



Electronic Communications Committee (ECC)
within the European Conference of Postal and Telecommunications Administrations (CEPT)

ECC REPORT

**DESCRIPTION OF PRACTICES RELATIVE TO TRADING OF
SPECTRUM RIGHTS OF USE**

Paris, May 2011

0 EXECUTIVE SUMMARY

The aim of this report is to provide factual information on trading procedures within CEPT countries. Therefore the report does not include any recommendations.

The transaction procedure is generally simple and has a limited number of steps¹ which may include:

- Notification of the intention to trade
- Publication of notified information
- Approval of transaction
- Publication of final transaction

The report also presents data on transactions for different bands. The main observation is that very different transaction patterns (number of licences and number of transactions) are observed depending on the bands. This means that competition issues may be different in different bands and could be treated specifically. The tools to deal with such issues include the possibility to refuse a transaction on competition ground and requirements in the licences for the effective exploitation of the rights of use. Detailed analysis of such tools is outside the scope of the report.

The report also includes a section on leasing dealing exclusively with the leasing transaction procedure.

¹ Not all administrations follow all steps (details are to be found inside the Report).

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LIST OF ABBREVIATIONS

Abbreviation	Explanation
BWA	Broadband Wireless Access
CEPT	European Conference of Postal and Telecommunications Administrations
ECN&S	Electronic Communications Networks and Services
EU	European Union
FWA	Fixed Wireless Access
GSM	Global System for Mobile communications
IMT	International Mobile Telecommunications
NRA	National Regulatory Authority
PAMR	Public Access Mobile Radio
PMR	Professional Mobile Radio
PMSE	Program Making Special Events
RSPG	Radio Spectrum Policy Group
WLAN	Wireless Local Access Network

Description of practices relative to trading of spectrum usage rights

1 INTRODUCTION

This report is the result of a project carried out by WGRA.

1.1 Subject and purpose of the Report

The aim of this Report is to present information on trading of rights of use as practiced in CEPT countries. Information on the regulations applicable to transactions and on the role of spectrum authorities has been collected via a questionnaire (annex 1).

The question of trading has been studied previously by the ECC in 2002 with ECC Report 016 “Refarming and trading in a changing radiocommunication world” [1]. However in contrast with the present Report the main focus was to analyse how trading could provide flexibility in spectrum use and be complementary to refarming as a tool to introduce new spectrum usage. ECC Report 016 presented some qualitative assessment of the advantages that could be expected from a market based approach. It also presented some of the limitations of such an approach.

1.2 Structure of the Report

This Report begins by an analysis of the different authorisations regimes used in CEPT countries based on the responses to the questionnaire sent out to administrations (section 2).

The heart of the report is the section on trading of rights of use (section 3). Here again the content is based on the responses to the questionnaire. There are descriptions of trading procedures, with a step by step analysis. Then data on the transactions recorded in a selection of CEPT countries (those that have provided quantitative information on transactions) is presented. The final subsection presents a very limited evaluation of this transaction activity, keeping in mind that the purpose of this report was not to assess advantages and disadvantages of trading of rights of use.

The final section of the report (section 4) presents factual information on leasing procedures as provided in the questionnaire.

The Report mentions at several instances specific countries as examples based on information provided in the questionnaire noting that such citations are simply for illustration purposes only (and such lists of countries are not exhaustive).

2 CHARACTERISTICS OF FREQUENCY AUTHORISATIONS

Before examining the legal frameworks for trading of rights of use within CEPT countries it is useful to study the objects that are traded, that is the spectrum rights of use. Section 2.1 presents the existing general regulatory framework (which must be taken into account by national legal frameworks in the case of EU countries). Section 2.2 presents the national legal frameworks and some characteristics of frequency authorisations that are relevant to trading.

2.1 Existing general regulatory framework

Legal frameworks for spectrum rights of use are regulated at national level. There are no CEPT recommendations with respect to these national legal frameworks for rights of use. However, within the EU there is a harmonised regulatory framework for rights of use in the context of Electronic Communications Networks and Services (ECN&S). The relevant texts are the “Framework” Directive [2] and the “Authorisation” Directive [3]. The following sections present the EU legal framework for radio frequencies authorisations as applicable to ECN&S.

The two directives mentioned above allow two kinds of authorisation status in relation to right of use of frequencies for ECN&S: general authorisations or individual rights of use (article 5 §1 of “Authorisation” Directive and article 9 §1 of the “Framework” Directive). The following gives a summary of to the two concepts as described in the “Authorisation” Directive.

2.1.1 General authorisations

The “Authorisation” Directive sets the legal provisions for general authorisations. General authorisations allow any undertaking to provide electronic communications networks or services, whether by means of radio frequency spectrum or by wired means. Undertakings may be required to submit a notification but can not be required to obtain an explicit decision before exercising the rights stemming from the general authorisation. For notification, member states shall not request more information than a declaration by a legal or natural person of the intention to commence the provision of ECN&S and minimal information needed to keep a list of providers of ECN&S (identification of provider, address, short description of the network or services, starting date for activity).

In the case of radio spectrum use, general authorisations are in practice limited to radio services that do not need to be coordinated to avoid harmful interference. General authorisation as opposed to individual rights of use cannot be transferred as, by definition, the spectrum can be accessed without the need to obtain an individual authorisation and therefore there is no exclusive right to be traded.

2.1.2 Individual rights of use

Taking into account the scarcity of radio frequencies in some frequency bands as well as the need to ensure efficient use of these frequencies individual rights of use /individual authorizations may be granted as opposed to general authorisations. Individual rights of use are often, depending on the context, called “licences” and both expressions will be used in this report. For ECN&S, individual rights of use may be granted for four reasons, in order to:

- Avoid harmful interference
- Ensure technical quality of service
- Safeguard efficient use of spectrum
- Fulfil other objectives of general interest as defined by Member States in conformity with Community law.

The “Authorisation” Directive defines a set of conditions that may be attached to individual rights of use (Annex B of the directive, Annex 3 of this report).

Individual rights of use, which in many administrations take the form of licences granted to users, may be transferred as prescribed by Article 9b of the “Framework” Directive. The European Commission may adopt appropriate implementing measures to identify ECN&S bands for which individual rights to use radio frequencies may be transferred or leased (except for frequencies used for broadcasting). In other bands the choice is left to Member States to make provisions for undertakings to transfer or lease individual rights of use. When granting rights of use the Member States shall specify whether those rights can be transferred by the holder of the licence and under which conditions (in accordance with Article 9b).

2.2 Different observed practices in CEPT countries

This section reflects the answers from administrations to questions 0.1 to 0.5 of the questionnaire (Annex 1).

There are generally two levels of authorisations for the use of radio frequencies. At the highest level there is the authorisation to deploy a network within a defined frequency band and geographical area that will provide electronic communications (or other radio) services. Then at the lowest level there are the authorisations for a single transmitter to operate, often called a transmitter licence. In some bands, also called collective frequency bands, there is a transmitter licence exemption, meaning radio transmitters may operate without a licence/assignment.

