

IPv6 Deployment Status in Japan

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1. Overview
2. IPv6 Application and Service
 - I. IPv6 Multicast Service
 - II. Building Facility Management
 - III. Environmental Information System
 - IV. IP Phone
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 - VI. IPv6 Products
3. What is IPv6 Promotion Council of Japan
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Overview

Governmental Activities

IPv6 deployment in e-government system

- IT Strategic Headquarters decided ***"IT New Reform Strategy"*** in January 2006

"Also, as information and communications hardware is updated and replaced in the future, new equipment will as a general rule be IPv6 compatible by FY 2008."

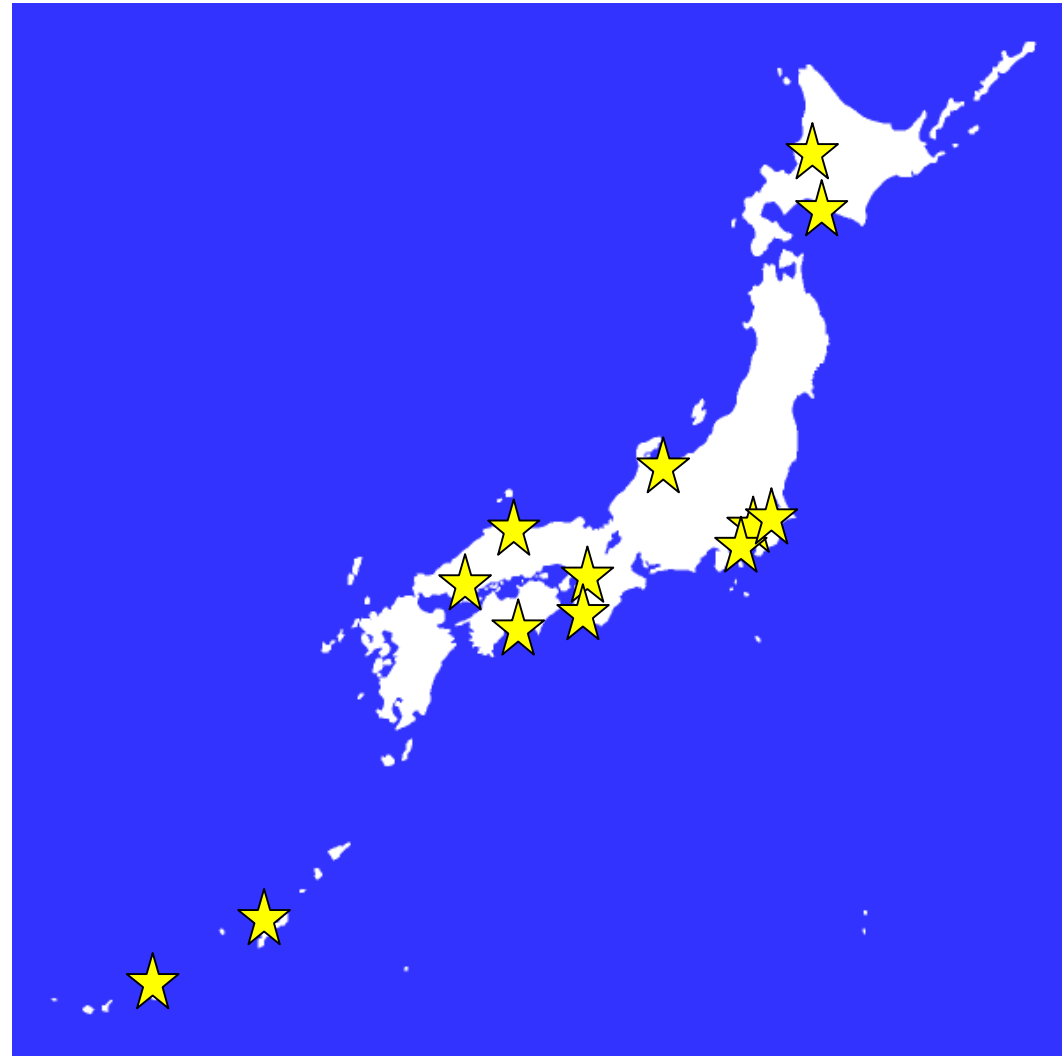
<http://www.kantei.go.jp/foreign/policy/it/ITstrategy2006.pdf>

- Priority Policy Program - 2006
 - IPv6 guideline
 - The each ministry agency makes the transition plan
 - Investigate the IPv6 correspondence of ISP

IPv6 Deployment Field Trial (1)

- IPv6 projects explore into nation-wide by MIC
- The development of applications in the public service, security, education, health and facility management in FY2005.
- Demonstrate potential of IPv6 applications to the public through field trials in 14 sites in Japan.

FY 2005 trial sites



IPv6 Deployment Field Trial (2)

Office Staff (remote) !
Kiosk Terminal For Residents Consultation

■ **Consultation services for residents (Taito, Tokyo)**
Constructing a remote consultation service system for residents by utilizing IPv6's security system.

PC of staff

■ **Taito City Assembly streaming live video relay services (Taito, Tokyo)**
Implementing a high-definition City Assembly video relay distribution system by multicast distribution functions of IPv6

Fire Headquarters
IPv6 mobile network
Care Terminal (IPv6)
Fireman
Providing services to users who cannot access to network environment by visiting them.
IPv6 static network
Health consultation by TV telephone and remote control of medical devices
Care Terminal (IPv6)
Video camera with microphone
Vital sensors (BP/Pulse/BT)
Emergency report devices
emergency report coordination

■ **Health care at home support services (Asahikawa, Hokkaido)**
Realizing a health-care-at-home support service by means of IPv6-ready mobile terminals by the "push functions" of IPv6.

Push-type provision of information
Information services form local authorities

■ **Push-type information provision services for residents (Osaka)**
Constructing information provision services by the information push function of IPv6.

Surveillance camera
One device belongs to multiple IPv6NWs.
Video distribution to home management associations
Security service
Device maintenance service
Street light

■ **IPv6 multi-services in Security-Town (Kawasaki, Kanagawa)**
Implementing a security town service system by simultaneous control functions of multiple connections and automatic setting functions of IPv6.

Music
Traditional arts
ISP1
ISP2
Wide-area distribution

■ **Music Town services (Okinawa)**
Realizing a video multicasting system via multiple ISPs by using IPv6.

■ **IPv6 multi-service in school security solutions (Tokyo)**
Implementing a security service system for schools by using the functions that control the multiple connections of IPv6 at the same time.

