IPv6 Deployment Overview & Policy Update

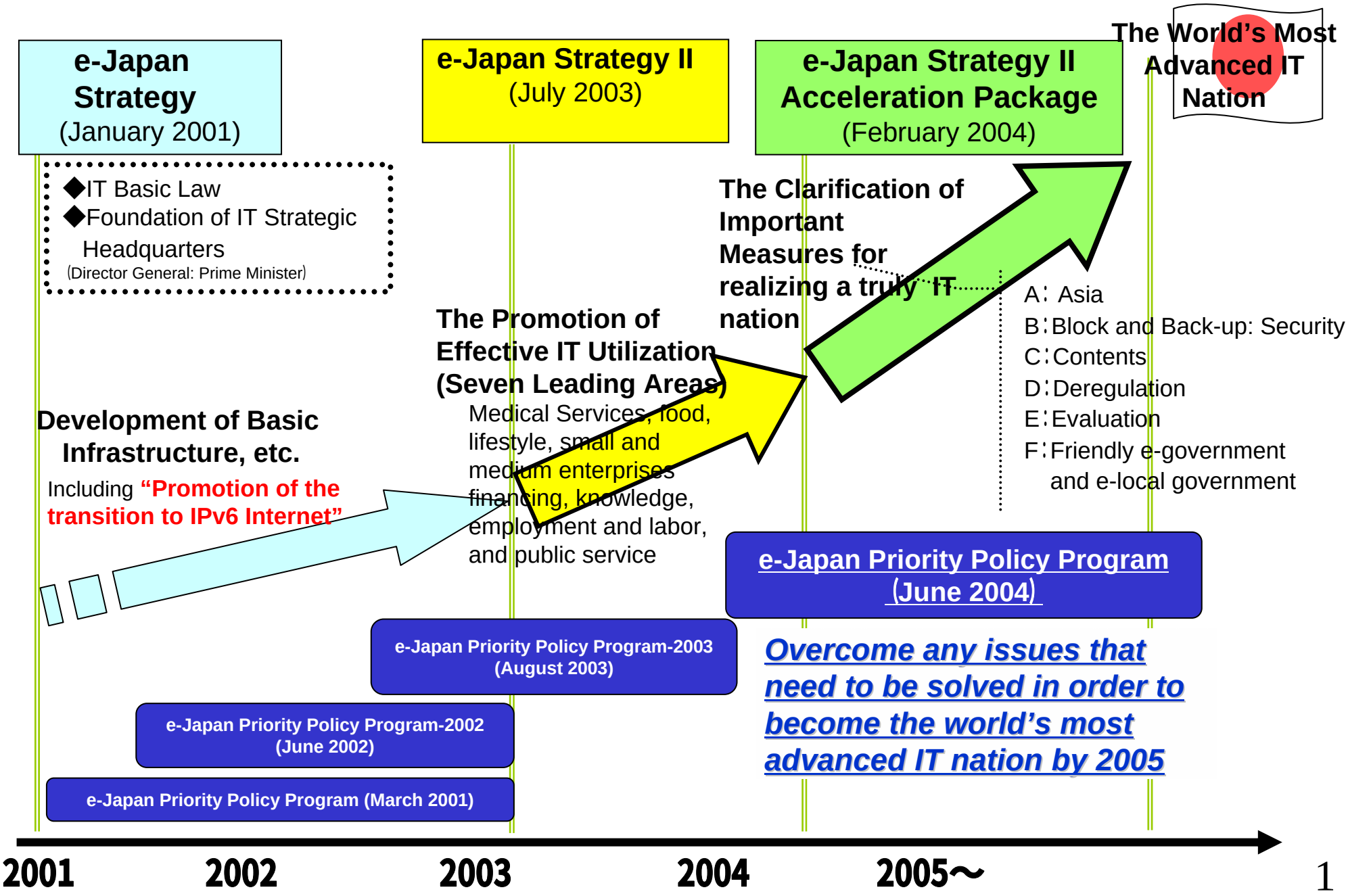
Takuya MIYOSHI

Internet Policy Office
Ministry of Internal Affairs and Communications, Japan

24th February, 2005

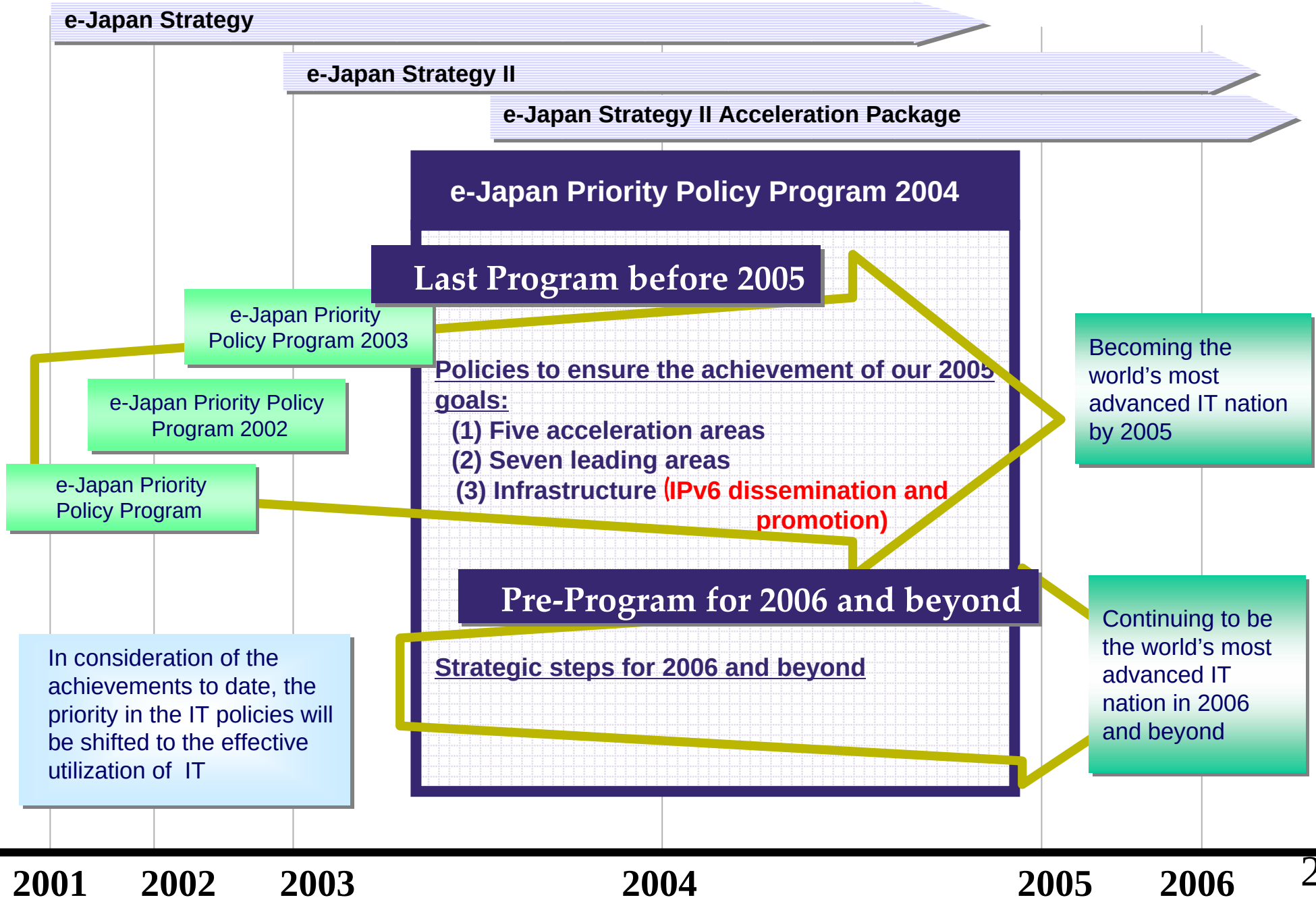
History and Acceleration of Japan's IT Strategy

MIC



e-Japan Priority Policy Program 2004: Concepts

MIC



“e-Japan Strategy II”

(Decided by the IT Strategy Headquarters July 2nd 2003)

“e-Japan Priority Policy Program-2004”

(Decided by the IT Strategy Headquarters June 15th 2004)

MIC

In addition to making Japan the world's most advanced IT nation by 2005, we must aim to continue leading the world after 2006.

