|  |  |  |
| --- | --- | --- |
| APTlogogreen3 | ASIA-PACIFIC TELECOMMUNITY | |
| **SOUTH ASIAN TELECOMMUNICATIONS REGULATOR’S COUNCIL (SATRC)** |  |
|  |  |

**SATRC report on**

**emerging licensing framework including exit and relicensing policy**

**Prepared by**

**SATRC Working Group on Policy, Regulation and Services**

**Adopted by**

**17th Meeting of the South Asian Telecommunications Regulator’s Council**

**4 - 6 October 2016, Dhaka, Bangladesh**

**PREFACE**

In order to provide a complete overview of the licensing framework in the SATRC region, this study report has been divided into the following four major areas:

1. Existing licensing framework
2. Emerging licensing framework
3. Exit Policy
4. Relicensing Policy

In order to prepare the study report, a questionnaire was prepared and circulated to all expert members of the SATRC countries for their inputs. The questionnaire is placed as   
**ANNEXURE-V** to this report. An analysis of above categories of licensing framework has been attempted based on the responses / input received from the experts of the following SATRC countries:

1. **AFGHANISTAN**
2. **BANGLADESH**
3. **BHUTAN**
4. **INDIA**
5. **IRAN**
6. **MALDIVES**
7. **PAKISTAN, AND**
8. **SRI LANKA**

The objective of this report is to bring forward the key aspects of the existing as well as emerging licensing framework in the SATRC regions and to highlight the issues pertaining to the practical implementation of relicensing and exit policies in aforementioned SATRC countries.

In the modern economies, the telecom industry around the world is keen in adapting and utilizing new technologies and on promoting their application for effective and efficient use in the telecom sector. The existing framework in any economy needs to pave the way to a new framework incorporating such new technology, network Equipments, penetration in rural and remote areas. With the experience gained over the years and with the development in business climate, it is prudent to review the licensing policy framework for telecommunication services because an obsolete regime stifles the growth of the industry. The old licensing framework, which was technology specific and service specific, is no longer sustainable, as it has been taken over by the dynamics of technology revolution enabling delivery of converged services in a technology on the same platform and service neutral (liberalized) environment. Hence, it is imperative to understand the emerging licensing framework for telecommunication sector, which would be easier to implement and would be beneficial to all stakeholders by increasing tele-density and proliferation of data usage.

This study report contains certain suggestions which can be adopted by the SATRC countries to have a well-defined and systematic licensing framework, compatible with the current technology for the orderly growth of the telecom sector.

**Table of content**

**CHAPTER - I: INTRODUCTION 6**

1.1 EXPONENTIAL Growth OF Telecom Sector 6

1.2 Major Challenges 6

1.3 CONTROLLED SECTOR 6

1.4 LICENCE FOR TELECOMMUNICATION services 7

1.5 BEST PRACTICE FOR LICENSING PROCESSES 8

1.6 PRINCIPLES FOR EFFECTIVE TELECOMMUNICATIONS LICENSING 8

1.7 CONVERGENCE TRENDS TOWARDS UNIFIED LICENSING 9

**CHAPTER - 2: EXISTING REGULATORY FRAMEWORK 11**

2.1 important departments relating to telecommunications IN INDIA 11

2.2 Enactments governing telecom sector IN INDIA 13

2.3 Overview of Telecom Sector in India 15

2.4 Existing licensing Framework in Other SATRC   
countries 22

2.5 OTHER REGULATORY ASPECTS: (LICENSE FEES AND Other LEVIES IN SATRC countries 29

2.6 SPECTRUM SHARING/ INFRASTRUCTURE SHARING 32

**CHAPTER-3: EMERGING LICENSING FRAMEWORK 37**

3.1 REQUIREMENT OF TRANSITION TO NEW LICENSING   
FRAMEWORK 37

3.2 KEY TRANSITION ISSUES 37

3.3 PRINCIPLES FOR TRANSITIONING TO A NEW LICENSING FRAMEWORK 38

3.4 LIBERALISATION OF SPECTRUM 38

3.5 SPECTRUM SHARING 40

3.6 EMERGING LICENSING FRAME WORK IN SATRC COUNTRIES 41

3.7 SPECTRUM SHARING IN INDIA 42

**CHAPTER-4: EXIT POLICY 46**

4.1 NEED FOR EXIT FROM THE TELECOM SECTOR 46

4.2 SPECTRUM TRADING 46

4.3 MERGER AND ACQUISITIONS 47

**CHAPTER-5: RELICENSING POLICY 50**

5.1 RELICENSING- EXISTING SCENARIO IN SATRC COUNTRIES 50

**CHAPTER-6: PROPOSAL / WAY FORWARD 54**

**ANNEXURES 57**

**CHAPTER I- INTRODUCTION**

**1.1 Exponential Growth of Telecommunication Sector**

The telecom sector is a vibrant and important sector in any economy and has been recognized the world-over as an important tool for socio economic development of a nation as the telecom services are crucial to realize the socio-economic objectives of the country. Telecommunications has evolved as a basic infrastructure like electricity & power, transportation, roads etc. and has also emerged as one of the critical components of economic development and growth required for overall socio economic development of the country. The telecom sector at present is very dynamic and fast growing sector around the world. The Indian telecom sector has registered a phenomenal growth during the last decade or so and has become second largest telephone network in the world, only after China.

**1.2 Major Challenges**

A major challenge facing regulators in developed and developing countries alike and is the need to strike the right balance between ensuring certainty for market players and preserving flexibility of the regulatory process to accommodate the rapidly changing market, technological and policy framework. This challenge applies across a wide range of regulatory instruments and vehicles including licensing framework of the telecom service sector.

Presently, major challenges being faced by the regulators in developed and developing countries are management of Existing Licensing and Policy Framework, Emerging licensing Framework including Exit and Relicensing Policy issues resulting from rapidly changing market scenarios and technological development and policy framework set by the government and role of telecom regulator.

**1.3 Controlled Sector**

Licensing for telecommunication service is one of the core elements of any communications market’s policy and regulatory framework and is integrally tied to the structure of the communications sector. Licensing determines the degree of competition between operators, revenues earned by government in the form of levies and fees and the conditions under which market participants can operate and provide telecommunication services in the country. An effective, forward looking licensing regime and secured policy framework are essential component for the successful deployment of new and emerging technologies, the promotion of effective competition between operators as well as facilitation of investment friendly environment in the telecommunications sector. Telecommunications is viewed as an essential public service with large positive externalities (like other infrastructure sectors such as water, electricity, gas and highways). Public policy places a strong emphasis on effective regulation. The governments and regulators must ensure robust and sector friendly policy framework that defines what is to be regulated, who to regulate, how to regulate and to regulate / intervene? As the telecommunications sector needs to be regulated but the dilemma is how much.

**1.4 Licence for Telecommunication Services**

A telecommunication license authorizes an entity to provide telecommunication services or operate telecommunication facilities. Licenses also generally define the terms and conditions of such authorization, and describe the major rights and obligations of a telecommunication operator.

The telecommunication licence is an official authorization to provide services or operate telecom networks. It can also be a regulatory code that defines the terms and conditions under which the licensee may operate. Licenses frequently describe the rights and obligations of the provider. Licences:

* Regulate the provision of an essential public service through some controls to support the public interest (e.g. safety).
* Assist in expanding network coverage and other universal service objectives.
* Represent a key element in shaping market structure (e.g. number of players).
* Establish a competition framework through fair trading conditions.
* Generate fees as part of revenue raising for Governments and regulators.
* Support consumer protection efforts through mandated license conditions.
* By clearly defining rights and obligations, licenses underpin regulatory certainty.

Licensing in the telecom sector is an important and prevailing across all the countries in the world but its regulation varies from country to country.

**1.5 Best Practice for Licensing Process**

WTO General Agreement on Trade in Services (GATS) and Annex on Telecommunications provide trade rules that are applicable to telecommunications regulation and licensing. The Reference Paper provides additional requirements that are legally binding for countries that commit to them:

*"Where a telecommunications license is required, the following shall be made publicly available:*

* *All the licensing criteria and the period of time normally required to reach a decision concerning an application for a license; and*
* *The terms and conditions of all individual licenses."*

The reasons for the denial of a license will be made known to the applicant on request. Any procedures for the allocation and use of scarce resources, including frequencies, numbers and rights of way, is carried out in an **objective, timely, transparent and non-discriminatory** manner. The current state of allocated frequency bands are made publicly available, but detailed identification of frequencies allocated for specific government uses is not required.

**1.6 Principles for Effective Telecommunications Licensing**

Licensing regimes must ensure they facilitate rather than restrict growth in telecom services. It must provide businesses with flexibility and certainty required to invest in new and existing operations. Five key principles to effective licensing are therefore:

* **SERVICE AND TECHNOLOGY NEUTRALITY**: Regulators increasingly allow licensees to offer a range of services using the most efficient technology and infrastructure.
* **SIMPLICITY**: Move towards a consolidated licensing framework that requires operators to hold a minimum number of licences and to be subject to a minimum number of different licensing processes.
* **FLEXIBILITY:** Operators should have the ability to respond to changes in the market quickly with a minimum regulatory friction.
* **CERTAINTY:** Licensees should be subject to clear and consistent licence conditions. Where there is provision for discretion in setting or modifying licence terms, regulators and ministers should ensure adequate consultation smooth transition.
* **AVOIDANCE OF DISCRIMINATION BETWEEN TYPES OF LICENSEES:** Governments should treat licensees on a consistent basis and ensure a level regulatory playing field.

**1.7 Convergence Trends towards Unified Licensing**

Trend in licensing practices reflects developments in telecommunications market, especially rapid growth in data and internet services. Licensing types and categories tend to reflect the value chain of telecommunications services. Value chain consists broadly of network infrastructure, followed by content delivery and other applications, and Value Added Services.

A unified licensing framework removes arbitrary and artificial distinctions between different services, promotes sector competition and facilitates sector convergence. The benefits of unified licensing include:

* Simplified licensing structure that reduces the regulatory burden and provides flexibility for operators.
* Technology neutrality, allowing operators to adopt best use technologies that maximize economic value.
* Facilitation of competition, both through greater ease of market entry and through the introduction of new technology.
* Reduction of legal disputes on scope of license and breach of licence conditions.
* Allows operators to take advantage of an evolving market, which is often characterized by rapid technological or market developments.
* Allows for customization based on the country’s unique circumstances.

Key challenge for licensing frameworks is rise of internet services (‘over the top’ or OTT services), which includes applications such as Skype, WhatsApp, Viber, LINE, IOTs etc. Convergence in the telecommunications sector in many countries has begun to re-evaluate how regulatory layers are defined, including how best to structure licence categories. A unified license combines licensing for both the provision of services and the operation of network facilities. A unified licensing regime should provide a simplified licensing procedure, allowing service providers to use any technology, ensuring greater flexibility and an efficient use of telecommunications network resources.

