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Ministry of Public Management, Home Affairs, Posts and Telecommunications

Note: In line with the Japanese Government reorganization, on January 6, 2001, the Ministry of Posts and Telecommunications (MPT), together with the Ministry of Home Affairs and the Management and Coordination Agency, was integrated into the "Ministry of Public Management, Home Affairs, Posts and Telecommunications (MPHPT)." Please be advised that throughout this report "MPT" on and before January 5, 2001, is currently "MPHPT." Where an article refers to "MPHPT," if the article describes a matter occurring on and before January 5, 2001, said "MPHPT" shall be read as "MPT."

Contents

Information and Communications Policy

I. Deployment of Info-communications Strategy toward the 21st Century

1. Promotion of IT strategy at the central government level

The Japanese government established the "Strategic Headquarters for the Promotion of an Advanced Information and Telecommunications Network Society (IT Strategic Headquarters)" (headed by the Prime Minister) in January 2001, based upon recognition that promotion of the IT revolution is a national strategy. At the first session of the Headquarters held on January 22, 2001, the "e-Japan Strategy" was adopted, based on the Basic IT Strategy, as a national strategy for IT.

March 2001, at the third session, the Headquarters adopted the "e-Japan Priority Policy Program" that materializes the "e-Japan Strategy" and clarifies measures the government should rapidly implement with priority to form an advanced information and telecommunications network society.

From now on, under the leadership of the cabinet with the IT Strategic Headquarters as its center, the government will implement this Priority Policy Program steadily, monitor the progress of the measures and review the program every spring, monitor the progress of the measures continuously every autumn, and when necessary add new measures to the program, thereby promoting rapid transformation to the world's most advanced IT society.

Furthermore, the "e-Japan 2002 Program" was adopted in June 2001, as an annual program which directs the office and ministries to include annual measures of the "e-Japan Strategy" and the "e-Japan Priority Policy Program" in their FY2002 budget requests.

1) e-Japan Strategy

The e-Japan Strategy states that Japan must take revolutionary yet realistic actions promptly in order to create a "knowledge-emergent society," where everyone can actively utilize IT and fully enjoy its benefits, thus the government shall intensively implement the four priority policy areas, namely i) establishment of the ultrahigh-speed network infrastructure and competition policies, ii) facilitation of electronic commerce, iii) realization of electronic government and iv) nurturing high-quality human resources; in addition, it also sets targets that Japan shall establish an environment where the private sector, based on market principles, can exert its full potential and make Japan the world's most advanced IT nation within five years.

2) e-Japan Priority Policy Program

The e-Japan Priority Policy Program, clarifying the roles of the public and private sectors, expressly shows measures with realistic targets and time periods in intensively implementing the following five policy areas with vital priority in order to realize the Priority Policy Program: i) formation of the world's most advanced information and telecommunications networks, ii) promotion of education/learning and human resources development, iii) facilitation of electronic commerce, iv) introduction of IT into the administration and utilization of IT in other public areas and v) ensuring of se-

curity and reliability over advanced information and telecommunications networks. In addition, the Priority Policy Program includes several cross-cutting issues requiring measures with importance, reaching 220 measures. The government will actively cope with such issues as i) promotion of R&D, ii) bridging of the digital divide, iii) countermeasures against newly emerging problems along with transformation of socioeconomic structure and iv) promotion of international harmonization and contributions.

3) e-Japan 2002 Program

In FY2002, this program gives priority to five pillars, namely i) promotion of widespread use of the high-speed and ultrahigh-speed Internet, ii) introduction of IT into education/learning and strengthening of human resources development, iii) enhancement of content over networks in both quantity and quality, iv) steady promotion of the e-government and e-local governments and v) strengthening of international activities. The government will, based upon this program, strive to achieve targets listed in the "e-Japan Strategy" by intensively and comprehensively implementing IT policy measures.

2. IT Policy Principles

1) The age of "IT revolution," comparable to the Agricultural Revolution and the Industrial Revolution, has started. Information technology (IT) is the important driving force of socioeconomic growth. The sustainable growth and prosperity in the 21st century are dependent on whether it is possible for the promotion of socioeconomic structural reforms to be achieved through widespread use of IT.

    As shown in the "Okinawa Charter on Global Information Society" (July 2000), the international community shares this recognition; accordingly, many European and Asian countries and the U.S. are promoting the IT revolution as national strategies.

2) In order to create an internation-

ally competitive "IT nation" in which benefits of the IT revolution are shared by all, Japan shall strategically and intensively implement comprehensive policy measures by combining private- and public-sector strengths.

In July 2000, the "IT Strategy Headquarters" and the "IT Strategy Council" were established within the Cabinet. At the same time, the budget allotment frames of the "Rebirth of Japan," which focuses on IT policies in the FY2001 budget request scheme, were adopted, resulting in the creation of the IT revolution promotion system.

3) Based on those recognition, the IT policy toward FY2001 is being deployed for attainment of the following four goals:

i) Preparation of IT infrastructure supporting the IT revolution
    Promote the preparation of IT infrastructure, ranging from facilities and equipment to regulatory frameworks, applications and content, in which benefits of IT can be shared by all in Japan prior to the rest of the world, through results of technological innovations.

ii) Strategic R&D for securing international competitiveness
    Invest with priority into technology development, which contributes to creation of new businesses, in order to secure global competitiveness for Japanese society and economy in the international community where the IT revolution progresses.

iii) Expand digital opportunities based upon the Okinawa Charter on Global Information Society (IT Charter)
    Based upon the IT Charter, realize an information society where everyone can reap its full economic and social benefits by seizing its digital opportunities through bridging of the digital divide.

iv) Promotion of information security measures
    Comprehensively promote preparation of regulatory

frameworks and R&D on information security measures including countermeasures against hackers, crackers and cyberterrorisim, taking into account the fact that socioeconomic activities are becoming more and more dependent on electronic networks.

3. Millennium Projects

With an eye to the new millennium and in response to issues that humanity faces, the government inaugurated "Millennium Projects," or initiatives for creating new industries through robust technological innovations. The projects aim to establish a core which plays an important role in building a new century full of vision and vigor. The projects in fact deal with collaborative initiatives based upon technological innovations among the industrial, academic and public sectors in the following three fields, these being of urgency and importance to Japan socioeconomically: 1) IT; 2) the aging of the population; and 3) environmental protection.

In order to effectively implement the projects, favored budget treatments were made in the "Info-communications/Science and Technology/Environment, etc. Special Budget for Economic Rebirth Package" (250 billion yen) set forth in the FY2000 budget.

Outline of IT projects in Millennium Projects

1) Project "Computerization of Education"

[Goals]

- Enable Internet access from all public elementary, lower secondary and upper secondary schools while having all public school teachers master the use of computers by FY2001.
- Aim to develop by FY2005 an environment where the Internet can be accessed from all elementary, lower secondary and upper secondary schools where teachers and students can use computers in all classes at all grade levels.

[Measures]

    i) Provide computers and Inter-

net connections at all schools
- Develop and support intra-school LANs at public elementary, lower secondary and upper secondary schools
  ii) Systematically support use of IT and computers
- Implement training programs for teachers at public schools
- Provide comprehensively high-quality content for schools

2) Computerization of government administration

[Goals]

Regarding administrative procedures between the private sector and the government, implement an infrastructure for "Electronic Government" to realize paperless administrative procedures over the Internet by FY2003.

[Measures]

- Build a common infrastructure (government approval infrastructure, standardized systems, security, etc.) to realize electronic administrative procedures between the private sector and the government
- Introduce a leading system utilizing the Internet to realize electronic filing (paperless procedures) of applications with the government

3) IT 21st Century Plan (IT21)

[Goals]

The government will create an Internet and computer environment in which all Japanese nationals regardless of location can securely, rapidly and easily obtain, process and transmit information they want through use of the ultrahigh-speed Internet by FY2005.

[Measures]

- Construct a super-Internet with 10,000 times faster transmission speed and 30,000 times bigger interconnection scale than the existing Internet, on which users can securely and accurately access information they want.
- Realize a new-generation computing environment in which everyone can easily handle high-performance information processing and network interconnection.

4. Promoting public sector info-communications

Info-communications plays an important role as a tool to drastically change the Japanese socioeconomic system as a whole.

The advancement of info-communications technology and the establishment of an advanced info-communications society by utilizing the technology is one of the most urgent goals needed to enrich people's lives.

Taking this into consideration, the government demonstrated issues to be solved concerning advanced info-communications and particular policies in the "Action Plan for Economic Structural Reform and Creation" (approved at the Cabinet meeting on May 16, 1997) and the "Basic Guidelines on the Promotion of an Advanced Information and Telecommunications Society" (decided upon by the Advanced Information and Telecommunications Society Promotion Headquarters on November 9, 1998).

Use of IT in the public sector will lead to a reduction in administrative service costs through use of IT in the government that improves consumer convenience.

It also takes on important roles for advancing the introduction of IT into the entire socioeconomic system.

It is necessary for the government to introduce advanced applications as a user and promote R&D on info-communications systems that will constitute the basis for a variety of public services including administrative, educational and transportation services, in cooperation with the relevant ministries and agencies, so that all Japanese can become beneficiaries of well-administrated public services.

In consideration, a "Law to Promote R&D for Developing Technologies Related to Specified Public Telecommunications Systems" was enacted on May 6, 1998. MPT, in cooperation with relevant ministries and agencies, decided to conduct all necessary procedures to enable the Telecommunications Advancement Organization of Japan (TAO) to conduct R&D on the technology necessary for telecommunications systems (specified public telecommunications systems) conducive to the following public services.

1) Educational support system (in collaboration with the Ministry of Education, Culture, Sports,, Science and Technology)
2) Irrigation control system for agriculture (in collaboration with the Ministry of Agriculture, Forestry and Fisheries)
3) Electronic filing system for application procedure (in collaboration with the Ministry of Land, Infrastructure and Transport)
4) Support system for people with disabilities suffering from restricted mobility (in collaboration with the Ministry of Land, Infrastructure and Transport)
5) Telecommunications system which improves the security of police communications (in collaboration with the National Police Agency)
6) Telecommunications system which helps information collection regarding natural disasters
7) Telecommunications system which helps advanced use of information regarding fishery (in collaboration with the Ministry of Agriculture, Forestry and Fisheries)
8) Telecommunications system which helps electronic procedures in filing applications with local governments

II. Promotion of Multimedia Content

1. Results Deploying-Type R&D

There is a growing need for research and development of telecommunications systems with advanced functionality, for such purposes as facilitating distribution of content suitable for the Internet and digital

broadcasting. In FY1999, the Telecommunications Advancement Organization of Japan (TAO), with the cooperation of local governments, universities and private enterprises, conducted the "New Techno-application Research Project," which applies the fundamental technology resulting from R&D efforts to further research into advanced telecommunications systems which facilitate distribution of content appropriate for the Internet and digital broadcasting.

Outline of the projects

1) R&D on creative communications/broadcasting systems

TAO, by entrusting R&D projects to other parties, conducted R&D into such projects as: 1) an advanced system that contributes to the enhancement of education, transport and social welfare services for daily life; and 2) multipurpose system-configuration technology which works as infrastructure for an advanced system which facilitates distribution of content including broadcast programming.

2) R&D on content distribution platforms

TAO has been promoting systems development for distributing, via the Internet, content suitable for e-publishing, digital music, streaming video and the Internet, under an appropriate charging system, maintaining high quality and without imposing stress on the users.

III. Building of an Information Society Open to Everyone

1. Report from "Study Group on Info-communications Security"

In order to deliberate on indispensable measures for information security that support the sound development of advanced information and telecommunications society, the Communications Policy Bureau of MPT formed a "Study Group on Security Assurance in the Usage of Info-communications" (Chair: Dr. Hiroyuki OHNO, Emergency Communications Section, Communications Research Laboratory, MPT: currently Emergency Communications Group, Information and Network Systems Division, Communications Research Laboratory) in March 2000. After a series of meetings, the study group compiled its findings as a report in November 2000.

The report recommends adoption of necessary measures for information security, in terms of technology, management, regulatory frameworks, etc.

In particular, this report points out the importance of the following measures:

1) Promotion of R&D on information security

2) Preparation of governmental organizations in charge of information security

3) Popularization of information security management in accordance with security policies

4) Realization of network security assessment and evaluation schemes

5) Promotion of human resources development

The report also points out the importance of promoting international collaboration, and shows guidelines for formulating security policies for each sector comprising the network society, including i) users, ii) various service providers and iii) public entities. In particular, examples of security policies are illustrated respectively in the report for personal users, service providers and vendors.

2. Virtual Agency's "Education Computerization Project"

The Virtual Agency is a task force under the direct control of the prime minister, and not otherwise associated with any particular ministry or agency, set up in December 1998 as a solution to deal with the increasing number of issues that fall outside the jurisdiction of ministries and agencies. The Agency identifies concrete goals and schedules.

In December 1999, the Virtual Agency submitted its findings as a final report, describing projects including measures for realizing an electronic government (E-Government) and the "Education Computerization Project."

1) Goals and targeted schedule

Aiming to implement by FY2005 environments where the Internet can be accessed from all elementary, lower secondary and upper secondary schools and teachers, the government will foster human resources suitable for an advanced information society through drastic changes in teaching methods, resulting in heightened student abilities in thinking, imaginative and expressive power.

2) Necessary measures

i) IT equipment environment

The government will prepare settings where teachers and students can use computers and access the Internet in all classes at all grade levels.

ii) Support measures

• Enable all teachers to gain computer literacy, through training for teachers, to teach their students.

• Support IT introduction into schools through the participation of human resources from outside schools in cooperation with communities and private enterprises.

• Implement initiatives to promote the development and provision of high-quality educational content in collaboration with the private sector and relevant ministries and agencies.

• Develop functions for a national center for school education

3) Issues

i) Adopt education concerning morals, rules and netiquette

It is necessary for students to understand: a) roles of information and IT in society; b) common rules concerning morals and copyrights in dealing with information; and c) responsibilities in transmitting information on the Internet, among others.

ii) Enhance "heartfelt education" (cultivation of sentiments)

It is necessary for students to strengthen "heartfelt education" in parallel with i) above, paying due consideration to concerns about lacking experience in society and nature, failing to establish human relationship and losing a grasp on the realities of life due to immersion in virtual space.

iii) R&D on teaching methods

The government decided to commence R&D on filtering and blocking harmful information over the Internet in the Millennium Projects, in order to promote info-communications technology indispensable upon introducing IT in education.

3. Use of the Internet in schools

Aiming to establish an environment where children can freely use the Internet

Schools have a responsibility to develop in children as high a degree of information literacy as possible, to enable them to live successfully in an advanced information society of the future. Of Japan's public schools, 57.4%, up 21.8 percentage points over the previous fiscal year (FY1999: 35.6%), had access to the Internet by the end of March 2000 (**Table III-3**). There are moves to connect all public schools to the Internet by FY2001, and new National Curriculum Standards will be introduced in FY 2002 that include education in information technology (IT).

MPT started a new three-year R&D plan (one year extended later) in FY2000 by expanding a network R&D project in the three-year "R&D project on network management with multi-type access lines for Internet connection (School Internet)" (two years extended later) since FY1999. This R&D plan entitled "R&D on the Internet utilizing new high-speed access networks" is carried out in collaboration with the "R&D promotion project for linking schools through multimedia" of the Ministry of Education, Sports, Science and Culture (currently Ministry of Education, Culture, Sports, Sci-

Table III-3   Number of state schools with Internet access (as of March 31, 2000)

	Number of schools (A)	Schools connected (B)	Ratio of connected schools (B/A)	Schools with computers (C)	Ratio (C/A)
Elementary schools	23,607	11,507	48.7%	23,344	98.9%
Lower secondary schools	10,418	7,068	67.8%	10,418	100.0%
Upper secondary schools	4,146	3,320	80.1%	4,146	100.0%
Special schools	925	554	59.9%	921	99.6%
Total	39,096	22,449	57.4%	38,829	99.3%

Source: "Survey of IT Education in Schools (FY1999)," the Ministry of Education, Science, Sports and Culture

Fig. III-3   Experimental advanced Internet access networks for schools
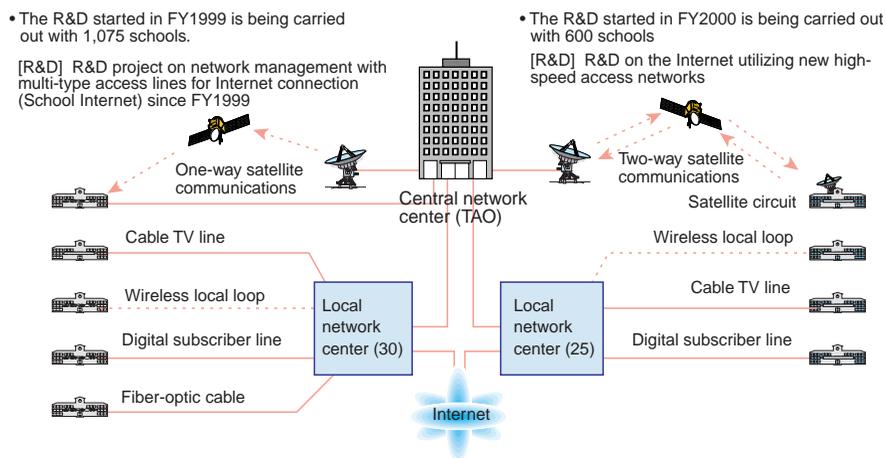
ence and Technology).

The objective of this R&D is to carry out R&D on network construction in an age where moving picture information is distributed on a full-scale basis. For the purpose, verification experiments are conducted on research networks that enable 600 schools selected from some 40,000 elementary/lower and upper secondary schools to be connected to the high-speed Internet through high-speed access networks.

One thousand and seventy five schools have been connected to these research networks through the "R&D project on the Internet utilizing hybrid access networks," which is launched in FY1999.

These research networks, called the "School Internet," consist of the 1,675 schools, 55 regional network centers throughout Japan and the Central Network Center in Mitaka City, Tokyo.

IV. R&D to Support Advancement and Diversification of Info-communications

1. R&D for space communications technology ushering in the future

MPT is promoting the timely implementation of the following R&D projects in fixed and mobile communications as well as broadcasting and positioning technologies to build satellite communications networks interoperable with fiber-optic and terrestrial wireless networks.

1) Engineering Test Satellite-VIII (ETS-VIII)

Includes the development of technologies for 10-meter-class deployable antennas, 400W-class high-power transponders and satellite on-board switches, all of these being conducive to the realization of personal mobile multimedia satellite broadcasting and communications, among other areas. Verification and

testing in space is scheduled to start in 2003.

2) Next-generation LEO System (NeLS)

Includes R&D into technologies needed for mobile satellite communications systems using next-generation low-earth orbit (LEO) satellites that will enable worldwide video transmission using handheld terminals, in line with increasing globalization and needs for multimedia in communications. Verification and testing in space are planned to start around 2005.

3) Gigabit Internet Test Satellite

Includes R&D into the Gigabit Internet Test Satellite in order to establish technologies for ultrahigh data-rate satellite communications systems that have such advantages as wide-area coverage, simultaneous and multiple destinations, disaster tolerance, etc. and will also enable supplementation of terrestrial Internet access networks.

Verification and testing of this R&D project in space will be carried out, together with R&D results of the Gigabit Satellite project to date, through use of the Gigabit Internet Test Satellite to be launched in 2005. After the launch, the government is planning to conduct joint experiments with countries and economies in the Asia-Pacific region using the Gigabit Internet Test Satellite.

4) Research on orbital maintenance system (OMS)

With the progress of space development such as the growth in the number of satellites for communications and broadcasting, concerns about the worsening of the space environment caused by increasing space debris are arising. To this end, with the aim of preserving the space environment and to enhance the reliability of space communications, MPT has been conducting R&D on an orbital maintenance system (OMS) for eliminating unnecessary satellites on orbits, repair and inspection satellites, etc. In FY2001, prior verification experiments of remote inspection technology will be conducted in space.

5) Research on quasi-zenith satellite system ("Figure-8" satellite)

MPT has been carrying out R&D on the Quasi-Zenith Satellite System.

A minimum of three satellites will be placed into synchronous orbit at an inclination of approximately 45 degrees to the geostationary orbit. These orbits are seen from the Earth as a figure of "8" from north to south, with its center on a point on the geostationary orbit. One of the three satellites is always seen near the zenith from Japan. With the three satellites at a higher elevation than geostationary satellites, high-quality mobile communications systems, etc. will be enabled through the development of new orbits which complement geostationary orbits that are congested.

6) R&D on advanced broadcasting satellite systems

In response to the need for sophisticated and diversified satellite broadcasting, the next-generation advanced broadcasting satellite system is anticipated to be realized. MPT has been conducting a satellite broadcasting system which enables compensation for rainfall attenuation throughout Japan, utilizing the 21GHz broadband satellite broadcasting band that can be used from 2007 under the authorization of the International Telecommunication Union (ITU).

2. Promotion of construction of Geographical Information System (GIS)

GIS is a system that integrates electronic map data and ledger data, as well as statistics in different formats, then carries out statistical processing and simulation. Because GIS enables a broader range of economic activities more efficiently, the U.S. and European countries are promoting this system as national initiatives.

In Japan, as part of central government efforts to promote GIS, the "Liaison Committee of Ministries and Agencies Concerned with Geographical Information System (GIS)" coordinates governmental policies concerning GIS; in January 1999, the "GIS Promotion Conference between the Government and the Private Sector" was established for promotion,

in cooperation with the private sector, of GIS-related initiatives, including efficient construction of and interoperability of GIS. Since FY2000, a GIS model district project has been implemented based upon collaboration between the private and public sectors.

In FY1998, MPHPT (Information and Communications Policy Bureau) kicked off R&D activities on element technology, such as communications protocols for constructing distributed GIS, which uniformly handles multiple GISs having different data formats; in FY2000, MPHPT developed a prototype of distributed GIS.

In addition to the prototype, MPHPT started R&D in FY1999 upon information technologies such as automatic matching of 3-D information, which requires formidable efforts for collection, as well as location information toward the construction of 3-D GIS. In FY2000, the ministry carried out R&D on i) technology for increasing the number of data collection areas, ii) improvement of the ratio of automated operations and iii) enhancement in data accuracy. Shared-use facilities for supporting information technology R&D regarding storage and distribution of large-capacity GIS data were opened in Yokosuka City, Uji City and Naha City.

As a key member of the "Liaison Committee of Ministries and Agencies Concerned with GIS" and the "GIS Promotion Conference between the Government and the Private Sector," MPHPT will participate forcely in central government efforts to construct GIS.

3. R&D on ultrahigh-speed photonic network technology

In recent years, transmission of huge data (e.g., movies) has been required to the Internet. R&D on ultrahigh-speed photonic network technology is indispensable for transmitting the huge data. Ultrahigh-speed photonic network technology enables optical communications throughout the network, by means of wavelength division multiplexing (WDM) technology which

multiplexes different signals on waves having different wavelengths in an optical fiber, as well as optical routing technology without converting optical signals into electrical signals. Ultrahigh-speed photonic network technology realizes ultrahigh-speed data transmission by maximizing the transmission capacity of optical fibers.

In order to realize the most advanced information and telecommunications society in the world, MPHPT has been promoting R&D on ultrahigh-speed photonic network technology under a unified academia-industry-government R&D scheme in collaboration with TAO, universities, etc.

4. Promotion of "Basic Research 21 for Breakthroughs in Info-communications"

Fundamental interdisciplinary R&D, more than simply an extension along the lines of existing technologies, is essential for "breakthroughs" that will open up new modes of info-communications in the 21st century. In FY1998, MPT began a fundamental and interdisciplinary research project called "Basic Research 21 for Breakthroughs in Info-communications (BT21)." The aim of the project, which will be carried out under the direction of the Communications Research Laboratory (CRL), is to conduct R&D as well as encourage international research exchanges based on cooperation between government, academia and industry.

This project has established three main focal areas of study in response to new technological needs: "Advanced materials, devices and photonics for communications technology," "Realization of friendly communications society" and "Education of biological information function and its application." These research themes are intended to promote more effective and efficient research incorporating a wide range of related sciences, including physical and life sciences as well as humanities and social sciences.

5. R&D for promotion of ad-

vanced technology transfer

TAO contributes to the creation of new businesses by transferring the advanced technologies studied in CRL to application-oriented R&D.

Under this technology transfer scheme, application-oriented R&D: "R&D on efficient light modulation devices in 10-GHz band," "R&D on adaptive communications technology," etc. have been carried out. The promotion of technology transfer described above contributes to the rebirth of Japanese economy.

6. Subsidies for leading-edge R&D

TAO has been subsidizing part of R&D expenses to ventures, etc. which carry out R&D on leading-edge and original technology in the communications and broadcasting fields (leading edge R&D subsidization scheme). In FY1999, TAO added an R&D promotion scheme for supporting university-industry tie-ups (university-industry tie-up R&D subsidization scheme) and an R&D promotion scheme for supporting particularly promising technology fields as designated by TAO (priority technology field R&D subsidization scheme).

7. Promoting R&D using Japan Gigabit Network

Japan Gigabit Network (JGN) is a nationwide open testbed for promoting R&D activities on ultrahigh-speed networking technology including the next-generation Internet and high-performance application technologies. It was established by MPT and TAO at a total cost of 57.3 billion yen using the supplementary budget in FY1998.

The JGN consists of three bodies: the ultrahigh-speed optical-fiber network called "Gigabit Network Link," which has 64 access points nationwide; five shared-use research facilities (Gigabit Laboratories) located in Tsukuba, Keihanna (Kansai Science City), Kita-Kyushu, Kyoto and Okayama (Kyoto and Okayama facilities also have WDM networks) and ;Research Centers where TAO

itself carries out R&D activities.

Gigabit Network Link and the shared-use research facilities are open to universities, research institutes, private companies and other organizations for a variety of R&D activities for five years from FY1999 through FY2003. The former is rented out free of charge (users pay for network charges from access points to their own facilities) and users of the latter are charged minimum expenses for fuel, lighting and other items.

In close collaboration with the Next-Generation Very High-Speed Network Promotion Conference, which has been formed with the primary function of maintaining the smooth and efficient operation of JGN, TAO has been promoting R&D activities utilizing JGN, by contract research whose themes solicited from the public under the "Fund for R&D themes utilizing JGN" scheme established in FY1999. From FY2001, TAO will add an environment where IPv6 can be used as the basic Internet protocol to JGN, thus promoting R&D on IPv6.

The latest information is available at:
http://www.jgn.tao.go.jp/english/index_E.html

8. R&D on a consignment basis

MPHPT is promoting R&D into original and innovative info-communications technology on a consignment basis through subsidies for funding excellent R&D themes selected from applicants. To this end, the Telecommunications Advancement Organization of Japan (TAO) invites R&D themes from the public through the following R&D promotion schemes:

1) R&D promotion scheme for creative info-communications technology

Implements R&D into original and innovative info-communications technology on a consignment basis by inviting R&D themes from universities, research institutes, etc.

2) R&D promotion scheme for realizing international standards

Contributes to international standardization activities, implements

R&D indispensable for realizing international standards.

3) R&D promotion scheme for regional proposals

By targeting at joint research teams consisting of local companies, universities, public research institutes, etc., invites R&D themes into original and innovative technology meeting local needs, then implements the R&D themes on a consignment basis.

4) R&D promotion scheme for supporting university-industry tie-ups and younger researchers with priority.

Promotes R&D through university-industry tie-ups, and implements original and innovative R&D through support for younger researchers

5) R&D promotion scheme utilizing Japan Gigabit Network

Invites R&D themes necessary for realizing advanced applications utilizing the Japan Gigabit Network, then implements selected R&D themes on a consignment basis.

6) R&D promotion scheme funding international joint research

Invites R&D themes from the public, then subsidizes part of expenses for promising R&D activities conducted by international joint research teams.

Through introduction of those key technology research promotion schemes in the info-communications field, in addition to various leading R&D projects being carried out efficiently and effectively, it is expected that Japan's R&D capacity will be enhanced and researchers' levels heightened through creation of a competitive research environment.

9. Establishment of the Communications Research Laboratory, an Independent Administrative Institution

Since April 1, 2001, the Communications Research Laboratory (CRL) becomes an Independent Administrative Institution with the purposes of enhancing the efficiency of operations and the flexibility of management in accordance with administrative reforms. CRL inherited service operations from the national research institute CRL. CRL is conducting R&D in the following four priority research fields:

1) Info-communications and networking technology
2) Wireless communications technology
3) Electromagnetic wave technology for measurement, standards and applications
4) Basic and advanced research of info-communications

V. Measures for environmental protection through use of info-communications

1. R&D on global environment measurement technology

The global environment problems include global warming caused by increasing greenhouse gases such as carbon dioxide generated from consumption of fossilized fuel, ozone-layer destruction by emission of fluorocarbons, deforestation by acid rain, expansion of ocean contamination, etc. In order to establish effective countermeasures against those phenomena and forecast thereof, it is necessary to monitor and analyze details of those global environmental changes.

To this end, MPHPT has been carrying out R&D on the global environment measuring technology through improvement of information quality and reliability in obtaining data on the global environmental changes, such as disasters, global warming and other environmental issues on a global scale, thus contributing to advancement in identifying causes of the global environmental changes and improving forecast accuracy.

VI. Regional information intensification in promotion of info-communications usage

1. Promotion of Telework/ SOHO

Telework (or telecommuting)/ small office home office (SOHO) offers a workstyle free from confinement to fixed work locations, as enabled by the use of info-communications. Not only individuals and businesses, but also society as a whole can benefit from telework/ SOHO because it reduces the burden of commuting on workers, improves productivity, realizes a comfortable lifestyle, enables engagement in work while childrearing, increases job opportunities for the elderly and people with disabilities, and contributes to environmental preservation by making actual travel unnecessary.

In particular, with the rapid penetration of IT including the Internet and the revision of traditional employment conditions such as lifetime employment and seniority systems, SOHO businesses are emerging and their number is increasing rapidly as independent businesses that ignore conventional corporate structures.

To promote telework/SOHO, MPHPT has been carrying out the following measures:

i) Telework Center Construction Project (see **Note**);
ii) R&D on info-communications systems contributing to SOHO, etc.;
iii) Reduction of the fixed assets tax on facilities and equipment for telework;
iv) Funding scheme for facilities and equipment for telework/SOHO;
v) Hosting telework promotional events; and
vi) Trials on telework by MPHPT personnel

Meanwhile, the Asia-Pacific Economic Cooperation (APEC) project to compile a "Telework Manual," which was proposed by Japan to promote telework in the Asia-Pacific region, has been completed, and the manual has already been made public.

Note: Telework Center Construction Project: Since FY1994, subsidies from the national funds have been granted to local governments or third-sector bodies that proceed with the construction projects of shared-use telework centers, with the aim of creating a base for further introducing telework into local communities.

2. Survey and study on regional IT potential indicators

The purposes of this survey and study, so that local governments, etc. in charge of regional IT promotion can assess and evaluate the progress of IT introduction in their regions, are to clarify the concepts of "regional IT potential indicators" and to set forth the "manual for investigation on regional IT potential."

Upon selection of fields and items to which IT potential indicators apply, MPHPT selected six fields including 22 items in accordance with types of public services for residents in the communities, from the standpoint of those residents. As for items making up the indicators, two to four steps are set forth, taking into consideration differences in quality, such as what is enabled by IT and what benefits for service users are made available.

As regards the significance of the introduction of IT potential indicators, the indicators can help local governments, local residents, etc., that are not much interested in regional IT, recognize benefits and necessity of IT, by indicating the concrete progress in implementing IT; and IT potential indicators can clarify problems to be solved by indicating the level of progress in IT.

3. Teletopia project

The Teletopia Project is an initiative aimed at solving a variety of problems in local communities and reinvigorating societies by promoting regional IT through the introduction of info-communications media such as cable TV, data communications and community broadcasting into designated communities.

Since its launch in FY1985, a total of 189 communities have been designated as Teletopia communities throughout Japan as of the end of March 2001, where a variety of systems have been built to accommodate the special needs of each community including the revitalization of a community, the promotion of local business and the expansion of medical as well as social welfare services.

4. Project for Enhancement of Regional and Life-related Information Infrastructure

The Project for Enhancement of Regional and Life-related Information Infrastructure is a modeling project aimed at enhancing the convenience of people's daily lives, reinvigorating local economies and accelerating the development of info-communications infrastructure, by developing and introducing info-communications applications to public-sector services such as administrative, educational, medical and welfare services.

