a consultation with a view to revising these Guidelines and the purpose of this document is to respond to the comments received from interested parties on a number of relevant issues that have come to light since the previous guidelines were published. A revised Guidelines document (ODTR 98/14R), which supersedes document ODTR 98/14, is available on the ODTR website.

² For the purposes of this document the term “radio link” refers to point-to-point radio links above 1 GHz. A radio link provides communication between two fixed locations by using the medium of radio to link the two locations. It is an alternative to wire line infrastructure such as copper and optical fibre and can be more economically attractive, particularly in rural areas.

3. BACKGROUND

Following the liberalisation of infrastructure³, in July 1997, The Director issued Guidelines relating to the application process for point to point links. The aim of these Guidelines was to set out the Director's policy relating to radio links thereby providing information and assistance to intending applicants for radio link licences. The original Guidelines were the subject of a previous public consultation in February 1998 (Document ODTR 98/02) and a revised document, ODTR 98/14, was issued in June 1998 as a result of that consultation.

In September 2000, the Office of the Director of Telecommunications Regulation ("ODTR") launched a consultation paper *"A review of Document 98/14 "Guidelines for Applicants for Point to Point Radio Link Licences in Spectrum Above 1 GHz."* (ODTR00/69).

The main reasons for the consultation are highlighted below:

1. The recent updating of the ODTR links application process as a result of software enhancements.
2. The ongoing automation of the ODTR wireless telegraphy licensing procedures, to speed up and simplify the processing of licence applications; The automation of the radio links licensing process is now nearing completion.
3. Recent technological and regulatory developments, which impact upon the guidelines. For example, the ITU recommendations which form the basis for calculating the performance characteristics of the link, have been revised.
4. Comments received from a number of licensees (An Garda Siochana - Telecommunications Division, Esat Digifone, Eircell, ESB, Eircom, Ocean Communications, Princes Holdings Limited, RTE) who have suggested that the Guidelines should be revised.

The consultation paper looked at the issues under the following headings:

- Radio Link Propagation Availability
- Link Length Policy
- Transmit High/Low Site Database
- Use of Automatic Transmit Power Control (ATPC)
- The Licence Application Form

In addition, respondents were asked to comment on any other issues of concern they may have had relating to the guidelines.

The responses received to the consultation paper have been of great assistance to the Director in helping her to revise document ODTR 98/14.

Fourteen organisations responded in writing to the consultation document, as listed below:

³ Prior to July 1997, Telecom Eireann (eircom) had a monopoly on the provision of telecommunications infrastructure.

- An Garda Siochana
- Department of the Environment and Local Government (Fire Services and Emergency Planning Section)
- Chorus Communications Ltd.
- Crown Castle International
- DMC Stratex Networks
- eircom plc.
- Eircell
- LM Ericsson Ltd.
- Esat Digifone Ltd.
- Esat Telecom / Ocean Communications Ltd.
- Electricity Supply Board
- Formus Communications Ireland Ltd.
- Mason Communications Ireland Limited
- Radio Telefis Eireann
- Siemens PLC

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

3.1 Legislative Background

A Wireless Telegraphy Licence is required under Section 3 of the Wireless Telegraphy Acts 1926-1988 to keep and operate apparatus for wireless telegraphy. The licensing of point to point radio links above 1 GHz is governed by the Wireless Telegraphy (Radio Link Licence) Regulations, 1992 ('the Regulations')⁴. The power to grant these licences was transferred to the Director by the provisions of the Telecommunications (Miscellaneous Provisions) Act, 1996, as amended. These Regulations provide that the Director may from time to time determine the conditions by which radio link licences are issued to applicants.

The applicant should be aware that any radio link licence granted by the ODTR is for the keeping and operating of the apparatus for wireless telegraphy which is specified in the licence. Any licence issued by the ODTR does not absolve the licensee from complying with any other statutory obligations.

⁴ S.I. 319/92.: Copies are available from the ODTR or from the Publications Office, Molesworth Street.

3.2 The Director's Duties

The spectrum available for radio links is a finite resource. It is the policy of the ODTR to manage the spectrum in an efficient and orderly manner in order to obtain the optimum use from this national resource.