**CHAPTER-II: EXISTING REGULATORY FRAMEWORK**

**2.1 Important departments relating to Telecommunications in India**

The important departments that regulate the telecom industry in India are as follows:

1. **Department of Telecommunications:**

The Department of Telecommunications (DoT), under the administrative control of the Ministry of Communications and Information Technology (MOC&IT), has been formulating developmental policies for the accelerated growth of the telecommunication services. The Department is also responsible for grant of licenses for various telecom services like Unified Access Service, Long Distance Service, Internet and VSAT service. DoT is also responsible for frequency management in the field of radio communication in close coordination with the international bodies such as ITU and also enforces wireless regulatory measures by monitoring wireless transmission of all users in the country.As per the Indian Telegraph Act, 1885 and the Indian Wireless Telegraphy Act, 1933 the Central Government has the exclusive privilege of establishing, maintaining and working telegraph and wireless telegraphy equipment and has the authority to grant licenses for such activities. The Central Government acts through the DoT. Following are two important department of DoT:

1. **WIRELESS PLANNING COMMISSION (WPC):**

The WPC was created in 1952 and is a wing of the DoT which is responsible for Frequency Spectrum Management, including licensing of wireless stations and caters to the needs of all wireless users (Government and Private) in India.

1. **STANDING ADVISORY COMMITTEE ON FREQUENCY APPLICATION (SACFA):**

SACFA is another wing of the DoT which gives approval for radio frequency spectrum (RFS) used by telecom service providers. Obtaining a telecom license is not enough for the operator to begin rolling out the services; a no objection certificate is required from SACFA.

1. **Telecom Commission**

The Telecom Commission was set up by the Government of India with administrative and financial powers of the Government of India to deal with various aspects of Telecommunications. The Telecom Commission is responsible for:

* Formulating the policy of Department of Telecommunications for approval of the Government;
* Preparing the budget for the Department of Telecommunications for each financial year and getting it approved by the Government; &
* Implementation of Government's policy in all matters concerning telecommunication.

1. **Telecom Regulatory Authority of India**

Telecom Regulatory Authority of India (TRAI) is an autonomous statutory body established under Telecom Regulatory Authority of India Act, 1997. TRAI was established to regulate telecom services, including fixation/revision of tariffs, interconnection and quality of service etc, of telecom services in India which were earlier vested in the Central Government. TRAI's mission is to create and nurture conditions for growth of telecommunications in the country in a manner and at a pace which will enable India to play a leading role in emerging global information society.  One of the main objectives of TRAI is to provide a fair and transparent policy environment which promotes a level playing field and facilitates fair competition. TRAI issues directions, orders and regulations to achieve its objectives and carry out its functions assigned under Telecom Regulatory Authority of India Act, 1997.

1. **Telecom Dispute Settlement Appellate Tribunal (TDSAT)**

The TDSAT was established in 2000 under an amendment to the Telecom Regulatory Authority of India Act, 1997. The TDSAT has been vested with exclusive powers to adjudicate any dispute between:

* DoT( Licensor) and a Licensee ( Telecom Service Provider;
* various service providers; and
* service providers and groups of customers

The jurisdiction of civil courts has been expressly barred in cases where the TDSAT has jurisdiction.

**2.2 Enactments governing Telecom Service Sector in India**

There are various enactments /laws and regulations that govern the telecom industry in India. Following main enactments are applicable to telecom service companies i.e. the companies who are either requiring license or registration from DoT:

1. **The Indian Telegraph Act, 1885**

This Act is one of the oldest legislations still in effect in India and governs the law relating to Telegraphs in India. The Indian Telegraph Act, 1885 gives exclusive privilege to grant telecom licenses to private bodies on such conditions and in consideration of such payments as it thinks fit, to any person to establish, maintain and work a telegraph*\*\** within any part of India. Some of the salient features of this Act are:

* It authorizes the Government of India to grant telecom licenses on such conditions and in consideration of such payments as it thinks fit, to any person to establish, maintain, work a telegraph within any part of India.
* It authorizes the Government of India to take possession of licensed telegraphs and to order interception of messages on the occurrence of any public emergency or in the interest of public safety.
* Any dispute concerning a telegraphic appliance/ apparatus/ line between the telegraph authority and a licensee shall be determined by arbitration by an arbitrator appointed by the Central Government.

*\*\*Telegraphs m*eans *any appliance, instrument, material or apparatus used or capable of use for transmission or reception of signs, signals, writing, images and sounds or intelligence of any nature by wire, visual or other electro-magnetic emissions, Radio waves or Hertzian waves, galvanic, electric or magnetic means.*

1. **The Indian Wireless Telegraphy Act, 1933**

The Indian Wireless Telegraphy Act, 1933 was enacted to regulate the possession of wireless telegraphy apparatus. According to this Act, the possession of wireless telegraphy apparatus by any person can only be allowed in accordance with a license issued by the telecom authority. Further, the Act also levies penalties if any wireless telegraphy apparatus is held / used without a valid licence from Government of India.

1. **Telecom Regulatory Authority of India Act 1997**

The Telecom Regulatory Authority of India Act, 1997 empowered the Telecom Regulatory Authority of India (TRAI) with quasi-judicial authority to adjudicate upon and settle telecom disputes. Later in the year 2000, this Act was amended by the notification of the Telecom Regulatory Authority of India (Amendment) Act, 2000 to bring in better clarity and distinction between the regulatory and recommendatory functions of TRAI. Further, the amended Act served a very important purpose in completely differentiating the judicial functions of TRAI by setting up of Telecom Dispute Settlement Appellate Tribunal (TDSAT).

There is also clear distinction between the recommendatory powers of TRAI and the policy making powers of DoT. The DoT is the sole authority for licensing of all telecommunications services in India, it is mandatory for the DoT to have TRAI's recommendations, beforehand, with regard to matters over which TRAI has recommendatory powers (mentioned above) however, the DoT has the discretion to either accept or reject the recommendations of TRAI under the TRAI Act.

1. **Information Technology Act, 2000**

There are various other laws which have an impact on the telecom industry in India such as the Information Technology Act, 2000 and subsequently, Information Technology (Amendment) Act, 2008 (ITAA 2008) which provided additional focus on information security as well as added several new sections on offences including cyber terrorism and data protection and also provides for penalties for various offences such as cyber-crimes, various e-commerce frauds like cheating by impersonation and pornography however. Though the ITAA 2008 does not directly apply to the telecom industry, but some of the amendments are directly related to the telecom sector, as we are aware that information technology sector and the telecom sector are closely related.

The Government also notifies various regulations from time to time, which have an impact on this sector such as the ‘Anti-Spamming Regulations’, which prohibit unsolicited commercial communications sent via SMS, and require all telemarketers to register under the said regulations.

This Act is one of the oldest legislations still in effect in India and it inter alia authorizes the Government of India to grant telecom licences on such conditions and in consideration of such payments as it thinks fit, to any person to establish, maintain and work a telegraph within any part of India.

**2.3 Overview of Telecom Sector in India**

Telecommunications in India can be traced back to the 19th century when the British East India Company introduced telegraph services in India. The past two decades have been considered as the golden period for the telecommunications industry in India with exponential growth and development in terms of technology, penetration, as well as policy. All this has paralleled with the liberalization in this sector and huge investment by both domestic and foreign investors.

Like in other countries, telecommunications in India started as a state monopoly. In the 1980s, telephone services and postal services came under the Department of Posts and Telegraphs. In 1985, the Government separated the Department of Post and created the Department of Telecommunications ("DoT") under the Ministry of Communications and Technology.

In the early 1990s the Indian telecom sector, which was owned and controlled by the Government, was liberalized and private sector participation was permitted through a gradual process.

* Telecom equipment manufacturing sector was completely deregulated.
* The Government then allowed private players to provide value added services such as paging services.
* The Government has been introducing its strategy on telecommunications vide various telecom policies introduced in 1994 (i.e. the NTP 1994) and in 1999 (i.e. the NTP 1999) and most recently in 2012 (i.e. the NTP 2012).

Prior to liberalization of Indian telecommunication service sector, the telecom services in the country were provided by Department of Telecommunications (DoT) and MTNL (Government Telecom Company). Telecom Services Sector was opened up for private participation with the issue of licences for radio paging and other value added services. Separate licences were awarded for each type of service. The following other services were opened up for private participation later on:

* Mobile Services – 1994
* Basic Services- 1997-98
* Internet Services-1998
* National Long Distance (NLD) -2000
* International Long Distance (ILD)-2002

For the award of Mobile, Basic and Internet licences, initially Indian territory was divided into 23 Licensed Service Areas (LSAs), now there are 22 LSAs.

**TELECOM POLICIES IN INDIA**

**1. NATIONAL TELECOM POLICY (NTP-94)**

The first National Telecom Policy (NTP-94) was announced by the Government in 1994 with the objectives of providing telephone on demand, provision of world class services at reasonable prices and universal availability of basic telecom services to all villages. NTP-1994 recognized that the required resources for achieving these targets could not be made available only out of Government sources and private investment and involvement of the private sector was required to bridge the large resource gap.

With the implementation of National Telecom Policy-1994 (NTP-1994), the first phase of liberalisation in mobile telephony began with the award of eight Cellular Mobile Telephone Service (CMTS) licences in four Metros (Bombay, Delhi, Calcutta, Madras) in 1994. These were awarded on the basis of a ‘beauty contest’. The licence fee was a flat amount for the first three years, and then was linked to the number of subscribers subject to a minimum amount. Subsequently, 34 CMTS licences were awarded in 18 Licence Service Areas (LSAs), two each in all LSAs through a single-stage competitive bidding process in November 1995 except West Bengal and Assam, where only one licence was awarded. No bids were received for Jammu and Kashmir and the then Andaman and Nicobar LSA. The licence had a validity of 10 years extendable by a period of 5 years at a time.

**2. NATIONAL TELECOM POLICY (NTP-99)**

While there were several achievements under the NTP 1994, some of the objectives could not be met. Acknowledging several changes both at the national and global scenario in the telecom sector; a New Telecom Policy- NTP-99 was announced by Government w.e.f. 1st April 1999. Licensing of all telecom services thereafter was to be under the policy framework of NTP-99, which sought to significantly redefine the competitive nature of the industry. The new policy lifted the restrictions on the number of service providers for the Basic Service Providers (BSPs) as well as the Cellular Mobile Service Providers (CMSPs) making it open for participation by all bidders who satisfied the conditions of the DoT. The new policy also allowed all operators who were under the fixed licence fee regime to migrate to a revenue sharing regime. In the revenue sharing model, the operators were required to pay a percentage of their Adjusted Gross Revenue (AGR) as annual license fee and spectrum usage charge to the Government. The percentage of revenue share depended on the licence service area\* where they offered their services under the Licence.