For parts of the spectrum that are under a general authorisation status there is no requirement for an explicit decision of the spectrum manager for the spectrum to be used, as long as the technical requirements for the band are met. However notification of the regulator may be necessary before starting operations (Ireland, Turkey). Bands under general authorisations are often “licence exempt” meaning that radio transmitters do not need a licence to operate. An example of such a band is the 2.4 GHz WLAN band. However depending on the service required there may be a requirement to hold a spectrum licence.

In Finland the authorisation to provide a network service is called a concession and is granted by the government, Spain also uses the notion of concession.

Individual rights of use may be described as a spectrum licence that covers a defined part of the radio spectrum within a geographically defined area which leaves it up to the licensee to decide how the licence should be utilized within the requirements of the licence (radio service, technology, location of radio stations, etc).

In Portugal transmitter/radio licence is a regime that does not necessarily requires rights of use, but requires an authorization from the administration which contains the requirements to be applied to the stations (such as location, frequency, power, protection tones...), limited within a geographical area. Point to point links and private mobile networks are typical examples of services to which those types of licenses apply. It has to be noted that the spectrum transactions registered in Portugal were mainly for radio licences.

In France, there are two types of individual authorisations of use for radio frequencies: frequency assignments and frequency “allotments” (where “allotment” does not have the same meaning as in ITU Regulations). Frequency assignments are individual rights of use granted for the use of a given frequency on a given geographical site with the technical parameters described in the assignment. Frequency allotments are individual rights of use that specify a bundle of frequencies in a geographic zone without specifying the parameters for each single radio station. The licensee may then organise its radio stations while respecting the given parameters of the allotment. Similar licensing regimes are followed by other CEPT countries as well.

2.2.1 Duration of rights of use

Usage rights do not constitute property of the frequency by the operator as they are part of the national domain, and therefore it can be seen as a concession by the governments to the operators. Therefore there is usually a limited duration to usage rights/frequency assignments. In fact only two countries stated that in some cases licences are assigned without any expiry date (Norway, UK). The UK stated that actually in most cases there is no fixed duration and the regulator aims at giving 5 years notice ahead of revocation or variation of licence for spectrum management reasons.

The questionnaire shows that there are two ways to deal with duration. In the case of frequency assignments with no selection procedure, they are generally granted for a short period, one to three years, but the licence is automatically renewed, if the licence fee has been paid (Cyprus, Estonia).

In the case of auctioned spectrum, or spectrum granted by means of comparative or negotiation procedures, the duration is longer, between 5 and 20 years. In this case however the renewal of the licence is not automatic, though there may be possibilities of their renewal/extension, e.g., by request of the operator. In Denmark the default duration for the granted usage rights is 15 years.

An interesting practice reported by Norway is to vary the duration of licences such that in a given band they all expire at the same time, allowing simplifying a possible transition to a different use of the band.

2.2.2 Legal possibilities for revoking rights of use

As usage rights do not constitute property they may be revocable, which is the case in all answering countries. For EU Member States Article 10.5 of “Authorisation” Directive specifies that serious and repeated breaches of the conditions of the authorisation may lead to a suspension of the rights of use or even to withdrawal of the rights.

The reasons for revoking the usage rights expressed in the questionnaire are the following:

- Disuse of frequencies (Austria, Cyprus, Estonia, Portugal, Slovak Republic, Romania), or frequency use has not commenced within a defined period after the issue of the authorisation (Cyprus, Estonia, Finland, Slovak Republic, Portugal, Romania)
- Bankruptcy, insolvency of the licence holder (Austria, Cyprus, Finland, Russia)
- Omission to pay the fee attached with the licence (Cyprus, Czech Republic, Denmark, Finland, Portugal, Romania, Russia, Slovak Republic, Slovenia, Sweden, UK). The NRA does not extend a frequency authorisation if the holder of the frequency authorisation has not paid the state fee before expiry of the frequency authorisation (Estonia).

- Change of use of the frequency band calling for refarming (Cyprus, UK), or change of national frequency plan giving early (few years) notice ahead of changing of regulations (Malta, Estonia).
- The licensee has been convicted of an offence (Cyprus, France)
- Terms and conditions of an individual right of use have been breached (Cyprus, Czech Republic, Denmark, Estonia, Finland, Ireland, Lithuania, Malta, Norway, Portugal, Russia, Slovak Republic, Slovenia, Spain, Switzerland, UK), to note that some countries require that the breach be severe or repeated (Romania), or constitutes a threat to safety/human health.
- When needing to comply with commitments following international cooperation/harmonisation (Denmark, Malta, Norway), radio frequencies have not been approved in the course of international coordination (Estonia, Norway), binding international agreements require cancellation (Finland, Slovak Republic, Sweden, Denmark). In Romania, the general authorisation is revoked in order to comply with the obligations under an international agreement and consequentially all related licences are repealed.
- When needing to meet public interest considerations, such as media policy considerations, military usage, emergency services usage, need for electronic communications services (Denmark, Switzerland)
- When it is discovered that conditions to refuse the issuing of a licence were present before the issuing of the licence, such as false information submitted by the applicant (Estonia, Russia, Slovenia, Sweden),
- Use of frequency may cause harmful interference (Estonia, Slovenia)
- The effective control of the concession holder changes, such as a merger or acquisition (Finland)
- Uses of the frequencies for unlawful purposes that damages the interests of individuals, society or the state (Russia)
- If requested by the licensee (Estonia, Denmark, Romania, Russia, Slovenia, Sweden)
- If the licensee failed to remedy to deficiencies within the time interval specified by the authorities (Romania, Slovenia)
- Changes in radio technology (Sweden).

Finland distinguishes the cases of concessions and of radio licences. Romania distinguishes between the types of licences granted for the electronic communications networks and services: radio and TV broadcasting is being authorized through broadcasting licences in the case of analog broadcasting and licences for the use of frequencies in the case of digital broadcasting; for the other electronic communications networks and services than those mentioned before, the Romanian regulatory authority ANCOM grants licences for the use of frequencies.

Portugal specified that it allows a escalation of actions such as suspension of activity (up to a maximum of two years), full revocation or partial revocation (in line with EU regulations). Russia also uses as a first step suspension of the permission when a violation was detected.

2.2.3 Restrictions relative to the country where a licensee is registered

Question 0.5 of the questionnaire asked if there are any restrictions regarding in which country a holder of a licence must be registered. Some countries do not have any restrictions regarding to where a licence holder is registered (Austria, Cyprus, Denmark, Estonia, Finland, Ireland, Romania, Slovak Republic, Slovenia, Sweden, Switzerland, UK). However the licence holder must meet requirements for conducting business in the country (Cyprus, Romania). For other countries the licence holder must be registered in that country (Croatia, Malta, Norway, Turkey), in the case of Portugal this means that the company must establish a permanent representation and comply with the provisions of the law regarding commercial register. In the case of Norway this means that the holder must register with the Brønnøysund Register Centre in Norway, which is a government administrative agency responsible for regulatory and registration schemes for business and industry (similar to Romania). In Russia requests for assignment (or allotments) must be filed only by citizens of the Russian Federation or by Russian corporate entities.

