

Telecommunications Administration

I. Creating a dynamic info-communications industry

1. Promoting Intelligent Transport Systems (ITS)

Intelligent Transport Systems (ITS) are gathering high hopes as a tool for realizing the advanced info-communications society in the 21st century.

Certain forms of ITS have already been partially implemented. One form, the Vehicle Information and Communication System (VICS) which conveys to vehicles such real-time traffic information as notification of traffic jams, has been implemented since FY 1996 on a large scale. Another form, the Electronic Toll Collection (ETC) systems that facilitate highway-toll collection without the need to stop vehicles, was introduced on a trial basis in an area within Tokyo from April 2000.

Under the circumstances, it has become a matter of urgency that the ideal status for developing ITS-related technologies and their standardization be discussed while clarifying the future status of the info-communications systems to be used for ITS. Thus, the Minister of Posts and Telecommunications in April

1998 made an inquiry on the "Desirable Info-communications System in ITS" to the Telecommunication Technology Council (Chair: Dr Junichi NISHIZAWA, President of Iwate Prefectural University), as part of its effort to fully implement ITS as early as possible. In February 1999 the council compiled its findings into a report and submitted it to MP Minister.

An overview of the present status of ITS implementation and outline of the council report follow.

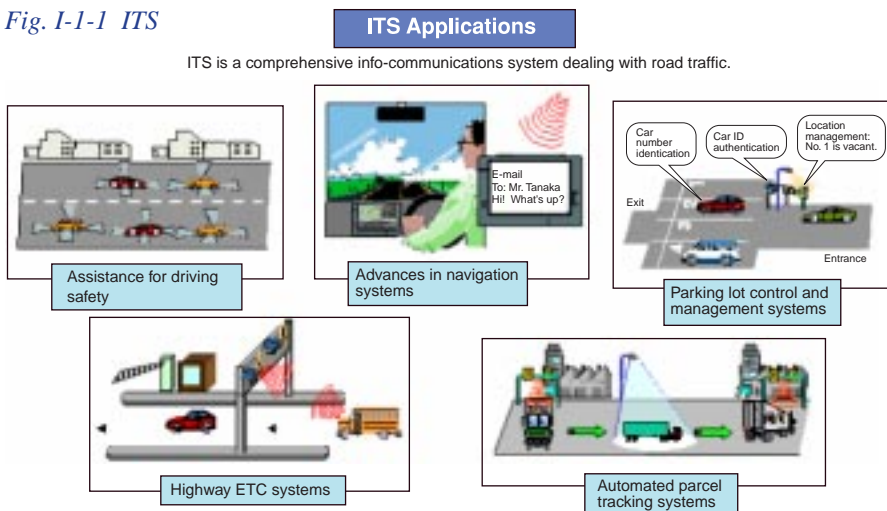
1) Current status of ITS promotion:

i) Objectives of ITS promotion

ITS can be regarded to be comprehensive info-communications systems dealing with road traffic. By employing state-of-the-art info-communications technology as much as possible, the systems realize integration of vehicles, roads and human in developing and operating such various systems as advanced car navigation systems, Electronic Toll Collection (ETC) systems and support systems for driving safety (Fig I-1-1).

When fully implemented, ITS will

Fig. I-1-1 ITS



make significant contribution to the creation of a comfortable vehicle utilization environment, alleviation of traffic jams, support for driving safety, improvement of efficiency in physical distribution and a reduction of the load on the global environment. Since ITS is seen being a key for solving these problems now faced by the world, wide-ranging measures are being adopted on a global scale for the early implementation of ITS.

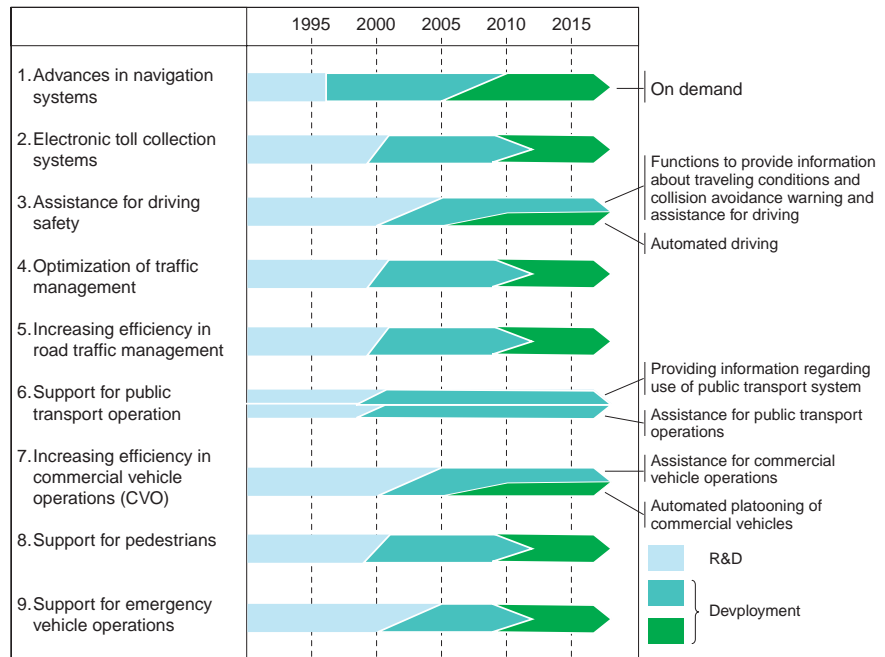
MPT, for its part, has been carrying out various policy measures from the standpoint that ITS can offer a mobile communications system targeting vehicles and comprise a significant portion of the effort to further promote mobile communications and multimedia. From the industry's viewpoint, the ITS initiative is aimed at utilizing road networks, expanding around the globe, and at controlling vehicles reaching 670 million worldwide. As Japan holds 10%, or 70 million, of the world's vehicles, a large ITS market is expected to be created in Japan along with the expansion of automobile and info-communications devices markets. To overcome the critical economic situation in Japan today as well as to usher in a bright, affluent society and economy for the 21st century, measures should be taken promptly for full implementation of ITS.

- ii) Measures adopted in Japan
 - a) Comprehensive Plan for ITS in Japan

In February 1995, the Advanced Information and Telecommunications Society Promotion Headquarters headed by the Prime Minister decided upon the "Basic Guidelines on the Promotion of an Advanced Information and Telecommunications Society." These guidelines advocated promotion of informatization in road, traffic and vehicles in the advanced info-communications society, and specified the basic policy for ITS promotion in Japan for the first time.

Based upon this basic policy, five

Fig. I-1-2 ITS development/deployment plan



Source: "Comprehensive Plan for ITS in Japan," July 1996

ministries and agencies in charge of ITS -- MPT, the National Police Agency, the Ministry of International Trade and Industry, the Ministry of Transport and the Ministry of Construction -- formulated the "Comprehensive Plan for ITS in Japan" in July 1996. This plan describes implementation schedules by early 21st century, R&D activity goals and so forth in the nine areas essential to development of ITS. (Fig. I-1-2)

- b) Promotion of ITS

Because such various fields as road, traffic, vehicles as well as info-communications are covered by ITS, and its coverage thus transcends boundaries of industrial sectors, ITS is regarded as a national project that can be promoted only when collaboration of government, industry and academia becomes possible. For this reason,

the five ministries and agencies are striving to strengthen cooperative ties between industries and academia in Japan as well as with those in other countries.

Meanwhile, as an initiative of Japanese industries and academia, the "Vehicle, Road and Traffic Intelligence Society (VERTIS)" (Chair: Mr. Shoichiro TOYODA, Honorary Chairman of Toyota Motor Corp.) was formed by scholars, private companies and relevant organizations. VERTIS conducts information exchanges in collaboration with the Five-Ministry Liaison Conference consisting of Japanese ministries and

Fig. I-1-3 Structure for promoting ITS in Japan

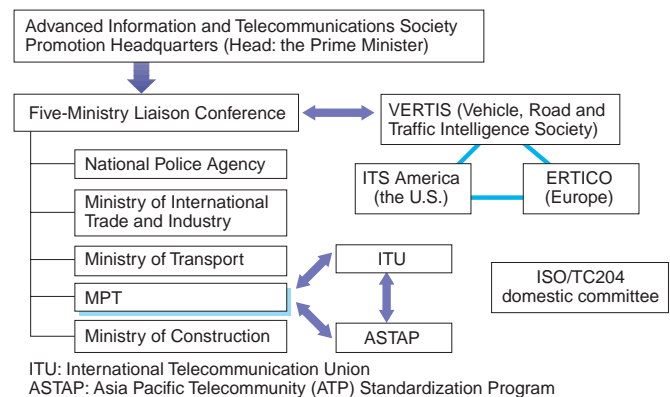


Fig. I-1-4 ITS Info-communications Forum

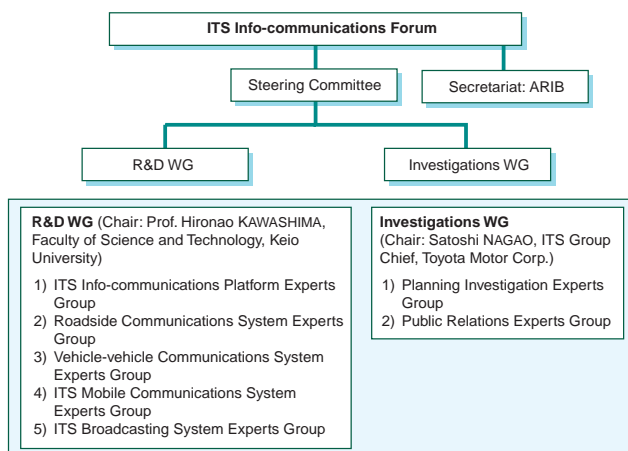
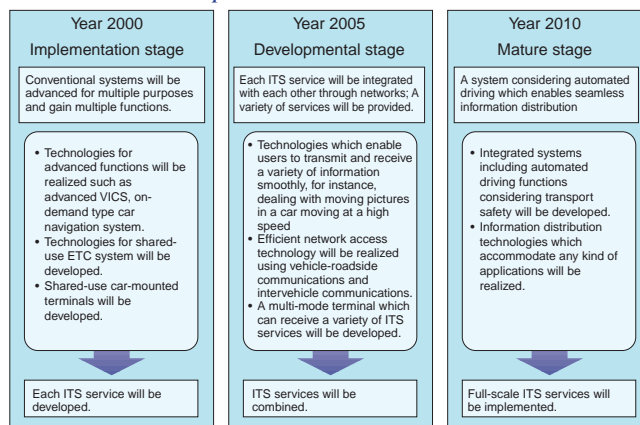


Fig. I-1-5 Image of ITS info-communications systems development



agencies in charge of ITS, and serves as a liaison for ITS-related organizations in the U.S. and Europe as a representative of the Asia-Pacific region. (Fig. I-1-3)

In July 1999, the "ITS Info-communications Forum" (Chair: Mr. Shoichiro TOYODA, Honorary Chairman of Toyota Motor Corp.) was formed, and the forum is conducting the study on R&D of ITS info-communications systems and standardization thereof, communication and coordination with concerning organizations, as well as diffusion and enlightenment on ITS info-communications systems (Fig. I-1-4).

iii) The Yokosuka Research Park (YRP) and the ITS Research Center

Since October 1999, within the Yokosuka Research Park (YRP) and the ITS Research Center of the Telecommunications Advancement Organization of Japan (TAO), an R&D team headed by Mr. Mitsutoshi HATORI, Director, Multimedia Information Research Division, the National Institute of Informatics, was formed and R&D on ITS info-communications technology was started.

