IPv6 Country Update : KR

2005. 2.

Jae-Ho Lee

National Computerization Agency

Basic Status and Policy

Basic Status

Broadband Internet Penetration Rate   (Sep. 2004)
(11.7M households 77% of the total households)

Internet Users (30.6M, 68% of the total population)
(Jun. 2004)

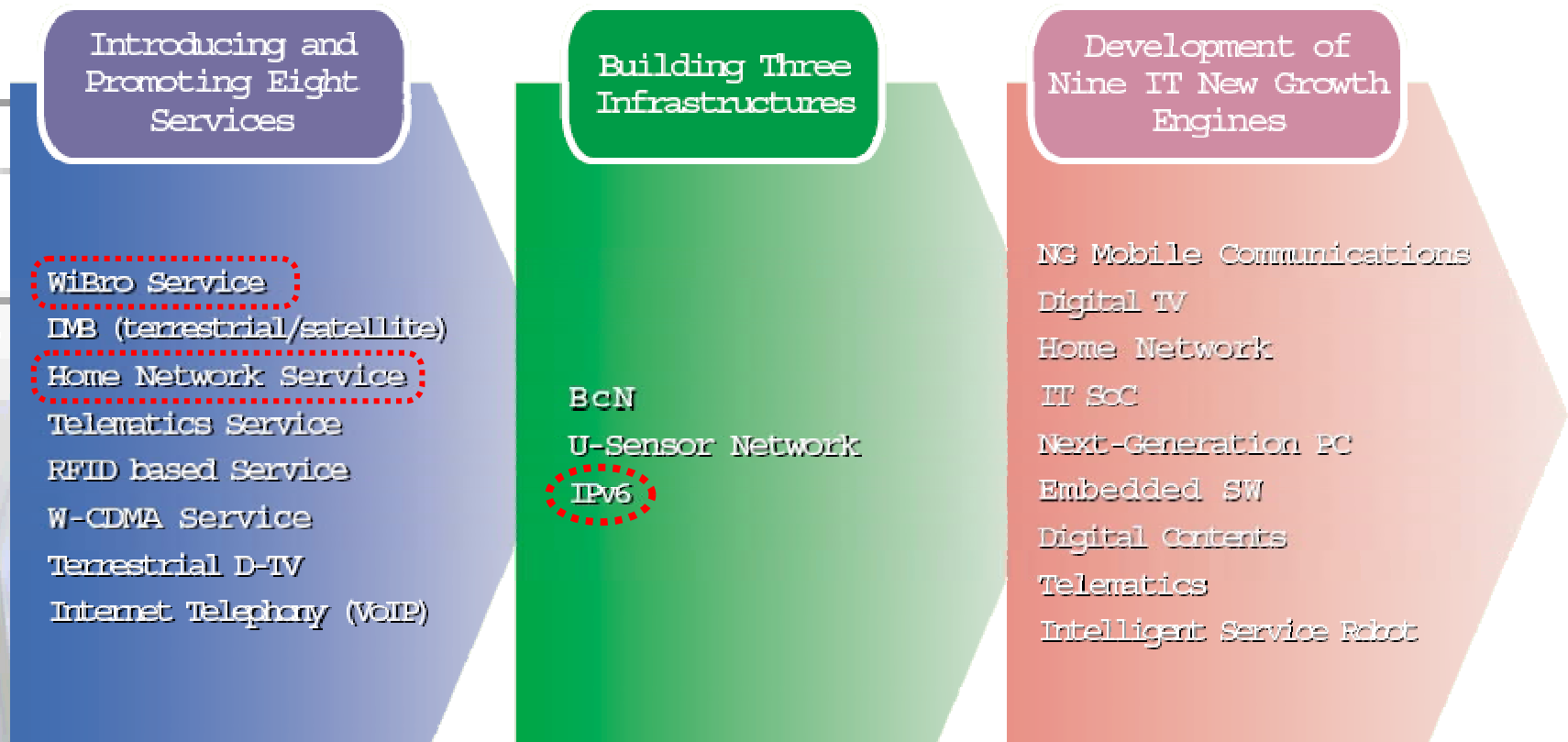**Mobile Phone Users (36M, 73% of the total population)**
(Sep. 2004)

IPv4 Addresses(34M)
(Oct. 2004)

IPv6 Addresses(31, /32)
(Oct. 2004)

M : Million

IT839 and IPv6 Policy

■ **IT839 Strategy: A master plan for the IT industry, in an effort to gain more growth momentum from the IT sector in Korea.**

Introducing and Promoting Eight Services

WiBro Service

DMB (terrestrial/satellite)

Home Network Service

Telematics Service

RFID based Service

W-CDMA Service

Terrestrial D-TV

Internet Telephony (VoIP)

Building Three Infrastructures

BcN

U-Sensor Network

IPv6

Development of Nine IT New Growth Engines

NG Mobile Communications

Digital TV

Home Network

IT SoC

Next-Generation PC

Embedded SW

Digital Contents

Telematics

Intelligent Service Robot

KOREA will expand IPv6 pilot networks in 2004
Provide All-IPv6 based services since 2010

Substance of IPv6 Policy

Deploy and Promote to develop IPv6 Equipments

Deploy and Promote IPv6 Application

Deploy and Promote IPv6-based Home Network

KOREAv6 IPv6 Trial Projects

Manage IPv6 Address resource & Deploy IPv6 DNS

IPv6 Standardization & Certification

International Cooperation, Public Relations, Education

National Computerization Agency

KOREAN MND IPv6 Adoption Policy

Chronicle

- '03. 10 ~ 04. 6 : Basic Survey

- '04. 7 : Meeting with DISA, US

- '04. ~ 12 : Making General Plan

Expectation

- Build Superior Digital Warfare Infrastructure

- Promoting Military IPv6 Network Industry

Key Factors

-Best strategy in Military
-Find Important Points for IPv6 Deployment
-Prepare IPv6 Based New Projects

-Build MND IPv6 Network Transition Model
-Build MND IPv6 Transition Organization and Budget

