

**INTERNATIONAL LONG DISTANCE
TELECOMMUNICATION SERVICES
(ILDTS) POLICY-2007**

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ABBREVIATIONS

1. ANS - Access Network Service.
2. BPO - Business Process Outsourcing.
3. BTRC - Bangladesh Telecommunication Regulatory Commission.
4. BTTB - Bangladesh Telegraph & Telephone Board.
5. CDR - Call Detail Records.
6. ENUM - tElephone NUmber Mapping.
7. ICX - Interconnection Exchange.
8. ILDTS - International Long Distance Telecommunication Services.
9. IP - Internet Protocol.
10. IPLC - International Private Leased Circuit.
11. IPO - Initial Public Offer.
12. ISP - Internet Service Provider.
13. IGW - International Gateways.
14. IX - Internet Exchange.
15. LI - Lawful Interception.
16. NGN - Next Generation Network.
17. POP - Point of Presence.
18. PLMN - Public Land Mobile Network.
19. PSTN - Public Switched Telephone Network.
20. QoS - Quality of Service.
21. VoIP - Voice over Internet Protocol.
22. VSAT - Very Small Aperture Terminal.

INTERNATIONAL LONG DISTANCE TELECOMMUNICATION SERVICES (ILDTS) POLICY-2007

1. PREFACE

- 1.1 Technological advancement in the field of telecommunication has brought in new generation technologies in the International Long Distance Telecommunication Services (ILDTS). Voice over Internet Protocol (VoIP) is one of such very popular technologies which is being used universally for inexpensive voice communications through Internet all over the world. The VoIP technology succeeded in proliferating popularity due to its low cost and compatibility with a host of different Internet Protocol (IP) based networks. VoIP has been the catchphrase in Bangladesh for quite some time. The issue has not been addressed in National Telecommunications Policy, 1998 and in Bangladesh Telecommunication Act, 2001 because the rapid emergence of the technology and its success could not be conceived judiciously. Upon gaining indispensable acumen the matter was eventually raised in the Cabinet meeting on 23 October 2003 and a resolution was taken to open VoIP in the private sector. Consequently there have been numerous studies, debates and discussions over opening of VoIP but unfortunately the Cabinet decision could not be implemented. Amidst confusion and delays by the implementing authorities, clandestine operation of VoIP services mushroomed, denying huge revenue opportunities for the government from this sector.
- 1.2 When a trendy and popular technology is perceived by the consumers as a convenient, affordable and value-adding opportunity, it is impossible to restrict its escalation. VoIP-enabled telephony services for call termination and origination has grown uncontrolled in absence of proper regulation. In the process, huge revenue was siphoned off the country and the government was deprived of its due share. Keeping all these points as underscored above and due to rapid increase of call demand of expatriate callers, local business entrepreneurs and multinational companies doing business in Bangladesh, government took invigorating steps to address the issue, by presenting a policy for all stakeholders and grant appropriate legitimacy on ILDTS by using VoIP technology.
- 1.3 This policy is formulated to facilitate, liberalize and legitimize ILDTS including VoIP. The policy is primarily focused on providing affordable communication means to the people at home and abroad, encouraging local entrepreneurs, encouraging new technologies to grow and ensuring due earning of revenues for the government.

2. POLICY OBJECTIVES

- 2.1 ILDTS Policy is formulated to achieve the following objectives:
- 2.1.1 Uphold subscribers' interest. Provide low cost international telecommunication services using modern technologies.
 - 2.1.2 Encourage local businesses and enterprises in telecommunication sector.
 - 2.1.3 Ensure healthy and motivating revenue to all stakeholders, service providers and other related entities.
 - 2.1.4 Stop foreign currency siphoning and money laundering.
 - 2.1.5 Ensure proper revenue earning of the government.
 - 2.1.6 Ensure national security and protect national interest.
 - 2.1.7 Encourage Next Generation Network (NGN) Technology.