The R&D team is striving for realizing the multimedia vehicle (R&D for transforming a vehicle into an office), creating a full-fledged R&D base for comprehensive ITS info-communications technology (with cross-industrial participation by automobile manufacturers, telecom-

munications carriers, broadcasters and communications equipment manufacturers) and promoting R&D for international standardization.

iv) Experiments for auto-parks in the future

MPT conducted R&D on advanced and multipurpose radio communications technologies so that the technologies for ETC be applicable to auto-park management systems, logistics management systems, etc. (the FY 1998 third supplementary budget).

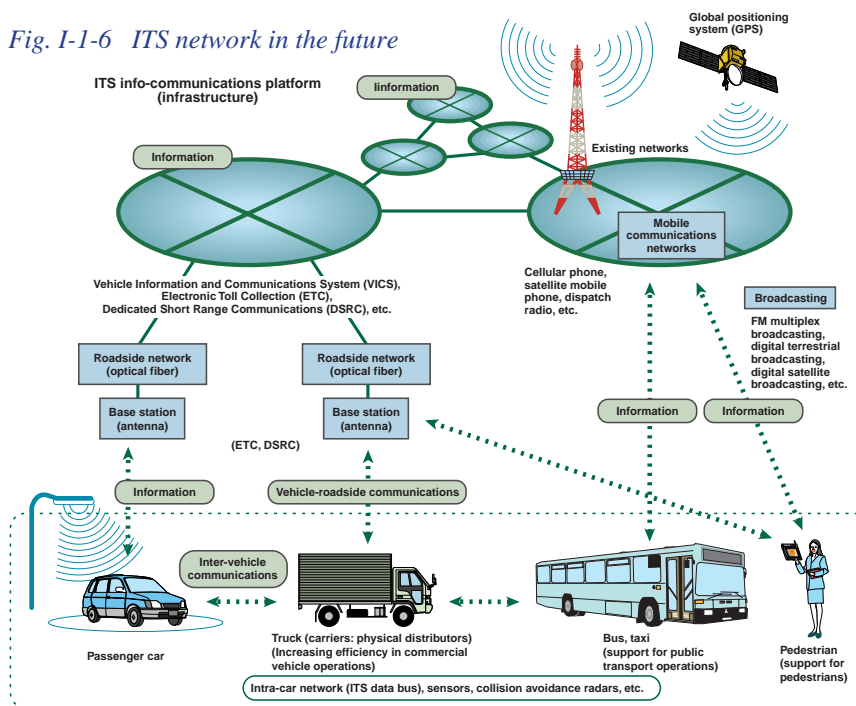
v) International standardization

ETC and the wireless transmission method of low-power automobile millimeter-wave radar system, which are provided by the ordinances of MPT, were adopted as Recommendations at the Radiocommunication Assembly (RA), International Telecommunication Union Radiocommunication Sector (ITU-R), held in May 2000.

2) Future image of ITS info-communications system

The report of February 1999 defines the direction of ITS info-communications systems development,

Fig. I-1-6 ITS network in the future



while taking into consideration future advancements in mobile communications, broadcasting, vehicle multimedia systems and so on.

Regarding media to be used in ITS info-communications systems for the near future, not only such systems as VICS and ETC that have been developed exclusively for ITS, but also other technologies planned for development and implementation, such as the next-generation cellular system and the next-generation Internet as well as terrestrial and satellite digital broadcasting, are expected to be integrated. The report foresees these ITS info-communications systems will be advanced, passing the "implementation stage" in CY 2000, where ITS services begin to gain multiple functions, then the "developmental stage" in CY 2005, where ITS services will be integrated with each others through networks, and finally reaching the "mature stage" in CY 2010, where advanced ITS services will be fully integrated, providing

Table I-1 Some examples of applications expected for ITS info-communications systems

Field	Applications
Road, traffic information	On-demand type car navigation system; Optimal route-guidance system; Parking-lot vacancy information, reservation system; Driving route information exchanging system between vehicles; Road, geographic information auto-renewal system; Destination point weather forecast information system; Traffic congestion, estimated driving time information system; Pedestrian route guidance, leading system
ETC, DSRC (Dedicated short range communications)	ETC system; Parking-lot control system; Automated check-in system for a car ferry; Drive-through shopping system for convenience stores; Cargo-tag physical distribution (PD) management system for a distribution center; Multi-purpose wireless IC card settlement system; Gas station charging settlement system; Automated gateway, vehicle control system
Car multimedia system	Provision of destination-related information (travel, sightseeing, recreation); A variety of booking system (public transportation, hotel, amusement facilities); Car-mounted on-line shopping system; Entertainment information provision system; Tandem communications system between vehicles; Car-mounted electronic secretary system (information search, electronic settlement system); Car-mounted Internet access system
PD, public transportation systems	Optimal realtime car allocation system; Container location, tracing/tracking system; Integrated PD operation system; Public transportation utilization information system; Commercial vehicles location system; Total delivery system; Public transport operations management system; Shared-use short-distance individual transport system
Support for pedestrians, driving safety	Danger warning system at an intersection and a turning point; Provision of road conditions information; Driver/vehicle condition information notification system; Optimal route guidance and control system; Automated emergency accident notification system; Collision avoidance/driving control radar system; Automated driving system for commercial vehicles; Stolen vehicles tracking system

seamless information services (Fig. I-1-5). When this vision becomes a reality, a variety of ITS information will be exchanged between ITS services providers and users over a number of networks. At the same time, from the users' perspective, ITS networks will serve as an info-communications platform (infrastructure) that enables flexible access to a wide variety of services, being un-

aware that the platform actually consists of disparate systems linked via different networks.

To this end, the report says, measures that prompt the development of the "ITS Info-communications Platform" must be taken. The report also suggests that the platform should encompass various systems interlinked via networks, and be capable of transmitting large-capacity information and of providing multimedia functionality while at the same time securing interoperability between ITS info-communications systems and other networks. (Fig. I-1-6)

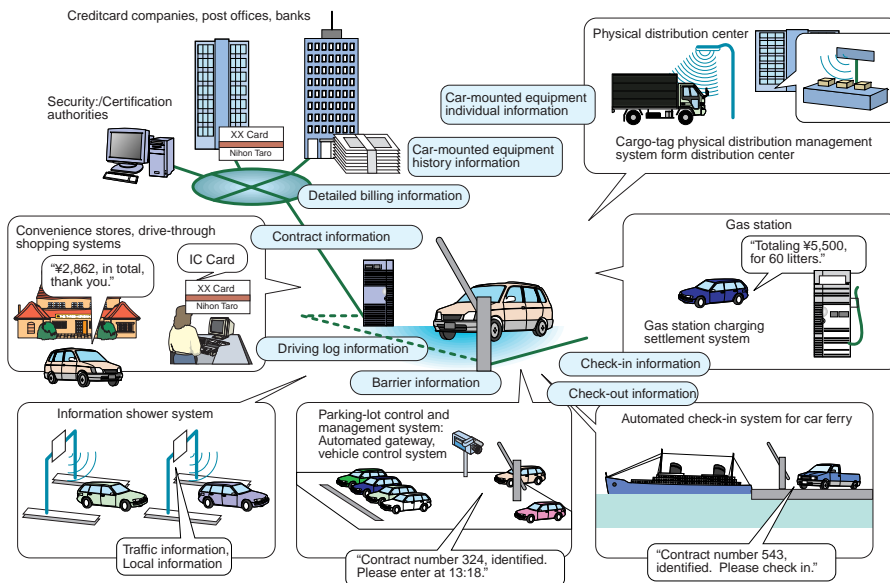
Since it is important to provide users with applications that are closely related to their lives, great expectations are placed upon the early development and implementation of 39 applications in five fields (Table I-1).

In order to realize the Dedicated Short Range Communications (DSRC), a type of multimedia mobile communications systems, constructed in small zones applying wireless communications technology concerning ETC, which is usable in such areas as auto-park management, logistics management, and charge payment at gas stations, MPT is inquiring on the technical requirements of the radio equipment, etc. for the DSRC systems of the Telecommunications Technology Council. The council will compile its findings as a report in October 2000 (Fig. I-1-7).

2. Toward introduction of dialing parity system

"Dialing parity" allows users to place calls without dialing a carrier identification code once they have registered their carriers of choice with their incumbent regional carrier.

Fig. I-1-7 DSRC System



Outlines of the dialing parity system to be introduced in Japan are as follows:

- 1) The system covers both domestic and international calls from networks of regional NTT companies, excluding calls destined for cellular and PHS phones.
- 2) There will be four registration categories for calls: local (intra-city) calls, inter-city calls within a prefecture, inter-prefectural calls and international calls. Users need to register their carriers of choice with one of the two regional NTT companies in their regions.

The dialing parity system is scheduled to be introduced in Japan from May 1, 2001, after a series of awareness campaigns for users about details of the system.

3. Proposals on telephone numbers for fixed terminals, as well as for IMT-2000 and IP telephones

In order to discuss the desirable long-term telecommunications number system for fixed terminals whose use is expanding, and the telecommunications number system of the IMT-2000 and IP telephones, MPT formed the "Study Group on Telecommunications Number in FY 1999" chaired by Prof. Tadao SAITO, Graduate School of Engineering/Faculty of Engineering, University of Tokyo. This study group compiled a report in June 2000.

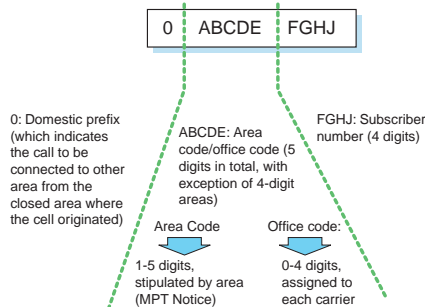
Major points of the report are as follows:

1) Telephone numbers for fixed terminals

Currently, a number system called "0AB-J numbers" is used for the telephone numbers of fixed terminals. Its composition is as follows: (Fig. I-3)

Recently, networks are constructed by plural telecommunications businesses, and diversified services are developed. Along with these, demands for the 0AB-J numbers are increasing rapidly, and the numbers are becoming tight in many regions. As the short-term measures for the

Fig. I-3 Telephone numbers of fixed terminals



0AB-J numbers, general principles below are to be implemented:

- i) Until area codes become three digits (ABC), digits are to be sifted between the area codes and office codes
- ii) Where available office codes are exhausted after that, when the C code is not 0 or 1, digits are to be shifted between the area and office codes, which makes 0AB-CDE-FGHIJ.
- iii) After that, if there are ten consecutive non-used codes in the office codes that start with C in the same prefecture, use the area codes. If there are no ten consecutive non-used office codes, shift digits between the area and office codes, which makes 0A-BCDE-FGHIJ.
- iv) If C = 0 or 1, since the first digit of the office codes becomes 0 or 1, shift digits by two digits. As a long-term measure, the Study

Group deliberated on seven measures to make the telephone numbers to be 11 digits, and proved that the long-term measures are not inconsistent with the short-term measures. As to streaming the seven measures, however, the Study Group made it a subject of further deliberation, since more detailed study is required.

2) Numbers for IMT-2000

Concerning the voice telephony for the IMT-2000, since the service is equivalent to existing mobile telephone services, and since the difference between the charges for those who transmit voice calls to IMT-2000 and the charges of existing mobile telephone services is not so large, the report recommended that IMT-2000 use the "0A0" numbering system, which is used by existing mobile telephone services.

3) Numbers for IP telephony

As regards the IP telephony whose quality, etc. are comparable with the fixed telephone service, the report recommended that the "0AB-J" numbering system be usable, and that the IP telephony terminal can be called with numbers of the same system as other fixed telephone services. And, if new concepts of IP telephony services can be thought up, the report suggested that the continuous study based on the further development, etc. should be made.