Leading Edge MND Network

* MND : Ministry of National Defense

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IPv6 Deployment in Public Sector in 2004

E-Gov Network

- New Network for e-Gov Service
- Building IPv6 Based Network Exchange Point

PUBNet+

- Network for Public Sector
  - Government, Schools, etc
- Build National Wide IPv6 MPLS
  - Seoul, Pusan, Taejon, Kwangju, etc

MICNet

- Network for Postoffice
- Upgrade IPv6 Supporting Network

Early Adoption Consideration

- Ministry of National Defense
- Local Government
- Gov Agency, R&D Center, Campus

Application & Trial Service (KOREAv6)

Background

- To verify IPv6 equipments & services and drive them to commercialize by using KOREAv6 (National-wide IPv6 based test network)

IPv6 Pilot Service

Providing IPv6 services for real users at home, campus, and a variety of areas
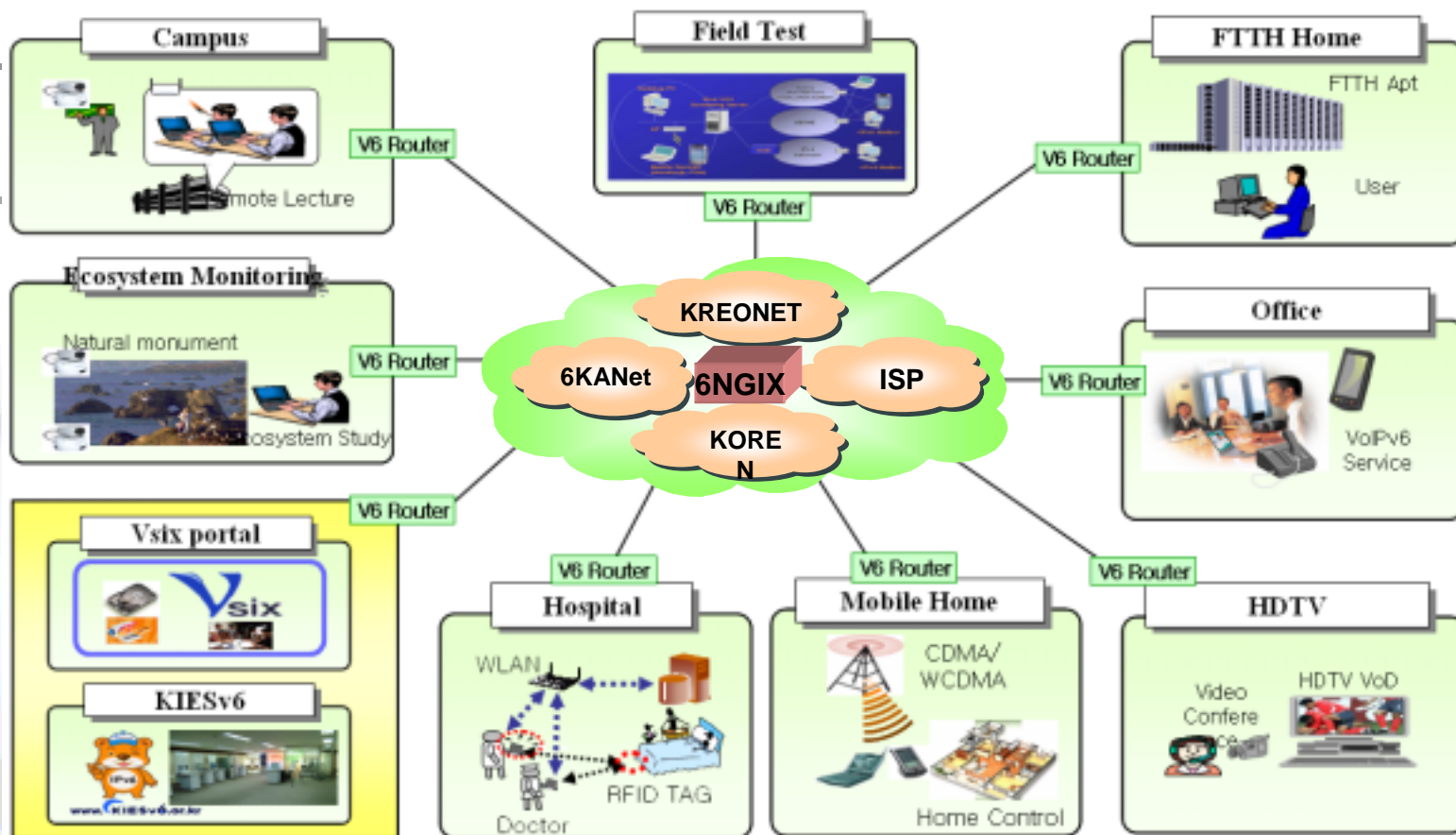
IPv6 Field Test

Testing stability and interoperability of IPv6 equipments & solutions in IPv6 network