Building management center

■ **Office building automation services (Tokyo)**
Implementing a total building management system by using abundant IPv6 addresses in some cultural facilities.

IPv6 Deployment Field Trial (3)

Provision of disaster information/Information service

■ **Information gathering service for disaster prevention (Niikappu, Hokkaido)**
Constructing an image processing stationary measurement system, the mobile terminal information service and the telephony service system by IPv6's connectivity and manageability.

Position information coordination

■ **Local digital museum (Tateyama, Toyama)**
Constructing a learning-aided system which archives the learning materials from many wireless LAN spots and provides to cellular phone type mobile terminal of IPv6.

■ **Local medical network service (Wakayama)**
Constructing a medical collaboration service system with high quality protection for personal data by end-to-end communication function of IPv6.

■ **Video distribution service between educational facilities (Hiroshima)**
Constructing an educational network system which delivers educational contents to multiple places and supports remote schooling by using direct connectivity of IPv6.

■ **Nature regeneration monitoring service (Taira)**
Constructing a continuous monitoring system for nature regeneration process by using abundant addresses and the plug & play function of IPv6.

■ **LP gas tele-metering (Kochi)**
Constructing a remote gas meter surveillance system by using the plug & play function and unchanging terminal IP address of IPv6.

■ **Environment monitoring (Tottori)**
Realizing an environment monitoring system for effective usage of limited sensors by using the plug & play function of IPv6.

- Reference

- IPv6 Deployment Field Trial

- <http://www.v6trans.jp/en/index.html>

- 2005 IPv6 Solution Guideline

- [http://www.v6trans.jp/en/pdf/2005_IPv6_Guidelines\(EN\).pdf](http://www.v6trans.jp/en/pdf/2005_IPv6_Guidelines(EN).pdf)

Deployment Status

Smooth Transition

- Prepare for IPv6 Environment at the time of system upgrades
 - Lead to a gradual transition in several years

Forced Deployment

- IPv6 Transition by force
 - Lead by government bodies, etc
 - Forced conditions such as IPv4 exhaustion

Solution Oriented Deployment

- IPv6 Deployment as solutions
 - Adopt IPv6 as means to meet the needs
 - This includes closed networks and other cases which doesn't require IPv4 compatibility

Two areas of commercial market in IPv6

IPv6 Intranet (Closed Network Service)

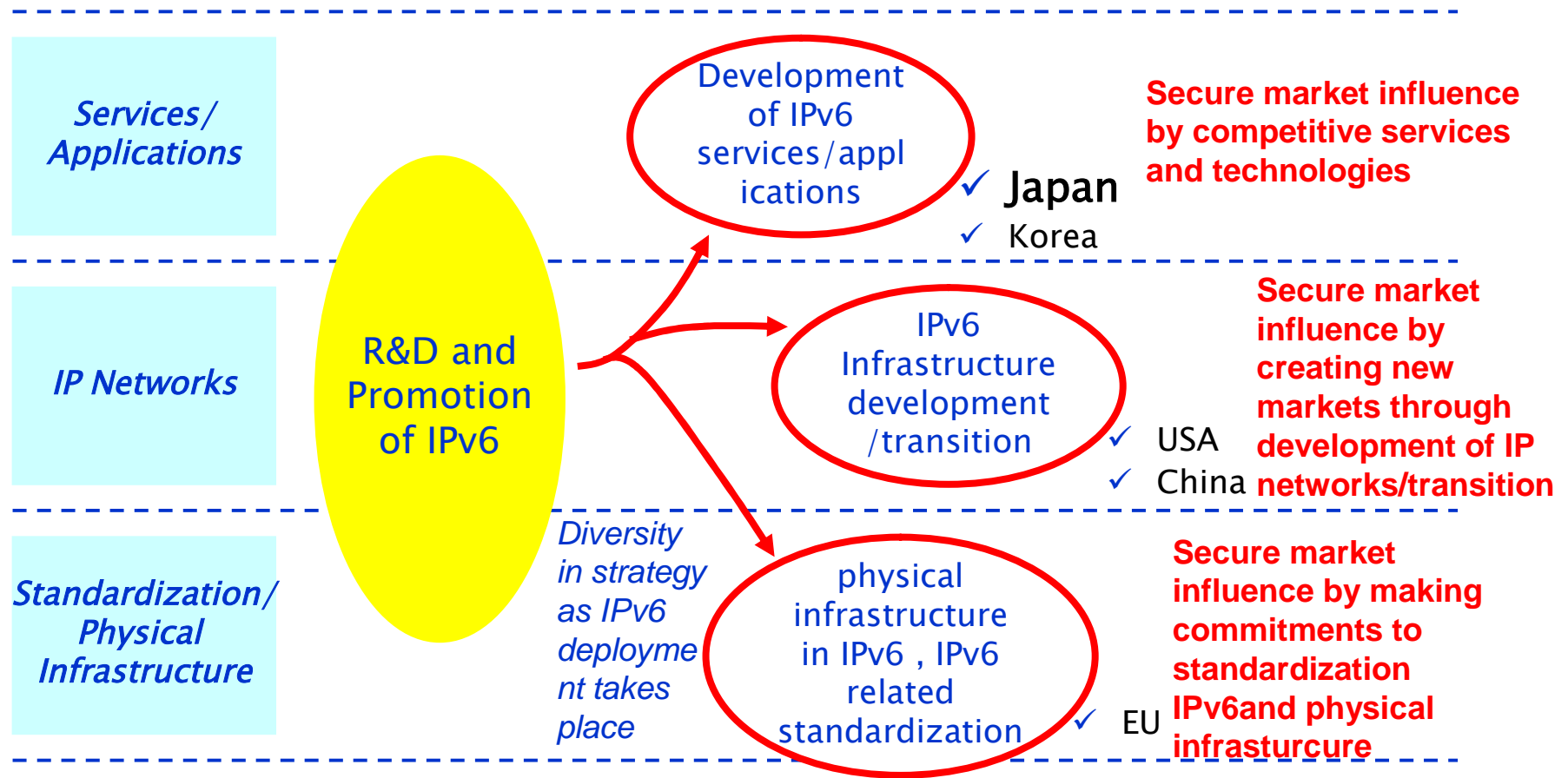
- IP-conversion of non-IP area
 - Facility Management
 - Sensor Networks
 - Telephone/mobile infrastructure
 - IPTV
 - etc...

