# Radio Links Licences
# Guidelines to Applicants

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**Note: The information contained in these guidelines is subject to change without notice.**

# 1. General Information

Radio Links are commonly used for providing high bandwidth connections between two points. These links can form part of public electronic communications networks, broadcasting networks (now also classified as electronic communication networks) as well as private networks.

The National Frequency Plan[1], in line with the Radio Regulations of the International Telecommunication Union (ITU), establishes a number of frequency bands that can be used for the provision of radio links.

These guidelines focus solely on terrestrial services and exclude services that make use of one or more satellites. In general, radio links can be divided into the following groups:

- point-to-point systems;
- point-to-multipoint systems.

[1] http://www.mca.org.mt/infocentre/openarticle.asp?id=516&pref=24

# 2. Statutory Requirements

## 2.1 Regulations

The operation of radio links is regulated through the following legislation:

- The Electronic Communications (Regulation) Act (ECRA) (Cap. 399 of the Laws of Malta): establishes the framework for the grant of rights of use of radio frequencies.

- The Radiocommunications Act (RCA) (Cap. 49 of the Laws of Malta): establishes a generic requirement for a licence to possess and use radiocommunications apparatus, unless the apparatus in question is licence-exempt.

- The Fees Ordinance (Cap. 35 of the Laws of Malta): establishes the applicable licence or administrative fees.

Each licence therefore authorises the use of specific apparatus, which is listed as part of the licence, for transmissions on specific frequencies, to and from specific points.

## 2.2 R&TTE Equipment Compliance

The placing on the market and putting into service of radio equipment is regulated by the Radio Equipment and Telecommunications Terminal Equipment and the Mutual Recognition of their Conformity Regulations (S.L.427.41). These Regulations transposed the provisions of the R&TTE Directive (1999/5/EC) into national legislation.

These rules set out a regulatory framework for radio and telecommunications terminal equipment to be compliant with essential requirements concerning user health, safety, electromagnetic compatibility and radio spectrum usage. Therefore all radio equipment including radio links, can be placed on the market and put into operation only if it complies with the said essential requirements and with other relevant provisions of these regulations. The latter includes, amongst other things, the requirement to affix proper CE marking.

Detailed information on the R&TTE requirements is available in the portals of the European Commission[2] and the MCA[3].

[2] http://ec.europa.eu/enterprise/sectors/rtte/files/guide2009-04-20_en.pdf
[3] http://www.mca.org.mt/infocentre/openarticle.asp?id=807&pref=14

# 3. Before applying for a Licence

There are many technical parameters that need to be considered when planning a radio link or a network of radio links. The following guidance relates to the most common issues.

## 3.1 Planning aspects of radio links

The general aim when planning a radio link is to identify the desired site location, frequency band and channel spacing to meet the transmission and availability requirements of the system. The following may assist the applicant in this process.

- When planning a radio link or a network of radio links, applicants must ensure optimal radio link spectrum efficiency, and repeat usage of the same frequency channel(s) throughout the network should be maximised.

  Where the applicant already has existing radio link licences, any future applications should, where possible, be based upon frequency channels already licensed to the applicant. The re-use of a frequency channel results in a reduction in licence fees. Where possible, the MCA will endeavour to facilitate applications based on re-used channels.

  The applicant should also consider the possibility of applying for a nationwide coverage licence (see section 5.2) which gives considerable flexibility to the applicant and could result in cost savings as the level of channel re-use is increased.

- The applicant should check that its desired radio link plan is in compliance with the technical requirements as set out in Appendix 1.

- Applicants should plan their radio link network based on the minimum Equivalent Isotropic Radiated Power (EIRP) necessary to achieve the required availability. This, together with the use of the most directional antennas should minimise the risk of interference to other users of the radio spectrum.

- Prior to submitting an application applicants should engage with their preferred equipment manufacturer to ensure that the desired radio link equipment is available, should spectrum be assigned on the frequency band requested in the application.

- The applicant should ensure that there are no internal interference issues (i.e. interference on its own network) on the desired frequency channels, as the MCA does not take internal interference issues into consideration when evaluating a radio link application.

- The applicant should also check with an architect and/or competent authority whether a planning permit is required for the installation of antennas at their preferred sites.

