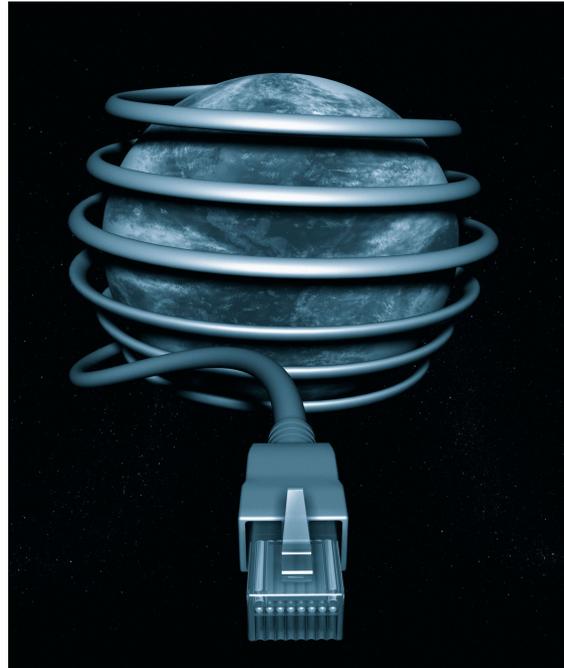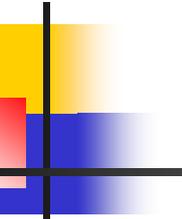# Next Generation
IP based Broadcasting System
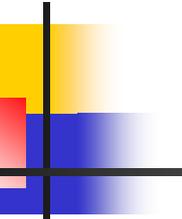
AddPac Technology

2003. 6. 18

Contents

- **Next Generation IP Broadcasting System?**
- **NG-IBS Design Feature**
- **AddPac Technology NG-IBS Solution**
- **NG-IBS Network Diagram**
- **Discussion**

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Next Generation IP Broadcasting System (NG-IBS) ?
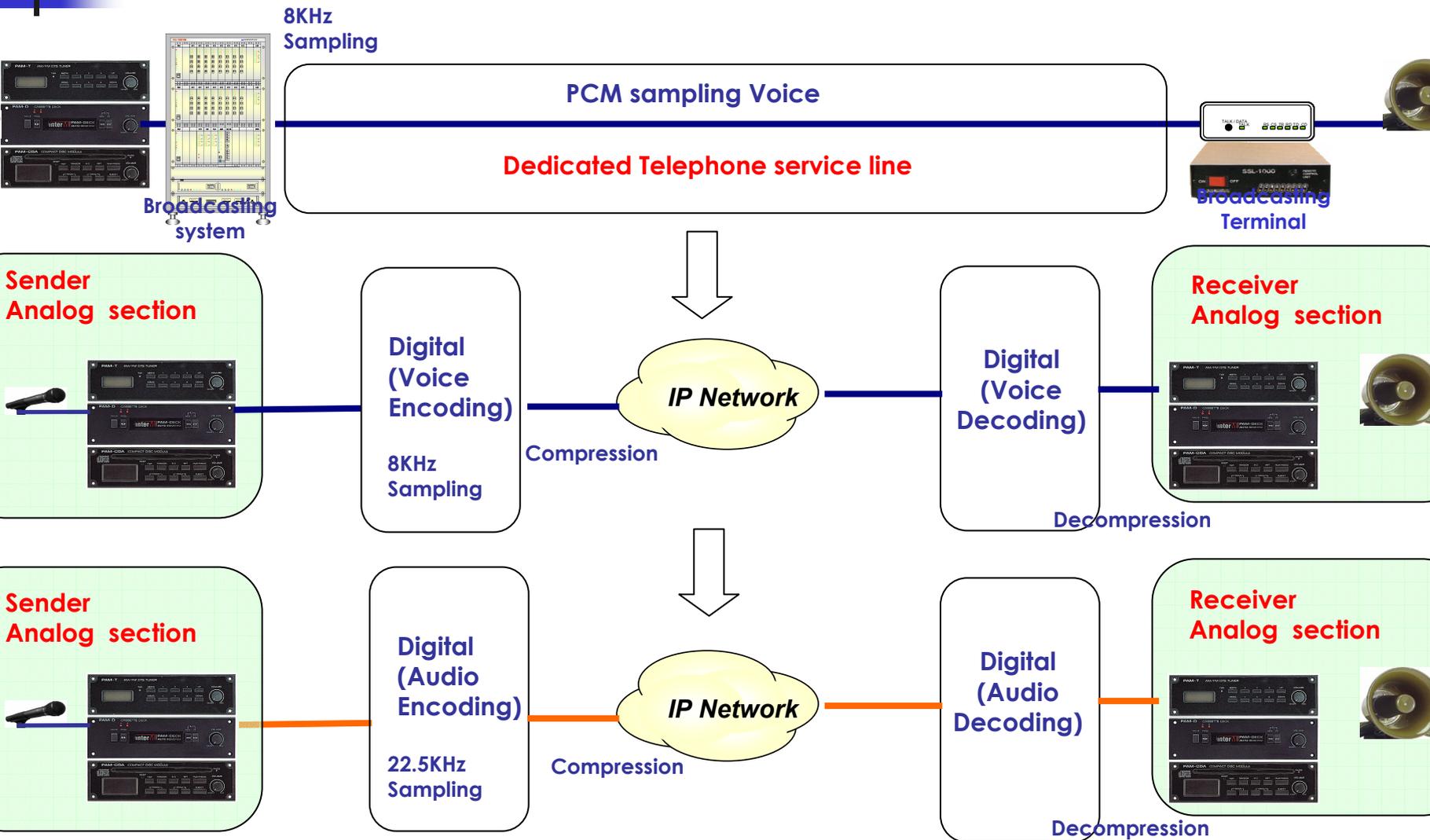
Next Generation IP Broadcasting