The Telecom Policy 1999 (NTP-99) has brought following important changes in he Indian telecom sector:

1. NTP-99 allowed the licensees to migrate from a Fixed Licence Fee Regime to a Revenue Share arrangement with effect from 1st August, 1999.
2. Licences validity period was extended for 20 years, extendible by 10 years. Previously, it was 10 years, extendible by 5 years.
3. The Cellular licence was made technology-neutral; it was mandatory for the licensees to use GSM technology.
4. In 1997, the Government granted the third mobile licence to MTNL for Delhi and Mumbai Metros. For other LSAs, BSNL was licensed as the third CMTS operator in 2000.
5. The Government awarded CMTS licences to 4th operators in the LSAs in 2001 through a single stage bidding process.

The Telecom Commission (Department of Ministry of Communications) in May 1999, accorded in principle approval for registration of Call Centres, both International and Domestic, in the country under the above category.  Later, services like Network Operation Centres and Vehicle Tracking Systems were also added to this category. As per the Terms and Conditions formulated by the Telecom Commission in February 2000, these  application Service Providers could take telecom resources from authorized Telecom Service Providers only and may not infringe upon the jurisdiction of other authorized Telecom Service Providers and they will not provide switched telephony. These companies should meet the revised terms and conditions of OSP registration.

The Union Cabinet based on the recommendations of Group of Ministers (GoM) on Telecom matters, constituted in September 2003, approved the policy for licensing of Unified Access Services. The GoM had considered the recommendations submitted by Telecom Regulatory Authority of India (TRAI) on 27thOctober 2003. The policy drew upon NTP-99. Through this approval, Cabinet besides, a number of other related decisions, charted the course to a Universal Licensing Regime. Guidelines for issue of Unified Access Services (UASL) licences were issued on 11thNovember 2003 where after licences were issued only for UAS.

UASL permitted an access service provider to offer both fixed and/or mobile services under the same licence, using any technology. The existing operators were given the option to continue under the present licensing regime or migrate to new UASL. The majority of licensees have migrated to the UASL regime. Subsequently UAS licences were given in January 2004, December 2006, and March 2007, as and when people applied for the same. All these licences were linked with spectrum and entry fees was the same as charged for the fourth cellular licence

In April 2007, the DoT sought the opinion of the TRAI on some specific points including that of putting a cap on the number of access service providers in a service area, as radio frequency spectrum required for wireless services was not sufficient to meet the increasing demand from UAS Licensees.

In August 2007, TRAI recommended that no cap should be placed on the number of access service providers in any service area. TRAI in August 2007 also recommended that “a licensee using one technology may be permitted on request, usage of alternative technology and thus allocation of dual spectrum. However, such a licensee must pay the same amount of fee which has been paid by the existing licensees using the alternative technology or which would be paid by the new licensee going to use that technology”.

**3**. **NATIONAL TELECOM POLICY (NTP-2012)**

The Government approved National Telecom Policy-2012 (NTP-2012) on 31st May 2012 which addresses the Vision, Strategic direction and the various medium term and long term issues related to telecom sector. The primary objective of NTP-2012 is maximizing public good by making available affordable, reliable and secure telecommunication and broadband services across the entire country. The main thrust of the Policy is on the multiplier effect and transformational impact of such services on the overall economy. It recognizes the role of such services in furthering the national development agenda while enhancing equity and inclusiveness. Availability of affordable and effective communications for the citizens is at the core of the vision and goal of the NTP-2012. The Policy also recognizes the predominant role of the private sector in this field and the consequent policy imperative of ensuring continued viability of service providers in a competitive environment. Pursuant to NTP-2012, these principles would guide decisions needed to strike a balance between the interests of users/ consumers, service providers and government revenue.

The objectives of the NTP-2012, inter-alia, include the following:

* Provide secure, affordable and high quality telecommunication services to all citizens.
* Strive to create One Nation - One License across services and service areas.
* Achieve One Nation - Full Mobile Number Portability and work towards One Nation - Free Roaming.
* Increase rural tele-density from the current level of around 39 to 70 by the year 2017 and 100 by the year 2020.
* To recognize telecom, including broadband connectivity as a basic necessity like education and health and work towards ‘Right to Broadband’.
* Provide affordable and reliable broadband-on-demand by the year 2015 and to achieve 175 million broadband connections by the year 2017 and 600 million by the year 2020 at minimum 2 Mbps download speed and making available higher speeds of at least 100 Mbps on demand.
* Provide high speed and high quality broadband access to all village panchayats through a combination of technologies by the year 2014 and progressively to all villages and habitations by 2020.
* Recognize telecom as Infrastructure Sector to realize true potential of ICT for development.
* Address the Right of Way (RoW) issues in setting up of telecom infrastructure.
* Mandate an ecosystem to ensure setting up of a common platform for interconnection of various networks for providing non-exclusive and non-discriminatory access.
* Enhanced and continued adoption of green policy in telecom and incentivize use of renewable resources for sustainability.
* Achieve substantial transition to new Internet Protocol (IPv 6) in the country in a phased and time bound manner by 2020 and encourage an ecosystem for provision of a significantly large bouquet of services on IP platform.

Till 2012, individual licenses were required to start a different telecom services, however with the introduction of Unified License in 2012 - a number of telecom services can be provided under single licence by taking appropriate service authorisations. However, one company can have only one Unified Licence. Under Unified Licence, there can be authorization for any one or more services. The applicant company can apply for authorization for more than one service and service area at different time. Depending upon the authorization, the scope and jurisdiction of the licence will vary.

At present, licenses for the following services are operative as specified in **Table No.1** given below:

**Table No. 1**

|  |  |  |
| --- | --- | --- |
| **Sl. No.** | **Service** | **Remark** |
| 1. | Unified Licence | All Services |
| 2. | Access Service | Service Area wise |
| 3. | Internet Service : Category-A | All India jurisdiction |
| 4. | Internet Service : Category –B | Service Area wise |
| 5. | Internet Service : Category –C | Secondary Switching Area wise |
| 6. | National Long Distance (NLD) | All India jurisdiction |
| 7. | International Long Distance (ILD) | All India jurisdiction |
| 8. | Global Mobile Personal Communication by Satellite (GMPCS) Service | All India jurisdiction |
| 9. | Public Mobile Radio Trunk (PMRTS) Service | Service Area wise |
| 10. | Very Small Aperture Terminal (VSAT) Closed User Group (CUG) Service | All India jurisdiction |
| 11. | INSAT MSS-Reporting (MSS-R) Service | All India jurisdiction |
| 12. | Resale of International Private Leased Circuit (IPLC) Service | All India jurisdiction |

In India, regulatory fee is payable as a one-time non-refundable Entry Fee for Unified Licence for all licensed service areas is 150.00 Million. The entry fee varies as per service authorization requirements as specified in **Table No. 2** given below

**Table No. 2**

|  |  |
| --- | --- |
| **Service** | **Entry Fee**  **( Million INR)** |
| Access (Wire line / Wireless) Service (Telecom Circle / Metro Area) | 10.00 (5.00 for NE & J&K) |
| NLD (National Area) | 25.00 |
| ILD (National Area) | 25.00 |
| VSAT (National Area) | 3.00 |
| PMRTS (Telecom circle/Metro) | 0.05 |
| GMPCS (National Area) | 10.00 |
| INSAT MSS-R (National Area) | 3.00 |
| ISP "A" (National Area) | 3.00 |
| ISP "B" (Telecom circle/Metro Area) | 0.20 |
| ISP "C" (SSA) | 0.02 |
| Resale IPLC(National Area) | 10.00 |

In India, Infrastructure Providers (IP-I Category) requires registration only and no licence. Further, as per New Telecom Policy (NTP) 1999, Other Service Providers (OSP), such as tele-banking, tele-medicine, tele-trading, e-commerce etc. are allowed to operate by using infrastructure provided by various access providers for non-telecom services.

**2.4 Existing Licensing Framework in Other SATRC Countries**

Liberalisation of the telecom sector in SATRC region started in early nineties. In Bangladesh, liberalization process in the telecom services market began in 1989, followed by Sri Lanka, India and Pakistan in 1991, 1992 and 1996 respectively. Bhutan and Iran started their process of liberalization quiet late - in 2006 and 2008 respectively.

In Bangladesh, a license was issued in 1989 for a period of 15 years. In Afghanistan also first GSM license was issued in January 2003 for 15 years. In Bhutan, a consolidated (unified) licence was issued in 2007 for a period of 15 years. In Pakistan, de-regulation policy for fixed telecom was issued in 2003 and Cellular license were issued for 15 years. In Iran, private operators were issued licenses for period of 10 years. In Maldives, ISP licence was issued in 1996 for 10 years. In Sri Lanka, initial licence for the private operators was issued in 1989 for a licence period of six years.

SATRC country wise information about the liberalisation of the sector for telecommunication services and licensing regime prevailed at that time is enumerated below:

**AFGHANISTAN:**

Just ten years ago, Afghanistan had a barely functional infrastructure and literally no telecom services. Since the re-emergence of the telecom sector in April 2002, when the first private telecom company – Afghan Wireless Communications Company (AWCC) – was authorized to provide mobile (GSM) services, the telecom sector has witnessed unprecedented and phenomenal growth. The Afghanistan Telecommunication Regulatory Authority (ATRA) was established in 2006, in order to regulate telecommunication in Afghanistan and is responsible for issues and monitoring of the telecom licenses.

The regulatory framework for the telecom sector is mainly governed by the Telecommunications and Internet Policy (drafted and approved in 2003), which was enacted in the context of a nascent telecom sector. Due to the phenomenal and unexpected growth of the sector since 2003, this policy has failed to keep pace with the development of the sector. The Licensing regime forms a major element in sector reform. The following licenses are distinguished in the Policyas specified in **Table No. 3**given below:

**Table No. 3**

1. Mobile Services Provider Licenses (MSP)

2. Fixed Services Provider Licenses (FSP)

3. Local Fixed Service Provider (LFSP) Licenses.

4. International Gateway Services (IGS) Licenses.

5. Very Small Aperture Terminal (VSAT) Registrations.

6. Digital Trunk Radio Services (DTRS) Spectrum Licenses.

7. Radio Paging Services (RSPS) Licenses.

8. Value-added Network Services (VAS), General-License.

9. Global Mobile Satellite Services Provider (GMSSPs) Licenses and Satellite Phone User Licenses for end users.

10. Cable Television Services Licenses (to be issued by the Ministry of Information and Culture).

The Telecom Law (2005) sets out the general legal framework for the telecom sector in Afghanistan. The Law contains a detailed institutional framework for the creation of the Afghanistan Telecommunications Regulatory Authority (ATRA), licensing regime and procedures, competition policy, interconnection, co-location, scarce resources management, universal access, tariffs, regulations, penalties, sanctions, and dispute resolution.