II. Measures for Ongoing Globalization

1. Toward the Introduction of the International Mobile Telecommunications – 2000 (IMT-2000)

1) Introduction

Mobile communications such as the mobile telephone or the Personal Handy-phone Service (PHS) is rapidly diffusing, and the number of subscribers to such services has reached 60 million at the end of July 2000. The IMT-2000 is a next-generation mobile communications service

that follows the mobile telephone or the PHS. In Japan, preparations are being made aiming at introduction within 2001.

2) What is IMT-2000?

Since mid-1980s, IMT-2000 has been studied in the International Telecommunication Union (ITU) as the third-generation system which follows the first-generation system based on analog technology that came as the automobile telephone in 1979, and the second-generation system based on digital technology in-

roduced in 1993. IMT-2000 has been developed with the aim of realizing a full-fledged multimedia service based on moving picture transmission and high-speed Internet access, etc. IMT-2000 can be considered to provide transmission speed as high as 2 Mbps at the quasi-fixed condition such as indoors, and as 144-kbps at the fast-moving condition in automobiles, etc. In addition, IMT-2000, being standardized with the aim of achieving global roaming, is expected to be carried and used with ease in Japan as well as abroad.

It is considered that mobile communications will develop further based on IMT-2000, and in the Telecommunications Technology Council Next-Generation Mobile Communications Committee Report (mentioned later) of September 1999, it is forecast that the number of mobile communications subscribers including IMT-2000 in Japan will reach 75 million to 100 million.

3) MPT measures

MPT, in order to facilitate introduction of IMT-2000 during year 2001, has been conducting the following measures. Details of these measures are provided through the MPT website.

In July 1998, MPT announced the basic guidelines for introducing IMT-2000 and invited public comments. The result is published in November 1999 at:

<http://www.mpt.go.jp/pressrelease/english/telecomm/news980729html>

As for technical requirements concerning the introduction of IMT-2000 to Japan, MPT asked for discussions to be conducted by the Telecommunications Technology Council from September 1997, and received a report including two radio specifications (DS-CDMA and MC-CDMA) from the Council in September 1999.

http://www.mpt.go.jp/pressrelease/english/telecomm/news990927_6.html

Based on these, in December 1999, the basic guideline concerning the radio station license was published.

The processes for creating regulatory frameworks necessary for introduction were made, and in March 2000, relevant ministerial ordinances and notices such as radio equipment technical requirements were promulgated.

On February 14, 2000, the final plan for the introduction guidelines including the comparative examination was announced. The public comments were invited by March 6, and the results were published on March 27, 2000.

Based on these relevant rules and introduction guidelines, MPT has been accepting applications since April 3, 2000, and selected the businesses on June 30, 2000 (NTT DoCoMo Group, J-Phone Group and DDI/IDO Group).

<http://www.mpt.go.jp/pressrelease/english/telecomm/news000214.html>

Outline of the basic guidelines

- i) The technical requirements should be based on the Telecommunications Technology Council Report
- ii) Regarding the use of frequencies, with the aim of providing efficient 2Mbps services, available frequency bands of 60 MHz x 2 should be used by dividing into three blocks. In determining specific frequencies, however, sufficient care is to be paid on securing equitable use of radio waves and preventing harmful interference of PHS or existing fixed stations.
- iii) As regards radio station license, the maximum number of licensees in one area should be three. If there are more than three applications, licensees are determined by a comparable examination method.

Outline of draft guidelines, etc. concerning the introduction of IMT-2000

- i) Concerning the use of frequencies, as basic guidelines, in order to promote efficient provision of 2 Mbps services, available fre-

quency bands of 60 MHz x 2 should be used by divided into three blocks, 20 MHz x 2 each. Therefore, in regard to the radio station license, the maximum number of licensees in one area should be three. However, paying sufficient care on securing equitable use of radio waves and preventing harmful interference of PHS or existing fixed stations, each business should be assigned frequencies 15 MHz x 2 maximum for the moment.

- ii) If there are more than three applications, the licensees are determined with a comparable examination method in consideration of the construction plan for base stations, the content of service expansion plan and the technological capability that enables service provision, etc.
- iii) Both existing Type I telecommunications carriers and businesses that wish to conduct the Type I telecommunications service anew may apply, but the businesses owning local networks are excluded.
- iv) Entries are allowed by regional blocks, but entries into plural regions and entries in all Japan by single business are to be allowed.
- v) The obligation to try to cover population more than 50% within five years after starting business will be set forth and a nationwide service will be secured through inter-business roaming, etc.

4) Further tasks

With the study on IMT-2000 continuing at ITU, technological deliberations are being made for further development of the systems including improvement of interoperability with the Internet, addition of frequency bands is being studied for meeting increasing demands and arrangement of problems are being conducted for the global roaming of terminals. And, the study on the next-generation systems following the third-generation IMT-2000 has already been started. MPT will aggressively contribute to these stan-

standardization efforts.

2. Measures for MRA in Telecommunications Equipment

The Mutual Recognition Agreement/Arrangement (MRA) is an agreement/arrangement between two countries (or more) regarding acceptance (Note 1) by an importing country of the results of conformity assessment procedure for telecommunications equipment with technical regulations provided for by an exporting country (Note 2).

Implementing mutual recognition enables facilitation of international

continues to consult with the European Union (EU) to conclude the MRA.

The Government of Japan is preparing to alter domestic regulatory frameworks in order to implement the MRA.

Notes: 1. "Agreement" becomes mandatory

1. "Agreement" becomes mandatory after conclusion of the treaty by the countries involved. "Arrangement" is a note or memorandum between countries that is not legally binding.
2. The conformity assessment procedure is, in principle, carried out in accordance with the regulations in the importing countries.

III. Development of info-communications infrastructure

1. R&D for Stratospheric Radio Platforms (Skynet Plan)

MPT, in cooperation with the Science and Technology Agency (STA),

launched full-scale R&D on the Stratospheric Radio Platform project in FY 1998.

The Stratospheric Radio Platform is a radio system utilizing unmanned airships equipped with communications equipment and flying

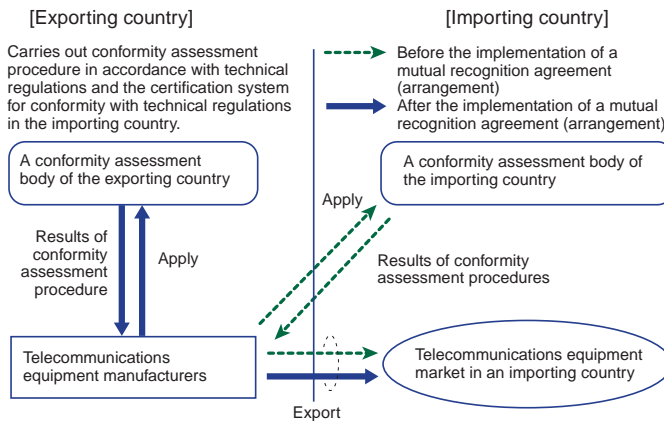
at an altitude of approximately 20 kilometers in the stratosphere for the purposes of communications and broadcasting. If these unmanned airships are equipped with observation sensors, the platform can also be used for earth observation.

This system has the following advantages:

- 1) High-speed, large-capacity communications and broadcasting using unused frequencies such as the millimeter-wave
- 2) Smaller terminals because of the shorter propagation distance than those for satellite communications

MPT is responsible for the tracking and control system as well as the communications and broadcasting mission. STA is responsible for construction of the entire platform system

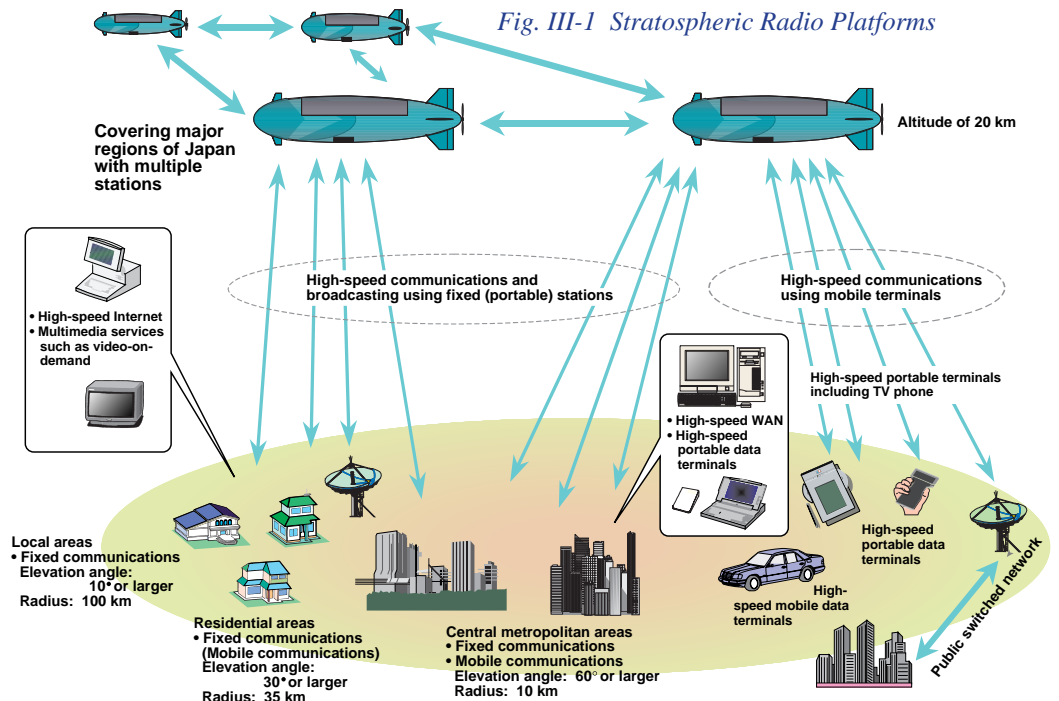
Fig. II-2 Concept of MRA



distribution of telecommunications equipment, development of telecommunications services and improvement of the convenience of citizens in the countries that are taking part in MRA.

In June 1999, Japan decided to participate in the framework of the APEC Mutual Recognition Arrangement for Conformity Assessment of Telecommunications Equipment (APEC Telecom MRA). Japan is now conducting necessary information exchanges with other countries that will participate in the framework of APEC Telecom MRA. Japan also con-

Fig. III-1 Stratospheric Radio Platforms



tem and the earth observation mission. As regards preparatory measures, MPT and the STA allocated 2 billion yen for FY 1999 budget and a total of 2.6 billion yen for FY 2000.

In FY 1999, MPT conducted research on tracking technologies and research on technological factors and trial production of equipment on fixed communications. MPT is planning to expand and strengthen the R&D project in FY 2000.

In October 1999, the Stratospheric Radio Platforms project is selected as a "Millennium Project" targeting the environment protection based on a decision of the Prime Minister, which will accelerate research on Stratospheric Platform.

In addition to the 47-GHz band allocated at the World Radiocommunication Conference (WRC) - 97, the 31/28GHz-bands were allocated and were enabled to use the platform stations as IMT-2000 base stations in the WRC-2000, which expanded usability.

2. Establishment of the Fixed Wireless Access (FWA) System

1) What is the FWA system?

The fixed wireless access (FWA) system is a system that directly connects residential and corporate users to the telecommunications line facilities of telecommunications carriers. Since the FWA enables large-capacity info-communications, and since it can be installed at a low cost, it is expected that the FWA will contribute to the stimulation of competition in the local telecommunications market ("last one mile") whose service provision is virtually monopolized by NTT regional carriers, and to diversifying access methods.