3. DEFINITIONS AND INTERPRETATION

- 3.1 Unless the context otherwise requires, the different terms and expressions used in the policy shall have the following meaning assigned to them. The headings are given for the sake of convenience in the policy and do not carry any special meaning.
- 3.2 “**Access Network Service Operators**” means the PSTN, Cellular, Cable Service Provider and ISPs who have a direct access with the subscribers.
- 3.3 “**Business Process Outsourcing (BPO)**” refers to the increasing trend of relocating entire business function and processes to either self-owned or third party service providers, typically in a low cost location. The most common examples of BPO are Call Centers, Human Resources Management, ‘Back office’ banking, Accounting, Insurance claim, Tax, Payroll and other business data process outsourcing.
- 3.4 “**Call Detail Records (CDR)**” is generated by all types of switches and HUB in the form of binary or any other form of file that includes all types of records of outgoing and incoming calls such as caller and called party number, origin and destination of calls, call duration, calling time, location, etc.
- 3.5 “**IP Telephony**” means allowing voice traffic to travel over data networks using Internet Protocol. Voice signals are broken down into packets which go over the Internet or privately owned data networks where Internet Protocol is used.
- 3.6 “**Interconnection Exchange (ICX)**” refers to switching system which provides interconnections among the existing/future telecommunication

network of the operators and allows monitoring, Lawful Interception (LI) facilities and roaming number portability.

- 3.7 “**Internet Exchange (IX)**” refers to switching system which connects all the ISPs and equivalent service providers primarily for data traffic flow. It consists of two parts i.e. “International Internet Gateway (IIG)” and “National Internet Exchange (NIX)”. “IIG” will provide global internet connectivity. All domestic internet data communication will be routed via NIX to minimize usage of international bandwidth. It allows non-business computer-based voice traffic (messenger etc.).
- 3.8 “**International Gateways (IGWs)**” are switching systems through which international voice traffic (VoIP and clear channel) is sent and received. IGW allows physical monitoring of the traffic flow.
- 3.9 “**International Private Leased Circuit (IPLC)**” means international point to point leased circuit.
- 3.10 “**Next Generation Network (NGN)**” is a packet based network able to provide services including telecommunication services and able to make use of multiple broadband, QoS-enabled transport technologies and in which service related function are independent from underlying transport related technologies. It offers unrestricted access by users to different service providers. It supports generalized mobility which will allow consistent and ubiquitous provision of services to users.
- 3.11 “**Number Portability**” is the term used to describe capability of individuals, business and organizations to retain their existing telephone number(s) and the same quality of service when switched to another local service provider.
- 3.12 “**Operator**” means an organization or a person licensed for establishing or operating a telecommunication system or providing telecommunication services or operating a system which is the combination or more than one of those facilities.
- 3.13 “**Point of Presence (POP)**” means setting up of switching center and transmission center of appropriate capacity to provide on-demand service of prescribed quality and grade of service in a non-discriminatory manner.
- 3.14 “**Quality of Service (QoS)**” is evaluated on the basis of measures on the grade of service, calls lost due to wrong processing, bit error rate, response time, acceptable number of faults per unit subscribers served, and Mean Time To Restore (MTTR), faults carried over beyond the MTTR, etc.
- 3.15 “**Telecommunication Service**” means any of the following services:-
- 3.15.1 Transmission or reception, with the help of a telecommunication system, or anything that falls within the purview of the definition of telecommunication.
- 3.15.2 Any value added telecommunication service (e.g. fax, voice mail, paging service, etc.).

- 3.15.3 Internet services.
- 3.15.4 IP-TV services.
- 3.15.5 Supply of information or directory relating to a telecommunication system for the convenience of using a service mentioned in (3.15.1), (3.15.2), (3.15.3) and (3.15.4) above;
- 3.15.6 A service for installation or a service relating to the adjustment, alteration, repair, moving or replacement of such apparatus.
- 3.16 “**Telecommunication System**” means a combination of the telecommunication apparatus (e.g. switching system, transmission apparatus, terminal apparatus, satellite, etc.) whether or not these equipment are visibly connected with one another, or whether or not they are combined in using the transmission or reception of any information or message.
- 3.17 “**tElephone NUmber Mapping (ENUM)**” is mapping of “Telephone Numbers” to Uniform Resources Identifiers (URIs) using the Domain Name System (DNS) in the domain e164.arpa. ENUM enables the convergence between the PSTN/PLMN and Internet.
- 3.18 “**Tariff**” means rates, charges payable by a subscriber/party for services provided and related conditions at which telecommunication services may be provided including rates and related conditions at which messages shall be transmitted, deposits, installation fees, rentals, free calls, usages charges and any other related fees or service charge.
- 3.19 “**Voice over Internet Protocol (VoIP)**” is the routing of voice conversations over the Internet or any other IP network. The voice data flows over a general-purpose packet-switched network, instead of the traditional dedicated circuit-switched voice transmission lines.