In addition, the ODTR has a policy to encourage and secure effective competition in the interests of consumers. In so doing the Director has a policy to encourage the construction of high quality communications networks in both urban and rural areas. Whilst the Director generally regards optical fibre as the most appropriate medium for the provision of broadband services, she recognises that radio links facilitate the early development of infrastructure and competition in the provision of telecommunications services, and in this context the ODTR will consider applications for licences for such links.

The ODTR also recognises the important role played by radio links in the development of networks used by the emergency services, public utilities, and broadcasting services.

In order to ensure the optimum use of the radio spectrum for the benefit of the maximum number of licensees, the ODTR has a policy not to allocate blocks of spectrum to individual licensees for radio link purposes, rather it assigns frequency channels to individual links on a first come first serve non-exclusive basis. Accordingly, licensees should be aware that the ODTR licences other users to use the same frequency channels at different geographic locations.

3.3 Format of this Document

This document presents the outcome of the consultation. Specifically, this document:

- outlines the issues addressed by the consultation document;
- summarises the views provided by respondents;
- presents the Director's proposals on each of the issues highlighted in the consultation.

4. LINK PROPAGATION AVAILABILITY

4.1 Summary of the Consultation Issues

The consultation requested views relating to how link propagation availability is treated in document ODTR 98/14. Specifically, views were sought on:

- The way availability is defined and calculated (Question 1)
- Whether table An3-2 (of document ODTR 98/14) should be revised, and if so, how (Question 2).
- Whether specific allowances should be made for radio link(s) situated in geographical areas where there are no spectrum congestion issues, and if so, how these geographical areas should be determined (Question 3)
- Whether higher propagation availabilities should be made available for those employing high quality spectrally efficient equipment, and if so, how these should be determined and what parameters should be used to determine whether equipment is classified as “high quality spectrally efficient” (Question 4)
- Whether providers of specific services (e.g. public telecommunications or safety related) should qualify for higher availabilities and if so, which services should qualify, what levels of availability should be made available and what would be the impact on spectrum efficiency (Question 5)
- Whether the highest propagation availabilities should only be granted where appropriate measures are in place to ensure corresponding levels of equipment reliability (e.g. hot standby working) and where alternative methods (e.g. routing diversity) are not feasible (Question 6)

4.2 Views of Respondents

In relation to how availability is defined and calculated, all respondents agreed that the ITU-R recommendations should be followed. However, a number of issues of concern were highlighted:

- The existing calculation of availability only accounts for propagation availability on a single link path, whereas it should also take account of:
 - ITU-T and ITU-R link performance and quality criteria
 - ITU-T criteria for overall network availability
 - The overall propagation availability of the link network, daisy chain etc.
- A number of respondents suggested that minimum fade margins be introduced to ensure that shorter links operate to the licensed availability, whilst others suggested that availability calculations should use the equipment receiver thresholds as specified in the

ETSI standards rather than the actual equipment receiver thresholds.

With regard to Table An3-2, all respondents indicated a need for this to be amended.

The main issue highlighted by the respondents in relation to Table An3-2 indicated that the conditions imposed for meeting propagation availability targets are too stringent, in particular:

- The specification of a minimum antenna size does not, by itself, impact on spectrum efficiency. In addition it can have an adverse effect on mast wind loading and planning application issues. The reference to minimum antenna sizes should be replaced by reference to antenna standards.
- Issues such as equipment redundancy, space diversity and routing diversity should not be a consideration for link availability licensing requirements. These factors do not contribute to efficient spectrum use, may not be necessary to ensure a high quality network and may lead to an unnecessary economic burden on the licensee.
- Mean Time Before Failure (MTBF) of equipment has improved over the years so that equipment redundancy should not be required at all sites.
- Space diversity is only of benefit in bands between 3.5 GHz and 12 GHz at path lengths greater than 25km.
- The guidelines should allow for circumstances where radio is the only means of providing communications and routing diversity is not feasible.
- 99.99% availability should be permitted with no restrictions.
- The licensed availability should be related to the service e.g. higher availability for the public telephone network (PSTN) and emergency services, lower availability for access links.
- All operators should be allocated their own spectrum.
- The Guidelines should be treated as such and not applied as hard and fast rules.
- The rationale behind associating radio propagation availability with network and equipment resilience was found to be confusing.
- Fade margins in excess of 10 dB should be factored into licences.
- Table An3-2 should be revised to take account of the ITU recommendations on error performance and overall network availability.
- Allowance should be made for the use of a network management system managed on a 24-hour basis.