❑ **Beyond the existing broadcasting system**
- **Realizing high quality broadcasting (From Voice level to audio level)**
- **Utilizing reasonable IP network, replacing expensive voice-dedicated line**
- **Eliminating Integration & Management difficulties**

❑ **Expanded Bandwidth and Various Contents**
- **ADSL→ VDSL → FTTH**
- **Doubled bandwidth in one year**
- **Internet arena asking for more than PC contents**

❑ **To meet NGN arena based on IP network**
- **Intelligent communication system**
- **Modularized, flexible architecture, adoptable to rapidly changing network environment**
- **Reliable and stable system -"Full embedded system"**

❑ **IP Broadcasting is the future of telephony service**
- **The quality of telephony service will be upgraded in the future.**

IP Broadcasting vs. TD Broadcasting

8KHz Sampling

PCM sampling Voice

Dedicated Telephone service line

Broadcasting system

Broadcasting Terminal

Sender Analog section

Digital (Voice Encoding)

8KHz Sampling

Compression

IP Network

Digital (Voice Decoding)

Receiver Analog section

Decompression

Sender Analog section

Digital (Audio Encoding)

22.5KHz Sampling

Compression

IP Network

Digital (Audio Decoding)

Receiver Analog section

Decompression

Various Applications of IP broadcasting

AddPac Broadcasting System

Financial institutions

Hospitals

Disaster Prevention
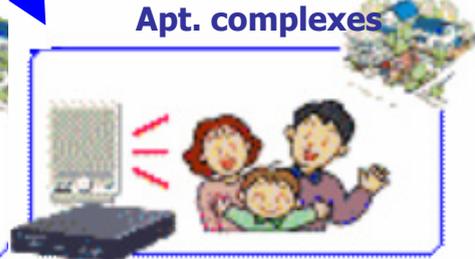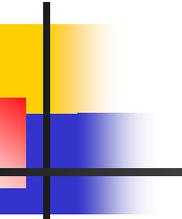
Schools