IT Strategy – Phase I:

To positively tackle the establishment of IT infrastructure

→ significant level of progress achieved

IT Strategy – Phase II:

To realize a *“vigorous, safe, impressive and convenient society”* through the use of Information Technology

Priority Policies

5 fields to be accelerated

1. ASIA IT strategy (Cooperation in ASIA, etc.)
2. Security Policy
3. Contents Policy
4. Deregulation (e-paper)
5. Digitization of the administration, e-Government (Central & Local)

7 leading fields to make use of IT

Medical / Foods / Life / Finance for SMEs / Intellectual / Employment and Labor / Governmental Services

Creation of New Society

1. Creation of next generation IT environment
2. Safe and secure use environment
3. R&D to promote the development of the resources of the next generation (such as IPv6 technology)
4. Develop IT-HR and promote learning
5. New international relationships focusing on IT

Revised Targets

Real Use by 2005
High-speed(includingWireless): 40 million
Ultra-high-speed(over 30Mbps): 10 million

Realization of the ubiquitous network society

MIC

Ubiquitous network society (u-Japan)

- The society to be realized in 2010
- New policy target after the realization "e-Japan"

"Ubiquitous network"?

- Anybody can, anytime, anywhere
- without being forced to be aware of the existence of networks
- benefit from the use of the terminals and networks

Today: Broadband Internet mainly for PCs
Future: Network of micro-chips, home electronic appliances and PCs
100 times more terminals connected to the network
Communication among devices

Basic u-Japan Concept

MIC

u－Japan is the next generation ICT society from 2010

u－Japan (Ubiquitous Japan)

Ubiquitous

Connects everyone and everything

○An easy-to-use network anytime, anywhere, with anything and for anyone.
- ICT will be everywhere in daily life for a user-friendly society

○Person2Person plus Person2Goods, and Goods2Goods
- In every aspect, communication will take the more important role in society

Universal

User-friendly

○Gentle with people
- Can be used by anyone without thinking of the equipment or network
- The aged and disabled will be able to participate in society with ICT

○Interaction
- A heart to heart interaction overcoming barriers between generations and localities to create togetherness

User-oriented

From the user's point of view

○Close to the user
- For a society that is user-orientated than a society where objects are given by the supplier
- Developing technologies and services that are connected to our needs