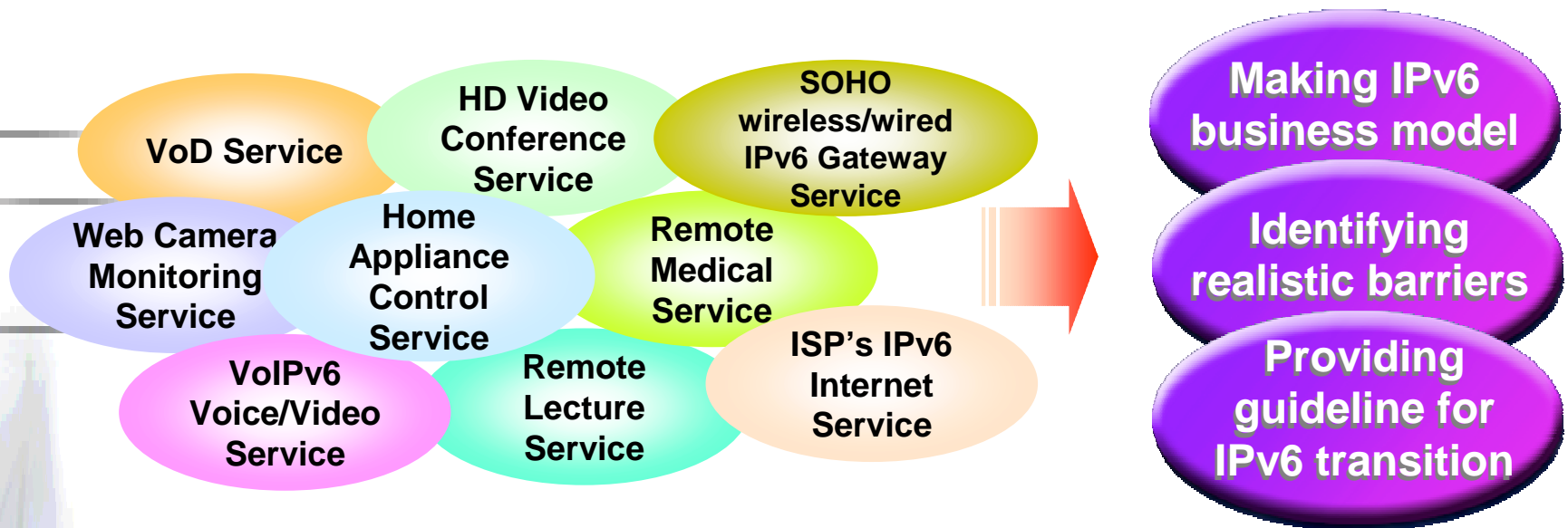Achieving phased IPv6 Commercialization from 2005 through successful KOREAv6 Project

Backbone network

- **Built the greatest IPv6 network in KOREA with connecting existing IPv6 networks**
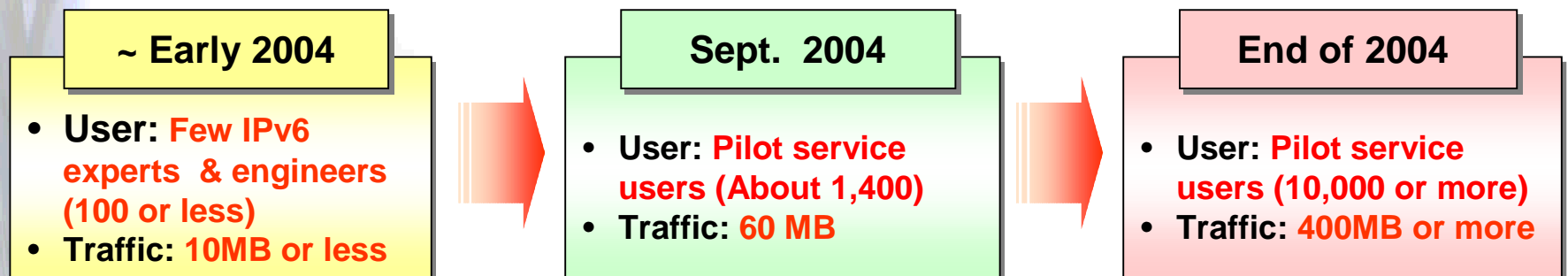 - The 6NGIX centric backbone including advanced networks (6KANET, KREONET, KOREN) and a commercial ISP

Project Status

IPv6 pilot services in a verity of areas (10 Pilot Services, 35 Participants)

- VoD Service
- HD Video Conference Service
- SOHO wireless/wired IPv6 Gateway Service
- Web Camera Monitoring Service
- Home Appliance Control Service
- Remote Medical Service
- VoIPv6 Voice/Video Service
- Remote Lecture Service
- ISP's IPv6 Internet Service

→

- Making IPv6 business model
- Identifying realistic barriers
- Providing guideline for IPv6 transition

Increasing IPv6 traffics and real IPv6 users

~ Early 2004	Sept. 2004	End of 2004
• **User: Few IPv6 experts & engineers (100 or less)** • **Traffic: 10MB or less**	• **User: Pilot service users (About 1,400)** • **Traffic: 60 MB**	• **User: Pilot service users (10,000 or more)** • **Traffic: 400MB or more**

Ecosystem Monitoring Service

- **Observation of Seasonal birds in Eulsukdo (Pusan , KOREA) by using a IPv6 network (Internet real-time service)**

Cam1

Cam2

ISP's IPv6 Internet service

- **Built National-Wide IPv6 MPLS backbone and serve both IPv6 and IPv4 users**
- **Perform IPv6 Network Engineering**
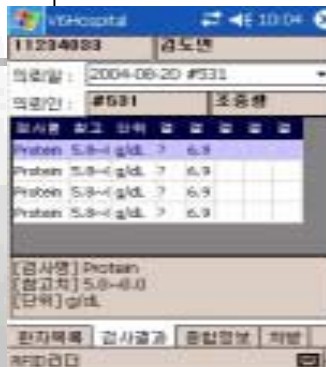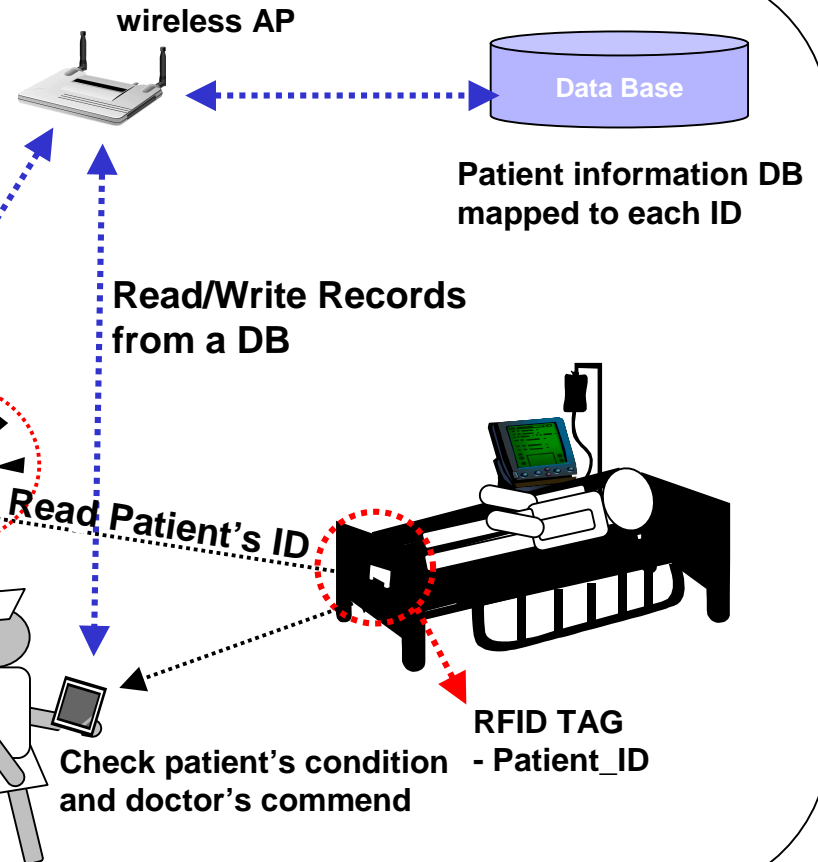- **Encourage users to use IPv6 with offering IPv6 application services**