IPv6 Internet (Global Network Service)

- IPv6 over IPv4 (tunneling)
- Dual stack connectivity
- Remote

Where is Japan in terms of IPv6?

Japan is strong in Business and Application Area

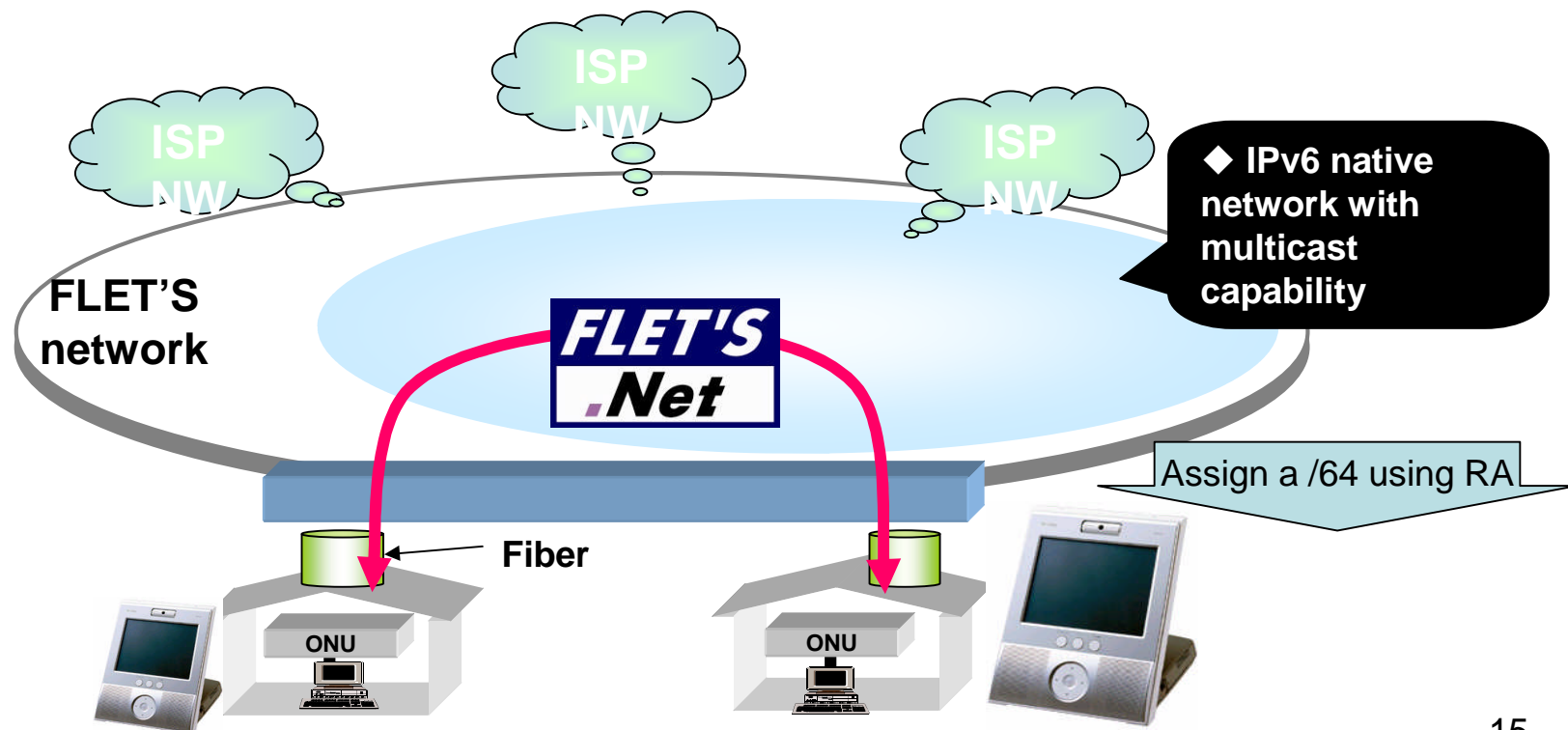


IPv6 Application and Service

Access-line Service in a Closed Network

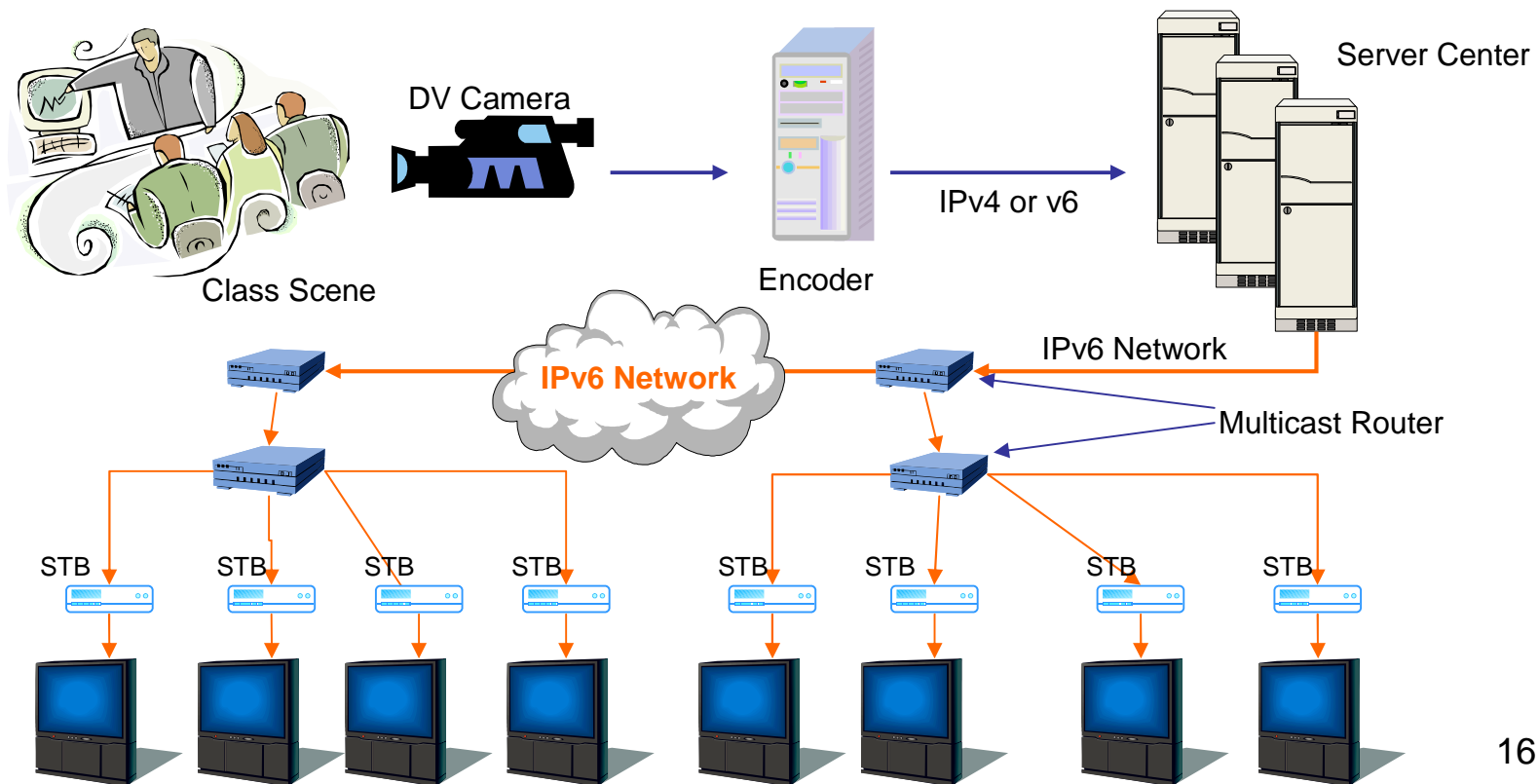
FLET'S.NET

- Optional service for flet's internet subscribers
- ISPs connected to flet's infrastructure can be ASPs