During the period between April 1994 and March 2001, the project was implemented at 303 sites nationwide including 85 local government networks, nine telework centers, 184 advanced local cable TV networks, four districts designated under the City Central District Revitalization Project Using Multimedia, and 26 facilities under the Regional Intranet Infrastructure Construction Project, two information barrier-free telework centers and 655 facilities under the Regional Internet Infrastructure Construction Project.

5. Advanced Info-communications System Model City Construction Program

The introduction of IT in the public sector is expected to spur widespread adoption of IT in Japanese society, which will lead to the creation of an advanced info-communications society.

In line with this, MPHPT, in collaboration with the Ministry of Economy, Trade and Industry (METI), has been carrying out the "Advanced Info-communications System Model City Construction Program." It constructs advanced info-communications systems in highly motivated municipalities to provide public-sector applications covering more than one field, including administrative, educational, medical and social welfare. Their aim is to realize "future multimedia cities" as well as an advanced info-communications society as soon as possible.

This program has a greater degree of appeal than similar programs in the past, for the following reasons:
1) Financial support for software has been made available for the first time, targeting content production expenses.
2) Financial support for hardware has been expanded to include transmission lines and terminals.
3) The level of financial support, at 50%, is quite high.
4) Financial support has been expanded to include third-sector organizations and nonprofit organizations.

MPHPT expects that these "future multimedia cities" will serve as role models for 3,300 local governments in Japan, spurring them to introduce public sector applications. As of March 31, 2001, 42 projects in 36 areas were designated as future multimedia cities.

6. Okinawa International Information Special District Project

In Okinawa Prefecture, the U.S. military bases and facilities are concentrated, affecting the islanders' living environment and regional development. Taking this into account, the central government has been taking necessary measures for helping Okinawa Prefecture i) gain economic self-reliance as a regional economy, ii) secure employment, iii) contribute to improvement of the prefectural living standard and iv) develop Okinawa as a region that contributes to Japan's economy and society. MPHPT in FY1996 proposed the "Okinawa Multimedia Special District Project" (the Multimedia Island <MMI> Concept in Okinawa). Since then, MPHPT has been getting ex-

pected results, such as job creation, through a variety of policy measures for transforming Okinawa into an "info-communications hub" in the Asia-Pacific region.

Furthermore, based on the results of the MMI project, the "Okinawa International Information Special District Project," which accelerates the realization of "info-communications hub" and invites domestic and overseas IT industries into Okinawa, was proposed by the final report of "Okinawa Economic Build-up Plan" (approved by the "Okinawa Policy Council" in August 2000). The "Okinawa Economic Build-up Plan" proposes various measures for helping the islands gain economic self-reliance.

MPHPT has been deploying, in a multifaceted and multilayered manner, a range of policy measures for realizing the "Okinawa International Information Special District Project," based upon the following five promotion measures:

1) Constructing a Global Internet eXchange (IX) for building an info-communications hub in the Asia-Pacific region
2) Advancing regional info-communications networks
3) Inviting, clustering and fostering domestic and overseas IT-related industries and research institutes
4) Concentrating domestic and overseas content and applications
5) Promoting accelerated and en masse human resources development programs

7. Telecom Venture Business Fund

In May 1998, the "Telecom Venture Business Fund" (or Telecom Investment Enterprise Cooperative) was established with the aim of spawning new telecommunications and broadcasting businesses (Note).

The Fund is giving financial assistance to "new telecommunications and broadcasting businesses" who is given authorization by the Minister of Public Management, Home Affairs, Posts and Telecommunications under the "Law for Promoting Specified Telecommunications and Broad-

casting Businesses." The new business with authorization that is newly established or is within five years since its inception and with capital of one billion yen or less (where a juridical person who has Type I telecommunications business permission shall be a juridical person with capital of 1.5 billion yen or less) can be given capital investment from the Fund. The upper limit of capital investment per authorized business is 200 million yen or up to 30% of the total capital.

8. Promotion of New IT Applications R&D (Multimedia Pilot Town Project and others)

Through the Telecommunications

Advancement Organization of Japan (TAO), MPHPT will conduct follow-up R&D, winning cooperation from enthusiastic local governments, universities and private companies, for new IT applications and realizing further advanced info-communications system based on basic technology which has been developed in designated communities under pilot projects.

Through these activities, MPHPT will create new demand for a variety of multimedia model towns which will produce new lifestyles, and contribute to a socioeconomic revolution toward an advanced information society.

VII. Contribution to Development of the Global Information Infrastructure

1. Promotion of international standardization

The International Telecommunication Union (ITU) is a specialized agency of the United Nations in charge of telecommunications issues, whose objectives are promotion of international cooperation for improving telecommunications as well as rational use, promotion and provision of technical support for developing countries, and enhancing efficiency of telecommunications services. MPHPT, through ITU, is engaging in the promotion of international standardization.

From September 27 through October 6, 2000, the World Telecommunication Standardization Assembly (WTSA-2000), the general meeting of ITU Telecommunication Standardization Sector (ITU-T) held every four years, was held in Montreal, Canada. The WTSA is an important meeting which deliberates activity reports, draft Recommendations and draft resolutions presented by each study group (SG) of ITU-T and the Telecommunication Standardization Advisory Group (TSAG), as well as decides basic direction of ITU-T in coming four years such as review of working methods, establishment and abolition of SGs, allocation of re-

search tasks, and appointment of chairs and vice-chairs of SGs and TSAG.

The meeting accepted the introduction of new procedure enabling rapid adoption of Recommendations utilizing electronic methods for technical Recommendations not related with regulatory or policy issues, or, Alternative Approval Process (AAP), and the introduction of "Associate," a new membership which allows participation in specific SGs, as a system to promote participation of private enterprises, etc., in activities of ITU-T. And, as the Special Study Group (SSG) on standardization of network portion of mobile communications was established, the progress of standardization in collaboration with ITU-R and other organizations is expected. Deliberations were made on draft Recommendations studied by each SG and TSAG from 1997 to 2000, 54 new and revised Recommendations were approved. Research themes for 2001 through 2004 were approved, and chairs and vice-chairs of 14 SGs and TSAG were appointed including a chair and six vice-chairs from Japan.

The Radio Assembly (RA-2000), the general meeting of ITU Radiocommunication Sector (ITU-R) held once in every two or three

years, was held from May 1 through 5, 2000, in Istanbul, Turkey. The RA is an important meeting which approves Recommendations of Study Groups (SGs) and the Radiocommunication Advisory Group (RAG), Questions determining research strategy of the next period, as well as decides basic direction of ITU-R such as organization of ITU-R, appointment of chairs and vice-chairs of SGs and RAG, and review of working methods.

At the meeting, 74 Recommendations providing technical and operational conditions, etc., for various radiocommunications including communications such as radio transmission methods of the third-generation mobile communications system (IMT-2000), the Electronic Toll Collection (ETC) system of Intelligent Transport Systems (ITS), and automobile radars for supporting safe driving. Nearly 400 Questions concerning next period's research activities, such as advancement of IMT-2000, study on the next-generation mobile communications system and research on frequency sharing of the stratospheric radio platform and other services, were approved. Thus far, research on broadcasting-related technology has been made by SG10 (broadcasting service - sound) and SG11 (broadcasting service - television) of ITU-R. However, since the meaning of separating the two research areas recedes along with the innovation in digital broadcasting technology, it was decided to integrate SG10 and SG11 into SG6 (Broadcasting Service-Terrestrial and Satellite). Appointments of chairs and vice-chairs of seven SGs including newly established SGs were made, and four from Japan were appointed as chair or vice-chair. Review of work methods was also made, and, as in the case with ITU-T, the introductions of AAP and Associate system were approved.

2. Promotion of the Asian Info-communications Council (AIC)

Based on Japan's proposal, the Asian Info-communications Council (AIC) was established in FY1988 aimed at supporting the sound development of the telecommunications infrastructure, contributing to socioeconomic development and improving the quality of life in each member country.

AIC, initially started with four countries (Japan, the Republic of Korea, the Philippines and Singapore) was expanded to nine countries with the participation of China, Indonesia, Malaysia, Thailand and Vietnam. A total of 100 organizations participating in AIC include telecommunications administrations, carriers, communications equipment manufacturers, universities and other related organizations.

So far 25 conferences of AIC have been held. By designating a five-year period from April 1998 to March 2003 as the third AIC term, AIC has launched new extensive joint experiments on Internet Protocol (IP), Wireless Local Loop (WLL) and other items. In October 1999, the name AIC was changed from the Asian ISDN Council to the Asian Info-communications Council, in order to respond to the latest technological trends.

In February 2000, the first AIC meeting since the name change was held in Denpasar, Indonesia on the threshold of new millennium. The meeting was successfully closed with the first official participation of a Vietnamese delegation.

The AIC joint experiments are anticipated contributing to the development of Asian info-communications infrastructures and the revitalization of the Asian economy.

3. Promotion of the APII Testbed Project

The Asia-Pacific Information Infrastructure (APII) Testbed Project is aimed at contributing to regional economic development by promoting the construction of info-communications infrastructure in the Asia-Pacific region.

In order to practically promote the project, MPT on February 13, 1997 opened the APII Technology Center in the Kansai branch of the Communications Research Laboratory (CRL) in Kobe City, Hyogo Prefecture. The center is equipped with advanced info-communications experimental facilities including an ATM-backboned network and serves as a hub for international joint studies on the info-communications infrastructure in the Asia-Pacific region.

The project members are conducting international joint R&D and experiments on next-generation technologies such as IP over satellite, IPv6 and the next-generation Internet, as well as application technologies including telemedicine, distance learning, and so on. APII Technology Center also has been training multimedia info-communications experts who will be required to develop the next-generation network in the Asia-Pacific region.

Note: A testbed is an experimental network for conducting verification experiments in order to develop networking and applications technologies.

4. Promotion of GENESIS project

Toward the realization of a global multimedia society, in promoting interconnectivity and interoperability experiments on broadband networks by G7/G8 countries, a variety of issues have emerged for building and utilizing the next-generation global broadband networks.

GENESIS project beginning from FY1997 identifies technological problems and finds solutions through R&D, thus contributing to the realization of a global multimedia society.

GENESIS project is conducting the following elemental technologies:
1) R&D on network control technology for next-generation global broadband networks;
2) R&D on application technology for next-generation global broadband networks; and
3) R&D on network performance measurement technology for next-generation global broadband networks.

In conducting R&D, an international broadband network linking the U.S., the EU and the Asia-Pacific

region are planned to be constructed, through the collaboration with the Japan Gigabit Network (JGN) Project in Japan, and JEG (Japan-Europe Global Architecture for Multi-Media Access) Project as well as APII (Asia-Pacific Information Infrastructure) Testbed Project.

5. Promotion of satellite application experiments

Since October 1997, MPHPT has been hosting the "Satellite Application Experiments Promotion Conference," chaired by Dr. Yasuhiko YASUDA, professor at the School of Science and Engineering, Waseda University. One of this Promotion Conference's missions is to support three high-data rate (HDR) satellite communications experiments jointly conducted by Japan and Europe, Japan and the U.S., and Japan and the Republic of Korea, that are to verify the feasibility of HDR satellite communications technologies over an advanced info-communications infrastructure. Another mission is to promote experiments on satellite-based applications in Japan.

1) Roles and structure of the Conference

The Promotion Council is comprised of experts, satellite communications carriers, communications equipment manufacturers, interested organizations, etc. Its purpose is to create a satellite testbed necessary for the experiments and to contribute to the smooth promotion of satellite communications experiments using the testbed. (See **Fig. VII-5**.)

2) Experiment plan

i) The Japan-U.S. experiment group

As part of G7's "Global Interoperability of Broadband Network" (GIBN) project, this experiment is promoted by the Communications Research Laboratory (CRL) and the U.S. National Aeronautics and Space Administration (NASA) as key actors, in collaboration with industries (communications businesses, manufacturers, etc.) and universities.

As Phase 1, the "high-definition video postproduction experiment" was conducted in March 1997 with

success. In May 2000, as Phase 2, various communications experiments were made by expanding transmission capacity to 155 Mbps and using ATM high-speed satellite links with success.

ii) The Japan-Europe experiment group

A group representing the Japanese side in the Japan-Europe Joint HDR Satellite Communications Experiments is also part of GIBN. Experiments (Japan-Europe Gamma: JEG, which links Japan and Europe via HDR satellite circuits) are carried out primarily by the CRL and the European Space Agency (ESA), in collaboration with the ESA-led GAMMA (Global Architecture for Multi-Media Access) project.

In Phase 1 (from July 1997 through November 1999) of the project, various experiments utilizing 2Mbps links were successfully closed.

iii) The Japan-Republic of Korea experiment group

At a Japan-Republic of Korea Bilateral Consultation held in April 1995, Japan's proposal to conduct the International Joint High-speed Communications Experiments linking Asian countries/areas gained consensus. Based on the High-Data Rate Satellite Communications Experiment Project agreed with Korean Ministry of Information and Communication in September 1997, in Phase I between November and December 2000, various experiments

were successfully conducted using 45Mbps links. In Phase II from November 2001, it is planned to conduct experiments using 155 Mbps links.

iv) The national Satcom application experiment group

The group, in February 1998, conducted experiments on 3D ultrahigh-definition video transmission at the 18th Nagano Winter Olympic Games.

6. Promotion of the POST-PARTNERS Project

MPHPT, in cooperation with countries in the Asia-Pacific region, has been promoting an international joint experiment known as the POST-PARTNERS (Post-Pan-Pacific Regional Telecommunications Network Experiments and Research by Satellites) Project.

The purpose of this project is to promote technology transfer, human resources development and the diffusion of satellite communications in the region.

Many countries in the Asia-Pacific region are made up of a multitude of islands with populations spread out over a wide area, and with insufficient transportation and communications networks.

In such a region, satellite links are an extremely effective means of communications and are expected to play an essential role in building the

Fig. VII-6 POST-PERTNERS

Communications satellite

Asia-Pacific region

Content of project

• **Earth radio propagation**
• **Experiments in multimedia communications**
• **Data transfer for applications**
• **TV conferencing**

Japan

Goal

Promotion of APII

Expected results
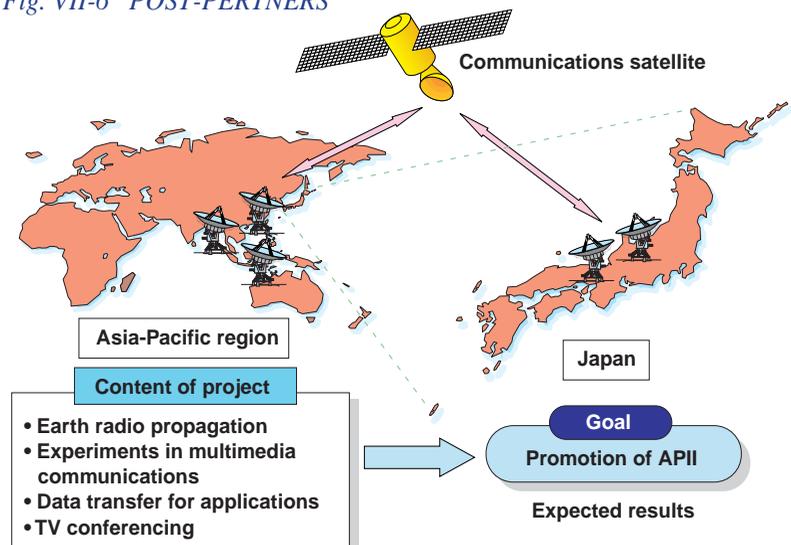
Asia-Pacific Information Infrastructure (APII) network of the future.

As the very first project of the POST-PARTNERS, a joint experiment was launched in January 1997 between Japan and Thailand. Since then, a variety of experiments have been conducted including a measurement of the characteristics of satellite radio-wave propagation for studying basic satellite communications technology, a multimedia satellite communications experiment using 1.5 Mbps satellite links, a dis-tance learning (telelearning) experiment by holding an international workshop at which reports on the current status of each country's communications and cultural affairs were provided, and a telemedicine experiment in which medical images were transmitted.

As of FY2000, Thailand, Indonesia, Malaysia, Fiji and the Philippines are participating in the project. MPHPT is going to expand the experiments by connecting with conventional networks.

VIII. Preparation of "Information Barrier-Free" Environment

1. R&D for imaging technology for advanced telemedicine

The Telecommunications Advancement Organization of Japan (TAO) carries out R&D on technology concerning moving picture natural vision (the next-generation image display/transmission system), which reproduces super-realistic images with true color, gloss and texture, based on multi-spectral imaging beyond the RGB-based systems, the foundation of current imaging systems. The system is expected to be applied to many areas including telemedicine, electronic museum, electronic transaction, etc.

2. Information Barrier-free Telework Center Construction Project

For the purpose of promoting expansion of the job opportunities and self-reliance by utilizing IT for the elderly and people with disabilities, MPHPT has been supporting local governments, etc., constructing info-communications systems, etc. and constructing Information Barrier-free Telework Centers that expand opportunities for the elderly and people with disabilities to participate in society since FY1998. By FY2000, four projects have been conducted throughout Japan.

3. Development and deployment of info-communications system supporting self-reliance and social participation of the elderly

MPHPT, through TAO and with the cooperation of local governments, etc., has been carrying out R&D for realizing info-communications systems in the welfare field to help the elderly. The systems expected to be realized include: wide-area care support systems, which enables efficient provision of care services and regional welfare information, etc., and the next-generation visiting-care support systems with which nurses, etc., can get the latest care information at the homes being visited.

4. Subsidies to R&D on info-communications and broadcasting services for the elderly and people with disabilities

Since FY1997, to private enterprises, etc. conducting R&D on info-communications and broadcasting services for the elderly and people with disabilities, MPHPT, through TAO, has been granting subsidies to cover part of R&D expenses as the "Subsidy for R&D on info-communications and broadcasting services for the elderly and people with disabilities." As of the end of FY2000, 70 such grants have been made. In addition, in order that opinions of people with disabilities, etc. will be reflected on R&D toward more meaningful R&D, MPHPT has been holding opinion exchange meetings between private enterprises conducting R&D with the subsidies and users of the info-communications equipment since FY2000.

5. Study Group on Accessibility for the Elderly and People with Disabilities

MPHPT, in collaboration with the Ministry of Health, Labor and Welfare (MHLW), studied measures for supporting non-profit organizations promoting use of IT by the elderly and people with disabilities as well as for putting R&D results of info-communications technology into practical use for the elderly and people with disabilities, and compiled a report of the "Study Group on Accessibility for the Elderly and People with Disabilities" in May 2001. The report advocates measures for supporting non-profit organizations, including i) organizing groups engaging in Senior-Net or PC volunteers, ii) constructing portal sites providing information on those groups, iii) providing lecture manuals and education materials, and iv) improving subsidization systems to R&D on info-communications technology for the elderly and people with disabilities.

6. Measures for the Diffusion of Websites Friendly to Everyone

In FY2000, MPHPT, in order that the elderly and people with disabilities can easily access to ordinary websites and understand the content thereof, created a system with functions to check and correct websites, which is necessary in supporting them. From FY2001, with the cooperation of local governments, etc. and organizations of people with disabilities all over Japan, the ministry is planning to conduct verification experiments of the system and to open the system to the public.

IX. Promotion of Content

1. Advancement of the environment for content production

1) Measures on the production of content

Along with the advancement of the Internet and diffusion of digital broadcasting, in order for the benefits thereof to be fully enjoyed, it has become necessary to create an environment in which diversified content is amply provided. For that purpose, MPHPT is promoting policy measures toward advancement of the environment for content production.

i) Verification experiments on content distribution platform (Network Collaboration)

The digital content industry is expected to develop as Japan's key industry in the 21st century. In producing content, the realization of an advanced collaborative content production environment utilizing networks, which is employed in the U.S. and the U.K., has become a challenge. For the purpose of promoting Japanese digital content industry and strengthening its international competitiveness, the Telecommunications Advancement Organization of Japan (TAO) conducted verification experiments on collaborative production of visual content utilizing networks within the Tokyo Metropolitan area and between Tokyo and Okinawa in FY2000.

ii) Next-Generation Intelligent Content Distribution System Development Promotion Project

As one of the "Innovative Development of Info-communications Systems," TAO carries out the R&D, by entrustment, on a content distribution system which promotes the usage of the advanced broadband content using digital technologies, such as interactive and storing functions.

iii) Support for the digitalization of broadcast programming production facilities, etc.

In order to promote early diffusion of terrestrial digital broadcasting, toward relevant broadcast programming production facilities, etc., special tax incentives, no- or low-interest loans from the Development Bank of Japan, and guaranteed obligation by TAO based on the "Advanced Television Broadcasting Facility Promotion Temporary Measures Law" enforced in November 1999.

2. Creating market for content

1) Measures on distribution and archiving of content

Although the progress of multimedia/multichannel characteristics through digitalization of broadcasting and widespread use of the broadband Internet is expanding demands for content, the distribution thereof has not been fully facilitated. MPHPT is promoting the following policy measures for creating the environment for facilitating the distribution of content.

i) Verification experiments on content distribution platform (system for processing and managing copyrights and neighboring rights)

Upon distribution of content, facilitation of the secondary use of content and prevention of illegal copying have become urgent issues. In FY2000, TAO created copyright transaction and management systems, carrying out verification experiments for realizing content distribution platforms enabling content's smooth distribution over networks, verification experiments on copyright transactions by content creators for sales and; verification experiments on illegal-use detection systems, for embedding ID in each content using digital watermark, distribution over networks, and track and search locations, etc. of said content through a retrieval system.

ii) Developing database management systems for the promotion of the secondary use of broadcast programming

MPHPT has been conducting development of database management systems for promoting the secondary use of broadcast programming through creation of shared databases utilizing existing broadcast programming databases made by individual broadcast programming production companies, etc. since FY1999.

iii) R&D for archiving broadcast programming

TAO carries out the R&D on a system which i) digitalizes broadcast programming libraries (the Broadcast Program Center) which collect and archive broadcast programming, ii) connects them via network and iii) enables remote and high-speed retrieval and browsing of the programming. It also carries out the R&D of the system which provides relatively short broadcast programs, such as local information programs, on demand from the viewer booths.

iv) Study Group on the Formation of Network Distribution Market of Digital Content

While the progress of multi-channel in digitalization broadcasting and expansion of in the broadband Internet increases demands for content, the smooth distribution thereof has not been achieved since, for example, rules for regulating transactions of copyrights, etc. at using content via networks have not been established. Based on the reality, MPHPT had been holding the "Study Group on the Formation of Network Distribution Market of Digital Content" since February 2001, studied institutional and technical issues for creating a copyright management system required for forming the smooth content distribution market, and compiled a report in July 2001.

3. Promotion of mobile Internet content

1) Toward vigorous development of mobile content business

Against the backdrop of recent explosive diffusion of mobile phones, the Internet access service of mobile phone has made drastic growth, and advancement and diversification of content business utilizing mobile network are ongoing. On the other

hand, the quality of content and the manner of protecting users are questioned. As the third-generation mobile communications system (IMT-2000) service starts up, distribution of moving picture content is realized. The advent of diversified business methods providing more advanced applications is expected, but there is a concern that problems will become further complicated and grave.

MPHPT had been holding the following study groups and studied for the purpose of making an environment necessary for mobile content business to shoulder social liability and to grow:

i) Study Group on Business Model over Next-Generation Mobile Communications System

In Japan, preceding the rest of the world, the commercial service of IMT-2000 is launched in FY2001, and the advent of various business models providing more advanced applications is being expected. In these circumstances, MPHPT had been holding the "Study Group on Business Model over Next-Generation Mobile Communications System" from July 2000, studied on i) the IMT-2000, which is expected to grow as a new platform of socioeconomic activities, ii) feasibility of business models based thereon, iii) its effects on people's daily lives, industry and economy, iv) issues to be solved for its vigorous development and v) the roles the government should play. In June 2001, the group compiled its findings as a report.

ii) Study Group Concerning Policies for the Preparation of a Mobile Content Business Environment

Along with the rapid growth of mobile phone's Internet access services represented by "i-mode," online content provider business utilizing mobile networks is being advanced and diversified. Meanwhile, the existence of content problematic from the perspective of protecting minor users and the lack of transaction rules based on the features of mobile terminals. Under these circumstances, MPHPT held the "Study Group Concerning Policies for the Preparation of a Mobile Con-

tent Business Environment" for grasping the situation of content distributed over mobile networks and studying effective measures for pro-

tecting users. In June 2001, the study group compiled its findings as a report.

X. Broadcasting Policies for the Multimedia Age

1. Approaches for promoting advancement of cable TV

Besides retransmission of terrestrial and satellite broadcasting, cable TV operators also provide their community-oriented TV programs and communications services such as the Internet access service, thereby playing an important role as an info-communications infrastructure in communities. At the end of 2000, cable TV household subscribers exceeded 10 million and the number of cable TV Internet access service contractors was 784,000. These figures have been showing a steady growth.

As digitalization progresses in the entire broadcasting media as symbolized by the start of broadcasting satellite (BS) digital broadcasting in December 2000 and the launch of terrestrial digital broadcasting scheduled to start in 2003, the digitalization of cable TV, whose households subscribers comprise over 20% of all the Japanese households, is also in progress.

The role of cable TV is expected to grow even further, such as supply of a variety of services meeting demands of communities, including high-quality advanced broadcasting services, various administrative services and communications services which provide the high-speed Internet access.

Thus, MPHPT intends to promote dissemination, digitalization and broadband service operations of cable TV systems through financial support measures and tax incentives, along with the subsidy on constructing cable TV facilities. In addition, from FY2001, MPHPT is taking measures such as the addition of the digital headend, which is necessary for transmitting digital broadcasting as one of the targets for assistance based on the Temporary Measures

Law for Preparing Telecommunications Infrastructure, as well as the establishment of cable TV wide-area digital investment project which provides assistance for operators who intends to achieve efficient business operations by sharing the digital headends.

2. Approaches for promotion of digital terrestrial broadcasting

Digitalization of broadcasting brings high-definition pictures without ghosts, pictures suitable for reception by a mobile terminal unit, diversified services such as interactive service by improved affinity to communications services, as well as effective utilization of radio waves. In addition, it is also expected to bring a significant economic repercussion, including expansion of the broadcasting market, and creation of terminal and content markets. Namely, digitalization is becoming global trends.

As regards the terrestrial TV broadcasting, the "Advisory Committee on Digital Terrestrial Broadcasting" has been held since June 1997, and the Committee compiled its findings as a report in October 1998. In the report, it is recommended that in the three major metropolitan areas of Tokyo, Kinki and Chukyo, the full-scale digital terrestrial TV broadcasting is to be commenced until 2003, while in other locations, the full-scale digital terrestrial TV broadcasting is expected to be commenced until the end of 2006.

Subsequently, the "Joint Study Committee Concerning Digital Terrestrial Broadcasting" was established in September 1999, aiming to promote joint study by MPT (currently MPHPT), Japan Broadcasting Corp. (NHK) and commercial broadcasters in order to deliberate on measures for commencing digital terres-

trial broadcasting. In April 2000, the members of the Committee, prior to the shift to digital terrestrial broadcasting, shared a common understanding that includes i) the number of households to be affected by the analog frequency changes as caused by the required change in frequencies allocated for existing analog broadcasting in some regions, ii) costs to deal with such effects and iii) a draft broadcast channel allotment plan for main stations all over Japan. Based on these considerations at the Committee, MPHPT requested budgets required to cover such costs involved in the analog frequency change in the FY2001 budget, and approximately 12.3 billion yen was approved. In connection with this, the "Law to Amend the Radio Law" was passed the Diet in June 2001 to allow implementation of measures for the frequency changes in analog broadcasting as a task associated with the change of specific frequencies. Also, in June 2001, the Committee reached a common understanding on a draft broadcast channel allotment plan for large-scale digital relay stations throughout Japan.

MPHPT instituted tax incentives and financial support measures to alleviate the burden of capital investment for digitalization at broadcasters and to put digital broadcasting into widespread use at an early stage. Furthermore, in May 1999, the "Advanced Television Broadcasting Facility Development Promotion Temporary Measures Law" that stipulates provisions of measures for promoting construction of digital terrestrial TV broadcasting facilities, passed the Diet to pave the way for broadcasting audience enjoyment of digitalization benefits.

As for the digital terrestrial sound broadcasting, the Telecommunications Technology Council released partial reports in November 1999 on the technical requirements for the digital terrestrial sound broadcasting system and on the technical requirements for installation of digital terrestrial broadcasting stations. In response to them, MPHPT formulated technical standards in December 2000. On the other hand, in No-

vember 2000, the Radio Regulatory Council released a report on the licensing policy, etc. for practical trial broadcast stations, and, over the period from April through June, 2001, MPHPT accepted applications for license for practical trial broadcast stations which operates digital terrestrial sound broadcasting.

3. Approaches for diffusion of digital satellite broadcasting

MPHPT, with the aim of diffusing digital satellite broadcasting (Broadcasting Satellite [BS] digital broadcasting and Communications Satellite [CS] digital broadcasting), took the following measures:

1) Start of BS digital broadcasting

Since it started in December 2000, BS digital broadcasting is not only providing the digital high-definition TV broadcasting with realistic sensations, but is also providing broadcasting services capitalizing on digital features, including a variety of versatile and convenient data broadcasting and digital sound broadcasting that offers CD-quality sound.

For the diffusion of BS digital broadcasting, upon start of BS digital tuner built-in TV sales in June 2000, trial broadcasting began mainly for demonstration at shops. At the G8 Kyushu-Okinawa Summit Meeting 2000, BS digital tuners were set up at open reception sites for the public and major post offices in Okinawa and elsewhere throughout Japan to broadcast the Summit Meeting. The live broadcast of the high-school baseball championship in August and Hi-Vision (high-definition TV: HDTV) programming over the period from September to November were also broadcast by the digital system. The Sydney Olympic Games in September were also broadcast by digital HDTV broadcasting.

With the start of BS digital broadcasting, the Association for Promotion of Satellite Broadcasting, which falls under the jurisdiction of MPHPT and consists of program-supplying broadcasters and receiver manufacturers, started engineering broadcasting for improving func-

tionality of the receivers and also their operations for the promotion of the penetration of BS digital broadcasting. The Association will make further efforts with an eye toward "10 million household subscriptions in 1,000 days after start of the broadcasting." MPHPT for its part will work to raise public awareness concerning the diffusion of BS digital broadcasting, while assisting those broadcasters in their public relations efforts.

2) East longitude 110 degree CS digital broadcasting

CS digital broadcasting has been offered by using three CSs (in the geostationary orbit at East longitude 124, 128 and 144 degrees). In addition to them, in October 2000, a CS (N-SAT-110) was launched at East longitude 110 degree, the same orbit location as the Second Launched digital BS-4 satellite. Subsequently, MPHPT developed frameworks for the broadcasting via CS.

For technical standards, from the standpoint of viewers' benefits and sound penetration of the CS broadcasting, MPHPT considered the possibilities of expanding the CS digital broadcasting systems. As a result, MPHPT added a broadcasting system almost identical with the BS digital broadcasting system to a list of CS digital broadcasting systems and decided to employ it for the East longitude 110 degree CS digital broadcasting.

Furthermore, for the East longitude 110 degree CS digital broadcasting, MPHPT adjusted regulatory frameworks through frequency allocation and formulation of approval policy, etc., while requiring that due consideration be given to the realization of highly functional services capitalizing on the characteristics of digital broadcasting and to the promotion of those services.

Against the backdrop of this situation, in September 2000, Space Communications Corp. and JSAT Corp. were approved as facility-supplying broadcasters, and 18 program-supplying broadcasters were decided in December 2000. They will start operations from the spring of 2002. In particular, highly func-

tional services such as storage-type data broadcasting and interlocking to the Internet are foreseen.

Besides, MPHPT requested the Association of Radio Industries and Businesses (ARIB), which is responsible for developing private standards for digital broadcasting receivers, to formulate digital DTH technical standards as well as to develop common terminals, allowing for reception of both BS digital broadcasting and East longitude 110 CS digital broadcasting with a single antenna and a receiver. The advent of such terminals is eagerly being anticipated.

4. Progress Report of a "Study Group on Broadcasting Policy"

Chapter 1. Environmental changes surrounding broadcasting

I. Background

The environment surrounding broadcasting has changed noticeably along with rapid technological innovation in the info-communications field, as highlighted by the advent of services, such as data broadcasting, Internet broadcasting, etc. that are radically different from typical broadcasting and communications of the past.