6Portal   IPv6 Web Site

ISP (IPv6)

6NGI X

KIX (IPv4)

IPv6 App. Servers

Native IPv6

Tunnel

6PE

GW1

GW2

MPLS Backbone

6to4 tunnel

BORANet (IPv4)

TGW

PSTN, PLMN

NAT-PT

Native IPv6

6PE

6PE

Organization Users

Broadband Internet Users
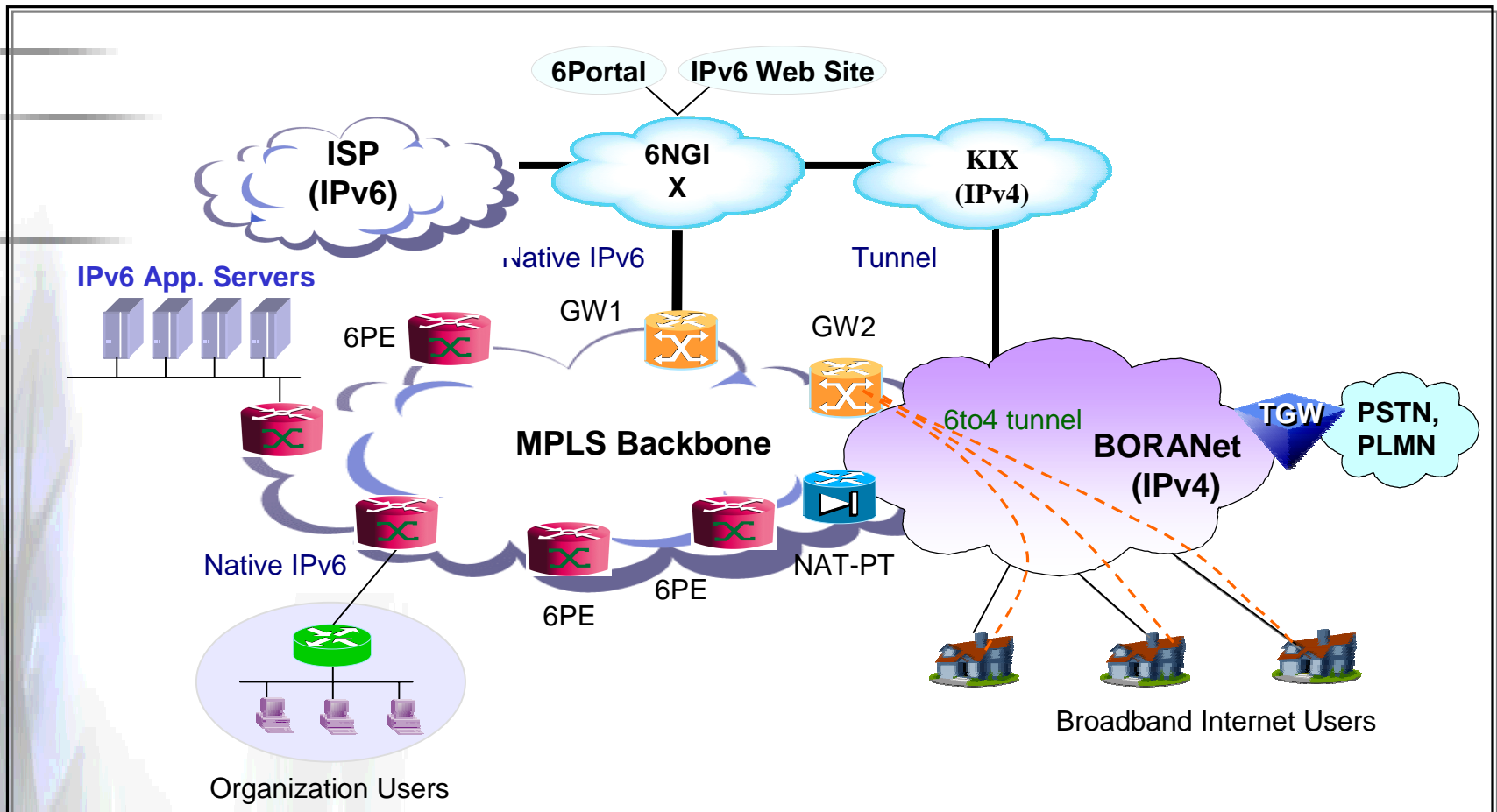
Medical information service at hospital