2) Introduction of FWA system using quasi-millimeter-wave-band and millimeter-wave-band frequencies

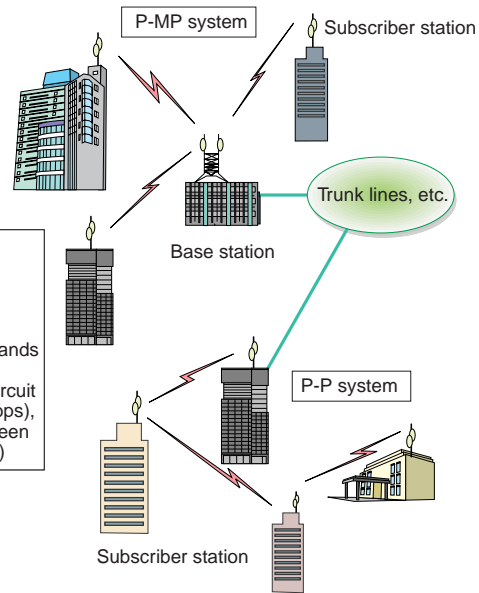
On December 25, 1998, MPT pre-

Fig. III-2-1 FWA System

1. Outline

In order to promote competition in the local communications markets and to meet demands for large-capacity communications, the FWA system directly connects users' office buildings to telecommunications carrier's exchanges and/or trunk lines.

• Formulation of regulatory framework:	December 1998
• New entries:	16 companies (as of August 2000)
• Frequency bands	22, 26 and 38 GHz bands
• Examples of the services:	High-speed leased circuit service (max. 156 Mbps), Interconnection between LANs (max. 10 Mbps)



2. MPT measures

- 1) 5-GHz band FWA system
MPT is carrying out studies on technical requirements for enabling Mbps-class Internet connection between homes and condominiums.
- 2) R&D on next-generation FWA systems
MPT conducted R&D on a mesh-type FWA system for enhancing flexibility of network construction and fault-tolerant network. (FY2000 budget: 132 million yen)

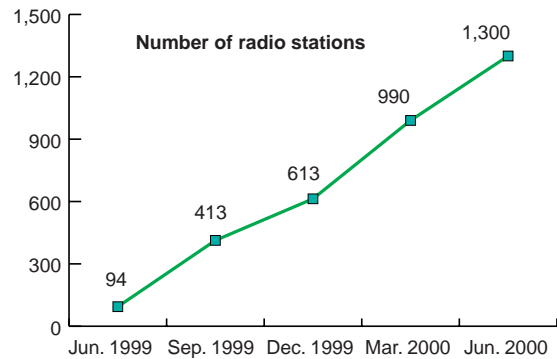


Table III-2 Entries in FWA market

Applicant	Radio station license block
Japan Telecom Co., Ltd.*	10 blocks excluding Okinawa Pref.
Osaka Media Port Corp.*	Kinki
KDD Winstar Corp.*	Kanto, Tokai, Kinki, Kyushu and Okinawa
KDD Corp.*	Kanto
DDI Corp.*	Kyushu
Chubu Telecommunications Co., Inc.*	Tokai
Tokyo Telecommunication Network Co., Inc.	Kanto
Cross Wave Communications	Kanto, Tokai and Kinki
Global Access Ltd.	Kanto
MCI WorldCom Japan, Inc.*	Kanto
Sony Corp.*	Kanto, Tokai, Kinki and Kyushu
NTT Communications Corp.*	10 blocks excluding Okinawa Pref.
Cable & Wireless IDC Inc.	Kanto
Broad Band.Com, Inc.*	Chugoku and Kyushu
New Century GlobalNet Corp.	Kanto, Tokai, Kinki and Kyushu
Fusion Communications Corp.	9 blocks excluding Okinawa Pref. and Kyushu

Note: Company with * started services. (as of August 2000)

pared regulatory frameworks for the FWA system using the quasi-millimeter-wave-band (22-GHz and 26-GHz bands) and the millimeter-wave-band (38-GHz band) frequencies. In conjunction with this, MPT published the basic guidelines, etc. concerning the introduction of the system on December 24, 1999.

Up to now, 16 businesses have entered the telecommunications service using the FWA system. The FWA system is used mainly for leased-circuit and LAN data transmission services, etc. (Fig. III-2-1)

3) Introduction of new FWA systems

MPT inquired of the Radio Regulatory Council on relevant ministerial ordinances for introducing the FWA system of 60GHz, whose transmission distance is short (several hundred meters), but which enables large-volume communications from 622Mbps to about 1Gbps. (Fig. III-2-2)

In order to contribute to creating an environment for individuals and households to use the Internet more economically and easily, MPT inquired of the Telecommunications

Technology Council on the technical requirements of the FWA system for accessing the Internet using the 5GHz-band frequency. (Fig. III-2-3)

Further, MPT is planning to promote for five years from 2000 R&D on the next-generation FWA system that tolerate interference or disasters.

Fig. III-2-2 Millimeter-wave FWA System

1. 60GHz band radio LAN: Used for large-volume transmission system, including moving picture transmission, indoors (e.g., office buildings, etc.) and outdoors (e.g., exhibition halls, etc.)
2. Home link: Used for interconnection at home or SOHO between consumer electronics (e.g., TV, video, PCs, telephone, etc.)
3. 60GHz band high-speed radio link system: Used for large-volume radio trunk lines suitable for future multimedia transmission. Also, used for access networks to residential users and radio links between telecommunications carriers with functions to cope with high-speed LAN/VAN and high-speed Internet access.

• Introduction Schedule

June 1999:	Inquiry of the Telecommunications Technology Council Set up of "60GHz-band Radio Facilities Committee"
February 2000:	Report from the Telecommunications Technology Council
April 2000:	Inquiry of the Radio Regulatory Council (Revision of relevant ministerial ordinances)
July 2000:	Report from the Radio Regulatory Council
August 2000:	Revision of relevant ministerial ordinances

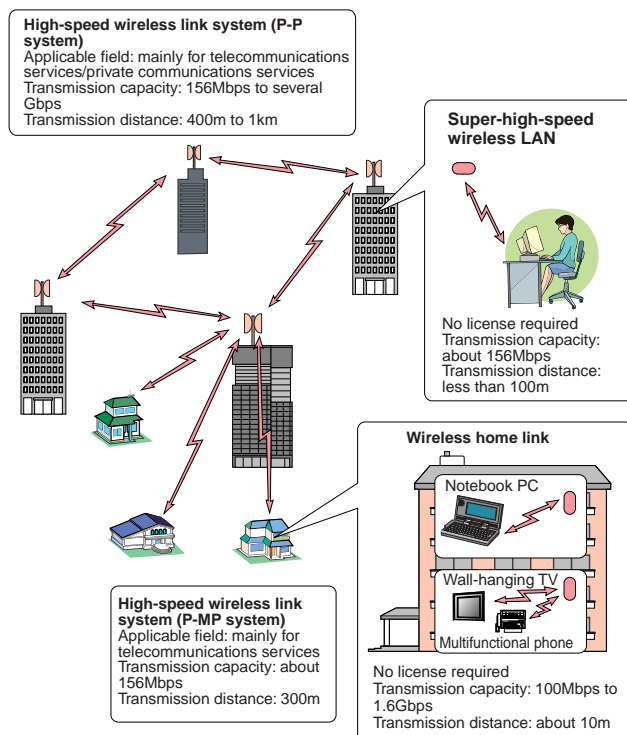


Fig. III-2-3 5GHz-band FWA/radio LAN System

1. Systems usable indoors:
 - Frequency band: 5,150-5,250 MHz
 - Transmission speed: max. 20Mbps
 - Applicable field: Radio LAN, home link (no licenses required)
 - Establishment of legal frameworks: FY1999
2. Systems usable outdoors:
 - Frequency band: 5,250-5,350 MHz
 - Technical requirements: Under deliberation at the Telecommunications Technology Council
 - Applicable field: Internet access by individuals and households
 - Future expansion: Frequency sharing with existing systems (e.g., weather radar and earth observation satellite)

• Introduction schedule

October 1999:	Inquiry of the Telecommunications Technology Council Set up of "5GHz-band Radio Facilities Committee"
October 2000:	Report from the Telecommunications Technology Council

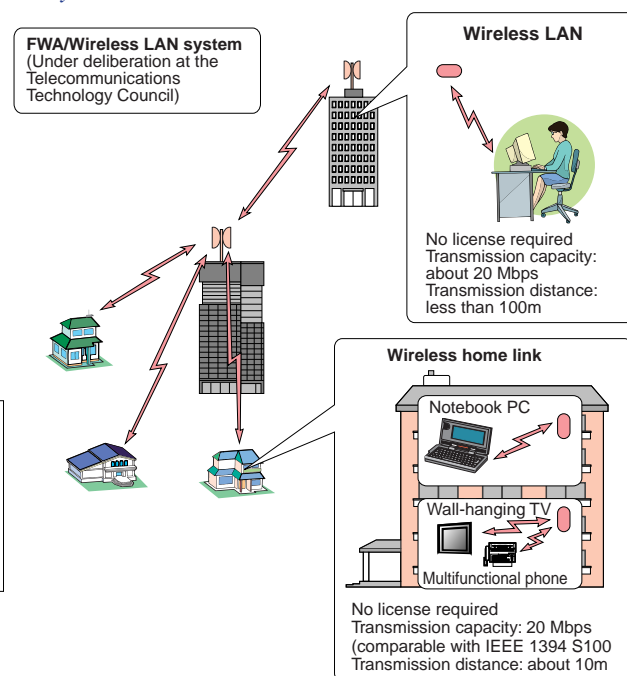
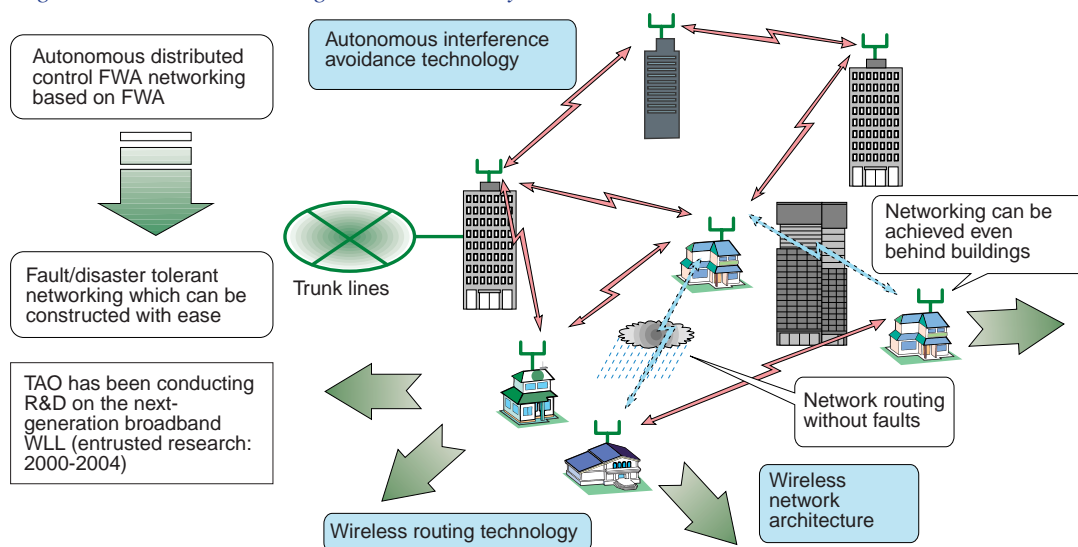


Fig. III-2-4 R&D on next-generation FWA system



23-Cities of Tokyo and cities in Osaka, lowered the charges to 4,500 yen or 2,900 yen. They have been expanding the provision of these services to major cities. In June 2000, these carriers announced that they would start offering the service and expand the service areas.