In addition, specific suggestions as to how Table An3-2 should be reconfigured were offered by a number of applicants.

On the issue of congestion, most respondents were not in favour of making allowances for radio links situated in geographical areas where there was no spectrum congestion and even those who saw some merit in the idea considered it would be too difficult to administer. In

addition, some respondents believed the introduction of new services such as fixed wireless access and 3G services would introduce congestion to large areas of the country.

A small number of respondents indicated that allowances could be made where:

- There was no alternative means of communication and where there was no possibility of providing adequate antenna support.
- The links were access or low capacity links.

Other respondents indicated that rather than allowances being made in areas where there was no shortage of spectrum, the requirements for areas of spectrum congestion should be stricter.

In relation to the issue of whether higher propagation availabilities should be made available to those employing high quality spectrally efficient equipment, respondents were divided. Of those who wanted higher availabilities for spectrally efficient equipment, the definition of what constituted spectrally efficient equipment differed. One respondent suggested that this referred to “high performance” antennae. Some respondents suggested that the ETSI receiver threshold level should be used in calculations so that all equipment which better this will receive an availability advantage, whilst another suggested that equipment utilising higher modulation schemes, co-channel dual polar equipment or equipment with superior interference rejection should be allowed higher availabilities.

Respondents who considered that there should be no advantage for spectrally efficient equipment cited reasons such as the fact that links utilising higher modulation schemes require higher protection ratios and operate over shorter distances. In addition, technology is continually changing so it would be difficult to define which equipment was spectrally efficient at any given time.

On the matter of whether higher availabilities should be granted to the providers of specific services (e.g. safety or public telecommunications services) most respondents indicated that there should be no need to do this, particularly if Table An3-2 was revised. Some of the reasons for this were:

- It is too easy to mix services on the network.
- It is too difficult to develop transparent criteria.

Those who favoured the idea indicated that public safety related, non-profit making, non-commercial organisations should be allowed an availability advantage. One respondent suggested that an availability of 99.99% minimum should be given to these organisations. Another respondent also suggested that public fixed network operators should be allowed higher availabilities.

Regarding the criteria used to determine the licensed propagation availability, most respondents were against only licensing the highest propagation availability in cases where network equipment reliability has been optimised and where routing diversity is not feasible. The main reasons for this are highlighted below:

- The level of redundancy required by the network should be the primary concern of the operator and should not be mandated by the ODTR, particularly where the degree of redundancy may cause an unnecessary economic burden on the licensee.
- With the high reliability of modern radio equipment, the effect on the network of equipment outages is less significant than the effect of outages caused by propagation fading.
- Factors such as the presence of alternative means of communication in the area, and the nature of the service itself should also be considered.

4.3 Position of the Director

Having considered the responses, the Director has decided that her responsibility for ensuring the optimum use of the spectrum is best met by continuing to use the relevant ITU-R recommendations to calculate fixed link propagation availability. In particular, ITU-R 530-8 applies. The availability is calculated independently for each radio link, taking account of the receiver threshold corresponding to a bit error rate of 10^{-6} . The Director does not propose to take account of the ITU recommendations on network quality or overall network availability when licensing links as this is impractical and goes beyond the Directors responsibility to ensure the effective and efficient use of the spectrum and in many cases may require detailed knowledge of large networks consisting of a mix of transmission media.

In relation to Table An3-2, this table has been revised. The revised table is detailed on the following page.