Applicants are encouraged to seek MCA's feedback on their intention to apply for a radio link licence prior submitting an application form.

# 4. Application Process

## 4.1 Categories of applications

An application could be categorised as follows:

- Setting up of a new link on a new channel
- Setting up of a new link on an already-used[4] channel
- Setting up of a new link on an existing nationwide channel[5]

In the first two instances the applicant is required to submit an application form, whilst for the third case the applicant will need to fill in a notification form. The Authority will subsequently process this application in line with the procedure outlined in Section 4.3 below.

## 4.2 Submitting an Application or Notification – Terms for submission

In order to minimise the possibility of an application proving unsuccessful, applicants are requested to review the suggestions contained in the above section 3 prior to submitting their application / notification forms.

These forms can be found in the following links:

- Application form to establish a new link or to be assigned with a new radio frequency (MCA/10/23): http://www.mca.org.mt/infocentre/openarticle.asp?WsAppId=590&id=1416&pin=podfk5465g4v6e5r4g6

- Application form to change the status of an already assigned radio frequency (MCA/20/24): http://www.mca.org.mt/infocentre/openarticle.asp?WsAppId=590&id=1417&pin=podfk5465g4v6e5r4g6

- Notification form to add or reduce radio links to a nationwide licence (MCA/10/25) http://www.mca.org.mt/infocentre/openarticle.asp?WsAppId=590&id=1418&pin=podfk5465g4v6e5r4g6

To submit an application/notification, it is necessary to carry out the following tasks.

- In the case of an application, prior to submitting the form, it is recommended that applicants have carried out the necessary checks as outlined in Appendix 2. This minimises the possibility of the application proving unsuccessful;

[4] The channel in question could be either in use by the applicant or another user
[5] The operator is already licensed to use the channel in question on a nationwide basis.

- The application/notification form must be completed in full in accordance with these guidelines, and the instructions contained in the forms;

- The declaration in the application/notification form must be signed.

## 4.3 The Evaluation Process & Assignment Methodology

Only applicants that have met the minimum requirements outlined above will be considered for evaluation. Invalid applications will be declined and returned to the applicant.

Unless the MCA indicates otherwise, all valid applications for a radio link licence will be evaluated on a First Come First Served basis, with applications received on the same day being treated equally, i.e. evaluated as though they arrived at the same time.

### 4.3.1 New Link on a New Channel

- Prior to accepting an application, the MCA carries out a validation process to ensure that the spectrum bands being requested are the most appropriate for the service being established with a view to making an efficient use of the available spectrum.

- Applicants should note that while the MCA will endeavour to accommodate the needs of the applicant, there is no guarantee that the requested frequency band or channel will be granted.

- Following conclusion of the evaluation phase, the applicant will be informed of MCA's decision to accept or refuse an application. In the event of refusal, the reasons for refusal will be specified and the applicant will be requested to submit a fresh application that addresses these points.

- Once an application is accepted, the MCA will issue a public notice of the proposed assignments. In the absence of any representations, the Authority will issue a temporary assignment for a maximum period of 6 months. In the event that the operator does not make use of the spectrum thereby assigned, or part thereof, within these 6 months, the assignment of the unutilised spectrum will be rescinded. As soon as the radio equipment comprising the link is in possession of the applicant the Authority will issue an invoice and, upon payment of the fees due, the rights of use in line with the licence conditions outlined in Section 5 will be granted.

### 4.3.2 New Link on an Already-Used Channel

The establishment of a new link on a channel already assigned to a licensee is initiated through the submission of an application (refer to section 4.2 above).

Prior to accepting an application, the MCA carries out a validation process to ensure that the spectrum bands being requested are the most appropriate for the service being established with a view to making an efficient use of the available spectrum. Applicants should note that while the MCA will endeavour to accommodate the needs of the applicant, there is no guarantee that the requested frequency band or channel will be granted.

Following the conclusion of the evaluation phase, the applicant will be informed of MCA's decision to accept or refuse an application. In the event of refusal, the reasons for refusal will be specified and the applicant will be requested to submit a fresh application that addresses these points.

Once an application is accepted, the Authority will proceed with the update of the grant of rights of use in line with the licence conditions outlined in Section 5.