3 TRADING OF SPECTRUM USAGE RIGHTS

Section 3 presents the results of the questionnaire relative to regulatory aspects and recorded practice of trading of rights of use.

Of the 22 countries that answered the questionnaire only four have declared that they do not allow trading of usage rights (Cyprus where however a legal framework exists, Estonia and Ireland where secondary trading regulation is under preparation, Russia).

Trading of usage rights has been allowed as early as 1997 in Denmark (except usage rights for broadcasting services and spectrum allocated for the Military to be used without a licence) (1998 in Switzerland). However for most countries this possibility is more recent, 2002 for Romania, 2003 for Austria, Norway and Sweden, 2004 for the UK and Portugal and after 2006 for all other countries that do allow trading.

Frequency bands open to transfer of usage rights differ among countries. Details of bands open to transfer of usage rights are described in section 3.3.

The circumstances under which usage rights may be transferred may differ from country to country. In Austria all frequencies which are defined as scarce resources and/or auctioned, are tradable. However in some countries spectrum that is considered scarce may not be open to transfer of usage rights (Lithuania). In some cases the transfer of the rights for use of radio frequencies is allowed only in bands available for electronic communications services to the public such as mobile communication bands, broadcasting bands and bands for broadband services (Czech Republic).

In general transfer of usage rights is not possible if the spectrum resources (radio frequencies/channels), requested to be transferred are assigned to activities relating to defence and security of the state, maintenance of the public order, state emergency services, civil aviation, security of railroad traffic, ensuring of stable and reliable functioning of energy system and other non-commercial functions of the state (including foreign states) and its institutions (as stated by Lithuania).

Many countries are either considering introducing the possibility of transferring usage rights (Ireland, Malta) or changes to their regulations if transfer is already allowed. In Cyprus and Estonia there is a provision in national law that allows the trade of spectrum usage rights but the Legal Order/secondary trading regulation to make this effective has not yet been issued. In the Czech Republic (where some transfer of usage rights is allowed) the possibility of opening to trading usage rights allocated by tender is being considered. The UK consulted in 2009 on simplifying spectrum trading and introducing leasing and plans to proceed when the revised EU framework, which introduces the concept of spectrum leasing (as opposed to transfer), is implemented. In Portugal, it is planned to launch a public consultation to streamline trading with less intervention from the regulator (taking into account that transfer of spectrum usage rights and licenses is already allowed on a case by case basis). In Ireland ComReg has determined that secondary markets could potentially play a role in ensuring the efficient assignment and use of spectrum in some areas. Provision for spectrum trading is intended for inclusion in the transposition of the 2009 EU regulatory framework. In Malta also the concepts in relation to spectrum trading are being studied to allow a gradual move to spectrum trading for specific bands. Since 2002, after the transposition of the new telecom framework, Romania provides the possibility of transferring all usage rights, with the compliance by the assignee of all minimum requirements that have been considered in the initial granting of the license.

3.1 Trading possibilities

Some parameters of licences represent quantities that can be subdivided, namely the frequency allotment, the geographical area and the duration of the licence. This leads to the possibility of a partial transfer of a usage right. This may give greater flexibility to the licensee to optimise his use of his usage rights and may possibly allow for a more effective use of the limited spectrum.

In thirteen countries usage rights can be partially traded in frequency (Austria, Czech Republic, Denmark, Finland, France, Lithuania, Norway, Slovak Republic, Spain, Sweden, Switzerland, Turkey, UK), whereas it is not possible in Croatia, Cyprus, Ireland, Romania and Slovenia.

In eleven countries usage rights can be partially traded in geography (Austria, Czech Republic, Denmark, France, Lithuania, Norway, Slovak Republic, Spain, Sweden, Turkey, UK), whereas it is not possible in Croatia, Cyprus, Ireland, Romania, Slovenia and Switzerland. In Finland, trading the spectrum partially by geography is allowed but the concession must be transferred fully (geographically, i.e. in the whole country). In France, the rights are only acquired for that part of the geographical area to which the authorization relates, part of the frequencies or bands which are the subject of the authorization, or part of the duration remaining to run.

In seven countries usage rights can be partially traded in time (Austria, France, Lithuania, Norway, Slovak Republic and Spain). In Romania, in particular situations, very few broadcasting licenses are granted based on shared time allocation. In ten countries it is not possible to trade usage rights in time. These countries are Czech Republic, Croatia, Cyprus, Denmark, Finland, Ireland, Slovenia, Sweden, Switzerland and Turkey. In Denmark, pursuant to the Act on Radio Frequencies usage rights may not be traded by time but they may be leased by time – in case of lease the licence holder is responsible for the use of the spectrum the whole time. In Finland, leasing the spectrum partially (time sharing) is allowed but the concession must be transferred fully (whole time). In Turkey, trading is actually a re-authorisation and subject to default authorisation periods. Trading for a limited period is also possible in the UK, which is planning to simplify the process by introducing spectrum leasing.

3.2 Trading procedure

3.2.1 Requirement of the EU framework

The EU “Framework” Directive sets in Article 9b paragraph 2 (see annex 3) some requirements for the transfer of rights to use radio frequencies. That is, the intention to trade as well as the effective transfer are to be notified to the competent national authority responsible for granting individual rights and are to be made public. This therefore sets up the possibility for national authorities to approve (or not) the transfer (since the authorities have been notified of the intention to trade), though such an approval step is not made mandatory by the Directive.

3.2.2 Reported practices

The object of this section is to present the various trading procedures described in the answers to the questionnaire. The procedures can be broken up in several steps, essentially what happens before the transaction and what happens immediately after the transaction.

3.2.2.1 Notification of the intention to trade

Only two countries do not require the trading parties to notify the NRA of the intention to trade (Finland, Sweden), so this disposition is widely used, as it is an essential step if one wants to keep the possibility for authorities to block a transaction if such a possibility is included in the national regulatory framework.

Information required at notification of the intent to trade may include:

- Consent of the holder of the usage rights (Lithuania, Romania)
- Information about the parties (holder and transferee) that seek to trade usage rights (Austria, France, Norway, Romania, Slovak Republic, UK). This information should enable to ensure that competition is not infringed (Czech Republic, Switzerland), and should indicate if the parties are part of the same undertaking (Lithuania)
- Reference of the usage right (frequency licence number) that will be transferred (Denmark, France, Norway, Romania, Slovak R).
- Date of the transfer (France)
- Financial conditions of the transfer (France), established conditions of the contract (Portugal)
- Evidence of the technical and financial capacity of the assignee to comply with the license obligations (France, Switzerland), certificate of incorporation of the transferee rights (Slovak R)
- The commitment of the assignee to assume all the obligations arising from the licence; The rights of use of radio frequencies granted through competitive or comparative selection procedures may be transferred only with compliance by the assignee of all minimal conditions considered at the initial granting of the licence, as well as by his undertaking of all obligations under the licence (Romania).

3.2.2.2 *Publication of information prior to the transaction*

Eight countries do not publish information prior to the transaction.