| Target Outage per year (Radio propagation only) | Required Propagation Availability | Requirements to be met in order to be licensed for the required availability (for bands below 3 GHz.) | Requirements to be met in order to be licensed for the required availability (high capacity bands above 3 GHz) | Requirements to be met in order to be licensed for the required availability (access bands above 3 GHz.) |
|---|-----------------------------------|---|---|--|
| Approx. 263 Minutes. | 99.95% | Meets Guidelines but antenna is not compliant with class 3 in ETSI standard EN 300 631 at either site | | Meets Guidelines but antenna is not compliant with class 3 in ETSI standard EN 300 833 at either site |
| Approx. 52.6 minutes | 99.99% | Meets Guidelines and antenna is compliant with class 3* in ETSI standard EN 300 631 at both sites | Meets Guidelines and antenna is compliant with at least class 3 in ETSI standard EN 300 833 at both sites | Meets Guidelines and antenna is compliant with class 3* in ETSI standard EN 300 833 at both sites |
| Approx. 26.3 minutes | 99.995% | Meets 99.99% and (1 or 2 or 3) 1) including equipment resilience at both sites 2) Routing diversity using for e.g. network meshing, rings etc. on radio, fibre or coax or the use of an alternative infrastructure provider. 3) Is site sharing at either mast with another licensee** | Meets 99.99% and (1 or 2 or 3) 1) including equipment resilience at both sites 2) Routing diversity using for e.g. network meshing, rings etc. on radio, fibre or coax or the use of an alternative infrastructure provider. 3) Is site sharing at either mast with another licensee** | Meets 99.99% and (1 or 2 or 3) 1) including equipment resilience at both sites 2) Routing diversity using for e.g. network meshing, rings etc. on radio, fibre or coax or the use of an alternative infrastructure provider. 3) Is site sharing at either mast with another licensee**. |
| Approx. 5.3 minutes. | 99.999% | Meets 99.995% Guidelines and (1 or 2) 1)the applicant is allowing other licensees** to share the mast 2)Is site sharing at both masts with another licensee** | Meets 99.995% Guidelines and (1 or 2) 1)the applicant is allowing other licensees** to share the mast 2) Is site sharing at both masts with another licensee** | Meets 99.995% Guidelines and (1 or 2) 1)the applicant is allowing other licensees** to share his mast 2) Is site sharing at both masts with another licensee** |
| Approx. 26.3 – 5.3 minutes | 99.995% - 99.999% | Meets conditions for 99.995% (or 99.99% in rural areas where there is no shortage of spectrum) and satisfies the ODTR that the higher availability is necessary. | Meets conditions for 99.995% and satisfies the ODTR that the higher availability of 99.999% is necessary. | Meets conditions for 99.995% (or 99.99% in rural areas where there is no shortage of spectrum) and satisfies the ODTR that the higher availability is necessary. |

Table An3-2: Required Propagation Availability

* In rare circumstances for example in rural areas where there is no spectrum congestion AND where there is no alternative means of communication AND where there is no possibility of providing adequate antenna support AND where the links are access or low capacity links, the use of Class 2 Antennae may be permitted. However, these may have to be upgraded (at the licensee's own expense) if spectrum problems arise.

** For the purpose of these guidelines licensee means a licensee of links above 1 GHz, an FWA, FWPMA or mobile telephony licensee.

The revised table ensures that the Director's requirements, as detailed below, are met.

- To optimise the use of the radio spectrum.
- To encourage the construction of high quality communications networks in both urban and rural areas.

In addition, the Director seeks to encourage mast sharing and this has also been factored into the guidelines.

In general, the revised table takes account of technological developments which have occurred since the original version was developed whilst also allowing greater flexibility to the licensee in the choice of network resilience techniques.

In particular, in the table:

- ETSI standards are used for the antennae rather than stipulating a minimum antenna size. These standards were not available when the original guidelines were published. They should allow applicants greater flexibility in their choice of antenna whilst not compromising on the Director's requirement for optimal spectrum reuse.
- The range of availabilities that will be licensed has changed slightly. The minimum availability is now 99.95% and the maximum availability is 99.999%. This is to encourage the rollout of high quality networks.
- The trade off between propagation availability and network resilience has been simplified. This trade off is used to assist the Director in encouraging the development of high quality networks. The revised Table An3-2 should however, allow licensees greater flexibility in their choice of resilience techniques.
- The Director has added mast sharing as an option for obtaining higher availability, if required.
- There is no relationship between propagation availability and the service being offered. This is because of the Director's duty to optimise the use of the radio spectrum. The Director also agrees with respondents that linking propagation availability to the service being provided may be difficult to administer transparently, particularly as commercial interests increase. However, it is hoped that the revised Table An3-2 will help all applicants in obtaining their required availability.

The Director does not propose as a matter of course to provide increased availability to applicants who use spectrally efficient equipment. This is because the Director agrees with respondents, that what constitutes spectrally efficient equipment is subject to change as technology develops and so may be very difficult to define. However, this issue may be considered further in the future.

5. LINK LENGTH POLICY

5.1 Summary of the Consultation Issues

In this section the link length policy as set out in document ODTR 98/14, Annex 2 was addressed. At its simplest, this policy relates the most appropriate frequency band for a link to the length of that link, in general, the shorter the length of the link path, the higher the appropriate frequency band.