It is necessary to consider what a broadcasting system should be in light of such a situation.

II. Period for study

It is necessary to bring into view the changes in social situations, such as long-term trends of technology and services, but regulatory frameworks do not need to be capable of coping with all foreseeable technological developments. Study is made on the basis of the need to review the regulatory frameworks flexibly, in response to trends in the services.

III. Convergence of communications and broadcasting

At least for the time being, it is appropriate to study supposing the current regulatory frameworks for communications and broadcasting would remain valid. It is, however, necessary to promote proper policies toward convergence of communications and broadcasting.

Convergence of communications and broadcasting consists of i) service merger, ii) switching merger, iii) business merger and iv) terminal merger.

III-1. Service merger
- Data broadcasting has been categorized as broadcasting. However, studies are necessary if it is appropriate to impose the same regulations on data broadcasting as imposed upon other types of broadcasting.
- It is necessary to deliberate on the concept of broadcasting and study the adequacy of current classification of broadcasting and communications in the future including procedural adjustment, by referring to cases in foreign countries.
- Accompanying services that are not offered for viewing, such as an engineering slot, do not need to be regulated, however, it is necessary to formulate measures to ensure equitable offering.

III-2. Switching merger
- By allowing more flexible use of transmission facilities for CS digital broadcasting, cable TV, etc., it is necessary to develop regulatory frameworks to allow smoother unbundling of transmission facilities and content distribution.
- It is appropriate to treat the aforementioned regulatory framework development as strictly tentative and to undertake a review thereof at an appropriate time.
- Regulations concerning content are to be studied further.

III-3. Business merger
- Broadcasters' entry into telecommunications business and telecommunications carriers' entry into broadcasting business are not particularly restricted, excepting NHK and NTT that have been put under control as public corporations.
- NHK's entry into telecommunications business needs to be discussed along with the consideration of the status of public broadcasting. NTT's entry into broadcasting business also needs to be studied from the viewpoint of a sound development of broadcasting and the desirable status of NTT.

III-4. Terminal merger
- In order to realize new services through terminal merger, technological development and standardization of both the sender and receiver of information are essential. Voluntary efforts by manufacturers and parties involved to respond to the convergence of communications and broadcasting are expected.

Chapter 2. Status of public broadcasting

I. General
- Discussions were made as to whether broadcasting considered to be public broadcasting is limited to broadcasting provided by NHK. For the sake of convenience of discussion, it is decided to consider what NHK ought to be as deliberations on the way that public broadcasting should be, and also decided to separately consider commercial broadcasters by taking their public aspects into account.

II. Dual system and role of public broadcasting
- Up to this time, the double-track system, a framework of coexistence of public broadcaster (NHK) and commercial broadcasters, has functioned effectively for broadcasting in Japan. This Study Group commonly recognized that NHK has played a leading role in the diffusion of broadcasting and development of new services.
- On the other hand, as digitalization and a shift to multimedia progress, further study is needed on the future role of NHK. Discussions are also necessary on the meaning of the dual system of NHK and commercial broadcasters.

III. Scope of service
- It is not appropriate at this time to legally identify services like Internet-based content distribution as new services of NHK. It is necessary to discuss the issue in the study on the status of NHK from the beginning of 2001.
- Until conclusion is reached in the discussion, the services of NHK including Internet-based content distribution should be provided within current legal frameworks.
- Incidentally, NHK's provision of broadcast programming over the Internet is within the scope of accompanying services under the Broadcast Law. MPT explained that this holds true only when the service satisfies the requirements that it should be a simple secondary use of broadcast programming and that the scale and mode of said service is to the extent that can be considered to be within the scope of accompanying services.
- As for the subsidiaries and affiliated companies, discussions are needed concerning the lack of legal restrictions on the information disclosure/provision, liquidation/consolidation and the scope of services.

IV. Revenues and management, etc.
- Up to now, the receiver's fee system has been functioning effectively.

Fig. X-4-1. *Basic concept of regulatory frameworks to support convergence of communications and broadcasting*

[Current system] Broadcasting / Communications

Content — Terrestrial broadcasting — BS digital broadcasting: Broadcast programming operations — CS digital broadcasting: Broadcast programming operations — Cable TV broadcasting (Facility permission) — Telephone, the Internet, etc.

Facilities — Entrusted broadcasting — Entrusted broadcasting — (Dual-permission section: FTTH) — Services (facilities) of telecommunications carriers

- Facility-/program-supplying broadcasters system

The government designates frequencies for broadcasting. Those frequencies are not available freely for meeting demands for broadcasting and communications.

- Cable TV
Dual-permissions are required for using FTTH.

[New system] Broadcasting / Communications

Content — Terrestrial broadcasting — BS digital broadcasting: Broadcast programming operations — Cable TV broadcasting (Facility permission) — New broadcasting regulatory system (CS, cable TV, etc.) — Broadcasting using telecommunications services (facilities) — Telephone, the Internet, etc.

Facilities — Entrusted broadcasting — Services (facilities) of telecommunications carriers — Services (facilities) of telecommunications carriers

- Further promotion of unbundling of facilities and content
- Drastic deregulation

Enable broadcasting using the services (facilities) of telecommunications carriers.

Fig. X-4-2. *Thorough separation of facilities and content in CS broadcasting*

[Current system]
CS is required to conduct broadcasting as a broadcasting station in order to use transponders for broadcasting. For using them for telecommunications, services are offered from a radio station as a telecommunications carrier.

[New system]
Radio stations as a telecommunications carrier can flexibly provide facilities for both communications and broadcasting.

For telecommunications ← → For broadcasting
Transponders

[Current system]
The government designates frequencies for broadcasting.

[New system]
Telecommunications carriers can flexibly offer frequencies for broadcasting.
Promotion of effective utilization of frequencies to meet demands for communications/broadcasting.

Content providers

[Current system]
Program-supplying broadcasters

[New system]
Broadcasters using telecommunications service

Facility operators

[Current system]
Facility-supplying broadcasters

[New system]
Telecommunications carriers

Viewers

[Current system]
Entry allowed within the national target number of broadcast programs as included in the Basic Broadcasting Plan, as decided by the government.

[New system]
Entry allowed for all with specified qualifications.
Broadcast through contract with telecommunications carriers.

Meanwhile, it is necessary to study the adequacy of employing other revenue sources such as pay broadcasting, and of allowing NHK to offer commercial services newly for the purpose of obtaining secondary income.

- In line with the Final Report of the Exploratory Committee for Disclosure of Public Corporations' Data (July 2000), NHK compiled the "NHK Information Disclosure Standard Guideline," which indicates their way of thinking concerning the voluntary information disclosure in December 2000. In accordance with the guideline, NHK developed a framework for the implementation by also taking MPT's opinion into account (and started the information disclosure from July 2001). This study group expects appropriate information disclosure to be realized.
- Discussions are needed on the system to ensure efficient management as public broadcasting and on measures for activating the Board of Governors as well as for further reflecting viewer opinions.
- Accounting system is pursuant to the generally accepted

accounting principles. Studies are made for the introduction of consolidated accounting.
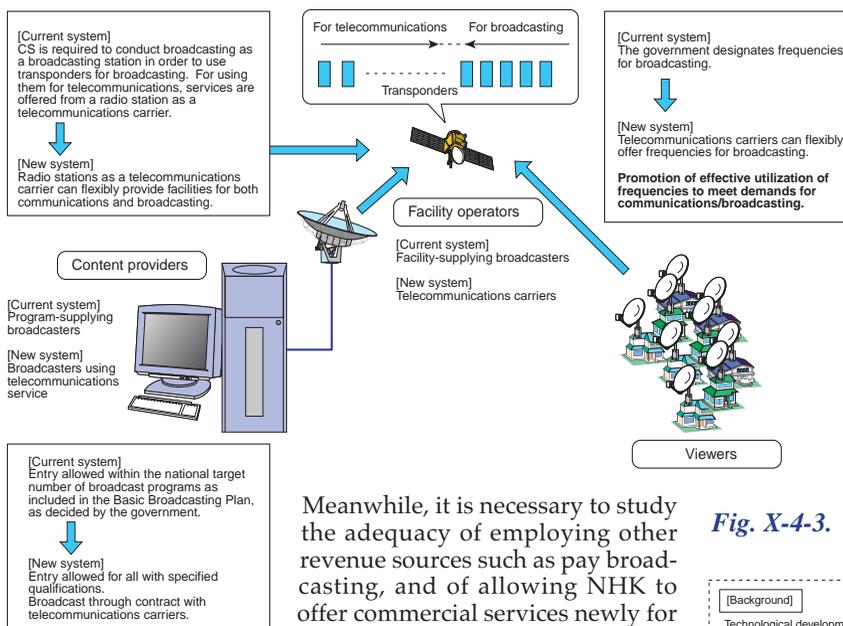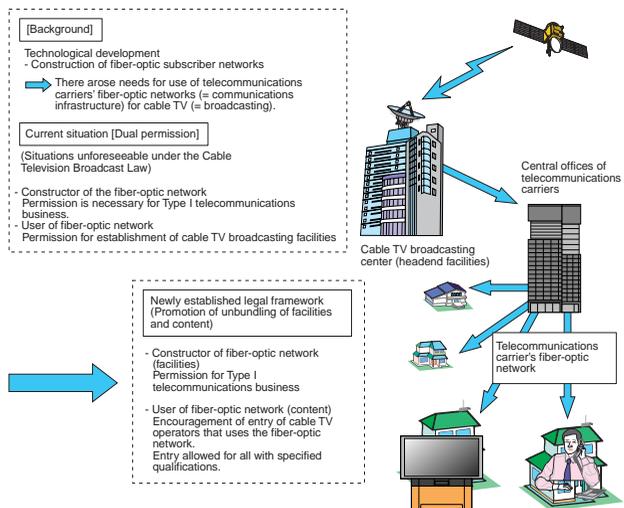
V. Broadcast programs
- Based on the understanding that broadcast programs as owned by NHK are the common properties of all Japanese nationals that were produced depending on receiver's fees, discussions on how content shall be distributed are to be made in this digital age.

Chapter 3. Status of commercial broadcasting

I. Status of commercial broadcasting
- From now on, intensive studies should be made on the principle of excluding multiple ownership of the media, broadcast service area and investment by local governments, etc.

II. Satellite platform business
- A platform operator is an essential and exclusive body for program-supplying broadcasters, in supplying broadcasting services. For each of the CS digital broadcasting, BS digital broadcasting and the East longitude 110 degree CS digital broadcasting markets, studies are necessary to check whether "exclusion by other carriers" is occurring, or the possibility thereof exists.
- Studies need to be made, taking into account the European Commission's policies for ensuring competition in the interactive TV platform market.

Fig. X-4-3. *Promotion of separation of facilities and content in cable TV broadcasting*

[Background]
Technological development
- Construction of fiber-optic subscriber networks

There arose needs for use of telecommunications carriers' fiber-optic networks (= communications infrastructure) for cable TV (= broadcasting).

Current situation [Dual permission]
(Situations unforeseeable under the Cable Television Broadcast Law)
- Constructor of the fiber-optic network
Permission is necessary for Type I telecommunications business.
- User of fiber-optic network
Permission for establishment of cable TV broadcasting facilities

Newly established legal framework
(Promotion of unbundling of facilities and content)
- Constructor of fiber-optic network (facilities)
Permission for Type I telecommunications business
- User of fiber-optic network (content)
Encouragement of entry of cable TV operators that uses the fiber-optic network.
Entry allowed for all with specified qualifications.

Central offices of telecommunications carriers
Cable TV broadcasting center (headend facilities)
Telecommunications carrier's fiber-optic network

XI. Technological development in digitalization

1. Formulation of digital broadcasting method in cable TV

The technical standard for digital cable TV system (64QAM), allowing delivery of four to six times more TV programs than with the analog cable TV system, was established in December 1996; from July 1998, some cable TV operators have been offering digital cable TV broadcasting.

Also, retransmission method of the terrestrial digital broadcast programming and BS digital broadcast programming via cable TV have been developed as follows:

1) Retransmission of terrestrial digital broadcast programming via cable TV

In April 2000, the technical standards of cable TV transmission methods for terrestrial digital TV which will be started from 2003, were developed. They can realize more economical and simpler transmission than by adopting transmodulation digital cable TV system into 64QAM, which include:

i) Technical standard for transmission method of the terrestrial digital broadcasting without converting either modulation (OFDM) or receiving frequencies at a cable TV broadcasting facility (pass-through using the same frequency)

ii) Technical standard for converting receiving frequencies into optional ones before transmission (pass-through using frequency conversion)

2) Retransmission of BS digital broadcasting via cable TV

In exact timing with the inauguration of BS digital broadcasting from December 2000, a technical standard for retransmitting multiple transport streams (TS) such as BS digital broadcasting efficiently and reliably by using the digital cable TV broadcasting system (64QAM) (Multi-TS transmission system), was established in August 2000 so that retransmission via cable TV of a variety of broadcasting media including BS

digital broadcasting may be allowed.

2. Establishment of technical standard for expanded CS digital broadcasting system

In February 2000, the Telecommunications Technology Council submitted a report on the technical requirements for the expanded CS digital broadcasting system. In May 2000, on this report, MPT inquired of the Radio Regulatory Council on draft amendments to relevant ministerial ordinances for establishing the technical standard for the expanded CS digital broadcasting system. In July 2000, the Council replied that the draft amendments are adequate, and then, in August 2000, the ministry amended the ministerial ordinances and established the technical standard.

The technical standard is characterized by the following items:

1) Adoption of highly-bandwidth efficient modulation methods and transmission control signals, etc. enables high-quality, multi-channel and high functional broadcasting services.

2) Adoption of common transmission methods with the BS digital broadcasting system enable to re-

ceive the BS digital broadcasting service with the integrated receiver-decoder (IRD) of the expanded CS digital broadcasting.

3. Establishment of technical standard for digital terrestrial sound broadcasting system

In November 1999, the Telecommunications Technology Council submitted a report on the technical requirements for the digital terrestrial sound broadcasting system. In September 2000, on this report, MPT inquired of the Radio Regulatory Council on draft amendments to relevant ministerial ordinances for establishing the technical standard for the digital terrestrial sound broadcasting system. In December 2000, the Council replied that the draft amendments are adequate, and then, in the same month, the ministry amended the ministerial ordinances and established the technical standard.

The technical standard is characterized by the following items:

1) Offering CD-quality stereo sound, data, picture images, etc. is possible.

2) Mobile reception remains stable even in a car on an expressway or in an area surrounded by high buildings.

3) Compatibility with other digital broadcasting media is ensured.

XII. Approach for next-generation broadcasting

1. Report by "Research Meeting for Next-Generation Broadcasting"

MPHPT has been holding the "Research Meeting for Next-Generation Broadcasting" from June 2000 to April 2001 for studying i) a future image of the next-generation broadcasting system in 10 to 15 years ahead, ii) necessary R&D elements to realize the next-generation broadcasting system and iii) technical standards thereof, on the basis of the trend of development of info-communications technology.

Next-generation broadcasting systems, services to be realized and technical challenges for realizing them are as follows:

1) Next-generation broadcasting system

With a hybrid system utilizing the following two types of receivers with storage functions and different purposes, diversified broadcasting services will be realized.

- "Hyper-vision" (stationary receiver installed at home):
  Carrying automatic program selection/large-capacity storage functions, platforms of home net-

works, multimodal interface, agent functions, etc.
- "Hyper-agent" (mobile receiver carried by users):
  Small/portable, storage functions and interconnection functions with mobile communications system

2) Services to be realized
- Viewing/listening anytime: By utilizing storage functions, etc., viewing/listening is enabled without restrictions of program schedules.
- Viewing/listening anywhere: By utilizing mobile receivers, etc., viewing/listening outdoors is enabled.
- Easy handling by anybody: By utilizing multimodal interface, etc., viewing/listening without complicated operation is enabled.
- Viewing/listening favorite programming: By utilizing agent functions, etc., desired content can be selected easily from diversified broadcast programming.
- Realistic video/sound: By utilizing a large-capacity transmission line, viewing/listening 3D-images is enabled.
- Multifunctional receiver: Uses other than viewing/listening broadcast content, such as controlling consumer electronics by interconnecting to a home network, are enabled.

3) Technological challenges
- Project for hyper-intelligent broadcasting:
  Development of i) multimodal interface, ii) large-capacity storage technology and iii) agent technology. Standardization of content management protection systems.
- Project for seamless network:
  Development of i) technology for seamless networking between communications and broadcasting networks, and ii) optimal layout technology. Standardization of common interface
- Project for 3D broadcasting: Development of technologies for i) 3D imaging/reproducing and ii) stereophonic recording/replaying, etc.

XIII. Measures for the Elderly and People with Disabilities

1. Improvement of broadcast programming for people with visual and hearing disabilities

Assisting the equal access opportunity for people with disabilities

Improving broadcasting for people with visual and hearing disabilities is an important task to realize equal opportunities to access information. MPHPT is implementing measures for providing TV programming with closed-captions, narrated explanations and sign languages, which are indispensable for people with visual and hearing disabilities to understand content of TV programming.

1) Promoting the creation of TV programming with closed-captions and narrated explanations
Based on the "Law for Promoting Businesses that Facilitate the Use of Communications and Broadcasting Services by the People with Disabilities," MPHPT, through TAO, is subsidizing programming suppliers who produce TV programming with closed-captions, etc., up to the half of the expenses, from FY1993. The subsidy in FY2000 was about 450 million yen.

2) R&D on TV programming production technologies for people with visual and hearing disabilities
TAO is conducting R&D on technologies of producing programming for people with visual and hearing disabilities. From FY1996 through FY2000, TAO conducted R&D on systems that automatically create and attach closed-captions for TV broadcast programming whose content is easy to be summarized, and all of whose voiced content is scripted (such as news and information programs). From now on, setting FY2003 as the target fiscal year, it will be pursued to realize a system that automatically attaches closed-captions to most recorded programs in a short time. Meanwhile, in FY2000, MPHPT built a verification system with more practical functions for the system under development, and conducted evaluation jointly with the Ministry of Health and Welfare (currently, Ministry of Health, Labor and Welfare)

3) Constructing TV broadcast programming production facilities for people with visual and hearing disabilities
Aiming at programming suppliers who prepare TV broadcast programming production facilities toward people with visual and hearing disabilities, for the purpose of providing TV broadcast programming for channels dedicated to such people, and businesses who prepare TV broadcast programming production and transmission facilities as well as wireless facilities that are necessary to conduct teletext broadcasting, a support system was created in FY1997 to grant low-interest loans through the Development Bank of Japan, etc.

XIV. Policy Measures for Internationalization

1. Promotion of Broadcast Program Exchange

1) Purpose
Developing countries with insufficient program production capacity need foreign programs with high quality.

As part of Japan's effort for contributing to the broadcasting industry in developing countries, MPHPT is promoting a project granting subsidies for providing high-quality Japanese educational programs for developing countries.

2) Outline of the policies
MPHPT is providing subsidies to the Japan Media Communications Center, a foundation providing Japanese broadcast programs to foreign countries, to partially cover the foundation's costs for translating

Table XIV-1 Program distribution

Broadcaster	Nippon Television Network	TBS	Fuji TV	Japan Entertainment TV (JETTV)	NHK
Footprint	Korea, Hawaii, Singapore, Taiwan, Guam, Indonesia, Saipan, Hong Kong, Malaysia and the Philippines	Taiwan, Korea, Hong Kong	USA, Europe, the Philippines	Taiwan	Almost the entire world
Satellite	PAS-8	PAS-2	Optical cable, PAS-8	JCSAT-3	PAS-8, PAS-9, PAS-10, ASTRA/HOTBIRD, ECHOSTAR
Hours	2 hours per day (weekdays) and baseball match	About 10 min. per day	4 - 5 hours per day and baseball match	Around-the-clock	Around-the-clock
Launch of service	April 1999	July 1999	April 1998	March 1997	April 1995
Target	Broadcasters, cable TV, hotels	Broadcasters, cable TV	Broadcasters, cable TV	Broadcasters, cable TV	Broadcasters, cable TV
Type	Programming	News materials	Programming	Programming	Programming
Content	Professional baseball game, news and information	News	News, entertainment and professional baseball game	Entertainment	General

and editing educational programs that are sent to developing countries.

3) Achievements
- Number of programs stored in the library: 935
- Number of programs provided: 3,381
- Number of countries provided with programs: 60
- (Accumulated figure: 136, as of the end of March 2001)
- Total subsidies from MPHPT between FY1991 and FY2000
- Total of actual amount: 976 million yen
- FY2001 budget: 72 million yen

2. Current status of international TV and radio broadcasting

Along with rapid globalization of information transmission, it has become more important to gain foreigners' understanding and trust to Japan, as well as to provide information necessary for Japanese nationals in foreign countries. It is required to continuously transmit information on Japanese culture and society, and positions and propositions of Japan to the international society, as well as to provide information concerning security of each region and entertainment programs. Strengthening and pro-

moting international broadcasting is one of the goals of broadcasting administration.

1) International TV broadcasting

The international TV broadcasting carried out by the NHK (NHK World TV), using PanAmSat satellites (PAS-8, PAS-9, PAS-10, ASTRA/HOTBIRD, ECHOSTAR), Astra satellite and Echo satellite, covers almost the entire world. In October 1999, 24-hour broadcasting was started.

In addition to news programs, Japanese-language education programs were started, and the air time of broadcasting in English were expanded.

2) Distribution of TV programming and video materials to abroad

Commercial broadcasters, etc. are distributing broadcast programming, news materials and sports programs to foreign broadcasters, cable TV, hotels and business offices, using satellite communications and fiber-optic communications circuits. NHK, using PanAmSat satellites, is distributing to foreign broadcasters, cable TV operators, etc.

In particular, the program distribution to Asia region is constantly increasing in the number of programming providers, air time and countries.

3) International shortwave broadcasting

In international sound broadcasting by shortwave, the ordered broadcasting in accordance with the provisions of the Broadcast Law was provided to all the world and 17 regions using 22 languages, carrying reports and analyses concerning the state's important policies and the government's view on international issues. The ordered broadcasting, combined with voluntary broadcasting of NHK, the sum of broadcast hours of the voluntary broadcast and the ordered broadcast in FY2000 was 65 hours a day. In FY2000, 1.9 billion yen was granted from the Japanese government to NHK as the cost for the ordered broadcasting.

Fig. XIV-2 International TV Broadcasting (NHK)

Astra/HOTBIRD   PAS10   PAS 8   PAS 9   Echo
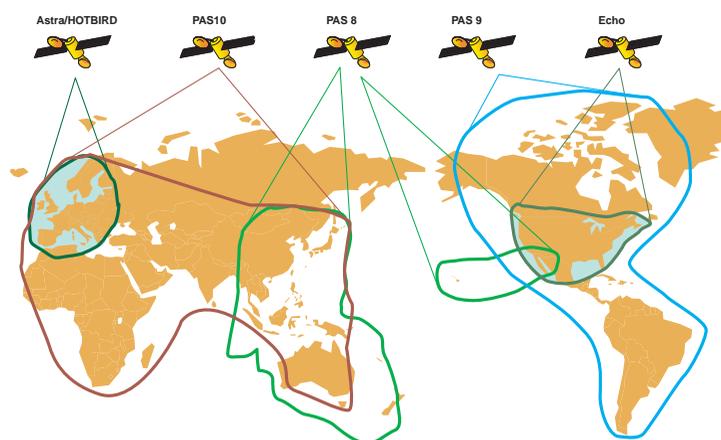
I. Creating a Dynamic Info-communications Industry

1. Toward introduction of dialing parity system

The telecommunications carrier preselection system (dialing parity system) refers to a system which allows users to place calls without dialing a carrier identification code once they have registered their carriers of choice with their incumbent regional carriers such as NTT East or NTT West.

Under the existing system, when users subscribing to carriers other than NTT make a telephone call, they have to dial a carrier identifi-

cation code (00XX) first. There has been concern about this in that fair competition between NTT, which allows for calling without dialing the carrier identification code, and other carriers deteriorated. Therefore, MPT studied the possibility of the dialing parity system in the "Study Group on Dialing Parity" in FY1998, and in FY1999, held "Study Group on Introduction of Dialing Parity" for deliberating on realization of dialing parity system based on "ensuring user benefit," "ensuring fair competition" and "ensuring coherence with foreign countries' sys-

Table. I-1-1. Process toward introduction of telecommunications carrier preselection system ("MYLINE")

1. "Study Group on Dialing Parity" (March 1998 – November 1998)
   Issues on dialing parity were identified and basic principles for introduction were studied.
2. "Study Group on Introduction of Dialing Parity" (October 1999 – February 2000)
   For the smooth introduction of dialing parity system, problems upon introducing the system were studied.

Fig. I-1-1. Telecommunications carrier preselection system ("MYLINE")
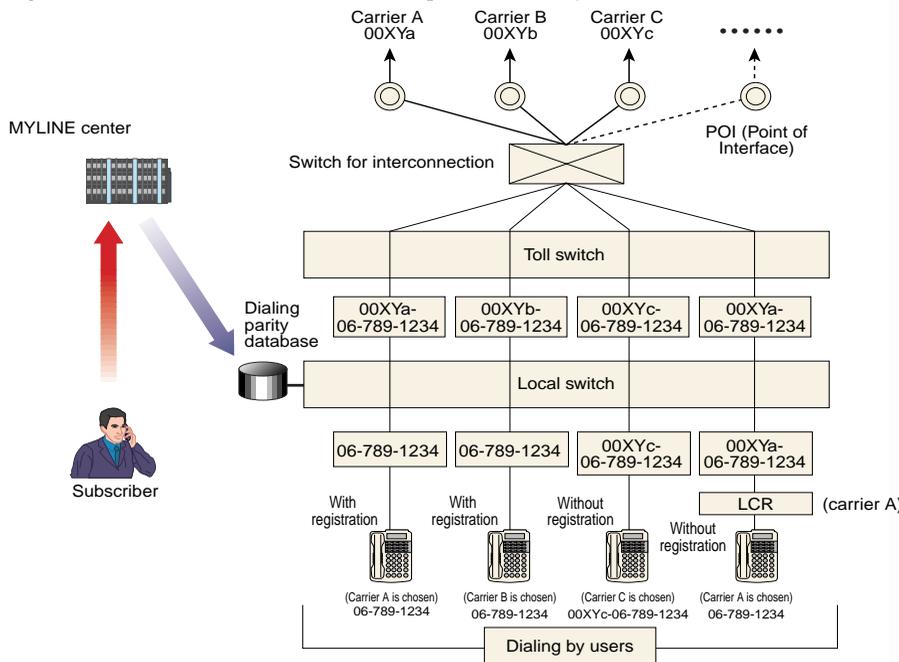
tems." (**Table I-1-1**) These studies resulted in the introduction of the dialing parity system (service name: "MYLINE" (**Fig. I-1-1**) from May 2001. The system is expected to bring time-saving of dialing carrier identification codes for users, and ensuring fair competition for many carriers.

2. Numbering plan for fixed terminals, as well as proposals on numbering plan for IMT-2000 and IP telephony

1) Telephone numbers for fixed terminals

a) Forecast on years when number accommodation capacity becomes tight based on trends in area codes already in use

Recently, networks have been constructed by multiple 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. The table below shows the areas where shortage of available number is forecast, based on forecast of number demand in each region. According to the forecast, the area codes 042 and 048 will be unable to sustain current two-digit area codes in FY2008, and the area code 082 in FY2009. In addition, in the area 042, the prefecture identification by the first three digits of 0AB-J will become impossible by FY2003, unless changes in area codes are made.

b) Short-term countermeasures against shortage in available 0AB-J numbers

As short-term countermeasures against the shortage in available 0AB-J area codes, the 042 area (Tokyo, Saitama and Kanagawa prefectures), where area codes are foreseen to become short the earliest, is studied as an example, on the assumption that there is no change in the current message area (MA: local service area). As methods to expand number domains, methods such as digit-shifting, digit increase, moving number domains, halting closed number dialing (i.e., connection with only office codes and subscriber numbers) are considered. Specifically:

Plan 1 is to expand capacity of office code by changing numbers with digit-shifting (altering 042-CDE-FGHJ to 04-2CDE-FGHJ) in order to use 0 or 1 as the first digit of office code (C code).

In Plan 1, a system that each MA uses given C code (Tokyo: C=2-6, 8, Saitama: C=9, 0 and Kanagawa: C=7, 1) is Plan 1-1, another system that in all MAs in 042 area C codes are shared when number assignment becomes tight is Plan 1-2 (Level 1) and the one that after all CDE numbers are assigned, other B codes (except 0 and 1) within 04 are assigned is Plan 1-2 (Level 2).

In Plan 2, area codes are moved to other area codes in the same prefecture that have assignable numbers. Specifically, when existing local codes of each MA become tight (for Tokyo MAs, after C=2-6, 8 are shared), numbers are moved to other area codes or office codes with assignable numbers in the number domains in the same prefecture.

Plan 3 is apart from the existing principle that an area code in the same area uses the same area code. For areas where assignable numbers become tight, plural area codes are used by introducing new area codes other than existing area codes (overlaying), which is already used in some areas within the U.S. Specifically, when existing office codes become tight in each MA (for Tokyo MAs, after C=2-6, 8 are shared), other area codes with assignable numbers used in other number domains in the same prefecture are also used.

Plan 4 is the one which halts the use of closed dialing and expands office code capacity by using 0 and 1 at the first digit of office codes, that are not currently in use.

In Plan 4, the system that each MA uses assigned C code (Tokyo: C=2-6, 8, Saitama: C=9, 0 and Kanagawa: C=7, 1) is Plan 4-1, the one that in every MAs in the 042 area C codes are shared when the assignable area codes become tight is Plan 4-2 (Level 1), and the one that after all CDE codes are assigned, another B code

(except 0 or 1) inside 04 shall be used is Plan 4-2 (Level 2).

Plan 5 increases one digit to 11 digits, including domestic prefix "0."

Upon employment of a plan, it is necessary to precisely and comprehensively study future business trends, development of new services in the telecommunications field and users' opinion. Since the shift of fixed terminal numbers to 11 digits has huge effects on both users and telecommunications carriers, and needs fairly long-term preparation, there is a need to choose a plan at the earliest possible stage. In addition, because the shift to 11 digits has influences on many facilities of telecommunications carriers, telecommunications carriers should prepare well for the 11-digit numbering system before a plan thereof is chosen.

Any of the above plans are consistent with the Plan 1-1 (a plan to introduce one-digit area code and to conduct total prefecture identification at the third digit (code C)). Therefore, employing Plan 1-1 as temporary measures for coping with the 042 area without unassigned area codes has no problems in the consistency with the long-term measures.

2) Various numbers and dialing process necessary for IMT-2000

a) Numbering for IMT-2000

The International Mobile Telecommunications-2000 (IMT-2000), which has been standardized at the International Telecommunication Union (ITU), has features in provision of global and multimedia communications services. The IMT-2000 is expected to be the third-generation (3G) system following the second-generation (2G) digital mobile telephone system. In Japan, the commencement of the 3G service is scheduled from 2001.

In Japan, 0A0 service numbers, such as 090 and 080 numbers for existing cellular telephone service and 070 numbers for PHS service, have been assigned to mobile communications service numbers. Also for IMT-2000, non-geographic 0A0 service numbers are expected to be assigned.

In deciding a specific 0A0 number, it is indispensable to consider service

features of IMT-2000. For the following reasons, it is considered that the assignment of the 0A0 number is appropriate:

i) Service specifications of IMT-2000 is the same as existing mobile phones.

ii) It is supposed that charges for those who make a voice telephony call to IMT-2000 terminals are not largely different from the existing mobile phones.

iii) In the provisions of international standard, there is no provision to use different user identifiers between voice calls and non-voice services.

iv) If numbering systems of the existing mobile phones and IMT-2000 differ from each other, there will be a loss due to separation of service numbers, which is not desirable from the viewpoint of efficient use of numbers.

b) Expanding number capacity of mobile phone

In mobile phone numbers, the three digits following 090 (CDE) are designated to carriers. As of the end of March 2000, 775 among total 900 codes (C=0 is suspended.) have already been designated. (The number of subscribers is 51.14 million.) Since IMT-2000, whose service is scheduled to start in 2001, also uses 0A0 service numbers, if demands for numbers thus far continues from now, the 090 number space will be fully assigned in the end of FY2001. There is a need to decide a method for expanding number capacity.

