

A large, stylized graphic of the text 'IPv6' in the background. The 'I' and 'P' are formed by overlapping newspaper clippings and documents. The 'V' is a solid, colorful shape. The '6' is a large, thin, white outline.

# *IPv6 Deployment Status in Korea*

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The 1st GLOBAL IPv6 Summit in AP*



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# Internet Status of Korea

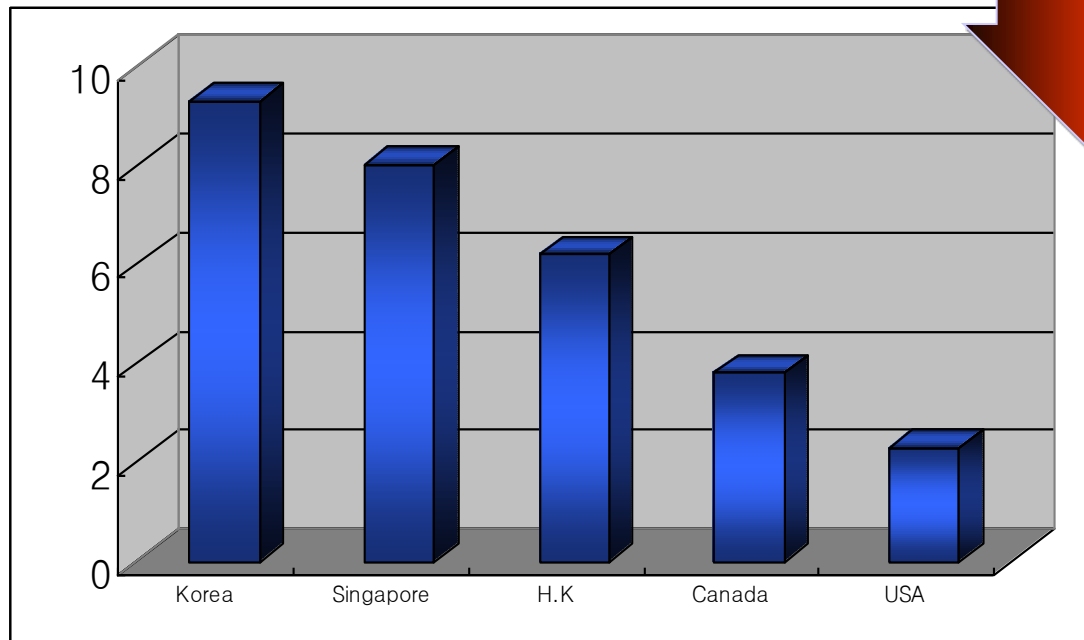
- ***Tremendous Growth of Internet***
  - 28 million of Internet users (2002. 1)
    - ⇒ about 60% of population
  - 8 million of subscribers of new high-speed Internet service (2002. 12)
    - ⇒ xDSL, CATV subscribers
  - 94 ISPs (Currently IPv4-based services)
  
- ***OECD(May 2001) : “Korea is the first to realize the highest high-speed internet access penetration rate in the world OECD 30 member countries”.***
  
- ***ITU(Sep. 2001) : “Korea ranked top in the penetration rate of High speed Internet”.***
  - Especially ITU pinpoint government-driven policy and unique residential pattern as key success factors of Korean Internet.

# Internet Status of Korea

## ■ *Increasing of New Demands*

- **Wireless Internet, Home Networking, Public Wireless LAN**

- ***Big potential for the New Internet***



High speed Internet Users per 100 person

- ◆ *Government Policy*
- ◆ *IPv6 Forum Korea*
- ◆ *Network deployment*
- ◆ *R&D Projects*
- ◆ *Trial services*
- ◆ *Standardization & International Cooperation*

# Government Policy

- *Minister of Information and Communication(MIC) officially declared the strong intention of IPv6 adoption (Feb. 2001)*
- *Initiated several IPv6 related projects since Feb. 2000*
  - IPv6 routers, IPv4/IPv6 translators, IPv6 Applications
- *Sponsored the setup of IPv6 forum Korea for promotion on March 2000*
- *Funding to develop IPv6-applied high speed Internet equipments*
  - It will include routers, IMT2000 terminals and information home appliances by investing 46.8 billion won of government budget and 36.8 billion won of private fund, a total of **83.6 billion won (us\$ 83 M) until 2003.**

# IPv6 Forum Korea



- *Launched at March 17, 2000 sponsored by government*
- *A consortium participating 71 member organizations for IPv6 from industrial bodies, research Institutes, Universities, etc*
- *Mission and Role*
  - Promote IPv6 in Korea
  - The center of IPv6 deployment in Korea
  - Give inputs to policy making in Korea
  - Discuss IPv6 standardization issues and strategy
  - Conference for promotion (e.g. Global IPv6 Summit)
  - Publishing text book, and webzin for IPv6
  - Education program