### 4.3.3 New Link on an Existing Nationwide Channel

In this case the licensee in question must submit the notification form so as to notify the Authority of the deployment of a new link and provide the Authority with the necessary equipment details.

Upon receipt of this notification the Authority will duly update the relevant licence.

# 5. Licence Information

A Radio Link licence allows the licensee to keep and operate radio apparatus in accordance with the regulations mentioned earlier in this document. The following provides guidance on the licence conditions attached to a radio link licence. It should be noted that the MCA reserves the right not to issue a licence.

## 5.1 Licensee

The Radio Link licensee can be an individual, company or firm. It is the responsibility of the licensee to ensure compliance with the Radio Link licence conditions. Additionally, it is the responsibility of the licensee to ensure that their licence details with MCA remain valid and updated. The licensee should inform MCA of any licence amendments (e.g. change of address) as soon as they occur.

## 5.2 Types of Licence Categories

**Links below 1GHz**

Radio Links intending to operate below 1 GHz can be categorised in two types: those being used for services ancillary to broadcasting and those used for other services. This difference is also reflected in the licence fees that need to be paid for such links.

**Links above 1GHz**

With the introduction of the new regime, the same fees will apply for services ancillary to broadcasting and those used for other services. However, there will be two different types of licence categories. An operator may choose to apply for the type of licence that best suits his needs, i.e. either a 'per link' licence or a 'national coverage' licence.

A 'per link' licence gives the operator the right to deploy a link between two specific points. Licensees should be aware that MCA could license other users on the same frequency channels, provided that there is minimal interference potential. In this case the licensee would need to submit a fresh application to the MCA for every additional link as outlined in sections 4.3.1 and 4.3.2.

A 'national coverage' licence would give the operator the right to deploy any number of links with the channel spacing less than or equal to the assigned frequency channel. In case of additional links, 'Nationwide' licensees should send a notification to the MCA as outlined in section 4.3.3.

## 5.3 The Licensed Frequency

A Radio Link licence allows the licensee to install and operate a radio link on a specified frequency band and channel spacing, between specific points as the case may be.

A licence does not confer any right of ownership of the frequency spectrum. It allows the assigned frequency channel to be used during the term of the licence in accordance with the conditions of the licence.

It should be noted that if a Licensee has no radio links established on a radio frequency or channel assigned to it, the MCA will consider that that frequency is no longer required and its assignment will be withdrawn. The Licensee will be notified with this withdrawal.

## 5.4 Licence Duration

The duration of licences for radio links is of one year renewable subject to the conditions described in section 5.5.

The following provides information on the duration of licences relevant to different scenarios.

- *New link, new channel*

The duration of the licence is one year renewable, which licence period will commence on the date when the radio equipment comprising the link is in possession of the applicant[6].

If the applicant already enjoys a Radio Link licence, the amended licence duration will be pro-rata[7] to coincide with the expiry date of the current licence. Upon renewal, the licence duration will be of one calendar year.

- *New link, same channel*

This implies that the applicant already operates a Radio Link licence on the channel in question. The amended licence duration will be pro-rata to coincide with the expiry date of the current licence, whereby the pro-rata period will commence on the date when the radio equipment comprising the link will be in possession of the applicant. Upon renewal, the licence duration will be of one calendar year.

[6] In accordance with the RCA, possession of radiocommunications equipment is subject to licensing.

[7] The licence fee for pro-rata duration will also be pro-rata.

- *New link, nationwide*

This implies that the applicant already enjoys a Radio Link licence. The termination date of the current licence is retained.

## 5.5 Licence Renewal

The MCA may renew a licence subject to the necessary renewal conditions being met, primarily that the necessary licence fees are paid prior to the licence's termination date.

It is the responsibility of the Licensee to request MCA to change the category of the Licence from a 'per link' to 'nationwide coverage' basis. If this request is not received at least 60 days prior the expiry date of the licence due for renewal, the MCA will consider a no change to the status of the assigned radio frequencies.

In this regard, circa 30 days prior the expiry date of licences, a renewal notice in the form of an invoice is sent to the Licensee. This invoice covers the forthcoming calendar year, which would need to be settled as per the payment terms stated in the invoice. Upon payment in full of the renewal fee, a new licence is issued. However, prior to the issuance of this licence the MCA reserves the right to inspect the radio link to verify the relevant details.