The digital subscriber line (DSL) is a technology which realizes a communications speed 10 times faster than existing

telephone circuits by equipping special modems at both ends of existing telephone lines. NTT East and NTT West started trial services of the DSL in late December 1999, in certain areas in Tokyo, Osaka and Oita. During the trial services, the two NTT regional companies set up a service where the installed DSL-related facilities inside NTT buildings, as well as allowed other businesses to collocate such facilities inside NTT buildings. As of the end of May 2000, the number of subscribers has reached 760.

2) MPT's efforts for realizing low flat-rate systems

MPT has been introducing fair and effective competition for the telecommunications market through its deregulatory measures to reorganize NTT, to promote interconnection policies such as arranging for mandatory interconnection and ruling the interconnection scheme and to enhance deregulation in entry and charges as well as for foreign businesses.

i) Deregulation on tariffs

As a result of the deregulation concerning charges, the tariff regulations for Type I telecommunications businesses (businesses which provide telecommunications service by establishing telecommunications circuits such as NTT or new communi-

IV. Diffusion and Advancement of the Internet

1. Toward the flat-rate or lower charges of the Internet communications

Because local call charges are based on a volume-sensitive tariff system such as "10 yen for three minutes" in Japan, if the Internet is used "without caring about time," the charges will be high. For example, both NTT East and NTT West provide "Time Plus service," the discount rate which makes local call charges 10 yen for five minutes. Even if one uses this service, if one uses the Internet for 100 hours a month, the charge will be more than 12,000 yen a month.

Meanwhile, in the U.S., flat-rate systems that enable no-limit local calls for 2,000 yen to 3,000 yen a month are being provided, and one can use the Internet without time considerations.

Recently in Japan, the Internet has been diffused rapidly, but the diffusion rate is less than that of the U.S. still. Since 1999, policy proposals have been made for introduction of low, flat-rate systems similar to the systems in the U.S., in order to dif-

fuse the Internet use as in the U.S. and to realize advanced info-communications society. The efforts of the businesses and MPT for realizing the flat-rate systems are as follows:

1) Business efforts for flat-rate systems

When a cable TV operator provides a cable TV service, the operator lays a cable to a household. By utilizing such cables, the cable TV operators realize flat-rate Internet services with monthly rates of 5,000 – 6,000 yen. The cable Internet communications speed is at maximum several Mbps, while ordinary ISDN circuits provide 64 kbps. As of the end of July 2000, 133 cable TV operators are providing Internet access services. Users numbered about 66,000 at the end of June 1999, but the number increased fivefold to some 329,000 at the end of June 2000.

In November 1999, NTT East and NTT West started trial services of complete flat-rate system in some areas of Tokyo and Osaka, which enable continuous 24-hour connection with the Internet at 8,000 yen a month. In addition, two businesses, by expanding the areas of the trial to

cations carriers) have been changed from an approval system to a notification system by November 1998. As a result, now the charges can be set according to the ingenuity and the management decision of businesses. Along with the transition of tariff regulations to the notification system, a system is introduced where the Minister of Posts and Telecommunications may order charges to be changed if deemed to have been set unfairly.

ii) Creating a pro-competition environment

Since the introduction of principles of competition in 1985, with conditions for fair competition having been created, more than 8,000 newcomers have entered the telecommunications market. As a result of the abolition of foreign capital restrictions, 25 foreign-based businesses till now have entered the Type I telecommunications business. Regarding mobile, long-distance and international telephones, by the entry of these many new businesses, which

created active competition among businesses, convenience of users such as cheaper charges and more diversified advanced services has been enhanced.

However, substantial competition has not been realized in local communications markets that provide subscriber local loop networks connecting households, etc. and telecommunication businesses. In order to lower the Internet access charges, it is crucial to promote competition in the local communications markets.

MPT is promoting introduction of diversified local access networks such as the digital subscriber line (DSL), cable TV and wireless access. MPT is also creating a competitive environment in local communications markets by unbundling networks of NTT East and NTT West, including connecting the main distributing frame (MDF) of the two, which is necessary for non-NTT businesses upon providing the DSL services, etc.

3) Concluding remarks

As businesses are striving actively to offer cheaper communications charges, by creating a competitive environment for local communications markets, MPT is trying to realize Internet connection with cheap flat-rate systems as early as possible.

2. Law Concerning Electronic Signatures and Certification Services

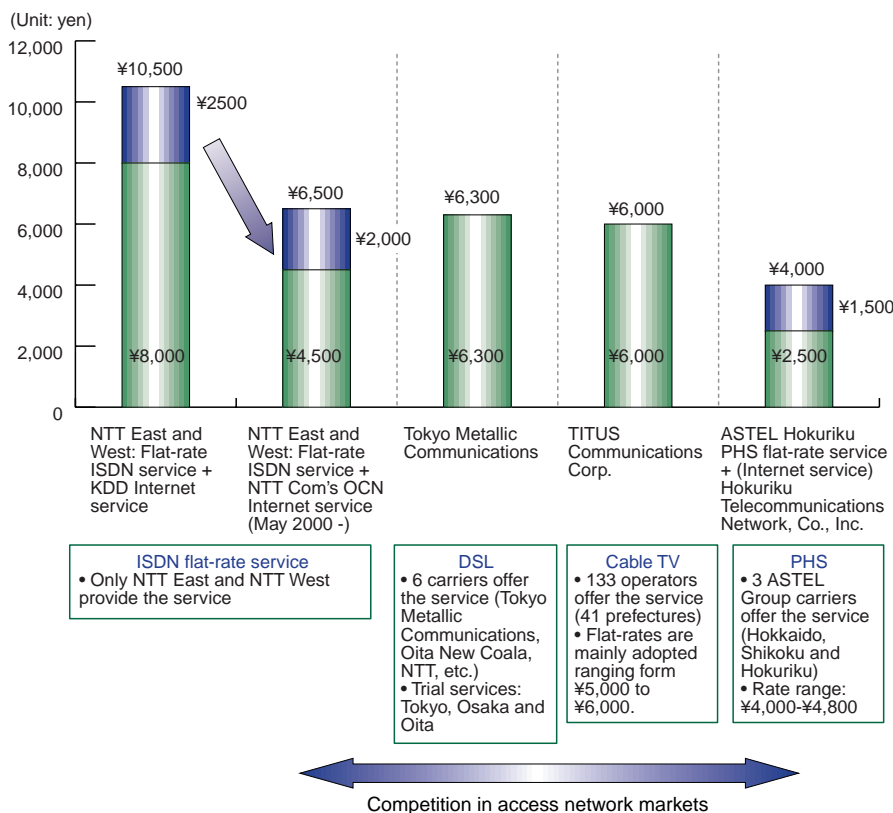
1) Digital society's features

Currently, as represented by the explosive diffusion of the Internet use, the "digital revolution," which is comparable with the Agricultural Revolution and the Industrial Revolution in the past, is progressing with a speed much higher than these past revolutions. With the progress of information-processing technology and the creation of advanced communications infrastructure represented by optical fiber, it is possible to quickly transmit mega-information such as moving pictures to all over the world. Against the background of such progress, activities over networks, especially electronic commerce, have made remarkable development. Electronic commerce not only can cut labor and advertisement costs to a large extent and distribute commodities more efficiently but also is expected to create new business opportunities. Besides, in the near future, it is predicted that the construction of an "electronic government" and the diffusion of "telework" and "telemedicine" will realize a "digital society" based on network utilization.

In a "digital society," information is exchanged through digital networks using computers, while all information such as texts, hand-drawn as well as moving pictures such as movies and sound is expressed in combinations of two figures, "0" and "1."

Therefore, some noise in the process of communications does not deteriorate the data. Because the information is a combination of figures, with various calculation methods,

Fig. IV-1 Competition in access network markets



we can compress the data volume before sending and expand after receiving it, and we can check the omission of data (error detection).

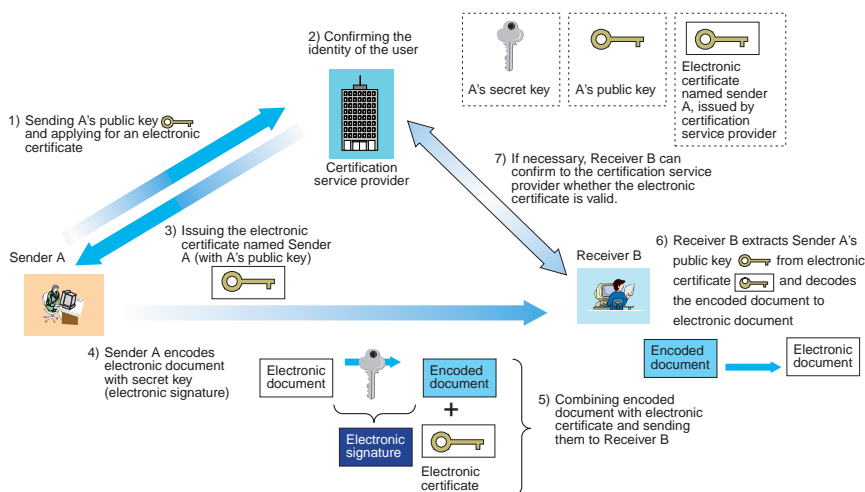
Using these technologies, it is possible to transmit movies and music with sound quality comparable with CD, etc., at a practical level. Meanwhile, problems of digital information are pointed out that it enables copies being made without degradation in quality and data being changed without leaving a trace.

For example, for a contract in real society, parties concerned may meet face to face, and confirm agreements before entering into a contract. Even when the parties involved are located far apart at the time contract is made, in most cases, some relations, such as meeting beforehand, are presupposed. On the other hand, in a digital society, as in the case of electronic commerce, cases of exchanging information among parties with no prior contacts is expected to increase.

In such a case, different from telephones and leased circuits where one is sure about the person one is speaking to, the parties exchange digital information in an open network of the Internet without meeting each other. So, it is difficult to confirm if the party one is contacting with is really the person or not, or if the information is altered in the process of transmission or not.

Recently, cryptographic technology has been used in order to solve these problems. In the past, as in the cases of spy activities in mystery novels or of wartime transmission of information to keep it secret from enemies, the cryptographic technology has been used for the purpose of concealing information within specific people. But now, with the progress of technology, by going beyond the concealment function, cryptography can play an authentication function that confirms the identity of parties with whom one is communicating and of ensuring the integrity of communications content upon communications with an un-

Fig. IV-2-1 Example of electronic signatures using certification services



specified number of people.

Currently, the “public key cryptosystem” is used as cryptography with such an authentication function. Electronic signatures and certification services using this technology are being used widely in business activities and daily e-mail exchanges.

2) Need to create laws concerning electronic signatures and certification services

Although electronic signatures and certification services are playing the authentication function of confirming the identity of parties and ensuring the integrity of communications content, the electronic signatures and certification services are not given legal status comparable with handwritten signatures or seals in existing forms of transactions, etc., even when, for example, there is trouble with the communications content in electronic commerce. It has been pointed out that such a situation hinders electronic commerce and such from the development while in foreign countries, lawmaking on electronic signatures and certification services has been advancing.

Note: The Code of Civil Procedure Article 228 Paragraph 4 states: “A private writing shall, where it has a signature or seal of the one who wrote it or of their proxy, be presumed to be authentic.”