Unique

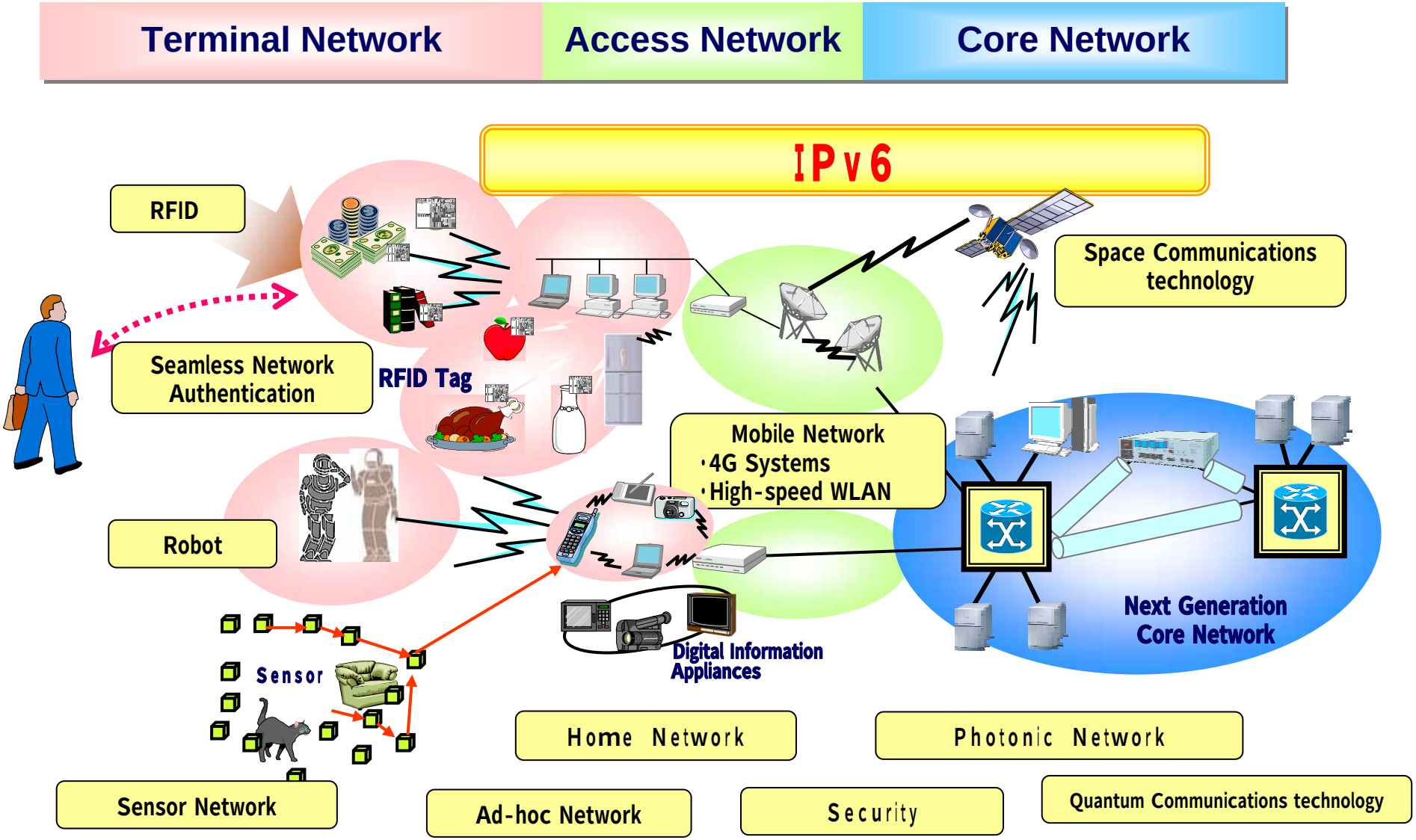
Be something special

○Create individual energy
- A new society where your dreams come true

○Vitalize the society
- Create new social systems and business services
- Get out from the norm and realize local revitalization with creativity