It is pertinent to point out that in the event that the fees due are not settled within the indicated timelines, a penalty for late payment of licence fees is imposed. In addition, failing to pay the relevant licence fees will constitute a breach to the licence conditions and the Radiocommunications Act[8]. In the circumstances the MCA has the right to revoke the licence and withdraw the assignment of the radio frequency.

## 5.6 Licence Amendment

It is the responsibility of the licensee to inform the MCA of any licence amendments as soon as they occur.

A licence amendment occurs when the administrative details on the licence are no longer correct and therefore need to be updated.

It should be noted that a change in the site co-ordinates of the radio link licence is not an amendment. In such cases, the existing licence will be cancelled and the licensee must apply for a new link with the new site co-ordinates.

[8] A breach to the Radiocommunications Act is considered a criminal offence.

Where the technical characteristics of radio links listed in a licence are modified, the MCA will issue an amended licence. This could be subject to the submission of an application form and to the payment of any pro-rata fees that may arise due to, for example increased bandwidth usage.

In exceptional circumstances and where appropriate, the MCA may need to make modifications to existing licences conditions. Where this is required, the MCA will endeavour to provide as much advance notice as possible to the affected licensees.

## 5.7 Licence Cancellation

A licence may be cancelled at the written request of the licensee. Two types of cancellations may occur:

- Cancellation of a radio link due for example to service discontinuation, in which case the Radio Link licence would need to be amended; or
- Cancellation of all the Radio Link systems, in which case the entire licence is terminated.

In both cases, administration fees relating to the cancellation procedures may apply.

Any fees due should be settled prior to the cancellation of licence. In addition there shall be no entitlement to any refund of licence fees in the event of any such cancellation.

## 5.8 Transfer of a Licence

A transfer of a licence is subject to approval by MCA and is considered on a case-by-case basis. This arrangement also applies when there is a change in the ownership of a company.

## 5.9 Temporary Licence

The MCA accepts requests made for the establishment of temporary Radio Links. Temporary licences are issued against payment of the relevant licence fees. These fees are pro-rata to the annual fees as contained in the Regulations, however, subject to a minimum payment relevant to one month.

## 5.10 Revocation of a Licence

The MCA may suspend or revoke a licence where there is serious or repeated non-compliance, by the Licensee with the conditions of the licence or Laws administered by the Authority. This includes failure to pay the licence fees due.

# 6. Licence fees

The applicable licence fee structure may be found in Appendix 3.

The licence fees for links below 1 GHz will remain unchanged. The fees for radio-relay links depend on the bandwidth of each terminal comprising the radio link system. For systems used for services ancillary to broadcasting, a fixed fee applies which is dependent on whether the service relates to audio or video applications.

For radio-relay links and services ancillary to broadcasting, operating in spectrum above 1 GHz the fee will depend on the occupied bandwidth[9] of each radio link. In this case, a 2-year transition period to introduce the new fees has been adopted. The fee structure that will come into force on **1 January 2012** will be further explained hereunder.

## 6.1 Fees for "per-link" licences

The first link is charged at €45 per MHz. An incentive was introduced to encourage operators to invest in the reutilisation of assigned frequencies. In this regard, operators deploying links on re-used channels will benefit from a reduction of 50% from the applicable licence fees (€22.50 per MHz). A typical example is shown hereunder:

**Operator deploys 2nd bidirectional link (2x28MHz) in same channel**

- 1st link: €45 x 2 x 28 = €2,520
- 2nd link: 50% of €2,520 = €1,260
- Total fee due €3,780

**Note: The reduction in fees will only apply if the applicant itself already operates a Radio Link licence on the channel in question.**

## 6.2 Fees for National Coverage Licences

A fixed fee was set in order to allow users to establish any number of links (a national coverage fee). In this way, an operator is free to establish links of any channel spacing within a channel.

The national coverage fee was set at the fee due for 10 re-uses. The fee that is due for 1MHz of bandwidth (unidirectional) having national coverage at €45 per MHz is €247.50 per MHz.

[9] Occupied bandwidth may be defined as the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage β/2 of the total mean power of a given emission. Unless otherwise specified, the value of β/2 should be taken as 0.5%.

