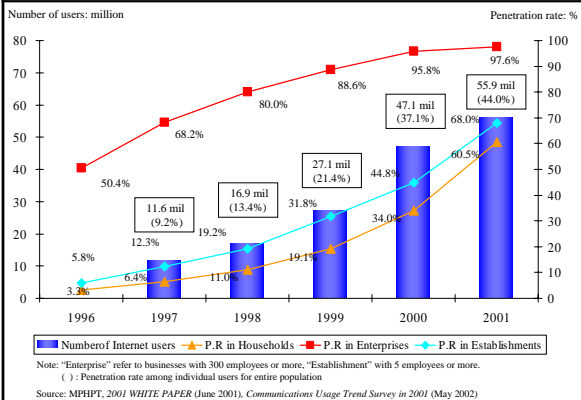


IPv6 Research in Japan

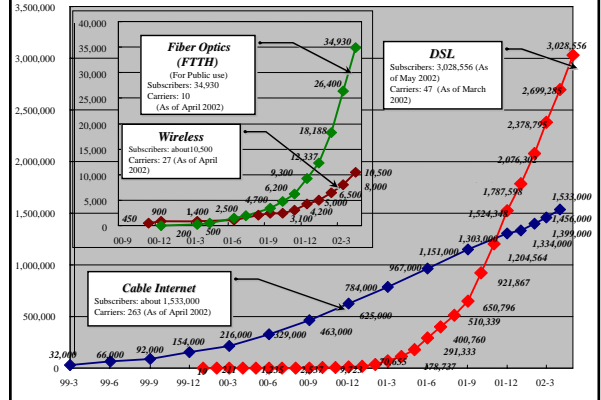
August 21-22, 2002
KDDI Labs. JAPAN

1. Current Status of Internet in Japan

Number of Internet users and Penetration rate

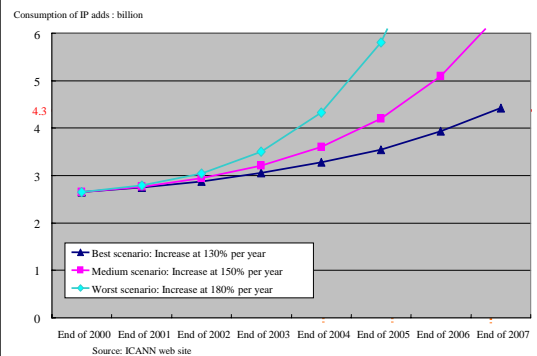


Number of subscribers to Broadband Internet

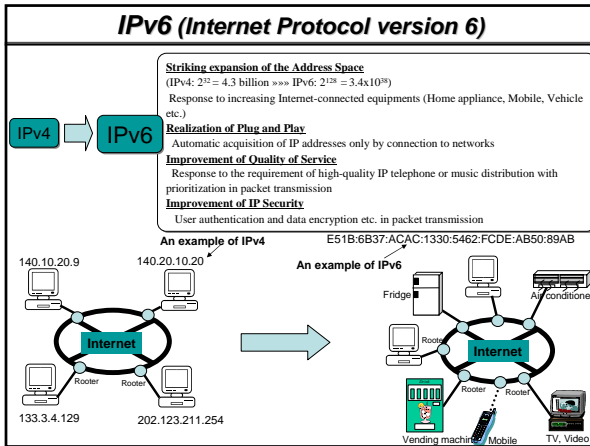


2. Necessity for transition to IPv6

Depletion of IPv4 addresses



IPv6 Research in Japan



3. Toward smooth transition to IPv6

Toward smooth transition to IPv6

The governmental objective

e-Japan 2002 Program (June 26, 2002)

In order to spread and promote IPv6 which is secured sufficient address space and security, the road map toward the prompt transition to IPv6 shall be created during 2002. Moreover, based on the relevant law, required measures for the prompt transition to an IPv6 network, such as preferential tax measures and no interest and a low interest loan from the 2002 fiscal year shall be implemented.

Measure

Examination of the road map toward IPv6

It has been discussed as a subject which should be tackled immediately at the Internet Infrastructure Committee in the Telecommunications Council since last Dec. The interim report is to be published in August, 2002.

At the each level of the transition, for each actor; ISPs, data centers, corporate users, private users,

1. When, and How?
2. What challenge at each level of the transition?
3. How solve the problems and realize the smooth transition?