As measures for expanding number capacity, in consideration of influence on users, adding a new 0A0 service number is considered to be appropriate.

c) Various numbers

In IMT-2000, international roaming service, with which seamless use of foreign carriers' terminals is enabled in Japanese networks, is planned. Under IMT-2000 international standard, dialing processes start from "#" and "*" are provided. Some dialing processes using them are not consistent with the Study Group Reports on Telecommunications Number (Note). It may be, however, necessary to allow those processes for enabling international roaming. The use of signal "+" is also provided for indicating that a call is an international call when placing international calls, so it is necessary to allow the use thereof for users from abroad.

Besides numbers that users dial, IMT-2000 uses mobile subscriber identification numbers, etc., used in a mobile communications network and between mobile terminals. These should be included in the methods compliance with international Recommendation of ITU-T. In Japan, these should be methods for ensuring necessary capacity to meet future demands.

Note: In the FY1998 report of the Study Group on Telecommunications Number, "#" was to be used in the form of #ABCD by using A=7-9, B, C, D=0-9, and "*" was to be used in the form of ab (c…) by setting a, b, c, … as numerics. "*31#" or "#21#", etc., which are used in IMT-2000 for additional-service control, are not consistent with the report's processes.
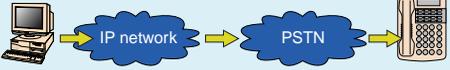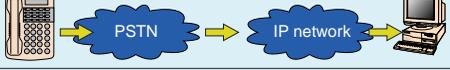
3) Numbers for IP telephony

i) Interconnection modes to be studied

a) Interconnection modes between Internet Protocol (IP)-based networks and public switched networks (PSTNs) are considered to be 1 through 4 listed in the **Fig. I-2**. Among the four modes, in cases of 2 and 4, identification numbers for IP-based network terminals will be needed as called party IP telephony numbers (telephone service utilizing IP).

b) In this case, in order to call an IP-based network terminal from a PSTN terminal, it is necessary to have an E.164 number (an international public telecommunications number provided under the ITU-T Recommendation E.164). The E.164 number can receive a call from foreign countries and is within 15 digits including a country code.

c) Of E.164 numbers, assignment, etc. of global numbers (a numbering system using special country codes) to IP telephony are deliberated at the ITU-T SG2. This Study Group will study a domestic numbering system suitable for domestic IP telephony service.

ii) Items to be identified upon deliberation on IP telephony numbering

IP telephony service is to be classified into Category A and Category B. Category A refers to IP telephony comparable to fixed telephone service. Namely, Category A has features, such as i) a geographical identifier, ii) rates comparable to fixed telephone service rates where rates to be charged on a calling party who calls an IP telephone, iii) comparable quality of service to fixed telephone service (e.g., quality of speech, quality of connection, etc. stipulated under the Rules Concerning Telecommunications Facilities for Telecommu-

Fig. I-2. Interconnection modes

Interconnection modes between IP-based networks and PSTNs	IP-based network terminal number
1. From IP-based network terminals to PSTN terminals	Basically, not needed. (In cases of caller ID, etc., needed.) A called party can receive with the existing PSTN terminals number.
2. From PSTN terminals to IP-based network terminals	Needed. A called party needs to have an IP-based network terminal number for reception.
3. From PSTN terminals to PSTN terminals via IP-based network	Not needed. With carrier identification codes, it is possible to identify carriers providing IP-based networks.
4. From IP-based network terminals to IP-based network terminals via PSTN	Needed. A called party needs to have an IP-based network terminal number for reception.

nications Business), and iv) interconnection methods comparable to the existing interconnection methods between fixed telephone telecommunications carriers. Category B refers to new IP telephony service other than Category A.

iii) Numbering system appropriate to be employed

Category A IP telephony is comparable to fixed telephone service in terms of geographical identification, rates, quality of service and interconnection methods. Thus, it is appropriate to use 0AB – J numbers. In cases where substitutable IP telephony service for cellular phone or PHS is provided, it is appropriate to use 090, etc. or 070 numbers.

With regard to carriers assigned 0AB – J office codes by the MPHPT Minister, because PSTN carriers carry out routing through trunk line interconnection and accounting between carriers, those carriers shall be carriers carry out trunk line interconnection with PSTN carriers and IP conversion.

On the other hand, it is appropriate for Category B IP telephony to employ different numbering (identifiable from numbers as IP telephony) from the existing numbering. From now on, upon decision of specific numbering plan, an appropriate numbering shall be studied.

4) Numbering for content provision service

i) Backdrops and purposes

As for content provision service which charges content-fee in addition to communications rates, "content-fee billing commission service" telecommunications carriers offer online content providers (OCPs) is using 0990 numbers. Amounts of payment for the goods and services are included in telephone bills. OCPs are indirectly paid from telecommunications carriers after deduction of commission.

Along with widespread use/development of IT and high-speed access networks, demands for content-fee billing commission service, through which information goods (music, game software, etc.) are distributed over IP networks, are expanding. Some OCPs are requesting

telecommunications carriers to use numbers other than 0990 numbers. In response to the request, it is necessary to carry out study on whether special numbers would be set or not.

ii) Study on numbering for content provision service

a) Problems and points to be cared in content provision service

In general, as problems and points to be cared in providing content provision service, in consideration of cases such as Dial Q^2 (a calling-party pay service) offered from 1989 by NTT, the following items are concerned:

- Charges are increasingly expensive.
- Use of such service by a person other than subscribers is possible.
- Inappropriate content for minors is distributed.

Upon deliberation on content provision service through use of numbers other than 0990 numbers, such problems and points shall be carefully considered in light of consumer protection.

b) Definition of content provision service to be studied

Definition of "content provision service" shall be "service that is billed combined amounts of payment for content and telephone charges," with possible concerns about problems listed in a).

c) Study on numbering

In consideration of problems in a), it is desirable that users can recognize from a number whether a service is content provision service or not, users so that users can easily identify content provision service which the users want to use.

Furthermore, a telephone service

contractor shall be enabled to easily take measures for preventing other parties using such service (e.g., origination restriction from PBX or terminals, etc.). Thus, a variety of numbers shall not be assigned to the content provision service, but a specific unified number shall be assigned.

Accordingly, taking the following reasons into consideration, it is appropriate that the number for the content provision service be only currently assigned 0990.

- It is generally recognized that with the 0990 number users are billed content fees in addition to communications charges.
- Every carrier can use the 0990 number by obtaining DEF codes (three digits following 0090: 0090 + DEF).
- In order to set new 0AB0 numbers, i) there must be necessity to do so, ii) standards for use of the new 0AB0 numbers are expressly different from those for the 0990 number and iii) the new 0AB0 numbers are equitable. Currently, however, such necessity is not found.

Because it is thought that problems listed in a) will not or are not likely to occur under the following cases, there is no need to unify numbers.

- Service that starts after a principal who is a telephone service contractor clearly understands terms and conditions of content provision service beforehand, then the principal concluded a contract with an OCP.
- Service that only a principal who is a telephone service contractor is allowed to use through security measures such as use of ID numbers, etc.

II. Measures for ongoing globalization

1. Toward implementation of telecommunications equipment MRA

Along with globalization trends in international distribution of telecommunications equipment, international harmonization has been requested in Japan's technical standard conformity certification system concerning telecommunications equipment. In response to this, MPHPT has been promoting mutual recognition of approval for telecommunica-

Fig. II-1. MRA scheme

[Current system]

[After implementation of mutual recognition]
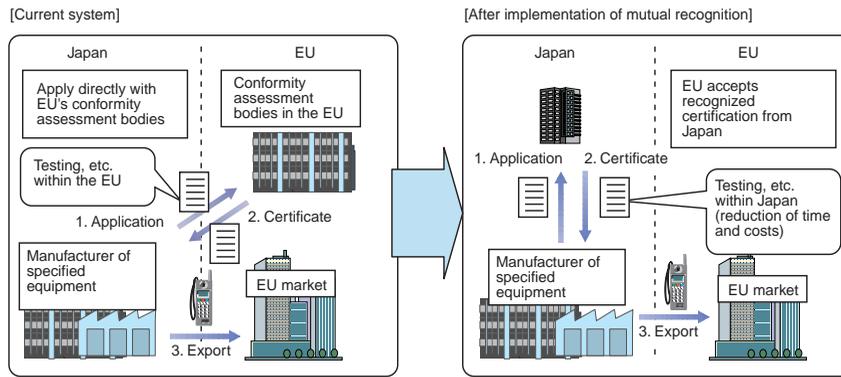
Note: This diagram shows a case where Japan exports equipment to the EU, and vice versa.

tions equipment.

Between Japan and the EU, on April 4, 2001, the two sides signed a Mutual Recognition Agreement (MRA: the Agreement on Mutual Recognition between Japan and the European Community) for reducing the cost of certifying products for conformity with the two parties' technical regulations in four specific areas of telecommunications terminal equipment and radio equipment, electrical products, chemicals and medical products. Subsequently, a "Law for the Implementation of the Mutual Recognition between Japan and the European Community in Relation to Conformity Assessment of

Specified Equipment" was promulgated on July 11, 2001, in order to implement the MRA and facilitate telecommunications equipment trade.

Furthermore, the government is preparing to implement MRAs with APEC member economies within frameworks for APEC MRAs.

MPHPT has been promoting global deployment of Japan's competitive telecommunications technology and contributing to improvement in IT benefit for people around the world through a variety of available telecommunications equipment including foreign equipment.

total of 2.6 billion yen for FY2000 budget and 3.1 billion yen for FY2001.

By FY2000, MPHPT conducted i) research on element technologies for tracking and control systems and ii) research on element technologies for fixed communications and prototype production thereof. MPHPT is developing element technologies for repeaters, etc. to carry out flight demonstration in around FY2005.

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

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

III. Development of info-communications infrastructure

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

MPHPT, in cooperation with the Ministry of Education, Culture, Sports, Science and Technology (MEXT), launched full-scale R&D on the Stratospheric Radio Platform project in FY1998.

The Stratospheric Radio Platform is a radio relay 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 Ka band and the millimeter wave band
2) Smaller terminals because of the shorter propagation distance than those for satellite communications
3) Effective in earth environment measurement such as measuring CO_2

MPHPT is responsible for the tracking and control system as well as the communications and broadcasting mission. MEXT is responsible for construction of the entire platform system and the earth observation mission. As regards budgets, MPHPT and MEXT were allocated a

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 carrier's networks by the wireless communications technologies. Since the FWA enables large-capacity communications and can be established at a low cost, it is expected that the FWA will contribute to the promotion of competition in the local telecommunications market ("last one mile"), and to diversifying users' access methods.

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

On December 25, 1998, MPT prepared a regulatory framework for the FWA system using the quasi-millimeter-wave-band (22GHz and 26GHz bands) and the millimeter-wave-band (38GHz band) frequencies. In conjunction with this, MPT published the basic guidelines, etc.

concerning the introduction of the system on December 24, 1999.

In May 2001, MPHPT added six blocks of frequencies in the 26GHz band to the initial 18 blocks and made a partial revision to the above guidelines. As of the end of September 2001, 18 telecommunications carriers have received licenses or pre-licenses, among which 13 carriers are actually providing the FWA services. (**Fig. III-2-**1.)

3) Introduction of new FWA systems

In April 2000, MPT inquired of the Radio Regulatory Council on relevant ministerial ordinances for introducing the FWA system using 60GHz band, whose transmission distance is relatively short (several hundred meters), but which enables large-capacity communications from 8Mbps to around 1Gbps. (**Fig. III-2-2.**)

Furthermore, MPHPT has been carrying out the five-year R&D project since 2000 on the next-generation FWA system that has a flexible structure for the design and invulnerable against interference or disasters.
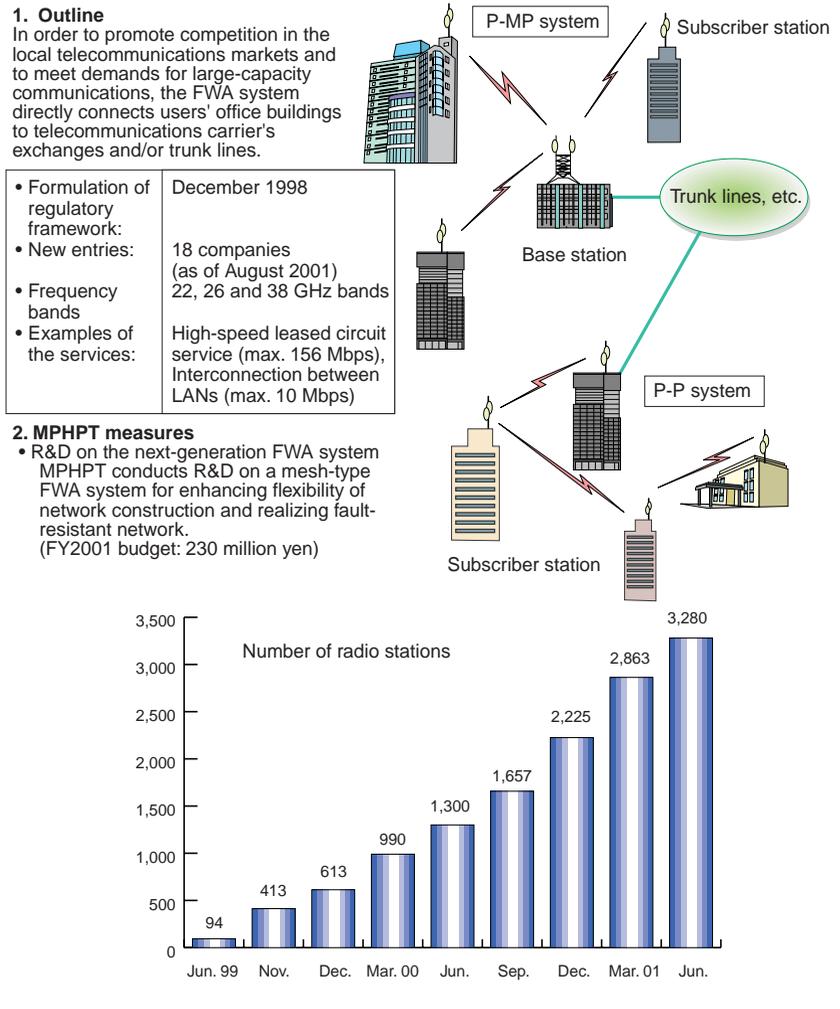
3. R&D on the next-generation FWA system

1) Outline

In order to realize the next-generation FWA system, which is a mesh-type system advancing the current FWA system (P-P or P-MP type) in flexibility, fault tolerance, etc., the following technologies are necessary. MPHPT carries out the five-year R&D project thereon from FY2000 to FY2004 as an entrusted research of the Telecommunications Advancement Organization of Japan.

  i) Autonomous interference prevention technology:
  Technology that autonomously controls radio waves

  ii) Autonomous route selection technology: Technology that autonomously selects the optimal route

  iii) Wireless network technology: Technology that enables access

Fig. III-2-1 FWA System

1. Outline
In order to promote competition in the local telecommunications 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:	18 companies (as of August 2001)
• 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. MPHPT measures
• R&D on the next-generation FWA system MPHPT conducts R&D on a mesh-type FWA system for enhancing flexibility of network construction and realizing fault-resistant network.
(FY2001 budget: 230 million yen)

P-MP system — Subscriber station — Trunk lines, etc. — Base station — P-P system — Subscriber station

Number of radio stations

Date	Number
Jun. 99	94
Nov.	413
Dec.	613
Mar. 00	990
Jun.	1,300
Sep.	1,657
Dec.	2,225
Mar. 01	2,863
Jun.	3,280

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

1. 60GHz band wireless LAN: Used indoors (e.g., office buildings) and outdoors (e.g., exhibition halls) for large-capacity transmission system, including video transmission.

2. 60GHz home link: Used for interconnection at home or SOHO between consumer electronics (e.g., TV, video, PCs, telephone), etc.

3. 60GHz band high-speed wireless link system: Used for large-capacity radio trunk lines, suitable for future multimedia transmission. Also, used for high-speed Internet access for residential users, and links between telecommunications carriers to cope with high-speed LAN/VAN.

High-speed wireless link system (P-P system)
Applicable field: mainly for telecommunications services/private communications services
Transmission capacity: 156Mbps to several Gbps

Super-high-speed wireless LAN
No license required
Transmission capacity: about 156Mbps
Transmission distance: less than 100m

High-speed wireless link system (P-MP system)
Applicable field: mainly for telecommunications services
Transmission capacity: about 156Mbps
Transmission distance: 300m

Wireless home link
Notebook PC
Wall-hanging TV
Multifunctional phone
No license required
Transmission capacity: 100Mbps to 1.6Gbps
Transmission distance: about 10m

Fig. III-3. Next-generation FWA System

Communication is established regardless of the line of sight.

Set alternate routes during inclement weather
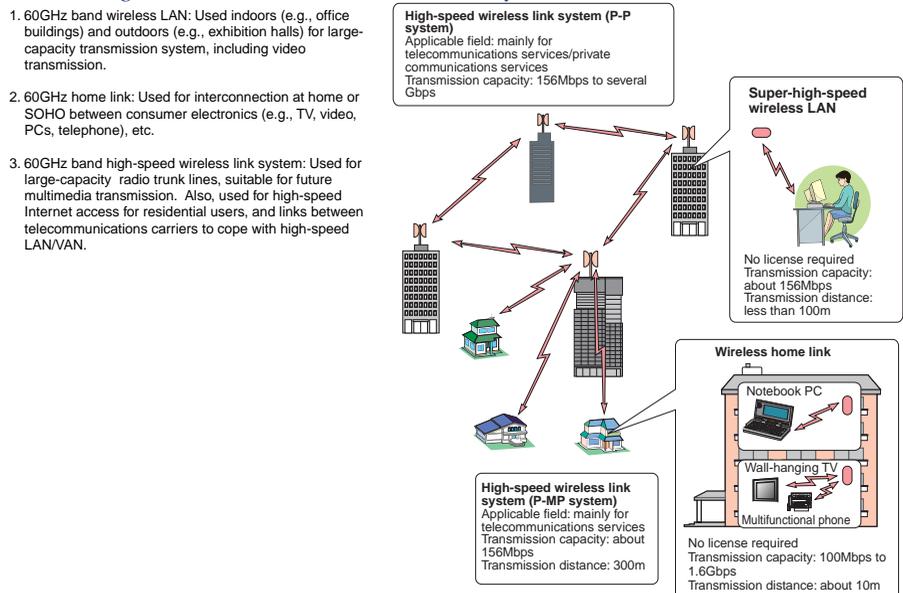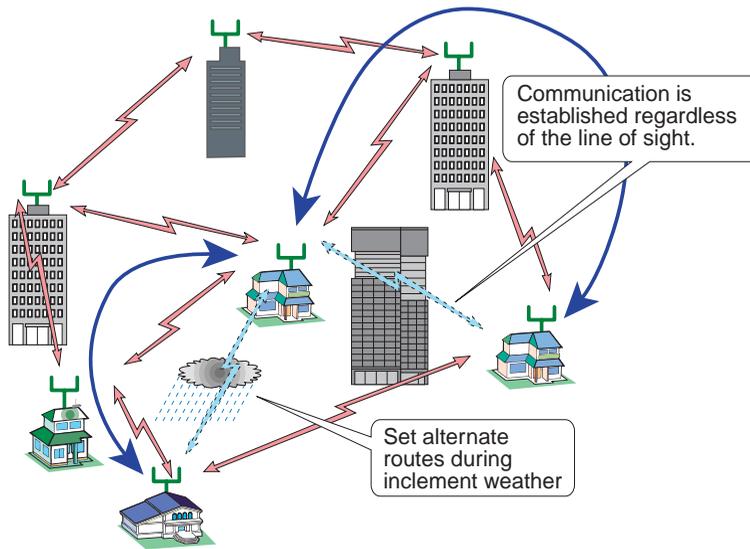
to the Internet in the systems constructed by the above i) and ii).

IV. Promotion of mobile IT

1. Promotion of ITS

Promotion of R&D and standardization of ITS-related info-communications systems

Intelligent Transport Systems (ITS) can be regarded to be comprehensive info-communications systems dealing with road traffic, and is gathering hopes as a trump card for solving road traffic-related problems that are close to people's daily lives, including traffic jams, traffic accidents, inefficiency in transportation and disharmony with the global environment.

In Japan, five ministries and agencies then 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. Also, based on the "Desirable Info-communications Systems in ITS" as submitted from the Telecommunications Technology Council, R&D and standardization efforts are being promoted for the ITS-related info-

communications systems.

Today, part of the ITS is already in practical use. The Vehicle Information and Communications Systems (VICS), which provide drivers with real-time information on traffic congestion and the like, has been in operation as a full-scale service since
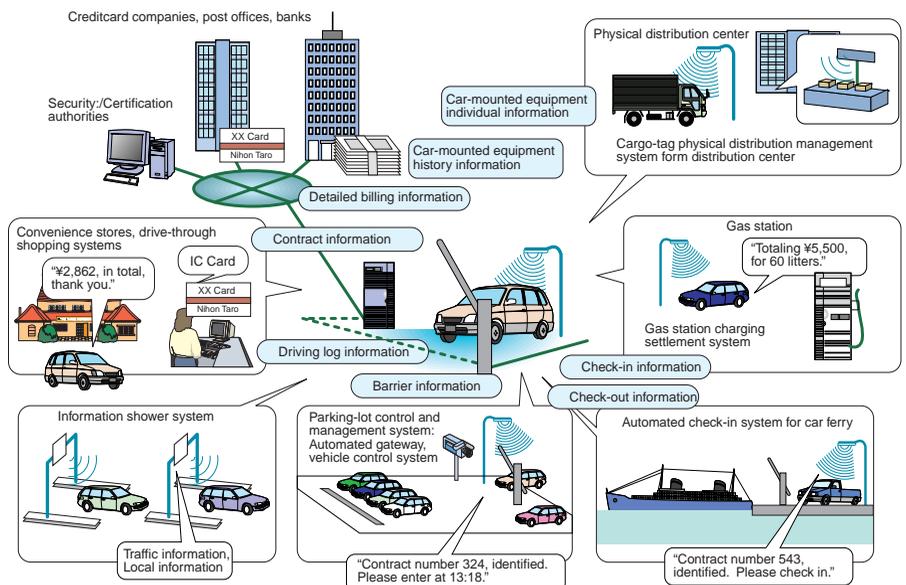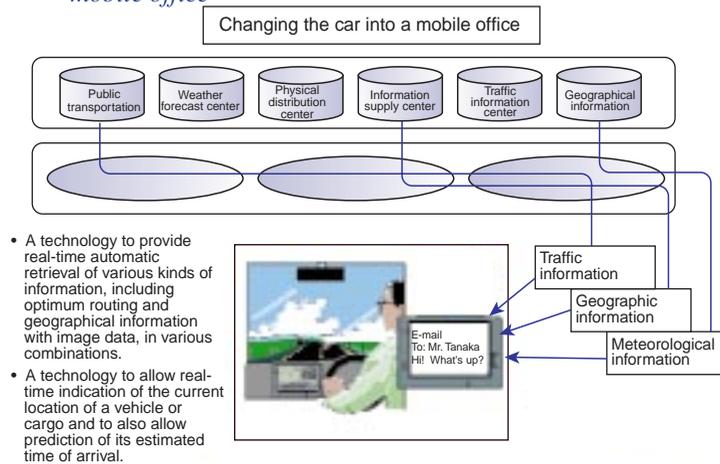
1996. As of the end of March 2001, VICS is provided in 27 prefectures, and the cumulative units of VICS shipped up to the end of March 2001 exceeded 2.8 million. Meanwhile, the Electronic Toll Collection (ETC) system, which enables toll collection without stopping vehicles on the expressway, became operational in Chiba area from March 30, 2001. It will be introduced in a total of 900 toll booths (of a total of 1,300 toll booths throughout Japan) by the end of FY2002.

MPHPT is currently working on the following measures in liaison with the related ministries and agencies, in order to put ITS into widespread use.

1) Promotion of practical use of DSRC

In order to realize the Dedicated Short Range Communications (DSRC) systems, a type of multimedia mobile communications systems, constructed in small zones applying wireless communications technology concerning ETC, which is usable in such areas as parking-lot management, logistics management and charge payment at gas stations, MPHPT inquired of the Radio Regulatory Council about draft revisions to applicable ministerial ordinances in January 2001, based upon the Telecommunications Technology

Fig. IV-1-1. DSRC System

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Fig. IV-1-2   R&D on info-communications systems for changing the car into a mobile office

- A technology to provide real-time automatic retrieval of various kinds of information, including optimum routing and geographical information with image data, in various combinations.
- A technology to allow real-time indication of the current location of a vehicle or cargo and to also allow prediction of its estimated time of arrival.

Council's report of October 2000 titled "Technical Requirements of the Radio Equipment for DSRC System." The Council reported its findings in March 2001, stating the revisions were appropriate. The revised ministerial ordinances came into force on April 17 (see **Fig. IV-1-1**.). Besides the technical requirements, this report gives proposals on the future challenges for prompt popularization of the DSRC system, including the earliest-possible establishment of the industry standards by standardization organizations, positive coordination toward the international standardization of the DSRC system and R&D on applications of regional DSRC systems, etc.

2) R&D on info-communications technology to change the car into a mobile office (see Fig. IV-1-2.**)**

In October 1999, Yokosuka ITS Research Center of the Telecommunications Advancement Organization of Japan (TAO) was established within the Yokosuka Research Park, for R&D on wireless agent and software automatic updating technologies i) to enable a user to build a system in a car whereby smoother use of ITS information is allowed and ii) to realize the high-speed Internet and the car multimedia system.

3) R&D on smart gateway

The "e-Japan Priority Policy Programs" as decided upon by the IT Strategic Headquarters in March 2001, prescribe that the R&D should be promoted for the driving assis-

tance system that provides the driver with necessary information, danger warnings and operation assistance and that they should be put into practical use on the Second Tomei and Meishin Expressways by FY2003. MPHPT jointly with the Ministry of Land, Infrastructure and Transport (MLIT) is conducting R&D on the hand-over control and continuous cell configuration technologies that support high-speed driving, aiming at the realization of info-communications technology (smart gateway technology) that links roads to automobiles.

4) Realization of ITS Smart Town

MPT and MITI (currently, the Ministry of Economy, Trade and Industry) conducted a survey on regional ITS pilot project to study the feasibility of a specific form of ITS that is conducive to the solution of problems in each region. Based on its findings, the ministries involved held the "ITS Smart Town Study Group" from April 2000 for the promotion of introduction of ITS that can address problems specific to each region (ITS Smart Town) and compiled its final report in December 2000. From now on, MPHPT will embark on the field work for research and study on the regional ITS.

5) International standardization in the ITS field

The International Telecommunication Union (ITU) decided to adopt radio systems as the international standards for the ETC and car radar

systems which Japan and other Asian-Pacific countries jointly proposed. It was formally approved in May 2000. MPHPT will maintain its positive stance for promoting international development of ITS and ensuring development and widespread use in the Asian countries, etc. of the Japan's ITS info-communications technologies, including DSRC systems.

2. Promotion of the next-generation mobile communications service (IMT-2000)

Full-scale service starts in October 2001

IMT-2000 (International Mobile Telecommunications - 2000) is a digital, next-generation mobile communications service which features a global service allowing use from anywhere in the world, high-quality voice service comparable to the fixed network, provision of a multimedia mobile communications service including easy video transmission and Internet access, etc.

In preparation for the introduction during CY2001, MPHPT in March 2000 formulated its policies for the introduction thereof and from April 2000 started accepting applications for business permission and radio station licenses. In June of the same year, it approved applications for changes in the preliminary licenses and telecommunications businesses from mobile communications carriers. Accordingly, NTT DoCoMo Group started IMT-2000 trial service in May 2001, in preparation for launch of commercial operations from October 2001. Also, J-Phone Group and KDDI Cellular Group are scheduled to start commercial services from June 2002 and September 2002, respectively, mainly in metropolitan areas such as the Tokyo metropolitan area.

In addition, in response to the future development of IMT-2000, MPHPT intends to consider allocation of additional frequencies to the service in line with the results of the ITU World Radiocommunication Conference 2000 or ITU WRC-2000.

3. Outlook for future mobile communication systems

With the expanded penetration of mobile computing and the rapid evolution of IT, demands are rising for the realization of multimedia mobile communications including ultrahigh-definition moving picture transmission, through ultrahigh-speed transmission and the totally IP-based network having higher security and reliability. A variety of R&D activities are being carried out in Japan and foreign countries on future mobile communication technology including the software defined radio (SDR) technology, which allows frequencies, communications methods, etc. to be changed flexibly and simply by replacing or modifying software. At ITU, studies for the realization of future development of IMT-2000 and the systems beyond IMT-2000 have just begun.

Taking those backdrops into account, toward the realization of the future mobile communication systems, MPHPT in October 2000 inquired of the Telecommunications Council about the "Outlook for the Future Mobile Communication Systems," that includes such urgent themes as i) basic concept of the future mobile communication systems, ii) R&D topics (on mobile communications technology, networking technology, etc.), iii) items to be standardized and promotion measures thereof, and received their report in June 2001. In line with the report, MPHPT will make a positive contribution to the international activities for the standardization of the future mobile communications systems and promote R&D necessary for the realization of such systems.

4. Advanced use of PHS (Personal Handyphone System) and efficient use of frequencies to be promoted

Technical Requirements for Radio Facilities

1) Backdrops

Since the inauguration of PHS service in 1995, PHS have penetrated mainly into urban areas as simple and low-priced mobile communications means; now the systems, in parallel with cellular telephone systems, are very popular information and communications tools closely involved in national daily lives. In response to a report "Measures for Introducing Technology Contributing to Promotion of Advanced Use of PHS" from the Telecommunications Technology Council (July 1998), the quality of speech upon moving and indoors, etc. and level of convenience were improved for PHS, resulting in increased data communications traffic mainly for Internet access.

Use of PHS are thought to have expanded as a means for mobile Internet access, as a result, data communications will lead to a sustainable traffic growth. Accordingly, introduction of new technology, etc. toward further advancement of PHS service are needed to be studied for properly meeting various and enhancing user demands. In addition, because frequencies allocated for PHS are adjacent to those for the third-generation (3G) mobile communications systems (IMT-2000), in advancing PHS, measures for reducing interference are taken into consideration.

On June 25, 2001, MPHPT received a report on "Technical Requirements for Radio Facilities Necessary for Advancement of PHS Coexisting with IMT-2000" from the Telecommunications Council.

2) Outline of Advancement

Technical requirements compiled this time for advancement of PHS, based on a study into various measures for the advancement of PHS coexisting with IMT-2000, will enable high-speed data transmission at up to 1 Mbps.
-   Adaptive modulation system

The adaptive modulation system can maximize the data transmission speed according to the radio wave propagation conditions through selection of optimum modulation methods. The adaptive modulation system can select a more efficient modulation method when the radio wave propagation conditions are excellent, and prevents loss of data by lowering data transmission speeds when the radio wave propagation conditions become poor.
-   Expansion of frequency bandwidth

The adaptive modulation system can make data transmission speeds about three times higher than those of the existing PHS system by expanding the frequency bandwidth three times wider to 884 kHz from the existing PHS system's 288 kHz.
-   Improved efficiency of slot configuration

The PHS communications method, which employs TDMA/TDD methods, inserts bits into each slot for maintaining transitional response time caused by on/off of burst waves and for establishing synchronization. Through adoption of linked slots, high-speed data communications about 1.2 times faster than before can be achieved by conducting continuous communications without bits for insertion.
-   Introduction of wireless packet communications

Packet switching data communications is a method which uses circuits only when data are generated to be transferred, suitable for discrete data communications such as e-mails or web browsing, and multiple users can share one circuit.

Because one PHS cell station covers a small area, cell stations shall be flexibly located. Thus, the PHS system can utilize its dormant function, instead of the fixed channel assignment method employed by the cellular telephone system. The dormant function means a status without data to be transmitted or an intermittent status. The dormant function keeps the upper layer connected even when the lower layer has automatically been disconnected upon passing of time period with no transmission data handled. Through the interrupt/resume functions, sessions of higher layers can release lower layers while maintaining an active status. Then, when data to be transmitted are originated, the dormant function reconnects sessions of lower layers and transfers the data by establishing a link. This function, which does not need overheads of

connect/disconnect processing at sessions of higher layers, is a packet communications method with high affinity to the circuit switching system.