Views were sought from respondents on whether this policy should be applied in all cases.

5.2 Views of Respondents

All respondents agreed that a link length policy was important in ensuring the effective and efficient use of the spectrum. In addition the following points were raised:

- There is limited spectrum available for medium or low capacity links in bands below 15GHz.
- Suggestions were offered indicating that the minimum link length in the bands between 3 – 11 GHz should be reduced to between 15 and 25km.

A number of respondents suggested that the link length policy should not be used in the following cases:

- Where there are high/low clashes which can only be resolved by using a lower frequency band.
- For backbone networks or multiple hop systems - to avoid the use of an additional channel.

5.3 Position of the Director

In the interests of the effective and efficient use of the spectrum and ensuring continued availability of spectrum to all users, the Director will continue to operate a link length policy. It has been revised slightly to include the 13 GHz band and to account for the use of higher modulation equipment. The policy may be reviewed from time to time as technology evolves.

In addition, the ODTR recognises that there are circumstances where the application of the link length policy may be inappropriate, such as in the case of a high/low conflict where the use of a lower frequency band is unavoidable, or in the case of a network where spectrum efficiency is best served by allowing the use of a single frequency channel rather than a number of frequency channels in different frequency bands.

6. HIGH/LOW DATABASE

6.1 Summary of the Consultation Issues

The ODTR wished to examine whether a database of high/low sites should be made available to help avoid problem applications containing high /low conflicts.

In particular, respondents were asked for their views on whether or not a database of high/low sites should be made publicly available.

6.2 Views of Respondents

All respondents except two were in favour of a high/low database being made publicly available.

Those who were not in favour indicated that such a database would be of little benefit. In addition, concern was raised that to release such a database would allow commercially sensitive information into the public domain. This last objection was subsequently withdrawn.

6.3 Position of the Director

The Director intends to make a database of high/low sites available on the ODTR website in order to assist applicants in preparing their application. This should help reduce the time required to process a link by reducing the number of erroneous applications which occur as a result of high/low conflicts.

7. USE OF AUTOMATIC TRANSMIT POWER CONTROL (ATPC)

7.1 Summary of the Consultation Issues

In this section, respondents were asked for their opinion on whether the use of ATPC can benefit overall spectrum utilisation efficiency for point-to-point fixed links. ATPC is a power control system whereby the link normally operates at a nominal radiated power level (EIRP) but, in the event of a deep fade, the EIRP automatically increases to compensate for the fade. Should the use of ATPC be allowed, beyond the licensed power level, it may increase the potential for interference into other systems which do not operate ATPC.

7.2 Views of Respondents

In relation to ATPC, the majority of respondents indicated that the use of ATPC could be beneficial in bands where all other users were also using ATPC. However one respondent indicated that problems could occur if the ATPC system became permanently activated due, for example, to a misalignment of the antennae.

7.3 Position of the Director

The Director recognises that the use of ATPC may be beneficial to licensees in frequency bands where all licensees operate ATPC. The ODTR will consider allowing ATPC to be used up to 10dB above the licensed powers in bands between 4 GHz and 11 GHz where ATPC is used by all licensees, under the conditions set out in the revised guidelines. It should be noted that the use of ATPC will be time limited and will not be taken into account in frequency planning between different networks.

In addition, ATPC can be used in the other frequency bands but only up to the power level specified in the licence.

8. THE LICENCE APPLICATION FORM

8.1 Summary of the Consultation Issues

The current application form is contained in document ODTR 98/15 “ Application for Point to Point Radio Link Licences above 1 GHz.”. As a result of the ongoing automation of the ODTR wireless telegraphy licensing procedures, to speed up and simplify the processing of licence applications this document is currently being revised. The revised application form will shortly be available on the ODTR website as document ODTR 98/15R.

Views were requested on the content or layout of the current application form.

8.2 Views of Respondents

In general most respondents agreed with the layout of the application form. A small number of respondents suggested a preference for fully electronic applications in order to speed up the licensing process. Whilst others indicated that the application form was too cumbersome.

8.3 Position of the Director

The Director will be amending the application form to take account of the requirements of the revised licensing process. In addition, the ODTR will review the application form with a view to simplifying it, where possible.