- 48K Subscriber in 2006



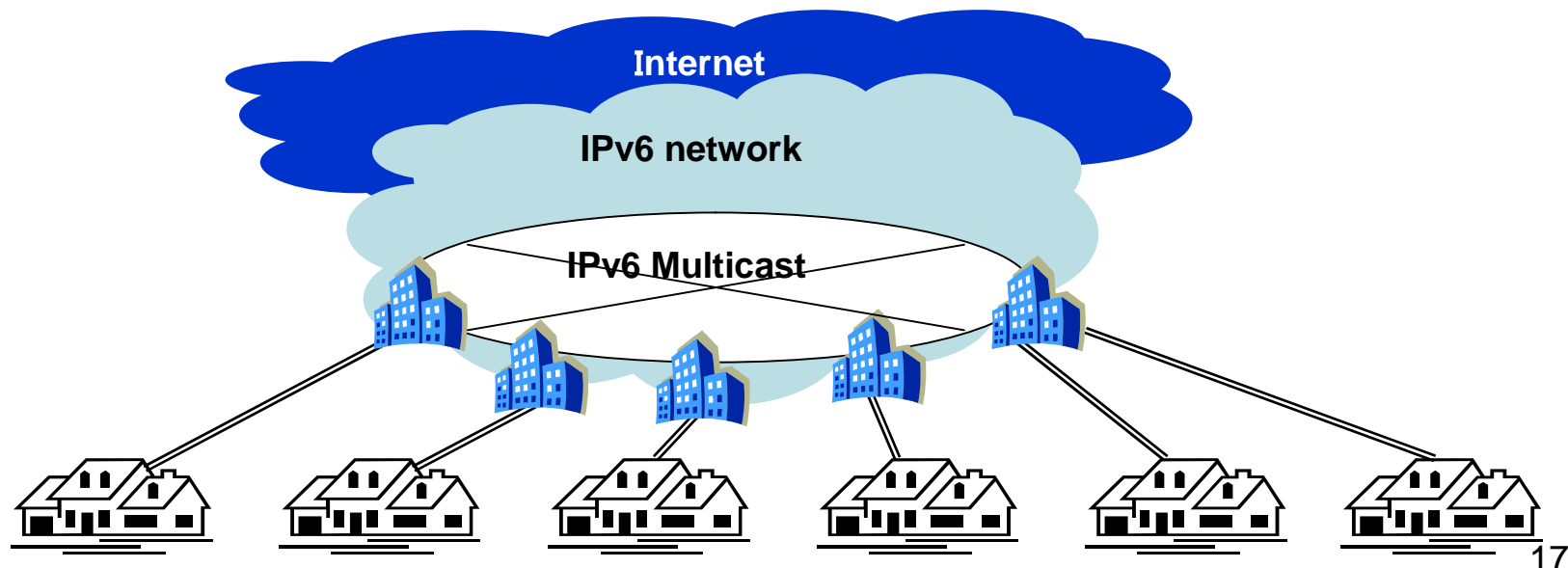
Real-time broadcast service (Becare)

- They distribute the DV image of the class of the cram school to the remote place.
- Based on IPv6 Multicast Technology



TV broadcasting and VoD service (Plala)

- TV broadcasting and Video on Demand services based on IPv6 multicast technology
- Currently brought to the subscriber by a major ISP (Plala)
- 30K Subscriber in 2006