# Global IPv6 Summit (July 11~12, 2002 - Seoul)

## ■ Global IPv6 Summit Conference



Ki-shik Park



Latif Ladid



Steve Deering

MIC welcome address

## ■ IPv6 Tutorials



## ■ Global IPv6 Summit Banquet

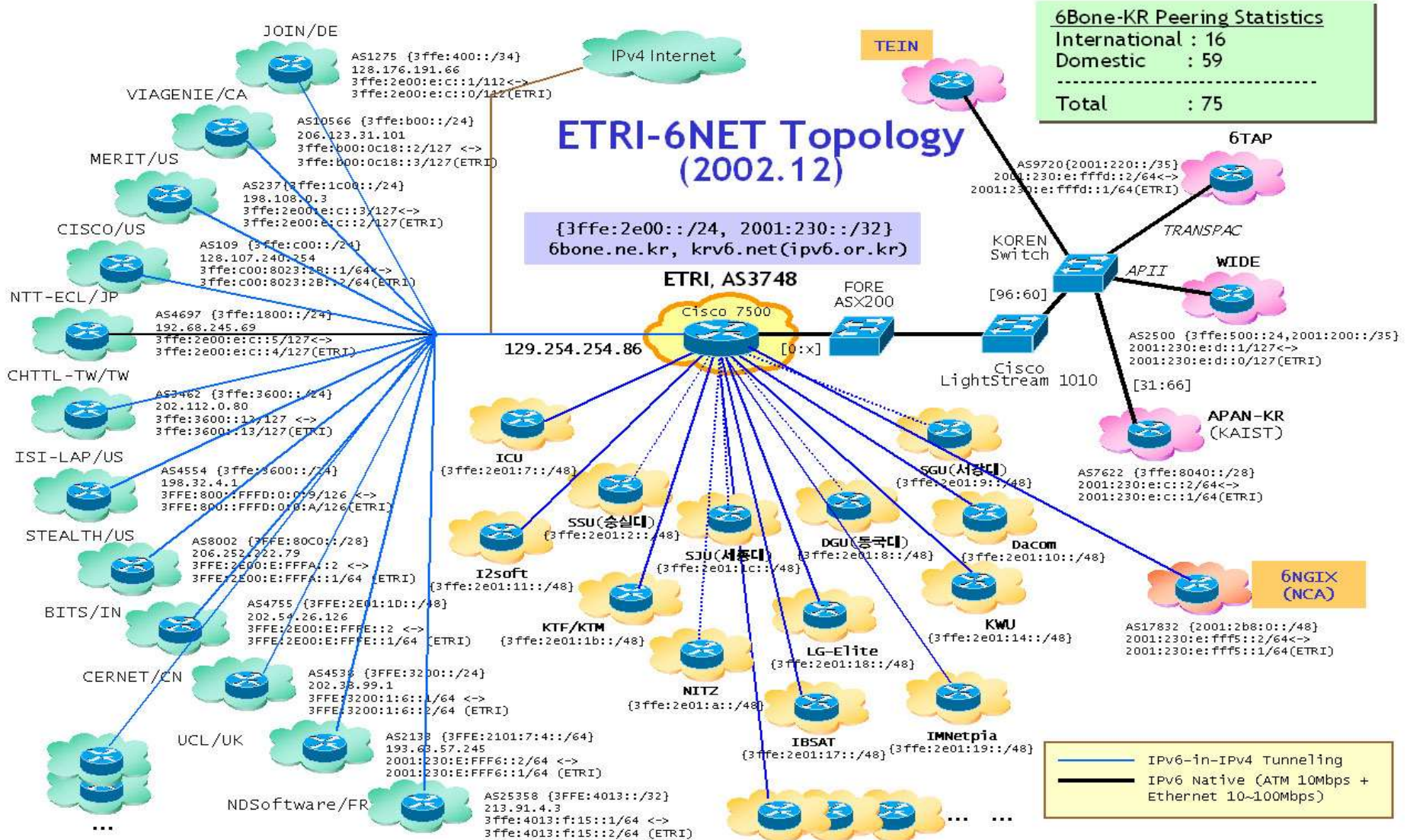




# IPv6 Network deployment

- **6Bone-KR (since 1998) ([www.6bone.ne.kr](http://www.6bone.ne.kr))**
  - First IPv6 experimental network in Korea (operated by ETRI)
  - 70+ organizations has involved in 6Bone-KR
- **KOREN IPv6 (since 1999)**
  - First native IPv6 network in Korea (operated by KT/NCA)
  - R&E IPv6 network
- **TEIN IPv6 (Since 2001)**
  - TEIN: TransEurasia Information Network
  - Continental IPv6 network between Asia and Europe
- **6NGIX (Since 2001)**
  - IPv6 Internet Exchange in Korea (operated by NCA)
- **IPv6 address in Korea**
  - 6Bone: 2 pTLAs
    - ⇒ ETRI/KR, `3ffe:2e00::/24` (98/5), APAN-KR, `3ffe:8040::/28` (99/7)
  - Production Address: 15 sTLAs
    - ⇒ Most of ISPs in Korea have a IPv6 sTLA (KT, Hanaro, SKT, Hitel, etc)