Internet/ Dedicated line

Civil affairs

Park

For the aged

Apt. complexes

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NG-IBS Design Feature

IP Broadcasting Design Feature

Sender
Analog section

AP3120 Server

**IP Network
Section**

AP1601 Player

**Receiver
Analog section**

IP network

**8Khz Sampling
(Voice codec)**

**22.5Khz Sampling
(Audio codec)**

**Analog to Digital
conversion**

**Digital to Analog
conversion**
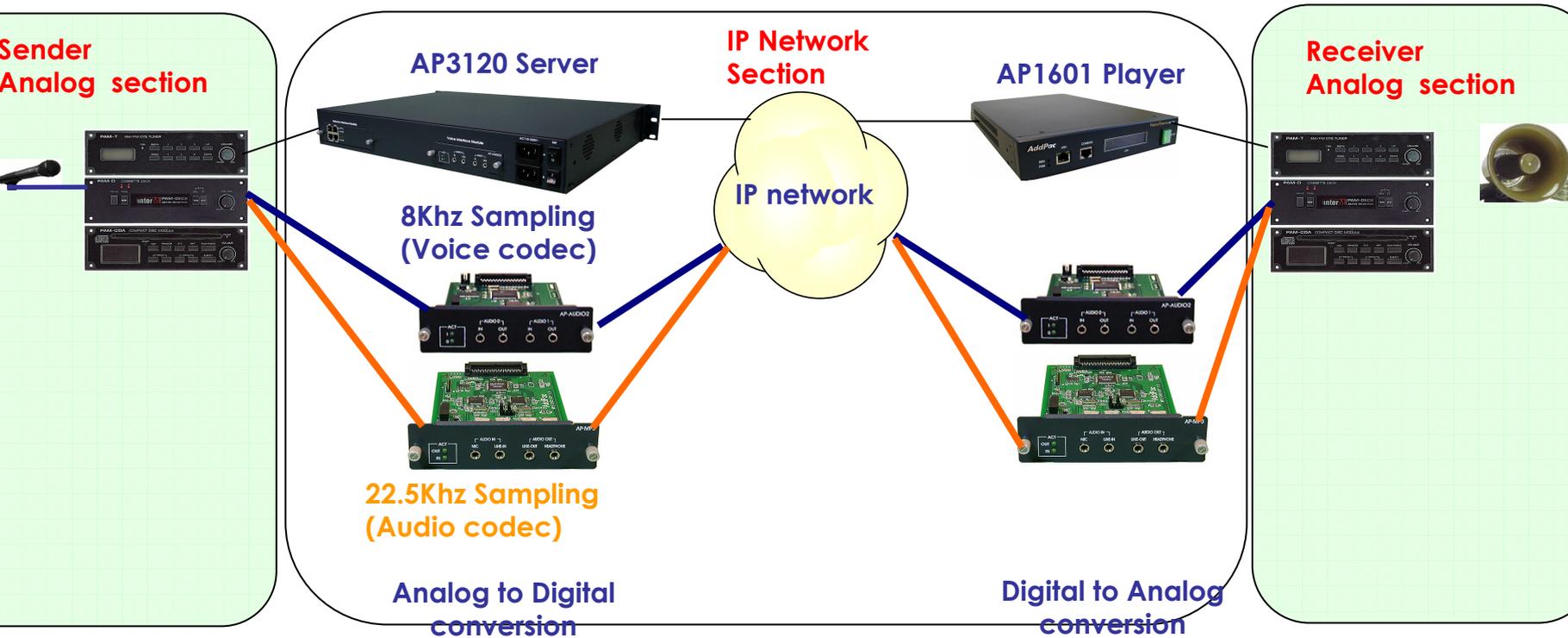
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Merits of AddPac's Broadcasting system