In Afghanistan - Wireless, Wire Line, Internet, Long Distance and other services in telecom sector require ATRA license, while services like VAS and IT Solution do not require any license and just need to be registered with ATRA. The telecom equipments which work on 2.5 GHz spectrum require neither any license nor any registration with ATRA.

Currently there are six active telecom service providers and 44 licensed Internet Service Providers (ISPs) in Afghanistan, including four individual private GSM licenses (Etisalat, MTN, Roshan and AWCC); one private CDMA license - issued to Wasel Telecom and one government Unified license - issued to Afghan telecom, however, Afghan telecom has sold its CDMA part to Wasel telecom implying that Afghan telecom can't provide CDMA service.

The Telecom Law contains provisions for transitions, enactment and enforcement. In other countries where traditional telecom laws were replaced by a new framework focusing on competition, additional provisions were also needed to limit the duration of the licenses of incumbents and other existing providers. Keeping in view that the chosen system of individual licenses is rather strict, and as the sector shall further evolve, it shall be gradually replaced by a general/unified licensing regime, the Telecom Law provides an open and modern framework. The Unified license is authorized, on a non- exclusive basis to build, own and operate facilities based network and provide any voice, internet/data and video telecommunications services to the public thereon as granted by the license, including local, national and international.

**BANGLADESH:**

In 1971, Bangladesh Telegraph and Telephone Department was set up under the Ministry of Posts and Telecommunications to run telecommunication services in Bangladesh. This was converted into a corporate body named Bangladesh Telegraph and Telephone Board [BTTB] in 1975. However, by Ordinance No XII of 1979, BTTB was re-converted into a Government Board to function under the Ministry of Posts and Telecommunications [MoPT].

The sector was first opened up in 1989 with nationwide operating licenses being issued to Hutchison Bangladesh Telecom Limited [HBTL] for mobile and fixed wireless applications for all-Bangladesh for 20 years. This was followed by another licence to Bangladesh Rural Telecom Authority [BRTA] in the same year for rural telephony for 25 years. Pacific Bangladesh Telecom [PBTL] acquired HBTL in 1991. Since then four licensed private sector mobile operators and a number of value added service providers, including Internet Service Providers [ISP] have entered the Bangladesh telecom market.

The sector was regulated [licensing and spectrum management] by BTTB until the responsibility was transferred to MoPT in 1995. Later, under the National Telecommunication Policy of 1998 and the subsequent Bangladesh Telecommunications Act of 2001, the Bangladesh Telecommunications Regulatory Commission [BTRC] was established to be effective from 31 January 2002.

Bangladesh Telecommunication Regulatory Commission (BTRC) is the only agency responsible for the issuance and monitoring of License in Bangladesh, with the prior approval from the Government. All the services like Wireless, Wire Line, Internet, Long Distance require licenses from BTRC. Currently, only call center service providers do not require any license from BTRC, but only registration. In Bangladesh, individual license is issued to provide a telecom service.

**BHUTAN:**

In 2003, Bhutan Telecom launched the first mobile communication service in the country. Since then, Bhutan's development in the sector has been phenomenal. In 2008, Tashi InfoComm Limited, a private Telecom operator started its operation. Bhutan InfoComm and Media Authority (BICMA) is the only agency responsible for issuance and monitoring of Licence in Bhutan. All the services like Wireless, Wire Line, Internet, Long Distance require licence. The BICMA Act does not exempt any telecom services from obtaining licence.

In Bhutan, two types of licenses are issued - Individual licence for small telecom operators including ISPs and ICT Facility providers and consolidated (Unified) license for big major telecom operators. The consolidated licence can provide both ICT services (which includes voice, data and multimedia) as well as ICT facilities (which includes all ICT infrastructures required for providing ICT services). As per the Telecom Policy, the Government of Bhutan adopts a converged and technology neutral licensing framework to encourage innovation, diversity and competition leading to affordability, choice and quality of services.

**PAKISTAN:**

The Pakistan Telecommunication Re-Organization Act, 1996 empowers Pakistan Telecommunication Authority (PTA) to issue & regulate licenses for telecom services. Before this, there were government owned incumbent operator (PTCL), NTC and SCO in the fixed sector whereas Mobilink and PakTel in Cellular sector. In 2003, De-Regulation policy for fixed telecom was issued, resulting in 14 Long Distance & International (LDI) and 34 Local Loop (LL) licenses being issued to private operators.

* + 20 years each for LDI and LL, also PTA is issuing CVAS (15 yrs) for small business operators. Cellular license are issued for 15 yrs.
  + First cellular Cellular (AMPS) licenses were issued in 1990 for 15 years to PakTel & InstaPhone followed by first GSM license issued to PMCL (Mobilink) on 6th July, 1992.
  + At present five (5) CMOs are providing GSM/LTE/WCDMA services.

In Pakistan, wireline services - LDI, FLL, CVAS, ISPs, FTTH, Hybrid (Copper+OFC) and Wireless Cellular Services (3G, 4G, LTE, GSM, WiMax, EVO, CDMA, VHF) require license. Content Services, SMS aggregated services & Video Conferencing requires registration only which is valid for five years. As per prevailing License framework in Pakistan, individual license is issued for services (e.g. LDI, LL, Cellular and CVAS), with no provision for Unified license (UL) in Pakistan**.**

**IRAN:**

Before liberalisation of the principle telecom sector in 2008, some private operators were issued licenses in Iran for a period of 10 years like small fix operators in 2003 and a large mobile operator (Irancell) in 2005.

Since long back, the Radio licenses were issued to private sector for a period of 1 year to 3 years. All the services like Wireless, Wire Line, Internet, Long Distance require licence in Iran. There are some radio services (related to the usage band) that do not require license and just registration from Communication Regulatory Authority (CRA) of Iran. Some parts of Iran have been issued unified licence, for example, unified license for fixed wire line services (called FCP) and mobile but some other mobile operators still have an individual license.

**MALDIVES:**

The Communications Authority of Maldives (CAM) has the mandate of regulating the communications sector, creating an environment conducive for promoting competition in communications services and developing these services in accordance with the national policies. The communications sector includes telecommunications, post and Information Technology. The Communications Authority of Maldives (CAM) is responsible for issuing licence and regulating telecom sector. All telecommunication services provider require operating license from CAM. CB sets and long range communication phone require one time registration, while equipments operating on 2.4 GHz require no licence.

**SRI LANKA:**

Although Sri Lankan telecommunication industry was liberalized in 1991, initial licence for the private operators was issued in Sri Lanka in 1989 for a licence period of six years. The Telecommunication in Sri Lanka is governed by Telecommunications Regulatory Commission of Sri Lanka under the Presidential Secretariat. The telecom services that require license are specified in the **Table No.4** below:

**Table No. 4**

|  |  |  |
| --- | --- | --- |
| **Section 17 System Licensed Operators** | **Frequency Licence** | **Vendor Licence** |
| * [Fixed Operators](http://www.trc.gov.lk/fixed-operators.html) * [Mobile Operators](http://www.trc.gov.lk/mobile-operators.html) * [International Telecommunication Operators (External Gateway Operators)](http://www.trc.gov.lk/international-telecommunication-operators.html) * [Data Communication Operators](http://www.trc.gov.lk/data-communication-operators.html) * [Internet Service Providers](http://www.trc.gov.lk/internet-service-providers.html) * [Cable Distribution Network Operators](http://www.trc.gov.lk/cable-distribution-network-operators.html) * [Direct to Home Satellite Broadcasting Operators](http://www.trc.gov.lk/direct-to-home-satellite-broadcasting-operators.html) * [Trunk Radio Operators](http://www.trc.gov.lk/trunk-radio-operators.html) * [Payphone](http://www.trc.gov.lk/other-operators.html) | |  |  | | --- | --- | | * The use of radio equipment   requires a license under the  Section 22 of the  Sri Lanka  Telecommunications Act   * Aeronautical Services * Amateur Services(5) * Broadcasting Services * Cellular Services * Data / Telemetry Services * Fixed Services * Land Mobile Services * Low Power Device * Maritime Services * Satellite Services * Low power devices one | | |  |  | |  |  | | The Vendor Licence is an authorisation issued by the Telecommunication Regulatory Commission (TRC) to manufacture, import, sale, offer for sale, deal-in, hire, lease, demonstrate, maintain or repair of any telecommunications equipment or radio communication equipment in Sri Lanka. |

Telecommunications Regulatory Commission of Sri Lanka (TRCSL) issues approval/authorization to Import Controller/Customs/BOI for the importation of network equipment including Customer Premises Equipment/Terminal Apparatus by telecommunications operators, vendors or individuals. In Sri Lanka, individual Licence is issued. Unified licence has not been introduced yet. Currently, TRCSL is reviewing the licensing framework with the assistance of ITU experts.

**2.5 Other Regulatory Aspects: ( License Fees and other Levies in SATRC Countries)**

**In INDIA,** in addition to one time entry fee, TSP pays License service-area wise an annual license fee as a percentage of Adjusted Gross Revenue (AGR) (Revenue Sharing Basis) for each authorized service from the effective date of the respective authorization. Since 2014 the License fee shall be 8% of the AGR, inclusive of USO levy which is presently 5% of AGR. Further, from the second year of effective date of respective authorization, the license fee shall be subject to a minimum of 10% of the entry fee of the respective authorized service and service area as discussed in above table.

After the license fee, the telecom service providers who use administratively allocated spectrum are required to pay as per the slap system. The spectrum usage charges as per DoT notification 25.2.2010 are specified in **Table No. 5** given below:

**Table No. 5**

| **Schedule A: Charges for GSM operators (Applicable for 1800MHz, 900MHz** B**ands)** | | **Schedule B: Charges for CDMA operators**  **(Applicable for 800MHz** B**and)** | |
| --- | --- | --- | --- |
| **Spectrum Slabs** | **% of AGR** | **Spectrum Slabs** | **% of AGR** |
| Up to 4.4 MHz | 3% | Up to 5 MHz | 3% |
| Up to 6.2 MHz | 4% | Up to 6.25 MHz | 4% |
| Up to 8.2 MHz | 5% | Up to 7.5 MHz | 5% |
| Up to 10.2 MHz | 6% | Up to 10 MHz | 6% |
| Up to 12.2 MHz | 7% | Up to 12.5 MHz | 7% |
| Up to 15.2 MHz | 8% | Up to 15 MHz | 8% |

However, in case the telecom service provider acquires the spectrum through auction then he is required to pay the spectrum related charges, including payment for allotment and use of spectrum. The spectrum Usage charges for spectrum acquired by Telecom service provider (licensee) through auction are 5% of AGR, provided that minimum AGR shall not be less than 5% of bid amount.