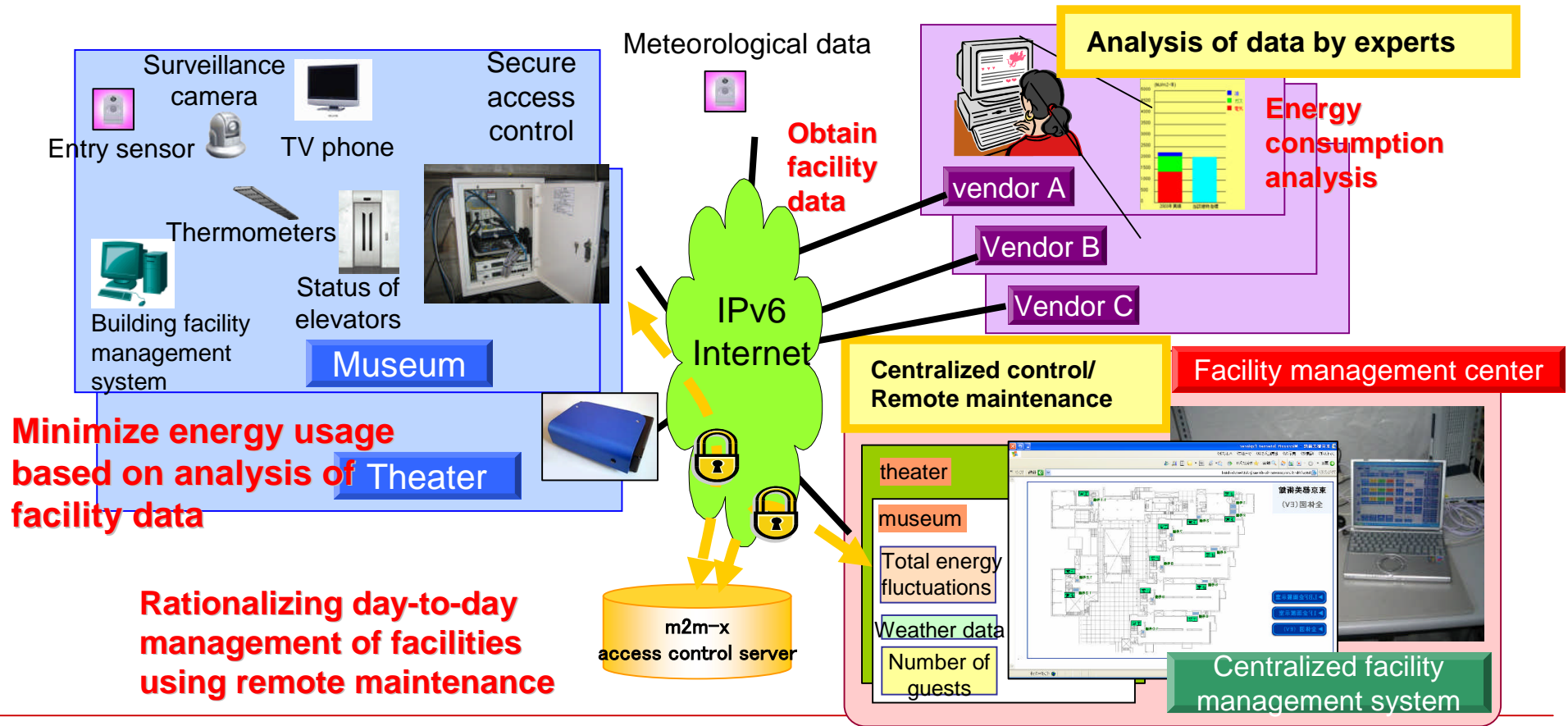
Benefits

- Why?
 - To provide (real-time) high quality broadcasting services
 - To distribute the high quality image to multi point cheaply.
 - In the method using CS, it costs several hundred million yen to an initial cost. (Becare)
 - Saves the transition cost of network from IPv4 to IPv6 (Plala)

- Then... IPv6 is
 - Reduce the initial cost (Becare)
 1. Neither special lighting equipment nor the studio, etc. are necessary for the distributed base.
 2. There only have to be an encoder and DV camera (household use) in the delivery base.
 3. the initial cost is several 200,000,000 yen → 17,000,000 yen.
 - Well-suites to TV and VoD services on IP technology (Plala)

NTT Communications

- Status of elevators, AC or ventilators, movement of guests in the museum, temperature of rooms, surveillance camera images may be monitored in a facility management center.
- Shared use of networks among IP phone, Internet access and facility management.
- Where experts' analysis of data on the number of guests in respective rooms and temperatures are available, it is possible to minimize energy consumption.

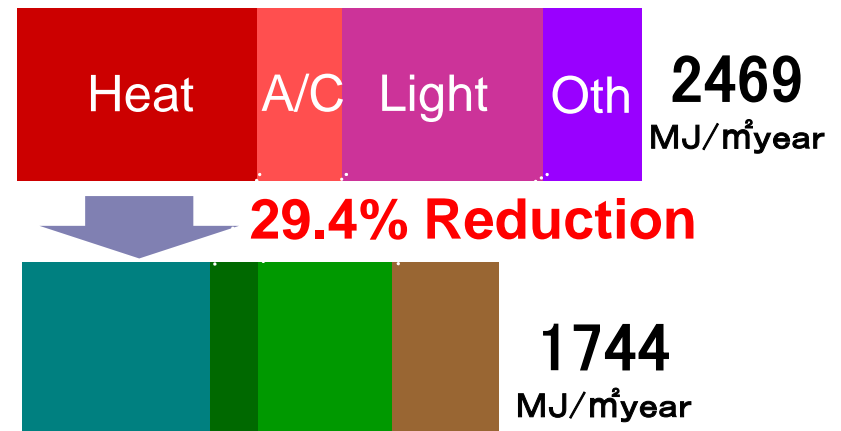


Benefits

- Why?
 - Shares the network infrastructure for several protocol defined by specific vendors
 - Reduces the cost of device and service and accelerates the growth of facility management market
 - Reduces energy consumption and its cost

- Then... IPv6

- Integrates each independent protocols and services
- Manages detailed devices among the distributed facilities
- Manages large number of devices



Live E!

- Live E! is a approach that aims at the achievement of the infrastructure construction that can use, process, and share “Environmental Information”.
- “Environmental Information” is collected by "Digital Weather Station“, IP Camera, etc. that are set up by the individual and the organization voluntarily.
- By the installation of a lot of “Digital Weather Station”, the environmental information can be utilized much more.
- The development of a new activity is assumed in an education, public service and the business field.



Digital Weather Station

Chair : Hiroshi ESAKI (Tokyo Univ.)
Co-Chair : Reiji AIHARA (Hiroshima Univ.)