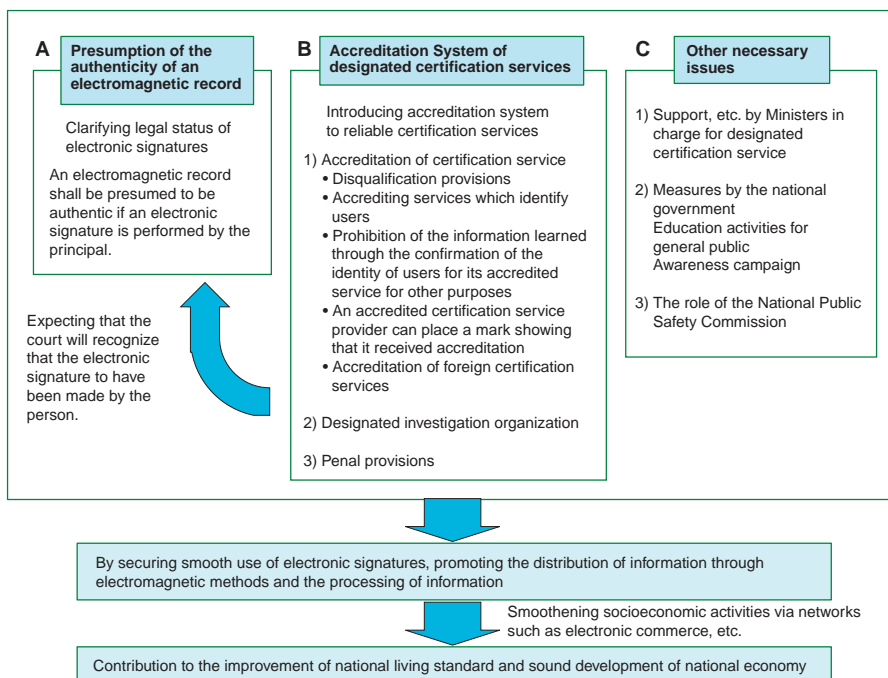
Also in Japan, it became necessary

to create laws concerning electronic signatures and certification services at the earliest date, for the purpose of creating a “digital society” in which people can act safely and of maintaining international competitiveness in electronic commerce, etc. The government, based on the “Basic Guidelines on the Promotion of an Advanced Information and Telecommunications Society: Action Plan,” set forth by the Advanced Information and Telecommunications Society Promotion Headquarters in April 1999, etc., has studied the issue at MPT, the Ministry of International Trade and Industry and the Ministry of Justice. Also based on the public comments conducted in November 1999, the government made a cabinet decision on the “Bill Concerning Electronic Signatures and Certification Services” on April 14, 2000, and submitted it to the 147th ordinary Diet session, which was passed on May 24, 2000.

3) Outline of the “Law Concerning Electronic Signatures and Certification Services”

This law, from the perspective of not preventing the free development of a “digital society,” has basic ideas of securing technological neutrality, minimum regulations and securing international harmonization. The law is composed of three large pillars:

Fig. IV-2-2 Composition of the Law Concerning Electronic Signatures and Certification Services



- i) The “legal status of electronic signatures” (Presumption of the authenticity of an electromagnetic record)
- ii) “Securing credibility of certification services” (Accreditation of designated certification services)
- iii) “Other necessary issues”

In the “legal status of electronic signatures,” the law defines electronic signatures in a technologically neutral way, not restricted to the public key cryptosystem, and sets the provision equivalent to the Code of Civil Procedure Article 228 Paragraph 4 concerning hand-written signature and sealing. Accordingly, when for example it is proven that a person made an electronic signature on an electronic mail, etc., it is assumed that the electronic mail was issued based on the will of the person (presumption of the authenticity of an electro-magnetic record).

In “securing credibility of certification service,” concerning the certification service which proves by whom electronic signatures are made, the law stipulates that any person who seeks to perform certifi-

cation service that satisfies certain standards (defined in the law as the “designated certification service”) may be granted an accreditation from the competent ministers. The law also stipulates:

- Obligations of the person who is accredited (obligation to preserve books and records, prohibition from using the information learned through confirmation of the identity of users for its accredited service for any purpose other than those necessary for provision of the accredited service)
- Marking system (placing a mark to the effect that its service has received accreditation on an electronic certificate, etc.)
- Accreditation of designated certification service located in foreign countries (foreign businesses can be granted accreditation)
- Penal provisions for a person who makes a false application before an accredited certification service provider and thereby causes an untrue cer-

tification shall be punished with penal servitude (not more than three years or a fine of not more than two million yen), etc.

In addition, since electronic signatures or certification services do not have a long history like that of hand-written signatures or seals, and have not become familiar among the Japanese public, the law stipulates following provisions in order to promote the awareness by the Japanese people, etc.:

- Competent minister’s support, etc., concerning designated certification service (R&D on technological evaluation related to electronic signatures and certification services, information provision to designated certification service providers, etc.)
- Educational activities and awareness campaign by the national government (diffusion of knowledge on electronic signatures, etc.)

This law, except for a part concerning the designated investigation organization, is scheduled to come into force as of April 1, 2001.

3. “e-Japan Initiative” for the Information Technology (IT) Revolution -- Outline of the “Study Group on the Next-Generation Internet Policy” Report --

The IT revolution has a huge impact on demand, supply, employment and is about to bring about great changes as well as the Industry Revolution to the Japanese economy and society. The increasing proportions of IT in facilities and equipment investment and consumption are boosting the recent economic recovery of Japan. In the manufacturing industry, it is considered that expanding IT investment is contributing to the improvement of productivity and in employment the labor supply of business at home is increasing through “telework,” etc.

Fig. IV-3-1 e-Japan Initiative for IT revolution

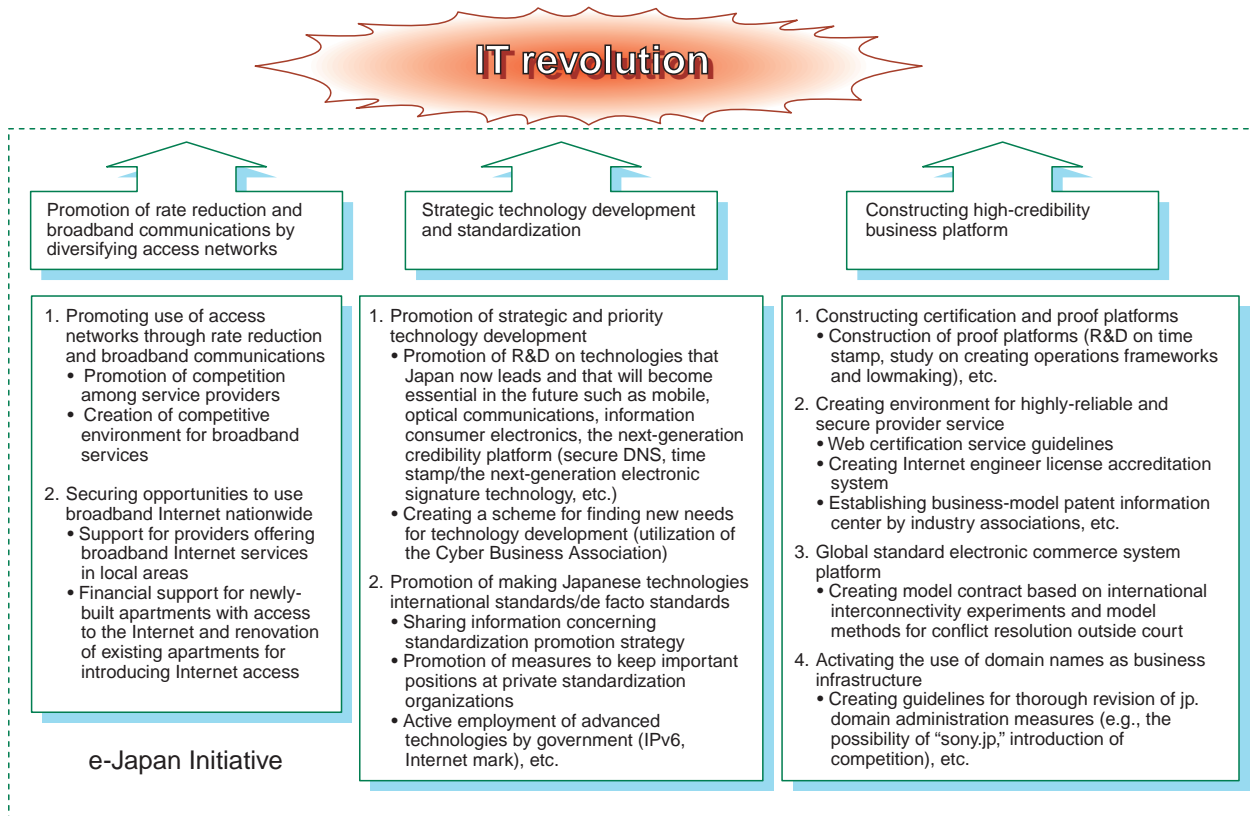
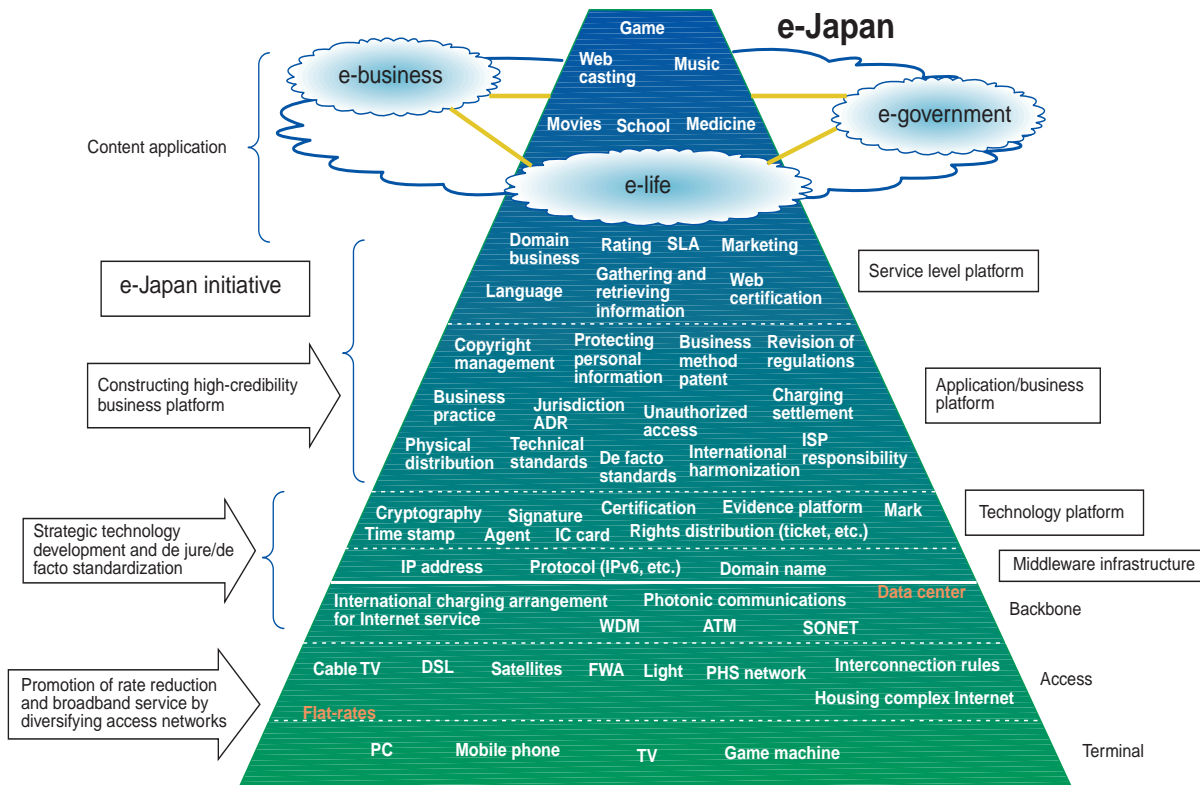


Fig. IV-3-2 Tasks toward IT revolution and e-Japan Initiative



Under the recognition that IT gives revolutionary effects on society, foreign countries have started strategic measures depending on their regional circumstances. In Japan, it has become necessary to realize full-scale economic structural reforms and industrial competitiveness enhancement through the IT revolution, aiming for a true economic rebirth. In the process of such a rebirth, it is crucial to make a transition from the existing catch-up-type economy to a front-runner-type economy, through cost structure adjustment to the Japanese economy and preparing an environment for creating and promoting new businesses.