Presently, following Access Service Licensees are operative in India:

* + Licensee having only administrative allotted spectrum (with Bundled with License)
  + Licensee having spectrum acquired through auction. License to be taken / Renewed separately
  + Licensee having mix of spectrum (administrative allotted with license) and acquired through auction.
  + Service specific telecom licenses granted prior to UL regime are also continuing. Government as a policy is encouraging service providers to migrate to UL.

However, there is difference in Spectrum Usage Charges (SUC) and presumptive AGR for the purpose of LF.SUC is different for different Access Service Licensees, like-

(a) Slab rate for administratively allotted spectrum as specified in Table No. above

(b) 5% for auctioned spectrum

(c) Weighted Average Rate (mixed spectrum- administratively allotted spectrum and auctioned spectrum)

**In AFGHANISTAN**, according to law for regulating telecommunication services of Afghanistan, the open bidding process specifies all fees of telecom licenses. The fees are levied / recovered from the telecom operators as following:

1. One time 3G-license fee is 25 million USD and annual regulatory fee is 250000 USD.
2. Unified license is issued free of cost.
3. One time CDMA license is one million USD and annual regularity fee is 180000 USD.
4. First Frequency Block Fee: Four Thousand United States Dollars (USD$4,000) or Afghani equivalent annually in respect of each duplex 200 kHz channel assigned to the Licensee in the First Frequency Block as amended by the New Frequency Assignment Schedule B.
5. Second Frequency Block Fee: Two Hundred Thousand United States Dollars (USD$200,000) or Afghani equivalent annually per 10 MHzduplex frequency band assigned to the Licensee in the Second Frequency Block.

In **AFGHANISTAN** the License is technology neutral thereby permitting the Licensee to utilize any current and future wireless mobile technology standard.

**In BANGLADESH**, the licensee has to pay 5.5% of its annual gross revenue as revenue and 1% of its annual gross revenue as Social Obligation Fund to the government. In Bangladesh Spectrum sharing is not allowed, while BTRC has issued a guideline regarding Infrastructure Sharing between the operators under which all the telecom licensees are allowed to share passive infrastructure with others as per Infrastructure Sharing guidelines. For wire-line the technology used is a combination of Fiber, microwave and copper cables, while GSM, CDMA and VSAT (very limited) are used to provide mobile and internet service. ADSL is also used for the provision of broadband services.

**In BHUTAN**, Licence fees and regulatory fees are charged to cover administrative cost. Initially licence fee for mobile service was charged based on the auction that was held while privatizing the telecom sector. The regulatory fee charged is 1% of Adjusted Gross Revenue annually. Licence fee for ICT facility Licence is Nu. 100,000.00 (One Hundred Thousand) and Licence fee for ICT service Licence is Nu. 10,000.00 (Ten Thousand).

**In IRAN**, the regulatory fees such as License fee is levied on the basis of income, net profit value, usage of limited resources; while spectrum usage charge depends on the kind of services, band width, type of geographical zone, Time of usage and coverage.

**In PAKISTAN**, LL License Fee is 10,000 USD/license per region (total 14 regions) and License Fee for LDI is Rs.500,000/- (five lac) for nationwide. License fee is decided after thorough consultation with stake holders and notified in a policy directive by Government of Pakistan. In Pakistan, any waiver of regulatory fees for licensees in special cases is on a case-to-case basis and subject to approval of the government. In Pakistan, the licensees contribute annually to a USF fund, and the USF Fund then allocates amount to winners of a project in rural areas, in which the same operators had participated. This way, it is ensured that USF fund is given payments as well as projects are also assigned. The Spectrum Price in Pakistan is based on Auction.

**In MALDIVES,** 5 percent of the gross turnover is being charged as the licence fee of licence base service.

**2.6 Spectrum Sharing/ Infrastructure Sharing**

Spectrum sharing refers to an arrangement between two access licensees (CMTS/UASL/UL (AS)/UL) in a LSA, where both licensees having access spectrum in the same band, pool their respective spectrum in that LSA for their simultaneous use, using a common Radio Access Network (RAN)\*. The shared RAN will be connected to the core networks of each of the licensee. Both licensees will continue to hold their primary right over their own spectrum.

*Note: \*RAN refers to access network up to BSC in 2G network, while in 3G networks, it refers to access network upto Radio Network Controller (RNC) and is known as Universal Terrestrial RAN (UTRAN).*

Licensees having access spectrum as defined in UL will be permitted to share the spectrum in an LSA. Apart Basic/CMTS/UASL/UL (AS) licensees, ISPs may also be included as eligible.

It is essential to ensure that both the licensees continue to use shared spectrum resources; otherwise it would be akin to spectrum leasing. Therefore, the licensees would be permitted to share pooled spectrum only on those sites which are part of the common RAN connected to core network of each licensee. These sites have been referred to as spectrum shared sites above. Therefore, the Authority does not agree with the DoT’s view and reiterates its recommendations.

**AFGHANISTAN,** With regard to spectrum sharing/ infrastructure sharing Afghanistan does not have any regulations with regards of spectrum sharing/ infrastructure sharing. The License is technology neutral thereby permitting the Licensee to utilize any current and future wireless mobile technology standard.

**In BANGLADESH**, Spectrum sharing is not allowed, while BTRC has issued a guideline regarding Infrastructure Sharing between the operators under which all the telecom licensees are allowed to share passive infrastructure with others as per Infrastructure Sharing guidelines.

**In BHUTAN**, Spectrum sharing is not mandatory or implemented. However, all licensee are required to share passive infrastructure as per the Rules governing ICT infrastructure sharing.

**In IRAN**, Infrastructure sharing is regulated but the management is under the licensee control, hence, spectrum sharing is not regulated yet.

**In PAKISTAN**, at present, only passive infrastructure sharing is allowed and a separate license (Infrastructure license) is also being issued. Active sharing and spectrum sharing is not covered in the current regulatory framework, but it is being considered in the upcoming telecom policy review. Presently, wireline uses OFC, DSL, FTTH, Hybrid while Wireless uses WCDMA, HSPA, GSM, CDMA, Rev-A, Rev-B, WiMax.

**In MALDIVES,** at present, no regulations are in place for spectrum sharing or telecommunication infrastructure sharing.

**In SRI LANKA,** Spectrum Sharing is carried out between two licensed operators wherever possible and only the tariffs are being regulated. Guidelines on Antenna Structures based on the National Policy on Antenna Structures are as follows:

1. Antenna structures should be used on sharing basis for which the tariff schedule will be determined by TRCSL in consultation with the TISPs. The minimum number of antenna structures that conform to the technical requirements will be approved for an identified Antenna Structure Farm.
2. The TRCSL will initiate the formation of a new Antenna Structure Farm when the necessity arises. TISPs may propose such locations to TRCSL.
3. The antenna structure shall be designed and constructed to accommodate a minimum of 20 square meters of additional design antenna area (from the top portion) for at least two other TSPs. Physical space required for fixing of the additional antenna shall be reserved at top portion. This allocation of additional design antenna area will be encouraged through incentive schemes.
4. Initially up to three requests will be considered to construct separate antenna structures within the Antenna Structure Farm. Subsequent applicants should share one of the available antenna structures. Applications for additional antenna structures will be considered only under special circumstances and such applications will be referred to the TAC with justification for such request.
5. The Antenna Structure Farm will be confined to a minimum feasible area by the TRCSL, subject to a maximum radius of 250 m.
6. The distance between Antenna Structure Farms will be kept at a minimum separation of 4 km.
7. Both TSPs and TISPs may obtain approval to erect roof top masts of height not exceeding 20 meters from the roof top within or in between Antenna Structure Farms.
8. Broadcasting antenna structures are exempted from the clauses 1.3 and 1.4 provided that application is initially forwarded for an Antenna Structure to be used only for broadcasting purposes.
9. Cumulative radio frequency power density due to Antenna Structure Farm should be within the limits defined by ICNIRP and adopted by TRCSL provided that the maximum RF power levels are as per allowed.

TRCSL is insisting on sharing of existing facilities and develop projects for common antenna structures with the help of investors and operators.

**Technology presently in vogue – Wireline and Wireless**

**In INDIA**, presently, wireline uses Copper, OFC, DSL, FTTH and Hybrid whereas wireless services are categorized as follows-

* 2G (Second Generation): The technology used to provide second generation services are- GSM (Global System for Mobile) and CDMA (Code division multiple access).
* 3G (Third Generation): the 3G services are provided through W-CDMA (wideband [code division multiple access](https://en.wikipedia.org/wiki/Code_division_multiple_access) (W-CDMA), HSPA (High Speed Packet Access).
* 4G (fourth Generation): the 4G services are provided using LTE (Long-Term Evolution), FDD (Frequency Division Duplex), LTE-TDD (Long-Term Evolution-time division duplex).

**In AFGHANISTAN,** the License is technology neutral thereby permitting the Licensee to utilize any current and future wireless mobile technology standard.

**In BANGLADESH**, for wire-line the technology used is a combination of Fiber, microwave and copper cables, while GSM, CDMA and VSAT (very limited) are used to provide mobile and internet service. ADSL is also used for the provision of broadband services.

**In BHUTAN**, for wireline the technology used is a combination of Fiber, microwave and copper cables, while GSM and VSAT are used to provide mobile and internet service. ADSL and DSL are also used for provision of broadband services.

**In IRAN**, presently, wireline uses DSL, FTTx, Hybrid, cable; whereas Wireless relies on GSM, CDMA, WiMax, LTE, 3G.

**In PAKISTAN**, Presently, wireline uses OFC, DSL, FTTH, Hybrid while Wireless uses WCDMA, HSPA, GSM, CDMA, Rev-A, Rev-B, WiMax.

**In MALDIVES,** the licence is technology neutral and operators are permitted to choose any proven technology in Maldives.

**In SRI LANKA,** Presently, wireline in Sri Lanka uses IPTV, ADSL, Cable TV while wireless uses CDMA, LTE, WiMAX, WIFI, Analog Broadcasting (Sound and TV), Satellite TV.

**CHAPTER III- EMERGING LICENSING FRAMEWORK**

**3.1 Requirement of Transition to New Licensing framework**

Since the liberalization of telecom sector around three decade ago most of the countries, there have been sea change in the telecom sector in terms of growth, penetration, development, change in technology etc, the policy framework which was relevant for quite some time, looked not meeting the requirement of current period and required intervention.

