



*Government of Pakistan*  
PAKISTAN TELECOMMUNICATION AUTHORITY

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# Spectrum Trading Framework

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# Spectrum Trading Framework

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# I. Executive Summary

Radio frequency spectrum is like a vertebral column for technological developments in telecom industry; its demand is increasing day-by-day as new technologies emerge. This has forced regulators to introduce measures to liberalize the markets. In order to meet the growing demands of radio frequency spectrum, the regulators have focused on latest trends in spectrum management. The objective of spectrum management is to maximize the social, economic and technological benefits from this natural resource.

Spectrum Management is the process to regulate the use of radio frequencies in an efficient manner. Various technical and regulatory tools are used for the spectrum management and **Spectrum trading** is one such tool.

In Pakistan, telecom sector was de-regulated in the year 2003. The Government of Pakistan (GoP) issued De-regulation Policy in 2003, followed by Cellular Mobile Policy 2004, Broadband Policy 2004, Policy Directive for Next Generation Mobile Services in 2014 & 2016, and Telecom Policy 2015. The GoP policies on Telecommunication & Information Technology have generally been characterized as proactive, pro-competition, pro-growth and pro-market. This fundamental, step has assisted in creation of a competitive industry for basic, value added and broadband services. The Telecom Policy 2015 allows Spectrum Trading. The purpose of spectrum trading is to allow markets to determine the best use of spectrum. The goal of the Telecom Policy 2015 with reference to spectrum is as under:

"Allocation and assignment of spectrum to maximize social and economic benefits derived from the use of this scarce resource".

This report covers all aspects of the topic in a comprehensive manner; Part II of the report briefly focuses on introduction to spectrum trading, various types of spectrum trading and spectrum swapping. In Part III, case studies of UK, Australia, India and USA have been summarized. Clauses of Telecom Policy 2015 with reference to Spectrum Trading have been mentioned in part IV. Spectrum Trading Framework for Pakistan has been provided in Part V of the document.

## II. Introduction

The Electromagnetic Spectrum is a natural resource and it must be utilized in a well-organized mode. **Spectrum Management** is the process to regulate the use of radio frequencies in an efficient manner. It describes various administrative and technical procedures to ensure the operation of radio communication without causing or receiving harmful interference. Various technical and regulatory tools are used for the spectrum management and **Spectrum trading** is one such tool. The ability to trade the rights and obligations in radio spectrum, which is used for various communications needs, is termed

as spectrum trading. Spectrum trading is a process that allows the holders of certain wireless licenses to transfer or lease the license rights to another. It adds to a more economically efficient use of frequencies.

There are different types of spectrum trading e.g., Outright sale of the rights and obligations, partial transfer, Term Lease and sub-lease.

**Outright transfer:** the rights and obligations of the person making the transfer become the rights and obligations of the transferee. The original licensee (that traded the license) no longer has any rights and/or obligations under the traded license.

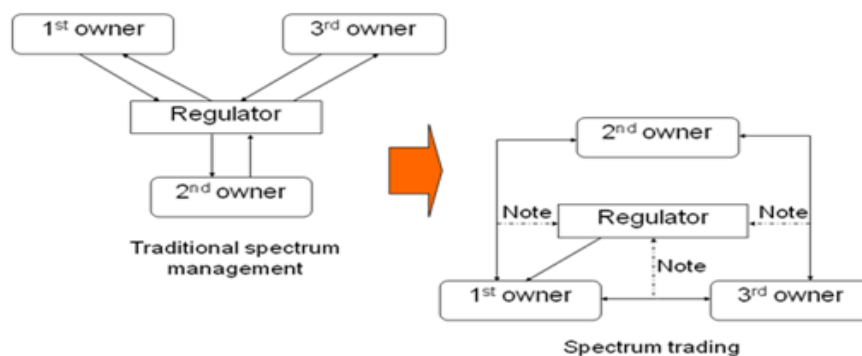
**Concurrent transfer:** the transferred rights and obligations become rights and obligations of the transferee while continuing, concurrently, to be rights and obligations of the person making the transfer. Such a transfer enables licensees to share rights to use spectrum.