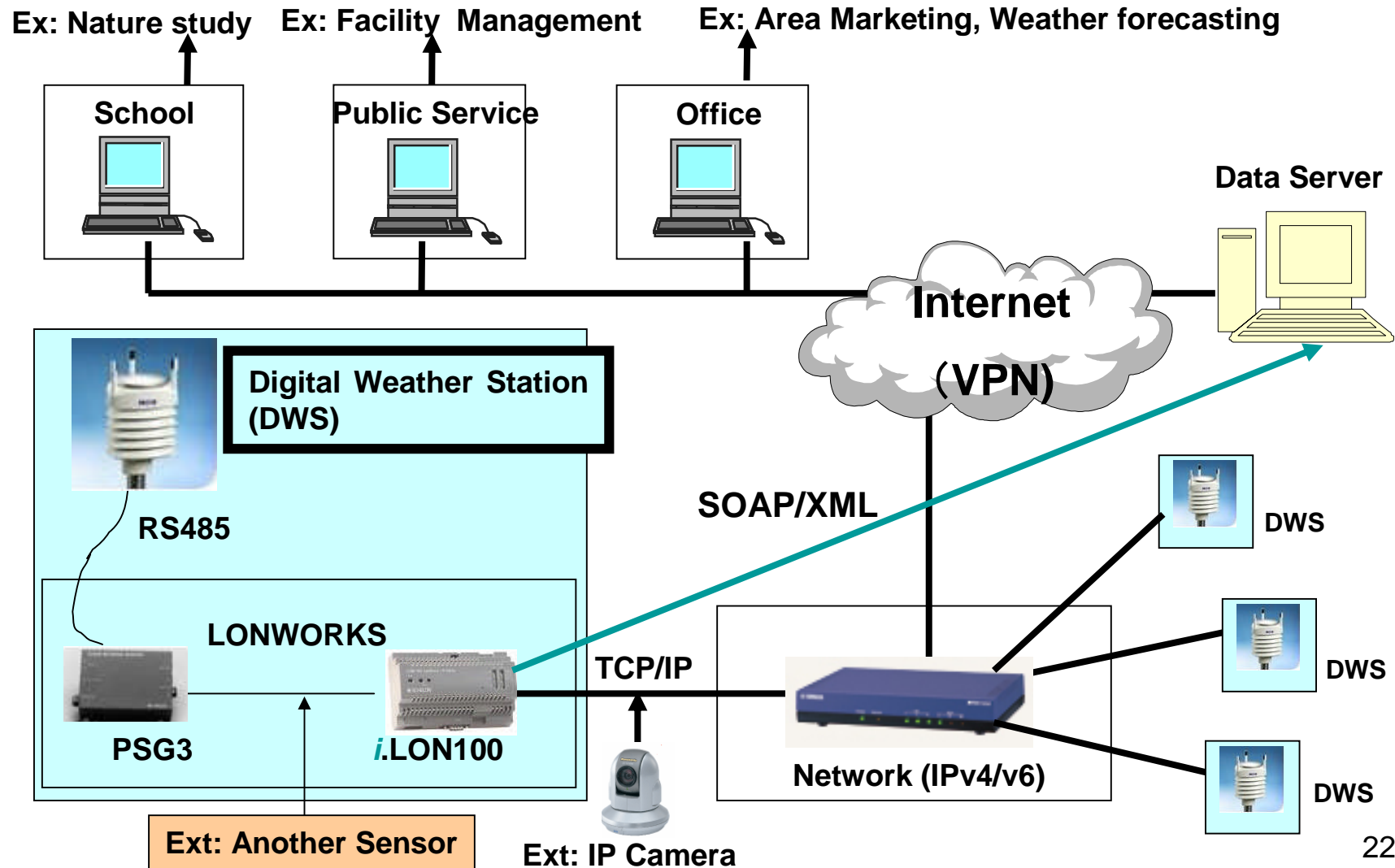
Cooperation WIDE Project
Organization: IPv6 Promotion Council of Japan
U18 IPv6 u
IRI Ubiteq, Inc. Weathernews, Inc.
Uchida Yoko Co., Ltd. ECHELON Japan K.K.
Cisco Systems, Inc. DAI-DAN CO., LTD.
Net One Systems Co., Ltd.
Nippon Telegraph and Telephone East Corporation
Willcom Inc.
NTT Neomeit Chugoku Corporation
Mitsubishi Research Institute, Inc.

multiple purposes

- ① Education Materials
- ② Public Services
- ③ Business applications

Environmental Information System

Live E! (2)



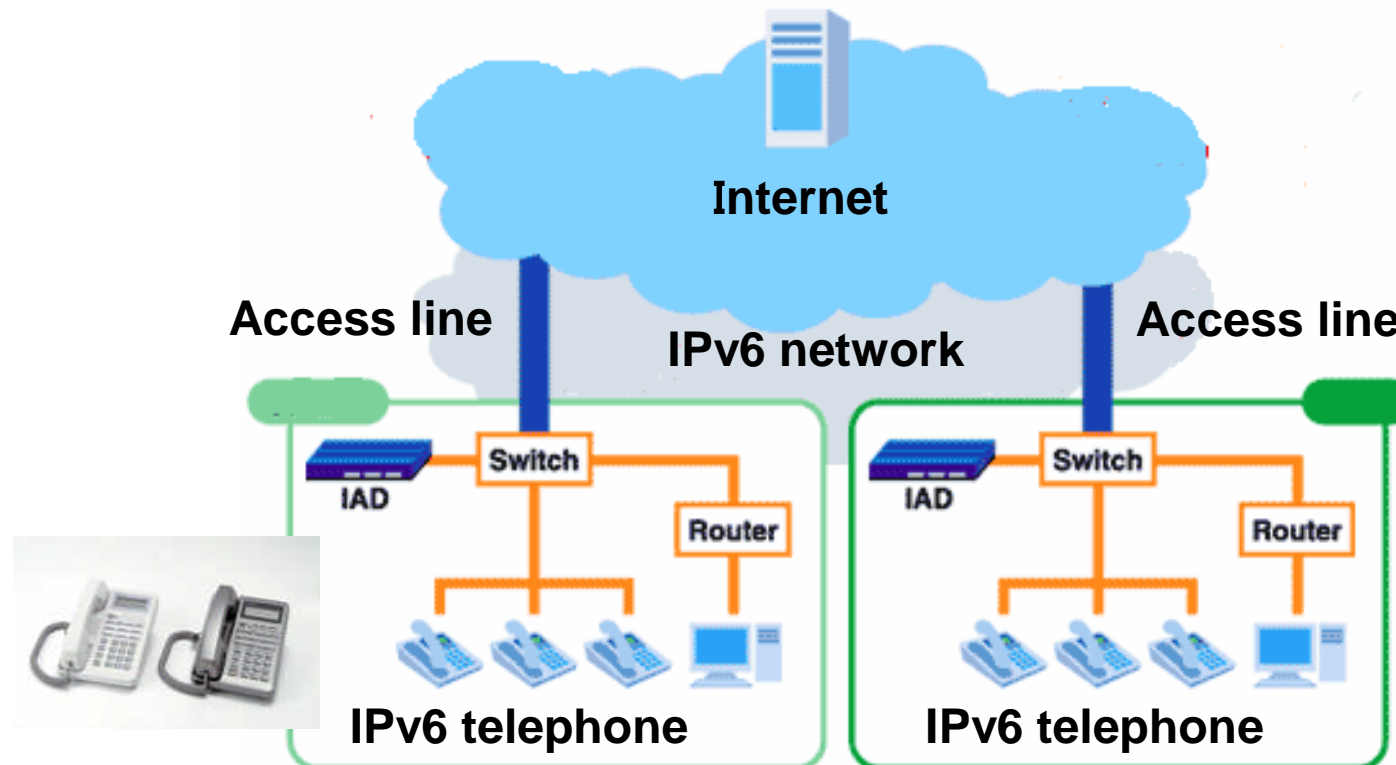
Benefits

- Why?
 - To install a lot of sensors, widely
 - to reduce the time / human resources to install a lot of sensors.