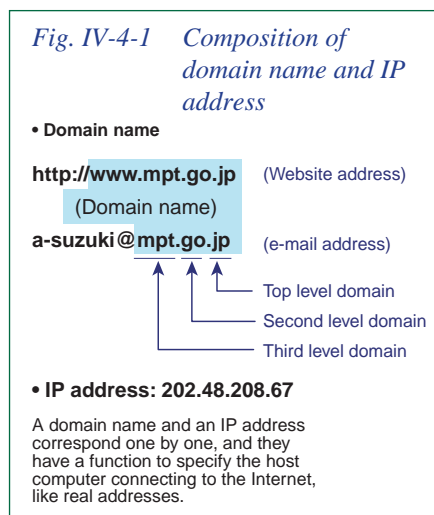
In order to attain these goals, comprehensive policies for the next-generation Internet (the “e-Japan Initiative”) are necessary for Japanese industry, academia and government to create an “e-Japan,” a powerful 21st century-type IT society under the principle of cooperation and competition. It is important for these parties involved to have confidence as to regeneration of Japan and to a powerful 21st century-type IT society, through the promotion of specific measures in line with the “e-Japan Initiative.”

Based on these conditions, since December 1999, MPT has held the “Study Group on the Next-Generation Internet Policy.” The Study Group compiled a report in June 2000, titled “e-Japan Initiative for the IT Revolution.” (See Fig. IV-3-1)

Based on the report of the Study Group, MPT will actively promote measures in line with the action plan presented in the report, while seeking continuous cooperation and coordination among industry, academia and government, toward the realization of 21st century-type IT society for the rebirth of Japan.

4. Measures for Internet Governance

Domain names and IP addresses (Fig. IV-4-1) are the basic factors of communications over the Internet, and their administration means



managing the Internet itself (Internet governance).

Domain names are administered in the Internet Corporation for Assigned Names and Numbers (ICANN), an international private non-profit corporation (Fig. IV-4-2). Reflecting the interests of Japanese users and businesses is important from the viewpoint of international contribution as the second largest Internet power for creating the ICANN system and of Japan’s mid-term Internet development.

MPT, as Japan’s only formally registered member (Director of Data Communication Division, Telecommunication Bureau) of the Governmental Advisory Committee (GAC) under the ICANN system, participated in the Sydney Meeting in February 2000, the Cairo Meeting in March 2000 and is playing a part in establishing cooperative system in the Asia-Pacific region.

An agreement among the ICANN, Network Solutions Inc. (NSI) and the U.S. Department of Commerce, stipulating the status of each participant and the rights and obligations concerning registration and administration services, was published in November 1999. (<http://www.icann.org/nsi/nsi-agreements.htm>)

Concerning this agreement, at the U.S.-Japan Deregulation Dialogue, MPT is demanding that the U.S. gov-

Table. IV-4 Number of businesses conducting domain name (e.g., .com) registration service

(As of the end of May 2000)

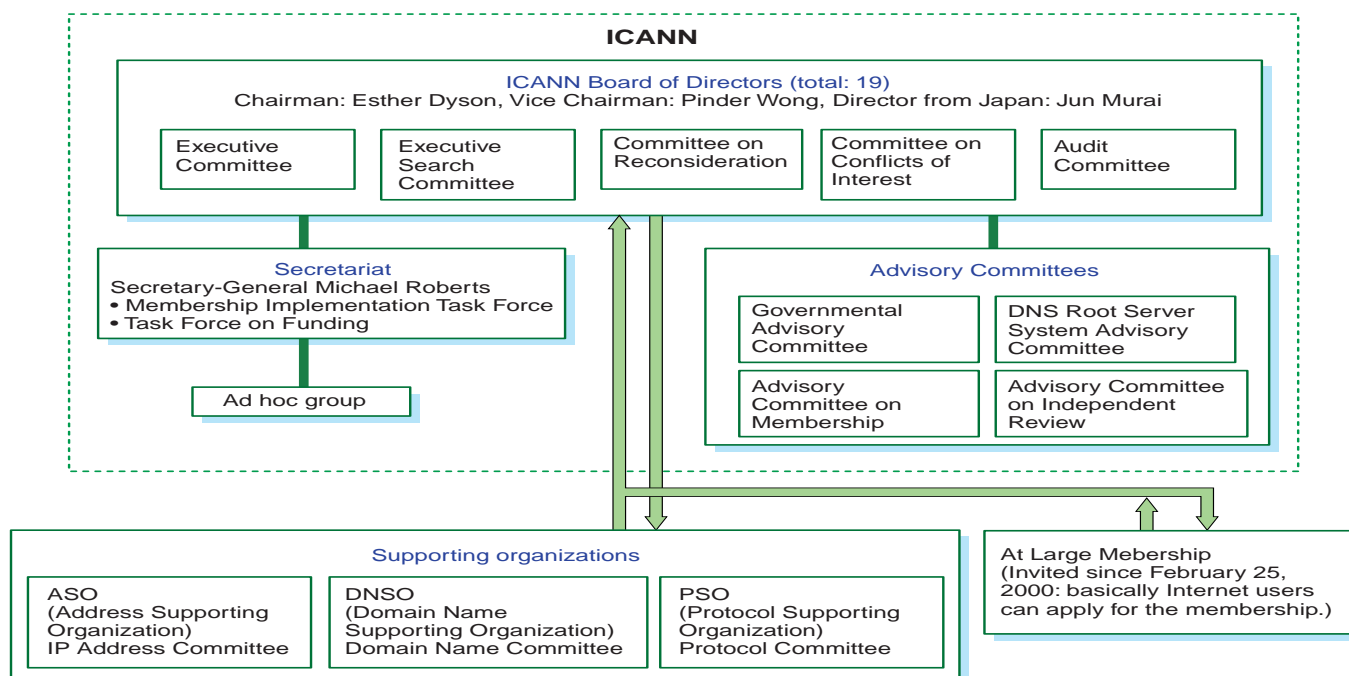
U.S.	71
U.K.	8
France	7
Germany	6
Canada	6
Japan	3
Korea	4
China	4
Others	15
Total	124

ernment take measures which pay respect to the independence of the ICANN.

In November 2000, five of nine interim board members of the ICANN board will be selected from the newly recruited ICANN At Large Membership. Since any person over 16 years of age with an e-mail address may become a member of the Membership, this can be called the first online direct election in the world. In Japan, the “Japan ICANN Forum,” an organization established mainly by the private sector in March 2000, is encouraging the registration to the ICANN At Large Membership from Japan, and is striving for Japanese members to be the ICANN board members. MPT is supporting such activities of the Japan ICANN Forum.

For the purpose of increasing Internet users among aged Japanese people as well as children and homemakers in Japan, it is crucial that the domain names are comprehensible and usable for Japanese users. As is shown by the advent of services providing domain names with Japanese as a part in 1999, there is an active movement for realizing the multilingual domain names other than alphabet. In order to use the multilingual domains, it is necessary to add changes to the existing Domain Name System (DNS). While specialists at home and abroad are studying from technological angles, it is crucial that care be paid to Japanese

Figure IV-4-2 ICANN administrative organization



users' utility.

As regards domain names with top-level domains of ".com," ".net," and ".org," the registration and administration of applications from all over the world was conducted exclusively by NSI (decided to be bought by VeriSign, Inc. in 2000) (registration fee was \$70 per one domain for the first two years and \$35 per domain thereafter). Since competition was introduced to this business in 1999 (as of the end of May 2000, 124

firms have entered) (Table IV-4), the domain name is expected to be a new market in the Internet business. However, as the fact that only three Japanese firms have entered the registration business of domain names (such as ".com") shows, the interest to the domain names is relatively low in Japan. It is considered that more attention should be paid to this new market including the multilingual domain name business.

of these laws is extremely narrow. In regard to personal data handled by telecommunications carriers, provisions on protection, including punitive action applies to "the confidentiality of communications." Moreover, regulations on "the secrets of others contained within communications" is limited to the provision on protection without punitive action, and, other than those mentioned above, there is little legal protection for personal data in general.

Section 2: Self Regulation

Promotion and dissemination of "Guidelines on the Protection of Personal Data in Telecommunications Business" developed in 1991 and revised in 1998 (MPT Notice No. 570 of 1998, hereinafter termed "Personal Data Protection Guidelines"), along controls by each with the promotion of voluntary telecommunications carrier and their industry associations, currently serve as the basis for the protection of personal data in the field of telecommunications.

Also, the "Personal Data Protection Registration Center," set up within the Japan Data Communications Association in April 1998 reg-

V. Creating the Info-Communications Utilization Environment for the 21st Century

1. Interim Report of the Study Group on Legislation of the Privacy Protection Law in Telecommunications Sector (Summary) (November 25, 1999)

Chapter 1 Current Situation concerning the Protection of Personal Data in the Telecommunications Sector

Section 1 : Legislative System

At present, legislative regulations

on the protection of personal data in the telecommunications sector are founded on the Telecommunications Business Law, which provides for the protection of confidentiality in communications handled by telecommunication carriers, based on Paragraph 2, Article 21, of the Constitution of Japan. Among others, bribery under the NTT Law, the penal code, etc., may apply by case, but none of them have been stipulated specifically for the protection of personal data. The range of application

isters telecommunication businesses that implement appropriate measures to protect privacy and issues a “personal data protection mark” to such businesses.

Chapter 2 Need for Legislation on Personal Data Protection in Telecommunications Sector

Section 1: Legal Positioning of Personal Data Protection

The right to privacy that is founded out of respect for the private individual is being emphasized as the right of an individual to control information about oneself, based on the rising awareness of the independence of the individual and individual rights in an increasingly information-oriented society. Although the protection of personal data is an important issue in achieving respect for the private individual under the Constitution of Japan, it is necessary to conduct a review as to what types of protective measures should be applied to what range of information, also taking into consideration other important social demands.

Section 2: Problem Cases

Recently, there have been a string of media reports on leakage of customer data maintained within telecommunications businesses. There is a rising number of employees, etc. of telecommunications businesses being arrested on criminal charges such as violation of the NTT Law (acceptance of bribery) and theft (theft of printouts of personal data)

Section 3: Mounting Demand for the Protection of Personal Data

With progress in commercialization and distribution of information, and in the advancement toward an information communications-oriented society, there is a growing demand for the protection of personal data. Especially in the field of telecommunications, the Japanese public has very high expectations for the protection of personal data by telecommunications carriers. This is particularly high in view of the public service nature of telecommunica-

tions and the responsibility of carriers in dealing with confidentiality in communications — the heart of personal data. In the Telecommunications Service Monitor Survey conducted by MPT in August 1999, findings have shown clear gaps between great public interest in the protection of personal data in telecommunications and current laws and regulations.

Also, telecommunications carriers themselves recognize the difficulty in taking action against problems, such as the leakage of personal data, solely within the framework of self regulations.

Section 4: Effectiveness and Limitations of the Guidelines

Protective measures under the Personal Data Protection Guidelines are esteemed for their ability to take swift and flexible action suited to business conditions in the telecommunications industry and for the small size of administrative costs involved in their supervision and administration, such as observance of regulations.

However, there are growing doubts over the effectiveness of action based on these Guidelines in light of the number of problems that have recently emerged, and strong interest and awareness of people’s rights related to personal data.

