

E1-E2 (EB)

Chapter 8B

Broadband Multiplay

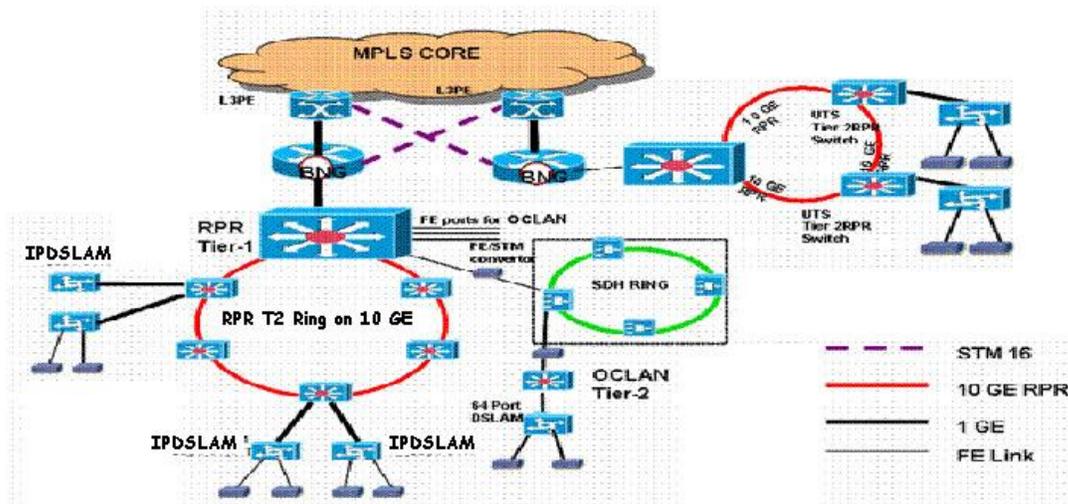
8B.Broadband Multiplay

- **Objective**
 - What is broadband Triple Play / Multiplay
 - Service offered in Broadband Triple play
 - Components of broadband triple play
 - What is IPTV
 - What is VoIP

- **What is BB Multiplay?**

The triple play service means providing the following service to the customer: -

- Data (Internet)
- Voice (VoIP and not the PSTN which is already provided on broadband also)
- Video (IPTV, VoD or in general live broadcast and stored broadcasting using video streaming protocols)



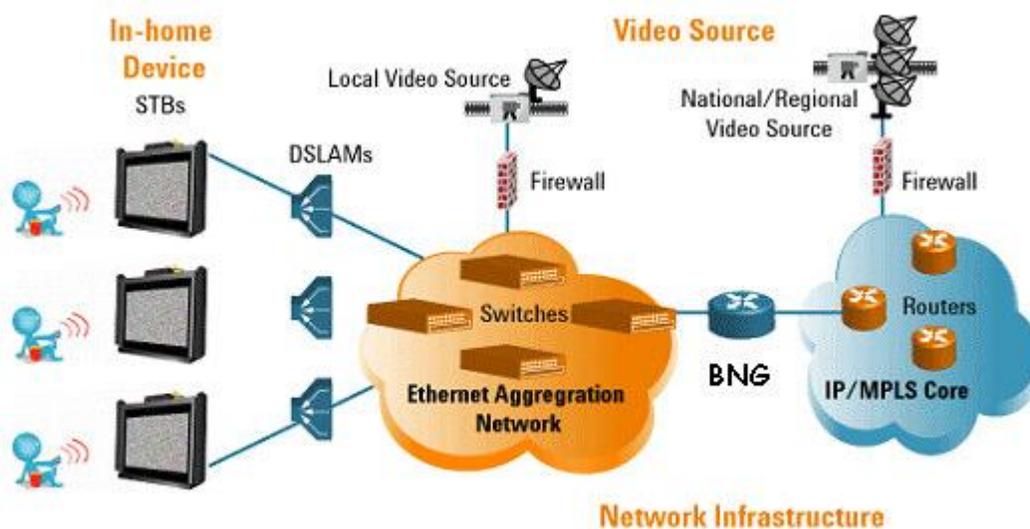
N/W Architecture Broadband Multiplay

Components of Broadband Multiplay

The BSNL's Broadband multiplay network consists of the following components:

- L3PE (MCR / PE Router of NIB-2 Project 1 – Supplied by HCL).

- BNG – Broadband Network Gateway (Connects Multiplay Network to NIB2 Backbone Project 1, through L3PE).
 - RPR (Tier-1 Switch and Tier-2 switches in the ring Provides connectivity to BNG & vice versa).
 - OC LAN Tier-2 Switch.
 - DSLAM.
 - ADSL CPE.
 - DSL Tester.
- **Changes in Broadband Multiplay after Broadband**
 - T1 & T2 changed from star topology to RPR ring topology – High reliability
 - IP-DSLAM connected on GE interface as compared to FE interface.
 - BNG behaves as customer edge router whereas BRAS was a PE Router.
 - BRAS were present at 23 “A” locations only whereas BNG is present upto “B” type cities.