- Then... IPv6 is
 - Set it only by connecting, by plug & play function
 - Providing easy operation to everyone
 - The sensor installed on the large area can be managed in one place.
 - Reduce the human resources and it's cost

FreeBit

- IP-phone solution based on shared IP Centrex
- Has Already installed 25,000 terminals to a dormitory operator to manage their distributed facilities



Benefits

- Why?
 - To reduce the initial and running cost
 - To provide the service such as PSTN quality
 - To adapt the dynamic change of condition of facility
 - such as dormitory operator (distributed and diverse facility)
- Then... IPv6 is
 - Simplifying Network design / re-design
 - fall into only three install manuals
 - Reduce the required human-resource and it's cost
 1. Installation
 2. Mis-configuration
(i.e., 300 → single number)
 3. Trouble shooting

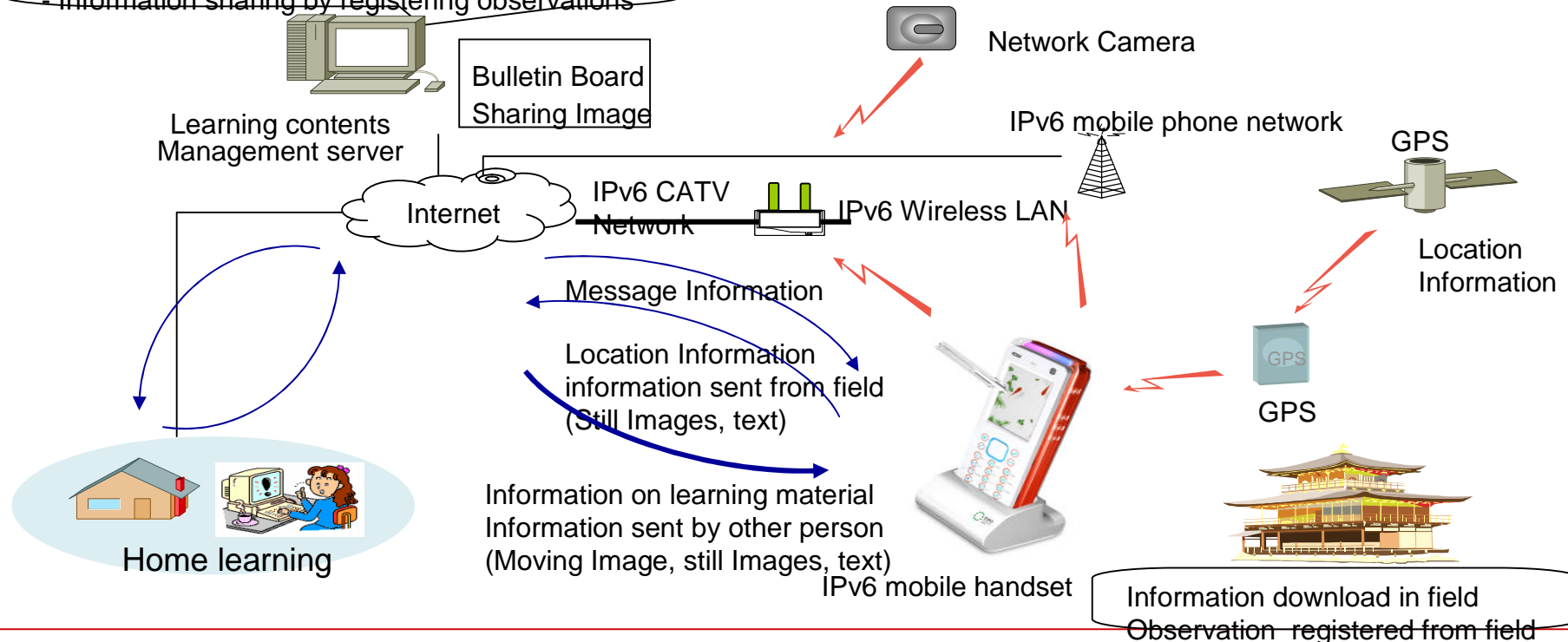


Regional Digital Museum (KDDI + INTEC W&G)

- Conducted using the IPv6 mobile handset at ubiquitous learning hotspots and browsing through the study content
- IPv6 mobile handset uses IPv6 mobile phone network or IPv6 CATV Network



- Knowledge exchange on bulletin board
- Information sharing by registering observations



IPv6 Products : to the market in succession.

◆ Brand-new IPv6 Products

- ✓ Office Solution
- ✓ Facility Management
- ✓ Transportation System
- ✓ Medical System
- ✓ And so on...



FreeBit
IP Phone & Centrex



Matsushita Electric Works
EMIT Total Buildings. System Controller for floor management



Yokogawa
"Xancia"
(All-purpose Controller)

◆ Commercialized IPv6 Products



NTT Regional Co.
IP Video Phone



Panasonic Communications
Network Printer & WebCam



Yokogawa
Networked Audition Machine & "Fis" Environment Analysis System



YAMAHA (IPv6&SIP)



Hitachi ULSI (IPv6&IPsec)



Fujitsu LSI (IPv6&IPsec)



Hitachi
GR2000 Series (Router)



SGI "View Ranger"
(Micro server & Cam for Monitoring)



TOSHIBA "REGZA Z1000"
(IPv6 multicast mode)

IPv6 getting closer to the home

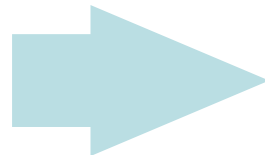
FLET'S SQUARE



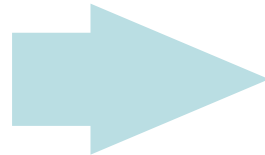
FLET'S .NET



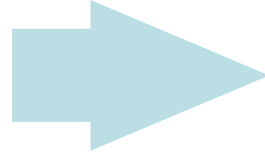
FLET'S v6 Appli.



Content services and video phone services via IPv6 Connection (not Internet) are available to all FLET'S Users.