Seven countries state that they publish some information before the transaction. Information published may include:

- Information on both parties (Austria, Czech Republic, UK)
- Information on the licence (including licence number for Denmark, UK), may include frequency, technical details, territory (Denmark, Lithuania).

Information made public in France respects the secrets protected by the law (in particular business secrecy).

3.2.2.3 *Approval of transaction by NRA*

In general approval of transaction by authorities is mandatory, generally by the NRA (15 countries) or by the government (Finland).

Most countries require approval for all types of transaction, however in Denmark it is only required for the trading of parts of licences issued after an auction or a public tender and in France trading of spectrum delivered on a first come first served basis does not need an explicit authorisation for the transfer. In the case of Portugal a public consultation takes place before a transaction on the rights of use is concluded. In the UK all trades must be approved but there are plans to remove this requirement for the generality of cases.

That a trade must be approved implies that there can be circumstances where a transaction can be refused. The grounds to refuse the transaction may include the following:

- Negative impact on competition (Austria, Czech Republic, Finland, France, Lithuania, Norway, Portugal, Romania, Slovenia, Sweden, Slovak Republic, Switzerland)
- The transferee does not qualify for obtaining a licence (Romania, UK)
- The licensee is in breach of licence (UK)
- Unacceptable modification of the usage (Romania, Sweden), including of internationally harmonised frequencies (Czech Republic, Portugal, Slovak Republic)
- Unpaid payment for a licence issued following an auction (Denmark, Sweden), or unpaid spectrum fees (Romania)
- Licence holder cannot guarantee obligations on the licence (Slovak Republic, Switzerland) such as minimum requirements of geographic coverage or provision of services with remaining spectrum (Denmark)
- Risk of interference (Finland)
- Risk to national security (Finland, UK)
- Transfer of spectrum assigned to public interest protection (defence, security and other non-commercial functions of State) (Lithuania)
- Effective and efficient use of spectrum (Portugal, Slovenia)
- Laws on broadcasting (radio and TV) are to be respected (Portugal, Romania)
- Compliance with international obligations (UK).

To summarize, for a transaction to go forward there are two types of requirements. First there are administrative requirements that the licensee and transferee must meet which may be simply checked by the authorities (not being in breach of licence for example). Then there are more qualitative criteria like impact on competition that may require a more detailed assessment. This kind of assessment may only be practical in the case of bands where the number of transactions is small.

3.2.2.4 *Publication of information on the effective transaction*

For EU countries information on the transaction must be made public. However there are no particular requirements on the nature of the information to be made public. The list of information made public may include:

- Identity of the parties (with possibility of relevant information on parties)
- Reference of the original authorisation that is being transferred, reference of the new authorisation
- Date at which the transfer becomes effective
- Geographic area
- Frequency band
- Expiration date.

Publication of information on transactions is in place in Austria, Czech Republic, Denmark, Finland, France, Norway, Portugal, Romania, Russia, Slovak Republic, Spain, Sweden, UK. In some cases only information on the authorisation is available (Slovenia) and information on the transaction itself is not published. Lithuania releases information on current and former licence holders on request.

3.2.2.5 *Monitoring system*

In most cases the NRA is responsible for monitoring transactions on spectrum usage rights, except in Finland and Spain where it is the government.

In most cases the information on transactions is made public via a website. In some cases however the information is also published in the official journal (France). In Switzerland the information is not published on a public registry but made public via a press release.

In the UK, parties are invited but not required to provide price information.

More generally information about individual authorisations (or licences) is always hosted on a website, except for the cases of Sweden and Romania where information on licence holders is only available on request. The information published includes:

- Reference of authorisation (or licence)
- Date of issue, date of expiration
- Type of licence
- Information on licence holder, name and address
- Information about the spectrum (amount, frequency band)
- Geography information, transmitter site
- Technical data.

It should be noted that some countries stressed that only information that respects the secrecy rules for business is published.

3.3 Trading activity by application

This section presents quantitative information supplied in the answers to the questionnaire. For most bands there is no significant number of transactions, however, the main added value for presenting such information is to show the diversity of type of bands where licence transactions are allowed.

3.3.1 PMR

Among the countries that answered 9 allow trading of PMR licences.

Country	Number of licences	Trading statistics
Denmark	5093	Activity not known
France	25000	No activity
Lithuania	69	69
Norway	Approx. 4000	Approx. 150 per year
Portugal	2336	2007: 57 transactions 2008: 42 transactions 2009: 21 transactions
Romania		2009: 27 transactions
Slovak Republic	Not Communicated (NC)	0 transaction
Spain	NC	NC
Sweden	Several hundred	NC
UK	43000	900 trades (including 190 "Business radio simple site") Partial trade: Spectrum segmentation to a minimum channel width of 6.25 kHz (subject to clearance by Ofcom and prior licence variation). Transfers of individual assignments where licence covers more than one assignment. For area licences geographical segmentation possible down to a minimum trading unit (50 km grid square).

Table 1: PMR transactions

The PMR bands have by nature a high number of users and licences. These are also bands where licences are often granted on a first come first serve basis (as long as there are frequency resources available for a given geographical area).

3.3.2 Fixed wireless access including BWA

Among the countries that answered 12 allow trading of fixed wireless access licences.

Country	Bands	Number of licences	Trading statistics
Austria	3.5 GHz, 26 GHz	NC	NC
Czech Republic	3.5 GHz, 25 GHz, 29 GHz	NC	0 transactions
Denmark	3.5 GHz, 10.5 GHz, 26-29 GHz	20	3 transactions
France	3.5 GHz	45	45 trades (possibility to split geographically)
Lithuania		NC	NC
Norway	All bands are technology neutral and assigned licences are tradable	NC	NC
Portugal	3.5 GHz, 26 GHz, 29 GHz	5	0 transactions
Romania	3.5 GHz, 26 GHz		
Slovak Republic	3.5 GHz, 10.5 GHz, 25 GHz, 29 GHz, 42 GHz	3	0 transaction
Slovenia	1.8 GHz, 3.5 GHz	3	0 transactions
Spain	25 GHz	NC	NC
Sweden	3.5 GHz, 3.7 GHz, 10 GHz, 26 GHz, 28 GHz	A few	NC
UK	3.48-3.6 GHz, 3.6-4 GHz, 28 GHz, 29 GHz		

Table 2: Fixed wireless access transactions

Licences for fixed wireless access are often granted by auction to a national or local (regional) operator, which explains the limited number of licences. The statistics on transactions are not sufficient to show if there is a functioning secondary market for these licences.

3.3.3 IMT

Among the countries that answered 8 allow trading of IMT licences.

Country	Bands	Number of licences	Trading statistics
Austria	2.1 GHz	NC	NC
Czech Republic	Bands in 400 MHz range, GSM bands, 2 GHz band	NC	0 transactions
Denmark	GSM bands, 2.1 GHz, 2.5 GHz	19	2 transactions
Lithuania		NC	NC
Norway	All bands are technology neutral and assigned licences are tradable	NC	NC
Portugal	GSM bands, 2 GHz	3	0 transactions
Slovenia	GSM bands, 2 GHz, 2.1 GHz	10	1 transaction
Sweden	GSM band, 2.1 GHz	A few	NC

Table 3: IMT transactions

The number of countries that announced that they allow trading of IMT licences is limited. Given the small number of IMT operators in any given country it can be expected that any transaction will have an impact on competition and is subject to scrutiny by authorities.