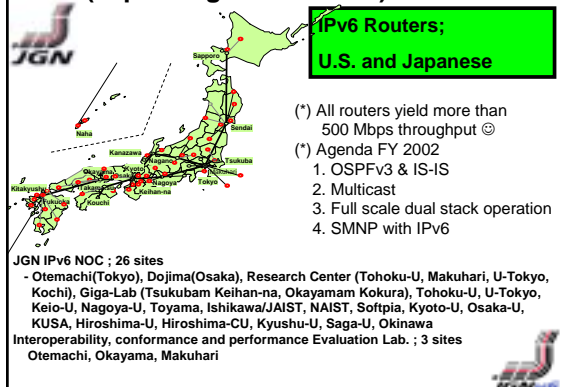
Put up the road map nationwide, and contribute to the smooth transition to IPv6

Items to be considered in the Roadmap

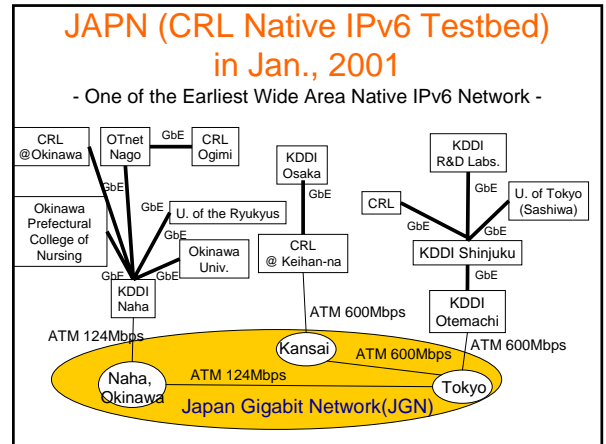
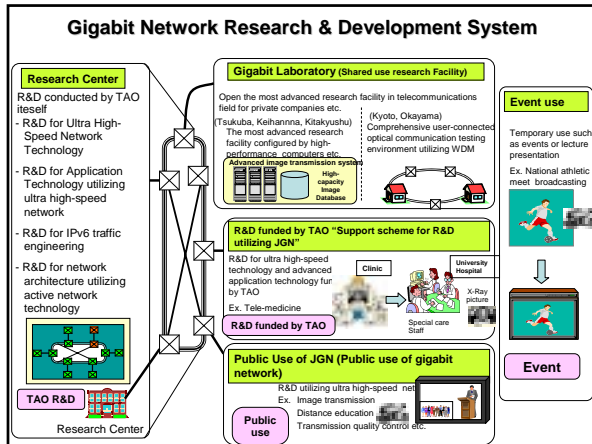
1. Technical development and Standardization:
Protocol stack, Router for Ipv6, Chip, and IPsec etc.
2. Operational infrastructure:
Addresses, DNS, and Registry etc.
3. Network services:
ISP, IX, and Data center etc.
4. Application services:
Terminals, Home information appliances, Mobiles, Games consoles, ITS etc.
5. International cooperation:
Strategies of other countries, cooperation etc.
6. Governmental implementation:
E-government, E-local government, public services etc.

4. IPv6 related activities in Japan

JGN (Japan Gigabit Network) IPv6 Service



IPv6 Research in Japan



Special projects on IPv6 in WIDE

- * KAME IPv6 for BSD
 - Keio Univ., Univ. of Tokyo, Fujitsu, Foretune, Hitachi, IJ, NEC, Toshiba, Yokogawa
 - <http://www.kame.net>
- * USAGI IPv6 for LINUX
 - IJ, Keio, Yokogawa, CRL, Toshiba, IBM, Hitachi, NTT-Soft
 - <http://www.linux-ipv6.org>
- * TAHI IPv6 Test & Evaluation Software
 - <http://www.tahi.org>
- * DNS and BIND
 - USC-ISI, ISC

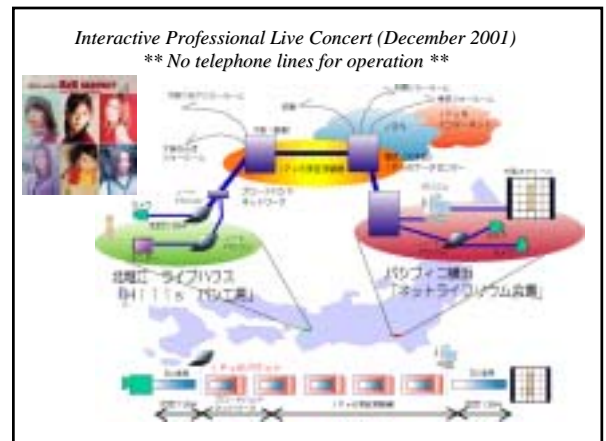
Network Appliances(on sale)