Fully electronic applications are not possible at present but work is underway to permit this in the future. (see revised application form 98/15R).

9. OTHER ISSUES

9.1 Summary of the Consultation Issues

The respondents were invited to offer comments on all aspects of the guidelines as well as the particular issues detailed above. Issues which have not previously been raised in this document are discussed below.

9.2 Views of Respondents

General views on the guidelines were expressed by a number of respondents. The main concerns raised are highlighted below:

- There should be more emphasis in the guidelines on the importance of radio to the emergency and essential services.
- The use of low capacity systems should be favoured as high capacity systems are best provided over optical fibre networks.
- Use the bands L6GHz, 7GHz and 8 GHz for access?
- There shouldn't be much congestion outside urban areas.
- Why is the pre-consultation process required?
- There should be no need for a declaration form, as links should be assumed to operate in accordance with the licence conditions.
- The operators' forum should be open to manufacturers.
- Large operators should be given preferred frequencies in the bands 18-38GHz.
- Block allocations of spectrum should be given to licensees.
- The use of radio links should be allowed where there is a clear cost advantage over fibre.

9.3 Position of the Director

The Director is aware of the importance of radio to the emergency services and believes that the revised guidelines will allay fears in this regard.

In relation to the provision of low capacity systems, the ODTR licences low capacity systems in the bands 1.3 GHz, 2 GHz, U8GHz, 15 GHz, 23 GHz, 38 GHz at present. In relation to the deployment of high capacity systems, the ODTR would prefer that high capacity systems be provided over optical fibre network. However, the deployment of such networks may not always be possible in the short term, so, in order to encourage the rapid roll-out of competitive telecommunications networks, the ODTR encourages the development of high

capacity radio networks - particularly for new market entrants or in rural areas where the terrain may be unsuitable for the rollout of wire line alternatives.

The main areas of congestion at present are Dublin and to a lesser extent Limerick, Cork, and Galway. However, the issue of congestion is quite complex as it does not only relate to congestion in a particular area but also to the zone of interference around the congested area. In addition the problems associated with planning permission have lead to clustering of radio systems at particular sites so that congestion may occur on specific hill top sites even in relatively remote areas. Another factor to consider is the likely impact of future networks such as the Fixed Wireless Access (FWA) systems and third generation (3G) mobile networks. Given the complexity of this issue the ODTR does not intend to designate areas as congested or non-congested at this stage, but may consider doing so in the future.

In relation to the pre-consultation process - this is not mandatory. However, experience has shown that applicants who do avail of the opportunity to discuss their network proposals prior to application have fewer problems with the application process.

In relation to the declaration form - although licensees are required to abide by the terms of the licence, a declaration form is nevertheless required to inform the ODTR that the link has been put into operation. The declaration form is contained in the Guidelines document and in the revised application form.

It is intended that the "licensees' forum" will be used to resolve specific issues of widespread operator concern. However, where manufacturers could usefully contribute to specific fora then their participation would be welcomed. The agenda will, in any event, be published in advance of the meetings.

In relation to the issue of preferred frequencies - in the past, operators with rapid roll-out obligations have been given preferred frequencies in the bands 18 GHz - 38 GHz. However, these preferred channels are not exclusive and may be shared with other users as needs arise.

Regarding the issue of block allocations - the ODTR has a policy to optimise the use of links spectrum for the benefit of the maximum number of operators. In order to ensure this, the ODTR has a policy not to allocate blocks of spectrum to individual licensees for radio link purposes, rather it assigns frequency channels to individual links on a first come first served non-exclusive basis. This enables the maximum number of individual licensees to be accommodated in the available spectrum.

On the issue of allowing radio links where there is a clear cost advantage - the ODTR seeks to optimise the use of links spectrum for the benefit of the maximum number of operators whilst also encouraging the rollout of optical fibre networks where practical. The ODTR regards optical fibre as the most appropriate medium for the provision of broadband services in many parts of the country and the long term view must be to move towards optical fibre to ensure Irelands future competitiveness in the telecommunications market.

10. CONCLUSION

The Director has revised the Guidelines and in so doing has been pleased to take into account the respondents comments. The revised guidelines are available on the ODTR website as Document ODTR 98/14R. It is hoped that the new Guidelines will give operators a better understanding of the ODTR link licensing process and provide assistance when preparing and submitting fixed link licence applications.