3.3.4 Fixed links

Among the countries that answered 10 allow trading of point-to-point fixed links licences.

Country	Number of licences	Trading statistics
Czech Republic	NC	0 transactions
Denmark	273	Not known
France	30000	0 transactions
Lithuania	NC	NC
Norway	Approx. 3000	NC
Portugal	341 (including network licences)	2008: 1 transaction 2009: 1 transaction
Romania		2009: 1 transaction
Slovak Republic	3+1 (network licences)	1 transaction
Slovenia	5 (network licences)	NC
Spain	NC	NC
Sweden	Approx 20	Most transactions due to reorganisations
UK	Approx 40000	

Table 4: Fixed links transactions

Some countries only grant point-to-point fixed links licences (and therefore a large number of such licences) while other countries grant “network licences” that enable the deployment of a whole network of point-to-point fixed links.

3.3.5 PMSE

Among the countries that answered 3 allow trading of PMSE licences.

Country	Bands	Number of licences	Trading statistics
Denmark		NC	Not known
Lithuania		NC	NC
Norway (In Norway most cases are covered by general authorisations)	White spaces in the band 470-790 MHz	Approx. 20-30 per year	NC

Table 5: PMSE transactions

3.3.6 Satellite

Among the countries that answered 5 allow trading of fixed satellite or/and mobile satellite licences.

Country	Bands	Number of licences	Trading statistics
Denmark	Fixed and mobile	6 fixed, 21 mobile	Not known
Lithuania	Fixed and mobile	NC	1 transaction (fixed)
Norway	Fixed and mobile (restrictions apply to the area of Svalbard)	NC	NC
Portugal	Fixed	19 earth stations, 24 VSAT, 32 SNG	1 transaction
Sweden	Fixed and mobile	NC	None

Table 6: Fixed wireless access transactions

3.3.7 Other applications for which transfer of rights of use may be allowed

No trade reported for public services (emergency services).

Country	Bands/applications	Number of licences	Trading statistics
Czech Republic	Broadcasting	NC	0 transactions
Denmark	All licences may be traded except Broadcasting (Radio and TV) and Military use without licence	1792	Not known
Finland	2.6 GHz	4	No trading activity
Lithuania	Aeronautical and analog cellular communications	NC	NC
Romania	Broadcasting		2009: 27 transactions
Sweden	Broadcast	NC	Approx 5

Table 7: Other transactions

3.4 Analysis of trading activity

Though not designed for a benchmark study on secondary market trading the questionnaire included a series of questions (questions 6.1 to 6.8) that requested information on the experiences of administration with spectrum transactions. The answers provided by administrations are presented in the sections below.

3.4.1 Intensity of trading (how often, how much)

The volume of trading can be a good indicator of the success (and perhaps usefulness) of regulations allowing trading of rights of use.

One country (Finland) reported that transactions never occur whereas another one (Sweden) reported that transactions occur very often. In the case of Sweden, there are a few hundreds of transactions every year. The reason for this are the reorganisations primarily within the PMR licence holder area.

Six countries reported that transactions occur regularly (Austria, Denmark, France, Norway and Romania). In Lithuania this depends on the types of services considered. In six other countries, transactions rarely occur (Croatia, Czech Republic, Portugal, Slovak Republic, Spain and Switzerland).

The frequency bands for which most transactions occur are below 450 MHz (PMR/PAMR bands) and above 2 GHz (2.200-2.300 MHz, 2.500-2.690 MHz, 3.410-3.600 MHz). According to Denmark, the most transactions have occurred in the PMR bands whereas the transactions of FWA and fixed links licences have had the most market significance.

Without going into a detailed analysis (which the data included in this report would not allow) it is however possible to see that there are two scenarios for secondary trading. One scenario is secondary trading in bands where the number of licences is high. In this case competition issues do not seem to arise as long as spectrum is used by many different users. The second scenario concerns bands where the number of licences is small, such as the mobile networks bands. In such cases competition issues may be critical, but the small number of licences and therefore transactions do not imply a huge burden on authorities to analyse the impact on competition. Maybe in the future there will be the possibility to assess the effect of allowing trading of rights of use for these two scenarios.

3.4.2 Advantages and drawbacks of trading

The aim of this report was not to specifically make an evaluation of the performance and impact of current trading regulations within the CEPT. However some of the theoretical ideas can be presented, even though a detailed discussion would need to be based on reports from administrations who have conducted studies on the impact of trading.

The RSPG opinion on “Secondary trading of rights to use radio spectrum” [4] explains the advantages that could be expected from trading of rights of use (annex §2):

Potential benefits of trading include facilitating market entry and exit, permitting more rapid redeployment and faster spectrum access for innovators and new players and allowing new technologies to gain access to spectrum more quickly. For existing operators, benefits could include the opportunity to sell unused or underused spectrum and make more flexible use of spectrum. Secondary trading may also provide incentives to transfer underused spectrum to those who can utilise it better and a mechanism to address excessive spectrum fragmentation through the amalgamation of spectrum holdings.

However the RSPG opinion also notes that:

Spectrum trading can be expected to promote competition. However, the introduction does raise concerns about the potential for competition to be distorted. The RSPG considers that the question of whether existing general competition law is sufficient to prevent this is complex, particularly as it may be necessary to consider competition in the market for communications services as well as within the spectrum market itself.

There are two very different contexts for trading: the impact of trading may be different according to the number of rights of use in a band, either large or small. For instance in PMR bands there are typically thousands of licences. The risk of having competition distortion is less immediate than in the case of bands with a limited number of licences. In such bands, as the IMT bands, the risk of distortion of competition by concentration of spectrum must be assessed and palliated. One palliative measure is for the administration to approve on a case by case basis transactions in such bands.

3.4.3 Impact on competition

To analyse the trading activity it is useful to be able to make a distinction between genuine trades between unrelated economic operators and trades that are the result of a take-over or a merger. For mergers and take-overs it may be necessary to assess the impact on competition before actually approving the transaction under general competition framework. Most authorities state that they acquire enough information following the notification of the intention to trade to tell if the transfer is the result of a merger or a take-over (Austria, Croatia, Czech Republic, Finland, Lithuania, Norway, Portugal, Romania, Sweden, Switzerland, UK). Some countries require that the commercial relationship between the interested parties be given others simply use public information to check if there is such a commercial relationship (UK).