**Operator deploys more than 10 bidirectional links (2x28MHz) and applies for nationwide coverage licence**

- 1st link: €45 x 2 x 28 = €2,520
- 9 links @ €22.50 x 2 x 28 = €11,340
- 11th and subsequent links are free of charge
- Total fee due €13,860
- This is equivalent to €247.50 x 28 x 2

## 6.3 Unidirectional and Bidirectional Links

The fees in Appendix 3 do not take into consideration how links are used but are solely based on the bandwidth requested. This means that bi-directional links are charged twice unidirectional ones.

The Authority in this case reserves the right to assign the related paired channel to other parties as deemed fit.

Example of applicable fees:

**First 28MHz bidirectional link**
- €45 x 2 x 28 = €2,520

**First 28MHz unidirectional link**
- €45 x 28 = €1,260

## 6.4 Point-to-Multipoint Links

A Point-to-multipoint link is a method of linking by radio, a central station located at a specified fixed point and multiple out-stations located at fixed points. Any transmission of data that originates from the central station is received by all of the out-stations, while any transmission of data that originates from any of the out-stations is only received by the central station.

With regard to licence fees, point-to-multipoint links are considered as a composition of a number of unidirectional or bidirectional links. Consequently, the charging computation described in sections above will be applicable for point-to-multipoint links.

Example of applicable fees:

A central station communicating with four peripheral stations, employing 3 uni-directional links operating on one frequency with 28 MHz bandwidth and one bidirectional link on other frequencies with 28 MHz bandwidth:

**First 28MHz unidirectional link**

- €45 x 28 = €1,260

**Other 28MHz unidirectional links**

- €45 x 28 x 2 x 50% = €1,260

**First 28MHz bidirectional link**

- €45 x 2 x 28 = €2,520

# 7. Others

## 7.1 International Coordination Obligations

The establishment of radio links whose transmissions cross the territories of other countries could require MCA to undertake international coordination and registration procedures, particularly where there is a possibility of interference to/from the terrestrial and/or satellite services of other jurisdictions. As this is a lengthy process, radio links are licensed subject to a condition that the licence may have to be amended, or withdrawn if the process is unsuccessful. Where changes arising from international coordination are required to be made to a licence, the Licensee will be advised of the necessary changes. In this event, all expenses must be borne by the Licensee.

## 7.2. Site Inspections

The MCA reserves the right to inspect a radio link station at any time to ensure that the system is configured and operating in accordance with the licence conditions.

# APPENDIX 1

## Planning a Radio Link above 1 GHz

| Band | Frequency | Transmit / Receive separation (duplex direction) | Band Plan | Channel spacing | Minimum path length per Link[10] |
|---|---|---|---|---|---|
| 1.3 GHz | 1350-1375 MHz and 1492-1517 MHz | 142 MHz | CEPT Recommendation T/R 13-01 E, Annex A | 0.025MHz, 0.25MHz, 0.5MHz, 1MHz, 2MHz | n/a |
| 1.4 GHz | 1375-1400 MHz and 1427-1452 MHz | 52 MHz | CEPT Recommendation T/R 13-01 E, Annex B | 0.025MHz, 0.25MHz, 0.5MHz, 1MHz, 2MHz | n/a |
| 2 GHz | 2025-2110 MHz and 2200-2290 MHz | 175 MHz | CEPT Recommendation T/R 13-01 E, Annex C | 3.5MHz, 7MHz, 14MHz | 25 km |
| L6 GHz | 5.925-6.425 GHz | 252.4 MHz | CEPT/ERC/REC 14-01 E, Annex 1 | 29.65MHz | 25 km |
| U6 GHz | 6.425-7.125 GHz | 340 MHz | CEPT/ERC/REC 14-02 E, Annex 1 | 20MHz, 40MHz | 25 km |
| L7 GHz | 7.125-7.425 GHz | 154 MHz | CEPT/ECC/REC/ (02)06, Annex 1 | 3.5MHz, 7MHz, 14MHz, 28MHz | 25 km |
| U7 GHz | 7.425-7.725 GHz | 154 MHz | CEPT/ECC/REC/ (02)06, Annex 1 | 3.5MHz, 7MHz, 14MHz, 28MHz | 25 km |
| 8 GHz | 7.9-8.5 GHz | 310 MHz | CEPT/ECC/REC/ (02)06, Annex 2 | 3.5MHz, 7MHz, 14MHz, 28MHz | 25 km |
| 10 GHz | 10-10.68 GHz | 350 MHz | CEPT/ERC/REC 12-05 E | 3.5MHz, 7MHz, 14MHz, 28MHz | 10 km |
| 11 GHz | 10.7-11.7 GHz | 490 MHz | CEPT/ERC/REC 12-06 E | 40MHz | 10 km |
| 13 GHz | 12.75-13.25 GHz | 266 MHz | CEPT/ERC/REC 12-02 E | 3.5MHz, 7MHz, 14MHz, 28MHz | 9 km |
| 15 GHz | 14.5-15.35 GHz | 420 MHz | ITU-R F.636-3 | 3.5MHz, 7MHz, 14MHz, 28MHz | 9 km |
| 18 GHz | 17.7-19.7 GHz | 1010 MHz | CEPT/ERC/REC 12-03 E | 13.75MHz, 27.5MHz, 55MHz | 6 km (≤34Mbit/s) or 0 km (>34Mbit/s) |