[Coexistence with IMT-2000]

Coexistence with IMT-2000 will be realized through introduction of a filter for reducing adjacent carrier interference and gradual shift of PHS control channels for reducing guard bands currently in existence for IMT-2000 bands.

3) Conclusion

MPHPT will, based on the report, amend relevant ministerial ordinances at the beginning of 2002.

5. Toward advancement of wireless system using 2.4GHz band

The 2.4-GHz frequency band is allocated for low-power wireless facilities such as low-power data transmission system (wireless LAN) or mobile terminal identification systems as well as for various devices for industry, science and medicine (ISM) such as microwave ovens.

At present, as regards low-power data transmission systems, along with the expansion of demands for wireless Internet access, development and studies on large-capacity data transmission technology, etc.

are being carried out. Also, on mobile terminal identification systems, a study is being conducted on establishing a new method, which is superior in interference resistance, as a global standard (ISO). Under such circumstances, there is high expectation from industries for advancement in low-power transmission systems and mobile terminal identification systems.

Based on the conditions above, MPHPT inquired of the Telecommunications Council to deliberate on technical conditions for wireless facilities and equipment, etc. for the advancement of wireless systems using 2.4GHz band. Regarding results of the deliberation on the following items, findings will be reported around September 2001.

1. Relaxation of antenna gain conditions to allow flexible use of wireless LAN as a fixed wireless access system
2. Further speedup of wireless LAN (introduction of OFDM modulation method; transmission speed of 20Mbps or more)
3. Establishment of a mobile terminal identification system as a global standard (introduction of a frequency hopping method that is similar to wireless LAN)

versal services, and v) addition of services that can be offered by NTT East and NTT West. The bill was passed on June 15 and promulgated on June 22.

MPHPT will now work toward the coordinated introduction of relevant ministerial ordinances in preparation for the enforcement of this Law. Also, considering the rapid pace of change in the telecommunications business field, the ministry will keep up the heat of promoting fair competition in the telecommunications business field.

[Outline of the revised law]

I. Introduction of new asymmetric regulations

1. In order to promote further competition in the Telecommunications Business Field and eliminate anti-competitive behavior of major telecommunications carriers which are assumed to have market power in a more transparent manner, fair competition rules shall be strengthened.
2. Anti-competitive safeguards shall be applied to the following two categories of telecommunications carriers:
   1) A Type I telecommunications carrier that possesses the Category I-designated telecommunications facilities (regional fixed system)
   2) A Type I telecommunications carrier that possesses the Category II-designated telecommunications facilities (mobile system) and that is designated by the Minister of Public Management, Home Affairs, Posts and Telecommunications on account of the carrier's market shares, the movement of its shares and other aspects.
3. Carriers falling under the preceding items 1) and 2) above, by clarifying three sets of prohibited behaviors, namely, the abuse or provision of proprietary information obtained from competitors through interconnection for other purposes; unduly favorable or unfavorable treatment of specific telecommunications carriers; and, undue compulsion or interven-

V. Creating the Info-communications environment for the 21st century

1. Deployment of new pro-competitive policies in the telecommunications field

On July 26, 2000, the Minister of Posts and Telecommunications inquired of the Telecommunications Council about "Desirable Pro-Competitive Policies in the Telecommunications Field for Promoting the IT Revolution," in response to the Inquiry, the "Special Department for Desirable Pro-Competitive Policies in the Telecommunications Field for Promoting the IT Revolution" was established and deliberated on related issues. On December 21, 2000, MPT received the first report entitled

"Special Department for Desirable Pro-Competitive Policies in the Telecommunications Field for Promoting the IT Revolution" in response to the inquiry from the Telecommunications Council.

MPHPT, in order to further promote fair competition in the telecommunications business field, submitted to the Diet a bill to amend part of the Telecommunications Business Law to incorporate i) introduction of asymmetrical regulations, ii) introduction of wholesale telecommunications services, iii) establishment of Telecommunications Dispute-Settlement Commission, iv) introduction of a system for ensuring uni-

tion upon other telecommunications carriers, manufacturers/suppliers of telecommunication equipment or content providers, effective measures (order to suspend/change behavior) enabling quick remedy of violation thereof will be introduced under the revised laws.

4. Limited to telecommunications carriers of item 1), the revised laws set legal "firewall" restrictions (prohibition of concurrency of board members; ensuring equal treatment upon use of buildings/facilities and upon provision of information necessary for interconnection; and ensuring equal treatment upon being entrusted with various services) on telecommunications carriers having special relations therewith (designated among parent companies, subsidiary companies, and fellow subsidiaries by the Minister of Public Management, Home Affairs, Posts and Telecommunications). Effective measures (nonpenal fines or order of suspension/change of behavior) for rapidly remedying violation thereof and ordering carriers falling under item 1) to annually report compliance thereof will be established under the revised laws.

5. Formulating and changing tariffs, interconnection tariffs and facilities sharing agreements of telecommunications carriers falling under item 1) shall remain under the existing approval system, but formulating and changing tariffs, interconnection agreements and facilities sharing agreements among carriers except Item 1) (current regulations remain) shall be relaxed from the approval process to the notification process.

6. A Type I telecommunications carrier that possesses the Category II-designated telecommunications facilities (mobile system) shall be obliged to establish, notify and disclose their interconnection tariffs.

II. Introduction of wholesale telecommunications service system

1. In order to improve effective use of fiber-optic networks of local governments, public utilities and other entities and improve network flexibility of telecommunications carriers, regulatory frameworks which enable flexible provision of wholesale telecommunications services through individual contracts among businesses shall be introduced.

2. All wholesale contracts shall suffice under the notification system.

III. Establishment of Telecommunications Business Dispute-settlement Commission

1. A new administrative system for dispute settlement shall be introduced to ensure quick and effective dispute resolution among telecommunications carriers.

2. Outline of the Telecommunications Business Dispute-settlement Commission

   1) Dispute settlement organization independent of the section in charge of permissions and authorizations shall be established based upon Article 8 of the National Government Organization Law.

   2) The commission shall comprise five members (a maximum of 2 of them shall be full-time members) appointed by the Minister of Public Management, Home Affairs, Posts and Telecommunications with the consent of the House of Councilors and the Houses of Representatives.

   3) For conducting secretarial work, an independent secretariat shall be set up under direct control of the commission.

3. As choices of dispute settlement procedures for resolving various degrees of conflict, new procedures (mediation/reconciliation) shall be established in addition to arbitration.

4. The commission may recommend that the Minister of Public Management, Home Affairs, Posts and Telecommunications take necessary action including improving competition rules in the telecommunications business field.

IV. Measures for ensuring the

Rights-of-Way (ROW)

1. The measures to be taken include establishing dispute settlement procedures for ROW conducted by the Telecommunications Business Dispute-settlement Commission.

2. Establishing coordination procedures between MPHPT and agencies involved in the use of public land such as roads, leading to smooth and quick use of utility poles, ducts, conduits and the like by telecommunications carriers.

V. Ensuring the provision of universal service

1. For ensuring the provision of universal service (prescribed by the applicable ordinance of the Ministry of Public Management, Home Affairs, Posts and Telecommunications), a new system (Universal Service Fund) shall be introduced where telecommunications carriers are required to shoulder the fair cost burden.

2. Designation of Eligible Telecommunications Carriers (ETCs)

   1) Under the new system, telecommunications carriers providing universal service may be designated as ETCs followed by application of those carriers.

   2) ETCs may receive universal service supports as a part of financial compensation for the cost of universal service provision.

   3) In order to provide for the universal service support, telecommunications carriers interconnecting with ETCs' facilities for providing universal service shall be required to shoulder reasonable contributions for the provision of universal service.

3. Designation of Universal Service Support Institution

   1) A non-profit organization shall be designated as Universal Service Support Institution, which is envisaged to conduct activities such as providing universal service support to ETCs as well as collecting contributions from other telecommunications carriers.

2) Providing universal service support and collecting contributions by the Universal Service Support Institution requires authorization from the Minister of Public Management, Home Affairs, Posts and Telecommunications.

VI. Expansion of the business scope of NTT East and NTT West

1. NTT East and NTT West shall be allowed to conduct new telecommunications services (so-called "utilization service") utilizing equipment, technology and/or personnel the companies possess for conducting regional telecommunications services by obtaining authorization from the Minister of Public Management, Home Affairs, Posts and Telecommunications under two conditions mentioned below.

2. Clearly stipulated as two conditions for the authorization are: i) no possibility of existence of obstructions for ensuring smooth operations of the regional companies' existing services and ii) no possibility of existence of obstructions for ensuring fair competition of telecommunication business.

VII. Relaxation of foreign capital ownership restriction on NTT and other issues

1. Foreign capital ownership restrictions on NTT holding company shall be relaxed from less than 20% to less than 1/3.

2. Special measure shall be introduced for allowing the NTT holding company to issue new shares by notification until the number of the company's shares reaches a certain level specified in the applicable ministerial ordinance of MPHPT for a period of time.

3. The authorization system for the NTT holding company for sales of NTT Communications Corp. shares held by the holding company shall be abolished.

VIII. Miscellaneous

1. Along with the series of regulatory reforms above, the Telecommunications Business Law shall add "promotion of fair competition in the field of telecommunications business" in its purposes.

2. In the supplementary provisions of the amended law, comprehensive review of regulatory frameworks concerning telecommunications shall be provided, taking into account the progress of Internet technology, convergence of communications and broadcasting, the situation of the enforcement of the revised laws and other matters.

2. Guideline for Use of Utility Poles, Ducts, Conduits, etc. in the Telecommunications Field

MPHPT, in order to facilitate use of utility poles, ducts, conduits (rights-of-way) and promote construction of fiber-optic networks by Type I telecommunications carriers, has made the "Guideline for Use of Utility Poles, Ducts, Conduits, etc. in the Telecommunications Field" effective since April 1, 2001.

3. Interim Report of "Study Group on Legislation of Privacy Protection Law in Telecommunications Sector" (Summary) (December 15, 2000)

Along with the evolution of advanced information and telecommunications network society, large-volume and rapid processing of electronic information are becoming possible. Because storage, retrieval, use, etc. of such electronic information can be processed easily, more than ever before protection of personal data (proprietary information) is recognized as a necessary and urgent task. In order to facilitate the evolution of e-commerce in a networked society on the basis that ensures indispensable free distribution of information, strong demands are arising for personal data protection, with one eye toward useful aspects of personal data.

As regards protection of personal data in the telecommunications sector, thorough implementation thereof had been expected through voluntary efforts of each telecommunications carrier under the "Guidelines on the Protection of Personal Data in Telecommunications Business (MPT Notice No. 570 of 1998)," formulated by MPT in 1991 and revised in 1998. These Guidelines, based upon the "Recommendation of the Council Concerning Guidelines Governing the Protection of Privacy and Transborder Flows of Personal Data" (1980), stipulates basic principles (collection of personal data, use and external disclosure of personal data, proper management of personal data, disclosure and correction of personal data, clarification of accountability) to be observed, and by the amendment of 1998, items (traffic records, itemized bill, caller ID data, location information, blacklist information, telephone number information) specific to the telecommunications field are provided for observation upon handling thereof. Those guidelines were intended to realize personal data protection at sufficiently higher level, in light of international standards. Upon protection of personal data in telecommunications business, the existing manner of personal data protection, through encouragement of voluntary efforts of each telecommunications carrier by thorough implementation and promotion of those guidelines, had become functional to some extent.

In recent years, however, a concern about the effectiveness of the existing guidelines has been arising, triggered by the fact that recently, there have been a string of media reports on leakage of customer data maintained within telecommunications businesses, such as the rising number of employees, etc. of telecommunications businesses being arrested on criminal charges under the NTT Law (acceptance of bribery) and theft (theft of printouts of personal data).

As seen in cases of personal data leakage, in the modern information society, personal data have become

an asset. On the other hand, in the progress in legislation having close relation to personal data protection, including enforcement of the "Law Concerning Access to Information Held by Administrative Organs" (Law No. 95 of 1988) and the amendment to the "Resident Basic Ledger Law," Japanese nationals have high expectations for the protection of their own personal data, derived from heightened "rights consciousness." 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 Japan. At meetings of the "Working Group on Personal Data Protection" established in July 1999 and the "Experts Committee for Legislation on Data Protection" established in February 2000 under the "Advanced Information and Telecommunications Society Promotion Headquarters" (currently the "IT Strategic Headquarters"), deliberations were made on the basic legal system for protection and use of personal data. Based on their outcomes, the government has been conducting deliberations on the draft bill for basic legal system.

At MPT, the report of the "Study Group on Privacy Protection in Telecommunications Services" described that laws for the protection of personal data in the telecommunications sector should be formulated at the earliest possible date.

The "Study Group on Legislation of the Privacy Protection Law in Telecommunications Sector," based on those efforts, in November 2000 released an interim report, stating that further deliberations are needed on i) whether it is necessary for such legislation to protect personal data in the telecommunications sector and, if necessary, ii) content of the legislation and procedures.

The study group has been, based on the interim report and other movements, in particular, efforts paid by the entire government toward the legislation, conducting deliberations on whether it is necessary for "individual legislation by sector" to protect personal data in the telecommunications sector and contents of the legislation.

This report is the final results of the deliberations.

The contents of this report is as follows:

Chapter 1. Current Status and Problems Concerning the Protection of Personal Data in the Telecommunications Sector
Section 1: Legislative System
Section 2: Self Regulation
Section 3: Standpoints Concerning the Protection of Personal Data in the Telecommunications Sector
1. Legal positioning of personal data protection
2. Mounting demand for the protection of personal data
3. Effectiveness and limitations of the guidelines
4. Peculiarity of personal data maintained by telecommunications carriers and necessity for protection thereof
  1) Peculiarity of personal data maintained by telecommunications carriers
  2) Problems in dealing with secrecy of communications
5. Developments in legislation in other countries

Chapter 2. Situation Surrounding Legislation on Personal Data Protection
Section 1: Current Status
  1) Regulations on protection of confidentiality
  i) Obligation of civil servants
  ii) Crime of disclosure of secrets
  2) Regulations on credit information
  3) Regulations on protection of personal data
  i) Protection of personal data upon data processing in computer systems at government offices

  ii) Protection of personal data of job-seekers, etc.
  iii) Protection of information on confirmation of identity related to resident registry
Section 2: Deliberations in the Past on the Basic Legislation
Section 3: "Outline of the Basic Legislation to Protect Personal Data"

Chapter 3. Relationship between "Legislation to Protect Personal Data in Telecommunications Sector" and "Outline of the Basic Legislation to Protect Personal Data"
Section 1: Basic Nature of the Basic Legislation
Section 2: Positioning of Sector-by-Sector Legislation Provided for by "Outline of the Basic Legislation to Protect Personal Data"

Chapter 4. Direction of Legislation to Protect Personal Data in Telecommunications Sector (Sector-by-Sector Legislation)
Section 1: Regulations on Telecommunications Carriers
  1) Expansion of scope of liabilities of telecommunications carriers
  2) Addition of provisions on "administrative order to improve," etc.
Section 2: Regulations on Individuals (Perpetrators)
  1) Addition of provisions on protection of confidentiality of personal data and penal provisions thereof
  2) Addition of directory provisions on protection of personal data

Conclusion
The direction of Japanese legal frameworks concerning protection of personal data will be provided for by the "Basic Law" that will establish basic principles governing both the private and public sectors. Based on the basic legislation, as a supplement thereof, individual sector-by-sector legislation will be imple-

mented in a sector where there is a need to protect personal data.

As for the "Basic Law," the "Outline of the Basic Legislation to Protect Personal Data" compiled in October 2000 shows frameworks.

Under the "Basic Law," the "individual sector-by-sector law" in the telecommunications sector shall intend to thorough personal data protection in the telecommunications sector. This final report, paying due consideration to the intention, presents rough images on additional provisions concerning the telecommunications sector, based on the assumed contents the "Basic Law" would include in line with the "Outline of Basic Legislation."

However, even the "Outline of Basic Legislation" left not a few issues to further deliberations on the concrete content of the "Basic Law." Accordingly, at present, because the detailed "Basic Law" has not finalized as yet, this report cannot help reserving unspecified part. From now on, the study group hopes that MPHPT will, taking into consideration this report, conduct in-depth deliberations toward preparation of the "individual sector-by-sector law" in the telecommunications sector, in keeping pace with work on drafting 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.

4. Report of "Study Group on Advanced Maritime Communications"

Chapter I. Current status of maritime communications
(Omitted)

Chapter II. Current status and future challenge of maritime communications in various fields

1. Ensuring safety of life and property
1) Current status
  i) Measures for safety ship navigation
  a) Navigational warning, meteorological information, etc. are provided by wireless telephone, fax, etc.
  b) Vessel traffic advisory service centers are established by the Japan Coast Guard in areas where vessel traffic is congested, in order to provide navigational control information by wireless telephone or electric signboard.
  c) For fishing boats, a unique system of distributing maritime safety information has been implemented by building their own fishery communications networks.
  d) To avoid collision between boats, radar systems to detect the ship positions in the area are being utilized (Approx. 39,000 units).
  ii) Search and rescue
  a) Satellite EPIRB and other distress alerts falsely emitted for reasons other than distress account for more than 90%.
  b) 1,920 vessels needed rescue. By type of application, pleasure boats and fishing boats account for 79%. By distance from coast, distress that occurred in ports or within three nautical miles from ports account for 78%.
  c) The dead or missing in distress are 146 persons in total, of which 60 boats had only one operator (60 persons).
2) Future challenge
  i) Measures for safety ship navigation
  a) Installation of various devices is indispensable for obtaining various kinds of information. R&D activities on new communications methods using digital and other technologies are urgent tasks for ascertained information collection.
  b) The vessel traffic advisory service centers are in charge of navigational traffic control; however, necessary data for the control are input manually. Shipboard automatic information transmission systems are needed.
  c) Onboard radars can hardly detect small vessels in some cases. Thus, a system for small vessels to inform ships nearby of their existence is needed.
  ii) Search and rescue
  a) Communications systems that can ensure distress alert transmission must be implemented.
  b) Some communications measures suitable for small vessels not equipped with means of communications are needed.
  c) Global efforts are needed to prevent false distress alerts of satellite EPIRB, etc.
2. Improvement of efficiency in maritime transportation
1) Current situation
  i) Port EDI (electronic data interchange)
  a) Through installation of e-mailboxes in servers, etc. of the applying/notifying parties, such as shippers and shipping agents, and of the administration, such as port administrators and portmasters, various forms that had been processed on paper were digitalized by using the Internet.
  b) Trial operations started in October 1999.
  ii) Cargo management
  The location information on cargo is grasped at the land side through progressive transmission of GPS positional information by fax or INMARSAT polling system.
2) Future challenge
  In order to construct an intermodal logistics system which realizes cost reductions and improve the efficiency of operations, automatic information transmission systems and simplified procedures for applications are needed.
3. Fishing industry
1) Current situation
  For improving efficiency and adding high value to fisheries, further utilization of info-communications (IT) is expected. Speedup and video handling capability of the following systems are expected.
  i) Positional information such as buoys and nets (radio buoy)
  ii) Monitoring of fish detector information, and control/monitoring of feeding in ocean ranches (telemetry)
  iii) Fish catch management (total allowable catch [TAC] management)
  iv) Meteorological/hydrographic phenomena information, fishing/market information, etc.
2) Future challenge
  For promoting efficient fisheries and aquaculture, more intense use of info-communications is needed. In particular, R&D on systems capable of coping with increasing amount of information, including video-based monitoring systems, is required.
4. Comfortable life at sea
1) Current situation
  By providing smoother communications with families and communications regarding health management, improve-

ment of amenity of life at sea is expected.

2) Future challenge

In order to ensure the same communications quality as land-based communications, realization of high-speed and large-capacity data transmission systems in maritime communications is needed; and technological development on communications methods suitable for transmission systems is necessary.

Chapter III.   Measures for advancing maritime communications

Toward the advancement in the future of maritime communications systems, it will be necessary to address the following issues:

1. Digitalization of maritime communications

In order to improve quality of maritime communications, the government shall play a central role for conducting R&D activities on digital communications methods, etc. Then, the R&D results shall be used for contributing to standardization activities at the International Telecommunication Union.

2. Construction of maritime Intelligent Transport Systems (maritime ITS)

1) Construction of maritime ITS is needed for safety navigation and improved efficiency of maritime logistics systems, etc.

2) It is indispensable for the realization of maritime ITS to efficiently utilize digital communications systems and a universal shipborne automatic identification systems (AIS).

3) Toward efficient construction of maritime ITS, relevant ministries and agencies including MPHPT, the Ministry of Land, Infrastructure and Transport, etc. shall collaborate for this purpose.

3. Introduction and widespread penetration of AIS at an early stage

1) There are needs for preparing an environment for smooth introduction of AIS, such as mandatory obligation to install AIS, technical standards and requirements for operating AIS, etc.

2) In order to help users obtain AIS-related information, an AIS center (tentative name) and frameworks for operations shall be established as soon as possible.

4. Realization of communications systems suitable for small ships

Studies on realization of small, less expensive and convenient communications systems which enable distress alert and general communications shall be carried out. In keeping pace with those studies, deliberations on the entire system incorporating support methods

from land stations, etc. are necessary.

5. Issues and measures for coping with those issues after the launch of GMDSS

1) Promotion of awareness campaigns and proper ID management systems for the purpose of avoiding false distress alerts

2) Available systems for small vessels which are not covered by GMDSS are to be deliberated upon.

6. Promotion campaign for various applications

1) Advancement of fishery data transmission systems through digitalization

2) Development of systems suitable for educational and medical systems

3) Expansion of applicable scope for voting system at sea through digitalization and higher reliability

7. Security and protection of privacy

Countermeasures against alteration and tampering upon transactions of fish or shellfish, in case of voting at sea, allows identification of senders and abuse/piracy of data as needed.

5. Report of "Study Group on Adequacy of Information Distribution on the Internet" (December 20, 2000)

As a measure to fight against distribution of illegal and harmful information over the Internet, MPHPT has been assisting the formulation of guidelines for voluntary regulation within the industry organization of Internet service providers (ISPs), online content providers (OCPs), etc. and also of model tariffs for Internet access service in line with the guidelines. The ministry has also strived to solve this problem through R&D for advancement of filtering systems.

These efforts yielded some visible results. However, with the rapid diffusion of Internet use, troubles over distribution of illegal and harmful information are still increasing and becoming more diversified, for which the implementation of yet more effective measures is being called for.

Then, MPHPT held the "Study Group on Adequacy of Information Distribution on the Internet" from May 12, 2000. As a countermeasure against distribution of illegal and harmful information on the Internet,

the group clarified problems facing the conventional framework, which comprises recommendations of technical solutions by voluntary regulations within the industry organization of ISPs and use of filtering systems, through the studying of the actual status of various efforts in that field, inside and outside of Japan as well as the actual status of information distribution. The group also studied problems that need to be solved to enhance effectiveness, by putting into perspective an individual approach to each of the information sender, service provider and receiver, while also studying the direction for implementation of an environment as required for the job.

6. Measures for Internet Governance

Japan's contribution to infrastructural advancement of the Internet

In order to ensure that a range of socioeconomic activities such as e-commerce can be deployed over the Internet, which is called the "network of networks" for connecting a huge number of computers around the world, there is a need to secure interconnectivity on a global scale.

1) Internet governance

IP addresses (numeric identifiers assigned to each equipment on the network) and domain names (interpreted IP addresses into characters which humans can read; a domain name and an IP address correspond one by one) are assigned to each equipment as their "addresses" on the Internet, for exchanging information over the Internet (toward computers, etc. which connect to the Internet). These are the basic factors of communications over the Internet, and their administration under the unified rules, which govern assignment thereof on a global scale, means the "governing of the entire Internet for smoothly functioning thereof." Generally, it is called "Internet Governance."

At present, deliberations on "Internet Governance" are conducted mainly at the Internet Corporation for Assigned Names and Numbers (ICANN), an international non-

profit organization, that administers domain names and IP addresses and decides policies thereof.

In Japan, Japan Network Information Center (JPNIC) was established for providing various services, such as registration and management of domain names and IP addresses ending with ".jp," and carries out Internet-related research, survey, education and awareness campaigns. Deliberations on domain name systems and technological aspects concerning the management of ".jp" domain names are conducted by JPNIC.

Policies and deliberations on "Internet Governance" are gaining in importance upon formulating new frameworks and dispute resolutions concerning domain names. Thus, Japan's active participation into those efforts contributes to construction of stable and effective Internet usage on a global scale and leads to development in domestic Internet usage.

2) ICANN's organization and Japan's presence

Of the four Advisory Committees, MPHPT, as Japan's only formally registered member, participates in the Governmental Advisory Committee (GAC) consisting of accredited representatives of each national government, striving to establish an international cooperative environment, including the Asia-Pacific region.

In the ICANN Board of Directors comprising 19 directors, two Japanese are elected as directors. From the standpoint of Japan's international contribution to "Internet Governance," it is essential for Japan to actively support and participate in such international activities concerning the Internet.

3) gTLDs and ccTLDs

Domain names used to specify IP addresses are largely classified into two categories: generic Top Level Domain (gTLD) and country code Top Level Domain (ccTLD) names. The gTLDs, such as ".com" or ".net," can be obtained from everywhere around the world regardless of countries; and ccTLDs, such as ".jp," are assigned country-by-country.

gTLDs administered by some private companies, such as VeriSign Global Registry Services (VeriSign GRS), can be obtained through registrars in Japan and overseas. On the other hand, ccTLDs are managed by each country's registry (ccTLD registry). The ".jp" domain names can be obtained from JPNIC and registrars, which are generally Internet service providers in Japan (ISPs) and conclude contracts with JPNIC.

4) Multilingual domain names

The Domain Name System (DNS) hitherto are in principle based on English language. For the purpose of increasing Internet users among the general public, it is crucial that the domain names be comprehensible and easy-to-use for Japanese users. In response to requests from users in non-English speaking countries and regions, ICANN is carrying out studies on introduction of Internationalized Domain Name (IDN), also known as "multilingual domain names," which uses non-English characters for Japanese and other languages containing characters other than the alphanumeric system. At present, the Internet Engineering Task Force (IETF), an international standardization organization covering the Internet, is conducting technological standardization activities on the multilingual domain name. Apart from the standardization activities, in November 2000 VeriSign GRS started registration for the multilingual "gTLD" domain names including Japanese and in February 2001 JPNIC also started registration for Japanese ".jp" domain names.

Toward practical use of multilingual domain names, it is necessary to ensure that stable operations of IDN can work under the existing DNS. Thus, paying due consideration to the convenience of Japanese users, it is important for Japan to actively participate in international rule making for stable use of multilingual domain names.

5) New gTLDs

VeriSign GRS has been managing gTLDs on a monopoly basis to date. However, ICANN stated a program for the introduction of new generic top-level domains (gTLDs), in order

to cope with i) forecast of shortage in gTLD space, ii) introduction of competition in management service and iii) regionally distributed management service.

At its meeting on November 16, 2000, the ICANN Board selected the seven new generic top-level domains (gTLDs) for negotiation to be operational within 2001. There is no proposal from Asian registries in the seven candidate gTLDs, so Western-oriented domain name management structure still remains intact. Thus, if gTLDs convenient for Japanese and other Asian registrars are introduced, users in the region can have a broader range of choices in gTLDs, resulting in more inexpensive gTLDs for users. It is important for Japan to actively, in cooperation with Asian countries, participate in deliberations conducted in ICANN.

6) Dispute resolution and precaution concerning domain name acquisition

As regards domain names, to date there are cases where third parties in bad faith acquires a domain name reflecting trademarks, English corporate names, acronyms, service marks for the purpose of reselling it to the rightful trademark owner at a high price; establishing a website using a domain name identical or similar to a trademark owned by another party for the purpose of creating misunderstanding and confusion among Internet users. In order to cope with those cases and similar disputes, ICANN released Uniform Domain Name Dispute Resolution Policy ("uDRP") in October 1999. In accordance with this uDRP, dispute-resolution Panels which ICANN accredits can quickly cancelling or transferring domain names obviously registered or used in bad faith when complaints are made by rightful trademark owners through the administrative proceedings. In Japan, JPNIC, in July 2000, set forth the "JP Domain Name Dispute Resolution Policy (JP-DRP)" for coping with domain name disputes by arranging the uDRP. As the dispute-resolution service provider certified in accordance with JP-DRP by JPNIC, the Arbitration Center for In-

dustrial Property accepted 12 complaints as of July 2001 since the beginning of the arbitration in October 2000. In addition to those Alternative Dispute Resolutions (ADRs), because there are trends requiring resolutions by court judgements, such the JACCS case (Toyama District Court), in June 2001 the Law to Amend the Unfair Competition Prevention Law was passed the Diet, in order to prevent domain name abuse and registration for obtaining illicit gain or perpetration.

Undue acquisition of domain names have tended to occur upon introduction of new domain name systems. In November 2000, when a new system for the multilingual domain name was introduced, immediately after the acceptance was started, applications for registration were surged, then a registration system for acceptance was down. Furthermore, as the procedure for registration was basically on a first-come first-served basis, domain names identical or similar to a trademark owned by another party were acquired by unlawful third parties.

On the contrary, in case of registration for ".jp" domain names, JP-NIC took a preventive measures, such as setting a preferential time period (Sunrise Period) for rightful trademark and service mark owners, a time period for equal treatment without first-come first-served basis.

The Sunrise Period is internationally recognized as an effective preventive measure avoiding disorder. This measure is employed by JPNIC as the world's first attempt in the registration for ".jp" domain names. Such attempts will lead to stable Internet usage not only in Japan but also in the rest of the world. Proposals concerning such attempts shall be studied at international fora such as ICANN.

7. Interim report by "Committee to Promote Research on the Possible Biological Effects of Electromagnetic Fields"

The rapid spread of mobile telephones has raised public concern about the possible effects of radio waves on health, even though international experts including those in Japan concur that there is no apparent evidence demonstrating any adverse effects of radio waves at intensities less than the guideline levels. Nonetheless, scientific research into the effects of radio waves is important. Thus, MPHPT set up the "Committee to Promote Research on the Possible Biological Effects of Electromagnetic Fields" (Chair: Prof. Shoogo UENO, Dept. of Biomedical Engineering, Graduate School of Medicine, the University of Tokyo) (hereinafter referred to as "the committee") in 1997. The committee has since been promoting the research program for safety assessment of radio waves from the medical and engineering points of view.

On January 30, 2001, the committee has issued an interim report on research projects it has carried out to date in response to increasing public concern about the effects of electromagnetic waves on human bodies.

The committee plans to successively conduct i) experiments based on a two-year exposure (equivalent to a rat's average lifespan) of rats' heads to radio waves and ii) epidemiological studies to clarify the relationship between the use of mobile phones and their effects on the rat brain.

1) Research activity in the Committee to Promote Research on the Possible Biological Effects of Electromagnetic Fields

i) Outline of research in FY1997

The research in FY1997 focused on the effect of radio waves on the brain. The brain is one of the most important organs in the human body, and is also an organ that is subjected to a partial-body exposure of radio waves generated from mobile phones. There is also a report that the possibilities of development of brain cancers and other diseases may increase as exposure to radio waves increases. Thus, the effects of radio wave exposure upon brains must be clarified in the first place. Thus, in FY1997, the committee carried out the experiment of exposing rats' heads to radio waves, and con-

firmed that with a short-term exposure to radio waves of an intensity similar level to the general environment guideline value as shown in the Partial-body Absorption Guidelines does not bring any effect that may impair the blood-brain barrier (BBB).

ii) Outline of research in FY1998

In FY1998, an experiment overseas was reported, saying that more intense radio wave exposure had effects on BBB. However, as a result of an experiment using radio waves of similar intensity level by improving exposure conditions to prevent heat effects, it was confirmed that it causes no impairment to BBB.

iii) Outline of research in FY1999

In order to look into the effects of electromagnetic waves upon memory and learning, a experiment on learning was conducted using a rat in a T-shaped maze. Even when the radio wave exposure level is significantly above the guideline level (Partial-body Absorption Guidelines), any effect upon the rat's task learning ability was not observed in a condition without heat effect.