**Partial transfer:** instead of trading all the rights and obligations under a license, the transfer of only some rights and obligations in certain cases. This will result in the rights and obligations under the license being partitioned (divided) into two distinct licenses. The rights to use spectrum can be partitioned by frequency, geography or time.

**Leasing:** Leaseholder is not granted its own license but uses the spectrum by virtue of a lease contract with a license-holder

**Spectrum swapping:** Spectrum swapping is a two way trade in which two licensed spectrum holders swap their spectrum and as such it is not termed as spectrum trading.

## Spectrum trading [1](#)



### III. International Best practices

#### a. OFCOM

The legislation permitting spectrum trading in the UK has been in place by virtue of Communications Act 2003. However, the 2003 Act required that, before any actual trading could take place, OFCOM must enact specific regulations (by statutory instrument) mandating this. OFCOM, announced major measures to liberalize spectrum trading - first in July 2011, and then in June 2012. [2](#)

The following forms of spectrum trading are permitted by OFCOM:

1. You may transfer all or part of your license rights and associated obligations to another party.
2. Transfers may be permanent or time-limited. A time-limited transfer will involve reversal of the original transaction by the transferee.
3. If your license contains the necessary provisions, you may enter into a contract to let someone else exercise your rights to use the spectrum. This is referred to as 'leasing'.
4. There is a special trading process, for spectrum held by Crown bodies such as government departments.

There is no trading fee applicable to transferor or transferee.

Table 1 shows the Licenses that are tradable and types of transfer allowed.

License sector	License class/frequency (area)	Types of Transfer	
		Outright or concurrent	Total or partial
Business Radio	Technically Assigned	Fully flexible	Semi-flexible
	Area Defined	Fully flexible	Semi-flexible
	Light Licensing comprising: <ul style="list-style-type: none"> <li>• Simple UK</li> <li>• Simple Site</li> <li>• Suppliers</li> </ul>	Fully flexible	Total only
Spectrum Access	3.6 GHz	Fully flexible	Total only
	412-414 with 422-424 MHz 542-550 MHz (Cardiff) 758-766 MHz (Manchester) 1452-1492 MHz 1785-1805 MHz (NI) 3.5, 10, 28, 32,40 GHz	Fully flexible	Fully flexible
	1781.7-1785 with 1876.71880 MHz	Fully flexible	Total only

Concurrent Spectrum Access	28 GHz	Outright only	Fully flexible
Broadband Wireless (BFWA)	Fixed Access	Scanning Telemetry	Fully flexible
		Point to Point Fixed Links	Semi-flexible
Fixed Services	880-915 MHz 925-960 MHz 1710-1781.7 MHz 1805-1876.7 MHz 1899.9-1980 MHz 2110-2170 MHz	Fully flexible	Fully flexible
PWN		Fully flexible	Fully flexible

## b. ACMA

Under the provisions of the Radio communications Act 1992, the ACMA may determine rules for the assignment of spectrum licences and the circumstances in which licences can be varied, issued or cancelled as a result of assignments. [3](#)

Radio communications (Trading Rules for Spectrum Licences) Determination 2012 provide that a licensee may:

- (a) trade all or part of their licence to an existing licensee or to another person; and
- (b) Trade parts of the licence to different persons.

A licensee must only trade all or part of their licence as:

- (a) A single whole Spectrum trading unit (STU); or
- (b) A multiple of whole STUs.

A licensee must not trade a part of their license if the trade results in a license with a bandwidth that is less than the Minimum contiguous bandwidth (MCB) for the frequency band in which the license operates, without obtaining the ACMA's prior written permission.

## Minimum contiguous bandwidths

(Section 5, subsection 8(2))

Item	Band (MHz)	Minimum contiguous bandwidth (MHz)
1	703-748	5
2	758-803	5
3	825-845	1
4	870-890	1
5	1710-1785	5
6	1805-1880	5
7	1900-1980	5
8	2110-2170	5
9	2302-2400	3.5
10	2500-2570	5
11	2620-2690	5
12	3425-3492.5	2.5
13	3542.5-3575	2.5
14	26500-27500	50
15	27500-28350	50
16	31000-31300	50

### c. INDIA (DoT)

Department of Telecommunications, Ministry of Communications & IT, Government of India issued Guidelines for Trading of Access Spectrum by Access Service Providers on 12<sup>th</sup> October, 2015. Salient features of these guidelines are as under: [4](#)

Spectrum trading is allowed only between two access service providers, holding Cellular Mobile Telephone Service (CMTS) License, Unified Access Service License (UASL), Unified License (Access Services) (UL (AS)) and Unified License (UL) with authorization of Access Service in a licensed service area.