Technologies for the Ubiquitous Network Society

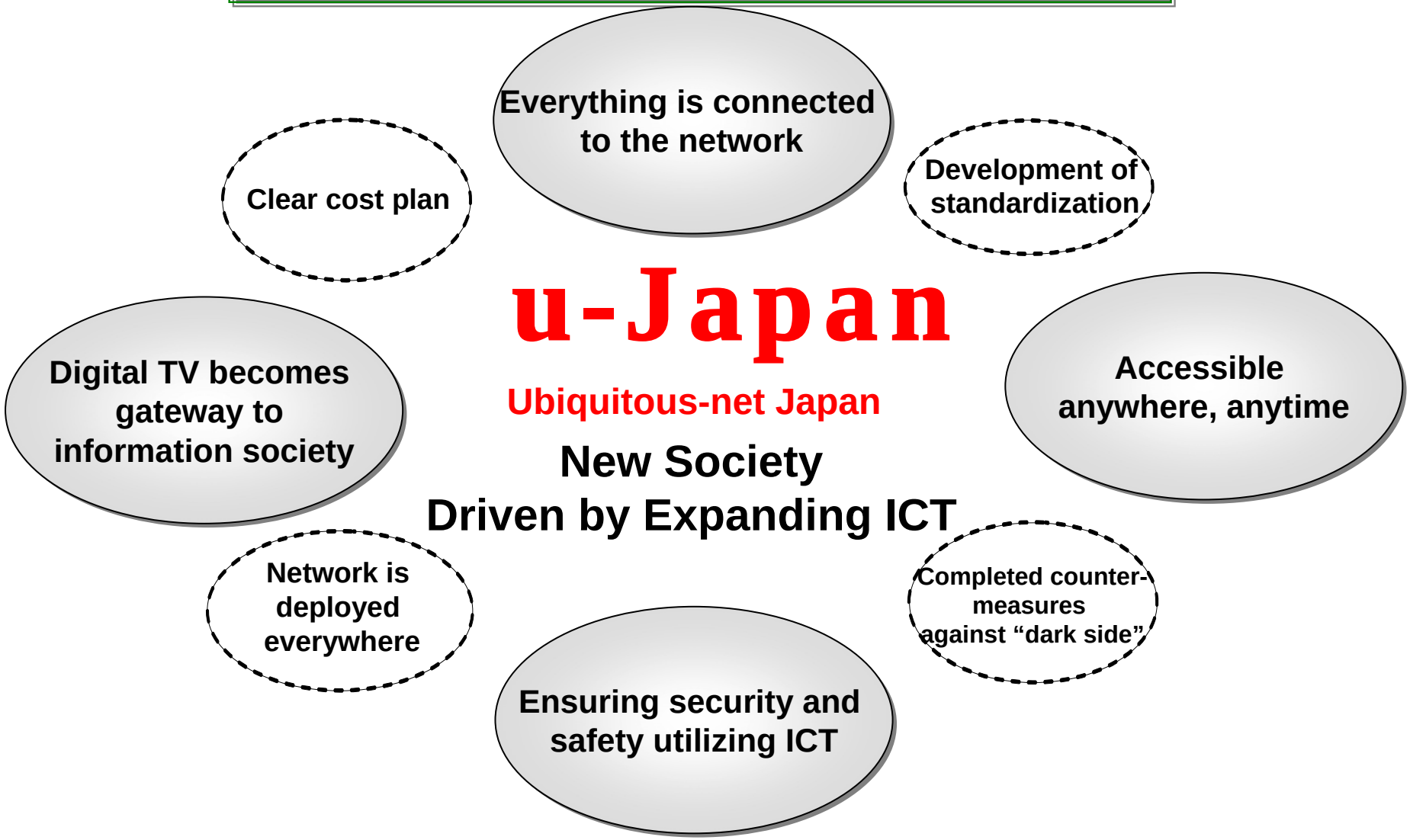
MIC



Target of ICT Policy in IP Age

MIC

2010 Realization of u-Japan



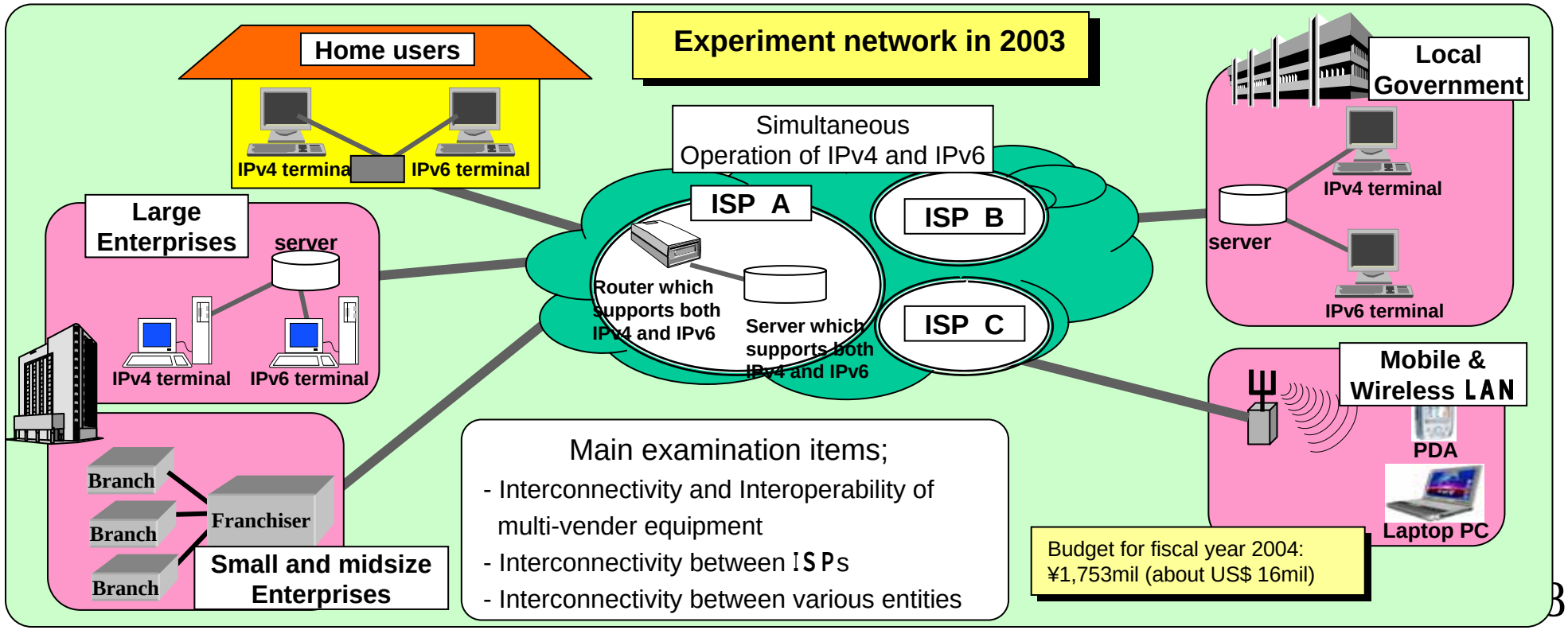
Promotion of the migration to IPv6 Internet

MIC

With the aim of becoming the most advanced IT nation in the world, demonstration experiments are being conducted to facilitate the migration of the whole Internet infrastructure from IPv4 to IPv6.

Through these experiments, operational problems and solutions to them are expected to be identified.

The know-how obtained through the experiments is to be broadly distributed.



Findings from the experiment in 2003 (1/2)

MIC

Basic applications functioned without any problem.

- Overcame the technical difficulties in parallel operation of IPv4 and IPv6
- Established basic migration model in 6 segments, reflecting the characteristics of each segment

Several problems were identified which need to be solved.

- Some migration methods might be subject to the following restrictions.
  - Set up of filtering should be done carefully in Tunnel environment. Also filtering might become a bottle neck in applying the tunneling method.
  - SIP dose not work fully in Translator environment

Findings from the experiment in 2003(2/2)

- Although the use of IPv6 anonymous address is considered to be effective in improving the network security, it poses a problem for network administrators when they want to have control over IP addresses of clients.