- **Services**
 - IPTV/ TVoIP
 - Video on Demand (VoD)
 - Games on Demand (GoD)

IPTV or TVoIP delivers television programming to households via broadband connection using Internet protocols. It requires a subscription and IPTV set-top box

(STB), this box will connect to the home DSL line and is responsible for reassembling the packets into a video stream and then decoding the contents. IPTV is typically bundled with other services like Video on Demand (VOD), Voice Over IP (VOIP) or digital Phone, and Web access. IPTV viewers will have full control over functionality such as rewind, fast-forward, pause, and so on.

If you've ever watched a video clip on your computer, you've used an IPTV system in its broadest sense. The video stream is broken up into IP packets and dumped into the core network, which is a massive IP network that handles all sorts of other traffic (data, voice, etc.). VOD (Video on Demand) service allows the user the luxury of watching the movie of his / her choice at his / her convenience.

- **Difference between VOD on BB & VOD on DTH**

In DTH, as it is broadcasting and not communication so the request for VOD has to be registered through some other mean than the Set top Box say can be through phone call, SMS or Internet and the same four to five movies are broadcasted and the viewers have to choose among them only and at predefined timings.

In true VOD, as offered by BSNL, the set-top box behaves just like a DVD player and viewer can select a movie from the boutique, view it at his / her desired time and day, pause it, rewind it, forward it or can have the exactly same experience has viewing from a personalized DVD player. This is only possible because of the two-way communication between the set-top box and the server. In BSNL one has a choice of selecting from hundreds of movies while VOD offered by DTH providers may have only few movies to offer.

- **Set-top-Box**

The set-top box is a smart solid-state device that acts as the gateway to a host of services offered on the BSNL Multiplay network. On one side the set-top box interfaces with the television using the 3-RCA or the S-Video ports, and on the other side it is connected to broadband ADSL modem via the Ethernet port. BSNL franchisee in Pune has named the set-top box as WICE Box (Window for Information, Communication and Entertainment) and supports all sorts of inputs like audio, video, tablet data, text data, pointer devices etc. it has a USB port and a microphone and headphone jack in addition to essential ports. In future, it will be possible to connect keyboard, mouse, web cams, pen-drives and other such devices for various applications that will be provided on the box. The WICE box is fully upgradeable through the network. This means, any new

application launched will be directly uploaded into WICE box without getting the box to service center. All software upgrade will be handled this way.

- **VOIP**

- The technology used to transmit voice conversations over a data network using the Internet Protocol.
- A category of hardware and software that enables people to use the Internet as the transmission medium for telephone calls.
- VoIP works through sending voice information in digital form in packets,
- VoIP also is referred to as Internet telephony, IP telephony, or Voice over the Internet (VOI)

- **Benefits of VOIP**

- **Cost reduction**

- Toll by-pass
- WAN Cost Reduction

- **Operational Improvement**

- Common network infrastructure
- Simplification of Routing Administration

- **Business Tool Integration**

- Voice mail, email and fax mail integration
- Web + Call
- Mobility using IP

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- **BSNL's Plan**

BSNL has planned to roll out this service in 898 cities progressively. The service is being provided at Pune, Chennai, Bangalore, Kolkatta, Hyderabad and Ahemdabad. This service is being provided through franchisees. Many cities already have franchisees for broadband content and they can offer this service. A pool of private IP addresses will be allotted by BSNL to the said franchisee, which will be used for allotting IP address to the IPTV customer.

Practice Questions

1. What for Set Top Box is used.
 - a. VOIP
 - b. IPTV
 - c. VPN
 - d. ISDN
2. BNG in Multiplay Network is connected to .
 - a. Core Router
 - b. PE Router
 - c. DSLAM
 - d. BRAS
3. Triple Play Service through Broadband means
 - a. Data, Games and Audio simultaneously
 - b. Data, Voice and Games simultaneously
 - c. Data, Voice and Video simultaneously
 - d. Voice, Video and Audio simultaneously
4. BNG behaves as _____router in BSNL Multiplay Network
 - a. Core Router
 - b. Provider Edge Router
 - c. Customer Edge Router
 - d. Gateway Router
5. Voice in Broadband Multiplay is
 - a. Voice over PSTN
 - b. Voice over IP
 - c. Voice over PLMN
 - d. Voice over ISDN
6. Set Top Box interfaces with Television using
 - a. Ethernet port
 - b. Serial port
 - c. 3-RCA Cable
 - d. RS 232 port