Only outright transfer of right to use the spectrum from the seller to the buyer is permitted.

Leasing of spectrum is not permitted.

Spectrum Trading is permitted only on a pan-LSA (Licensed Service Area) basis.

Spectrum trading is permitted only in the following block sizes (band wise):

Spectrum band	Block Size
800 MHz	2x1.25 MHz
900 MHz	2x200 KHz
1800 MHz	2x200 KHz
2100 MHz	2x5 MHz
2300 MHz	20 MHz in TDD
2500 MHz	20 MHz in TDD and 2x10 in FDD

Spectrum trading does not alter the original validity period of spectrum assignment as applicable to the traded block of spectrum.

#### d. The United States

The Federal Communications Commission (FCC) has been introducing measures to promote secondary markets, and as demand for spectrum grows, to gradually move away from a command and control approach.

Trades involving the transfer of a whole license have been permitted. [5](#)

Leasing and subdivision of spectrum rights are also permitted by virtue of regulations issued in 2003.

Two types of leasing arrangement are authorized, described by the FCC as:

- spectrum manager leasing - enables parties to enter into spectrum leasing arrangements without obtaining prior FCC approval so long as the licensee retains both de jure control (i.e. legal control) of the license and de facto control (i.e. working control) over the leased spectrum pursuant to the updated de facto control standard for leasing.
- De facto transfer leasing - permits parties to enter into long-term or short-term leasing arrangements whereby the licensee retains de jure control of the license while de facto control is transferred to the lessee for the term of the lease. De facto transfer leases under this option requires prior FCC approval.
- Spectrum lessees are permitted to sublease their spectrum usage rights, subject to the sub-lessee complying with the FCC's rules and regulations imposed on the licensee. The sub-lessee is responsible for ensuring this compliance.
- The spectrum leasing allowed, authorizes most wireless radio licensees with 'exclusive' rights to their assigned spectrum to enter into spectrum-leasing arrangements.



These policies and rules affect both mobile and fixed services, including (but not limited to) cellular, personal communications services (PCS), specialized mobile radio (SMR), local multipoint distribution service (LMDS), fixed microwave, 24GHz and 39GHz.

## IV. Telecom Policy 2015 for Spectrum Trading

Section 8.15 of the Telecom Policy 2015 deals with the subject of Spectrum trading. Following sections of the policy are re-produced for clear understanding of the subject.

Clause	Description
8.15.1	The purpose of spectrum trading is to allow markets to determine the best use of spectrum.
8.15.2	Spectrum trading will be permitted under specific conditions. Spectrum trading occurs through the outright sale of the rights and obligations or term lease, subject to license conditions and approval by PTA / PEMRA under intimation to FAB.
8.15.3	A spectrum trading framework will be developed by the PTA, PEMRA and FAB, and will be subject to policy level approval by Federal Government (MoIT). Factors like spectrum capping shall be considered while developing such framework.
8.15.4	In relation to trading, the seller will be expected to pay a Trading Fee. A Processing Fee and any other applicable fee will be levied to cover re-issuing of licenses.
8.15.5	The decision to trade is a commercial decision for the license holder. The terms of the trade will be a commercial agreement between licensees.
8.15.6	Spectrum will be traded only if the relevant license that contains the spectrum assignment to be traded, permits trading. Spectrum assigned to a licensee without such a permit will not be traded unless Federal Government (MoIT) specifically authorizes the trade as being in the public interest.
8.15.7	Nevertheless, spectrum trading will be permitted only for spectrum that has been acquired through a pricing arrangement that represents its market value (i.e. auction or AIP). Spectrum subject to Administrative Cost Recovery or other forms of nominal pricing will not be traded.
8.15.8	Spectrum may be traded between holders of the same license type only. For example, spectrum trading may take place between LL licensees or mobile licensees but not between an LL licensee and a mobile licensee to maintain

the basic value of the different categories of spectrum. Spectrum will not be traded by any licensee with the necessary license conditions until the licensee has fulfilled its payment and roll out obligations unless it also transfers its roll out obligations with the trade and same is verified and authorized by PTA. The eligibility for receiving spectrum through a trade will be the same as the eligibility for assignment of spectrum by FAB. The acquirer of spectrum will be required to obtain (or already hold) the appropriate telecommunications license and to meet the terms of that license.