- Although IPsec is effective in improving the network security, majority of end users feel uneasy and troublesome about IPsec. Finding the balance of safety and user friendliness is one of the subjects of future study.

- It is not true that there is no security attack and virus in IPv6. Some of the anti-virus softwares are unable to protect virus infection through IPv6 packets. Some of the firewalls are not been sufficiently ready for handling IPv6 packets.

Priorities in 2004 and 2005

MIC

- Enhance the migration model by overcoming the problems identified in 2003 experiment, and by enlarging the scope of segments to include mobile communications, etc.
- Establish improved security models for various internet use environment
- Develop solution guidelines applicable to various network environments
- Ensure interoperability and interconnectivity –domestically and internationally

Migration Guideline (2003 version) is available at

http://www.v6trans.jp/en/index.html

Procurement of IPv6 Devices

MIC

The e-Government Creation Plan was revised to encourage the adoption of *"IPv6"*. The procurement of IPv6 capable devices will be facilitated.

e-Government Creation Plan (revised)

June 14, 2004
Inter Ministerial CIO Liaison Conference

2 Improvement of the information system and its management
(5) Advancement of the information system
Each Ministry shall plan to advance its information system by gradually introducing the technological innovations such as **IPv6**, based on its Optimization Plan of Work and Systems.

e-Government Creation Plan (MIC)