Cellular Phone with Internet Connectivity
 © NTT DoCoMo

Digital Camera with Network Connectivity
 © Canon

Digital Video Camera With A/V Network Connection
 © Sony

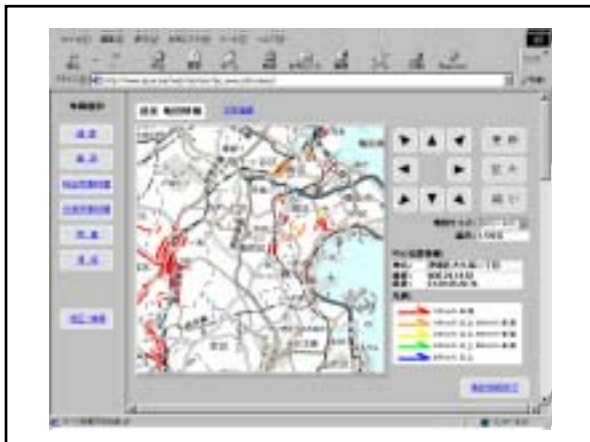
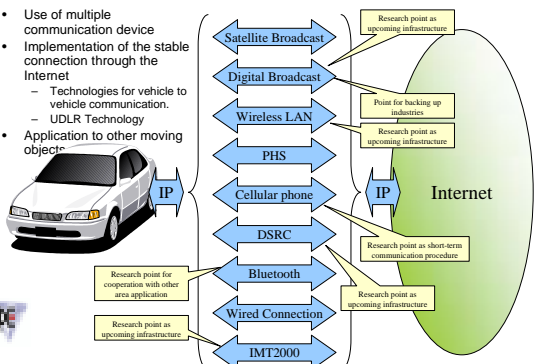
Microwave with Network Connectivity
 © Sharp



IPv6 Research in Japan

Technology of connecting vehicles to the Internet

- Use of multiple communication device
- Implementation of the stable connection through the Internet
 - Technologies for vehicle to vehicle communication
 - UDLR Technology
- Application to other moving objects



DENSO's IP over DSRC + Cell Packet

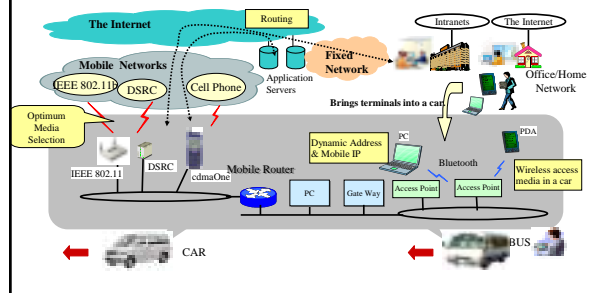


TAO ITS Project

- Moving Office: Seamless Communication -

Provide the office-equivalent Internet access inside a car, utilizing wireless access terminals and the optimum selection of communication media for WAN access

Members: Toyota, Panasonic, Toshiba, KDDI R&D Labs., Inc.



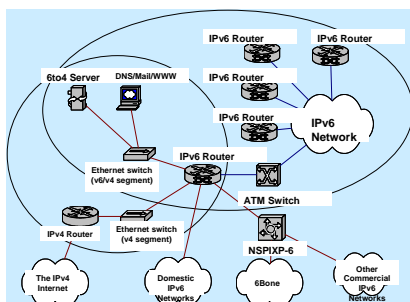
Four Functions of Testbed

- Research
- Development
- Operation
- Deployment

1. Network R&D and Application R&D
2. Research and Professional

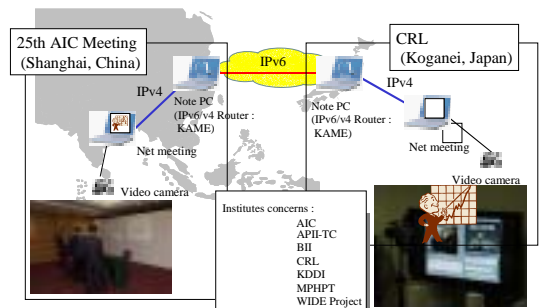
5. International Collaboration for the Next Generation Internet

External Connectivity of Japanese IPv6 Networks



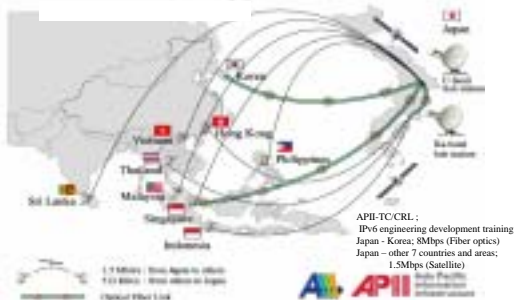
APII Test-bed Demonstration by IPv6 Network

(2001. Apr. 23 – 24, 25th AIC meeting in Shanghai)



Network Configuration of APII Test-bed project

APII Testbed in Asian Area (concept)



SOI-ASIA Partners Satellite Antenna



Brawijaya University, Indonesia



Hasanuddin University, Indonesia



Sam Ratulangi University, Indonesia



Laos National University, Laos



University of Computer Studies, Yangon, Myanmar



Asian Youth Fellowship, Malaysia



Asian Institute of Technology, Thailand



Chulalongkorn University, Thailand

SOI-ASIA Partners Satellite Antenna

SOI Asia site

Laos



Thailand



Myanmar

Site Setup Status

Thailand



Myanmar



Laos