FRAMEWORK OF INTERNATIONAL LONG DISTANCE TELECOMMUNICATION SERVICES POLICY

4. CONCEPT

- 4.1 All Voice Calls including VoIP will be routed (Terminated to and Originated from Bangladesh) through Interconnection Exchanges (ICXs) and International Gateways (IGWs). Domestic inter operator voice call services will be routed through ICXs.
- 4.2 Domestic inter operator and international internet based data traffic will be routed through Internet Exchanges (IXs) except IPLC.
- 4.3 Schematic diagram of Network Topology of ILDTS is at page-13.

5. VOICE SERVICES

5.1 Network Topology

- 5.1.1 Network architecture shall be based on three layers with appropriate equipment and technologies.
- 5.1.2 The first layer is the IGW. IGWs will be connected with submarine cable network and with ICX only. IGWs will have Satellite Earth Station or VSAT as backup until alternative submarine cable(s) are available.
- 5.1.3 The second layer is the ICX. ICXs will be connected with IGWs and Access Network Service (ANS) operators.
- 5.1.4 The third layer is the ANS operators who provide services to end users directly. This layer is to ensure the connectivity between the ICXs and the subscribers.

5.2. International Gateways (IGW)

- 5.2.1 There shall be 3 (three) IGWs in addition to BTTB IGW. There shall be 3 (three) IGW operators in addition to BTTB.
- 5.2.2 Location of the 3 (three) new IGWs will be at Dhaka.
- 5.2.3 IGWs will have primary backbone connection towards international network through SEA-ME-WE-4 submarine cable or through other submarine cables whenever available.
- 5.2.4 IGWs will have backup connectivity through Satellite Earth Station/VSAT until the availability of alternative submarine cable(s).

- 5.2.5 IGWs will have physical connections with ICXs. ICXs will develop and maintain interconnection facilities to connect the IGWs to ICXs and ICXs to ANS operators via their POPs.
- 5.2.6 IGWs will provide international voice call services including VoIP termination and origination.
- 5.2.7 IGW operators will arrange end-to-end service level agreements and will negotiate tariff with overseas carriers for call origination and termination by themselves. Agreed tariff will be vetted by BTRC.

5.3 Interconnection Exchange (ICX)

- 5.3.1 Initially there shall be 6 (six) ICXs in addition to BTTB ICXs. There shall be 2 (two) ICX Operators each having 3 ICXs in addition to BTTB.
- 5.3.2 Each ICX Operators will have one ICX in Dhaka and two more ICXs in two of the following cities namely Chittagong, Khulna, Sylhet and Bogra. Distribution/allocation of ICX site to the Operators will be done by BTRC. Depending on traffic volume and to allow more rural people to be connected with the network more ICXs will be setup under BTRC guidance in future.
- 5.3.3 ICXs will have physical connections with IGWs at Dhaka.
- 5.3.4 All ICXs will be interconnected at their own arrangement, either through existing backbone or by establishing new backbone networks where such networks are not available.
- 5.3.5 International incoming and outgoing voice calls including VoIP will be routed through ICXs.
- 5.3.6 ICXs will route/switch domestic inter operators telecommunication services. All ANS operators must interconnect through ICXs.
- 5.3.7 ICXs will serve as the Point of Presence (POP) for the neighbouring areas.
- 5.3.8 All ICX operators shall make necessary provisions for the ANS operators to connect at their POPs.
- 5.3.9 ICXs should support number portability, International Mobile Equipment Identification (IMEI) number, ENUM and other Next Generation Network (NGN) services as and when required.

5.4 Access Network

- 5.4.1 ANS operators under each ICX POP shall at their own arrangement be connected to their respective ICX POPs through optical fiber/wire/wireless means.
- 5.4.2 All ANS operators under each POP area shall be connected to the ICXs of that area for regional inter operator traffic transactions.