8.15.9 The framework for spectrum trading will take into account the effects of such trading on competition, national security, public health and safety, compliance with the national laws and policies and compliance with international obligations and international relations.

8.15.10 Swapping of spectrum will be considered as a two-way spectrum trade subject to approval by PTA and FAB.

## V. Spectrum Trading Framework for Pakistan

This document provides Spectrum Trading Framework, as per Telecom Policy 2015, to the eligible parties to carry out spectrum trading in Pakistan. This framework focuses on the following points:

- Follow the latest approach, let the market forces decide the best use of spectrum.
- Trading conditions.
- Trading types:
  - Outright sale of the rights and obligations
  - Term Lease
  - Spectrum swapping
- Tradable spectrum in Pakistan and categories of trading
  - Respective licenses
  - License holder
  - Spectrum Chunks
- Trading fee (processing + re-issuance fee)
  - It should recover the administrative cost
- Issuance of modified license
- Eligibility criteria for participation in trading
  - (payment + roll out obligations)
- Over riding clause
  - ensure competition
  - national security

- public health and safety
- compliance with national laws and policies
- Swapping of spectrum
  - two-way trade

## Framework

1. Spectrum may be traded between holders of the same license type only. For example, spectrum trading may take place between WLL licensees or mobile licensees but not between a WLL licensee and a mobile licensee.
2. Spectrum trading will be permitted only for spectrum that has been acquired through a pricing arrangement that represents its market value (i.e. auction or AIP). Spectrum subject to Administrative Cost Recovery or other forms of nominal pricing will not be traded.
3. Spectrum will be traded only if the relevant license that contains the spectrum assignment to be traded, permits trading. Spectrum assigned to a licensee without such a permit will not be traded unless Federal Government (MoIT) specifically authorizes the trade as being in the public interest.
4. Following forms of spectrum trading shall be permissible under this framework:
  - a. Outright sale of the rights and obligations (Transfer) : The license spectrum holders may transfer all of their license rights and associated obligations to another party who will also be the valid licensee of the same category. Transfers will be of two types permanent, till the remaining term of applicant licensee; or time-limited. A time-limited transfer shall involve reversal of the original transaction by the transferee after the expiry of the time involved. Both parties will enter into contract agreement to be submitted to PTA at the time of application. With an *outright* or total transfer, the rights and obligations of the transferor will become now the rights and obligations of the transferee. After such a transfer, the original licensee (transferor) will no longer have any rights and/or obligations under the traded license to the extent of traded spectrum.
  - b. Spectrum Leasing: Leasing is administered by license terms and conditions. A license-holder may grant leases only if the license contains the necessary terms and conditions as provided in this framework. After modification of the license conditions, the licensed spectrum holder shall become eligible to enter into a contract to let someone else to exercise its rights to use the spectrum. With spectrum leasing, the rights and obligations of the transferor will become the rights and obligations of the transferee for the period of lease. After such a transfer, the original licensee (transferor) will no longer have any rights and/or obligations under the traded license to the extent of traded spectrum for the lease period.

Sub-leasing to third party is not permissible i.e. licensee A may lease to B, who cannot sub-lease to C.

- c. Spectrum swapping: Swapping of spectrum is a two-way spectrum trade between both spectrum licensed holders subject to approval by PTA and FAB.

5. Interested parties will apply to PTA, under intimation to FAB, on a prescribed form seeking permission for either category of spectrum trading. The application form should be duly signed by the CEO or his/her authorized person. An affidavit shall be submitted in case of authorization. Depending upon the required category of trade, applicants are required to fill the Application for Spectrum Trading form alongwith the checklist attached as Annex-A to this document.