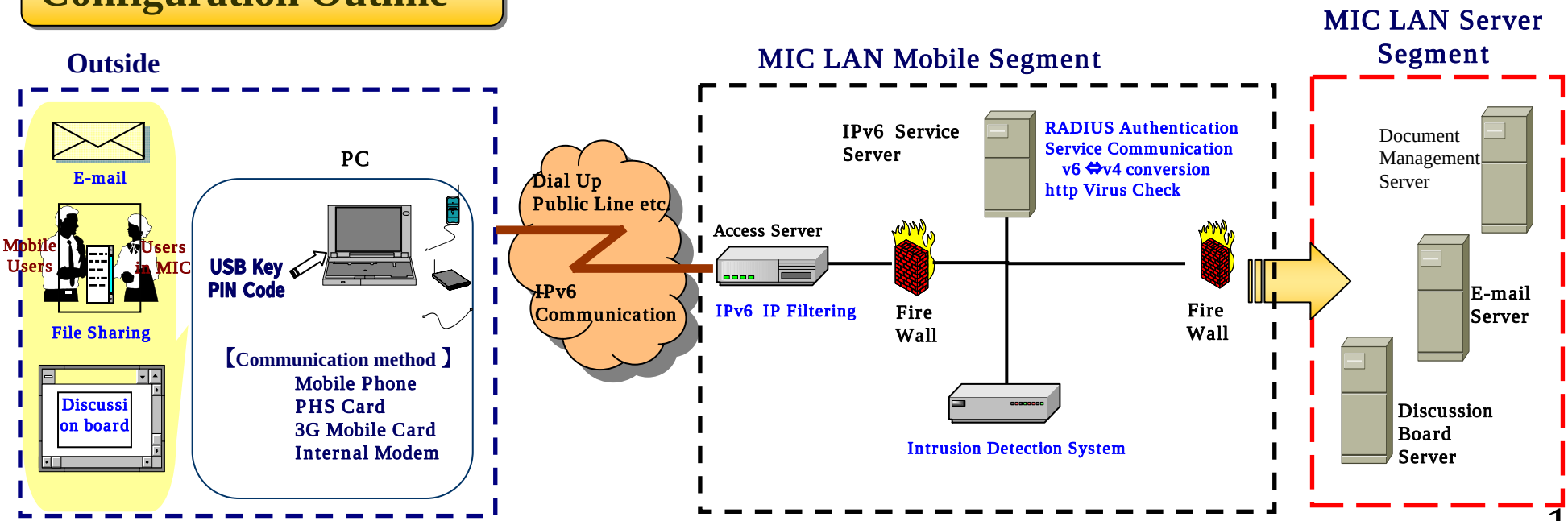
2 Improvement of the information system and its management
(2) **Introduction of IPv6**
In order to realize the efficient and effective management, the LAN of the Ministry of Internal Affairs and Communications shall be gradually **migrated to IPv6**, based on the Optimization Plan of the MIC network.

IPv6 Mobile Access Services in MIC

Service Outline

- LAN in MIC can be accessed from outside by IPv6 capable PCs.
- Available Services are E-mail, Discussion Board, and File Sharing.
- Experimental service started in Oct 2004.

Configuration Outline



IPv6 Readiness in DNS

- Domain Name Servers are IPv6 ready when…
  - IPv6 addresses are assigned to the servers
  - these IPv6 addresses are made public for name resolution

- ccTLD of Japan – “.jp”
  - IPv6 address assigned in August 2001
  - made public for name resolution from July 2004

Supply of Commercial products

MIC

○ **Various commercial products have been placed in the market**

- network camera, printer, router, IP phone, LSI, building management system, etc.

○ **IPv6 connection service** (Major topic)

-Plala Networks (NTT Group) started IPv6 multicast personal IP TV service.

-NTT East & West started IPv6 video phone service .

○ **Interoperability**

IPv6ReadyLogoProgram

the devices that pass a certain test to confirm the interoperability with other devices are furnished with "IPv6 Ready Logo"

As of January 31 2005, 137 products have obtained the Logo and the number is increasing. (67 Japanese Vendors' products are included)

IPv6ReadyLogo