6. DATA SERVICES

6.1 Network Topology

- 6.1.1 Network architecture shall be based on two layers with appropriate equipments and technologies.
- 6.1.2 The first layer is the International Internet Gateway (IIG) and National Internet Exchange (NIX). It will be connected with submarine cable network and ANS operator. IIGs will have Satellite Earth Station or VSAT as backup until the availability of alternative submarine cable(s).
- 6.1.3 The second layer is the ANS operators. This layer is to ensure the connectivity between the IXs and the end users for data services.

6.2 Internet Exchange (IX)

- 6.2.1 Initially there shall be 2 (Two) IXs under one operator in addition to existing IXs.
- 6.2.2 Location of the IXs will be at Dhaka and Chittagong. Depending on traffic volume and to allow more rural people to be connected with the network more IXs will be setup under BTRC guidance in future.
- 6.2.3 All IXs will be interconnected at their own arrangement, either through existing backbone or by establishing new backbone networks where such networks are not available.
- 6.2.4 International incoming and outgoing data services will be routed through IIG part of IXs. However, the Internet-based non business voice traffic should not exceed the limit decided by BTRC.
- 6.2.5 NIX part of IXs will route domestic inter operators data services.
- 6.2.6 IXs shall make necessary provisions to connect the ANS operators to provide data services to the subscribers.

6.2.7 IIGs will have backup connectivity through Satellite Earth Station/VSAT until the availability of alternative submarine cable(s).

6.3 **Access Network**

6.3.1 ANS operators under each IX shall at their own arrangement be connected to the IX through optical fiber / wire /wireless / VSAT HUB means.

7. **IP TELEPHONY**

7.1 To provide easy and affordable telecommunication services to the common people of the country by promoting and using latest technology, IP Telephony should be introduced.

7.2 It will help to sustain already grown young entrepreneurs and to grow more such entrepreneurs in the rural areas thereby solving unemployment problem to a great extent.

7.3 BTRC will issue necessary guidelines and licenses for introducing IP Telephony services in the country.

8. **LICENSES**

8.1 BTRC will issue the following category of Licenses.

8.1.1 IGW Operator License.

8.1.2 ICX Operator License.

8.1.3 IX Operator License.

8.1.4 IP Telephony License.

9. **LICENSE AWARDING PROCEDURE**

9.1 IGW, ICX and IX licenses will be issued only to Bangladeshi entities (resident citizens, proprietorships, partnerships and companies registered under 'Joint Stock of Companies and Firms' under the Companies Act, 1994). Foreign entities (citizens, companies or subsidiaries or holding companies) and non resident Bangladeshi entities cannot be eligible to be Owners/ Directors/ Shareholders/Investors/Partners of these licensee entities. All financial transactions must be through a scheduled Bank of Bangladesh.

- 9.2 One business entity will be allowed to get one license of IGW or ICX or IX category only. Licenses will be awarded by open auction.
- 9.3 IGW, ICX and IX operators will issue Initial Public Offer (IPO) in the stock market of Bangladesh. Necessary conditions will be set and will be included in the respective licenses by BTRC.
- 9.4 Above mentioned licenses except IP telephony license will not be issued to existing operators having any license from BTRC.
- 9.5 IP Telephony licenses will be issued only to the holders of ISP operators' license except PSTN/PLMN operators having ISP licenses.
- 9.6 Procedure for issuing licenses, licenses guidelines and fees will be determined and prepared by BTRC. While issuing these licenses, BTRC will give highest priority to the operators at the rural areas. Violation of license conditions will be dealt with severely.
- 9.7 BTRC may revise/amend licensing conditions of the existing licenses if deemed necessary for successful implementation of this policy.
- 9.8 BTRC will review and revise existing Licensing and Interconnection Regulations.
- 9.9 A license or any right acquired thereunder, whether wholly or partly, shall not be transferable and such transfer, if any shall be void.

10. UTILIZATION OF FACILITIES

10.1 Utilization of Existing Facilities

- 10.1.1 IGW, ICX, IX and VSAT HUB Operators should utilize the available resources such as backbone networks. BTRC will issue necessary guidelines as and when necessary.
- 10.1.2 BTTB's existing IGWs, ICXs and IXs will remain operative. However BTTB has to obtain the above licenses from BTRC.

10.2 VSAT

- 10.2.1 Indiscriminate use of VSAT has been one of the means of conducting unauthorized VoIP call businesses. As such it is crucial to control unauthorized usages of VSAT. VSAT will not be allowed for voice services except IGWs. VSAT connected to IXs will be allowed for data communication only.
- 10.2.2 All domestic VSAT HUBs must be connected to the IX. No new VSAT licenses will be issued and the existing VSATs will remain operative until the

IX ensures backup connectivity by VSAT. VSATs other than the IX operator will gradually be withdrawn under the guideline of BTRC.