Also, a brain pia mater microcirculation dynamic evaluation experiment was conducted, by surgically attaching to the rat's skull a cranial window that allows biomicroscopic observation of pia mater microcirculation (repeated and continuous observation of a live specimen), for evaluating the biological effects of irradiation of electromagnetic waves upon hemodynamic indicators (diameter of blood vessel, bloodstream velocity, bloodstream quantity), behavior of hemocyte components (red blood cell, white blood cell, blood platelet) and blood vessel permeability (BBB function). As a result, for any of the hemodynamic indicators, behavior of hemocyte components and blood vessel permeability, any change by exposure of radio waves was not observed in either acute exposure (10 minutes) or chronic exposure (4 weeks).

Also, for the "large-scale and long-term biological test," which is cited as the highest priority in the International EMF Project of the World Health Organization (WHO), Japan

made a preliminary study in order to conduct a long-term exposure test on its own. This test doses ethylnitrosourea (ENU) to a pregnant rat, gives an initiation treatment to an embryo via placenta and irradiates the head of a newborn rat with radio waves for two years, which corresponds to the entire lifetime of a rat.

In an epidemiological survey to find out if there is a meaningful interrelation between the use of a mobile phone and development of brain cancer, the committee decided to follow the epidemiological survey protocol as promoted by the International Agency for Research on Cancer (IARC) of WHO, and executed a feasibility study for that purpose.

   iv) Content of research after FY2000

In FY2000, full-scale research commenced for both of the long-term exposure test, in which the effects of irradiating a rat with radio waves for two years is investigated, and the epidemiological survey that is also carried out for a two-year span.

In addition, a maze learning test to look into the effects of radio wave exposure on memory recall and memory functions, and a further brain microcirculation dynamic evaluation test, this time using a newly developed device of partially irradiating the rat skull with radio waves, are being conducted at present.

2) Summary of interim report by the committee

Research into the effects of radio waves on the human body has been conducted for more than 50 years in countries around the world, including Japan. Based on voluminous findings from those studies, exposure guidelines including the Japanese guideline of the "Radio-Radiation Protection Guidelines for Human Exposure to Electromagnetic Fields" have been developed with enough safety margin to protect human health from adverse effects of radio waves.

The rapid spread of mobile phones has raised public concern about the possible effects on health of radio waves from mobile phones and mobile phone base (cell) stations, even though international expert organizations including those in Japan concur that there is no obvious evidence demonstrating any adverse effects of radio waves at intensities less than the guideline levels and that it is not appropriate to immediately regulate the use of mobile phones.

However, some reports state that low-level radio waves below Radio-Radiation Protection Guidelines levels may cause some effects on the human body. Such research results should not be treated as evidence for health risks until their reproducibility is confirmed, because many of those studies have been criticized in terms of the reliability of experimental methods and conditions. Such results were often contradictory to a huge amount of research results obtained to date. Lack of appropriate dissemination of precise information has created an obscure fear of radio waves among the public.

Against this backdrop, the committee has been conducting biological and medical experiments in order to directly evaluate the effects of radio waves from mobile phones on the human health. This research project has fairly and neutrally been performed jointly with the International EMF Project of WHO under the close cooperation of medical and biological experts and engineers who precisely evaluate exposure.

The results obtained from the committee's projects to date indicate that radio waves emitted from base stations and mobile phone devices have no adverse effects on human health. In addition, the replication studies of previous studies suggesting existence of health effects have not been successful in the reproducibility studies using advanced and improved medical/engineering techniques.

Thus, the committee currently considers that there is no firm evidence of the adverse effects, including non-heat effects, of radio waves at intensities not exceeding the level defined in the Radio-Radiation Protection Guidelines for Human Exposure to Electromagnetic Fields.

The committee recognizes that there is an opinion that the guideline values should be decreased to even lower levels than current guideline values in consideration of the "precautionary principle" or "precautionary measures." It should be noted that it is different from scientific-based guidelines. The committee believes that the current guidelines do not need to be revised at present because the guideline values for the general environment adopted by most countries including Japan already set a substantial safety margin (1/50) to the threshold for the effects confirmed by animal experiments, thus offering sufficient precautionary measures. Consequently, the committee finds no immediate necessity of revising the guideline values at this time. This is the same view as what was announced from WHO and many countries of the world.

The committee will continue its activities to promote research to assess the safety of radio waves aimed at improving the reliability of scientific data for the Radio-Radiation Protection Guidelines for Human Exposure to Electromagnetic Fields. The committee would, where necessary, recommend the revision of the values of the Radio-Radiation Protection Guidelines for Human Exposure to Electromagnetic Fields. The committee believes that publication of scientific data continuously obtained for reassessing the guideline values will contribute to the development of a sound environment for radio-wave use, where people can benefit from radio wave use without any undue fear.

Also, for press release information regarding the interim report of this committee, visit:
  http://www.soumu.go.jp.

8. Formulation of methods for measurement of SAR from mobile phone terminals and other terminals that are intended for use in close proximity to the side of the head

1) Background

In recent years, as the number of cellular telephones is skyrocketing, concern that radio-radiation from cellular telephone terminals affects human safety has been raised. In response to rising concern about human safety, the Telecommunications Technology Council in April 1997 released a report that recommends the Radio-Radiation Protection Guidelines for terminal equipment, including cellular telephones, operating in close proximity to humans (Partial-body Absorption Guidelines: stipulated in SAR). The Guidelines are used as a voluntary guideline in the production and operation of radio stations.

Note: SAR: Specific Absorption Rate. This refers to the average amount of radio wave energy imparted to a given 10g of tissue in a time period of six minutes when a living body is exposed to electromagnetic fields.

To date, many methods for measurement of SAR from mobile terminals have been developed and proposed. At European and U.S. standardization organizations, standardization activities for establishing measurement methods are in progress to uniformly evaluate SAR, aimed at formulating Partial-body Absorption Guidelines for mobile terminals. Given the rapid penetration of cellular phones in Japan, establishment of methods for measuring and evaluating SAR in the standardized manners had been called for.

Based on these backdrops, MPT on May 22, 2000, inquired of the Telecommunications Technology Council about "Measurement of SAR from Mobile Phone Terminals and Other Terminals," with the aim of promoting safe use of radio frequency and establishing the SAR Guideline. In response to the inquiry, the Council reported a partial report on November 27, 2000, on the "Methods for Measurement of SAR from Cellular Phone Devices Intended for Use in Close Proximity to the Side of the Head."

This partial report provided technical conditions for evaluating SAR from mobile phone terminals and other terminals that are intended for use in close proximity to the side of the head, by measuring the strength of electromagnetic field within a quasi-human body model (phantom) by means of an electromagnetic field probe. The report also proposes a future agenda of research, including expansion of applicable scope, development of more versatile measurement methods and contribution to international standardization activities.

Paying due respect to the report, MPHPT has revised relevant ministerial ordinances in order to formulate mandatory standards of Radio-Radiation Protection (stipulated in SAR) for mobile phone terminals and other terminals that are intended for use in close proximity to the side of the head (promulgated on June 1, 2001, and to be enforced on June 1, 2002.)

9. Panels, etc. on information security

In response to the incident where the websites of ministries and agencies were intruded upon and altered over the period from January through February 2000, the "Meeting on Countermeasures against Cyberterrorism in Telecommunications Business" (Chair: Prof. Norihisa DOI, Faculty of Science and Technology, Keio University) was launched in February 2000 to study i) countermeasures against malicious hackers and computer viruses, ii) guidelines for formulating information security policies and iii) guidelines for formulating contingency plans when attacked by cyberterrorism. The meeting compiled its findings as a final report at the meeting on November 15, 2000, and made proposals on the promotion of information security measures.

10. Promotion of information security measures

To counter the threat from hackers' unauthorized access to computers, data corruption as a result of attacks by computer viruses and cyberterrorist attacks, MPHPT added as new standards the counter-measures against malicious hackers and computer viruses as well as guidelines for devising the information security policies and contingency plans, to the "Safety and Reliability Guidelines for Info-Communications Networks" (MPT Announcement No. 73 of 1987), which is the indicator of general measures for the security and reliability in info-communications networks. In the "Regulations Concerning the Registration of Information Communications Networks for Actions Taken in Ensuring their Safety and Reliability" (MPT Announcement No. 74 of 1987), the ministry also established a new registration type for info-communications networks where information security measures are implemented. Furthermore, it added an information security-related subject to the Examination for Chief Telecommunications Engineer as a new human resources development measure.

11. Tax incentives for promoting reliability of telecommunications systems

With socioeconomic activities becoming increasingly dependent upon the Internet, such as electronic commerce, computer viruses influencing the entire telecommunications systems arose as a new threat to prevent stable provision of telecommunications services. In addition to the facilities conducive to the measures for improving reliability of telecommunications systems in an emergency such as a conventional disaster, "computer virus monitoring devices" were also qualified for tax incentives from FY2001. If telecommunications carriers procure these facilities, they can receive a 12% special depreciation on the acquisition cost for their corporate tax.

VI. Further promotion and advancement of radio wave

1. Establishment of Frequency Assignment Plan

1) Background to establishment

For enhancing transparency in the procedure of frequency allocation, improving convenience of license applicants and promoting effective use of radio spectrums, the Radio Law was amended by the Diet in June 2000. In line with the amendment, MPT promulgated and enforced the "Frequency Assignment Plan" in November 2000.

2) Positioning of the "Frequency Assignment Plan"

The "Frequency Assignment Plan" is established in accordance with Article 26 of the Radio Law as a table of frequencies that can be assigned and is made open to the public.

The Frequency Assignment Plan stipulates the allocation of frequencies by purpose of radio stations and the conditions for use of frequency, in addition to the allocation of frequency by radio service that had been made public through the "Principles of Frequency Allocation." This Plan is to be used as a reference for assigning frequencies, which is one of the criteria for granting license to radio stations.

MPHPT revises this Plan upon revision of international frequency allocation and to meet the changing demand for radio spectrum in the country.

3) Contents of the "Frequency Assignment Plan"

This Plan consists of:

Chapter 1: General Provisions
Chapter 2: Frequency Allocation Table
Chapter 3: Frequencies designated in authorization of construction plans for specified base stations

The following is the description of each Chapter.

Chapter 1: General Provisions

The General Provisions stipulates:

i) Definition of terms on radio services, purposes of radio stations, etc.

ii) That frequency assignments are required to conform with the Frequency Allocation Table.

iii) That due considerations shall be paid to the conditions as set forth in the Frequency Allocation Table and other requirements (e.g. international agreements, locations of radio stations, etc.) in order to avoid interference.

iv) Application of the Frequency Allocation Table to use of frequencies by radio stations for experiments and radio stations for tests for practical use.

v) Items provided in the Frequency Allocation Table.

Chapter 2: Frequency Allocation Table

The Frequency Allocation Table is divided into the following three subparts: i) from 9kHz to 27.5MHz, ii) from 27.5MHz to 10GHz and iii) from 10GHz to 275GHz. Each subpart stipulates national and international allocation of frequencies. Also, the Table is prepared by paying due consideration to the current frequency allocation for the frequency bands already in use and on the basis of the trend of use for frequencies to be used in the future.

a. National frequency allocation

The fourth column in the Frequency Allocation Table stipulates the national frequency allocation by radio service, e.g., fixed service, mobile service, etc., based on frequency allocation within Japan as specified in the "Principles of Frequency Allocation." In case when there are some conditions for a certain radio service, the description is given within parentheses. Also, considering the situation of international frequency allocation, a footnote is added as necessary to an entire frequency band or to an individual radio service.

b. Purposes of radio stations

The fifth column in the Frequency Allocation Table stipulates the purposes of radio stations to which frequency bands can be assigned within the limits of national frequency allocation in a given frequency band, according to purposes of radio stations categorized as below in the General Provisions. Also, purposes of radio stations are further restricted, such as requiring specific wireless systems to use the frequency bands, as necessary.

Classification of purposes of radio stations

Commercial Telecommunications Service, Public Service, Convenience Radio Service, Amateur Service, Broadcasting Service, Auxiliary Broadcasting Service, Low-Power Service and General Service

c. Conditions for use of frequencies

The sixth column of the Frequency Allocation Table stipulates as necessary the conditions for use of frequencies regarding frequencies, radio services and purposes of radio stations, such as follows.

- Assignable frequencies
- Distinction between single-wave systems and two-wave systems and combination frequency bands that form a pair in the case of a two-wave system
- Period of frequency assignment, etc.

More detailed information on broadcasting, aeronautical, maritime, premises and convenience radio stations as well as unlicensed radio stations are also given as separate tables.

d. International Frequency Allocation Table

The first, second and third columns of the Frequency Allocation Table show for reference the International Frequency Allocation Table in Article S5 of the Radio Regulations (RR) as provided in the Convention of the International Telecommunication Union. Also contained are footnotes to Article S5 of the RR that are associated with the frequency bands and modes of radio stations indicated in these columns.

Chapter 3: Frequencies designated in authorization of construction plans for specified base stations

In accordance with Section 4, Article 27-13 of the Radio Law, description is provided on frequencies designated in authorization of construction plans for specified base stations. However, the Frequency Assignment Plan does not have this Part to date since no frequency has yet been authorized for construction plans.

4) Disclosure of the Frequency Assignment Plan

The Frequency Assignment Plan established has been made public through notice on the Official Gazette Kampo. Any revisions thereof will also be publicized on the Official Gazette Kampo. The Frequency Assignment Plan is accessible to the public at MPHPT Headquarters and the Regional Bureaus of Telecommunications, etc. as well as on the MPHPT website.

The disclosure of the Frequency Assignment Plan serves as the source of valuable information to private companies, etc. when they draw up new radio-based projects for telecommunications services or construction of private networks. It is also expected to contribute to the development and introduction of new wireless systems.

2. Securing frequency allocation in international scene

MPHPT secures necessary frequency bands in the international scene for smooth introduction of new radio systems.

The International Telecommunication Union (ITU), a United Nations' specialized agency in the telecommunications field, normally holds the World Radiocommunication Conference (WRC) once every two or three years to set rules for international allocation of frequencies (ITU Radio Regulations). At the previous WRC, held in Istanbul, Turkey, from May through June 2000, a number of results including the following three were accomplished.

1) 800MHz, 1.7GHz and 2.5GHz bands were added as frequency bands available for IMT-2000.
2) 31GHz and 28GHz bands were added as frequency bands available for High-Altitude Platform Stations (HAPS).
3) For Japan, four channels were added to the East longitude 110 degree broadcasting satellite through review of the frequency plan for broadcasting satellites.

The next WRC will be held in Venezuela in June 2003 to discuss 39 different agenda items, including future development of IMT-2000, systems beyond IMT-2000 and allocation for mobile/fixed services in the 5GHz band. In the recent WRC meetings, regional joint proposals are treated with higher priority than single-handed proposals from individual countries. Thus, Japan actively participates in WRC preparatory meetings in the Asia-Pacific region. Toward the next WRC, these preparatory meetings are held in September 2000 (first meeting) and June 2001 (second meeting), where a joint proposal is developed through exchange of views among the countries in the region.

Also, for smooth operations of radio systems including satellite communications networks, international coordination of geostationary satellite orbit with concerned countries are being made according to the procedures as set forth in ITU Radio Regulations.

Frequency Assignment Plan 2110 ~ 2450 MHz bands (excerpts)

International allocation (MHz)			Domestic allocation (MHz)	Purpose of radio stations	Conditions for use of frequency
Region 1 (1)	Region 2 (2)	Region 3 (3)	(4)	(5)	(6)
2110-2120 FIXED MOBILE	FIXED MOBILE SPACE RESEARCH (deep space) (earth-to-space) S5.388		2110-2120 J99 FIXED	Commercial telecommunications service	Use of this frequency band by the fixed service is allowed only until November 30, 2002.
			MOBILE	Commercial telecommunications service (portable radio communications)	Assignment to portable radio communications service is subject to Annex 7-2.
			SPACE RESEARCH (deep space) (earth-to-space)	Public service / General service	
2120-2160 FIXED MOBILE S5.388	2120-2160 FIXED MOBILE Mobile satellite (space-to-earth) S5.388	2120-2160 FIXED MOBILE S5.388	2120-2160 J99 FIXED	Commercial telecommunications service	Use of this frequency band by the fixed service is allowed only until November 30, 2002.
			MOBILE	Commercial telecommunications service (portable radio communications)	Assignment to portable radio communications service is subject to Annex 7-2.
2160-2170 FIXED MOBILE S5.388 S5.392A	2160-2170 FIXED MOBILE MOBILE SATELLITE (space-to-earth) S5.388 S5.389C S5.389D S5.389E S5.390	2160-2170 FIXED MOBILE S5.388	2160-2170 FIXED MOBILE	Commercial telecommunications service	
2170-2200	FIXED MOBILE MOBILE SATELLITE (space-to-earth) S5.388 S5.389A S5.389F S5.392A		2170-2200 J99 J102 FIXED	Commercial telecommunications service	Use of this frequency band by the fixed service is allowed only until November 30, 2002.
			MOBILE	Commercial telecommunications service	
			MOBILE SATELLITE (space-to-earth)	Commercial telecommunications service / Public service	
2200-2290	SPACE OPERATION (space-to-earth) (space-to-space) EARTH EXPLORATION SATELLITE (space-to-earth) FIXED MOBILE S5.391 SPACE RESEARCH (space-to-earth) (space-to-space) S5.392		2200-2290 J102 FIXED	Commercial telecommunications service	Use of this frequency band by the fixed service is allowed only until November 30, 2002.
			MOBILE J101	Commercial telecommunications service	
			SPACE RESEARCH (space-to-space) SPACE OPERATION (space-to-space) EARTH EXPLORATION SATELLITE (space-to-earth) (space-to-space)	Public service / General service	
2290-2300	FIXED MOBILE (except aeronautical mobile) SPACE RESEARCH (deep space) (space-to-earth)		2290-2300 FIXED MOBILE (except aeronautical mobile) SPACE RESEARCH (deep space) (space-to-earth)	Public service / General service	
2300-2450 FIXED MOBILE Amateur Radiolocation	2300-2450 FIXED MOBILE RADIOLOCATION Amateur		2300-2400 MOBILE FIXED	Public service	
			2400-2450 J33 MOBILE	Low-power service (Low-power data communications system, mobile identification) / General service (Premises radio for mobile identification)	Assignment to low-power transmission systems is subject to Annex 6-3-4. Assignment to low-power service (mobile terminal identification) is subject to Annex 6-3-2-7. Frequency assignment to premises radio for mobile terminal identification is subject to Annex 4-3.
S5.150 S5.282 S5.395	S5.150 S5.282 S5.393 S5.394 S5.396		RADIOLOCATION	Public service	
			Amateur J70	Amateur service	

• Columns (1), (2) and (3) show the international frequency allocation stipulated in the Radio Regulations (RR). The RR divides the world into three regions (Region 1, Region 2 and Region 3) and shows a frequency allocation in each region. Japan belongs to Region 3. The expressions such as "S5. 388" indicate the footnotes to the international frequency allocation in the RR.
• Columns (4), (5) and (6) show the items to be included in the Frequency Assignment Plan under the provisions of Article 26 of the amended Radio Law. Those items are the national frequency allocation, purposes of radio stations, and conditions on the use of frequencies. The expressions such as "J99" indicate the footnotes to the frequency band concerned or the services allocated.

Postal Service

I. Current Status of Postal Services Development and Improvement

1. Letter-post items posted at Tsukuba Expo '85 delivered on the 1st day of the 21st century

MPT held an event "Tsukuba Expo '85 Post Capsule 2001" that commemorated Tsukuba Expo '85 (International Science and Technology Exposition 1985) in order to heighten public awareness concerning the letter-writing culture and to convey heartfelt messages in 1985 to the 21st century.

Letter-post items posted during the Expo totaled 3.28 million. These letter-post items were put in special envelopes; then, 3.03 million items (92.5%) of these were delivered on January 1, 2001.

These letter-post items includes letters from then Prime Minister Yasuhiro NAKASONE to former Prime Minister Yoshiro MORI and from then MPT Minister Megumu SATO to current MPHPT Minister Toranosuke KATAYAMA. Delightful voices from recipients of Post Capsule letter-post items were published in newspapers and other media. This news garnered general public's attention.

2. Postal Services Agency Becomes First National Governmental Organization to Obtain ISO-9001 Certification

The Postal Services Agency (PSA) has obtained certification for ISO-9001, an international standard for quality management and quality assurance, regarding the Agency's handling of "Refrigerated Parcel service," based upon examination by Japan Management As-

Photo   *The scene of ceremony of delivery held at Tsukuba Science City Post Office on January 1, 2001*

sociation Quality Assurance Registration Center (JMAQA: an ISO Quality Management System Registrar). PSA thus became the first national governmental organization in Japan to obtain the ISO-9001 certification.

The certification covers the Postal Services Agency, Regional Bureaus of Postal Services as well as all post offices handling the Refrigerated Parcel. The scope of certification is the largest in Japan.

Basis for certification

PSA obtained ISO-9001 certification concerning the Refrigerated Parcel, used mainly upon delivery of foods, etc., based on the following.
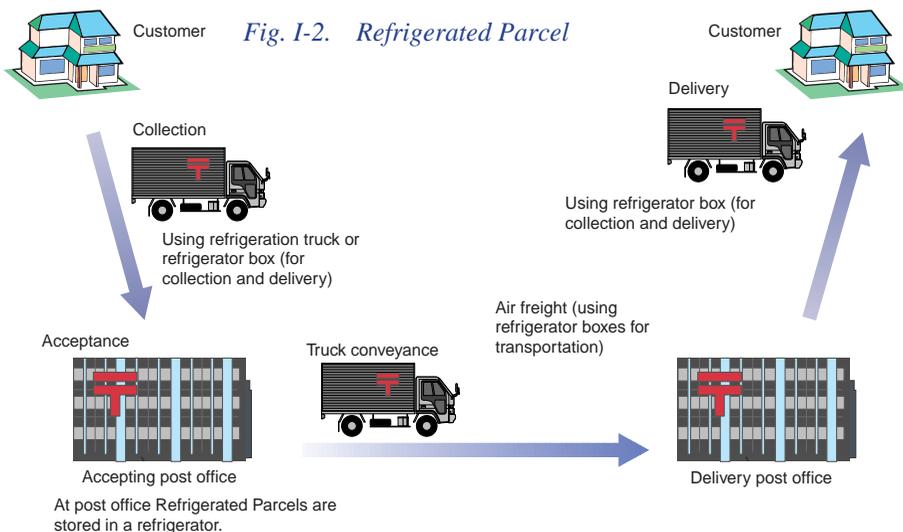i) Establishment of rigid quality control system meeting the global standard
ii) Improvement of customer confidence and assurance
(Reference)
  The Refrigerated Parcel is a service that maintains temperature at around 0°C ~ 5°C from acceptance to delivery.

Relevant standards applied, etc.
i) Applicable standard: ISO-9001: 1994 (JIS Z9901:1998)
ii) Coverage of registration:
• Postal Department, Postal Services Agency
• Regional Bureaus of Postal Services (including Okinawa Office of Posts and Telecommunications)
• All post offices handling the Re-

frigerated Parcel
(Reference)
Number of post offices handling the Refrigerated Parcel as of June 2001: 4,926
In the figure above, ordinary post offices: 1,263, special post offices: 3,663
iii) Registration date: January 26, 2001
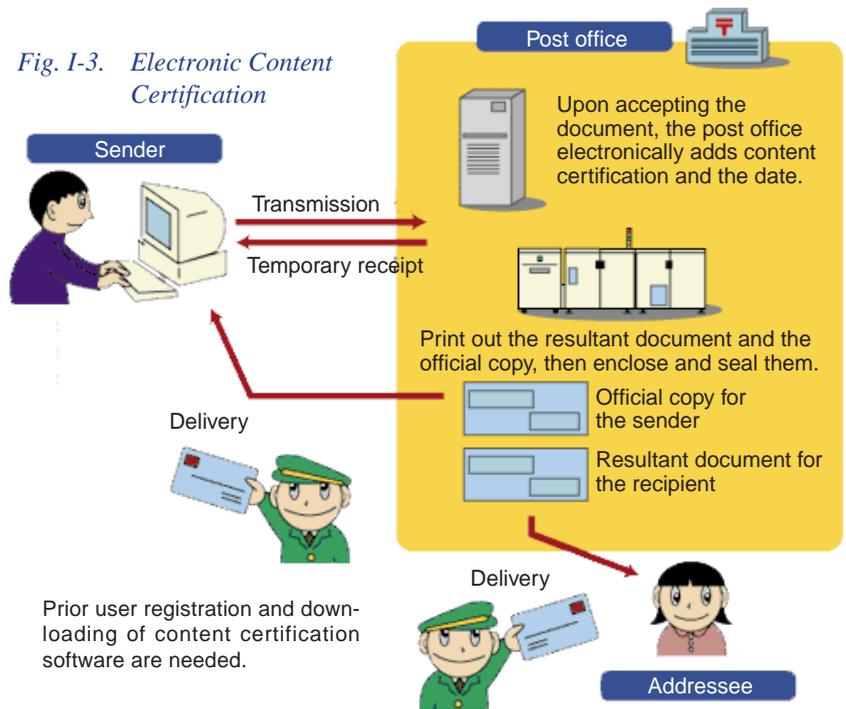
3. "Electronic Content Certification" Service Commenced

The "Electronic Content Certifica-

Fig. I-3. Electronic Content Certification

Sender

Post office

Transmission

Temporary receipt

Upon accepting the document, the post office electronically adds content certification and the date.

Print out the resultant document and the official copy, then enclose and seal them.

Official copy for the sender

Resultant document for the recipient

Delivery

Delivery

Addressee

Prior user registration and downloading of content certification software are needed.

tion" service was launched on February 1, 2001. This is a special scheme whereby a document prepared by a sender using a personal computer, and for which content certification is required, is accepted via the Internet. Content certification is processed electronically, and the resultant content document, as well as an official copy, are enclosed and sealed. The two documents are then delivered to the addressee and copy thereof to the sender, while simultaneously a second identical copy is electronically filed with the post office (see abbreviated diagram in **Fig. I-3**).

4. Outline of Mobile Radio System for Pickup of Mail Items in All Ordinance-designated Cities

Pickup of mail items is a service that is indispensable to increase demand for mail services. Effective use of an info-communications tool such as radio equipment plays an important role in offering quick and secure pickup of mail items.

The Postal Services Agency (PSA) deployed private radio systems (Note 1) in October 1997, in Tokyo 23-Cities and Osaka City; in October

Customer

Fig. I-2. Refrigerated Parcel

Customer

Collection

Delivery

Using refrigeration truck or refrigerator box (for collection and delivery)

Using refrigerator box (for collection and delivery)

Acceptance

Truck conveyance

Air freight (using refrigerator boxes for transportation)

Accepting post office

Delivery post office

At post office Refrigerated Parcels are stored in a refrigerator.

Fig. I-4. Digital MCA radio system

GPS satellite

GPS receiver
GPS antenna

Handset
(duplex system)

Radio communica-
tions control unit

Mobile manage-
ment station

Central pro-
cessing unit

AC power unit

Microphone
with a stand

Mobile station

Digital MCA
control station

Extended control unit

ity

When a mail carrier in a mail car does not operate the radio system, the collection post office can send a character message to the mail carrier.

With the introduction of digital MCA radio systems, PSA can offer efficient services such as quick response to requests from customers and information about collection time.

In addition, in post offices, PSA can collect mail items efficiently and effectively by sending the orders to the mail cars nearest the mail items.

Notes: 1. A radio system built, controlled, maintained and operated by a private user
2. MCA: Multi-Channel Access
3. GPS: Global Positioning System

1998 in Nagoya City; and installed digital MCA radio systems (Note 2) in May 1999, in Sapporo City, Sendai City, Yokohama City, Niigata City, Kanazawa City, Hiroshima City and Fukuoka City; in March 2000, in Kawasaki City, Chiba City, Tokyo 23-Cities (limited to Tokyo International Post Office), Kyoto City, Kobe City and Kitakyushu City. Mobile radio systems, private radio systems or digital MCA radio systems, were deployed in every ordinance-designated city. In addition, PSA has deployed a cellular phone systems in other cities.

The advantages of the digital MCA radio system are as follows:

1. Vehicle location management system utilizing GPS (Note 3)

At collection post offices with the digital MCA radio systems, PSA deploys the vehicle location management system at wide area collection post offices that collect mail items over borders between delivery areas. The vehicle location management system can indicate the position of mail cars on a map displayed realtime on a personal computer. By displaying both the locations of customers and mail cars on the map, managers can send indications by radio to the nearest mail car, making the rapid and ensured collection of mail items possible. Only PSA has introduced this vehicle location management system on a nationwide basis.

2. Connection with a public switched telephone network

Connecting to a public switched telephone network allows a mail car operator to call customers directly.

3. Message transmission functional-

II. Contribution to Development of Global Postal Services

1. Eleventh International Research and Study Course on Postal Services

The International Research and Study Course on Postal Services is aimed at young career-track officials of postal administrations in developing countries. The objectives of this course are to have these participants learn the good points of the Japanese postal services system while helping them to improve and develop postal services in their own countries.

The FY2000 course, with 12 participants from a dozen countries, was conducted under the theme of "Reform of postal services," for six weeks from September 29, 2000, in Tokyo. The participants attended lectures, took part in discussions and made observations at post offices and other facilities.

Some former participants now hold executive positions and are seen playing active roles.

2. Third Rapid Mail Service Course

This course is aimed at officials engaged in rapid mail service at postal administrations in developing countries. The purpose of the course is to put Japan's experience and expertise to their use upon problem-solving, and to strengthen and improve networks concerning the rapid mail service.

The course this time, with six participants from six countries, lectures, discussions and observations of postal facilities were carried out over a two-week period from October 23, 2000, in Tokyo and in Osaka.

3. Seminar on Postal Service Management

The objectives of the Seminar on Postal Service Management are to contribute to the improvement of postal services in participating countries by exchanging views over a variety of issues faced by each country's postal services, to deepen mutual understanding and to promote mutual cooperative relations among the participating countries.

The FY2000 seminar, with 12 participants from a dozen nations, was conducted in Tokyo under the themes of "Postal service management in Japan," "Building of the

low-cost and high-quality postal service network" and "Promotion of computerization and mechanization." The participants attended lectures, joined discussions and made observations at post offices and other facilities.

4. APPU Exchange Program of Officials

Based upon the personnel exchange programs of the Asian-Pacific Postal Union (APPU), high-ranking officials are being exchanged with five postal administrations in China, Indonesia, the Republic of Korea, Thailand and Vietnam every year for the advancement of research and personnel exchanges for development and improvement of postal services.

Postal Savings Service

I. Business Performance

The Postal Savings Service, administered by the Postal Services Agency (PSA), is a state-run, non-profit financial institution that offers savings, money orders, "giro" and other personal financial services to the public on an impartial basis. Besides playing a vital role in the day-to-day life of the populace, these services contribute to the economic stability of individuals and the nation as a whole.

The postal savings system, due to its close connection to people's daily lives, plays a central role in the area of personal deposits and savings. As of the end of March 2001, the balance of postal savings deposits was approximately 250 trillion yen, accounting for 18% of the total of Japanese households' financial assets. This share has remained constant for the last 10 years. Nearly 100% of postal savings depositors are individuals, representing a broad spectrum of people, regardless of ages, occupations, income levels and regions.

II. The management of Postal Savings Fund

1. Outline of the Postal Savings Fund

Along with the reform of the Fiscal Investment and Loan Program, the redepositing obligation of the Postal Savings Fund to the Trust Fund Bureau of the Ministry of Finance was abolished, and PSA began to manage the entire fund in April 2001. This will allow PSA to offer financial products and carry out fund management consistently as part of the postal savings service, which ensures yet more sound management of their services.

The basic investment policy of the Postal Savings Fund is to invest mainly to safe and secure bonds. Exceptional investment tool is a local government lending, which is executed from the viewpoint that the Postal Savings Fund, collected through post offices all over Japan, should benefit the regions from which the Fund is collected.

With regard to the management of the Postal Savings Fund, PSA will proceed with all necessary measures to protect the interests of account holders and maintain the stable and sound operation of the Postal Savings, making ample use of its long fund management experience.

As of April 2001, the Postal Savings Fund which had been deposited to the Fiscal Investment and Loan Funds (former Trust Fund Bureau) of the Ministry of Finance will be repaid to the Postal Savings at the maturity of the depositary term (seven years in principle). Thus, the Postal Savings Fund will be entirely put under PSA management in stages over the period of seven years.