In principle, spectrum trading may be expected to enhance competition by making it easier and faster for market entrants to gain access to spectrum. However there is a risk that allowing transfer of rights of use may concentrate spectrum in the hands of a small number of market players, thereby enabling them to actively reduce the level of competition faced in downstream markets (as well as leading to inefficient use of the spectrum awarded to them) a situation referred to as spectrum hoarding. Two countries have indicated that they have observed spectrum hoarding (Czech Republic, Russia), all other countries indicated that they have not observed it. Tools to prevent this include application of general competition law powers, refusing consent to a transaction that the regulator considers will impair competition (Finland, Portugal, Romania) and revising or suspending a licence for inefficient use of spectrum to the detriment of competition (Czech

Republic, Lithuania). The UK has concluded that its powers under general competition law are, in general, sufficient to maintain effective competition following the introduction of spectrum trading although it does not rule out the possibility of additional ex-ante remedies in specific frequency bands where necessary and proportionate. Denmark states that an order may be issued to the licence holder for the purpose of bringing anti-competitive behaviour to an end. This order may be followed by enforcement fines and eventually the licence holder shall be liable to a fine if the licence holder fails to comply. Some countries include spectrum caps in the auctioning process to prevent spectrum hoarding or negative impacts on competition (e.g., Denmark, Norway). Another possible mechanism is to forbid the participation of entities with Significant Market Power or that already hold rights of use in the spectrum to be auctioned (e.g., Portugal 3.4-3.8 GHz auction and Denmark in the 900 and 1800 MHz auctions in October 2010).

One practical way of preventing spectrum hoarding is also to impose “administered incentive pricing” AIP, i.e. annual spectrum fees, e.g. by means that can reflect the opportunity cost of holding that spectrum, so that it becomes relatively more expensive (and therefore less profitable) to hold spectrum idle. Three countries have indicated that they collect such fees (Denmark, Sweden, UK).

There are basically two parameters that could be used to analyse the secondary market for spectrum: the number of transactions and the value of the spectrum rights of use. To the question as to whether they monitor the price of spectrum, nine out of eighteen countries that allow transfer of rights of use answered that they do not (Croatia, Czech Republic, Denmark, Finland, Lithuania, Norway, Romania, Sweden, Switzerland, UK).

Among those who monitor the prices (Austria, Finland, Slovak Republic, Spain and Portugal), only Finland has observed relevant changes. Indeed, prices in Finland vary greatly from one transaction to another. In some occasions, the transaction is a simple validation in a change of company ownership, in which case it is sold for the same price it was bought in the initial assignment procedure. In others, rival operators have traded assets for prices significantly higher than the original price. Portugal considers that as very few transactions have actually taken place, it is not possible to conclude about any relevant change in prices.

The answers to the questionnaire do not indicate evidence of any adverse impact on competition at this time. Some countries explain that the number of transactions has been too limited to have an impact (Czech Republic, Finland, Portugal, Spain), or that no analysis on competition has been done (Sweden). UK expects competition to be enhanced over time.

From the information provided by authorities it is not possible to make a definitive statement on whether the introduction of spectrum trading has had an adverse impact on competition (for instance leading to spectrum hoarding). Options that may be effective to prevent or deter this include competition law and other regulatory tools such as scrutiny of the transaction before approval by authorities (this could be specific to some more critical bands) or licence conditions requiring effective use of spectrum.

4 LEASING OF SPECTRUM USAGE RIGHTS

A section of the questionnaire was aimed at leasing of spectrum rights of use (questions 2.1 to 2.4). The answers are summarised in the sections below. There were no questions on experience gained with leasing, so only procedures for leasing are presented.

4.1 Status of leasing in CEPT countries

For EU countries the Framework Directive sets up the possibility to allow lease of usage rights. The directive states that in the interests of flexibility and efficiency, national regulatory authorities may allow spectrum users freely to transfer or lease their usage rights to third parties. In fact the Commission may adopt appropriate implementing measures to identify the bands for which rights to use radio frequencies may be transferred or leased between undertakings, and these implementing measures would apply to all EU members.

Leasing of spectrum usage rights is allowed in 9 countries (Austria, Cyprus, Denmark, Finland where leasing is restricted to the 2500-2600 MHz band, France, Norway, Portugal, Slovak Republic, Spain). The UK allows a form of time-limited trading and is in the process of introducing spectrum leasing. 11 countries answered that it is not allowed.

Four countries have the intention to introduce leasing of usage rights (Cyprus, Estonia, Malta, Sweden).

4.2 Leasing procedures

There are no provisions in the EU Framework Directive concerning the details of the procedure for spectrum leasing, in contrast to the provisions for transfer of usage rights. However it can be assumed that the steps will be similar to the transfer but perhaps with relaxation of some requirements.

Five countries stated that it is required to notify the intent to lease a usage rights (Austria, Cyprus, France, Portugal, Spain). Notification is necessary in case the transaction should require an approval by the regulator or some other administration. The countries where notification is required may refuse a lease transaction for several reasons (in Finland the decision to approve or refuse the transaction is taken by the government and not the regulator, the decision is taken within two months of the application):

- negative impact on competition (Austria, France)
- breach of licence conditions, like not being able to fulfil licence commitments (France, Spain)
- risk for national security (Finland)

Only in three countries is information about the lease transaction made public (Austria, France, Finland). Information made public may include:

- identity of the parties
- reference of the licence
- date at which the lease comes into effect
- geographic information and frequency band
- duration of the lease.

Data was not collected on lease transactions in the countries that allow it. So no analysis of the lease of usage rights is presented.

5 CONCLUSION

This report presents regulatory aspects involved in secondary trading of rights of use. Conditions that may be attached to licences are presented in section 2. Details of procedures for transactions are presented in section 3.2. The steps of such procedures may include:

- Notification of the intention to trade
- Publication of notified information
- Approval of transaction
- Publication of final transaction.

There may be specificities in different countries (some steps being omitted) but basically the steps of the procedures followed are similar (and are generally coherent with the minimum regulatory requirements of the EU framework for ECN&S). The information presented in this report and provided by administrations may be used by any interested administration to create its own framework or perhaps enhance it.

Some information provided goes beyond procedural issues and provides some data on transactions (section 3.3). Without entering into discussion on whether the existing secondary markets are successful there are however some conclusions that relate to procedures for trading of usage rights. There are two main guiding principles. The first principle is to ensure that if trading of rights of use is allowed then the procedure should favour the expected benefits of trading. The second principle is to ensure that authorities still have the tools to deal with any competition issues.

Expected benefits of trading of rights of use will occur only if information on licences is available to all economic actors. This requires that authorities maintain an up to date information system that enables interested parties to search for licences depending on specific criteria such as bands and geographic information (such a system is critical for bands with a large number of licences). The possibility to split licences (in frequency and coverage area for instance) may also enhance the effects of trading of rights of use especially in the case of applications that are local (an example being Fixed Wireless Access).

Competition issues can be tackled in two ways, either before or after a transaction. To deal with such issues before the transaction implies that authorities are notified in advance of the intention to trade. This is in fact a requirement of the EU framework. So it appears that this notification is an important step in the transaction procedure as it enables authorities to analyse and accordingly reject the transaction (if such a possibility is included in the national regulatory framework). To deal with competition issues after a transaction requires conditions to be attached to licences that enable revocation of a licence on competition grounds. Of course the practicality of such steps, such as rejecting a transaction, depends on the number of transactions in a given band.

An obvious continuation of this Report would be a detailed analysis (e.g; an economic analysis) of the results obtained in different CEPT countries with secondary market trading. However such an effort would have to be based on existing national evaluations.