6. Spectrum holding licenses are allowed to transfer their license rights and obligations to others on terms agreed commercially between them. The following procedure for the transfer shall be followed:

- a. The license holders shall submit the spectrum trading application form to PTA duly signed by the transferee and transferor.
- b. The information provided on the form will be assessed and considered whether any additional information is required for grant of consent to the transfer.
- c. Maximum 75% of total spectrum held by a licensee, can be traded. The transferor and transferee both will be in compliance with the prescribed spectrum caps as and when declared from GoP/PTA/FAB.
- d. The PTA may seek public opinion from all concerned regarding spectrum trading and its impact on competition, national security, public health and safety, compliance with the national laws and policies and compliance with international obligations and international relations.
- e. PTA may require from interested parties to submit within 10 working days details of any concerns they might have about the proposed transfer.
- f. PTA will have detailed assessment of whether the proposed transfer raises sufficient competition concerns.
- g. PTA may require meeting with the trading parties and third parties to discuss issues, if any, related to the trade transfer;
- h. The proposed transfer or otherwise on the trade shall be properly notified to the concerned quarters.

- i. In case, the transfer is executed, the transferor and the transferee shall surrender their licenses to PTA and PTA will issue new licenses reflecting the terms of the trade.

7. The circumstances in which transfers are automatically barred include the following:

- a. Any of the transferor or transferee are defaulters of PTA payments and/or roll out obligations;
- b. In case, any of the transferor or transferee have not consented to the transfer in the form;
- c. In case, some legal proceeding are pending against either of the transferor/transferee;
- d. In case, PTA has not consented to a transfer being made due to any reason and this shall be notified properly by the Authority.

8. Trading Terms & Price: The trading terms including price are a matter of commercial negotiation between the parties concerned. However, these should comply with all regulatory requirements as set out in the relevant license conditions.

9. The spectrum issued by PTA/FAB are now tradable as listed in table 2 below with the types of trade allowed for each category.

License Category	Frequency Band
Wireless Local Loop	450 MHz
	479 MHz
	1900 MHz
	3.5 GHz
Cellular Mobile	850 MHz
	900 MHz
	1800 MHz
	1900 MHz
	2100 MHz

10. A licensee (in case of being a corporate entity) and is taken over by way of share purchase or, if company sells a business by some other way, will require permission from the Authority do so and a spectrum trade filing with PTA under intimation to FAB shall become mandatory.

11. PTA shall charge spectrum trade processing fee to recover its administrative costs involved in the processing of the application. The processing fee shall be levied on both transferor and transferee and will be Rs. 500,000/- in case of cellular mobile licensees and Rs. 100,000/- in case of LL licensees. The transferor shall be responsible to clear all its dues prior to finalizing any contract for spectrum trading. After agreement, any dues recoverable up to the effective date of trade shall be the liability of the transferee.
12. Spectrum trading shall not change the original period of spectrum assignment as relevant to the traded block of spectrum.
13. Transferee will be allowed to use the spectrum acquired through trading based on technology neutral policy.
14. The amount received from trading shall become part of Adjusted Gross Revenue (AGR) for the purpose of levy of License fee.
15. PTA/FAB reserves the rights to revoke spectrum trade in the interest to national security, threat to the competition, hazard to public health and safety, non-compliance with the national laws and policies, international obligations and international relations.

## **VI. References:**

1. ITU Regional Workshop, Amman, 5-7 Dec 2011
2. <http://www.ofcom.org.uk/>
3. <http://www.acma.gov.au/>
4. <http://www.dot.gov.in/>
5. <https://www.fcc.gov/>



# Application for Spectrum Trading

File No. _____
Company Name- _____
Proposal Date__ - _____

**Check List for Spectrum Trading Application**

S. No.	Required Documents	Yes	No	Remarks PTA Use Only
1.	Bank Draft as Application Processing Fee. Demand Draft No: _____ Amount: _____			
2.	Letter of intent duly signed by Transferee and Transferor.			
3.	Certificate of Incorporation (Including Memorandum & Article of Association and Form-29 duly certified by SECP).  i. Transferee ii. Transferor			
4.	Copy of Board resolution for the: i. Transferee ii. Transferor			
5.	Organizational Structure of the Company/Concerned Section dealing with the wireless license along with Contact Addresses / Nos.			
6.	Copies of CNIC/Passport of CEO & Contact Persons.			
7.	Undertaking on duly notarized stamp paper: i. That the company or its Directors have never been declared insolvent by any court of Law ii. That the directors of the company have never been convicted by a court of law for turpitude (other than minor offences) iii. That neither the applicant company nor its shareholder directors are defaulter(s) of PTA.			