**3.2 Key Transition Issues**

According to the ITU, some of the key regulatory transition issues include inter alia:

* Deciding which licensing model to adopt;
* Deciding whether framework overhaul should be all at once or phased.
* Deciding which who will be responsible for licensing or other authorizations.
* Mapping existing service/ technology specific licences to new licence categories.
* Deciding which services should continue to be licensed.
* Ensuring a level playing field between existing and new operators.
* Determining whether existing licensees require compensation for move to new licensing regime.
* Revising universal access/service regulations including any modifications to network rollout, coverage or investment requirements and contributions to universal access funds as needed.
* Reviewing and updating regulations affecting quality of service, interconnection, spectrum, numbering and other sector specific issues.
* Developing a regulatory framework that incorporates technological developments and anticipates continued technical and market evolution.
* Developing the enforcement capacity to resolve disputes and impose sanctions.

Along with technological revolution, issues of re-licensing, co-existence of licenses and exit of licenses are also coming up quite frequently. It is proposed to study these issues for identifying solutions to the practical difficulties involved and to facilitate introduction of new technologies and services. It is equally important to suggest a transition procedure, wherever necessary.

**3.3 Principles for Transitioning to a new licensing framework**

There are a number of principles that should be followed when transitioning to a new licensing framework. Transitional arrangements should:

* Facilitate entry into convergence markets (including ability to offer content services).
* Ensure consistency with company, competition and other relevant legislation/regulation.
* Ensure conditions leave licensees no worse off than under old licences;
* Avoid imposition of asymmetrical regulation on licensees that reduce ability to compete or hamper investment.
* Allow licensees to restructure to meet challenges posed by market and technology convergence.
* Minimize licence fees as well as administration and compliance costs.
* Enable easy and efficient license migration by having a clear licence map and transitional measures; and being as consistent across license/serves types as practically possible.

**3.4 Liberalisation of Spectrum**

Liberalisation of spectrum refers to the removal of technology restrictions to give the licensee an option to deploy latest and more spectrum efficient technologies, which shall result in optimal use of spectrum. Change of use (also known as service neutrality) allows different types of services and technologies to compete for the same spectrum.

In the 1990s, during the evolution phase of 2G mobile communication, spectrum was assigned mainly using command and control approach. The use of spectrum was restricted to using a particular technology. Over a period of time, the use of 900 and 1800 MHz bands has been liberalized in many countries.

In India, spectrum for mobile services has been assigned from different spectrum bands depending upon whether licensee is deploying CDMA or GSM technology. Therefore, the spectrum assigned in 800/900/1800 for 2G mobile services is bound with the technology chosen by the licensee, whereas ITU has assigned the spectrum in the 800, 900 and 1800 MHz bands for IMT applications. However, the spectrum that has been assigned through auctioned in the 900MHz/1800 MHz band is a liberalized spectrum. Also, there has been a provision that a TSP may convert its existing spectrum holding to liberalized form by paying market determined price pro-rated for the remaining licence validity period.

**In India,** spectrum in the 800/900/1800 MHz bands was assigned for 2G services and for a specific technology (either GSM or CDMA). It cannot be used for any other technology, until its use is liberalised. In its recommendations dated 23rd April 2012, the Authority opined that spectrum being limited in availability, the main aim of the frequency management administrator is to ensure allocative efficiency i.e. the spectrum must be allocated in such a way as to maximize the creation of community wealth, resulting from its use. The TRAI was of the view that any restrictions would also mean sub-optimal utilisation of available spectrum and the effect of any stipulation restricting the use of spectrum to specific technologies will be felt for 20 years, which is the life span of the spectrum allocation being made through the proposed auction. Therefore, the Authority recommended that all spectrums to be assigned through the auction process in future shall be liberalised. In other words, spectrum in any band can be used for deploying any services in any technology.

The DoT accepted TRAI’s recommendations and NIA dated 30th January 2013 mentioned that there are no restrictions on the technology to be adopted for providing services within the scope of the service licence using spectrum blocks allotted through the auction. It also mentioned that the existing licensees will be allowed to use the additional spectrum block(s) allotted through the auction to deploy any technology by combining with their existing spectrum holding in the same band after converting their entire existing spectrum holding into liberalised spectrum in the same band as per the terms and conditions to be specified. As per the provisions of NIA, existing CMTS/ UAS/ UL (AS) licensees can liberalise their existing spectrum holding in 1800MHz band after payment of the auction determined price.

**DoT has issued Guidelines for Liberalisation of Administratively allotted Spectrum (ANNEXURE-I)**

**3.5 Spectrum Sharing**

Till the beginning of 2015 the spectrum sharing was not allowed to the operators. Implementation of sharing of frequencies varies from relatively simple ways such as geographical separation between users of the same frequencies to very complex ways which are still evolving. Regulators are following diverse approaches to facilitate sharing of spectrum such as allowing in-band sharing/pooling of spectrum, permitting market based spectrum methods such as leasing/trading and promoting use of unlicensed spectrum combined with the use of low power radios and/or advanced radio technologies.

Shared networks can provide an answer for TSPs facing very diverse market conditions e.g., coverage which is a primary consideration for radio network deployment in remote or rural areas, and significant CAPEX savings are easily achievable for TSPs if they share the radio access network (RAN). Network roll-out and time-to-market also speed up, since only one set of new sites needs to be acquired and built. Restricted site availability is a big driver for TSPs in urban areas, where sharing sites can be the only feasible way to increase capacity. TSPs can face competitors in other areas of their businesses but can generate additional revenue /save in network operating costs by sharing network resources. Although it may be difficult for rivals to work together effectively, however, setting up a separate joint venture entity is often the favoured solution. Some joint venture partners go further and bring in a neutral third party to deploy and operate the shared network in a managed services deal.

Radio Access Network (RAN) and Core Network are the main components of any wireless network. Spectrum is the vital component of RAN. To avoid duplicity of the infrastructure elements, to reduce the cost and to ensure fast rollout of the network, many NRAs allow sharing of infrastructure elements. However, the depth of sharing may differ in different sharing models.

If sharing of spectrum is permitted, then both licensees can pool their spectrum and it shall be complete sharing of RAN. It shall result in the most optimal use of spectrum. However, there shall not be individual control of the licenses over the use of their radio resources.

Network sharing agreements may help operators to make the service available and leave operators to compete on more important parameters from a consumer perspective, such as brand, price and customer service particularly in rural and remote areas. On the flip side, MNOs could collaborate on network development and efficiency may also be lower with fewer networks able to provide high quality mobile broadband services. At the same time Regulatory authorities must assess the competitive situation and should ensure that all operators comply with the applicable regulatory obligations, including coverage particularly in rural, remote and hilly areas. Authorities may also wish to distinguish between urban and rural areas when judging network sharing agreements. In particular, authorities that have anticompetitive concerns may choose to limit sharing for a period of time until operators have acquired a substantial customer base in rural areas in order to satisfy their business case. Subsequently, operators would be required to deploy their own network.

In India, **DoT has issued Guidelines on Access Spectrum Sharing (ANNEXURE-II)** with following rules and regulations -

* 1. Spectrum sharing shall be allowed only for the access service providers holding Cellular Mobile Telephone Service (CMTS)/Unified Access Service License (UASL)/ Unified License (Access Services) (UL(AS))/ Unified License (UL) with authorization of Access Service in a Licensed Service Area where both the licensees are having spectrum in the same band.
  2. Spectrum sharing is permitted between two Telecom Service Providers utilizing the spectrum in the same band. Leasing is not permitted.
  3. Both the licensees shall ensure that they fulfill the specified roll-out obligations and specified quality of services norms.
  4. If a licensee is in the breach of terms and conditions of the license and the licensor has ordered for revocation/termination of its license, in this case, licensee shall not be eligible to share spectrum.
  5. The use of technology shall be governed by the terms and conditions of the respective license.
  6. Both the licensees will be individually and collectively responsible for complying with the sharing guidelines, including interference norms.
  7. Spectrum usage charges (SUC) rate of each o the licensees post-sharing shall increase by 0.5% of Adjusted Gross Revenue. The sharing of spectrum for part of a month, full one month period shall be counted for the purpose of levying SUC.
  8. Spectrum sharing shall be available for upto the balance period of the license or upto the period of right to use spectrum, whichever is earlier.
  9. A non-refundable processing fee shall be payable individually by each licensee for each service area at the time of intimation to WPC wing. At present, processing fee of Rs. 50,000/- is to be paid. In India Infrastructure Sharing among the service providers is being encouraged.

In India, DoT as well as TRAI, both are in favour of not only of spectrum sharing but also of spectrum trading as stated above. In this regard based on the recommendations of TRAI, the DoT has issued guidelines for spectrum sharing and spectrum trading. (Refer ANNEXURE- II and III)

**In AFGHANISTAN,** one Unified license has been already issued to Afghan Telecom and the licensee can provide number of telecom service under that licence. According to the provision of telecom operator’s licenses, the telecom operators can provide any future technology but there is no support for the use or migration from the government. Service license is subject to bidding process for the key public services. All other services on demand, spectrum is part of the service license.

**In BANGLADESH,** till date individual licenses are issued to provide telecom services, but BTRC is working on this issue. Bangladesh Telecommunication Act's regulation and rules are not fully technology neutral. Operators must have the prior permission from BTRC to use technology neutrality. Bangladesh Government has taken several initiatives to promote broadband services, such as the government has invested in building fiber network by incumbent operator and reduce the bandwidth price for data/internet services. BTRC issued license with the bundled spectrum, which includes license acquisition fee and spectrum fee. For other licensee, the spectrum is issued in accordance with the National Frequency Plan and relevant guidelines. In some cases, spectrum is sold by auction procedure.

**In BHUTAN,** a converged Act authorizes Authority to license both individual (ICT service and ICT facility service) licence and unified (consolidated) licence. Bhutan's Telecommunication Act's regulation and rules are based on technology neutrality and service sector neutrality. The choice of the technology is left to the operators to decide. However, in order to promote broadband services, government has invested in building national fiber network and made it an open access network for other licensed service providers to plug and play. The Authority only issues bundled spectrum (2 x 10 MHz spectrum in any GSM band) to the two consolidated licensee along with the licence. For other licensee, the spectrum is issued in accordance with the National Radio Rules at market price, on first come first basis.

**In IRAN,** from the liberalization of telecom, unified license has been issued. Some new technologies are under consideration, for example, 4G.The government supports migrating to newer technology, for example, relicensing for allowing mobile operators to deliver service natural technology. In fact, technology natural was chosen for supporting migration to new technology. The new license or renewal of license is being issued bundled with spectrum but it is decided to set auction in near future for license with spectrum.

**In PAKISTAN,** Telecom Policy is under revision with regard to Unified License (decision pending).All licenses issued in Pakistan are technology neutral, for example, recently Warid Telecom which was operating cellular license for GSM in 1800 MHz has shifted to LTE in same license with a few modifications in the license. New License is issued with Spectrum attached for cellular and only auction winners are then issued licenses.WLL Spectrum is separately given to LL licensees through an auction.