ANNEX 1: TRADING OF SPECTRUM USAGE RIGHTS QUESTIONNAIRE

The questionnaire:



Questionnaire on
Trading of Spectrum l

ANNEX 2: LEGAL FRAMEWORK OF INDIVIDUAL COUNTRIES AS DESCRIBED IN QUESTIONNAIRE

Legal frameworks with relevant internet links provided in answers to questionnaire:

1.4 What is the legal framework in your country for trading of spectrum usage rights? Please provide a link to an official guide to spectrum trading in your country:	
Country:	Comments:
Austria	§ 56 of the Austrian Telecommunications Act Link: http://www.bmvit.gv.at/telekommunikation/recht/aut/gesetze/tkg.html , only in German language; inofficial translation http://www.rtr.at/en/tk/TKG2003/TKG_2003_eng.pdf
Croatia	Electronic Communications Act, Article 92 prescribes the transfer of the licenses http://www.hakom.hr/UserDocsImages/dokumenti/Electronic%20Communications%20Act%20OG73_2008.pdf
Cyprus	Even though there is a provision in the national law that allows the trade of spectrum of usage rights, the enforcement is subject to the issuance of a Legal Order. To the present, such an order has not been issued. The link of the official guide to spectrum trading in Cyprus is www.mcw.gov.cy/mcw/dec/dec.nsf/DMLlaws_en . The relevant provision for the spectrum trading, can be found in article 16(5) and 35(3) of The Radiocommunications (Amendments) Law (L.180(I)/2004).
Czech Republic	In accordance with paragraphs 22 and 23 of the Electronic Communications Act (Act), there is only provision that the transfer of the rights for use of radio frequencies can be allowed. The rules and procedures for the transfer of the rights for use of radio frequencies are described by Measures of General nature No. 12.
Denmark	It is the general rule that transfer of licences may be made without prior approval. Transfer of licences may be made by way of a complete transfer, transfer of parts of a frequency band covered by a licence, or parts of the geographical coverage area of a licence. Licences may be returned to the NITA to the same extent, cf. the Act on Radio Frequencies section 21. A licence holder shall notify NITA of the intention to trade and immediately after having made an agreement on transfer. This information is published by NITA. Link to an official guide to spectrum trading in our country: English: http://en.itst.dk/spectrum-equipment/frequency-legislation/copy_of_main-points-of-the-act/main-points-of-the-act#_Toc243231775 Danish: http://www.itst.dk/frekvenser-og-udstyr/frekvensadministration/overdragelse-af-tilladelser/overdragelse-af-tilladelser-1/overdragelse-af-tilladelser Frequency charges must also be paid for licences in bands which are open to trading. For further information on NITA's calculation of frequency charges, see: English: http://en.itst.dk/spectrum-equipment/frequency-legislation/Calculation%20of%20frequency%20charges.pdf/view Danish: http://www.itst.dk/frekvenser-og-udstyr/frekvensadministration/afgifter
Estonia	The general framework is specified in § 17 of the Electronic Communications Act. Transfer or leasing of right to use radio frequencies (1) The holder of a frequency authorisation has the right to partially or fully transfer or lease the right to use radio frequencies defined in the frequency authorisation to another person if the right to transfer or lease the corresponding radio frequencies is provided for in the Estonian radio frequency allocation plan. (2) In order to transfer the right to use radio frequencies and to obtain the right to use radio frequencies, a corresponding application shall be submitted to the Technical Surveillance Authority. (3) In order to lease the right to use radio frequencies, a corresponding notice shall be submitted to the Technical Surveillance Authority.

	<p>(4) The Technical Surveillance Authority should if necessary coordinate the transfer or lease of the use of radio frequencies with the Competition Authority. The Technical Surveillance Authority has the right to refuse transfer or leasing of the use of radio frequencies if it distorts competition.</p> <p>(5) The procedure for the transfer or lease of use of radio frequencies shall be established by the Minister of Economic Affairs and Communications. This regulation is currently under consideration.</p>
Finland	<p>See Act on Spectrum Auctions, sections 16 and 18 http://www.finlex.fi/fi/laki/kaannokset/2009/en20090462.pdf NB! in the above unofficial translation concession = licence and radio licence=radio licence.</p>
France	<p>The Article L. 42-3 of the Code for Posts and Electronic Communications lays down the possibility to transfer individual usage rights. This procedure is regulated by the decree 2006-1016 of August 11, 2006 (Cf. http://www.arcep.fr/fileadmin/reprise/textes/decrets/d2006-1016.pdf).</p>
Ireland	<p>To date, the legislation has not yet been implemented to facilitate the adoption of spectrum trading within Ireland.</p>
Lithuania	<p>Legal framework in Lithuania for trading of spectrum usage rights is defined in the Rules for the Assignment and Use of Radio Frequencies/Channels, approved by order No. 1V-854 of the Director of the Communications Regulatory Authority of the Republic of Lithuania of 6 October 2005.</p> <p>Please provide a link to an official guide to spectrum trading in your country: http://www.rtt.lt/index.php?1175094971 http://www3.lrs.lt/pls/inter3/dokpaieska.showdoc_l?p_id=351399&p_query=&p_tr2=</p>
Malta	<p>Refer to 1.3 above</p>
Norway	<p>http://www.npt.no/portal/page/portal/pg_npt_no_en/pag_npt_en_home/pag_resource/page_frequency/transfer_of_frequency_licence?menuid=62382</p>
Portugal	<p>The legal framework for transfer of usage rights is Law n. 5 of 2004 while decree law 151-A amended by 264/2009, applies for the transfer of Radio Licenses.</p> <p>No guide has been published so far, ANACOM is planning to launch a public consultation in the coming months where the possible contents of a guide will be discussed.</p>
Romania	<p>Legal framework consists of:</p> <ul style="list-style-type: none"> a) Article 20 of the Government Emergency Ordinance no. 79/2002; b) Article 66 of Audiovisual Law no. 504/2002. <p>Article 20 paragraph (5) of the Government Emergency Ordinance no. 79/2002 mentioned that the licence for the use of radio frequencies achieved through competitive or comparative selection procedure may be transferred only with the prior approval of ANCOM, with compliance by the assignor of all minimal conditions considered at the initial granting of the licence, as well as by his undertaking of all obligations under the licence.</p> <p>http://www.ancom.org.ro/Portals/57ad7180-c5e7-49f5-b282-c6475cdb7ee7/OUG_en79_2002.pdf</p> <p>In the same time, according article 66 paragraph (1) of Law no. 504/2002 - The broadcasting license may be transferred to a third party only together with the analogue audio-visual license, upon prior approval from the Council and from the National Authority for Management and Regulation in Communications, as well as upon new license holder's consent to comply with all the obligations in the license, and upon submission of the fiscal certificate of the Company that holds the license.</p> <p>Article 66 paragraph (2) of Law no. 504/2002 (2) - The licence to use radio frequencies in terrestrial digital system can be transferred to a third party upon prior approval from the National Authority for Administration and Communications and advisory opinion from the National Audiovisual Council and only upon new licence holder's consent to comply with all the obligations in the license.</p> <p>http://www.ancom.org.ro/Portals/57ad7180-c5e7-49f5-b282-c6475cdb7ee7/Audiovisual%20Law%20no%20504_modif_en.pdf</p>
Russia	<p>In accordance with RF Federal law "On communications", the right to use a radio frequency band cannot be traded by one user directly to another Although the permit to use the radio frequencies can be redrawn to a successor in case when communication networks and facilities, authorized before are transferred to him.</p>
Slovak	<p>The legal framework in Slovak Republic established:</p>

