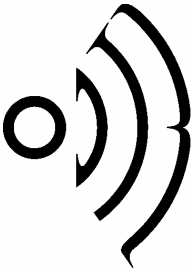

Office of the Director of
Telecommunications
Regulation

Review of Licensing of Trunked On-Site and Local Area Business Radio in the 410-430 MHz Frequency Band

Consultation Paper

Document No. ODTR 01/25 **APRIL 2000**

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1 INTRODUCTION

The purpose of this consultation document is to gauge the demand for trunked private and public access mobile radio (PMR and PAMR) in the 410 - 430 MHz band, and to consult on the introduction of a consolidated licensing regime for trunked radio systems to cater for both PMR and PAMR applications. The document proposes the introduction of new regulations to cover both trunked PMR and PAMR radio systems and provide greater flexibility in the number of radio channels that may be assigned to trunked radio systems. These regulations will be made with the consent of the Minister for Public Enterprise.

2 CONSULTATION PROCEDURES AND TIMETABLE

The consultation period will run from Friday 27th April to Friday 18th May 2001. Written comments should be marked "Response to ODTR Trunked Business Radio consultation" and submitted before 5.00 p.m. on Friday 18th May 2001, to:

Ms Margaret O'Sullivan
The Office of the Director of Telecommunications Regulation
Abbey Court
Irish Life Centre
Lower Abbey Street
Dublin 1

All comments are welcome, and it would make the task of analysing replies much easier if comments reference the relevant question numbers from this document .

The Director expects to make available the responses and to publish a report on this consultation. If there are elements of any response that are commercially confidential, then it is essential that these be clearly identified and placed in a separate annex to the main document. They will then be treated in confidence.

The Director regrets that it will not be possible to enter into correspondence with those supplying comments.

This consultative document does not constitute legal, commercial or technical advice. The Director is not bound by it. The consultation is without prejudice to the legal position of the Director or her rights and duties to regulate the market generally.

3 CURRENT SITUATION

3.1 Introduction to Trunked Mobile Radio

Business radio in the form of two-way "push to talk" communication may be either self-provided (Private Mobile Radio or PMR) or run by a service provider who provides communication services to users on a commercial basis. The latter services are licensed as Community Repeater services, which are defined in the Regulations[1]

[1] SI No 83 of 1988, Wireless Telegraphy (Community Repeater Licence) Regulations, 1988.

as " a combination of trigger stations[2] and mobile stations sharing a community repeater station, all of which operate together". Under the current licensing regime, each community repeater system must be individually licensed and may operate on a single duplex radio channel only. At typical busy hour traffic levels such a system can support around 50 mobile terminals. Unlike standard Business Radio systems, individual mobile and trigger stations do not require licensing under the Community Repeater Regulations.

Larger business radio systems may require additional radio channels to increase capacity or multiple base station sites to extend area coverage. Capacity and service quality of a multi-channel system can be increased significantly by *trunking*, which creates a pool of channels that can be accessed by any user rather than assigning specific channels to specific users. For a given number of users and radio channels, the likelihood of all the channels in the pool being in use at any one time is much lower than that of two users simultaneously accessing a single, common channel. Trunking also results in a significant improvement in radio spectrum utilisation, since available channels can be shared between a large number of users.

Private trunked radio networks are likely to be operated by large national or regional organisations such as the emergency services, utilities and transport operators that need to communicate between large numbers of mobile users. They may also be deployed on specific sites or premises where the traffic level is particularly high.

National and regional trunked PAMR networks have been operational for many years in countries such as France, Germany and the UK. These provide PMR functionality over a wide geographic area to users who do not wish to operate their own systems. A number of local networks also exist, operating on similar lines to community repeaters but serving a larger customer base than can be achieved with a single radio channel. On-site PAMR systems can provide valuable services to multiple user groups within specific premises such as airports or shopping malls.

3.2 Trunked Mobile Radio in Ireland

In 1997, in response to increasing demand for private trunked radio systems, the ODTR designated the following frequency band for trunked business radio services:

415.775–418.9875MHz, paired with 425.775 -428.9875MHz.

Licences are available for blocks of five paired 12.5 kHz duplex channels. Currently, trunked systems are licensed under the Business Radio regulations, which do not permit the provision of services to third parties.

Recently there has been increasing interest in the deployment of trunked systems for public access mobile radio, both for local area and on-site applications. The purpose of this document is therefore to gauge the demand for trunked PMR and PAMR systems and to invite comments on the proposed licensing regime for trunked radio systems in the 410 - 430 MHz band.