# 6Bone-KR Topology



# 6Bone-KR Service

## ■ *Address Allocation Service*

- IPv6 Experimental Address : <http://www.6bone.ne.kr>
- IPv6 Public Address : <http://www.krv6.net/krv6.html>

## ■ *IPv6 Application Service*

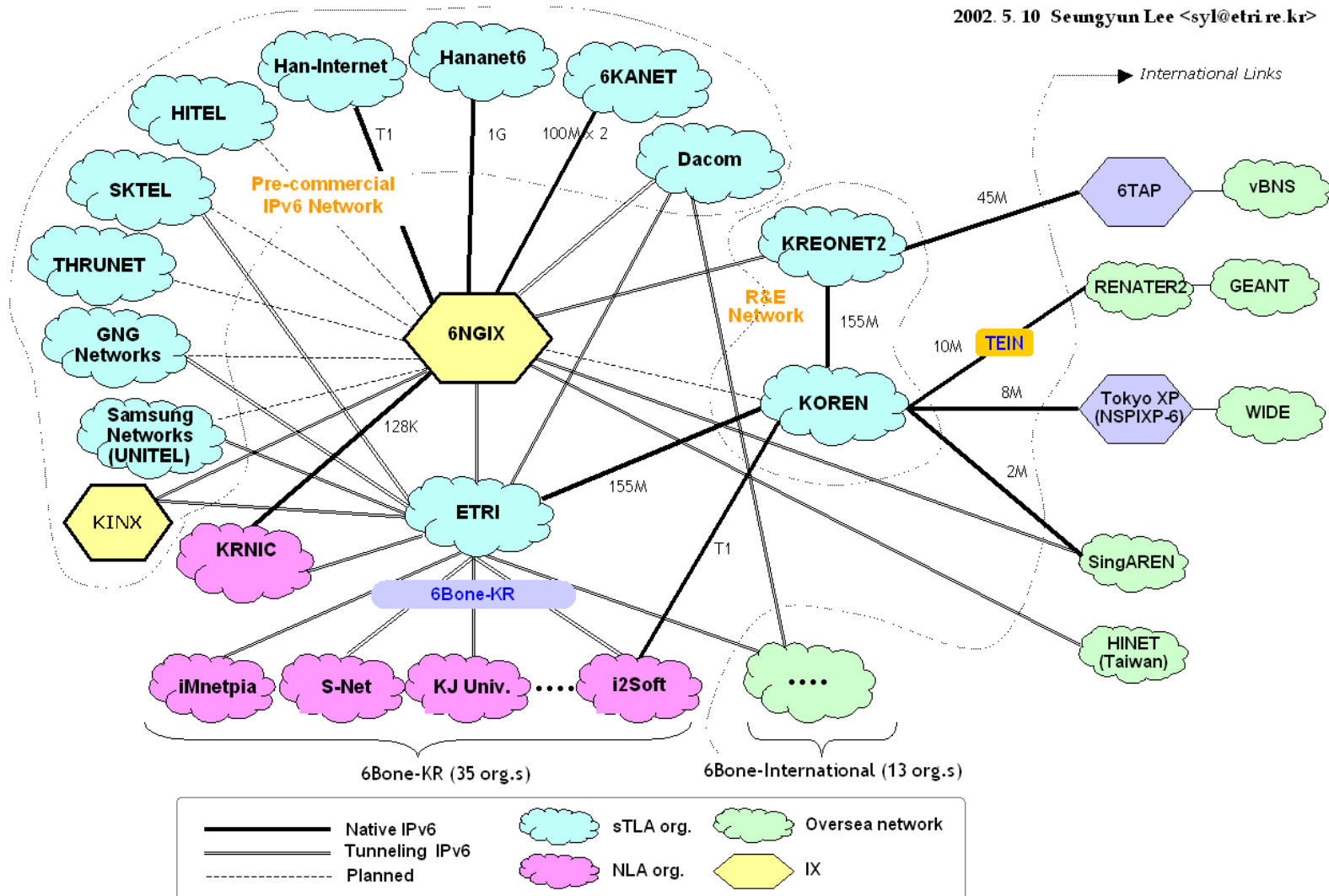
- DNS Service (IPv4 DNS with IPv6 Records(AAAA))
- IPv6 Native Web Service
- IPv6 Video Streaming Service (<http://v6stream.6neat.net>)
- IPv4/IP6 Translation Service based on NAT-PT
- Tunnel Broker Service

## ■ *Network Monitoring Service*

- MRTG (<http://www.6bone.ne.kr/mrtg/mrtg-index.html>)
- AS-Path-Tree (<http://www.6bone.ne.kr/bgp4+/ASpath-tree/htdocs-new/bgp.html>)
- Looking Glass

# Korean IPv6 Network Status

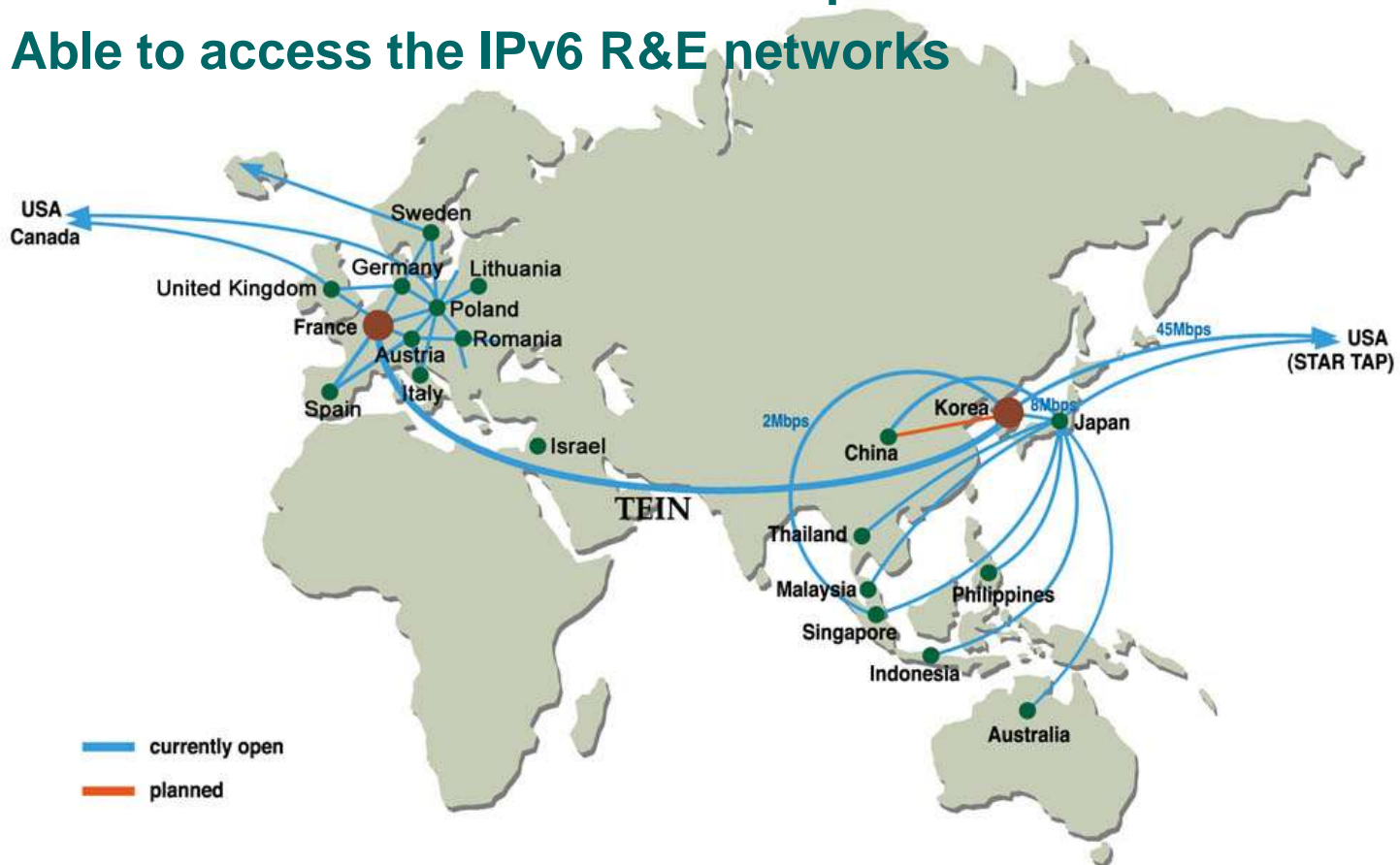
2002. 5. 10 Seungyun Lee <syl@etri.re.kr>



# TransEurasia Network (TEIN)

## ■ TEIN IPv6

- NGI infra. between Asia and Europe
- Able to access the IPv6 R&E networks



# IPv6 R&D Projects

## ■ *KRv6 Project (since 2001)*

### ○ *6TALK (ipv6 TrAnsLator of Krv6 )*

⇒ *Developing the IPv6 transition strategies and translation technologies*

### ○ *6ANTS (www.6ants.net)*

⇒ *Developing the IPv6-based Auto-configuration Networking Technologies*

### ○ *6NEAT (www.6neat.net)*

⇒ *Developing the IPv6 network infrastructure and IPv6 Applications*

## ■ *Other projects*

⇒ *IPv6 Routers, 3G, Home Networking*

⇒ *IPv6 Applications (VoIPv6, Multimedia Multicasting ..)*

# IPv6 Trials in Korea

## ■ *IPv6 Application Development*

- IPv6 Multicast Conferencing (ETRI, 2002)
- IPv6 Video Streaming (ETRI, 2002)
- VoIPv6 (NCA, 2002)

## ■ *IPv6 Networking Service*

- Public IPv6 Wireless LAN Service (ETRI, Hanaro, 2002)
- IPv6 Home Networking Protocol (ETRI, 2002)

## ■ *IPv6 Showroom in Korea (\*planned)*

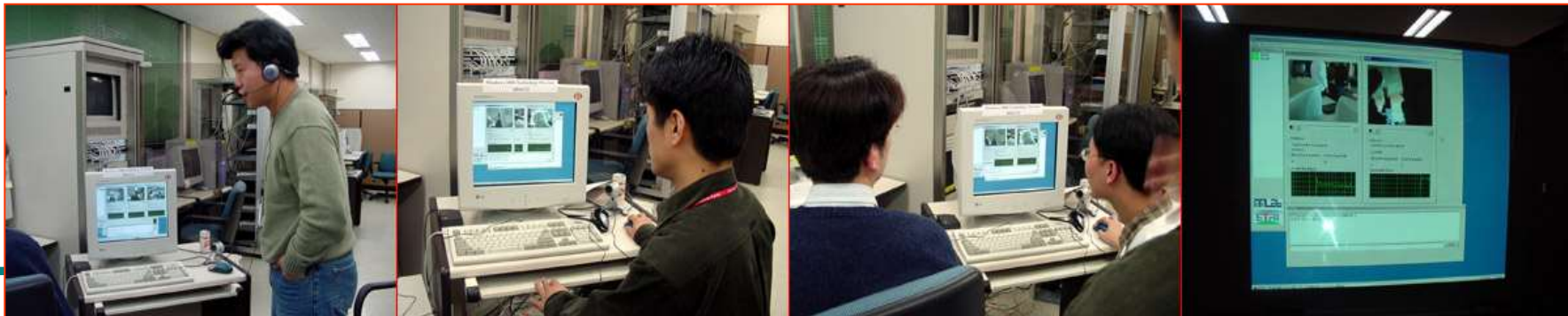
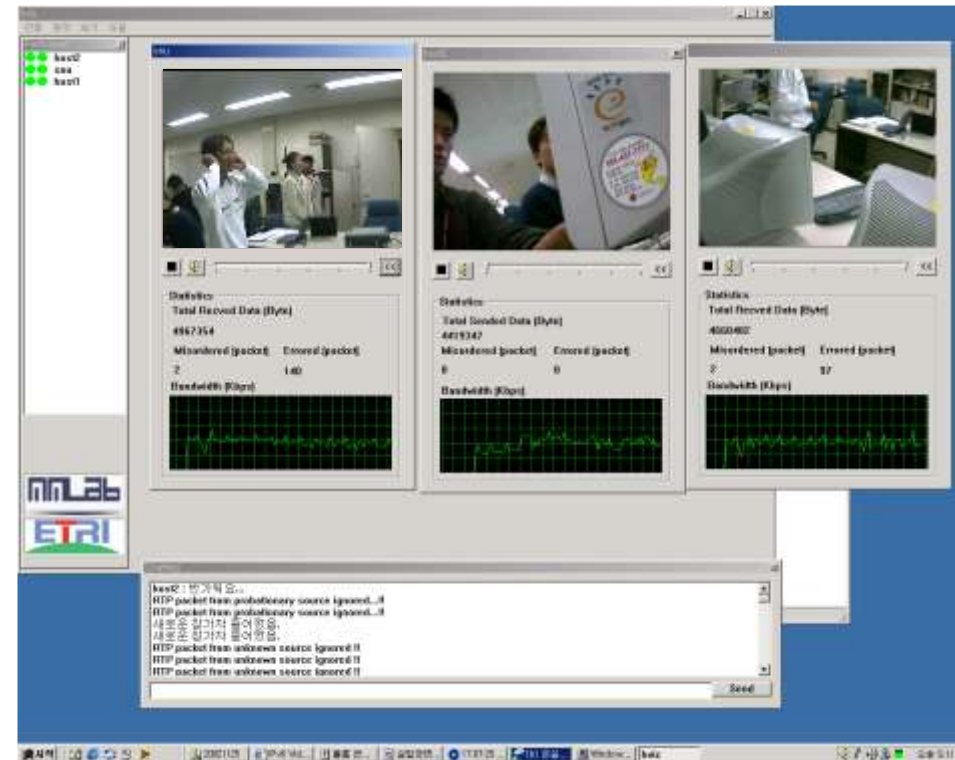
- (will be operated by NCA)

## ■ *KOREAv6 project*

- Global IPv6 Trail Service for real deployment in Korea

# IPv6 Multicast Conferencing System

- **HVCT (High-quality video conferencing tools)**
  - MPEG-based Real-time Encoding and Decoding for Video/Audio
  - Multiparty Conference
  - Text Messenger support
  - Traffic Monitoring





# IPv6 Multicast services over TEIN (ETRI-UCL-SNU)

**RENATER**

• IPv6 Conferencing system

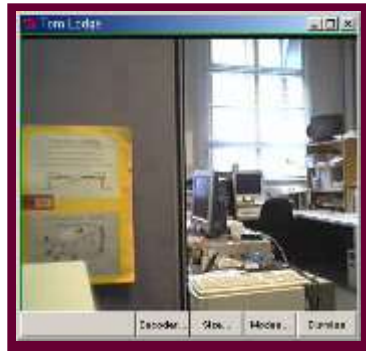
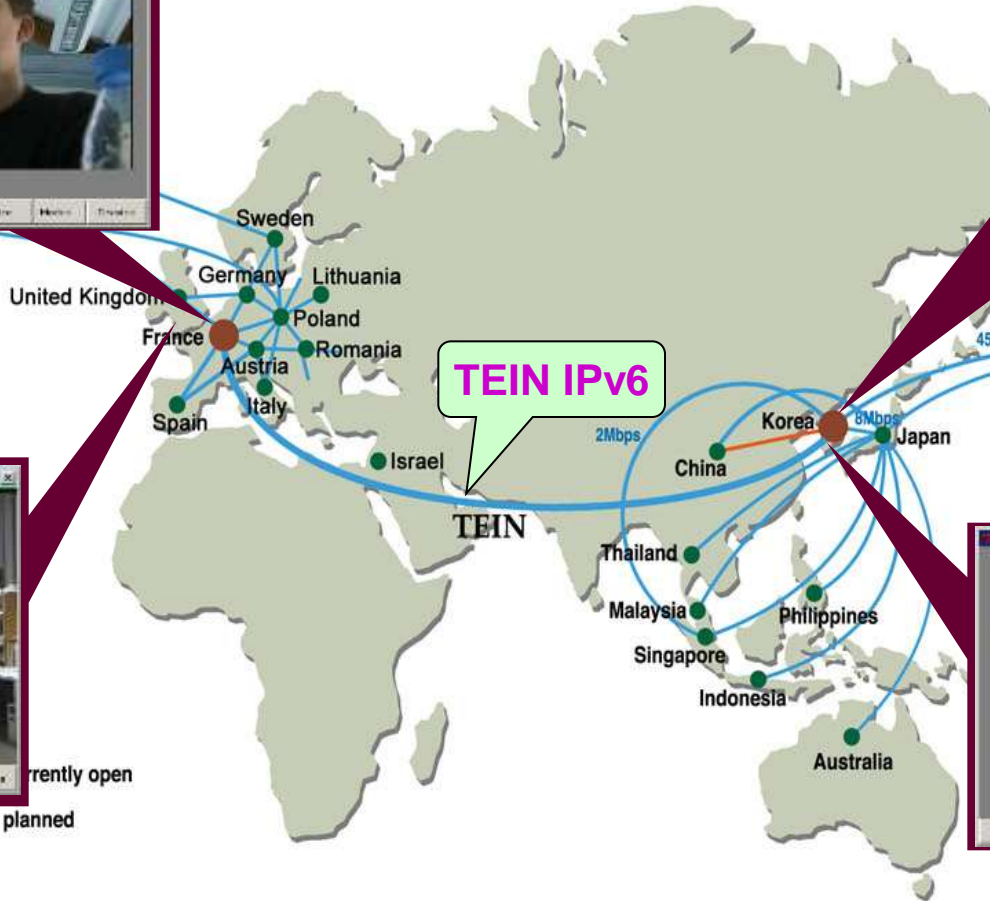
**SNU**



Canada



(STAR TAP)



**UCL**

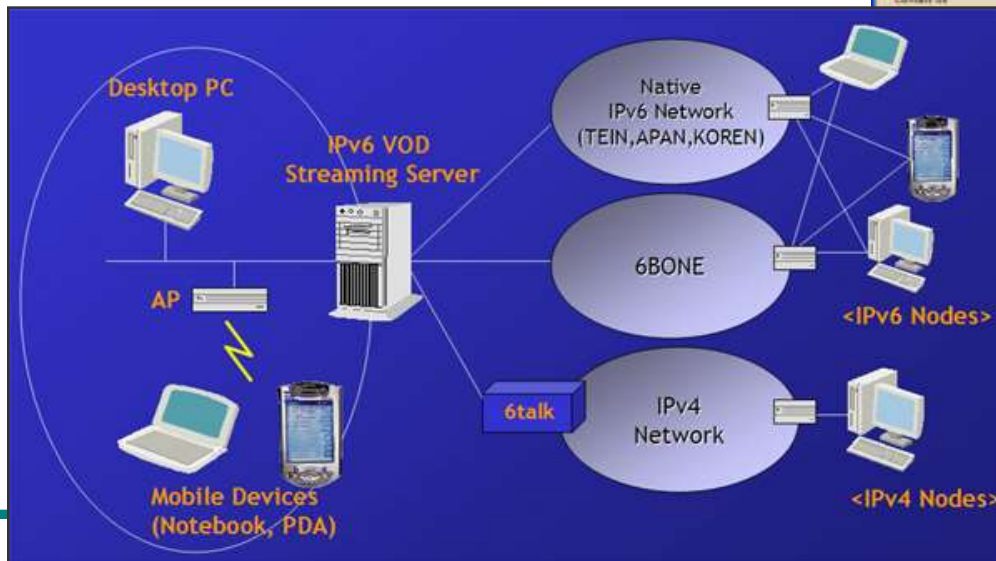
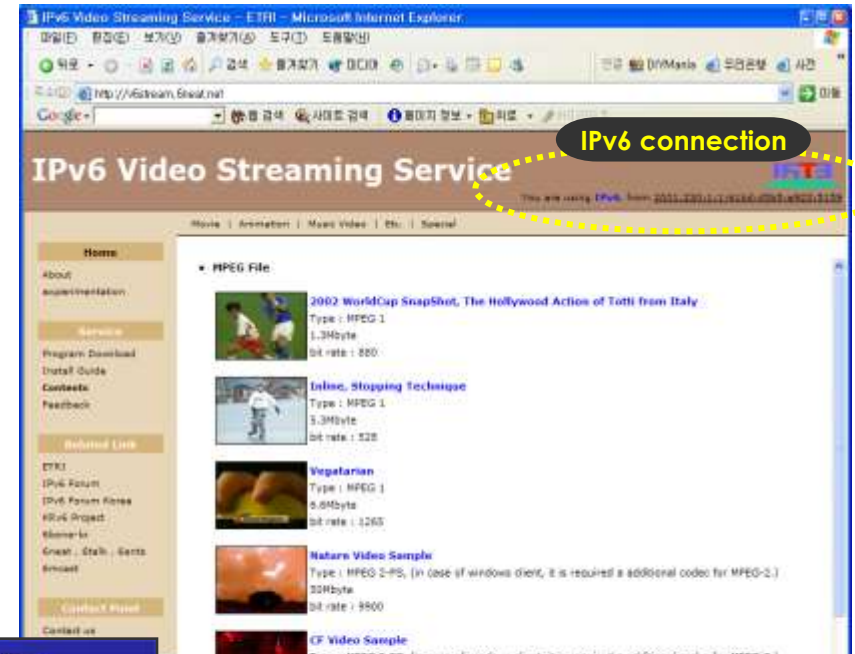
currently open  
planned



**ETRI**

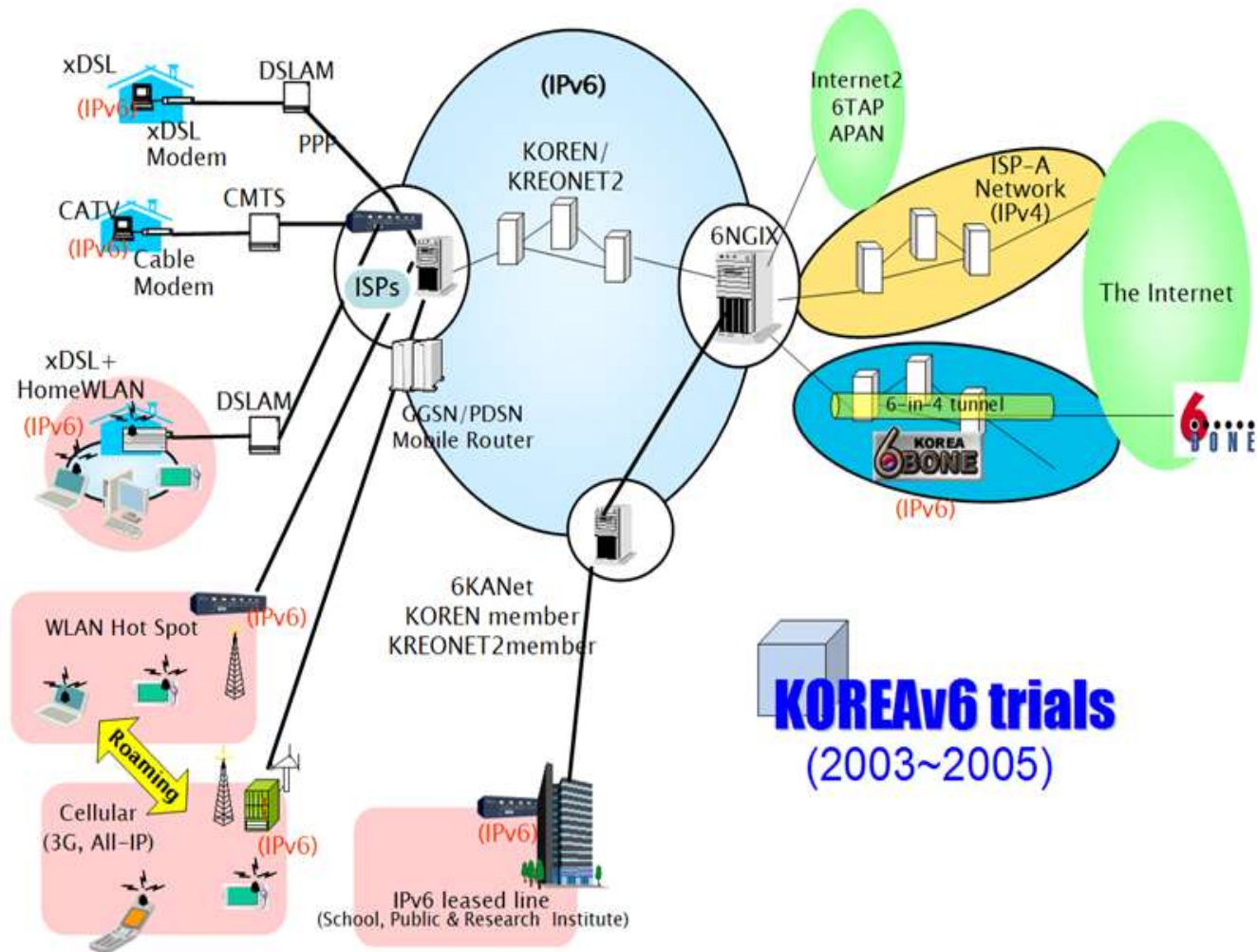
# IPv6 Video Streaming

- **IPv6 Real-time Streaming**
  - MPEG-1,2,4 video support
  - MP3 streaming support
  - IPv6, IPv4 service
- **International Experiments**
  - 6Bone, TEIN
  - IST2002 demo (Nov 2002)



# KOREAv6 Trial Service

## ■ Global IPv6 Trial Service in Korea (2003~2005)



# International Cooperation

## ■ *Cooperative works with IPv6 Forum*

- International Promotion of IPv6

## ■ *European Cooperation*

- Collaborative Research Works in EC-IST projects
  - ⇒ *6WINT Project (2001~2002)*
  - ⇒ *6NET Project (2002~now)*

## ■ *Asian Cooperation*

- KJC cooperation
  - ⇒ *Korea-Japan-China cooperative works (2002~)*
  - ⇒ *Cooperative standardization works on NGI technologies (2002~)*
- Cooperative Promotion
  - ⇒ *with IPv6 Promotion Council, Japan (2002~)*
  - ⇒ *with IPv6 Forum Taiwan (2002~)*

# Conclusion

- ✓ *IPv6 is a Key-player to realize the Worldwide Next Generation Internet*
- ✓ *Korean Government is already aware of necessity of IPv6 in order to become a Great Power*
- ✓ *Now, it's the time to adopt the IPv6 into the commercial domain*
  - ✓ (Of course, we need to consider the Business Model of IPv6 ...)