[10] The transmit power should be set to the minimum required to obtain the required availability level.

| Band | Frequency | Transmit / Receive separation (duplex direction) | Band Plan | Channel spacing | Minimum path length per Link[10] |
|---|---|---|---|---|---|
| 23 GHz | 22.0-22.6 GHz and 23.0-23.6 GHz | 1008 MHz | CEPT Recommendation T/R 13-02 E, Annex A | 3.5MHz, 7MHz, 14MHz, 28MHz | 3 km (≤34Mbit/s) or 0 km (>34Mbit/s) |
| 38 GHz | 37.0-39.5 GHz | 1260 MHz | CEPT Recommendation T/R 12-01 E | 3.5MHz, 7MHz, 14MHz, 28MHz | 0 km |
| 80 GHz | 71-76 GHz and 81-86 GHz | 10 GHz, < 5 GHz | CEPT/ECC/REC/ (05)07 | 250MHz-4.75GHz | 0 km |

# APPENDIX 2

## Application Checklist

Before submitting a radio link application, MCA advises applicants to complete the checklist below.

| Item | Issue | | Confirmed |
|---|---|---|---|
| 1. | All data provided for site co-ordinates is accurately sourced, preferably from GPS readings taken at precise mast locations; | | ☐ |
| 2. | Check if a planning permit is required from the competent authorities with regard to the installation of telecommunications infrastructures; | | ☐ |
| 3. | If applicable, a preferential channel has been requested; | n/a ☐ | ☐ |
| 4. | The EIRP stated in the application is the minimum necessary to achieve the required availability; | | ☐ |
| 5. | All the information requested in the application forms has been duly completed in an accurate manner. | | ☐ |

# APPENDIX 3

## Licence Fees – Extract of the Fees (Radiocommunications) Regulations (S.L.35.01)

"3. (a) Fixed Radio-Relay link operating in frequency bands below 1GHz, for each terminal, depending upon the bandwidth, per annum fee:

| | € |
|---|---|
| (i) not more than 100kHz ..... | 230.00 |
| (ii) more than 100kHz up to 1MHz ..... | 465.00 |
| (iii) more than 1MHz up to 10MHz ..... | 695.00 |
| (iv) more than 10MHz up to 100MHz ..... | 930.00 |
| (v) more than 100MHz, per 100MHz bandwidth ..... | 930.00 |

(b) Fixed Radio-Relay link, operating in frequency bands above 1 GHz and assigned prior to 2010, for each terminal, depending upon the bandwidth, per annum fee applicable up to 31st December 2010:

| | € |
|---|---|
| (i) not more than 100kHz ..... | 230.00 |
| (ii) more than 100kHz up to 1MHz ..... | 465.00 |
| (iii) more than 1MHz up to 10MHz ..... | 695.00 |
| (iv) more than 10MHz up to 100MHz ..... | 930.00 |
| (v) more than 100MHz, per 100MHz bandwidth ..... | 930.00 |

(c) Fixed Radio-Relay link, operating in frequency bands above 1 GHz and assigned prior to 2010, per annum fee applicable from 1st January 2011 to 31st December 2011:

(i) For the first link, operating on a channel, for each terminal, depending upon the bandwidth

| | € |
|---|---|
| a. not more than 100kHz ..... | 230.00 |
| b. more than 100kHz up to 1MHz ..... | 465.00 |
| c. more than 1MHz up to 10MHz ..... | 695.00 |
| d. more than 10MHz up to 100MHz ..... | 930.00 |
| e. more than 100MHz, per 100MHz bandwidth ..... | 930.00 |

| | |
|---|---|
| (ii) For subsequent links, operating on a re-used channel, per link ..... | 40% off fees in (i) above |
| (iii) For a channel, independent of the number of links deployed, per MHz bandwidth ..... | 247.50 |

(d) Fixed Radio-Relay link, operating in frequency bands above 1 GHz and assigned prior to 2010, per annum fee applicable from 1st January 2012:

| | € |
|---|---|
| (i) for the first link, operating on a channel, per MHz bandwidth ... | 45.00 |
| (ii) for subsequent links, operating on a re-used channel, per link per MHz bandwidth ..... | 22.50 |
| (iii) for a channel, independent of the number of links deployed, per MHz bandwidth ..... | 247.50 |

(e) Fixed Radio-Relay link, operating in frequency bands above 1 GHz and assigned in 2010 and thereafter, per annum fee:

| | € |
|---|---|
| (i) for the first link, operating on a channel, per MHz bandwidth ... | 45.00 |
| (ii) for subsequent links, operating on a re-used channel, per link per MHz bandwidth ..... | 22.50 |
| (iii) for a channel, independent of the number of links deployed, per MHz bandwidth ..... | 247.50 |

"4. (a) Broadcasting services (Ancillary) operating in frequency bands below 1GHz, per annum fee:

| | € |
|---|---|
| (i) Sound ..... | |
| a. Studio to transmitter link..... | 116.00 |
| b. Outside broadcasting unit ..... | 116.40 |
| c. Repeater..... | 116.40 |
| (ii) Vision ..... | |
| a. Studio to transmitter link..... | 230.00 |
| b. Outside broadcasting unit ..... | 230.00 |
| c. Repeater..... | 116.40 |

(b) Broadcasting services (Ancillary) operating in frequency bands above 1 GHz and assigned prior to 2010, per annum fee applicable up to 31st December 2010:

| | € |
|---|---|
| (i) Sound ..... | |
| a. Studio to transmitter link..... | 116.00 |
| b. Outside broadcasting unit ..... | 116.40 |
| c. Repeater..... | 116.40 |
| (ii) Vision ..... | |
| a. Studio to transmitter link..... | 230.00 |
| b. Outside broadcasting unit ..... | 230.00 |
| c. Repeater..... | 116.40 |

(c) Broadcasting services (Ancillary) operating in frequency bands above 1 GHz and assigned prior to 2010, per annum fee applicable from 1st January 2011 to 31st December 2011:

| | € |
|---|---|
| (i) for the first link, operating on a channel, per MHz bandwidth..... | 30.00 |
| (ii) for subsequent links, operating on a re-used channel, per link per MHz bandwidth ..... | 40% off fees in (i) above |
| (iii) for a channel, independent of the number of links deployed, per MHz bandwidth | 247.50 |

(d) Broadcasting services (Ancillary) operating in frequency bands above 1 GHz and assigned prior to 2010, per annum fee applicable from 1st January 2012:

| | € |
|---|---|
| (i) for the first link, operating on a channel, per MHz bandwidth ... | 45.00 |
| (ii) for subsequent links, operating on a re-used channel, per link per MHz bandwidth ..... | 22.50 |
| (iii) for a channel, independent of the number of links deployed, per MHz bandwidth ..... | 247.50 |

(e) Broadcasting services (Ancillary) operating in frequency bands above 1 GHz and assigned in 2010 and thereafter, per annum fee:

| | € |
|---|---|
| (i) for the first link, operating on a channel, per MHz bandwidth ... | 45.00 |
| (ii) for subsequent links, operating on a re-used channel, per link per MHz bandwidth ..... | 22.50 |
| (iii) for a channel, independent of the number of links deployed, per MHz bandwidth ..... | 247.50 |