- 10.2.3 BTRC will review existing VSAT HUB licenses and issue additional licenses if necessary. BTRC will take strong measures to curb unauthorized VoIP call business with VSAT.

10.3 Submarine Cable

- 10.3.1 To ensure uninterrupted telecommunication services and to reduce dependency on VSATs one or more additional submarine cables in addition to SEA-ME-WE-4 submarine cable should be installed on priority basis. Bangladeshi-owned companies will be encouraged to expedite the installation of additional submarine cables in private sector.
- 10.3.2 BTRC shall coordinate with all the stakeholders for creating at least two nationwide backbone networks in two different paths. Priority shall be given to establish an alternative optical link from Dhaka to Cox's Bazar in different paths in addition to the existing optical link.
- 10.3.3 BTTB should take necessary measures for optimum utilization of SEA-ME-WE-4 by issuing available bandwidth to telecommunication operators and by reviewing existing charges. BTTB will establish POP of submarine cable in different areas as early as possible for easy access from remote areas.

11. PROMOTION OF NEXT GENERATION NETWORK (NGN) TECHNOLOGY

- 11.1 BTRC will facilitate introduction of NGN Technologies in the country. Operators will be required to take necessary approval / license from BTRC in this respect.

12. PROMOTION OF BUSINESS PROCESS OUTSOURCING (BPO)

- 12.1 BTRC will facilitate to develop Call Centers, E-Health Care services, E-Education services, E-Commerce, IT Parks, etc. in the country. Operators will be required to take necessary approval / license from BTRC in this respect.

13. QUALITY OF SERVICES (QoS)

- 13.1 Strict adherence to maintaining QoS will be a foremost responsibility of all IGWs, ICXs, IXs, ANS, IP Telephony and VSAT HUB Operators. BTRC will issue necessary guidelines for maintaining and monitoring minimum QoS standard.

14. TARIFF STRUCTURE / REVENUE SHARING

- 14.1 Different tariff structures will be formulated by BTRC for voice and data services. Tariff structures will be fixed for a finite time period with the provision of reviewing periodically.
- 14.2 Tariff should be as such that people of the country can get the telecommunication facilities at an affordable rate and government gets its due share of revenue.