2. State of the Fund to Cope with Financial Deregulation

By the end of FY2000, the balance of the Fund to Cope with Financial Deregulation, which is an autonomous investment fund, reached around 57 trillion yen, and is being managed for securities (government bonds, municipal bonds and corporate bonds, etc.), trust money and deposits, etc.

As for the asset allocation, the government bonds account for slightly over 40%, which are followed by municipal bonds, government

Table II-2-1. The Fund to Cope with Financial Deregulation (Unit: ¥ trillion)

	FY 1987	1988-1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
New funds invested	2.00	¥0.50 trillion added to amount of new funds invested in the previous fiscal year	5.40	4.75	5.00	5.00	5.00	5.50	9.50	3.70	-1.50
Funds invested	2.00	4.50-15.00	20.40	25.15	30.15	35.15	40.15	45.65	55.15	58.85	57.35

Table II-2-2. Assets of the Fund to Cope with Financial Deregulation According to Type of Instrument
(As of the end of FY2000)

Investment instrument	Amount (¥ billion)	Percentage
Government bonds	25,018.7	43.6
Municipal bonds	9,794.8	17.0
Government agency bonds	2,521.4	4.4
Corporate bonds	3,371.6	5.9
Foreign bonds	4,500.0	7.8
Trust money (designated moneys in trust)	10,540.1	18.3
Deposits in financial institutions, etc.	1,701.3	3.0
Total	(57,447.9)	(100)

agency bonds, etc.

In securities, the balance invested into foreign bonds was 4.5 trillion yen. Largest in foreign bonds was invested into U.S. bonds, accounting for 25.6% of the total, then into German bonds (15.7%), international organization bonds (13.1%), French bonds (11.3%), Canadian bonds (8.3%), Italian bonds (6.8%) and U.K. bonds (5.3%).

III. Expansion of International Services

1. Expansion of international remittance services

For international remittance services at post offices, remittances such as study expenses for children studying abroad or payment for personal imports can be made at approximately 20,000 post offices throughout Japan to 81 nations and 10 regions in Asia, Europe, the Americas and Africa (as of May 7, 2001), by simple procedures.

The remittance can be made to the address or to the postal giro account of the payee. For telegraphic remittance, money can be sent in two to four days. (The service content may vary by nation.)

The international postal giro service, or money transfer service between postal giro accounts, can be used for a fixed charge of 400 yen, regardless of the amount transferred.

From January 2001, besides the remittance to the postal giro accounts, handling of remittance to the bank account was started. Presently, remittance can be made to bank accounts in 12 foreign countries, including the U.S. and the U.K. The service charge is the same as for the remittance to the postal giro accounts.

In addition, the post office offers other services, such as the international remittance card service (which automatically prints addresses and names on the international remittance application and declaration form) and the pre-printing service of international transfer application.

2. Opening up the Postal Savings ATM network to foreign card users

On June 30, 2000, cash withdrawals with credit cards or ATM cards issued by foreign financial institutions, etc. became possible at post office ATMs.

This service is offered as the result of entrustment from domestic credit card companies having membership contracts with foreign financial institutions with the cash payment service for users of the cards issued abroad.

Previously, only several hundred ATMs in Japan could be used with cards issued abroad, since such cards have a magnetic stripe on the back (whereas cards issued in Japan have the stripe on the face), which prevented such cards from being used at most Japanese ATMs. Considering that visitors from foreign nations are increasing year on year and so is the demand for such a service from foreign credit card businesses, the (then) Ministry of Posts and Telecommunications decided to remodel Postal Savings ATMs at post offices to open up the Postal Savings ATM Network.

As a result, some 21,000 post office ATMs throughout Japan became available during FY2000.

In addition, these ATMs also feature English-language guidance so that the ATMs are accessible for visitors from abroad.

Presently available cards are: Credit cards issued by VISA International, MasterCard International, American Express, Diners Club and JCB; Debit cards issued by financial institutions that are members of VISA Electron or Maestro Network; ATM cards issued by financial institutions that are members of PLUS and CIRRUS networks. A sticker showing a list of these cards is placed near the available ATMs.
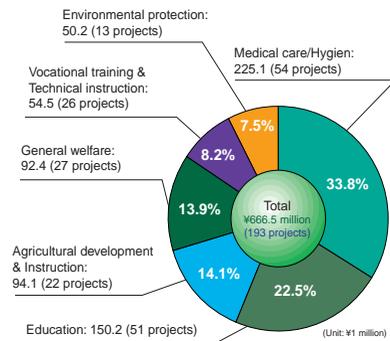
IV. Serving the International Community

1. Outline of the Postal Savings for International Voluntary Aid

In January 1991, Postal Savings introduced the Postal Savings for International Voluntary Aid (POSIVA) program with the aim of gathering grassroots support as a way of expanding overseas aid.

Participants in the POSIVA program donate a part of the after-tax

Fig. IV-1 Allocation of POSIVA funds by field in FY2001

Environmental protection:
50.2 (13 projects)

Medical care/Hygien:
225.1 (54 projects)

Vocational training &
Technical instruction:
54.5 (26 projects)

General welfare:
92.4 (27 projects)

Agricultural development
& Instruction:
94.1 (22 projects)

Education: 150.2 (51 projects)

Total
¥666.5 million
(193 projects)

7.5%
8.2%
13.9%
14.1%
22.5%
33.8%

(Unit: ¥1 million)

interest earned on their Ordinary Savings accounts, which is then channeled through non-governmental organizations (NGOs) into projects designed to improve the welfare of people in developing countries. The cumulative number of accounts in this program as of March 31, 2001 reached 26.08 million.

Note: Depositors can donate between 20% and 100% of the interest earned in increments of 10%.

2. Postal Financial Services Development Forum (Fourth Meeting of the World Postal Savings Institutions) (See Photo IV-2)

At the Universal Postal Union (UPU) Congress in Beijing (UPU Beijing Conference) held in August 1999, the "Beijing Postal Strategy," which includes the strategy for the "promotion of introduction and development of postal financial services" in the UPU member countries, was adopted. In the Congress, the Postal Savings Bureau of MPT (presently, the Postal Services Policy and Planning Bureau, Ministry of Public Management, Home Affairs, Posts and Telecommunications) chaired Committee 5, which was in charge of postal financial services including the postal savings. The Bureau, also appointed as the chair of the Postal Financial Services Project Team to formulate and promote the Action Plan for the development strategy,

Photo IV-2

will play a leading role in the further development of postal financial services.

Under these circumstances, with the purpose of collecting the latest information from the postal savings institutions and exchanging views with them, and helping introduce and improve the postal savings services overseas, the meeting of the postal savings institutions of the world, hitherto held in Tokyo, came to be held overseas in March 2001 for the first time in its history. By inviting the representatives from 48 administrations in 42 countries to Bern in Switzerland, the meeting of the "Postal Financial Services Development Forum" was held under the joint auspices of UPU. At this Forum, presentations were given on the trend of the financial industry toward the information society, the role of postal financial services, and various challenges of postal savings institutions in developing countries and their needs for improvement. Also, there were discussions on the specific actions of the individual countries toward the improvement of postal savings services that meet

the needs of the information society.

3. Postal Savings International Workshop (Photo IV-3)

Japan's Postal Savings has been holding an annual Postal Savings International Workshop since FY1992 aimed at contributing to the development of savings and remittance services of postal administrations and savings banks in developing countries and to the promotion of international cooperation as a savings institution sharing the same societal mission as other savings institutions.

The ninth workshop in FY2000 was held for 12 days from October 16 through 27 in 2000. A total of 12 high-ranking officials from 12 countries including Nepal and the Philippines, which are considering the improvement of a postal savings system, attended this workshop.

4. Executives' International Seminar on Postal Savings Services (Photo IV-4)

Japan's Postal Savings, as part of its technical cooperation for developing countries, has been holding the

Photo IV-3

Photo IV-4

Executives' International Seminar on Postal Savings Services since FY1984, for high-ranking officials from postal administrations and state-run savings institutions in developing countries. This annual seminar is held in cooperation with the Ministry of Foreign Affairs and the Japan International Cooperation Agency (JICA), aimed at contributing to the development of savings and remittance services in participating countries, through presentations on the Japanese postal savings system and the current status of the system as well as exchange of information and opinions among participants.

The FY2000 seminar, the 17th of its kind, was held from March 5 through 16, 2001. A total of 10 officials from 10 countries, including Bhutan, Brazil, Cambodia, Ethiopia, Myanmar, Palestine and Thailand which are considering the introduction of postal savings services, attended the seminar.

5. Acceptance of individual trainees and dispatch of experts

At the request of postal administrations and savings banks primarily in developing countries and also international organizations and the Japan International Cooperation Agency (JICA), the Postal Savings Department has been accepting trainees and dispatching experts from/to these organizations aimed at introducing and developing postal savings in developing countries as well as further promotion of Japan's contribution to the international community.

In FY2000, the Postal Savings Department accepted postal administration officials from China, Vietnam and some African countries to help them develop their postal savings system or to improve their international remittance services. Also, at the request of the Universal Postal Union (UPU) and JICA, the Postal Savings Department has dispatched experts to Thailand for introducing a postal savings system, to Kazakhstan and Vietnam for improving their postal savings services, and to Cambodia for introducing the international remittance services.

Since August 1998, Japan's Postal Savings has been dispatching an expert to the International Bureau of UPU in order to support the introduction of international remittance services into countries in the Asia-Pacific region where this system has yet to be introduced.

6. The World Savings Banks Institute (WSBI) Postal Savings Banks Forum

There are many savings institutions including postal savings for individuals worldwide. The World Savings Banks Institute (WSBI) was established as an association for these savings institutions. WSBI has been supporting activities of savings banks around the world by promoting studies on a wide variety of issues regarding savings and savings banks, such as promotion of savings and protection of account holders. The Postal Services Policy and Planning Bureau and PSA are playing an active role in WSBI.

In October 2000, the Fourth Postal Savings Banks Forum was held in Brussels, Belgium, aimed at promoting information exchange and strengthening ties among postal savings institutions which make up approximately one-third of all WSBI member institutions. At the request of WSBI, the (then) Postal Savings Bureau of MPT agreed to chair the forum, following the first through third forums. During the forum, the Postal Savings Bureau recapitulated the need for: i) establishment of an IT readiness which is an extremely important factor for improving the postal savings services; ii) further promotion of international cooperation in the field of postal savings; and iii) further effort for sharing know-how and information.

Note: WSBI has 107 member institutions from 87 countries as of May 2001.

Postal Life Insurance Service

I.   Postal Life Insurance Service

1. Features of the Postal Life Insurance Service (Kampo)

The Postal Life Insurance Service (Kampo) is a state-run service that aims to provide people living in Japan with easily accessible life insurance and annuities at the lowest possible premiums, realized as a result of efficient operations. It is intended to help stabilize the economic livelihood of people and secure their welfare.

A non-profit, government-run service, Kampo has the following features:

- Applicants are not required to undergo medical examination.
- Applicants are not limited by occupation.
- Services are conveniently offered at post offices throughout Japan.
- There are limits on the insured amounts of both insurance and annuities that each policyholder is eligible to apply for.

Since its inception in 1916, these features have made Kampo very popular with people in Japan, due to sales promotion at post offices nationwide.

However, the socioeconomic environment in Japan is changing dramatically, with the rapid aging of the population and a serious decline in the birth rate, progress in computerization and services, as well as deregulation and globalization in the financial sector. Along with these changes, people's need for life insurance is expected to become diverse.

MPHPT is thus striving to develop and put into place new services every year to respond to the new needs for Kampo services.

As of March 31, 2001, the total amount of Kampo insurance in force reached some 86.76 million (of which that of annuity policies are about 7.14 million), for a total insured amount of 205,762.4 billion yen for insurance and 2,327.5 billion yen for annuities, respectively. The balance of Kampo Fund, a reserve made up of premiums paid by policyholders, was 120.8189 trillion yen.

2. Types of Kampo Policy

Kampo has various types of insurance policies that are tailored to meet every specific need in the people's lifecycles, such as for welfare of a family befallen with misfortune, for welfare in old age, for education of a child, for savings toward marriage, and so forth.

As of April 2001, there are 11 types of Kampo (Whole Life Insurance, Term Insurance, Endowment Insurance, Family Insurance, Asset Accumulation Savings Insurance, Whole Life Annuity, Term Annuity, Husband-and-Wife Annuity, Whole Life Insurance with Whole Life Annuity, Endowment Insurance with Term Annuity and Family Insurance with Husband-and-Wife Annuity), divided into 27 policies by purpose:

- Whole Life Insurance: Ordinary Whole Life Insurance, Special Whole Life Insurance, Whole Life Insurance with Nursing Subsidy
- Term Insurance: Ordinary Term Insurance, Workplace Insurance
- Endowment Insurance: Ordinary Endowment Insurance, Endowment Insurance with Living Benefit, Special Endowment Insurance, Designated Endowment Insurance, Educational Endowment Insurance, Adult Insurance, Asset Accumulation Annuity Endowment Insurance
- Family Insurance: Husband-and-Wife Insurance
- Asset Accumulation Savings Insurance: Asset Accumulation Deposit Savings Insurance, Asset

Accumulation House Savings Insurance
- Whole Life Annuity: Immediate Whole Life Annuity, Deferred Whole Life Annuity, Whole Life Annuity with Additional Nursing Annuity, Whole Life Annuity, Asset Accumulation Whole Life Annuity
- Term Annuity: Immediate Term Annuity, Deferred Term Annuity
- Husband-and-Wife Annuity: Immediate Husband-and-Wife Annuity, Deferred Husband-and-Wife Annuity, Special Husband-and-Wife Annuity
- Whole Life Insurance with Whole Life Annuity: Whole Life Insurance with Whole Life Annuity
- Endowment Insurance with Term Annuity: Educational Endowment Insurance with Scholarship Annuity
- Family Insurance with Husband-and-Wife Annuity: Husband-and-Wife Insurance with Husband-and-Wife Annuity

Riders are available on request. Kampo has seven riders covering hospitalization resulting from illness or accident, surgery, hospital visits, convalescence or accidental death. The Nursing Rider provides coverage for the care of the bedridden.
- Casualty Rider
- Nursing Rider
- Accident Hospitalization Rider
- Illness Hospitalization Rider
- Illness and Accident Hospitalization Rider
- Illness Hospitalization Rider with Health Benefit
- Illness and Accident Hospitalization Rider with Health Benefit

Note: Policyholders may add up to three riders to their basic policy.

II. Kampo Funds

1. What are Kampo Funds?

Premiums paid by policyholders are in part used to cover insurance and annuity payments and necessary operating expenses for the fiscal year, but most of the premiums are held in reserve for future insurance and annuity claims. This reserve comprises the Kampo Funds.

Because fund management in life insurance services is generally considered to be the core operation along with the acquisition of new contracts and the maintenance of existing policies, Kampo Funds, unlike other government funds, have been managed and invested directly by MPHPT since inception.

Kampo Funds are the funds entrusted by policyholders as a result of their voluntary subscription to insurance policies. Thus, the Funds are shared assets of all policyholders to be apportioned for future insurance claims. At the same time, the Funds are characterized as a kind of public fund collected through the state-run insurance service.

Kampo Funds are therefore managed and invested in secure and profitable instruments for the benefit of policyholders and for the public interest. The Ministry chooses instruments that are closely related to the lives of policyholders, taking into consideration the fact that the Kampo Funds are a pool of premiums paid by policyholders throughout the country.

2. State of Kampo Funds Operation

The instruments of Kampo Funds include securities (government bonds, municipal bonds, corporate bonds, etc.), loans (to local governments, subscribers, etc.), money entrusted for operations, and deposits.

As of the end of FY2000, Funds investments reached 120,818.9 billion yen. About 50% was invested in securities including Japanese government bonds, municipal bonds, corporate bonds and foreign corporate bonds, and some 30% was loaned to the government, public corporations and subscribers, and about 20% was entrusted for operations, deposited into bank accounts and deposited with the Trust Fund Bureau (currently, Financing Funds).

A total of 3,837.9 billion yen was invested in foreign bonds, with U.S. Treasury bonds accounting for the largest share (33.2%), followed by German bonds (15.9%), Canadian bonds (7.2%), French bonds (7.0%) and Italian bonds (3.6%).

III. Serving the International Community

1. International Workshop for Government-related Institutions

The fifth Postal Life Insurance International Workshop for Government-related Institutions was held in Tokyo from February 27 to March 7, 2001.

The Kampo workshop, which aims at contributing to the inception and development of public-sector life insurance services in participating countries, has been held annually since 1996 in response to the requests for the provision of training assistance made by foreign public institutions that are considering introduction of life insurance services for the purposes of providing a stable livelihood for their citizenry and developing social infrastructure.

The 2001 Workshop had five participants from five institutions in five different countries: Malaysia, Nepal, Romania, Thailand and Vietnam.

It proceeded as follows:

The International Workshop:

Opening day:	Lectures outlining the Kampo services and organization
Second day:	Technical visit to a post office
Third day:	Lecture on the Kampo system and products
Fourth day:	Lecture on the operational flow of Kampo services and sales systems
Fifth day:	Lecture on actuarial basics
Sixth day:	Lecture on the Kampo accounting system
Seventh day:	Lecture on fund management

Photo III-1

International Policy and Cooperation

I.   Topics in International Relations

1. The APT Asia-Pacific Summit on the Information Society

In November 2000, the APT Asia-Pacific Summit on the Information Society (Chair: Mr. Kozo HIRABAYASHI, then Minister of Posts and Telecommunications of Japan) was held, with attendance of 20 countries' ministers for information and communications as well as key people in international organizations, industries and academic. For the purpose of creating an information society, which respects and reflects the diversity of the Asia-Pacific region, the Ministers adopted the "Tokyo Declaration" and the "Action Plan."

The Ministers declared in the "Tokyo Declaration" that they would "do their best in both domestic efforts and through international cooperation, to enable people in the Asia-Pacific region have access to the Internet by the year 2005 to the extent possible, including access from public facilities such as schools, post offices." In the "Action Plan" for realizing the Declaration, specific plans were adopted such as:
1) Bridging the digital divide
2) Developing the information and communications infrastructure
3) Essential applications for the information society
4) Human resources development and enhancement of information and communications technology (ICT) literacy

In October 2001, the APT Meeting on "Asia-Pacific Initiative for the Information Society (AIIS)" will be held to review the implementation status of the "Tokyo Declaration" and "Action Plan" in each member country. The meeting will further discuss and identify necessary actions for its implementation.

2. The Japan-China Third-Generation (3G) Mobile Communications Workshop

MPHPT sponsored the Japan-China Third-Generation (3G) Mobile Communications Workshop in March 2001, for the purpose of further strengthening Japan-China collaboration and cooperation in the info-communications field. From China, 12 participants, including executive staff charged with the 3G mobile communications at the Chinese Ministry of Information Industry, Beijing University of Posts and Telecommunications, and China Mobile Communications Corp.,

[Column] *Japan's ODA Contributions from FY 1996 to FY 2000*
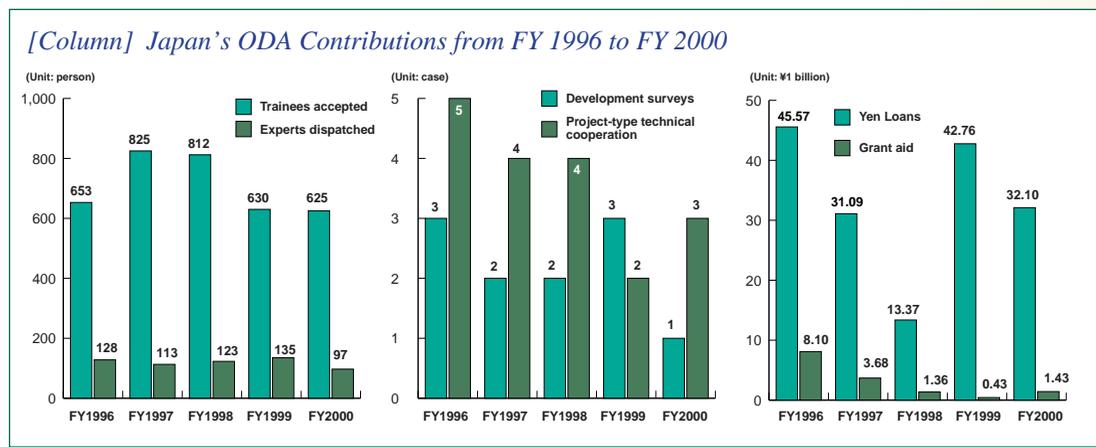
were invited. At the Workshop, relevant people held a roundtable; government agencies in charge of mobile communications of the two nations exchanged opinions; and Chinese participants and Japanese standardization organizations and corporations exchanged opinions.

At the roundtable, opinions were exchanged on the current status of mobile communications in Japan and China, and on measures for introducing the 3G, such as R&D and creation of regulatory frameworks.

China is now studying licensing procedures for introducing the 3G. At the opinion exchange with MPHPT and standardization organizations, an intensive Q&A session was held on procedures and process from business permission to radio station licensing, and results of private-public collaborations in standardization.

3. Third World Telecommunications Policy Forum (WTPF)

1) Introduction

From March 7 through 9, 2001, the "Third World Telecommunication Policy Forum (WTPF): IP Telephony" was held in Geneva, Switzerland.

The WTPF is aimed at high-level opinion exchange and internationally shared understanding on regulation and policy issues, in line with rapid environmental changes in telecommunications among ITU member states and sector members, which was established at Japan's proposal during the ITU's October 1994 Plenipotentiary Conference in Kyoto. (In the past the WTPF has been held twice: in October 1996 on "Global Mobile Personal Communications by Satellite (GMPCS)" and in March 1998 on "Trade in Telecommunications Services.")

This time, 755 people from 121 governments and 99 private members, etc., participated in the Forum, including 17 Japanese participants from the government (Representative: Mr. Koichi UCHIDA, Director-General, International Affairs Department, Telecommunications Bureau, MPHPT) and sector members,

for discussing worldwide introduction and penetration of IP telephony.

2) Background to the Forum

As regards "IP telephony," the topic of the Forum, various services are already being provided in Japan. Also, it is highly considered to be the key to promoting global development of the IP network, the Internet, and enhanced use of diversified high-level services provided on IP platforms.

On the other hand, in developing countries, IP telephony is often forbidden or restricted from the viewpoint of protecting universal services that have been provided by existing telecommunications carriers, despite those countries' high expectation concerning IT technology. Under such circumstances, the ITU Council decided upon the topic in July 2000, with support from many developing countries.

In preparation for the Forum, a draft of Secretary-General's Report, the input to the Forum, was presented to members, and informal meetings of specialists were held in November 2000 and January 2001 for deliberations on the Secretary-General's report and creating a draft of the Opinion, which is the output of the Forum.

In the Forum, "IP telephony" is defined as a generic term of voice transmission using IP technology, and it is divided into the type through IP networks such as closed networks or those secured with certain bandwidth and the type through the Internet, the latter of which is called "Internet telephony."

3) Secretary-General's Report

The Secretary-General's report arranges and analyzes global situation such as following items, as well as extracts and studies policy issues.

i) Definition of IP telephony, etc.

ii) Technical perspectives (service quality, numbering policy, interconnectivity, etc.)

iii) Economic perspectives (cost-effectiveness of IP telephony, developing countries' concern about the decrease of accounting rate, mid/long-term economic effects of IP network/service's progress)

iv) Regulatory perspectives (regula-

tions in developing countries, proposing regulatory frameworks in light of functions as telephone service, etc.)

v) Human resources development (ref. ITU website)

4) Deliberation

At the Forum, based upon the Secretary-General's report, active deliberations were made toward global introduction and penetration of IP telephony, and a common recognition among industrialized and developing countries was realized that the progress of IP network/service is indispensable for global economic activities. On the final day, the Opinion was adopted as the outcome.

The Opinion recommends each nation review regulation policies based on the benefits of pro-competitive liberalization policies, and on environment creation for infrastructure building in developing countries such as technology transfer and human resources development as well as encouragement of the promotion of international cooperation and support by collaboration of ITU, member states and concerning organizations.

The outline of the Opinions is as follows:

Opinion A: General implications of IP telephony

- The progress of IP network/service is the driving force of global economic activities
- Significance of market competition in IP-based telecommunications services
- IP telephony's role as opportunities for high-level network and expanded use of high-level info-communications services
- Regulatory frameworks and policies concerning IP telephony reviewed based upon the benefits of pro-competitive liberalization policies

Opinion B: Actions to assist in adapting to the changes in the telecommunications environment due to the emergence of IP telephony

- Conducting case studies for promoting understanding on potential benefits of applications

- Conducting research on cost-benefit analyses on IP platforms
- Support on creation of investment environment and fundraising towards infrastructure development of developing countries
- Organizing regional workshops
  Opinion C: Actions to assist in meeting the human resources development challenges presented by IP technology
- Enhancing ITU's function as the center for sharing of knowledge and views of global trends in IP-related technologies, infrastructure development, service, regulatory frameworks and policies
- Assisting developing Member States' creation of general human resources development programs
- Enhancing cooperation/collaboration with regional telecommunications organizations, educational institutions, NGOs and other related institutions
- Enhancement of distance training and educational function
  Opinion D: Interoperability between IP telephony and circuit-switched networks
- Conducting/continuing research on interconnectivity and interoperability with existing circuit-switched networks (including technical compatibility, service quality, etc.)
- Identifying the cost elements of international IP interconnectivity with respect to the introduction of IP telephony

At the deliberation, some developing states raised opposition to the expressions in the Secretariat's draft that sound as if forcing adoption of pro-competitive liberalization policies. Some argued on ensuring interconnectivity between IP telephony and public circuit switched networks as well as identification of cost elements of international IP interconnectivity with respect to the introduction of IP telephony. These opinions are added to the Secretariat's draft in Opinion D, in order to build a consensus.

Japan insisted on the ITU's functional enhancement as a knowledge-sharing center and the need for further adjustment to technological challenges toward the progress of IP network/service, from the perspective that ITU should take the leading role in international cooperation and support, for the purpose of promoting introduction/diffusion (including developing countries) worldwide. Japan's assertion was included in the Opinions.

v) Conclusion

The Forum has significance for future telephone and universal services and for the global progress of IP network/service, in that it created a consensus for promoting the introduction/diffusion of IP telephony in the world, which includes developing countries, under ITU's leadership.

ITU is expected to commence the activities written into the Opinions, and Japan will actively participate in and contribute thereto.

4. ITU TELECOM ASIA2000

ITU TELECOM ASIA 2000, the fifth regional telecommunications exhibition and forum for the Asia-Pacific region, was held from December 4 through 9, 2000, in Hong Kong, China.

In the exhibition, about 500 exhibitors from 29 countries including telecommunications carriers and manufacturers came together. Ten exhibitors from Japan presented such state-of-the-art technologies as IMT-2000 (the third-generation mobile systems) and 1.76-Tbps (10Gbps X 176 channels using WDM technology) ultrahigh-speed large-capacity Internet technology.

At the Forum, officials from information and communications administrations, executives from telecommunications carriers and IT equipment manufacturers, including ITU Secretary-General Yoshio UTSUMi, participated in sessions and presented their views and exchanged opinions on IT policy and the latest technological trends.

On December 5, Mr. Kouji HAMADA, (then) Vice-Minister for International Affairs, MPHPT, participated in a session, "ASIAN MARKET ACCESS: Gateway to Opportunities" under "Forum: Policy & Development Summit," as a panelist.

At the session, he gave an address entitled "Government Initiatives for Facilitating Universal Access," stressing the significance of "Target for Internet Access 'Phase One'" that was concluded at the APT Summit Tokyo held in November 2000.

The target states, "We Ministers declare that we will do our best, in both domestic efforts and through international cooperation, to enable people in the Asia-Pacific region to have access to the Internet by the year 2005 to the largest extent possible, including access from public facilities such as schools and post offices."

Mr. HAMADA showed the following three recognitions to be shared toward the realization of IT Universal Access.

1) There must be awareness that IT is an opportunity
2) There must be a clear and "as-soon-as-possible" time frame about the introduction of IT
3) There must be common awareness of core prerequisites in utilizing IT, such as developing IT infrastructure

He indicated the examples of "clear and 'as-soon-as-possible' time frame" setting as best practices, citing the "Digital 21 - IT Strategy" Vision (1998) of Hong Kong Special Administrative Region (SAR), the "e-Europe 2002: An Information Society for All: Plan of Action" (adopted in June 2000) of EU and Japan's "IT Basic Strategy" which was adopted by the IT Strategy Council.

As regards commitment, "Japan's comprehensive cooperation package to address the international digital divide" (US$15 billion over five years), which was declared as measures for bridging the international digital divide by (then) Prime Minister Yoshiro MORI prior to the Kyushu-Okinawa Summit in July 2000, Mr. HAMADA added that the Japanese government will play a due role that takes into consideration diversities and various needs particular to each developing country.

5. Participation in international conferences (World Economic Forum Annual Meeting: Davos Conference, etc.)

MPHPT has actively participated in various international conferences to make the Japanese info-communications policies well understood to foreign countries, and to gather information helpful for implementing the Japanese measures through opinion exchanges with key persons in governments, industries and academia abroad.

From January 14 to 17, 2001, Mr. Koichi UCHIDA, Director-General, International Affairs Department, Telecommunications Bureau, MPHPT, participated in the Annual Conference of the Pacific Telecommunications Council (PTC), held in Hawaii. Mr. Genichiro SATA, then Senior State Secretary for Posts and Telecommunications, participated in the GBDe held in Miami, Florida, from September 25 to 26, 2000. At the opening of roundtables, Mr. SATA gave a keynote address "An Asian Perspective on G8 Summit and Information Technology."

From the end of January to the beginning of February every year, Davos conference has been held in Davos, Switzerland, as an annual general meeting of an international nonprofit organization, WEF (World Economic Forum). In the meeting, numerous participants got together, including executives of private firms and high-ranking officials of governments from various countries and international organizations.

In the 31st Meeting in 2001, (then) Japanese Prime Minister Yoshiro MORI participated and gave a speech on Japanese economy on January 27. Prime Minister MORI put emphasis on the rebirth from Japan's "lost decade," socioeconomic restructuring and Japan's contribution to global challenges.

From MPHPT, Mr. Kenji KOSAKA, Senior Vice-Minister for Public Management, Home Affairs, Posts and Telecommunications, participated in the meeting, delivering a speech at a session concerning information technology (IT) and education on January 27 and joined a panel discussion entitled "What is Technology Doing to Education." In his presentation at the panel discussion, Senior Vice-Minister KOSAKA pointed out the effectiveness of how the Internet and other technologies improve education from the viewpoints of teachers and students, presented Japan's efforts for bridging the digital divide such as for people with disabilities, and showed further challenges. In addition, at the opinion exchange, Senior Vice-Minister KOSAKA mentioned the development of interface not using keyboard.

6. Genoa Summit

From July 20 through 22, 2001, the G8 Summit Meeting was held in Genoa, Italy. From MPHPT, Mr. Kaoru KANAZAWA, Vice-Minister for Policy Coordination (International Affairs and Telecommunications Bureau), accompanied Prime Minister Junichiro KOIZUMI.

At the G8 Summit Meeting, utilization of IT in developing countries was discussed, and on July 22, the G8 Communiqué summarizing Genoa Summit was adopted. In the Communiqué, the outline of parts relating to info-communications is as follows:

- Debt Relief and Beyond
1) Expanding the use of info-communications technology (IT) to train teachers in best practices and strengthen education strategies
2) Encouraging the private sector to examine new opportunities for investment in infrastructure, IT and educational materials
- Digital Opportunities
1) Referring to the potential of IT for helping developing countries
2) Endorsing the report of the Digital Opportunity Task Force (dot.force) and its Genoa Plan of Action* and encouraging promotion of continuous cooperation
3) Reviewing the implementation of the Genoa Plan of Action at the next Summit
4) Encouraging development of an Action Plan on e-Government
 * The dot.force Report and its Genoa Plan of Action refer to the report compiled by the Digital Opportunity Task Force (dot.force) which was established based on the Okinawa Charter on Global Information Society (IT Charter) adopted at the Kyushu-Okinawa Summit in 2000, and the action plan proposed in the Report for bridging the international digital divide.

MPHPT will, based on the Genoa Plan of Action, make aggressive efforts for realizing the "digital opportunity society" in which everyone can utilize IT.