A periodic check up of patients by using RFID TAG and mobile IPv6 device

- IPv6 based digital chart system
- Interworking between RFID and IPv6
- 13.56Hz frequency

wireless AP

Data Base

Patient information DB mapped to each ID

Read/Write Records from a DB

Read Patient's ID

Check patient's condition and doctor's commend

RFID TAG - Patient_ID

http://v6hospital.6dns.org

FTTH digital home service

Introduction

- Providing IPv6 VoD & web camera service at home (IPv6 only service) -> contribute to using IPv6 and increase IPv6 users
- Encourage real users at home to use IPv6 service (www.vsix.net)
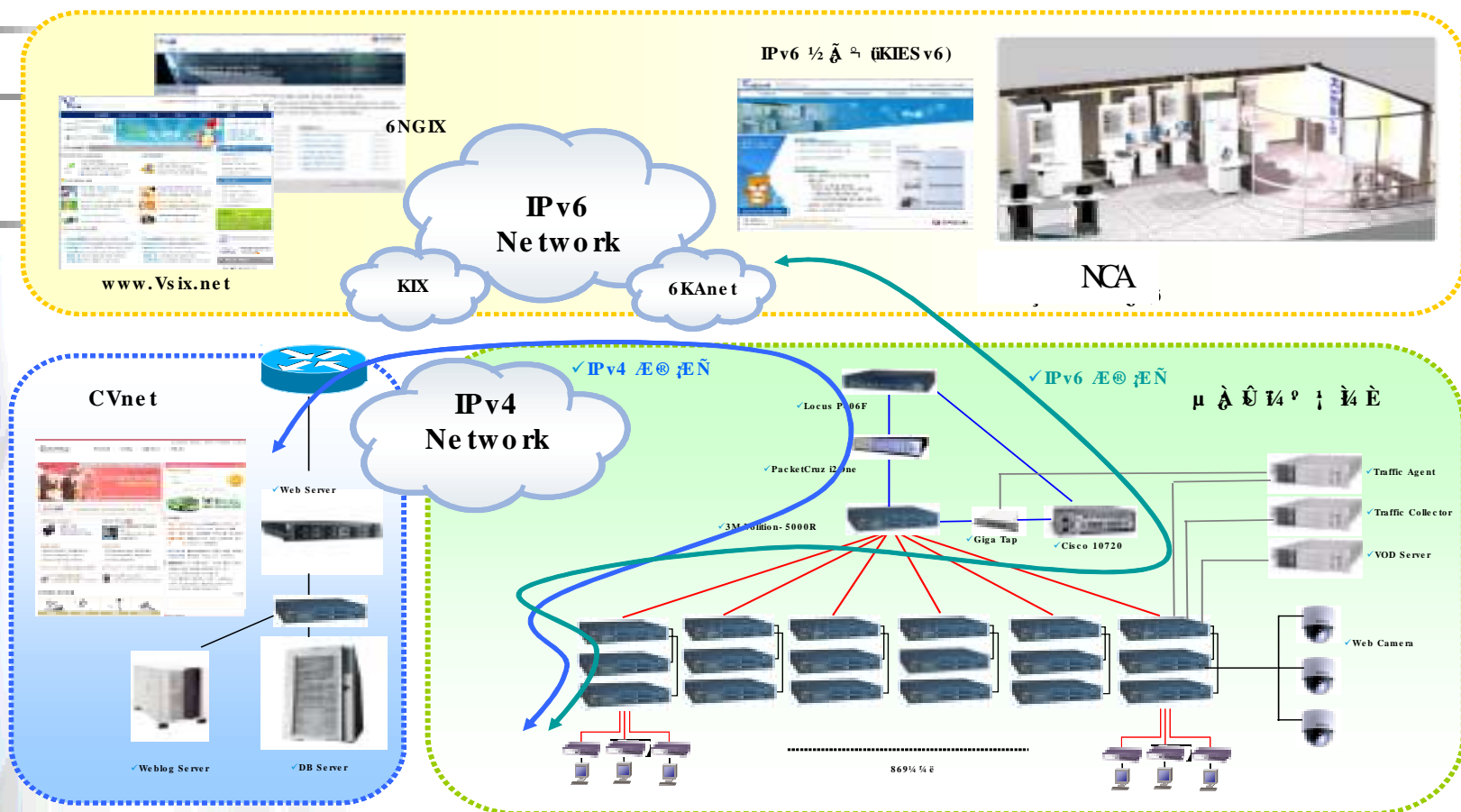
High Definition Video Delivery service over IPv6 internet
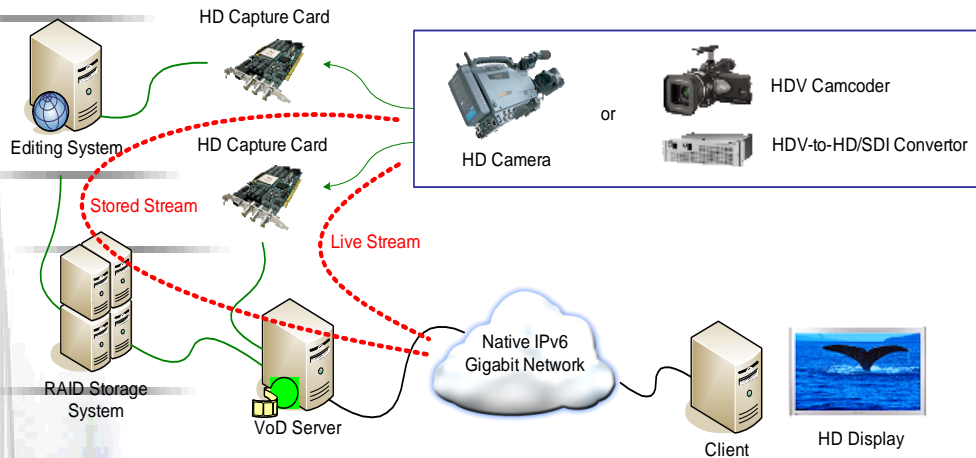
<20Mbps HDTV Delivery Technology>

