

IPv6 Testing Activities and Market Perspective in Taiwan

For Belgian IPv6 Event

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Chunghwa Telecom Labs.



NIC/IPv6 Steering Committee
Standard & Testing Division

<http://interop.ipv6.org.tw>
<http://interop6.ipv6.org.tw> (v6 only)



中華電信股份有限公司
Chunghwa Telecom Co., Ltd.

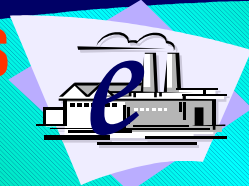
Agenda

- IPv6 in Taiwan
- IPv6 Testing Activities and Market Perspective in Taiwan
- IPv6 in CHT

“Challenging 2008”

2002-2007 Six-Year National Development Projects

e-Business



e-Government

ez-Life



e-Taiwan Project



Broadband to the Home



e-Transportation

5 Flagship Plans

- **6 Million Broadband Subscribers**
- **Broadband Wireless Access**
- **IPv6**
- **Broadband to Mid- and Small-Enterprise**
- **Secure Environment for Information Communications**

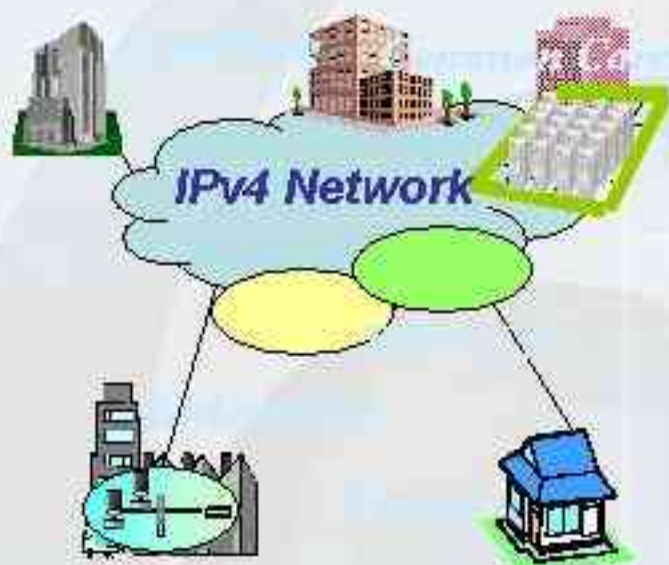
e-Taiwan Project (Cont.)

IPv6 Deployment & Promotion Plan

- ❑ Aims to improve the public IPv6 Internet infrastructure and the state's IT competitiveness**
- ❑ 6-year project (2002-2007)**
- ❑ Major focuses**
 - Government and non-government IPv6 resources integration**
 - Local developed/deployed HW/SW to support IPv6**
 - Internet infrastructure to support IPv6**
 - IPv4/v6 transition mechanisms to be developed/deployed**
 - IPv6 education and human resources development**
 - International collaboration and participation**
 - IPv6 embedded IA, 3G, WLAN products**

IPv6 Deployment & Promotion Plan

2002



- . Insufficient address space
- . Poor mobility & security
- . Limited application

2007

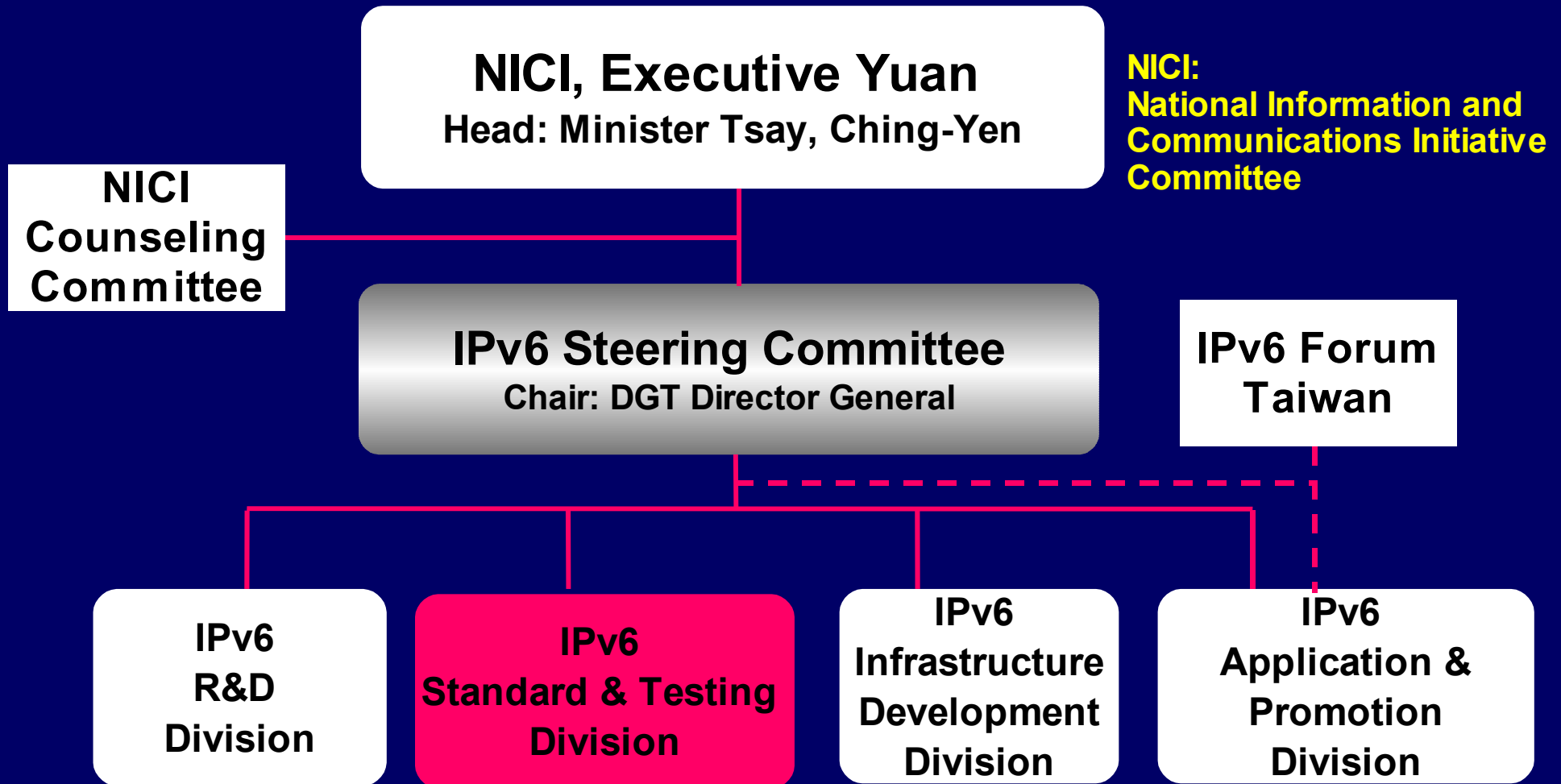


- . Get rid of address space limitation
- . Enhanced mobility & security
- . Encouraged IP-based application

IPv6 Deployment & Promotion Plan

NICI IPv6 Steering Committee

Established in October 2001



Led by CHTTL and III (Institute for Information Industry)

IPv6 Deployment & Promotion Plan

IPv6 Steering Committee

❑ R&D Division

- Led by NTPO (National Telecom Project Office), NSC
- Killer Applications, Transition, Mobility, 6ADSL, Security

❑ Standard & Testing Division

- Led by CHITL and III (Institute for Information Industry)
- National testing lab, IPv6 HW/SW product certification

❑ Infrastructure Development Division

- Led by NCHC, Academia Sinica, Ministry of Education
- National backbone upgrade, Assisting ISPs to move forward

❑ Application & Promotion Division

- Led by ITRI and TWNIC
- Training, Conferences, Journals, e-News, Fund raising
- Work closely with IPv6 Forum Taiwan

IPv6 Steering Committee

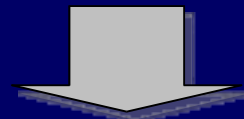
Major Milestones

Phase I

(- 2002)

IPv6 Steering Committee

IPv6 Forum Taiwan

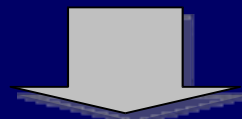


Phase II

(2003 - 2005)

IPv6 transition technology development

Native IPv6 network environment deployment



Phase III

(2006 -2007)

Nationwide pure IPv6 network completed

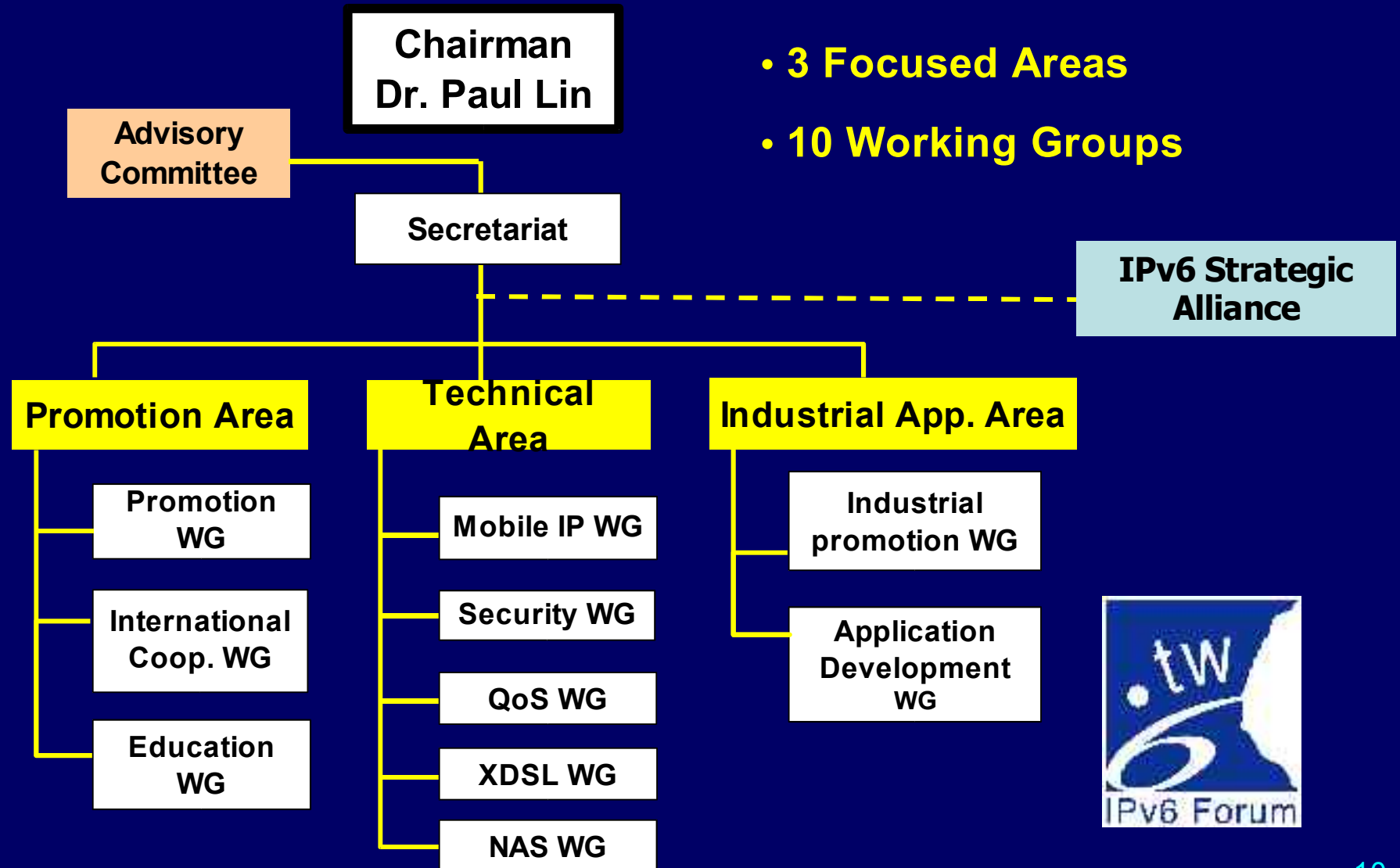
IPv6 to replace IPv4

IPv6 Forum Taiwan

- Established in April, 2002
- Chaired by Dr. Paul Lin, CCL/ITRI
- A membership organization (25 members)
- To improve market and user awareness of IPv6
- Organized by two nonprofit organizations
 - **ITRI** (Industrial Technology Research Inst.)
 - **TWNIC** (Taiwan Network Information Center)
- The window of Taiwan IPv6 activities
 - <http://www.ipv6.org.tw>
 - Published Taiwan's first **IPv6 Magazine**
 - Formed **IPv6 Industrial R&D Alliance**



IPv6 Forum Taiwan (Cont.)



Agenda



IPv6 Testing Activities and Market Perspective in Taiwan

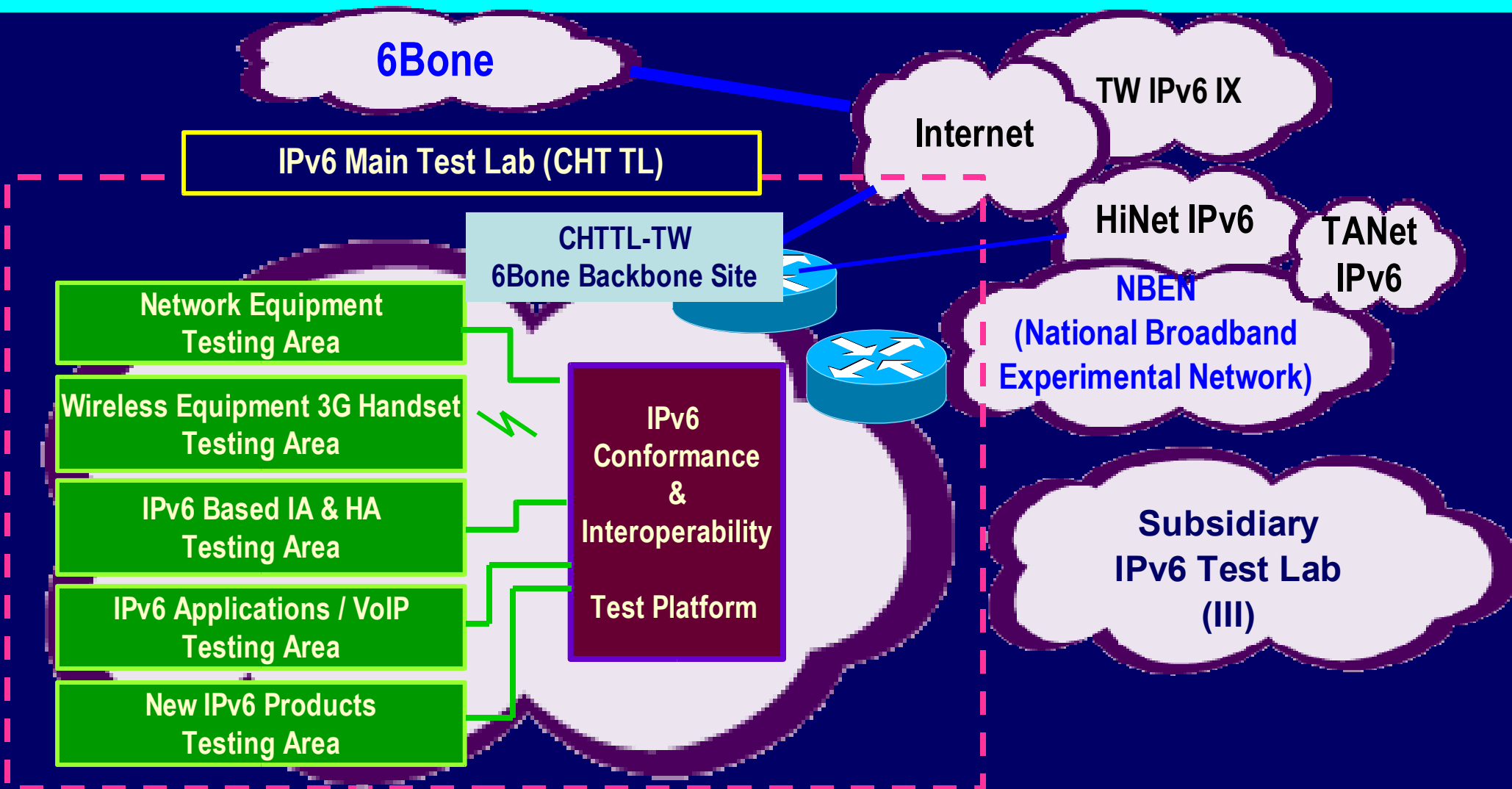


IPv6 Standard and Interoperability Testing Lab (SITL) Founded in July 1, 2003

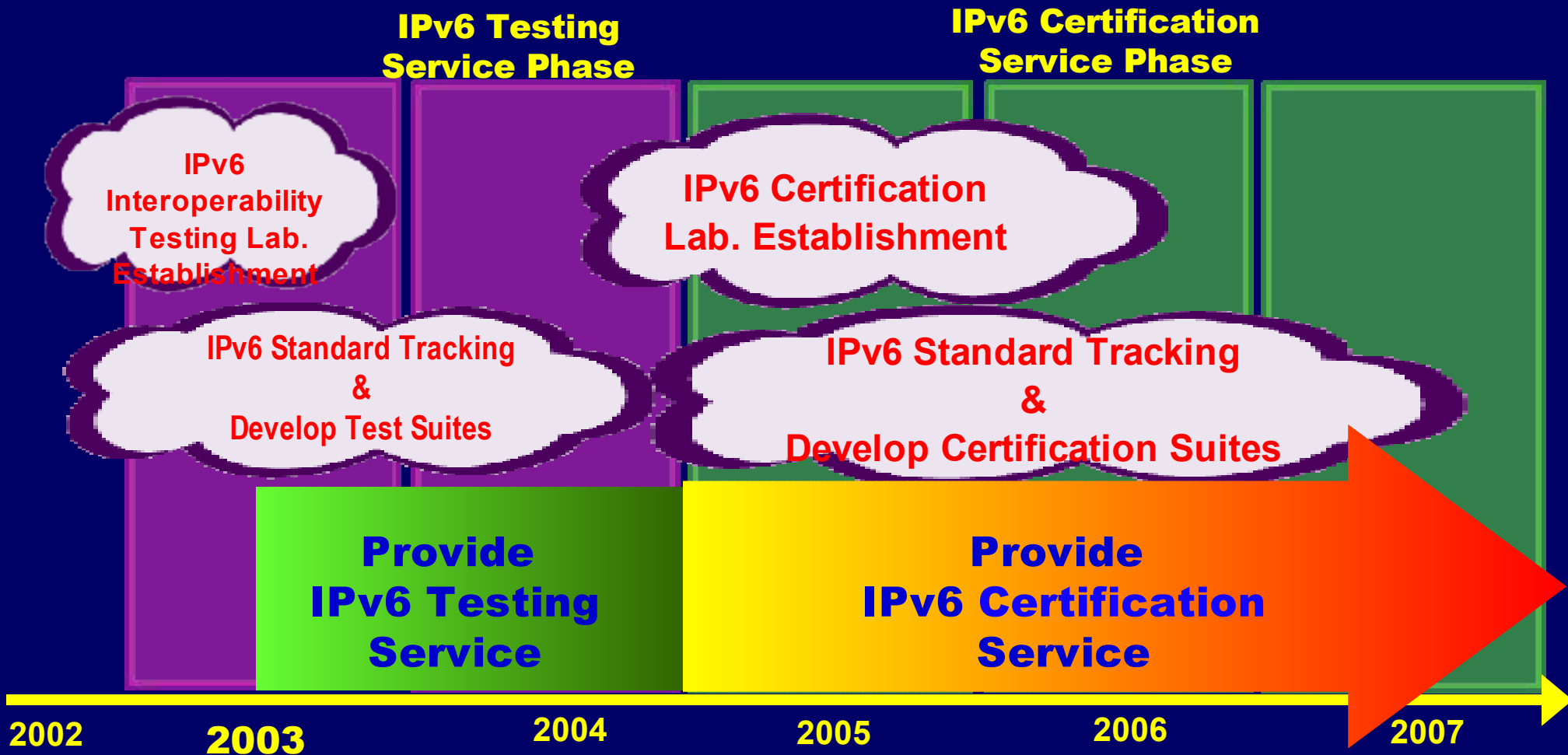
Goals

- To support local vendor in IPv6
Testing before products released
- To help the local vendor to get “IPv6
Ready Logo”
- To speed up IPv6 services in Taiwan
- To share IPv6 testing technology to
industry

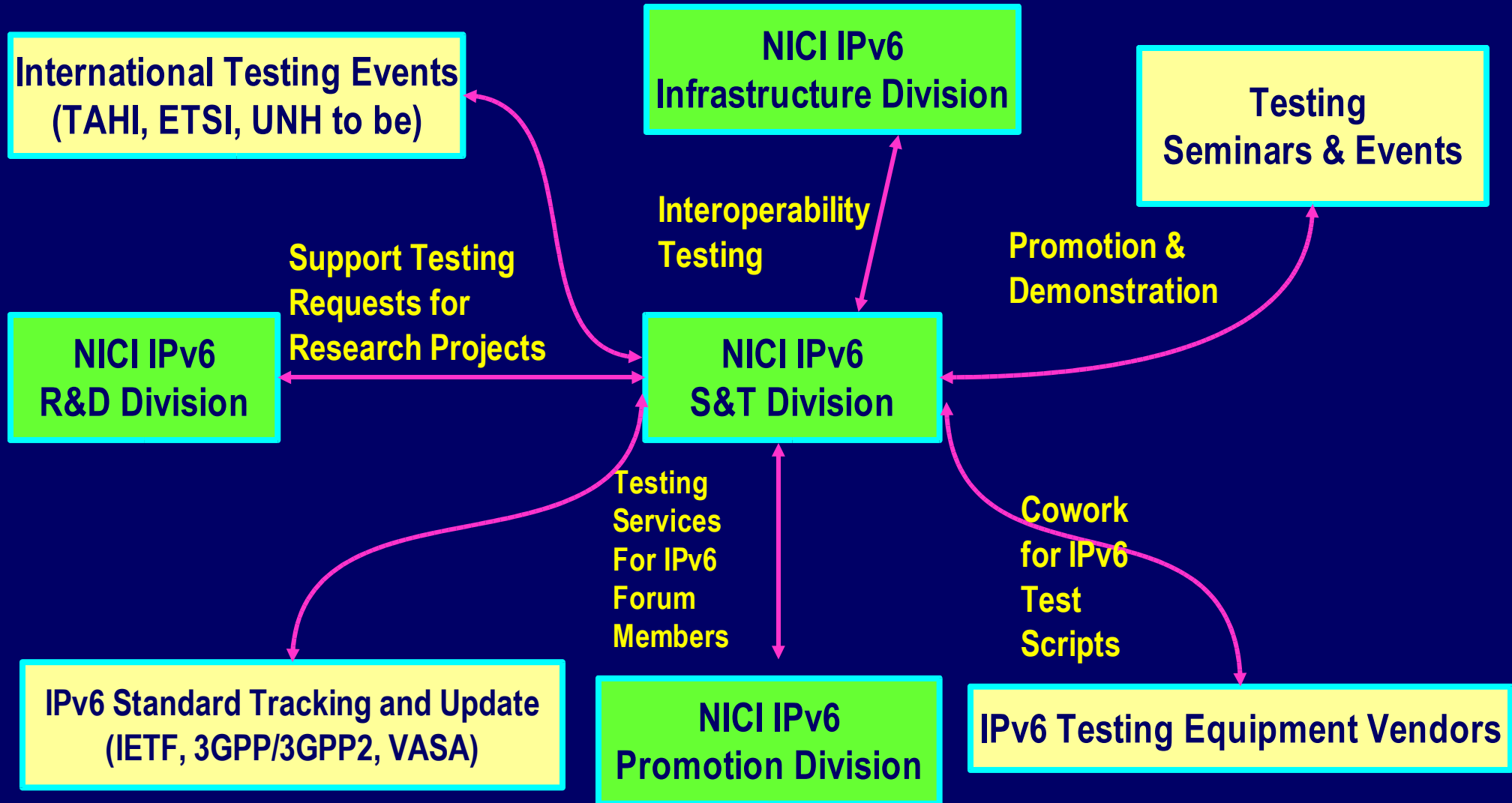
NICI IPv6 SITL Network



IPv6 Testing & Certifying Roadmap



Relationship with Other Divisions



General Guide

☐ Service Items

IPv6 Conformance Test

IPv6 Performance Test

IPv6 Interoperability Test

☐ Cost

Free in Service Promotion Phase

What we have?

- **Testing Tools:**

- Adtech AX4000 (Interface 10M/100M/Gbits Ethernet and POS)
- Smartbit 6000B (Interface 10M/100M/Gbits Ethernet and POS)
- TAHI Conformance Tools

- **Interoperability Testing Platforms:**

- CISCO Routers
- 6Wind IPv6 Edge Routers
- Juniper Routers
- IPv6 Server Gateway (Implemented by CHT-TL)
- IPv6 Server Farm (http, chat, news, tunnel broker, nat-pt, ...)
- Sun Solaris
- HP
- Microsoft Windows
- Linux
- FreeBSD
- IPv6 Public Multimedia Phone (Implemented by CHT-TL)

Participants

- ASKEY RT210W IPv6 WLAN AP



- NEC Router Series



- CISCO router and Aironet 1100



- CHTTL IPv6 Public Multimedia Payphone



Next Participants

- Intel



- Dlink



- ACCTON



- DrayTek Corp.



NICI IPv6 SITL



NICI IPv6 SITL Opening Ceremony

Time : August 12, 2003 1:30 p.m. ~ 3:30 p.m.

Place : Chunghwa Telecom Laboratories (CHT-TL)

Participants : 130

Information

National Information and Communications Initiative Committee (NICI) today announced its IPv6 Standard and Interoperability Testing Lab (SITL) in Taiwan. The opening ceremony was held at Chunghwa Telecommunication Laboratories, Taoyuan, Taiwan. Dr. Ching-Yen Tsay, Head of the NICI IPv6 Steering Committee (IPv6 SC), and Dr. Hiroshi Esaki, Chairman of the IPv6 Ready Logo Program Committee, along with other leading industry vendors attended the ceremony.

Opening Ceremony Activities



Cooperation(1)

TAHI Project Japan



JP-TW IPv6 Testing Cooperation



NICI IPv6 Standard & Testing
Division, Taiwan, ROC.



NICI IPv6 Standard & Testing Division

Cooperation(2)

Cisco



IPv6 Routing Technique
Cooperation



NICI IPv6 Standard & Testing
Division, Taiwan, ROC.



NICI IPv6 Standard & Testing Division



Cooperation(3)

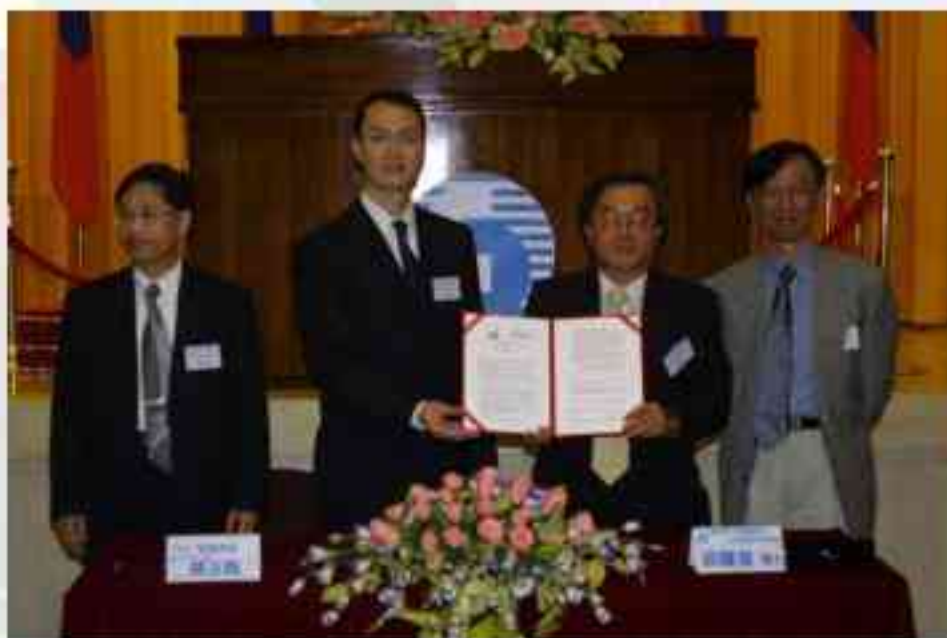
SPIRENT



IPv6 Testing
Technique Support Cooperation



NICI IPv6 Standard & Testing
Division, Taiwan, ROC.



NICI IPv6 Standard & Testing Division

CHT Participated in the ETSI 1st IPv6 Multi-site Remote Test



Activities between JP & TW

CHTTL participated in TAHI event (Jan. 2003)



The 1st JP-TW IPv6 Co. Meeting (Dec. 2002)



The 2nd JP-TW IPv6 Co. Meeting (Feb. 2003)



Agenda

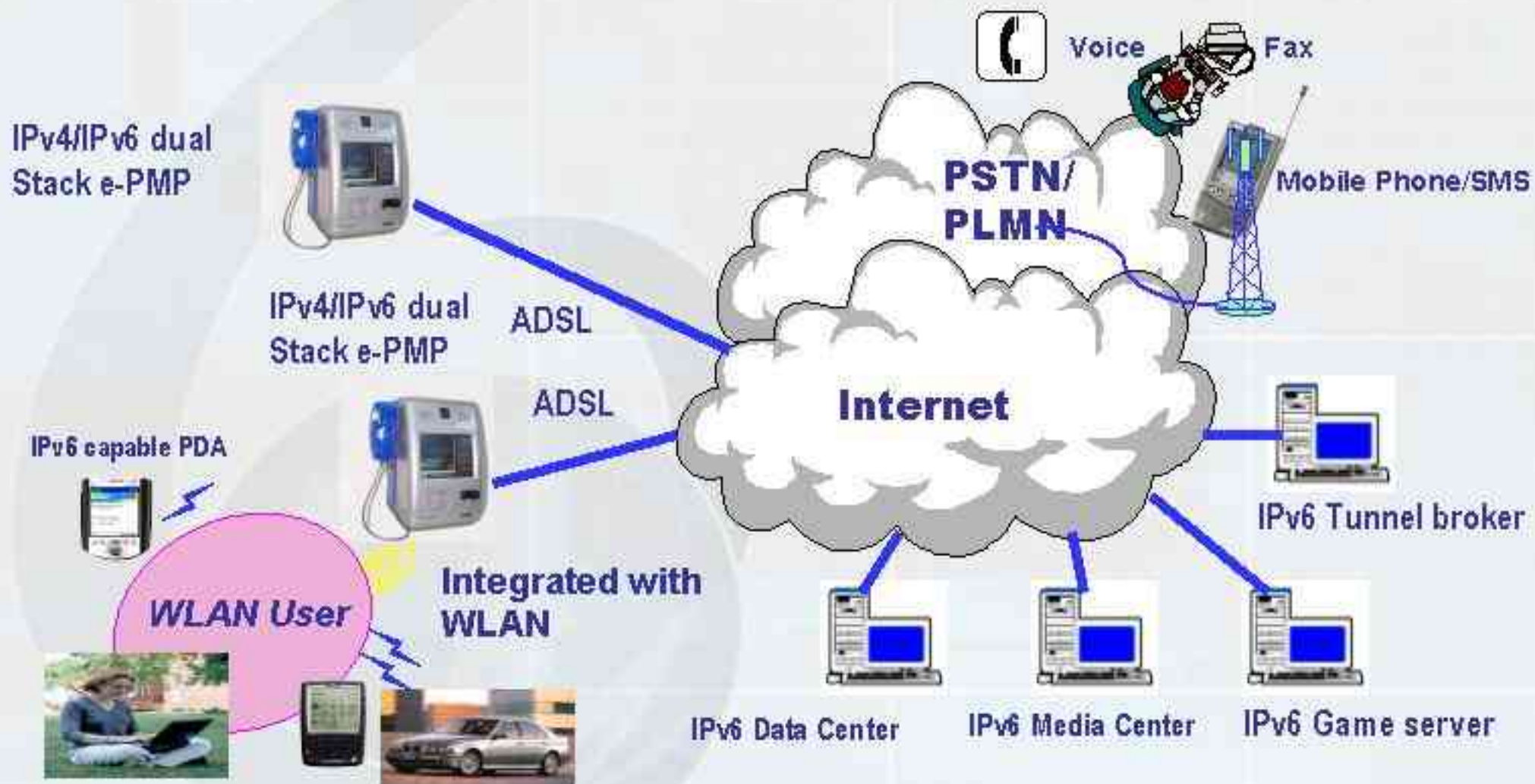
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IPv6 Public Multimedia Payphone



- **Deployed at Public Area (Airport, Train Station, ...)**
- **Charged by IC Card (Pre-paid)**
- **Provide Voice Services and IPv6 Internet Services (email, photo, ...)**
- **Wireless LAN Inside**

Applications of IPv6 Public Multimedia Payphone

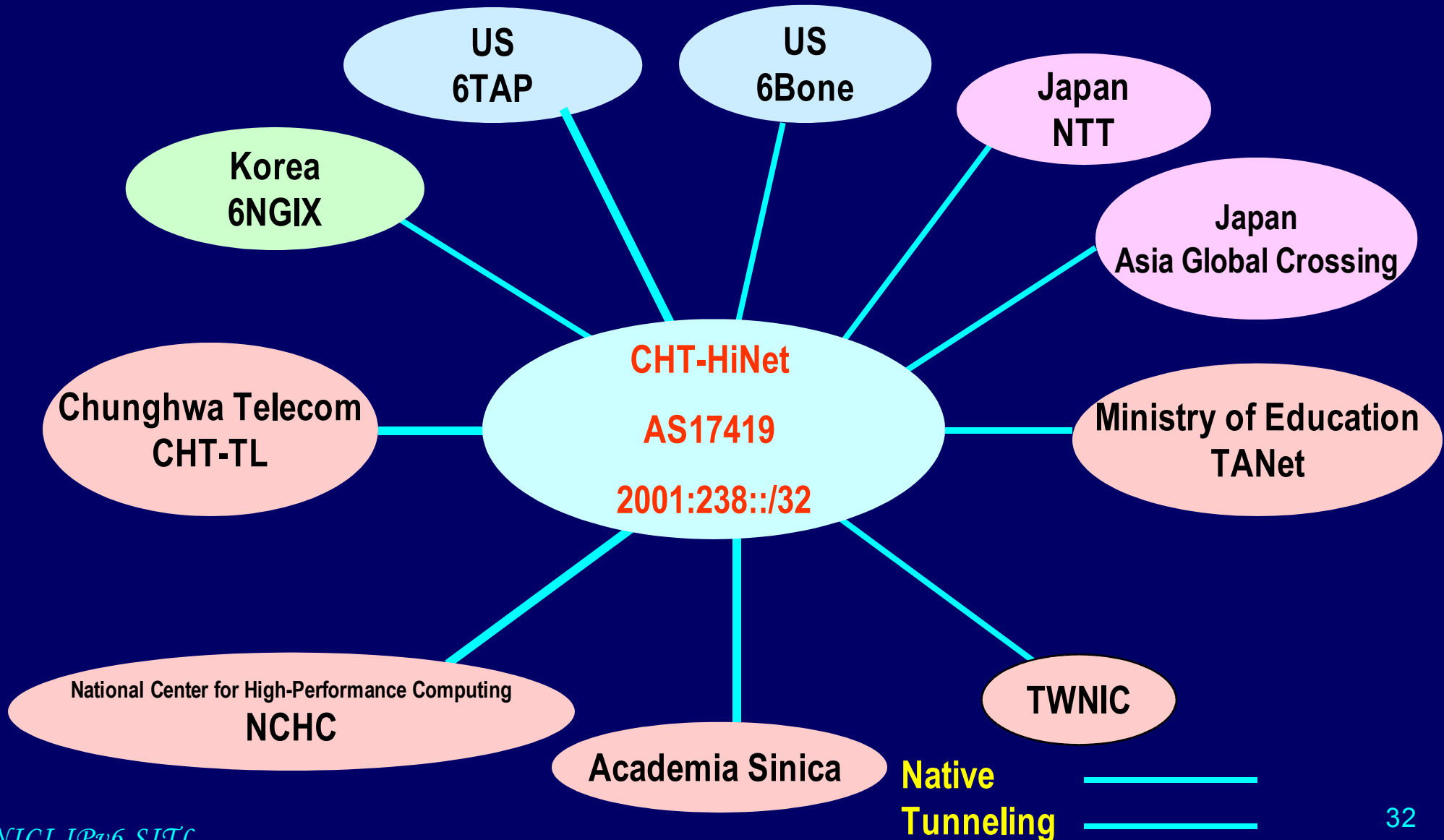


Main Services of IPv6 Public Multimedia Payphone



HiNet (CHT ISP)

IPv6 Domestic and International Peering

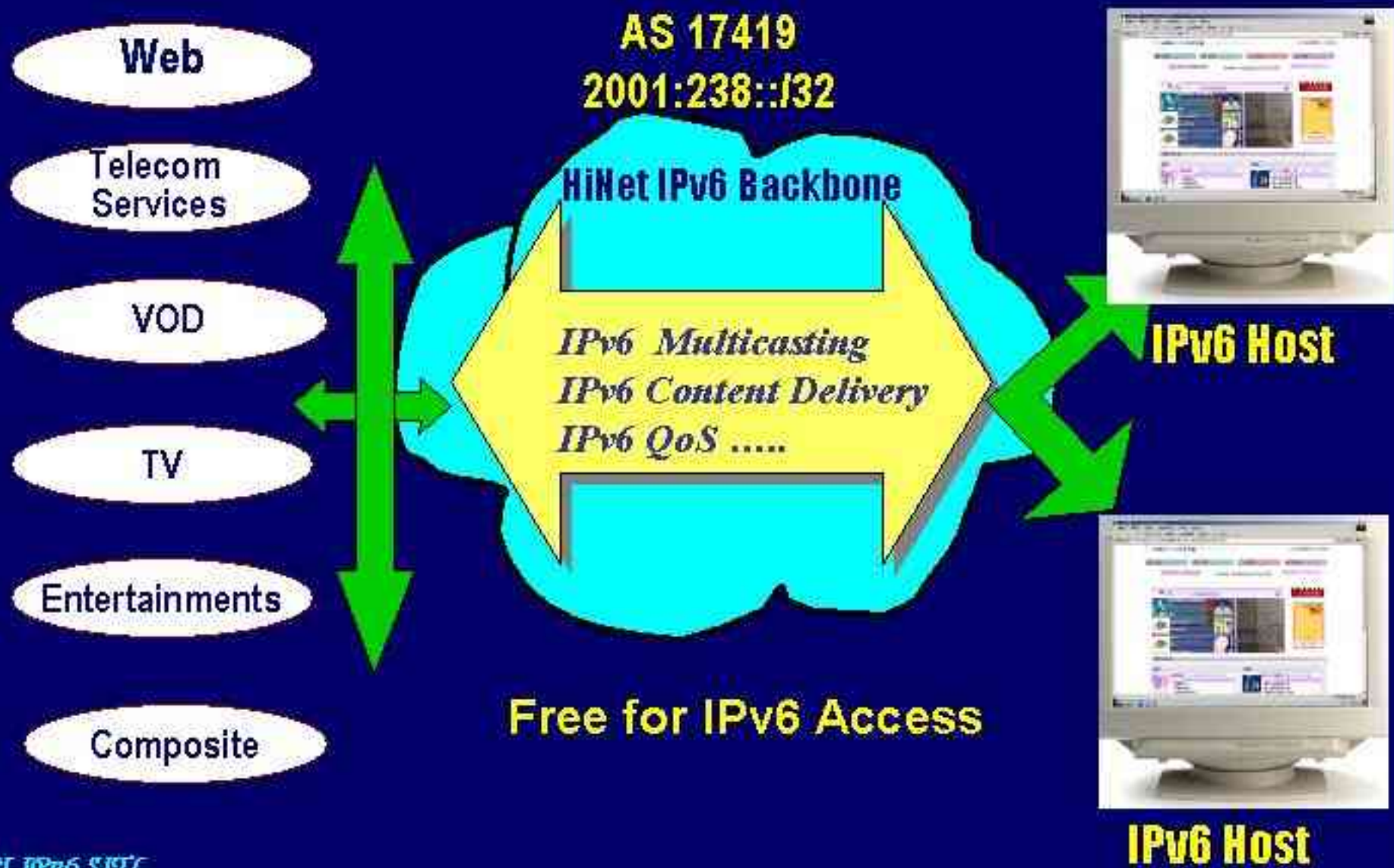


HiNet IPv6 Network Services

CHT IPv6 services launched since July 1, 2001

- **WWW** **www.ipv6.hinet.net** (Dual-stack IPv4/IPv6)
- **DNS** **dns.ipv6.hinet.net** (Dual-stack IPv4/IPv6)
- **Multimedia Server** (Dual-stack IPv4/IPv6)
- **Looking-Glass** (Dual-stack IPv4/IPv6)
- **Tunnel Server** (Dual-stack IPv4/IPv6)
- **MRTG Traffic Monitoring Server** (Dual-stack IPv4/IPv6)
- **Game Server** (trial)
- **Native IPv6 DNS Server** (trial)

HiNet IPv6 Multimedia Services



HiNet IPv6 Multimedia Services

Including :

- Movie
- Television
- Entertainments
- Composite



Thank You.

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