

# Declaration of Interest regarding the use of Fixed Wireless Access

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## Introduction

In recognition of the need to guarantee local access for the supply of new telecommunications services in the best possible economic conditions, the Instituto das Comunicações de Portugal (ICP) aims to authorise<sup>1</sup> the use of Fixed Wireless Access<sup>2</sup> (FWA) in 1999. This initiative is included within the series of preparation measures for the liberalisation of the fixed telephone service in the year 2000 and aims to promote the supply of new services and technological platforms.

Market players will thus have the opportunity to express their opinions, before licenses are granted, concerning relevant aspects of this issue, including repercussions on the spectrum segment required by each operator, the number of licenses to be granted, the geographical range and taxation policy.

In the present context of license assignment, FWA involves radio connections, in particular point-multipoint connections (P-MP). FWA is understood to be a means of access to a public telecommunications network and as such forms an integral part of this network, although not associated to any specific content. The possibility is presently being considered of granting licenses for the system uniquely within the context of a network composed of infrastructures of a fixed nature. Access to existing telecommunications infrastructures in buildings or future infrastructures to be created as a result of wireless access, in particular those covered by RITA (Regulations of Telephonic Installations of Subscribers) are especially important, and need to be considered in this context. Since this consultation is limited to Declarations of Interest there is no obligation, imposition or right resulting from the participation by any interest party in this process.

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<sup>1</sup> In the context of this document, authorisation regards the use of systems that enable Fixed Wireless Access.

<sup>2</sup> This terminology is internationally recognised

## Objectives

The present document aims to identify the number and type of companies interested in integrating this specific system segment within their networks.

This information will enable a solid basis to be established for the future license assignment policy, including evaluation of possible extension bands, opening of new bands and the access regime to system licenses.

## Procedures

Interested parties may send their comments, until April 9, 1999, in writing to ICP's head-office, Av. José Malhoa, No. 12, 1070 Lisbon, or by e-mail, to [fwa@icp.pt](mailto:fwa@icp.pt).

A specific web page, ([www.icp.pt/actual/cfwauk.htm](http://www.icp.pt/actual/cfwauk.htm)), has also been created, containing all information regarding the present consultation, including the present document.

### **What is Fixed Wireless Access?**

Fixed Wireless Access refers to the support system for the provision of telecommunications services which partially or fully guarantees connection of users (or user groups) to a distribution or access point of a public telecommunications network.

The diversity of systems which may be used in local access (point-multipoint, cellular, wireless, etc) as an alternative to wireline connections results from the fact that there is currently no standard solution that caters for all possible scenarios. The possibility to combine different technologies, mixing radio solutions with connections via cable further expands the range of available solutions. Independently of the technology used, the implementation of FWA systems by telecommunications operators will increase spectrum requirements.

In this manner, spectrum availability will condition the development of FWA systems. It is important to clarify certain key aspects in this regard: What are likely spectrum requirements? What license assignment policies will be introduced? Will spectrum scarcity limit the number of operators? Will one technology become dominant?

These and other questions are profoundly interrelated and cannot be answered separately, or outside the context of national telecommunications policy.

Access systems may be broadly classified by the bandwidth of services supported: narrowband, wideband and broadband systems. Narrowband systems are related to the transmission of vocal telephony and low-debit data (typically below 9,6 kb ps); wideband systems enable rhythms compatible with ISDN (typically 64 kb ps to 2 Mb ps) and broadband systems enable the transmission of high-debit data (typically above 2 Mb ps).

FWA systems using P-MP, currently available in the market, are owned by different manufacturers, since there are still no universal norms in this area. ETSI (*European Telecommunications Standard Institute*) has nonetheless established norms to be applied to access systems based upon TDMA (*Time Division Multiple Access*), FDMA (*Frequency Division Multiple Access*) and CDMA (*Code Division Multiple Access*), specifically regarding system architecture, radio characteristics and interfaces.

### **Frequencies**

FWA systems are presently expected to operate in the bands from 3.5 GHz to 26 GHz. These bands are defined by the publication of frequencies ([www.icp.pt/actual/frequencias98.htm](http://www.icp.pt/actual/frequencias98.htm)) available for point-multipoint systems.

The plans considered for the bands 3.4-3.6 GHz and 24.5-26.5 GHz are those indicated in the recommendations, CEPT T/R 14-03 and CEPT T/R 13-02 Annex B respectively.

The size of the frequency blocks to be assigned has still not been defined, and this is one of the objectives of this consultation.

### **Licenses for the use of FWA**

In order to ensure a transparent and non-discriminatory basis for granting licenses it is necessary to establish a solid basis for action. The consultation

process for Declarations of Interest will enable ICP to confirm whether interested parties exist for the implementation of FWA systems, and on the basis of responses received, define a model for license assignment policy, including the following:

- Geographical ambit of the utilisation license;
- Method for frequency assignment;
- License assignment conditions;
- Spectrum utilisation taxes to be applied.

Spectrum utilisation taxes are to be defined in function of various factors, in particular the frequency band, spectrum quantity, coverage area and the geographical region of utilisation.

### Questionnaire

In the light of the above, ICP aims to identify different viewpoints regarding these issues whose key aspects are identified in the following questions.

1. Given the assumptions and conditioning factors specified in this document, are you, as a market player, interested to obtain authorisation for the use of FWA?

2. Given the anticipated frequency bands and the type of services that you aim to provide, what is your minimum spectrum requirement to develop such services? Identify the assumptions upon which this estimate is made, specifically the technology to be used, service quality and the distance of frequency re-utilisation.

3. What is your opinion regarding the granting of licenses that assign frequency blocks in different frequency bands?

4. Subject to the technology to be used, what is your opinion regarding the following:

- i. Sharing of frequency band and/or infrastructures (site-sharing) with other P-MP systems in the same geographical region?
- ii. Site sharing with other radio-communications systems?

5. Do you require FWA licenses for a regional or national ambit? In the event that you prefer a regional license, how do you believe the regions should be defined (municipal boundaries, wider or narrower definition of regions)?

6. Given that the operation of radio-communications systems is subject to the payment of a spectrum utilisation tax, what is your opinion regarding the following questions:

- i. Should the FWA operator tax be based solely upon promoting rational spectrum utilisation or should it also partially reflect the price of the service it substitutes, i.e. the price of access to the Fixed Telephone Service?
- ii. In what manner should the following factors, amongst others, be taken into account in the calculation of this utilisation tax, in consideration of the need to achieve balanced development of infrastructures and service provision throughout the national territory?
  - Frequency bands (3,5 GHz or 26 GHz);
  - Spectrum occupied (number of channels x bandwidth of each channel);

- Area of covered/authorised region;
- Regional asymmetry (demographic/geographical/economic aspects).

7. In the event that FWA encourages competitiveness in terms of local access, might there be a need for operators to offer Local Loop Unbundling services?

8. Given that planning for the available frequency bands is designed for symmetric use (paired bands), what is the best means to achieve maximum effectiveness of spectrum utilisation in the case of asymmetric traffic services?

9. Considering the great variety of possibilities in the use of FWA technologies what other possibilities do you foresee in terms of other frequency bands and associated technologies?

10. Considering the Regulations of Telephonic Installations of Subscribers (RITA), what problems and solutions do you foresee in order to be able to make maximum use of a collective subscriber installation existing within buildings?

11. How do you foresee the placing of antennae and associated systems in buildings in terms of assembly, localisation and electricity supply?