<Gbps Level HDTV Delivery System>

<VoD System>
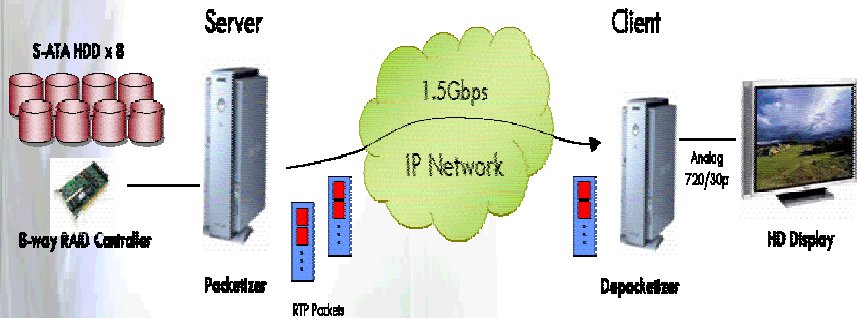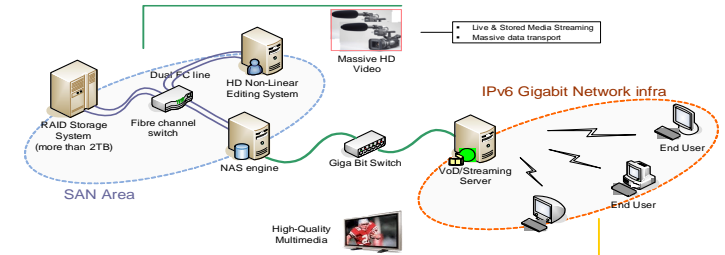
Total Count for IPv4/IPv6

Total Hit Count for HD Contents

<VoD Website>

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U-Lecture service in campus

- **Introduction**
  - **Built IPv6 network & IPv6 potal site and provided IPv6 remote lecture at campus**

- **Goal**
  - **To provide an opportunity to use IPv6 to students who easily adopt new technology and to offer guideline to introduce IPv6 at campus**

- **Service Status**

< IPv6 Network at Campus >

< IPv6 Cyber Lecture Service >

< PC Labs IPv6 Internet Service at Campus >

< IPv6 Multimedia Streaming Service >
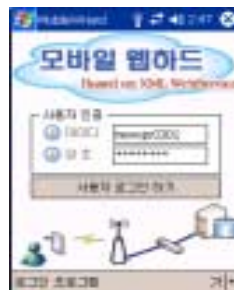
< Web Storage & P2P Service >

< iSCSI Remote Virtual Storage Service >

IPv6/IPv4 mobile home network service

Introduction

- **Home network appliance control in Wireless environment (CDMA)**
- **Electronic appliances at Ubiquitous Test Center (IlSan, Korea)**
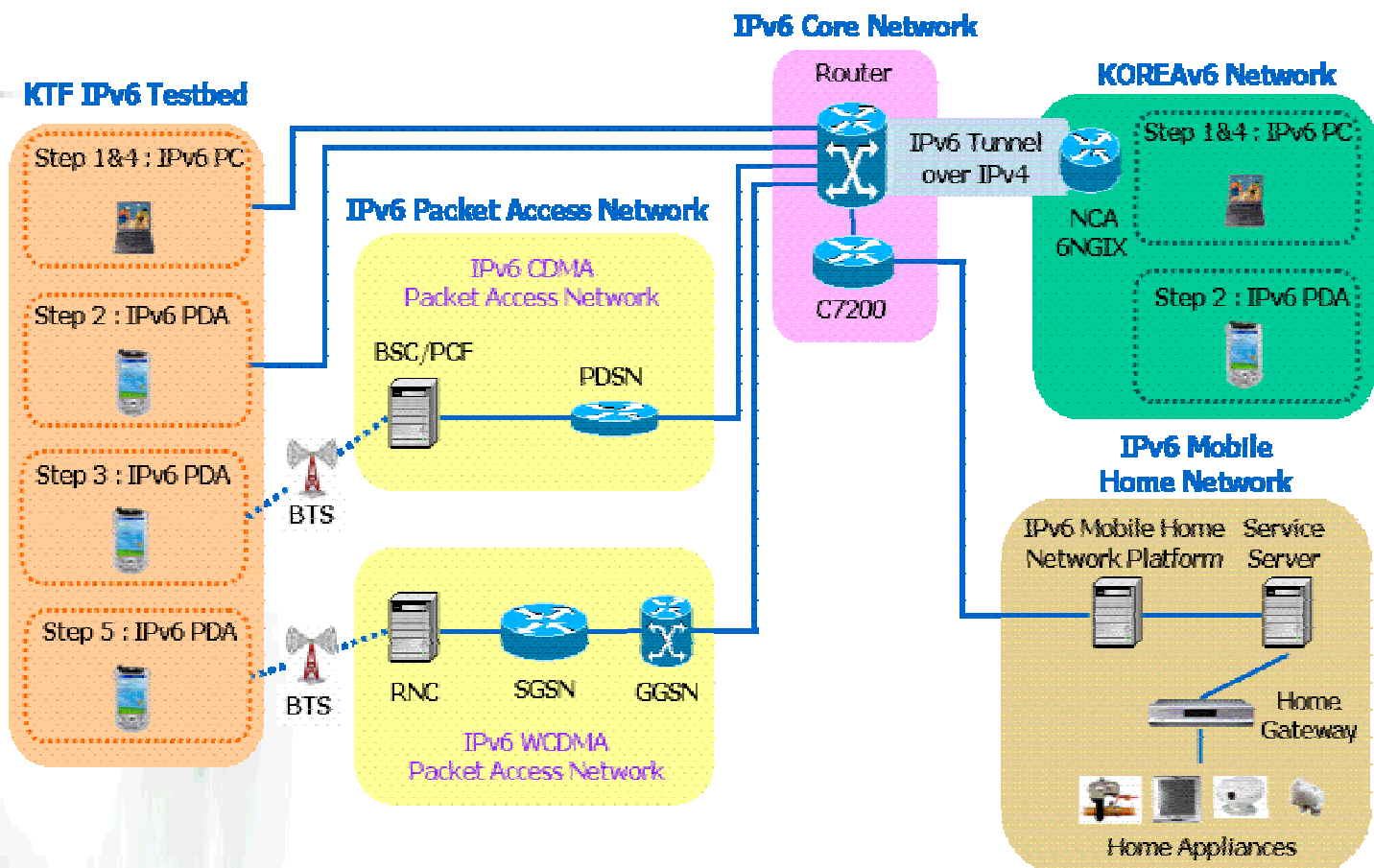
Wireless/wired IPv6 Internet gateway service at SOHO