Section 5: Current Situation and Problems in Personal Data Protection Legislation in the Field of Telecommunications

Regarding the leakage of personal data other than the confidentiality of communications in the telecommunications industry, the only application of Article 19 of the NTT Law (crime of bribery) relates to NTT employees, except in situations where the penal code applies. In contrast to strict protection of matters related to personal data on which “confidentiality of communications” applies, other personal data matters are not protected, causing dramatic differences in the level of protection depending on whether or not “confidentiality of communications” is

deemed to apply. In reality, however, it has been pointed out that the classification is not necessarily clear-cut.

Moreover, the protection of personal data generally suggests the active concept of each person being aware of information held on themselves, seek disclosure, and file objections. For this reason, it is necessary to revamp the approach of protection more actively from the perspective of redefining the “confidentiality of communications” as part of the necessary actions in this direction.

Section 6 Developments in Legislation in Other Countries

In the “Directive of the European Parliament and of the Council on the protection of individuals with regard to the processing of personal data and on the free movement of such data” (Directive 95/46/EC), data transfer is prohibited to a third country that does not provide adequate levels of protection for personal data. Under such conditions, laws are being developed for the protection of private data in industrialized nations.

Section 7: Necessity of Legislation

Looking at the situation of personal data protection within the telecommunications sector and problems related to the current situation of laws and self regulations, it is believed that a study of legislation regarding the protection of personal data held by telecommunication carriers is necessary in order to develop better systems without being confined to current frameworks.

Chapter 3 Review of Legislation for the Protection of Personal Data in the Field of Telecommunications

Section 1: Current Situation of Legislation in Relation to the Protection of Personal Data

Examples of legislation governing the general protection of personal data and related issues in areas other than the telecommunications sector are shown below. In all cases, how-

ever, penalties imposed on leakage, etc., are restricted to the "confidential" portion of personal data,

1. Regulations on protection of confidentiality
 - (1) Obligation of civil servants not to disclose confidential information (National Public Service Law and Local Public Service Law)
 - (2) Crime of disclosure of secrets (Article 134 of the penal code, etc.)
2. Regulations on credit information (Installment Sales Law and Regulation for Loan Business in Japan)
3. Regulations on the protection of personal data
 - (1) Protection of personal data upon data processing in computer systems at government offices (Act for Protection of Computer Processed Personal Data held by Administrative Organs)
 - (2) Protection of personal data of job-seekers, etc. (Employment Security Law)
 - (3) Protection of information on confirmation of identity related to resident registry (Basic Resident Registry Law)

Section 2: Direction of Legislation

Regarding legislation to protect privacy in the telecommunications sector, the focal point in reviews is chiefly to explore the necessary approaches for securing effectiveness of penalties for violations, etc., with attention to self regulations developed in compliance with the existing Personal Data Protection Guidelines.

1. The objective of protecting personal data

The protection of personal data is an important need rooted in respect for the private individual. Also, in view of the public service nature of the telecommunications business, protection of personal data in this area of industry contributes to protection of telecommunications service users and further to the healthy growth of the industry and to the promotion of public welfare.

2. Scope of personal data to be pro-

ected

Protection covering all personal data regarding telecommunications service users held by telecommunications carriers would make restrictions by provisions such as data related to computer processing unnecessary. However, a review must be conducted with attention to practical conditions related to personal data held by carriers and with consideration to other industries.

3. Basic principles in personal data protection

The basic principles involved in personal data protection in the telecommunications sector should be defined in compliance with the rules based on the Personal Data Protection Guidelines based on 8 Principles of the OECD, namely (1) gathering personal data; (2) use and supply; (3) appropriate controls; (3) disclosure and revision, etc.; and (5) identification of responsibilities.

4. Regulations on individuals (individuals who disclose personal data)

(1) Regulations applied to employees, etc., in the telecommunications business In order to prevent illegal disclosure of customer information by employees etc., in telecommunications businesses, the penalties imposed on such actions should be reviewed.

- (i) Scope of personal data to be protected by punitive measures

Under existing laws, the scope of personal data to be protected by punitive measures is classified as "secrets," and punitive regulations apply to actions that are aimed at the disclosure of "secrets."

Although it is necessary that protection of personal data corresponding to the aforementioned "secrets" be provided in the telecommunications sector and supported by punitive measures, a further review is necessary so that the range of punitive regulations can be widened, due to the need to delineate the requirements in regulatory action rationally, to ensure alignment with existing

legislation, and to pay due attention to balance with other industries.

Within the current legal framework, regulations on employees, etc., of telecommunications businesses should be stratified into three layers, with existing regulations that oblige the protection of "confidentiality of communications" and punitive regulations imposed on violations in this area newly combined with regulations engendering the compulsory protection of "personal secrets" obtained in the course of job execution and punitive regulations on violations. Further, regulations obliging protection of personal data in general (directive-type regulation) are also necessary.

- (ii) Range of targets for punitive action

In view of the situation that many administrative services handling customer information in the cellular telephone business are being outsourced to agents, a review is necessary into the possibilities of legislative action that can be applied to persons engaged in such duties at such agencies in order to ensure the effectiveness of punitive action.

- (2) Regulations on third parties

In addition to violations by employees, etc. of telecommunications businesses, it is possible to penalize third parties procuring personal data illegally, or through prompting employees to do so, by applying conspiracy regulations when it has been confirmed that a crime has been committed.

Regarding illegal access by third parties through other means, serious problems may arise from independent punitive regulations legislated under the current legal framework, which does not penalize the theft of data.

5. Regulations on telecommunications carriers

Regarding telecommunications carriers, a scheme to be Introduced will allow the Minister of Posts and Telecommunications to establish concrete "indices" on carriers' obligations to handle personal data ap-

appropriately and, if necessary, issue instructions, recommendations, and even requirements to make business modifications, as well as to impose penalties in the case of violations of such orders.

6. Civil redress

To secure effectiveness in the protection of personal data, it is necessary to review the system covering not only criminal penalties but also taking into account civil redress. Further reviews are necessary into the approach of civil redress that can be adopted in the telecommunications sector.

Chapter 4 Future Issues

On November 19, the Working Group on the Protection of Personal Data of the Advanced Information and Telecommunications Society Promotion Headquarters issued an interim report. The report stated, as one direction for the system to protect personal data in Japan, it is appropriate that “basic principles that apply to both private and public sectors be established, along with laws aimed specifically at areas that are in need of protection, voluntary action by industries and individual business corporations to establish self regulations, etc., be promoted, and, ultimately, to develop a suitable system that coherently combines such laws and regulations.” The report also pointed clearly at the telecommunications sector as an area where the establishment of an individual law is recommended.

In conducting a review of individual laws applicable to the telecommunications sector in the future, based on the interim report of the Working Group on the Protection of Personal Data, it is necessary to establish laws that are effective in protecting personal data in the telecommunications sector, with attention to their relation to the basic law.

Due to time restrictions, the interim report of the Study Group on the Legislation of the Privacy Protection Law in Telecommunications Sector was limited to indicating the direction of future reviews and the

need for such legislation to protect personal data in the telecommunications sector. Quite a number of areas remain that require further study. In proceeding into studies aimed at developing concrete legislative provisions in the future, the Study Group believes it essential to explore further into the issue from various perspectives and with attention to developments in the study of the basic law.

Note: The numbers and terms used in the chapters and sections in this Summary correspond to that within the full Interim Report.

2. Promotion of information security measures

The “Safety and Reliability Guidelines for Info-Communications Network” (MPT Announcement No. 73) presents the basic and comprehensive guidelines on the general measures for safety and reliability in info-communications networks. Its purpose is to be used by those who construct networks as guidelines at planning and implementing measures for safety and reliability, by publicizing advisable guidelines to the general public. Its another purpose is to help users deepen the understanding on the measures for safety and reliability. Currently, the guidelines are under revision in order to bring about a standard for information security measures.

3. R&D on information security

1) R&D concerning unauthorized access originator tracking technology (FY 2000: ¥280 million)

R&D on technologies concerning batch management of information from plural network monitoring tools, unauthorized access originator tracking and automatic warning message transmission to unauthorized access originators are conducted.

2) R&D concerning network trouble detecting technology (FY 2000: ¥370 million)

R&D on technologies that enable earlier restoration of the original

state by automatically specifying trouble portions (server, router, etc.) and causes (system down, burst information processing, etc.) in networks are conducted.

3) R&D concerning info-communications security technology (FY 2000: ¥180 million)

R&D on technologies, such as encryption and authentication, necessary for preventing information tampering in info-communications and unauthorized accesses to databases are conducted.

4. Tax incentives concerning countermeasures against unauthorized access, etc.

1) Establishment of a tax incentive system promoting countermeasures against illegal access

With the diffusion of Internet use, personal information, etc. is leaked and abused through unauthorized accesses, which is becoming a social problem.

The unauthorized accesses may damage not only the victim firms but also entire communications networks. Such accesses may seriously impact the rapidly developing network-dependent economy. Therefore, support for firms to actively take countermeasures against unauthorized accesses is needed.

Accordingly, when a juridical person (with regard to national taxes, only for small- and medium-sized enterprises) or a personal business installs firewall devices, security management server devices (only local taxes) or access monitoring/sensor devices (only local taxes), a special depreciation at 20% of the acquisition value is allowed for corporate and income taxes. Allowed also is the lowering of the tax base to 2/3 (for five years after acquisition) for the fixed assets tax.

2) Fiscal Investment and Loans Program for telecommunications security management systems

This is a loan framework for businesses installing facilities related to the construction of info-communications security management systems,

for preventing faults in info-communications networks and unauthorized accesses to computers.

The policy interest I (2.15%) is applied for this loan system, and the limit is up to 30% of the costs.

5. Panels, etc. on information security

1) Meeting on Countermeasures against Cyberterrorism in Telecommunications Business

Based on the "Action Plan for Building Foundations of Information Systems Protection from Hackers and Other Cyber Threats" adopted by the "Interagency Directors-General's Meeting on IT Security" (January 21, 2000), and taking into consideration the case where the websites of ministries and agencies were intruded upon and altered, the "Meeting on Countermeasures against Cyberterrorism in Telecommunications Business" (Chair: Prof. Norihisa DOI, Faculty of Science and Technology, Keio University) was started in February 2000 to study countermeasures against cyberterrorism in the telecommunications field and emergency system frameworks when attacked by cyberterrorism. The Meeting, planned to be held until December 2000, compiled its findings as an interim report in June 2000.

2) Meeting for Review of Security Assurance in the use of Information Communications

With the aim of studying necessary measures for securing info-communications toward the construction of secure network society, the "Meeting for Review of Security Assurance in the use of Information Communications" (Chair: Mr. Hiroyuki OHNO, Emergency Communications Section, Communication Systems Division, Communications Research Laboratory, MPT) was started in March 2000. The meeting is planned to be held up through around November 2000, and its results are to contribute to the final report of the "Meeting on Countermeasures against

Cyberterrorism in Telecommunications Business."

3) Study Group on Diffusion and Advancement of Cryptosystems

With the development in networking of socioeconomic activities, electronic commerce is growing rapidly. The use of cryptography over networks is quickly expanding from the perspective of information security in info-communications and securing secrecy.

The government is expected to play its role in the development and evaluation of cryptosystems technology and in promoting realization and use of more advanced cryptosystems, aiming to improve security in parallel with the development of the next-generation info-communications networks.

The "Study Group on Diffusion and Advancement of Cryptosystems" (Chair: Prof. Shigeo TSUJII, Chuo University) started its deliberation in November 1999 with the aim of conducting comprehensive study on the utilization, promotion of diffusion and advancement of cryptosystems in Japan. The Study Group was closed in June 2000.