[2] A trigger station provides a fixed communication link between the premises of a community repeater user and the community repeater station, enabling communication between the user's premises and associated mobile terminals via the repeater.

4 PROPOSALS FOR CONSULTATION

The Director proposes to extend the current licensing regime for community repeaters to include provision for multi-channel services including on-site and local area trunked radio systems in the 410 - 430 MHz band. Views are invited on the following specific proposals:

4.1 Licensing

Local area and on-site trunked radio systems require licensing under the Wireless Telegraphy Acts (1926-1988). The Director proposes to introduce a new, consolidated licensing regime, by way of regulation under the Wireless Telegraphy Acts (1926-1988), for both private and public access trunked mobile radio systems in the 410 - 430 MHz bands. Under the proposal, existing private trunked radio licensees will be migrated to the new licensing regime, however it is intended that this will in no way adversely affect such existing licensees.

Question 1. *Do you support the proposal to introduce a new, consolidated licensing regime for both private and public access trunked radio systems? If you do not support the proposal, please provide supporting argument.*

The Director recognises that in some cases operators of trunked mobile radio or Community Repeater systems may wish to provide access to the public switched telephone network (PSTN). It is therefore proposed to make provision for such access within the new licensing regime for trunked mobile radio systems. It is also proposed to amend the existing Community Repeater Regulations to permit access to the PSTN on the same basis. Where direct access to the PSTN is provided, operators will also be required to hold a separate telecommunications licence issued under Section 111 of the Postal and Telecommunications Services Act, 1983, as amended.

Question 2. *Do you support the proposal to permit the provision of access to the PSTN by trunked mobile radio and community repeater licensees? If you do not support the proposal, please provide supporting arguments.*

4.2 Frequency Plan for Trunked Radio Systems

To minimise the likelihood of interference arising from intermodulation between co-located transmissions, the Director proposes to maintain the current band plan in the 410 - 430 MHz band, which requires a fixed 300 kHz separation between co-sited transmissions. The frequency plan currently comprises 48 blocks of five paired duplex channels. The current approach of licensing five-channel blocks is intended to provide users with scope for future service growth, however the Director recognises that in some cases there may be a specific requirement for a different number of channels. She is therefore considering the possibility of smaller assignments of two, three or four channels within existing five-channel blocks for flexible channel assignment.

Question 3. *Do you think there is a requirement for blocks of fewer than five channels to be made available for trunked mobile radio systems? If so, do you have a view on the minimum number of channels that should be licensed? (please present supporting arguments).*

Question 4. *Do you have a view on the minimum channel separation that should apply for co-sited trunked radio systems? (please present supporting technical arguments).*

4.3 Channel Loading Requirements for Trunked Mobile Radio Systems and Community Repeater Systems

The existing Community Repeater Regulations stipulate a minimum loading of 50 mobile terminals per channel per site, based on typical local area business radio systems. The Director proposes to apply the same minimum loading requirement to trunked mobile radio systems. In practice, significantly higher loadings should be possible due to the increased spectrum utilisation efficiency of trunked systems.

The minimum loading requirements will take effect two years after the issue of the initial licence. Where the loading levels are not met and there is unsatisfied demand for radio channels in the area served by the licensed system, the ODTR will not re-licence the operator for one or more of the assigned channels and may make them available to other users. Licensees must meet the minimum loading requirement for their existing channels before they may apply for any additional channels.

Question 5. *Do you agree with the proposed minimum loading criteria for trunked mobile radio systems? If not, please state why and put forward any alternative proposal you may have.*

4.4 Proposed Licence Fees for Analogue Trunked Mobile Radio

4.4.1 Fees levied under the Wireless Telegraphy Acts

It is proposed to apply a fee structure to trunked mobile radio systems similar to that which currently applies to Community Repeaters but with an adjustment to Euros. Therefore an annual charge of €625 (Old fee £500) per channel per base station would apply in the first year, rising to €1000 (Old fee £800) per channel per base station thereafter. A non-refundable licence application fee of €12 (Old fee £10) per channel per base station will also apply, to cover the administrative costs of processing the licence application. Fees for trunked mobile radio systems utilising five-channel blocks will be €3,125 for the first year and €5,000 (Old fee £4,000) per annum, after the first year. Trunked mobile radio licences will continue to be renewable on an annual basis under the new licensing regime.