Introduction

- **Manufacture and distribute the IPv6 gateway (Qty:200) that has IPv6 auto-configuration function**

<Wireless/Wired IPv6 Internet Gateway>

<Recruiting IPv6 Users>

<IPv6 Users webpage>

- **http://www.ubi6.co.kr**

KOREAv6 Field Test Logo Products

ADPAC, AP2830

ADPAC, AP4820

ADPAC, AP 5840

Unitel, Smartbit

LG-Hitachi GS4000-160E

Uribyul Telecom, IX2010

LG, MSR-40

LG-Hitachi, AG8100-S

Samsung, ITP-5021D (IPv6 IP Phone)

Locus, P1006

LG-Hotachi, GR2000-2B

Unitel, AX/4000

Samsung OfficeServ IAP-E(IP PBX)

Linux Korea, CNS

IBIT-Forsix3200

Mercury-Rush1004

Samsung, WLAN WebPAD
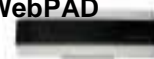
Samsung, OfficeServ IAP-M(IP PBX)

IBIT-Forsix2000R

Samsug-SR2000

Samsung, Access Point

Lanbird LB1121

Samsung, OfficeServ 7200(IP K/P)

Lanbird LB1211

ETRI, IPv6 Home Router

ETRI, VPNv6

ETRI, VPNv6

6WIND, 6windgate-6211

ETRI, 6talk

WizNet,Netcam

ETRI, NMSv6

ETRI, AR80

Samsung, OfficeServ IAP(IP PBX)

B
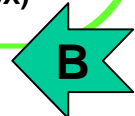
IPv6 R&D Projects

Deploy and Develop IPv6 Equipment

Development of IPv6 Equipment

- IPv6 Router Equipments (Home & SOHO, Access, Edge Router)
- IPv6/IPv4 Transition Gateway
- IPv6 VPN System & IPv6 Network Management System
- IPv6 Network Equipment and Technology required BcN (Broadband convergence Network)
- Advanced IPv6 Mobile Equipments
- IPv6 VoIP Solutions

IPv6 R&D Network : 6GN(Gigabit Network)
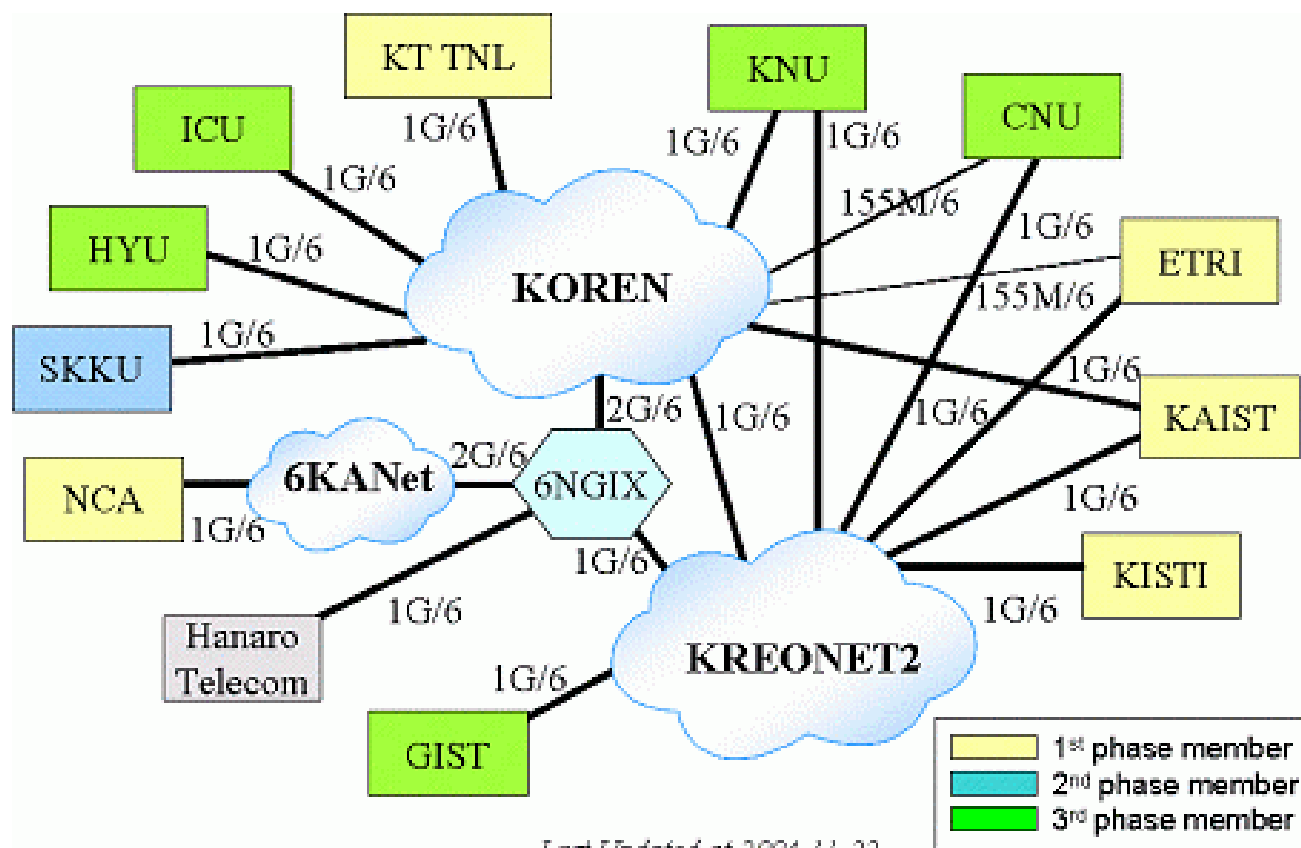
6NGIX(Next Generation Internet eXchange)