- ❑ **All embedded system**
  - ● **Based on Real Time Operation System (RTOS)**
  - ● **Powerful solution for Viruses and hacking**
- ❑ **High quality audio broadcasting without buffering delay**
  - ● **Not like PC based streaming broadcasting asking buffering time**
- ❑ **8 level bandwidth control**
  - ● **29~130Kbps**
  - ● **Able to select perfect bandwidth according to network condition**
- ❑ **22.5Khz sampling(29Kbps: 16khz sampling)**
  - ● **Superior sound quality on the same bandwidth**
- ❑ **Duplex broadcasting**
  - ● **Able to broadcast from the end-point terminals**
- ❑ **Various terminal models**
  - ● **AP1601∙2110 ∙2520G ∙2520R∙2830 2850**
  - ● **Offering Broadcasting, FAX broadcasting and VoIP telephony service at one terminal**
  - ● **Supports WAN Router/ATM Router at the same time**
- ❑ **Supports Multicast & unicast simultaneously, relay features**
- ❑ **Supports xDSL/cable network & static/dynamic IP**
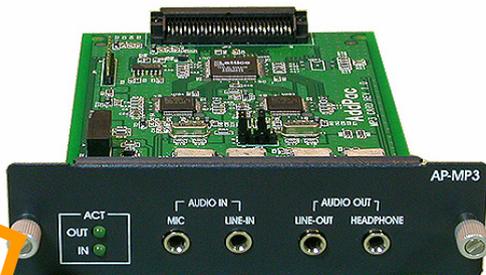 - ● **Supports various network service**
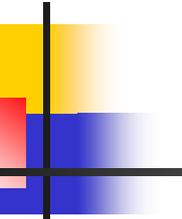
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NG-IBS Solution

Audio Band(HQ) & Voice Band

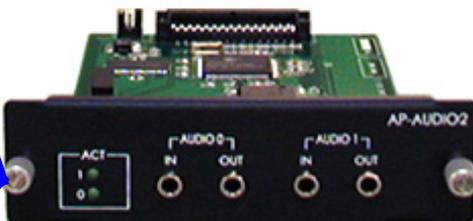**High Quality Audio Band Solution & Voice Band Solution**

Server

HQ Audio band card

Power Switch

Player

Voice band card

Manager

AddPac IP Broadcasting Solution

❑ **Base Components & Option Components**

	MODEL	Description	
Base Components	**AP3120**	▪**Server** ▪**Source broadcasting & relay** ▪**Management**	
	AP1601	▪**Player** ▪**Broadcasting receive & play**	
	AP-BMS	▪**Manager** ▪**GUI based broadcasting manage.**	
Option Components	**AP-AUDIO2**	▪**Voice band audio card** ▪**2Pair audio in/out interface module**	
	AP-AUD1S3	▪**Voice band audio card +VoIP card** ▪**1Pair audio in/out+FXS3 voice ports**	
	AP-MP3	▪**High quality audio band audio card** ▪**Direct line out/headphone + direct Mic/line in**	
	AP-PSB	▪**Power switching box** ▪**Remote side AMP power manage.**	

AP3120 IP Broadcasting Server

<HW Feature>

CPU	64bit RISC
Memory	Flash 4MB
	SDRAM 128MB
	Boot ROM 512KB
Network Interface Slot	2x10/100Mbps
	2xAsync. Serial
Analog Interface Slot	2xDirect Audio In/Out
	4xFXS(RJ11)
	4xFXO(RJ11)
	4xE&M (RJ11)
Dimension	65x441x323mm(HWD)

<SW Feature>

Routing protocol	Static / RIP v1, v2 / OSPF v2 / IEEE 802.1Q VLAN Routing / IGMP / Multicasting Packet Generation
VoIP services	VoIP based voice multicasting / Multiple PTP VoIP based voice broadcasting / H.323 and SIP dual stack / H.323 gateway & gatekeeper support
Security	Standard & extended IP access List /Enable-disable for specific protocols/ Multi-level user account management / Auto-disconnect for Telnet/Console Sessions
Network manage.	SNMP agent(MIB v2) / remote management using console, rlogin, telnet / web based management / traffic queuing

IP Broadcasting Terminal

❑ **AP2110 VoIP Gateway**
- **Fixed 4 Ports FXS Voice**
- **One Interface Slot**
- **4 Ports FXS/FXO/E&M, 1 Port E1/T1, 2 Ports Audio**
- **Suitable for introducing VoIP telephony service, FAX, broadcasting service at one time**