For systems which connect to the PSTN, a licence fee is also payable for a telecommunications licence, in accordance with Section 111 of the Postal and Telecommunications Services Act, 1983, as amended.

Question 6. *Do you have a view on the proposed fee levels for trunked mobile radio systems?*

4.5 TETRA

The above proposals relate to analogue trunked radio systems. In her response to the

2000 consultation on Opening the Market for Terrestrial Trunked Radio (TETRA)[3], the Director acknowledged that there may be a demand for private, self-provided digital trunked radio systems, based on the European TETRA standard or equivalent standards, in the future. In that case proposals for a licensing procedure for such private systems will be developed and a further consultation held. It is anticipated that private digital trunked radio systems will be licensed on a similar basis to current analogue trunked radio systems.

In the case of TETRA PAMR services, the Director considers that efficient and effective use of the radio spectrum can best be achieved by means of a national PAMR network providing service to a wide range of users. However, consideration will be given to proposals for local area or on-site PAMR services based on the European TETRA standard or equivalent standards, should demand for such systems become apparent and subject to further consultation.

4.6 Proposed Band Plan for 410 - 430 MHz

The Director proposes the following Band Plan for the 410 - 430 MHz frequency band:

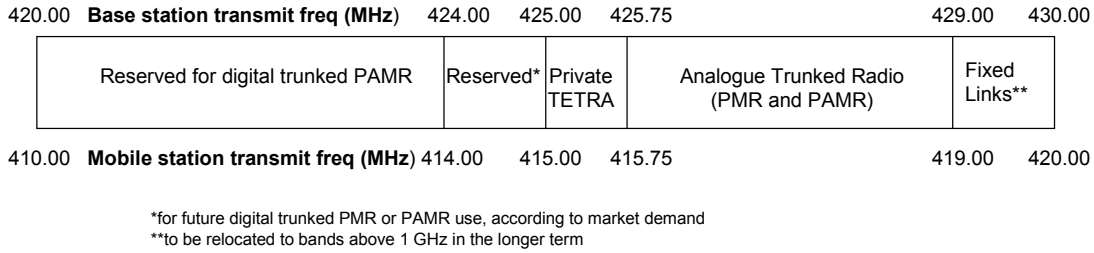

Figure 1: Band plan for the 410 - 430 MHz frequency band

Further consideration will be given to the status of the spectrum currently reserved for digital trunked mobile radio when there is a clearer indication of how the European market for such services is likely to develop. In the meantime views are welcomed on the likely future demand for analogue and digital trunked radio systems.

Question 7. *Do you have a view on the likely future demand for analogue and digital trunked mobile radio systems for public or private applications in Ireland?*

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5 CONCLUSIONS

The Director is pleased to present this consultation paper for comment by interested parties. Comments received will be considered carefully as the process of licensing trunked Business Radio services moves forward. This is an important opportunity to

[3] ODTR Doc 00/54 "Opening the Market for Terrestrial Trunked Radio (TETRA) - Response to the Consultation", August 2000

assist in developing further choice and competition in the Irish mobile communications market.

ANNEX A: Glossary

Business Radio Two-way mobile radio service operated by the user organisation. Size may range from two individual mobiles to an extensive network comprising multiple base stations and thousands of mobiles. An individual licence under the WT Acts is required for any Business Radio system. Also commonly referred to as Private Mobile Radio (PMR).

Community Repeater Mobile radio base station that can be accessed by multiple user organisations that subscribe to the service on a commercial basis. Provides Business Radio functionality without requiring users to hold an individual licence. Community Repeater operators must hold a licence under the WT Acts. Typically provides service for up to ten user organisations or 100 mobiles.

PAMR Public Access Mobile Radio, a public mobile communications network providing similar functionality to Business Radio on a national or regional basis. Typically provides service to a greater number of users and over a wider geographic area than community repeaters. A licence under the WT Acts is required by the operator, but not by users. If access to the PSTN is provided, a licence under the Telecommunications Acts is also required.

PMR Private Mobile Radio, an alternative term for Business Radio. The term Professional Mobile Radio is also sometimes used.

Telecommunications Act The Postal and Telecommunications Services Act, 1983, as amended, and the Telecommunications (Miscellaneous Provisions) Act 1996.

Trunking The pooling of multiple radio or voice channels in a communication system, enabling a large number of users to share a relatively small number of channels.

WT Acts The Wireless Telegraphy Acts, 1926 to 1988