Republic	<p>- Act No. 610/2003 Coll. on Electronic Communications (as amended), in Section 32, §§22, 23, 24 http://www.teleoff.gov.sk/index.php?ID=230 ,</p> <p>- Measure of the Telecommunications Office of the Slovak Republic of 26 October 2006 No. O - 11/2006 on the conditions and procedures for the transfer of rights resulting of frequency allocation http://www.teleoff.gov.sk/index.php?ID=201 (available in Slovak only).</p>
Slovenia	<p>Article 52 (of Electronic Communications Act) (transfer of decisions on the allocation of radio frequencies)</p> <p>Holders of decisions on the allocation of radio frequencies may transfer by legal transaction their rights to use such radio frequencies to another natural person or legal entity meeting the prescribed conditions, but only with a prior decision of consent from the Agency, which shall verify that such other natural person or legal entity meets the conditions laid down by law, secondary legislation or act of the Agency. (http://www.uradni-list.si/1/content?id=78325).</p>
Spain	<p>Real Decreto 863/2008 to be found at :http://www.mityc.es/es-ES/OficinaVirtual/Oficina%20Virtual%20Legislacion/3.%20Reales%20Decretos/A26305-26320.pdf</p>
Sweden	<p>The Electronic Communications Act (2003:389). No official guide is available.</p>
Switzerland	<p>Article 24d of Swiss Telecommunications Act: http://www.admin.ch/ch/e/rs/7/784.10.en.pdf allows the transfer of spectrum usage rights.</p> <p>There does not exist a guide to spectrum trading (since we allow only a limited form of spectrum trading).</p>
Turkey	<p>By-Law on Authorisation for Electronic Communications Sector Please provide a link to an official guide to spectrum trading in your country: http://www.btk.gov.tr/eng/doc/byLaw.doc</p> <p><i>“Rights and obligations of operators having right of use</i> <i>ARTICLE 20 –</i> <i>...</i> <i>(3) Transfer of rights and obligations within the framework of right of use: If the operator intends to transfer whole of frequencies and numbers it uses under the scope of right of use whose number is not limited, necessary transactions shall be performed according to provisions of (b) of the first clause of 19th Article. In case operator intends to transfer part of its frequencies under the framework of spectrum trading, if the company which is to take over the frequencies is an authorized operator, the transfer process shall be realized after the approval of the application of both operators by the Authority. If that company is not an operator, it has to bear conditions specified under Article 7 (authorisation application conditions) and apply to the Authority for approval regarding transferring frequencies by filling right of use application form determined by the Authority with other information and documents asked by the Authority. If the Authority provides a letter approving the transfer, a right of use certificate shall be prepared on behalf of the transferee company. In case of requesting a part of number source to be transferred, necessary process takes place according to the provisions of the relevant legislation.”</i></p>
UK	<p>Section 30 of the Wireless Telegraphy Act 2006 and regulations made under it. http://www.ofcom.org.uk/radiocomms/ifi/trading, http://www.opsi.gov.uk/si/si2004/20043154.htm, which are the main spectrum trading regulations for the UK.</p> <p>There is considerable information available on our website about the rationale for various aspects of our trading regulations and processes. See in particular http://www.ofcom.org.uk/consult/condocs/simplify/, http://www.ofcom.org.uk/consult/condocs/spec_trad/, http://www.ofcom.org.uk/consult/condocs/sec/, http://www.ofcom.org.uk/consult/condocs/spt_wtr/.</p> <p>Trade Notification Register http://spectruminfo.ofcom.org.uk/spectrumInfo/trades</p>

ANNEX 3: RELEVANT TEXTS FROM EU FRAMEWORK

Annex B to “Authorisation” Directive [3]:

Conditions which may be attached to rights of use for radio frequencies

1. Obligation to provide a service or to use a type of technology for which the rights of use for the frequency has been granted, including, where appropriate, coverage and quality requirements.
2. Effective and efficient use of frequencies in conformity with Directive 2002/21/EC (Framework Directive).
3. Technical and operational conditions necessary for the avoidance of harmful interference and for the limitation of exposure of the general public to electromagnetic fields, where such conditions are different from those included in the general authorisation.
4. Maximum duration in conformity with Article 5 of this Directive, subject to any changes in the national frequency plan.
5. Transfer of rights at the initiative of the right holder and conditions for such transfer in conformity with Directive 2002/21/EC (Framework Directive).
6. Usage fees in accordance with Article 13 of this Directive.
7. Any commitments which the undertaking obtaining the usage right has made in the course of a competitive or comparative selection procedure.
8. Obligations under relevant international agreements relating to the use of frequencies.
9. Obligations specific to an experimental use of radio frequencies.

Article 9b of EU framework directive [2]:

Transfer or lease of individual rights to use radio frequencies

1. Member States shall ensure that undertakings may transfer or lease to other undertakings in accordance with conditions attached to the rights of use of radio frequencies and in accordance with national procedures individual rights to use radio frequencies in the bands for which this is provided in the implementing measures adopted pursuant to paragraph 3.

In other bands, Member States may also make provision for undertakings to transfer or lease individual rights to use radio frequencies to other undertakings in accordance with national procedures.

Conditions attached to individual rights to use radio frequencies shall continue to apply after the transfer or lease, unless otherwise specified by the competent national authority.

Member States may also determine that the provisions of this paragraph shall not apply where the undertaking's individual right to use radio frequencies was initially obtained free of charge.

2. Member States shall ensure that an undertaking's intention to transfer rights to use radio frequencies, as well as the effective transfer thereof is notified in accordance with national procedures to the competent national authority responsible for granting individual rights of use and is made public. Where radio frequency use has been harmonised through the application of the Decision No 676/2002/EC (Radio Spectrum Decision) or other Community measures, any such transfer shall comply with such harmonised use.

3. The Commission may adopt appropriate implementing measures to identify the bands for which rights to use radio frequencies may be transferred or leased between undertakings. These measures shall not cover frequencies which are used for broadcasting.

These technical implementing measures, designed to amend non-essential elements of this Directive by supplementing it, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 22(3).

ANNEX 4: LIST OF REFERENCES

- [1] ECC Report 016, "Refarming and trading in a changing radiocommunication world"
- [2] "Framework" Directive, Directive 2002/21/EC amended by Directive 2009/140/EC
- [3] "Authorisation" Directive, Directive 2002/20/EC amended by Directive 2009/140/EC
- [4] RSPG Opinion 04-54, "Secondary trading of rights to use radio spectrum"