**In MALDIVES,** only one operation has been granted unified licence, while others continue to issue service based individual licence which is subject to bidding process and spectrum is acquired as part of the licence.

**In SRI LANKA,** Unified licence is proposed to be issued. Currently, TRCSL is reviewing the licensing framework with the assistance of ITU experts**.** In few cases, the TRCSL and GOSL have provided some assistance. Scarce and highly valued spectrum where demand exceeds supply will be assigned to the users through market-based spectrum management techniques such as auctions, competitive bidding, spectrum trading. E.g.:- Sri Lanka auctioned its mobile 4G LTE spectrum at a base price of 800 million rupees and became the first country in South Asia to roll out a full nationwide mobile 4G network. Dialog Axiata sealed the deal with a 3.2 billion Sri Lanka rupees ($25.22 million) bid at auction.

**3.6 Emerging Licensing Framework in SATRC Countries**

Since 2012 i**n India,** the licensing framework in India is based on Unified License. Unified licence (UL) is issued to provide number of telecom services under one licence. Different services can be provided by Unified Licensee by taking appropriate service authorization under it as explained above in **Table No. 1.** It contains all the provision that the licensee should comply with. TRAI has also recommended the introduction of MVNO (Mobile Virtual Network Operator) which is seen as natural progression towards enhancing free market principles and contributing to the efficient use of existing telecommunication infrastructure. It is an entity that provides mobile phone service but does not have its own radio spectrum nor does it necessarily have the entire infrastructure required to provide mobile telephone service. MVNOs operate through commercial arrangements with licensed mobile network operator and buy bulk minutes of traffic and resell them to their own subscribers in their own brand. The recommendation is under consideration of DoT.

At present, the licence as well the use of auctioned spectrum is technology-neutral. The licensee can also liberalize its administrative spectrum holding by paying market determined price of the spectrum. The spectrum has been delinked from the licence. Spectrum has to be obtained thorough auction / at market determined price only. Spectrum allotted administratively is put on auction after expiry of licence period. No priority is accorded to licenses whose license is expiring. In 2010, first time spectrum in 2100 MHz and 2300 MHz bands was allotted through auction. So far auctions for spectrum in different bands (800/900/1800/2100 MHz) have taken place between November 2012 to March 2015.

**CHAPTER IV- EXIT POLICY**

**4.1 Need for Exit from the Telecom Sector**

Since the entry in the telecom service sector is generally allowed by issuance of licence and in few cases by registration. Therefore if any service provider wanted to leave the sector or wanted to partly sell the business, there must be a mechanism for exit from the sector either fully or partially. For this the options are Spectrum trading and merger and acquisitions.

**4.2 Spectrum Trading**

Spectrum trading is a mechanism whereby rights and any associated obligations to use spectrum can be transferred from one party to another by way of a market-based exchange for a certain price. In contrast to spectrum re-assignment, in a spectrum trade, the right to use the spectrum is transferred voluntarily by the present user either in full or in part of its total holding in exchange of its monetary value.

**BENEFITS OF TRADING**

Spectrum trading help in ensures that operators are encouraged to target optimal use of the spectrum because incentive for selling unused spectrum is always available to them. As such, trading is likely to result in more efficient use of spectrum and can also help in introducing new players, thereby promoting the competition in the market. Spectrum trading may facilitate optimal use of spectrum by way the consolidation of spectrum or by encouraging the licensees to retain the minimum amount of spectrum with it and trade the unutilized or excess spectrum.

The main advantage of secondary spectrum trading is that it can overcome inefficiencies in the initial allocation of spectrum. The option of spectrum trading will encourage the Operators to invest in spectrum with the temptation that they have the opportunity to sell the spectrum rights, in case their business models are not successful. It also gives flexibility and speedy re-assignments between users helping the facilitation of new services being launched.

In short, spectrum trading may lead to greater competitions provide incentives to innovation, greater certainty to service providers over their rights on spectrum, access to spectrum by those who value it most, greater return to service providers, better/new services being available to consumers at cheaper tariffs and also greater choice to consumers.

**In India,** DoT has issued guidelines for transfer/merger of various categories of telecommunication service licenses/authorization under Unified License on compromises, arrangements and amalgamation of companies. However, the partial sale of spectrum is permitted subject to fulfillment of certain conditions. As such at present, there is no clear exit policy in place, although, DoT has issued guidelines on spectrum trading. If an operator is willing to exit the market, it can sell its acquired spectrum to other operator and leave anytime. The rights, roll-out obligations and liability associated will be transferred to the buyer. Spectrum Trading will not alter the original validity period of spectrum assignment as applicable to the traded block of spectrum. **DoT has issued Guidelines on Access Spectrum Trading (ANNEXURE-III).**

**4.3 Merger and Acquisitions**

**MERGER AND ACQUISITIONS POLICY IN INDIA**

**In INDIA,** DoT has issued guidelines for transfer/merger of various categories of telecommunication service licenses/authorization under Unified License on compromises, arrangements and amalgamation of companies on 20th February 2014. Partial sale of spectrum is permitted under the spectrum trading guidelines issued by the Department of Telecommunications subject to fulfillment of certain conditions. As such at present, there is no clear exit policy in place.

Guidelines for Transfer/ Merger of various categories of Telecommunication service licences / authorisation under Unified Licence (UL) on compromises, arrangements and amalgamation of the companies are placed at[*http://www.dot.gov.in/sites/default/files/DOC200214\_0.pdf*](http://www.dot.gov.in/sites/default/files/DOC200214_0.pdf)*.*

**In AFGHANISTAN,** there are no rules and regulations with regard to merger and acquisition. With respect to exit from the market, the ATRA board decides on case by case basis.

**In BANGLADESH,** at present, the Authority has not come out with any Rules on exit policy, merger, acquisition and/or sale of business. One can only transfer company shares to other company/persons. Complete exit has to be done.

**In BHUTAN,** at present, the Authority has not come out with any rules on exit policy, merger, acquisition and/or sale of business. Partial exit shall be allowed but there are no rules and regulations. Such cases shall be determined by the Authority.

**In IRAN,** there are no regulations on spectrum sharing yet. Sale of business and exit from the telecom service is written in the licenses context, and it is different to some extent according to the kind of license and under some regulation, license can be transferred by just completely exiting and issuing it to another legal person. About the sooner exit than expire time of license, CRC (Communication Regulatory Authority) decides depending on the services. Release of bank guarantees is promptly done after exiting, if no debt or penalty is outstanding. There is no time frame for exit or settlement.

**In PAKISTAN,** Merger/Acquisition is covered in the Section 5(2) of Telecom Act 1996. Under the Act, for upto 10% Ownership change, notification is required; but for more than (>) 10% Ownership change, approval of PTA is required. Rule 11 (5) Telecom Rules 2000 & PTA Regulation 23 also cover the same i.e. Partial exit in the form of change in shareholding / transfer of share can be done, however, all cases are processed on a case-to-case basis. Entry Fee is non-refundable and Bank Guarantee is linked with Rollout compliance. In all, Exit, cancelation etc. are governed by Rules, which require advance notification, settlement of dues etc.

**In MALDIVES,** Business mergers are not allowed if it has substantial effect on competition, but is also subject to approval from CAM. Partial/ Full exit is subject to approval from CAM on case by case basis.

**In SRI LANKA,** Licence conditions regarding the ‘Ownership of the Licensed System’ are as follows:-

* The Operator shall at all times own and operate the Licensed System and shall not sell, lease or transfer to any person, the whole or part of the Licensed System without the written approval of the TRCSL.
* Where the Operator seeks to transfer its Licensed System to another person, it shall comply with all terms and conditions of its Licence as at the date of transfer; and shall have paid all outstanding fees to the TRCSL.
* A person to whom a Licensed System is to be transferred shall apply to the Commission for a Licence to carry on the relevant telecommunications undertaking on the prescribed application form and shall satisfy the conditions set down by the Commission before any transfer of licence may be considered. Partial exit could be considered but full exit is encouraged.

**CHAPTER V- RELICENSING POLICY**

**5.1 Relicensing – Existing Scenario in SATRC Countries**

**In INDIA**, initially, the licence had a validity of 10 years extendable by a period of five years at a time. Since 1999, the validity period of the Licences was extended from 10 years to 20 years and after that extendible by 10 years. Licence can be renewed before its expiry. All eligible companies can get the Unified Licence and also can get it renewed. There is no requirement of according priority to incumbents or existing operators over the new telecom operator. Spectrum has been delinked from the licence. On renewal of the licence, Spectrum has to be obtained through auction only. Initially, the spectrum was allotted at administrative price and bundled with licence. The allocation of spectrum is, now, delinked from the licence and has to be obtained separately. At present, the Spectrum can only be acquired through auction. However, spectrum sharing has been permitted subject to fulfillment of certain conditions. There is no discrimination between the existing players and new entrants in terms of grant of licence or sale of spectrum through auction. As far as issue of Cross holding among the Operators is concerned, in the event of holding/obtaining Access spectrum, no licensee or its promoter(s) directly or indirectly shall have any beneficial interest in another licensee company holding “Access Spectrum” in the same service area where the term “Beneficial interest” means holding of any equity directly or indirectly including through chain of companies in the licensee company.

Recently DoT has decided to auction spectrum in 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz and 2500 MHz Spectrum Bands. TRAI has given its Recommendations on the Valuation of spectrum in the afore-mentioned spectrum Bands and these bands shall be placed for bidding by service providers for commercial use probably in the Second Quarter of 2016.The auction spectrum in 700 MHz and 2500 MHz Spectrum Bands have been proposed for the first time in India.

As stated in the preceding paragraphs above DoT has issued guidelines for Spectrum Sharing and spectrum trading. (Refer ANNNEURE II &III).

**In AFGHANISTAN,** all telecom licenses have been issued for 15 years. For the sake of protection of the investment, existing operators are preferred. Applicant can apply for renewal under the same terms and conditions. New technologies go to the open bidding process, according to the telecommunication law. Telecom operators have to take approval of ATRA for any new entrants. New entrants for providing any type of telecom services have to apply and provide the required documents according to the rules and regulations.

**In BANGLADESH,** all the licenses are issued for 15 years time period. ISPs and Vehicles Tracking Service provider licences have been issued for 5 years time period. All the licenses are renewable. The rules and regulations are decided by the government and are applicable for all operators. There is no preference given to existing operators. Spectrum is being allotted at administrative price. But in some cases, the spectrum price is decided by auction procedure. There are no special rules & regulations/policies for new entrants. They must follow relevant rules & regulations/policies which are applicable to them.