**Prepared By:** \_\_\_\_\_ **Signatur:** \_\_\_\_\_





### A. Instructions for completion

- Please print clearly.
- Please ensure this form is signed, stamped and dated at the bottom.
- A separate form must be completed for each trade.
- Applications cannot be processed unless the form is signed by all relevant parties or relevant proof of consent provided.
- The date of effect cannot be back-dated.
- Completed forms may be submitted to:  
**Director General (Licensing)**  
**PTA Headquarters Sector F-5/1**  
**Islamabad.**

### B. License holder details

Please enter details of the current license holder (Transferor)

Name:	<input type="text"/>
Company Name:	<input type="text"/>
Address:	<input type="text"/>
Postcode:	<input type="text"/>
Telephone:	<input type="text"/>
Fax:	<input type="text"/>
E-mail address:	<input type="text"/>
License Class (WLL, Mobile):	<input type="text"/>
License Number:	<input type="text"/>
Date of Issue:	<input type="text"/>
Date of Expiry:	<input type="text"/>
Licensed Service Area:	<input type="text"/>
Detail of Allocated Spectrum:	<input type="text"/>
Total spectrum band wise:	<input type="text"/>

## C. Proposed Transferee Details

Please enter details of the proposed Transferee.

Name:	<input type="text"/>
Company Name:	<input type="text"/>
Address:	<input type="text"/> <input type="text"/>
Postcode:	<input type="text"/>
Telephone:	<input type="text"/>
Fax:	<input type="text"/>
E-mail address:	<input type="text"/>
License Class (WLL, Mobile):	<input type="text"/>
License Number:	<input type="text"/>
Date of Issue:	<input type="text"/>
Date of Expiry:	<input type="text"/>
Licensed Service Area:	<input type="text"/>
Detail of Allocated Spectrum:	<input type="text"/>
Total spectrum band wise:	<input type="text"/>

## D. License Details

Please provide details of the license (s) which contains the rights and obligations which you wish to transfer

License class (WLL, Mobile):	<input type="text"/>
License No:	<input type="text"/>
License Service Area:	<input type="text"/>
Detail of spectrum to be traded:	<input type="text"/>
Technology presently deployed:	<input type="text"/>
Technology to be deployed after trade:	<input type="text"/>
Present use of spectrum by Transferor:	<input type="text"/>
Proposed use of spectrum by Transferee:	<input type="text"/>

## E. Description of transfer

Please state the type of transfer you wish to complete

Outright sale

Term Lease of the rights and obligations  
period. From: / /

To: / /

When would you like the transfer to take effect?

Immediate

Postdated (please state proposed date)

## F. Declaration from the Transferor

- i. The Transferor hereby warrants that it consents to the transfer detailed in this application
- ii. The Transferor has cleared all its dues, relating to its license till effective date of trade.
- iii. Transferor will be able to fulfill all the obligations linked with the spectrum including the rollout obligations with the remaining amount of spectrum.
- iv. The Transferor confirms that all eligibility conditions for spectrum trading have been fulfilled.
- v. The Transferor hereby confirms it has not requested PTA/FAB to revoke the license.
- vi. The Transferor indemnifies and holds harmless PTA/FAB from and against any loss, liability, damages, expenses or costs (including legal costs and expenses on a solicitor/client basis) arising in connection with any inaccurate or misleading information contained in this application (other than in Section C) or with its consent to the transfer.

Signed for and on behalf of the License Holder:

Date of application:

Full Name (in block capitals):

Company:

G. Declaration from Transferee

- i. The Transferee hereby warrants that it consents to the Transfer.
- ii. Transferee fulfils all the eligibility conditions for acquiring the spectrum and shall assume all the obligations linked with the spectrum including roll-out obligations.
- iii. The Transferee is not a defaulter of PTA.

Signed for and on behalf of the Transferee:

Date of application:

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Full Name (in block capitals):

Company: