IPv6 R&D and Deployment Status in Korea

Feb. 22. 2005.

Sang-Chul Shin
NCA, KOREA

한국전산원
National Computerization Agency

Contents

- Introduction
  - About NCA
  - National IPv6 R&D Strategy in Korea
- IPv6 R&D Staus in Korea
  - Projects
  - Equipments
  - Standards
- IPv6 Promotion & Deployment
  - KOREAv6 Project
  - IPv6 Network
  - IPv6 Portal Service/Deployment
  - International Collaboration

INTRODUCTION

한국전산원
National Computerization Agency

APRICOT 2005 Feb. 18 ~ 25

About NCA General

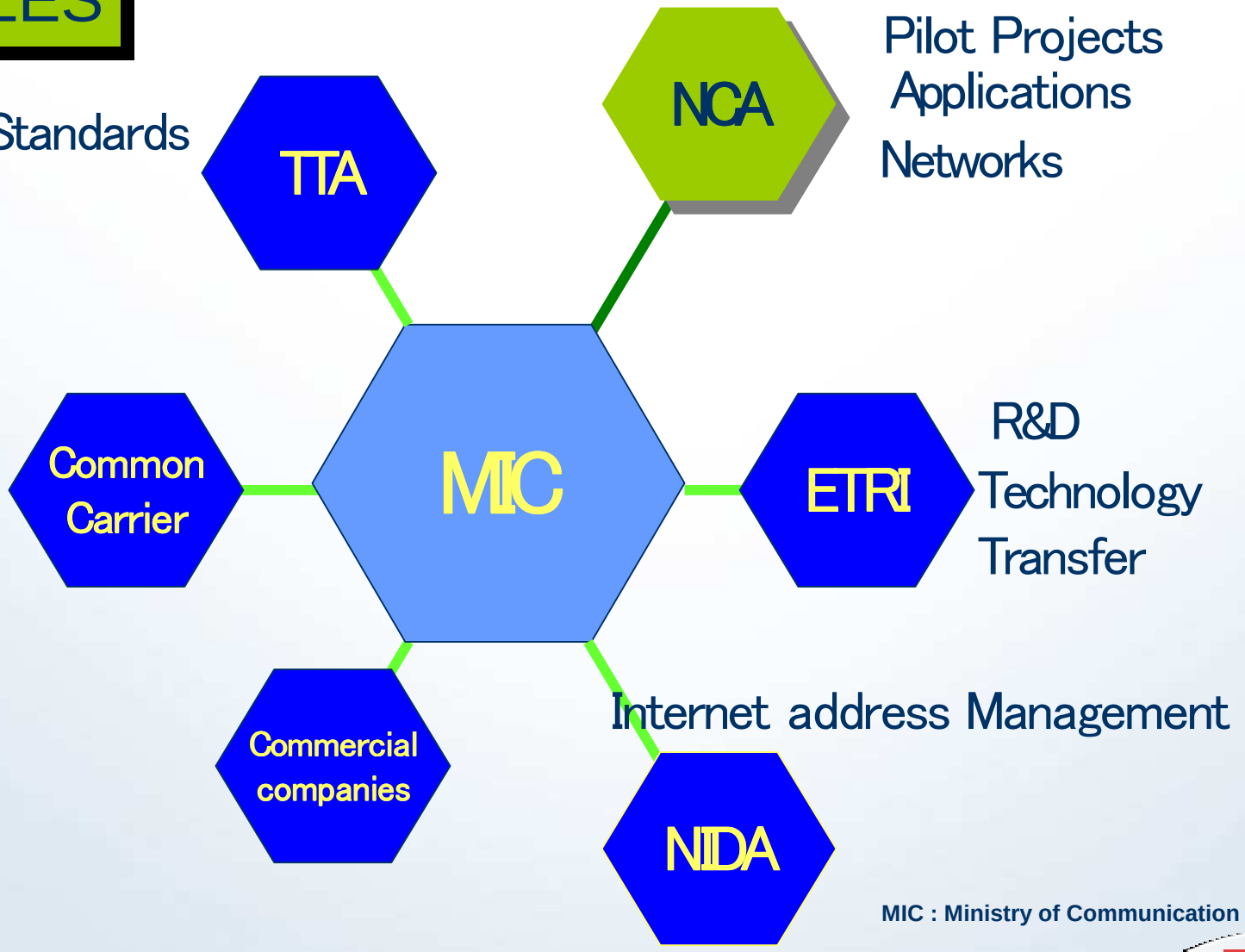
- **Established in 1986 by the gov't & 260 staffs**
- **As a leading agency for national IT strategy planning & implementation**
- **Main Activities**
  - Research, Consulting, Standard, Audit & Project Mgmt in IT area
  - Korea Information Infrastructure(KII), e-Gov't, IT839 strategy, Broadband IT Korea,...
- **Future Agendas**
  - Effective execution of IT839 strategy
  - Expand e-Gov't services
  - Setup NGN, BcN, u-Korea, etc

About NCA NCA IPv6 Activities

- Policy and Promotion
  - MIC IPv6 Policy Support
  - Secretariat office IPv6 Strategy Council(Chair : MIC Minister)
  - Set-up IPv6 National Strategy
- Network
  - Building and Operating IPv6 Network : 6NGIX, 6KANet, KOREAv6
- Application
  - Development and Deployment of IPv6 Application
  - KOREAv6 Pilot Project

About NCA NCA IPv6 Activities

ROLES

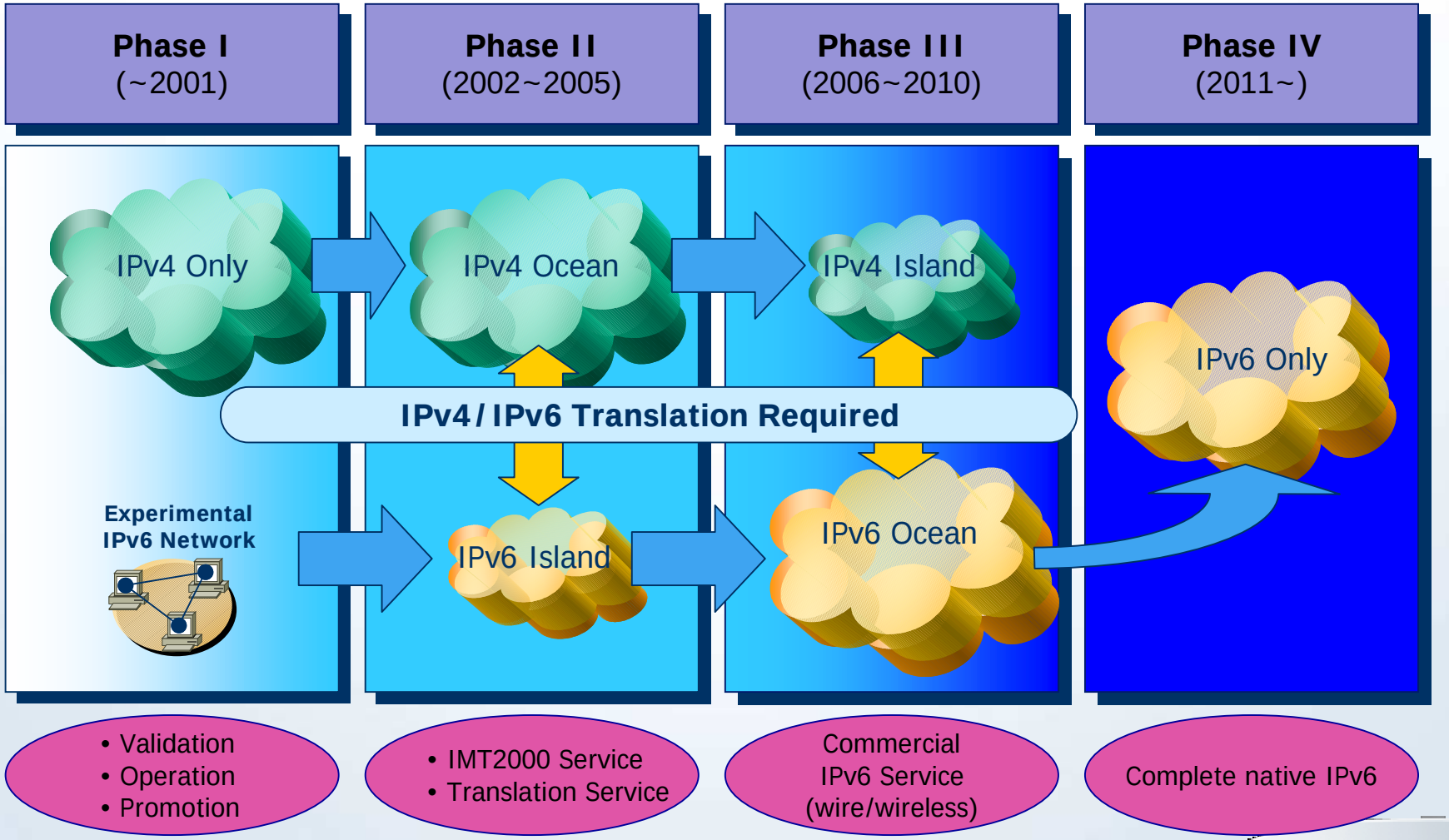


MIC : Ministry of Communication and Communication

한국전산원

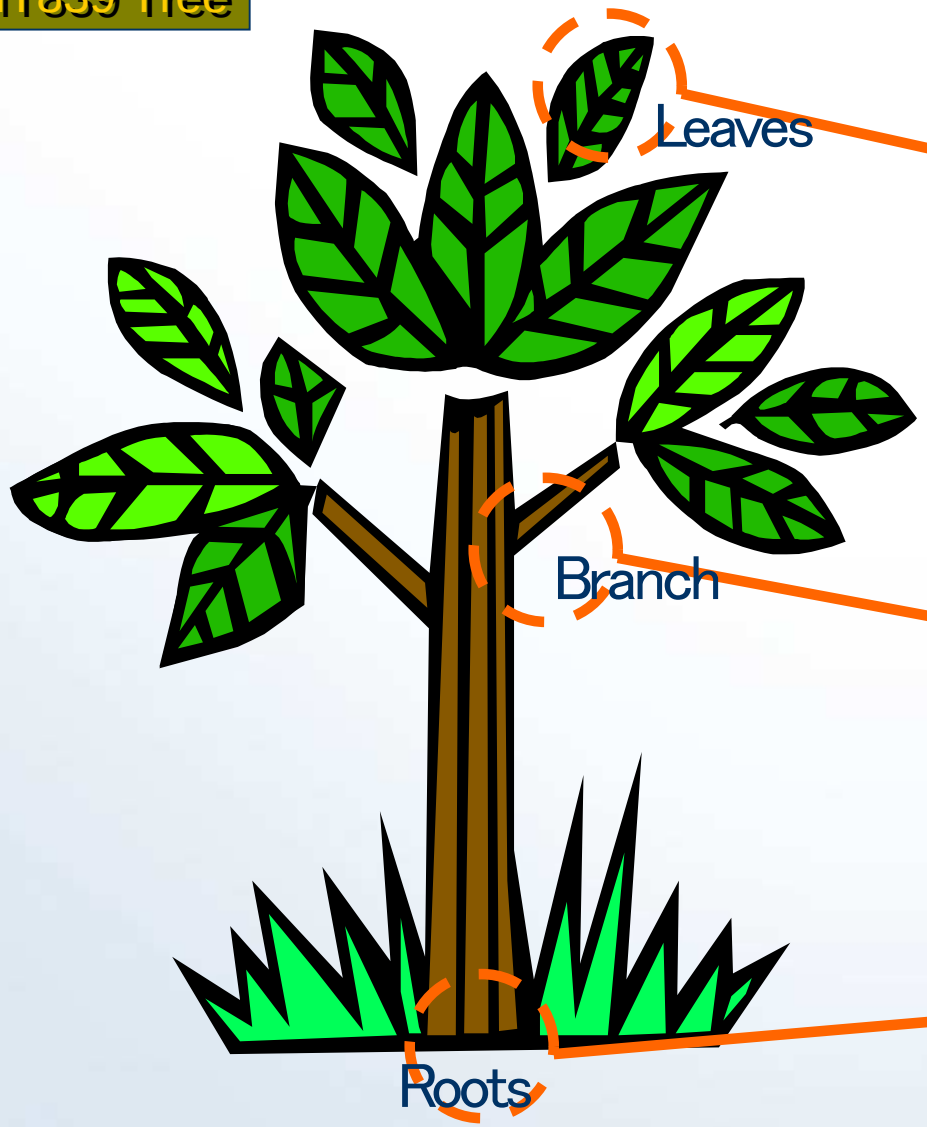
National IPv6 R&D Strategy in Korea

- **IPv6 Transition Roadmap of Korea**



National IPv6 R&D Strategy in Korea

IT839 Tree



8 Services

- WiBro service
- DMB (terrestrial/satellite)
- Home network service
- Telematics service
- RFID based service
- W-CDMA service
- Terrestrial D-TV
- Internet telephony (VoIP)

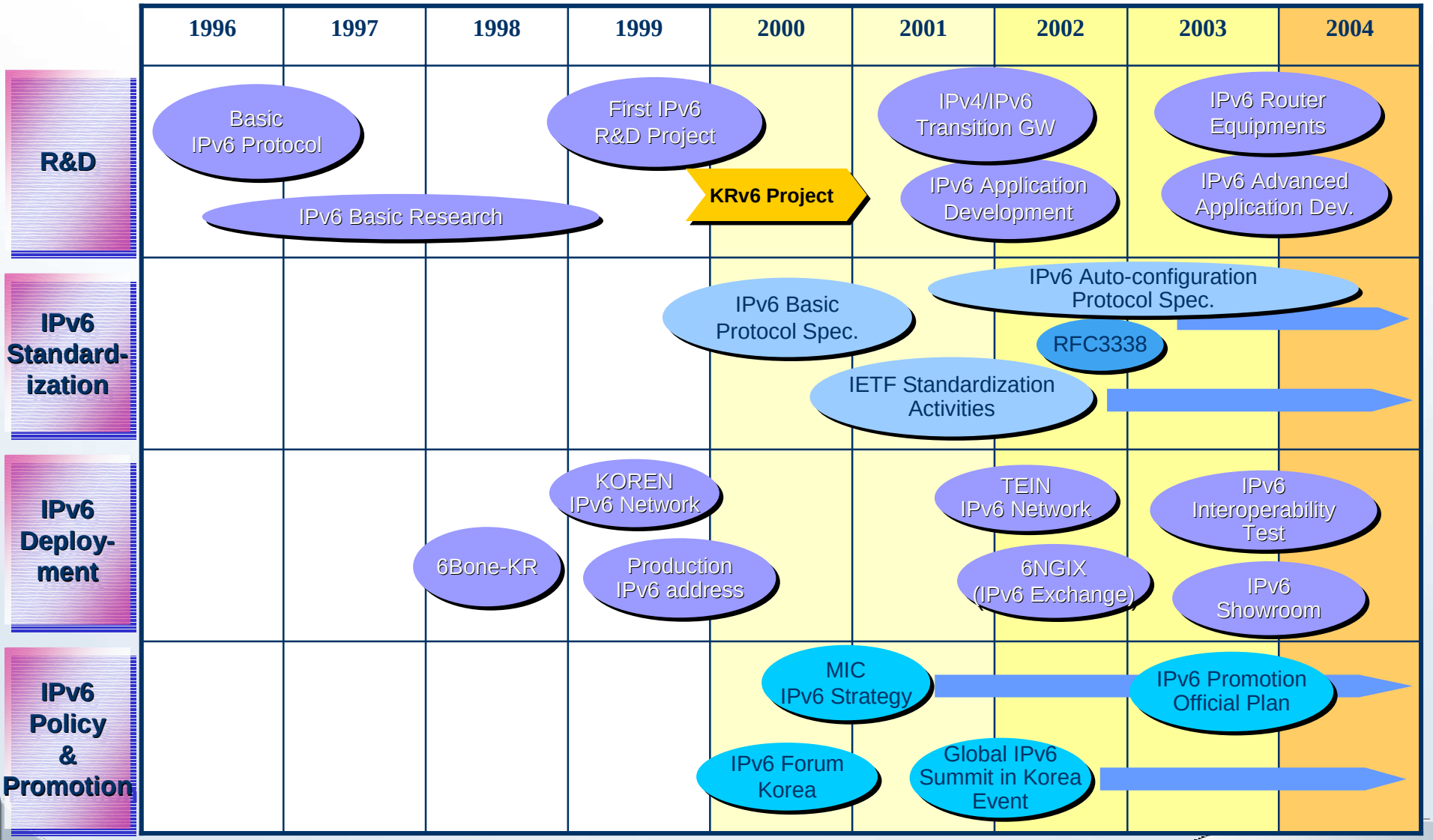
9 New Growth Engines

- NG mobile communications
- Digital TV
- Home network
- IT SoC
- Next generation PC
- Embedded SW
- Digital contents
- Telematics
- Intelligent service robots

3 Infrastructures

- BcN
- U-Sensor network
- IPv6

Overview of IPv6 R&D, Standardization and Deployment



한국전산원

IPv6 R&D Status

한국전산원
National Computerization Agency

APRICOT 2005 Feb. 18 ~ 25

IPv6 R&D Status Projects

- KRv6 Project (since 2001)
  - 6TALK (www.6TALK.net)
    - Developing the IPv6 transition strategies and translation technolo
  - 6ANTS (www.6ants.net)
    - Developing the IPv6-based Auto-configuration Networking Technologies
  - 6NEAT (www.6neat.net)
    - Developing the IPv6 network i nd IPv6 Applications
  - R&D on Next Generation Router and IPv6 Service Technologies
    - Develop next generation access & backbone routers and IPv6 based service technologies
- Other projects
  - Developing IPv6 Services (VPN, AAA, …)
  - IPv6 Routers, 3G, Home Networking

IPv6 R&D Status Equipments[1]

Router

- Home, small, medium sizes are focused

Size	Notifications
Home	◈ Prototype developed ◈ Apply to KOREAv6 ◈ IPv6 Ready Logo received
Small	◈ Apply to KOREAv6 ◈ Prototype developed
Medium	◈ Prototype developed ◈ Apply to KOREAv6 as core router ◈ IPv6 Ready Logo received ◈ Hardware based IPv6 packet handling

IPv6 R&D Status Equipments[2]

- Home Gateway/Home Server
  - Prototype developed
  - Announced and demonstrated at IT839 workshop
  - IPv6/IPv4 Dual Stack
- Next Generation Internet Server developed
  - Digital Home VoD server
  - Streaming Server for Broadcasting Service
  - Set top box
- IPv6 VPN/IPSec security product
  - Prototype developed
  - Apply for KOREAv6
  - Firewall

IPv6 R&D Status Equipments[3]

Other Equipments

- IPv6/IPv4 Interoperable Gateways
- IPv6 NMS Server
- AAAv6 Server/Client for user authentication

Portable Internet

- 30 Mbps level WIBro system developed
- Prototype developed

Other devices

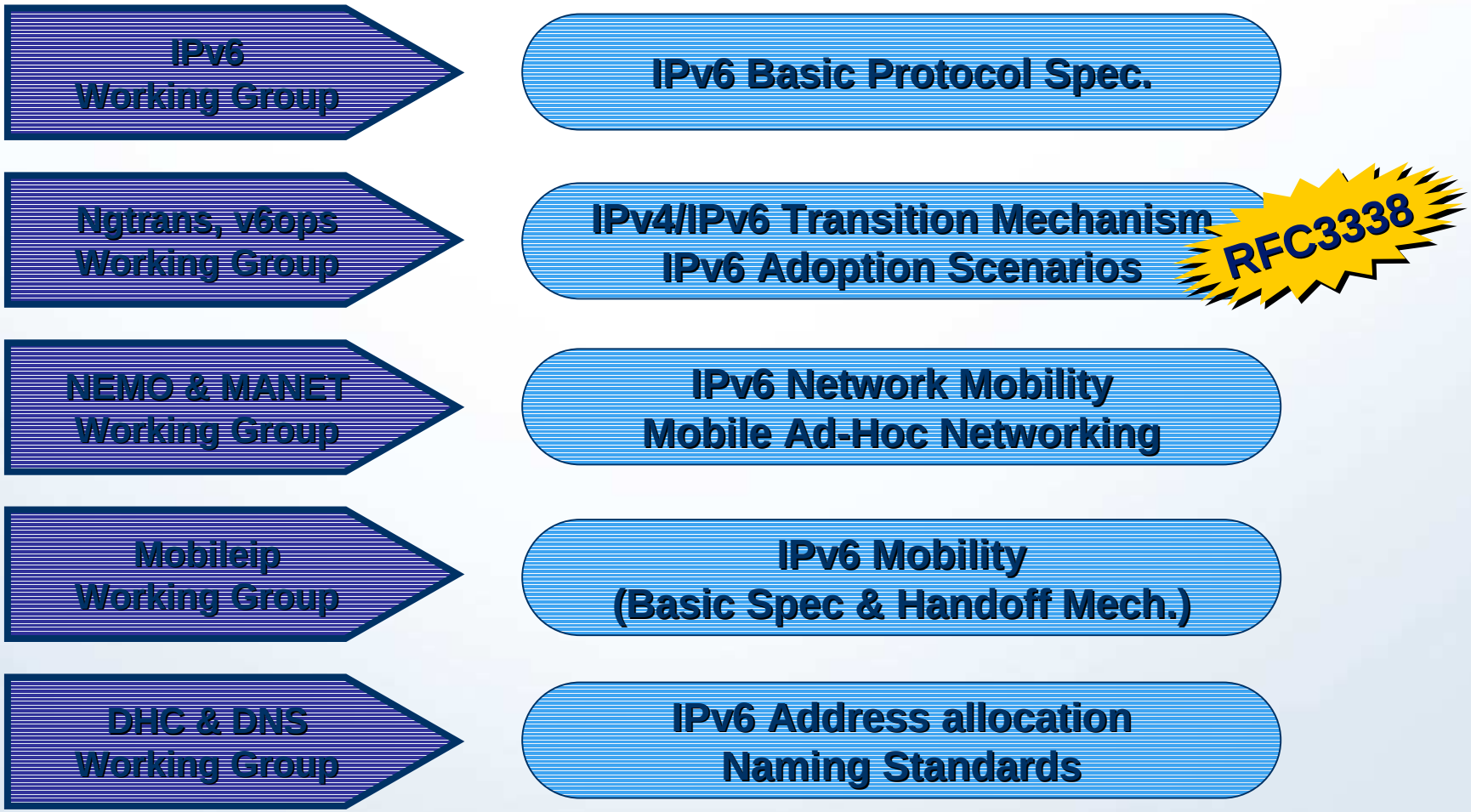
- Mobile Phone
- WIBro
- PDA

IPv6 R&D Status Standardization [1]

- International Standardization Efforts
  - IETF
    - IPv6 WG, v6ops WG, MANET WG, DHC WG, NEMO WG, etc.
  - ITU-T SG-13
    - IPv6 over NGN (2004~)
- Domestic Standardization Efforts
  - TTA
    - Development of National Standards for IPv6
    - IPv6 Project Group

IPv6 R&D Status Standardization [2]

- **IETF Activities of Korean**



IPv6 Promotion & Deployment

한국전산원
National Computerization Agency

APRICOT 2005 Feb. 18 ~ 25

KOREAv6 Pilot Project

- 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

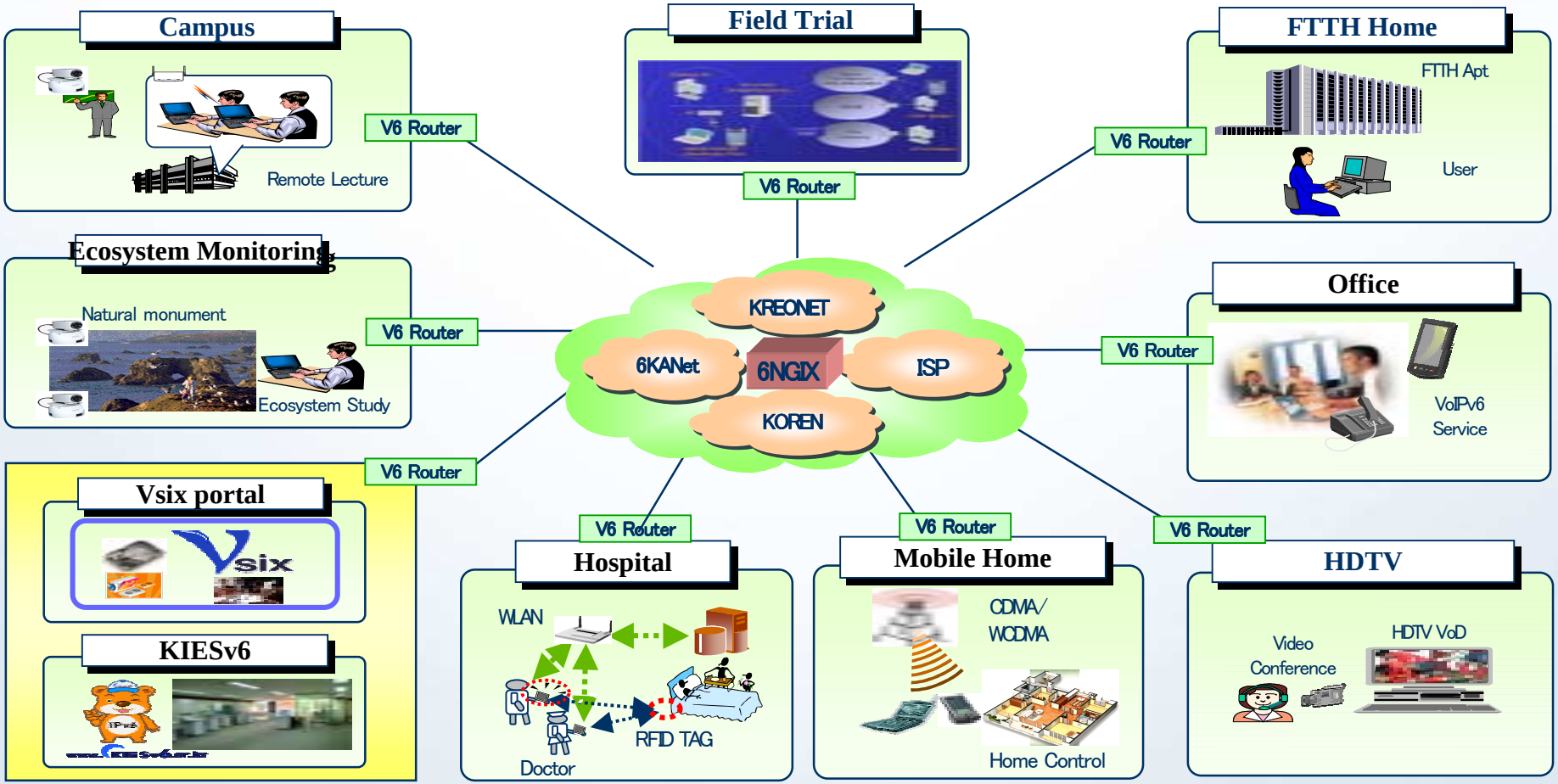
IPv6 Field Test

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

Achieving phased IPv6 Commercialization from 2005 through successful KOREAv6 Project

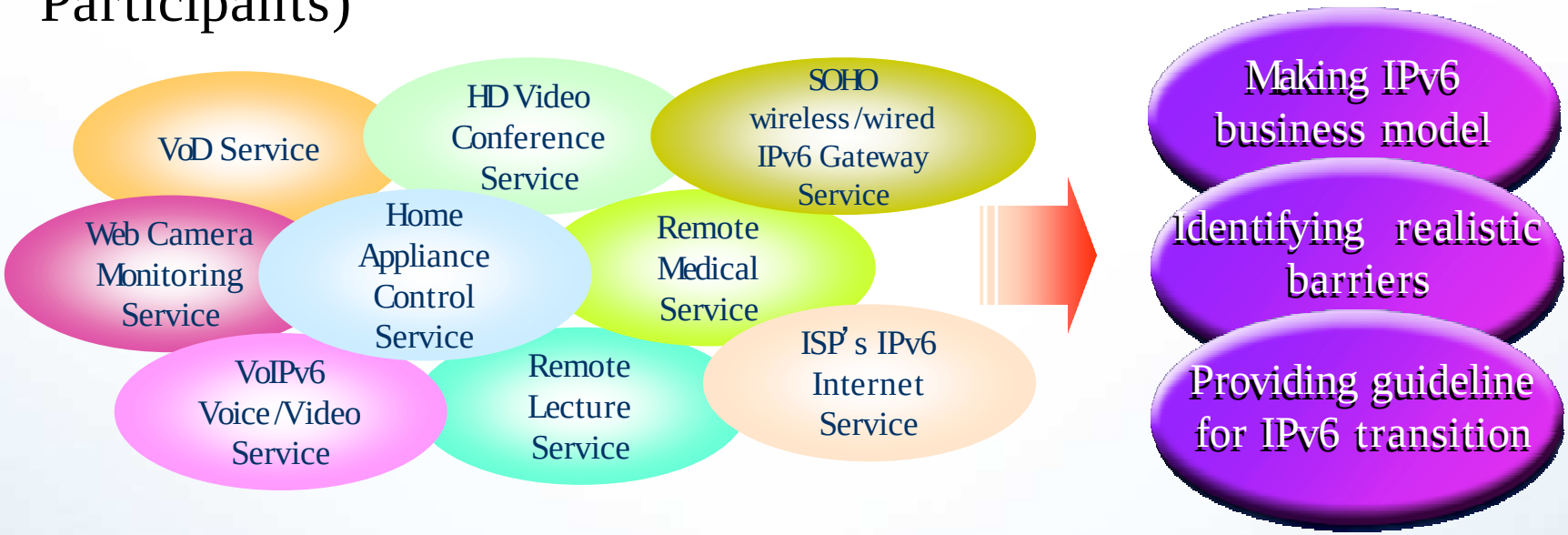
KOREAv6 Backbone Network

- 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**



KOREAv6 Trial Services

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



~ Early 2004

- User: Few IPv6 experts & engineers (100 or less)
- Traffic: 10MB or less

Sept. 2004

- User: Pilot service users (About 1,400)
- Traffic: 60 MB or less

End of 2004

- User: Pilot service users (10,000 or more)
- Traffic: 200MB or more

- Increasing Ipv6 traffics and real Ipv6 users

KOREAv6 Field Test

Field Trial Introduction

Test IPv6 equipments and solutions (18 participants, 39 products)

Background

- Develop & release IPv6 products from early 2004
- Needs for verifying stability & interoperability of the IPv6 Products

Identifying and verifying each function & interoperability among IPv6 equipments

TEST
Routing Protocol, Tunneling, Mobile IP, VoIP, VoD, QoS

KOREAv6 Logo

Expected Effects

- **Support stabilization of IPv6 equipments & solutions**
- **Providing a reference to IPv6 industries**

IPv6 Network

- 6Bone-KR (since 1998) (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)
  - R&E IPv6 network
- TEIN IPv6 (Since 2001)
  - TEIN: Trans Eurasia Information Network
  - Continental IPv6 network between Asia and Europe
- 6NGIX (Since 2001)
  - IPv6 Internet Exchange Point 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: 18 sTLAs
    - Most of ISPs in Korea have a IPv6 sTLA (KT, Hanaro, SKT, Hitel, etc)
- KOREAv6 (Since 2004)
  - National Wide IPv6 Trial Service Network in Korea

IPv6 Portal Service/Deployment

NCA IPv6 Show Room has been upgraded

- IPv6 Showroom (KIESv6) Upgrades
  - KIESv6 stands for Korea IPv6 Experience Sphere
  - One-Stop IPv6 Experience Space (NCA Building, Seoul)
  - Upgraded with new applications
  - KOREAv6 Trial services' demonstrations added
  - http://www.kiesv6.or.kr
- IPv6 Portal Service upgrades
  - Current registered users are more than 6500 people(Feb. 2005)
  - Attract users with popular services(Web Album Service)
  - Give away storage spaces(700Mb per user for free)
  - www.vsix.net

International Collaboration KIESv6 [1]

- KIESv6 as a window for int'l Collaboration
  - Almost 30 different countries, 200 visitors
  - Learn or get consulting on IPv6
  - IPv6 trial services testing
  - Visitors are increasing every year(more than 1,000/yr)

Taiwan ITRI & Korea NCA
VoIPv6 service testing

People from Jordan

International Collaboration KIESv6 [2]

KIESv6 Overhead View

Thank you

Contact Information

Sang-Chul Shin

Vice President

IT Infrastructure Division

National Computerization Agency

E-mail: scshin@nca.or.kr

http://www.nca.or.kr

한국전산원
National Computerization Agency