**In BHUTAN,** ICT Facility Licence are issued for a period of 10 years, ICT Service Licence for 5 years and the consolidated Licence for 15 years; and all the licenses are renewable. As per the Rules on the provision of ICT Facilities and ICT Services, no preference is given to existing operator. Spectrum is allotted at administrative price. The General Mandate and guiding regulatory principles of the Authority specified in the Act provide a level playing field for new entrants.

**In IRAN,** the license-holding period depends on the application and differs from 1 to 10 years. There are no general rules with regard to renewal of license or entry of new telecom operator. In some situations, however, existing operator is preferred while granting new license. In Iran, the spectrum is allotted at administrative price, but if auction is chosen in near future, the base price of spectrum will be at administrative price. Competition between the telecom operators is the only source of providing level playing field to new entrants.

**In PAKISTAN,** license-holding period for Cellular and VAS is 15 Years, while for LDI/LL/WLL and Registration is 20 Years and 5 Years respectively. In Pakistan from 2006 till 2013 a watch hold on further licensing of LDI/LL was imposed keeping in view the market. The same is now again open. As far as Renewal of license is concerned, it is governed by the Rules 2000, which mandates to provide an advance notice and as per the license condition, settlement of dues and provision of services is mandatory. The Entry of new telecom operators is not restricted for major licenses like LDI, LL, Cellular etc. For new entrants, concessions can be considered through Policy Directive of government, e.g. during the Spectrum Auction in 2014, new entrants could participate for 850 MHz directly, whereas the existing players had to first win 2100 MHz spectrum. In Pakistan, spectrum is sold through Auction, while the Backhaul Spectrum is sold on administrative rates. At the time of renewal, auction and winning price of same spectrum has to be paid. All of the above policies depend on the policy of the Government at that time. Act’s section 62(e) w.r.t. competition in telecom sector provides for level playing field for new entrants. New entrants for cellular are encouraged to have infrastructure sharing and National roaming with existing CMTOs on negotiable basis for speedy Rollout.

In **MALDIVES,** all telecom licences are issued for 15 years, except the 2nd ISP licence. Existing licensees are given preference and renewal of licence is subject to new terms and conditions.CAM makes best efforts to maintain fair competition and market conduct.

**In SRI LANKA,** Renewal /issuance of Section 17 System Licence is as stated in the Table No. 8 below:

**Table No. 8**

|  |  |  |
| --- | --- | --- |
| **S.No.** | **Category of Service** | **Period of Licence** |
| 1. | Fixed Wireline | 10 Years |
| 2. | Fixed Wireless | 10 Years |
| 3. | Mobile | 10 Years |
| 4. | Data Communications | 05 Years |
| 5. | Internet Service Providers | 05 Years |
| 6. | Trunking | 05 Years |
| 7. | External Gateway | 10 Years |
| 8. | Cable TV / Direct to Home | 05 Years |

1. Licence fee for renewal of Section 17 Licence in categories 1 to 6 above, is 3% of the past 3 years annual average turnover;
2. Licence fee for renewal of External Gateway (Category 7) and Cable TV / Direct to Home (Category 8) above has been revised as Rs.100 million and 25 million respectively.
3. Licence fee for new licensees or new entrants is as per the same as stated above.

In order to encourage development, growth and maximum participation in the sector, the regulator’s licensing regime should be non-discriminatory, and transparent. It has been recognized that some licensees require the use of scarce resources such as Radio Frequency Spectrum, which the regulator in its assessment considers should be assigned judiciously and restrictively. The better relationship and cooperation between the public and private sectors lead to a rapid development and growth of the telecommunication sector. Hence, private sector investment is further encouraged and facilitated by creating a conducive environment and level playing field.

**CHAPTER VI- PROPOSAL AND WAYFORWARD**

Since the existing licensing framework which is technology specific and restricted to specific service in most of the SATRC countries, may not be sustainable for a very long time as it has been taken over by the dynamics of technology revolution enabling delivery of converged services in a technology on the same platform in NGN environment. Hence, it is imperative that forward looking approach may be adopted by the SATRC courtiers to reap the maximum benefits of fast changing technologies in the telecom sector to handle in a better manner the emerging licensing framework for telecommunication sector, which would be easier to implement and would be beneficial to all stakeholders by increasing tele-density and proliferation of data usage. In this regard following are the few areas which can be considered as a way forward:

**1. Liberalization of Spectrum**

Liberalisation of spectrum refers to the removal of technology restrictions to give the licensee an option to deploy new technologies in the same. In other words, spectrum in any band can be used for deploying any services in any technology. Restrictions would also mean sub-optimal utilization of available spectrum leading to lower productivity and higher costs to the society. Spectrum, being a scarce resource, is required to put to optimal use. Spectrum liberalisation would enable mobile operators to launch new services and technologies and increase competition.

1. **Spectrum Sharing and Trading**

Spectrum sharing is the best way for the optimum use of the available spectrum by the telecom service providers and helps the service providers to share the excess spectrum and improve their profitability. Spectrum trading help in ensures that operators are encouraged to target optimal use of the spectrum because incentive for selling unused spectrum is always available to them. Spectrum trading may facilitate optimal use of spectrum by way the consolidation of spectrum or by encouraging the licensees to retain the minimum amount of spectrum with it and trade the unutilized or excess spectrum.

Thus SATRC countries may look for allowing spectrum sharing and trading as one of the areas which would not only bring the efficiency in the business but also would help in the efficient utilization of Spectrum, a scarce natural resource.

1. **Issue of Unified Licence**

As under Unified Licence (UL), there can be authorization for any one or more licensed telecom services and an applicant company can apply for authorization for more than one service and service area at different time. It is therefore imperative that in the SATRC countries where Unified Licence regime has not started, an effort can be made for introduction of Unified Licence in those countries to have a robust and certain licensing policy framework.

**4. Mobile Virtual Network Operators**

Internationally, VNOs have focused mainly for provisioning of mobile access services; and are known as Mobile Virtual Network Operators (MVNOs). The MVNOs can be classified based on the degree of dependency on Network Services Operators (NSOs) like (a) full MVNO who used their own brand infrastructure and SIM cards, (b) enhanced service provider (ESP) MVNOs who have their own service platform and telecommunication facilities but do not own SIM cards (c) Service Provider MVNO who can provide mobile services by purchasing capacity from NSOs but do not own their own telecommunication line equipment and SIM cards.

Therefore in the converging digital environment, where the boundaries between voice, data and video are blurring, it would be beneficial not only for the consumers but also for more proliferation of telecom services in the country, an enabling and facilitating environment can be created for the entry of VNOs for all segments of voice, data and video and all other telecom licensed services and guidelines can be issue for sharing of infrastructure between Virtual Network Operators (VNOs) and Network Services Operators (NSOs).

1. **Other areas of Concern**

While making a licensing and policy frame work there is an urgent need that a clear license renewal regime including legislation, renewal procedures, reasons for refusal to renew the licence and appeals to regulatory decisions which are against the development and growth of the telecom sector.

There should be clear guidelines or set procedures for provision of backhaul connectivity and OFC to all telecom towers, BSCs and BTS from nearest block headquarters and efforts to make available of more spectrum for wireless broadband for data proliferation which is a need of the hour and encouragement for pure internet service providers by way of reducing levies (licence fee etc) of such telecom service providers.

Encouragement and support for creation of contents and applications in regional languages to promote rural broadband in rural and remote areas of the country.

Finally there should be a clear regulatory and policy environment which would provide level playing field for new entrants in the telecommunication sector in any of the SATRC countries

------------------

**ANNEXURES**

**ANNEXURE-I: Guidelines for liberalisation of Administratively Alloted Spectrum in 800 and 1800 MHz Frequency Bands dated 05 November, 2015, by DoT in India**

**ANNEXURE-II: Guidelines for Sharing OF ACCESS Spectrum by Access SERVICE PROVIDERS dated 24 September, 2015**

**ANNEXURE-III: Guidelines FOR TRADINGOF ACCESS Spectrum by Access SERVICE PROVIDERS dated 12 October, 2015**

**ANNEXURE-IV:** **QUESTIONNAIRE CIRCULTED TO SATRC MEMBER PARTICIPANTS**

**ANNEXURE-IV**

**QUESTIONNAIRE CIRCULTED TO SATRC MEMBER PARTICIPANTS**

Q1. When was the telecom sector liberalized and opened for private operators? When were initial (first) licenses issued to private operators and for how many years (period of Licence)?

Q2. Which are the Authorities / Agencies/ Government Departments or Ministries that are involved in issue of License, monitoring of license in your country?

Q3. Which are the telecom services (e.g. Wireline, Wireless, Internet, Long Distance etc.) require the License?

Q4. Which are the telecom services that do not require the License and only registration is required with the concerned authorities? (For examples, in India Infrastructure Providers (IP-I Category) require only registration and no licence.)

Q5. Whether individual license is issued to provide a telecom service or Unified license (UL) is issued to provide number of telecom services under one license? If UL is issues what are the services that are covered in it?

Q6. On what basis the Regulatory Fee (such as License Fee and Spectrum Usage Charges etc) is being levied / recovered from the telecom operators? What are the basis and rates(s) of License Fee and Spectrum Usage Charges for different categories of licenses?

Q.7 What are the Rules and Regulations with regard to spectrum sharing/infrastructure sharing?

Q8. Which technology(s) is being presently used for wireline and wireless service?

Q9. Whether Unified license is proposed to be issued to provide number of telecom service under one license or still continue with individual license to provide telecom services?

Q10. Is the same technology is being in use or some new technology is considered to be used by the telecom companies in future? Whether the Government is providing any support for the use or migration to new technology? Please explain.

Q11. Whether the new license or renewal of license is being issued bundled with spectrum or the spectrum has to be acquired through auction or at market price?

Q12. What are the Rules and Regulations with regard to merger & acquisition, spectrum sharing/ sale of business and exit from the telecom service?

Q13. Whether partial exit (surrender of spectrum only-in part) from business is allowed or complete exit has to be done?

Q14. What are the rules & regulations / procedures about refund of part of entry fee, release of bank guarantees, pending non-compliance of roll-out obligations at the time of exit, time frame for exit and settlement of liabilities/claims?

Q15. What is license holding Period i.e., for how many years telecom license is issued to provide telecom service?

Q16. What are the Rules and Regulations with regard to renewal of license, entry of new telecom operator? Is there any preference to the existing operators as compared to new entrants about granting of license, allocation of spectrum through auction etc.?

Q17. Whether the spectrum is being allotted at administrative price or is being sold through auction or is there any other method to allot spectrum to at the time of renewal of existing license or issue of new license?

Q18. What are the rules & regulations / policies with regard to level playing field for new entrants?

Q19. Any other issue, which has not been included in the questionnaire. Critical issues/challenges, if any.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*