❑ **AP2520 VoIP Gateway**
- **Two Interface Slots**
- **4 Ports FXS/FXO/E&M, 1 Port E1/T1, 2 Ports Audio**
- **Suitable for step-by-step function expansion**

❑ **AP1601**
- **One Interface Slot**
- **ON-AIR Indication Lamp**
- **2×20 LCD**
- **Broadcasting- specialized**

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IP Broadcasting Power Switching

☐ **AP-PSB : Amplifier power control for IP broadcasting service**

- **Operating with AddPac's IP broadcasting system**
- **Terminate power supply during no service offered, Back-ground noise deletion function**
- **Master- Slave type power control : receives power on-off command from AP2520, AP1601 via RS-232C, LAN**

☐ **Feature**

- **RISC CPU, Flash Memory 512K, SDRAM 1MB**
- **1-Port 10Mbps Ethernet Interface(1xRJ45)**
- **1-Port Asynchronous Serial Interface (1xRJ45)**
- **Power : 110~220VAC, 50/60Hz, 5Watt**

IP Broadcasting Manager

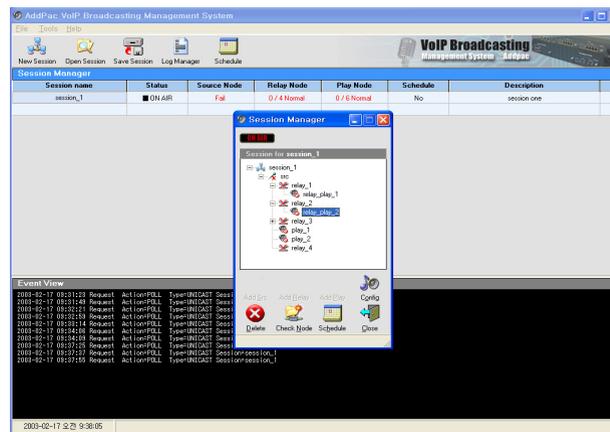## ☐ GUI type management S/W

- **Broadcasting group setting & saving**
- **Real-time & scheduled broadcasting**
- **Real-time monitoring of broadcasting condition**
- **Event Log Manager**
- **Report Manager**
- **Window GUI Mode**
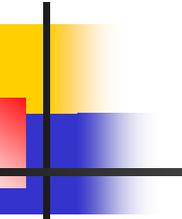- **Web-based management**
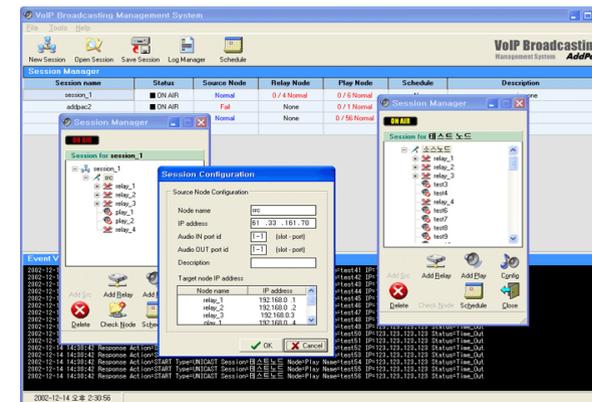
Broadcasting manager
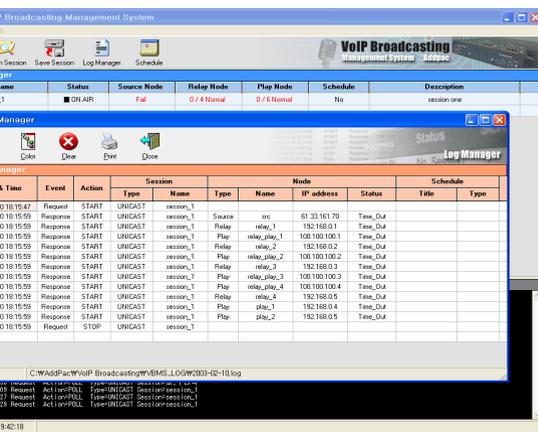
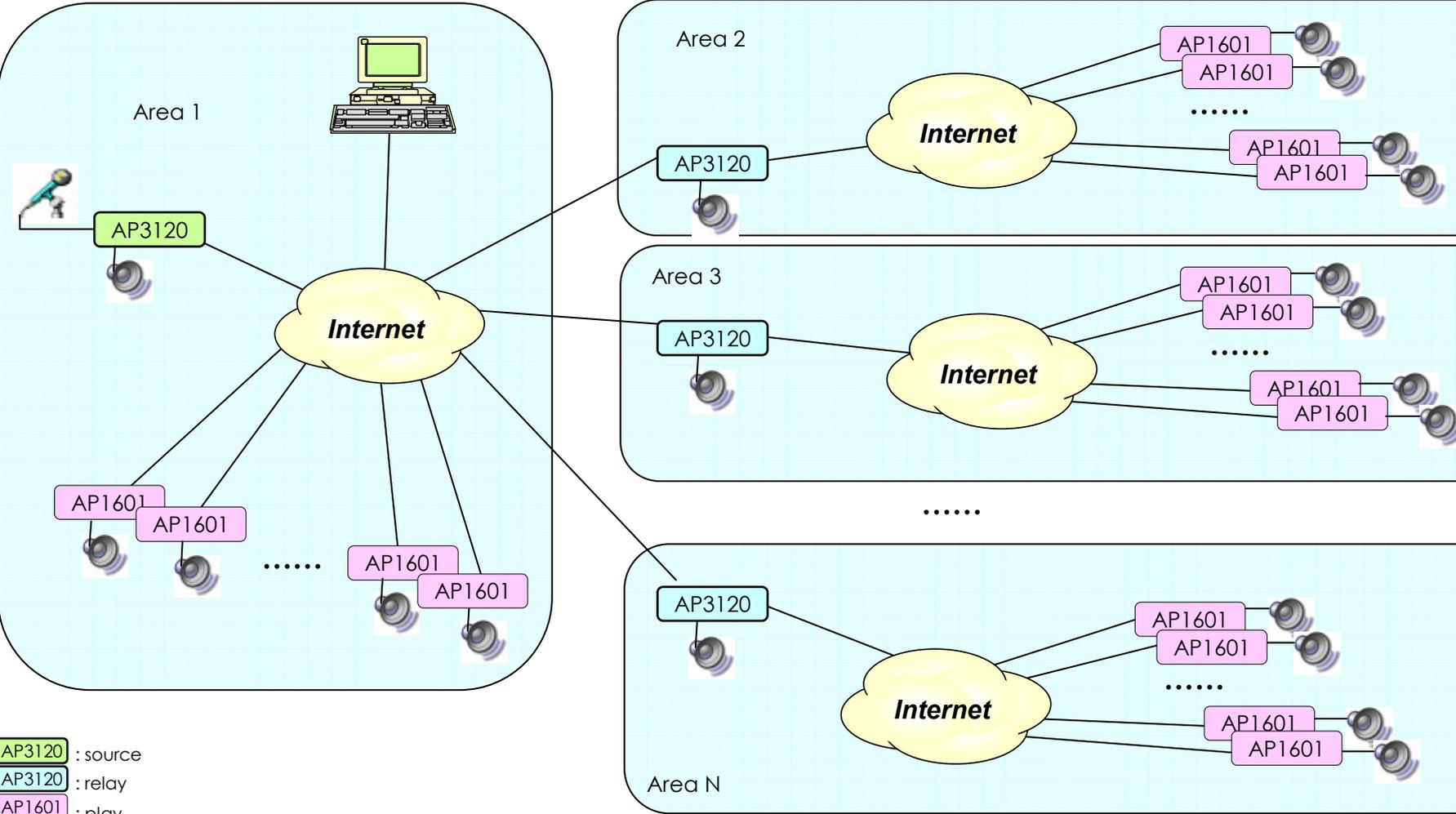**g Manager**