National Computerization Agency

IPv6 Promotion
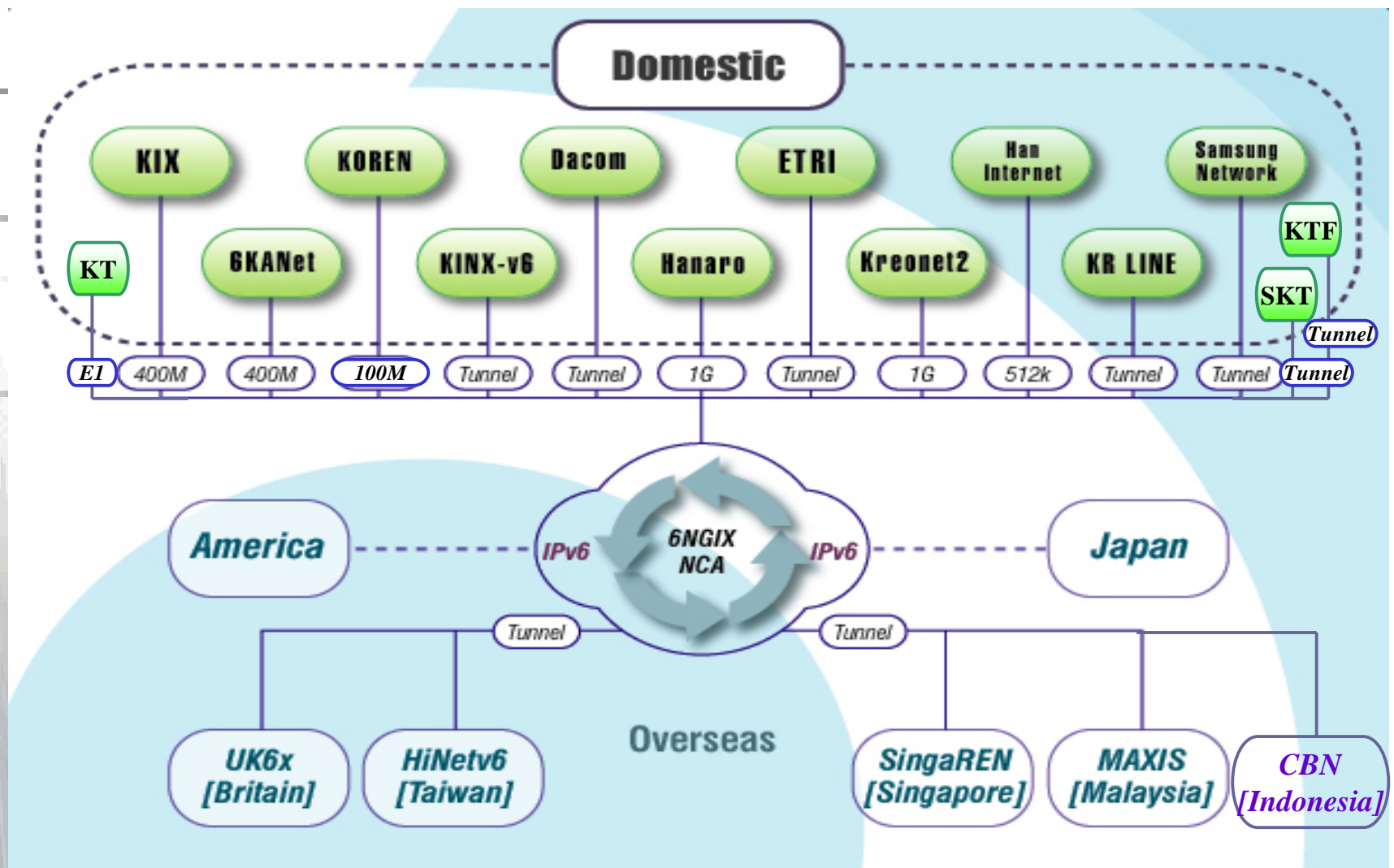
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IPv6 Forum Korea

- **More than 80 Companies and Orgs**
- **New Chairman : Hyung-Ho Lee, from 2006. 1.**

Ubiquitous Dream Exhibition

- In citizens future LIFE STYLE experience chance provision

- MIC building 1st Floor

- 6 companies Participated, KT, Samsung, LG, SKT, KTF, LGT

- Show ubiquitous advanced technology and skills
  - Home Viewer
  - Intelligent Refrigerator
  - Mirror Computer
  - Remote lecture
  - Intelligent robot
  - Next generation mobile communication

Ubiquitous Dream Exhibition(cont.)

- Open March, 2004
  - 2004. 3. 18 ~ 11. 12

- Total 59,520 people visit

- Important People
  - President of Korea
  - Intel APEC CEO
  - SONY CEO
  - MS CEO
  - Motorolla CEO
  - Qualcomm CEO
  - NTT CEO, etc

- www.ubiquitousdream.or.kr

• **H.P CEO Fiorina**

• **MS CEO Ballmer**

IPv6 Showroom

- Korea IPv6 Experience Sphere(2003. 10 ~)
  - Fully Renovated in 2004. 12.

- Provides IPv6 service experience space for the expansion of domestic IPv6 activities

- Exhibit IPv6 related organization's services and devices
  - Key IPv6 Service and Equipment in KR

International Cooperation

Global IPv6 Service Launch Event

- 2004. 1, Brussels Belgium
- KR-EU IPv6 Cooperation

59th IETF Meeting & Exhibition

- 2004.2 , Seoul
- IPv6 Standardization
- IPv6 Demo (Streaming, VoIP)

1st C-J-K NGI WG Meeting

- 2004. 3. KR, 2004. 11. JP
- 2005. Spring. CN

Global IPv6 Summit in Korea 2004

- 2004. 7, Seoul
- 3Days, Conference and Exhibition

2005 Plan

- **IPv6 with IT839 New Projects**
  - **WiBro(802.16e)**
  - **Home Network**
  - **VoIP**
  - **RFID/USN(Ubiquitous Sensor Network)**
  - **W-CDMA/CDMA**
  - **BcN(Broadband convergence Network)**

- **Accelerate IPv6 Network Deployment in Public Sector**

National Computerization Agency

Now, IPv6 is becoming

real key infrastructure for IT839

Thank You

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