IPv6 home router, Now in Japanese major electrical store. Only about \$120.00 !!



IPv6 Network Camera, Also in some store. Only about \$480.00 !!

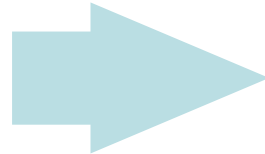
OCN IPv6

未来はすぐそこ。家庭内ネットワークの新しいカタチ！
OCN IPv6は、ライフスタイルが一変する可能性を秘めた接続サービスです！

IPv6ってなに？
IPv6は、現在インターネットで使われているIPv4の次世代通信プロトコル。IPv4よりも数億倍多くの中での、広大なアドレス空間を持つIPv6が期待されています。近い将来、その技術を使えば、あらゆる機器がインターネットにつながって、家庭内からのコントロールも可能になります。IPv6について詳しく知りたい方は、こちらをご覧ください。

OCN IPv6サービスの特長

① 外出先から自宅の対応機器へダイレクトにアクセス！	② 画面内ルータ等の設定変更が不要！
③ IPv4サービスと併用してのご利用が可能！	④ 接続プログラムを無償提供！
⑤ 月額315円(税込)で同時に2セッションご利用可能！	



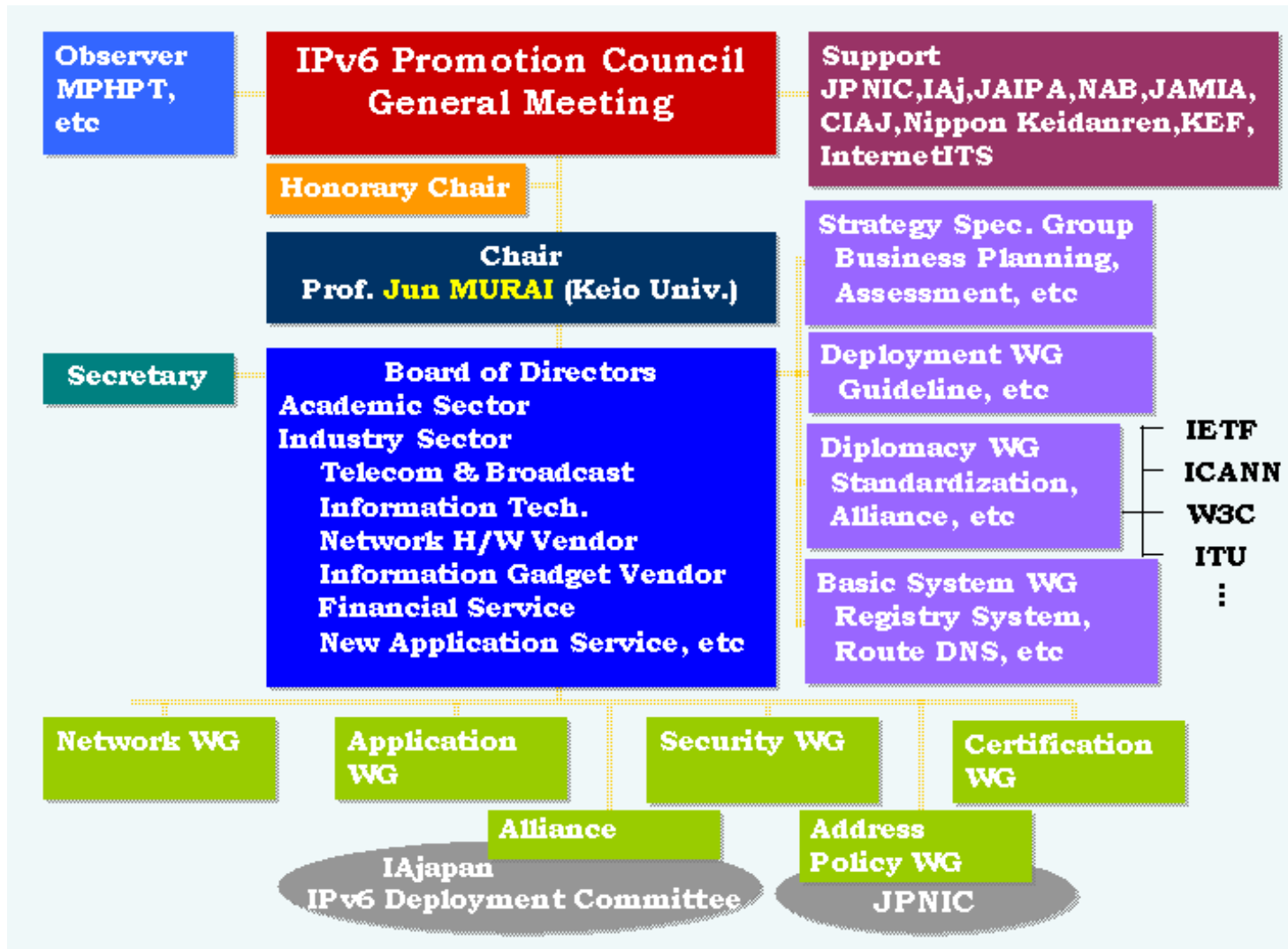
IPv6 Connectivity Option, provided by OCN. Only \$3.60 per month !!

What is IPv6 Promotion Council of Japan

What is IPv6 PC?

- Established in October, 2000
- Non-Profit and Non-Governmental organization
- 385 Corporations, Organizations, and Individuals as of February 2006
 - Members from worldwide major companies in telecom carriers, ISPs, HW/SW vendors, car, finance, general trading companies as well, such as TOYOTA, Bank of Tokyo-Mitsubishi UFJ and so on
 - international members such as HP, Juniper, CISCO, IBM, NOKIA, Native6 and so on

Organization



Conclusion

Future Activities in Japan

- Commercial IPv6 services for corporate and home-users are available in Japan
 - advantages of IPv6 confirmed as “value added”
 - services within closed networks currently enjoy more advantages
- For the consumer, the IPv6 connectivity is getting closer.
 - But, There are neither attractive contents nor an application, and the one that becomes the first trigger is waited for.
- In the field like the building maintenance , the sensor network and the disaster prevention system, the system using IPv6 will spread rapidly.
- We will contribute to spread IPv6 at worldwide scale.

Thank you for your attention !



More information:

IPv6 Promotion Council of Japan:

URL: <http://www.v6pc.jp/en/index.html>

e-mail: info@v6pc.jp