Broadcasting Group Setting

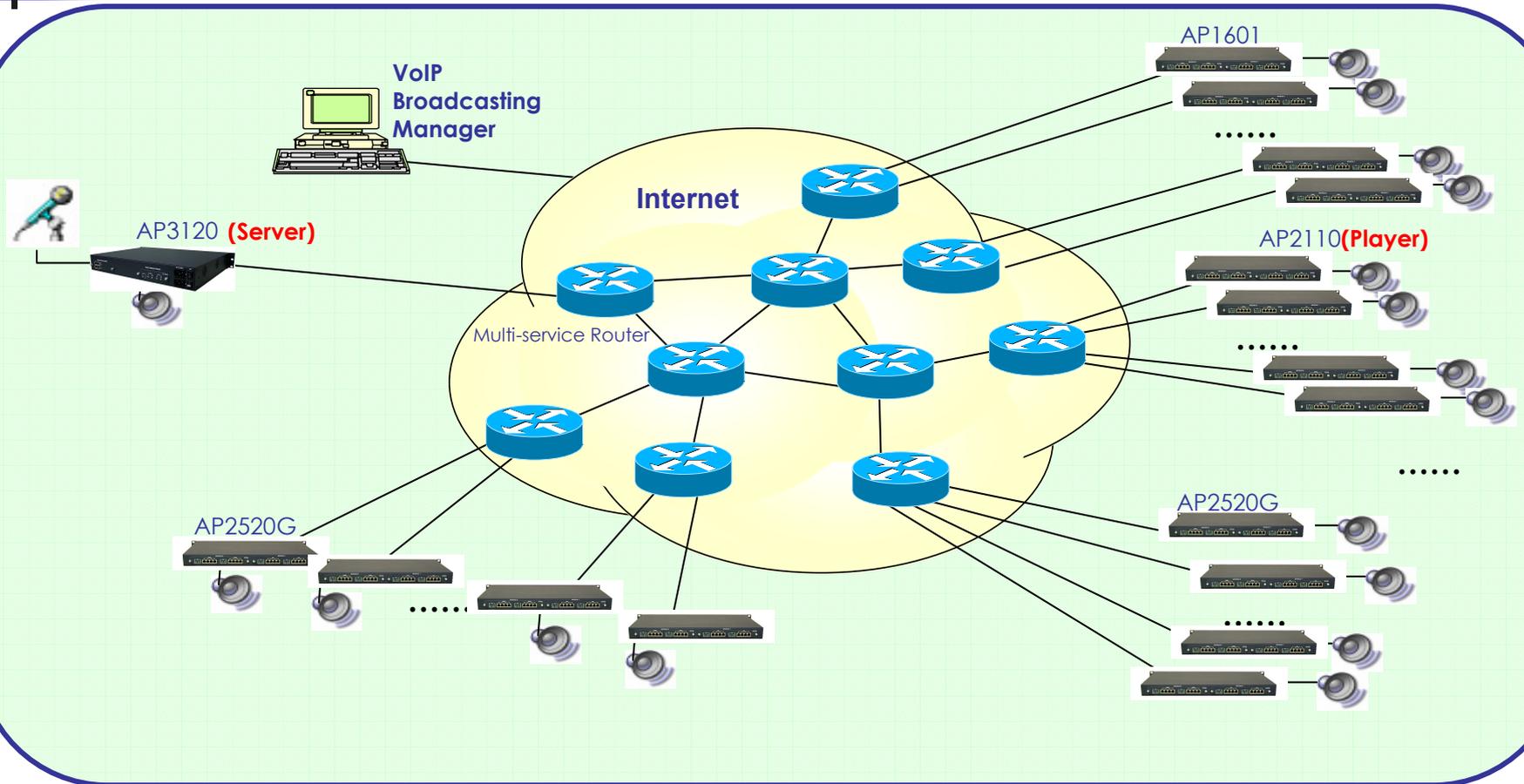**Broadcasting schedule setting**

NG-IBS Network Diagram
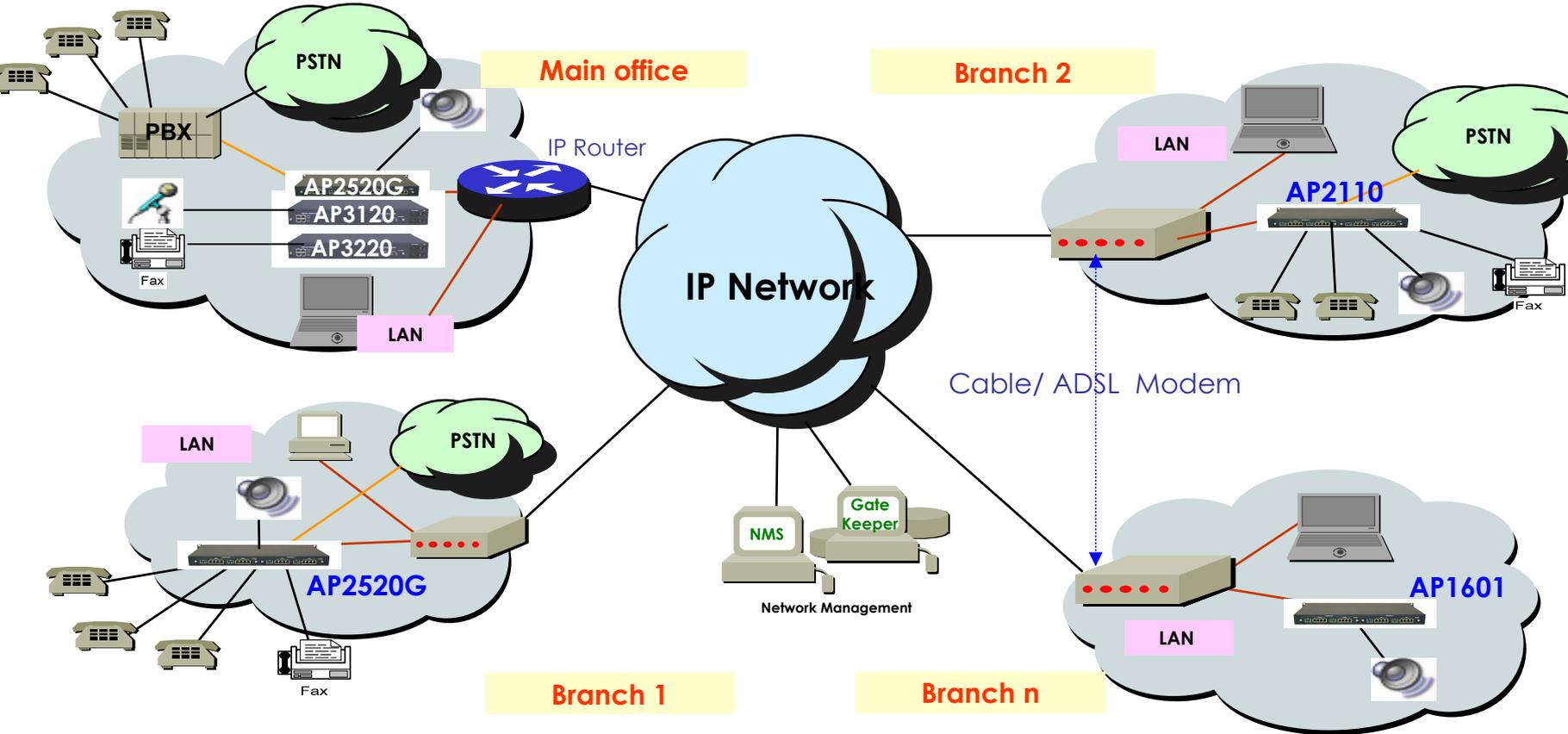
Unicast relay broadcasting network

AP3120 : source
AP3120 : relay
AP1601 : play

Multicast broadcasting network

- **Multicast Protocol**
- **Broadcasting to multi-locations with a single channel bandwidth**
- **Adoptable when the network router supports IGMP**

Broadcasting•Fax•Telephone Integrated model

- **On terminal side, Integrated broadcasting, Fax, Telephone service can be supported**
- **Possible to add functions step-by-step (Broadcasting→ Telephone→ Fax)**
- **Reduce Installation and management cost**