15. MONITORING AND NATIONAL SECURITY

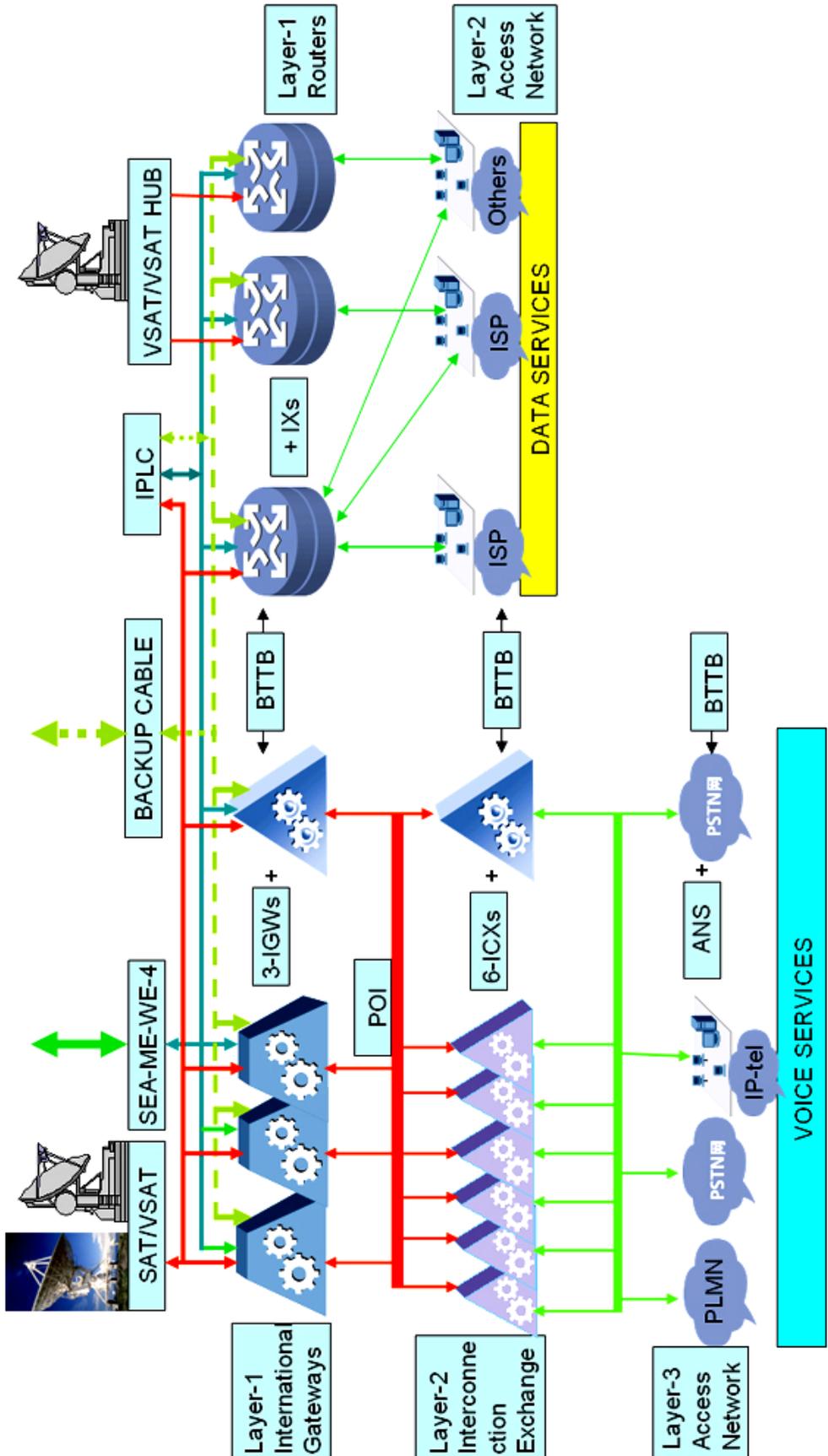
- 15.1 IGWs, ICXs, IXs, ANS, IP Telephony and VSAT HUB operators will provide necessary connections including necessary equipment and instruments and software to BTRC for online and off line monitoring.
- 15.2 IGWs, ICXs, IXs, ANS and IP Telephony operators will provide Call Detail Record (CDR) and/or any other monitoring facilities of voice and data calls for on-line and off-line monitoring by BTRC.
- 15.3 IGWs, ICXs, IXs, ANS, IP Telephony and VSAT HUB operators will provide access to Law Enforcing Agency (LEA) for lawful Interception (LI) as per Bangladesh Telecommunication Act, 2001 (as amended) including necessary equipment and software.
- 15.4 BTRC will establish monitoring center at submarine cable landing station(s) if needed.
- 15.5 Monitoring facilities will be established by respective operators for voice and data communication using IPLC. IPLC Monitoring facilities should also be extended to BTRC and LEA for on-line and off-line monitoring including necessary equipment and software by respective operators.

16. APPLICATION OF OTHER POLICES, ETC. RELATING TO TELECOMMUNICATION

- 16.1 Subject to the provisions of this Policy, National Telecommunication Policy 1998 and other Policies shall apply and in case of the said Policies are in conflict of this Policy, the provisions of this Policy shall prevail.
- 16.2 If any doubt or complicity arises due to technological development and business requirement, the Ministry of Posts and Telecommunications reserves the right to change or modify any clause or sub clause of this policy in consultation with BTRC.

17. CONCLUSION

- 17.1 The accelerated pace of technological development continuously increases alternative options for better and affordable services for the public. To keep up with the rapidly changing advances, it has been ascertained that state-owned enterprises alone do not have the required flexibility to cope up with mounting demands. The policy provisions will empower private sector, increase competition and reduce the disparity of access to international long distance telecommunication services and domestic interconnection services. Superior telecommunications environment is believed to help eliminate infrastructure bottlenecks and promote growth in the commercial and industrial sectors as well. The government is devoted and determined in accelerating momentous progress of our promising Telecommunication Sector.



Schematic Diagram of Network Topology of ILDTs-(VoIP and DATA)