7. Eighth Congress of the Asian-Pacific Postal Union (APPU)

The Eighth Congress of the Asian-Pacific Postal Union (APPU) was held in Tehran, Iran, from September 12 through 18, 2000, with 110 participants consisting of delegates from 23 of the 28 APPU member-countries and observers, etc.

i) Restructuring of the APPU

To manage efficiently the activities of the Union, it was decided that the APPU Central Office (located in Manila) and the Asian-Pacific Postal Training Centre (located in Bangkok) will be merged to form the APPU Bureau.

In connection with it, the APPU Constitution and the General Regulations were amended, and they were adopted as the Additional Protocols, respectively.

ii) Establishment of the Asia-Pacific Post Cooperative

The Asia-Pacific Post Cooperative was formally established for the purpose of promoting improvement of postal services in the Asia-Pacific region.

iii) Establishment of a standing committee on Security of the APPU

For the purpose of strengthening postal security in the region as covered by the Union, the "Standing Committee on Security of the APPU" was established. Japan was selected to chair the committee in their future activities.

iv) Effective date of the Additional Protocols

The effective date of the Additional Protocols as adopted and signed up in this Congress is July 1,

2002.

v) Holding of the next Congress

The next (ninth) APPU Congress will be held in the Republic of Korea in 2005.

II. Bilateral Meetings

1. Regular bilateral consultations

: venue is Japan.

FY	International Economic Affairs Div.							International Cooperation Div.				
	US	Canada	EU	UK	France	Germany	Italy	Malaysia	China	Korea	Australia	Mexico
1982				1								
1983				2								
1984	1											
1985		1		3								
1986	2	2		4								
1987		3	1									
1988	3		2	5								
1989		4		6						1		
1990		5	3	7						2		
1991	4	6	4	8	1	1				3	1	
1992		7	5	9	2	3	2	1		4	2	
1993	5	8		10	3			2	1	5	3	1
1994			6	11	4	4		3	2	6	4	
1995		9	7	12					3			2
1996			8	13	5				4	7	5	
1997			9	14		5		4	5	8		
1998			10	15	6							3
1999		10	11	16		6			6	9		
2000			12			7	1	5				
2001				17						10		

III. Bridging the Digital Divide

1. Opening "Do Site"

In the report compiled by the Digital Opportunity Task Force (dot.force) which was established based on the Okinawa Charter on Global Information Society (IT Charter) adopted at the Kyushu-Okinawa Summit Meeting in 2000, an action plan was proposed for bridging the international digital divide (Genoa Plan of Action). At the Genoa Summit Meeting held in July 2001, the Dot Force Report and the Genoa Plan of Action were endorsed by leaders of G8.

The Genoa Plan of Action includes an "establishment of an international e-development resource network," which networks developing countries' specialized knowledge on regulations and strategies for supporting creation of national e-strategies of the countries. At execution of the Plan of Action, various entities' vital participation is expected. As such participation, MPHPT has opened on a trial basis the Digital Opportunity Site (Do Site) **(http://www.dosite.jp/e/index.html)** in August 2001.

The Do Site has two functions for digital opportunities to be used internationally: the first function is to introduce Japan's and other countries' policies and initiatives for ensuring international digital opportunities, and the second function is that viewers post questions/answers on policies/projects concerning international digital opportunities as well as exchange information and resources, etc.

Specifically, the site is composed of following five items. 1) through 4) are for the first function and 5) is for the second.

1) For ensuring international digital opportunities
2) Japan's policies/projects for bridging digital divide
3) Foreign countries' policies/projects
4) Policies/projects of international organizations, etc.
5) Communication area (English only)

MPHPT will engage in enhancement of system and content, etc. of the site, in order that the Do Site be more meaningful for its purpose.

2. Measures for bridging the digital divide

On July 4, 2000, (then) Prime Minister Yoshiro Mori announced the "Comprehensive Cooperation Plan for International Digital Divide Problem" (hereinafter referred to as "Comprehensive Cooperation Plan"), a plan of about 15 billion dollar in coming five years.

At the Kyushu-Okinawa Summit Meeting held July 21 through 23, 2000, IT was discussed as one of the major topics. As an outcome of the summit meeting, the "Okinawa Charter on Global Information Society," or the IT Charter, was compiled.

In the "Basic Law on the Formation of an Advanced Information and Telecommunications Network Society" (IT Basic Law) enacted on November 29, 2000, international cooperation and contributions are written as a basic principle concerning creating policy measures, and in the "e-Japan Strategy," which was announced on January 22, 2001, and the "e-Japan Priority Policy Program" decided on March 28, 2001, international contribution and international cooperation for closing the global digital divide are referred to.

MPHPT, as the administration in charge of info-communications, will contribute to Japan's further devel-

opment of IT through diffusion of IT in developing countries. In addition, the ministry, based upon the recognition that IT diffusion in the Asia-Pacific region is significant in encouraging Japan's sustainable growth, will promote, in line with the spirit of the IT Charter, realization of the comprehensive cooperation plan aimed at narrowing the international digital divide.

IV. Participation in International Organizations

1. World Trade Organization (WTO)

Upon the enforcement of the World Trade Organization (WTO) Agreement on Trade in Basic Telecommunication Services in February 1998, Japan abolished all foreign capital investment restrictions in the Japanese telecommunications sector, except for Nippon Telegraph and Telephone Corp. As a result, many foreign businesses including carriers have entered into the Japanese market, pushing the number of Type I telecommunications carriers partially or wholly owned by them to 47 (as of the end of July 2001). Globalization in the Japanese telecommunications sector is also in rapid progress, as tie-ups between foreign and Japanese carriers and acquisitions of Japanese carriers by foreign carriers have been carried out. The Japanese telecommunications market has thus become one of the most open markets in the world.

To promote further liberalization of trade in services, MPHPT has been actively participating in the WTO services trade negotiations, resumed in 2000. In addition, MPHPT has been actively participating in discussions concerning electronic commerce, which has the great potential of expanding world trade dramatically.

2. OECD

The Organization for Economic Co-operation and Development (OECD) is an international organization, comprising 30 highly industrialized member countries, which bases its principles on the market economy and liberalism. The OECD's chief objectives are to prompt economic growth, to extend support to developing countries and to expand multilateral free trade.

In the info-communications sector, where MPT has been most active, studies on the impact of the info-communications infrastructure on economy and society at large are underway. The Committee for Information, Computer and Communications Policy (ICCP) of the OECD is the main promoter of these studies.

With the ICCP playing the main role, the activities of the OECD on electronic commerce have been vitalized. Examples include the OECD Ministerial Conference convened in Ottawa, Canada, in October 1998, under the theme "A Borderless World Realizing the Potential of Global Electronic Commerce," and the "Paris Forum" on electronic commerce held in France in October 1999. MPT is actively participating in these activities, as demonstrated by the attendance of Ms. Seiko NODA, (then) Minister of Posts and Telecommunications, at the conference of 1998.

ICCP's wide-ranging activities in recent years also include the following:

i) Initiatives on electronic commerce concerning privacy protection, electronic authentication, and so on
ii) Studies concerning local loops in telecommunications markets
iii) Defining terminology and data gathering for electronic commerce for statistical purposes
iv) Issuing biennially the "OECD Communications Outlook," which details progress made in telecommunications in OECD member countries
v) Issuing biennially the "Information Technology Outlook," which details measures taken for technological developments in telecommunications in member countries

MPT has also been actively making contributions to activities led by OECD committees other than ICCP. Those activities include:

i) Research and study on the effects of information and communications technologies (ICT) on economic growth
ii) Support for regulatory system reforms aimed at sustainable economic growth while maintaining the social cohesion
iii) Assessment of economic conditions in each member country and compilation of reports by each country on its findings

3. APEC

The Asia-Pacific Economic Cooperation (APEC) consists of 21 economies in the Asia-Pacific region, and has as its objectives liberalization and facilitation of trade and investment in the region and the strengthening of economic and technical cooperation among member economies. APEC has been vigorously conducting a number of activities in the telecommunications sector through the Ministerial Meetings on Telecommunications and Information Industry (TELMINs) and tasks undertaken by the Telecommunications Working Group (TEL).

At the first Ministerial Meeting on Telecommunications and Information Industry (TELMIN 1) held in May 1995 in the Republic of Korea, ministers agreed to promote the development of the Asia-Pacific Information Infrastructure (APII) as the main goal. They agreed upon five objectives and 10 core principles for the APII, as well as an Action Plan, which called for member economies' cooperation in realizing this goal.

TELMIN 2 was convened in September 1996 in Australia. Ministers reached a consensus that APII had developed from the conceptual stage to the implementation stage. They then agreed upon specific initiatives for realizing the APII through the collaborative efforts of the member

economies in promoting further co-operation and deregulation.

TELMIN 3 was held in June 1998 in Singapore. Ministers adopted the Mutual Recognition Arrangement (MRA) on Conformity Assessment for Telecommunications Equipment and approved the "Reference Framework for Action: Electronic Commerce," as a guideline. Ministers also agreed that further liberalization in the region, in addition to the development of the APII, should be promoted for the creation of the Asia-Pacific Information Society (APIS).

In May 2000, TELMIN 4 was held in Cancun, Mexico. The main theme of the fourth ministerial meeting was "Fusion," reflecting the worldwide diffusion of the Internet and its advancement. The meeting adopted the "Cancun Declaration," whose main contents are following three points:

1) International cost-sharing problem of the Internet

A report was made on the taskforce activities which had been made for 18 months before the meeting, and the "APEC Principle on International Charging Arrangement for Internet Services" was adopted. It was made that the discussion be continued, and that a report including proposals be made at the next ministerial meeting.

2) Fusion

The importance of adjusting regulations and policies with the fusion of technology and the fusion of services such as communications and broadcasting was recognized. It was decided that the work for such adjustment be conducted in the working group.

3) Digital divide

In the "Cancun Declaration," specific action plans were included for the purpose of overcoming digital divide at national, regional and global levels, such as the improvement of network access in rural areas.

It was decided that the next TELMIN be held in middle of the year 2002 in China.

TEL, which has been convened 23 times so far, is a forum where official-level discussions are held to de-termine detailed cooperation and liberalization schemes for the telecommunications sector. The latest TEL was convened from March 12 to 16, 2001, in Canberra, Australia.

TEL has four steering groups, respectively responsible for "liberalization," "business facilitation," "development cooperation" and "human resources development." These groups are vigorously working to promote 1) electronic commerce, 2) convergence of the telecommunications, broadcasting and others, 3) International Charging Arrangements for Internet Services (ICAIS), 4) Implementation of Telecommunications MRA, and 5) International Collaboration Projects in APEC.

The next TEL will be held in Autumn 2001.

4. APT

The Asia-Pacific Telecommunity (APT) is a regional international organization established in 1979. Its purposes are: promoting the balanced development of telecommunications in the Asia-Pacific region, supporting the planning and operation of telecommunications services, and seeking solutions to telecommunications-related problems.

The membership of the APT consists of telecommunication administrations of 32 countries and four regions, with 40 telecommunications businesses as Affiliate Members. In addition, 46 private firms other than telecommunications businesses participate as "Companies/Organizations."

APT, at the eighth General Meeting and the 24th Management Committee that were held in 1999, dealt with emerging tasks such as liberalization of telecommunications which is advancing on a global scale and creation of an info-communications base. In addition, with the aim at establishing shared policy in the Asia-Pacific region toward the new age and at strengthening Asia-Pacific countries' standing in the global field through such actions, the APT is planning to make three-pronged approach of: i) regional adjustment of telecommunications policy, ii) enhancement and expan-sion of standardization, and, iii) support on developing countries such as human resource development, in the three years from 2000 to 2002.

Japan is taking the leadership in regional policy coordination for the Asia-Pacific Telecommunity Standardization Program (ASTAP), APT Conference Preparatory Group (APG) and the IMT-2000 Forum, etc.

Also in the area of human resources development, Japan is making a 900,000-dollar special contribution for the purpose of improving policy planning capability and fostering technicians in charge of constructing/operating info-communications infrastructures. From CY2001, Japan is planning to make another 500,000-dollar contribution to human resources development through promoting exchange of advanced information and communications technology (ICT) researchers and technicians in the region.

5. ITU

The International Telecommunication Union (ITU) is a specialized agency of the United Nations in charge of telecommunications issues. The chief objectives of ITU are 1) international allocation of frequencies, 2) setting telecommunications technical standards, and 3) extending technical support to developing countries. Headquartered in Geneva, Switzerland, ITU had a total of 189 Member States as of May 2001. Japan became a member of ITU in 1879, and since 1959 has had the privilege of being selected to one of 46 Council members authorized to make actual decisions on ITU activities. Along with the U.S., Germany and France, Japan has been making the largest contributions to ITU, with its FY2000 contribution reaching approximately 6.5 hundred million yen.

In CY1998, at the ITU Plenipotentiary Conference held in Minneapolis, U.S.A., Mr. Yoshio UTSUMI of Japan (former Deputy Minister of the Ministry of Posts and Telecommunications) was elected as the Secretary-General of ITU. Mr. Utsumi took office in February 1999.

After assuming office, Secretary-

General UTSUMI's achievement in aggressively engaging in ITU reforms to cope with rapid environmental changes in information and communications has been highly appreciated by relevant countries.

6. INTELSAT

The International Telecommunications Satellite Organization (INTELSAT) is an international organization established by the "Agreement Relating to International Telecommunications Satellite Organization (INTELSAT)" with the main mission as providing without discrimination space segment (satellites and facilities/equipment required to support the operation thereof) necessary for international public telecommunications service to every region of the world.

In order to cope with recent environmental changes such as an increase in use of optical submarine cable systems and the progress of competition with private international satellite service, at the 24th INTELSAT Assembly of Parties Meeting held in Penang, Malaysia, in October 1999, it was decided that discussions be continued on the form of privatization with the presumption of earlier privatization of INTELSAT. After that, a study was made by working groups, and at the 25th Assembly of Parties Meeting held in Washington, D.C., U.S.A. in November 2000, the organization's privatization from July 2001 was decided upon, which was executed on July 18, 2001.

Regarding the form of privatization, existing business sections of INTELSAT was transferred to the new company while ensuring universal service for developing countries, etc., and an international organization was established for monitoring the provision of universal service. Along with this, the Amendment of INTELSAT Agreement was adopted.

7. Universal Postal Union (UPU)

Established in 1874, the Universal Postal Union (UPU) currently has 189 member countries. Japan joined the UPU in 1877.

At the Universal Postal Congress, the Union's supreme body, held from August and September 1999 in Beijing, China, Japan was elected as a member of the Council of Administration and the Postal Operations Council. Japan has a responsibility in leading the study of the improvement and development of major international postal services such as the EMS. And, Japan is participating actively in project teams, action groups, etc. in charge of postal and postal financial services as a chair and a member country.

MPHPT has dispatched an MPHPT official, two experts and an associate expert to the UPU Headquarters in Bern, Switzerland, to serve on the staff of the UPU's International Bureau. In addition, Japan has been providing the largest number of contribution units annually for funding the Union's operational expenditures, and has been granting voluntary contributions for the quality control of international postal services, and for supporting the introduction and improvement of international payment services.

8. APPU

The Asian-Pacific Postal Union (APPU) was established in 1962 as one of the restricted regional postal unions under the Universal Postal Union (UPU). APPU has 28 member countries now.

Since joining the union in 1968, Japan has been an active participant in the APPU activities. In addition to dispatching a consultant to the Asian-Pacific Post (APP), a body affiliated with the APPU, Japan has provided the largest number of annual contribution units for funding the Union's operational expenditures.

Policies Supporting Administrative Activities

I. Post Offices of Japan

1. Trial construction of environmental-friendly post office buildings

In line with the "Promote improvement of environmental-friendly government building facilities ('Green Government Buildings')," one of the "exemplary actions by government" within the "Guideline of Measures to Prevent Global Warming," the Postal Services Agency (PSA) has decided to build as well as renovate post office buildings in light of global warming prevention and energy efficiency measures. Along with

Photo I-2. *Yobito Post Office in Abashiri City*

Photo I-1. *Odawara-higashi Post Office in Kanagawa Prefecture*

such efforts, PSA is implementing trial construction of environmental-friendly post office buildings, "Eco-Post Office" for short, which are designed to reduce environmental loads and to save energy costs.

An ordinary post office building, Odawara-Higashi Post Office, located in Kanagawa Prefecture, was designed to verify the effectiveness of the latest environmental load reduction technology and methods for cutting energy costs such as fuel, electricity and water charges. The post office was constructed and opened in April 2001. Results of the use of newly installed environmental load reduction technology and methods are currently being monitored.

Two small-scale post offices are under construction in order to verify the optimum environmental load reduction technology and methods for post office buildings of such scale, Yobito Post Office in Abashiri City, Hokkaido Prefecture and Tomo Post Office in Fukuyama City, Hiroshima Prefecture, in different regions with differing climatic conditions. They will be completed in November 2001.

The effects that can be expected from the trial construction of environmental-friendly post office buildings areas follows:

i) Contribution to improvement of financial basis of postal services through reduction of life-cycle costs

Recovering the initial investment costs (reducing life-cycle costs incurred for construction, use and demolition of a building) for installing energy-efficient technology and methods by saving energy costs light/air conditioning/water, thus leading to improvement of the financial basis of postal services.

ii) Reduction of CO_2 emission

By reducing the use of power sources, supplied publicly, including electricity, gas, oils, etc., in order to contribute to the reduction of CO_2 emission.

Photo I-3. *Tomo Post Office in Fukuyama City*

Photo I-4. *Odawara-higashi Post Office*

Statistics

Table 1   Number of Employees in Charge of Postal Services

	FY2000	
MPHPT		
Internal Bureaus	506	
Institution		
Institute for Posts and Telecommunications Policy	68	
Regional bureaus		
Okinawa Office of Posts and Telecommunications	208	
TOTAL	782	
Postal Services Agency		
Internal bureaus	1,472	
Institutions		
Hospitals and clinics	2,456	
Personnel training institutes	490	
Subtotal	2,946	
Regional bureaus and field offices		
Regional Bureaus of Postal Inspection	1,149	
Regional Bureaus of Postal Services	5,463	
Postal Savings Operation Centers	9,099	
Postal Life Insurance Operation Centers	2,297	
Post offices	273,857	
Subtotal	291,865	
TOTAL	296,283	
GRAND TOTAL	297,065	

Table 2   Number of Postal Facilities

	FY2000	FY1999	FY1998	FY1997	FY1996	FY1995
Post Offices						
Ordinary post offices	1,312	1,311	1,315	1,324	1,321	1,319
Special post offices	18,916	18,878	18,832	18,764	18,711	18,654
Postal agencies (Note)	4,550	4,579	4,589	4,605	4,606	4,614
	24,778	24,768	24,736	24,693	24,638	24,587
Mailboxes	177,217	175,570	173,206	171,168	167,977	166,144

Note: Postal agencies are post offices that are established by local public organizations, agricultural cooperative associations, fishery cooperative associations, etc. or other qualified individuals who have been entrusted by the Postal Services Agency (PSA) to handle postal counter service. They are not part of PSA, and their staff are not PSA employees, either.

Table 3 Number of Mail Items Handled

Millions

	FY2000	FY1999	FY1998	FY1997	FY1996	FY1995
Domestic mail						
Letters						
Ordinary						
First class	13,151.6	12,907.0	12,821.2	12,724.3	12,452.6	11,944.3
Second class	7,518.8	7,229.9	7,082.9	6,945.5	6,788.1	6,619.8
Third class	1,086.6	1,122.9	1,154.2	1,197.9	1,247.3	1,269.6
Fourth class	36.1	37.3	36.3	34.1	36.6	39.8
New Year's mail	3,615.2	3,647.5	3,673.6	3,713.8	3,682.7	3,609.3
Election mail	61.7	84.9	27.4	14.9	64.1	85.9
	25,470.1	25,029.4	24,795.6	24,630.4	24,271.4	23,568.7
Special service						
Registered	182.0	191.8	203.6	223.4	263.2	333.4
Delivery-recording mail	189.1	204.6	184.8	132.3	104.9	25.7
Express	273.2	281.7	295.9	320.4	331.8	335.1
	644.3	678.1	684.3	676.1	699.9	694.2
Total letters	26,114.4	25,707.5	25,479.9	25,306.5	24,971.3	24,262.9
Parcels						
Ordinary	288.6	299.4	297.1	306.9	372.6	388.4
Registered	3.5	3.1	3.3	3.6	4.0	4.3
Express	18.3	17.0	16.0	15.4	9.8	7.5
Total parcels	310.5	319.5	316.4	326.0	386.4	400.2
Total domestic mail	26,424.9	26,027.0	25,796.4	25,632.5	25,357.7	24,663.1
International mail dispatched						
Letters	95.9	103.4	110.2	122.0	119.5	114.9
Parcels	1.7	2.0	2.3	2.6	2.9	2.9
EMS	8.4	7.7	6.8	6.0	5.4	5.0
Total international mail	106.0	113.0	119.3	130.6	127.8	122.8
GRAND TOTAL	26,530.9	26,140.0	25,915.6	25,763.1	25,485.5	24,785.8

Note: First class refers to letters and items not classified into any of the other three categories; second class refers to postcards; third class refers to periodicals and newspapers; fourth class refers to correspondence course mail, Braille materials and recordings for the blind, academic publications, etc.

Table 4   Postal Savings Transactions

Numbers in thousands/Amounts in ¥ million

	FY2000	FY1999	FY1998	FY1997	FY1996
Ordinary Savings					
Number of accounts (Note 1)	113,876	111,195	108,404	104,773	99,442
Outstanding balance (Note 1)	40,766,177	31,052,068	28,408,431	25,603,940	21,699,465
Collection Savings					
Outstanding balance (Note 1)	577,354	631,330	696,671	762,656	801,315
Housing Savings					
Outstanding balance (Note 1)	3,273	3,813	4,177	4,358	4,409
Education Savings					
Outstanding balance (Note 1)	6,696	6,284	5,703	5,213	4,701
Teigaku Savings (Note 2)					
Outstanding balance (Note 1)	192,846,848	212,416,738	206,467,480	202,127,597	193,858,822
Teigaku Savings for wage earners' property accumulation (Note 3)					
Outstanding balance (Note 1)	865,440	847,634	820,676	786,176	748,909
Time Savings					
Outstanding-balance (Note 1)	14,867,822	15,012,368	16,183,594	11,256,074	7,769,593
TOTAL OUTSTANDING BALANCE	249,933,611	259,970,235	252,586,731	240,546,015	224,887,214

Notes: 1. The number of accounts and outstanding balance are as of the end at each fiscal year.
2. Depositors may not withdraw the deposited amount for the first six months. A biannual compound interest rate is applied (up to 10 years).
3. These are savings bearing higher interest rates introduced to encourage wage earners to save money for the purpose of asset formation through home purchases or other means.

Table 5 Postal Money Order Transactions

Numbers in thousands/Amounts in ¥ million

	FY2000	FY1999	FY1998	FY1997	FY1996	FY1995
Domestic service						
Issue						
Number of orders	42,384	40,302	39,194	37,902	36,860	33,991
Amount	508,260	428,013	456,319	497,659	539,193	590,121
Payment						
Number of orders	43,325	40,568	39,366	36,838	36,638	33,299
Amount	507,748	428,324	456,800	496,979	539,025	584,796
International service						
Issue						
Number of orders	677	691	593	724	587	568
Amount	49,991	52,813	53,898	56,259	53,472	47,906
Payment						
Number of orders	94	73	52	40	33	31
Amount	2,676	2,365	2,086	1,666	1,339	1,112

Table 6 Postal Giro Transactions

Numbers in thousands/Amounts in ¥ million

	FY2000	FY1999	FY1998	FY1997	FY1996	FY1995
New accounts opened	7,383	8,554	8,867	12,355	24,611	21,664
Accounts discontinued (including "Sogo" integrated accounts)	2,094	2,335	2,227	1,413	1,218	765
Domestic service						
Inpayments	29,688,948	24,214,639	22,456,952	21,793,698	21,173,050	18,747,312
Transfers	6,834,856	6,173,304	5,697,573	5,727,456	5,146,092	5,240,291
Outpayments (including "Sogo" integrated accounts)	26,384,617	23,426,189	21,756,961	21,299,410	20,182,253	19,120,637
International service						
Transfer overseas	7,285	10,351	10,320	9,750	8,429	7,013
Transfer from overseas	747	767	678	761	759	762

Table 7 Postal Life Insurance Transactions (Life Insurance)

Amounts and premiums in ¥ million

	FY2000	FY1999	FY1998	FY1997	FY1996
New business					
Number of policies	5,755,688	5,920,736	6,653,176	6,067,502	6,948,599
Premiums	103,417.6	101,850.6	113,236.8	101,227.0	117,596.1
Amount	15,100,999.0	15,801,670.8	18,496,062.5	19,042,167.8	21,784,271.6
Reinstatement					
Number of policies	136,020	137,202	132,485	135,624	133,367
Premiums	1,481.0	1,487.8	1,418.3	1,432.8	1,391.5
Amount	391,270.8	396,647.6	379,474.1	378,958.9	359,741.6
Termination					
Death					
Number of policies	433,295	457,175	478,360	449,932	453,302
Premiums	4,179.8	4,244.7	4,203.4	3,967.7	3,835.4
Amount	727,658.7	745,833.8	740,700.1	701,174.1	674,752.0
Maturity					
Number of policies	4,587,080	4,453,755	4,422,478	4,121,081	4,021,198
Premiums	49,603.8	46,460.1	45,695.7	42,124.7	42,041.1
Amount	8,983,701.6	8,271,098.2	7,553,443.8	6,721,312.8	6,277,821.3
Surrender					
Number of policies	2,011,188	2,057,524	2,043,673	1,984,291	1,877,820
Premiums	27,133.9	27,373.4	27,439.3	26,706.0	24,923.0
Amount	5,878,969.8	6,024,805.1	5,946,995.7	5,643,084.9	5,150,079.9
Lapse					
Number of policies	505,603	503,084	487,820	512,396	513,663
Premiums	5,605.1	5,509.9	5,225.1	5,459.7	5,379.1
Amount	1,525,397.1	1,552,062.2	1,549,301.5	1,627,311.2	1,556,972.7
Insurance in force (fiscal year-end)					
Number of policies	79,619,726	81,295,218	82,716,384	83,402,306	84,321,810
Premiums	1,147,553.0	1,143,723.0	1,136,992.8	1,117,867.9	1,105,950.1
Amount	205,762,375.1	208,000,436.0	208,899,317.1	206,384,158.9	202,264,063.3

Table 8 Postal Life Insurance Transactions (Annuity)

Amounts in ¥ million

	FY2000	FY 1999	FY1998	FY1997	FY1996	FY1995
New business						
Number of policies	577,560	527,737	663,727	634,755	618,854	805,016
Amount	227,521.1	198,515.9	254,712.8	243,472.1	226,074.3	282,661.4
Reinstatement						
Number of policies	6,435	6,637	6,376	6,429	6,391	5,443
Amount	2,185.3	2,120.1	1,976.2	1,866.4	1,862.9	1,540.3
Termination						
Death						
Number of policies	30,969	29,081	26,718	22,796	19,104	15,725
Amount	9,689.0	8,841.1	7,862.0	6,484.0	5,240.4	4,139.4
Completion of payment						
Number of policies	166,661	127,190	86,612	60,009	41,682	28,921
Amount	33,723.7	24,429.4	16,057.6	10,790.3	7,450.3	5,079.9
Surrender						
Number of policies	70,795	77,806	76,191	74,853	68,672	71,630
Amount	25,002.9	26,358.6	25,159.4	24,237.0	21,167.2	20,840.2
Lapse						
Number of policies	17,019	18,174	16,626	18,649	19,108	20,268
Amount	5,705.9	5,843.5	5,210.5	5,619.0	5,610.6	5,771.6
Annuities in force (fiscal year-end)						
Number of policies	7,140,922	6,837,889	6,552,312	6,086,788	5,621,850	5,148,593
Amount	2,327,479.6	2,171,198.7	2,034,983.5	1,832,063.4	1,634,114.1	1,446,805.2

Table 9   Status of Kampo Funds

¥100 million

	FY2000	FY1999	FY1998	FY1997
Securities				
Government bonds	273,521	249,185	165,792	117,568
Local government bonds	74,608	75,029	74,331	75,966
Government finance corporations and public corporations bonds	236,434	249,147	258,051	266,909
Bank debentures and corporate bonds	37,654	39,547	41,499	45,367
Foreign bonds	38,379	45,579	46,877	39,830
	660,596	658,487	586,549	545,639
Loans				
Central government, government finance corporations and public corporations bonds	77,231	72,691	71,084	76,763
Local governments	176,521	169,405	162,933	153,697
Postal Life Insurance Welfare Corporation	32,700	32,700	46,700	51,700
Policyholders	26,950	26,831	25,069	22,712
	313,402	301,627	305,786	304,872
Funds entrusted to trust banks	130,311	115,311	95,311	70,311
Deposits with other institutions	51,621	41,944	65,261	67,149
Deposits with Trust Fund Bureau	46,260	32,561	61,461	69,514
Entrusted to National Treasury	6,000	6,000	3,000	0
TOTAL KAMPO FUNDS	1,208,189	1,155,930	1,117,368	1,057,485

Note: Kampo Funds are Postal Life Insurance funds. As of April 2001, "Trust Fund Bureau" became "Fiscal Investment and Loan Funds."

Table 10   Number of Telephone Subscribers

	FY2000	FY1999	FY1998	FY1997	FY1996	FY1995
Cellular phones	52,257,622	55,547,365	61,525,876	61,105,841	59,935,770	58,830,075

Table 11   Number of Cellular Phones

	FY2000	FY1999	FY1998	FY1997	FY1996	FY1995
Cellular phones	60,942,407	51,138,946	41,530,002	31,526,870	20,876,820	10,204,023

Table 12   Number of Radio Pagers

	FY2000	FY1999	FY1998	FY1997	FY1996	FY1995
Number of pagers	1,439,206	2,071,003	3,765,686	7,115,702	10,074,304	10,610,549

Table 13   Number of Radio Stations

	FY2000	FY1999	FY1998	FY1997	FY1996	FY1995
Number of stations	66,572,976	57,478,504	46,971,542	39,478,889	29,211,483	17,315,536

Table 14   Number of Household Cable TV Subscriptions

	FY2000	FY1999	FY1998	FY1997	FY1996	FY1995
Number of subscriptions	10,480,000	9,470,000	7,940,000	6,720,000	5,000,000	3,640,000

Table 15   Number of Contracts for Reception of NHK TV Broadcast

	FY2000	FY1999	FY1998	FY1997	FY1996	FY1995
Number of contracts	37,273,692	36,878,354	36,597,117	36,282,854	35,816,023	35,377,295

Table 16 Postal Service Account (Revenues and Expenditures)

Revenues

¥ million

	FY2000	FY1999	Increase/(Decrease)
Operating revenues			
Service revenues			
Mail service			
Postage stamps	478,424.2	500,519.7	(22,905.5)
Postcards and letter cards	287,817.3	296,528.7	(8,711.4)
Postage paid in cash	1,267,137.1	1,239,261.9	27,875.2
Others	21,837.9	24,138.2	(2,300.3)
Subtotal	2,055,216.5	2,060,448.5	(5,232.0)
Postal money order and Giro services			
Postal money order fees	4,199.9	4,286.2	(86.3)
Postal Giro fees	54,471.1	51,019.5	3,451.6
Others	13,195.6	12,000.2	1,195.4
Subtotal	71,866.6	67,305.9	4,560.7
Total service revenues	2,127,083.1	2,127,754.4	(671.3)
Revenues from other accounts or agencies			
Revenues from Postal Savings Special Account	1,112,141.2	1,085,078.9	27,062.3
Revenues from Postal Life Insurance and Annuities Special Account	685,712.7	700,928.7	(15,216.0)
Revenues from Nippon Telegraph and Telephone Corp.	4,751.5	7,062.8	(2,311.3)
Others	25,824.1	19,580.9	6,243.2
Total revenues from other accounts or agencies	1,828,429.5	1,812,651.3	15,778.2
Miscellaneous	125,974.1	126,205.3	(231.2)
Total operating revenues	4,081,486.7	4,066,611.0	14,875.7
Non-operating revenues			
Revenue stamps	1,150,862.2	1,176,612.2	(25,750.0)
Vehicle weight taxation stamps	1,134,231.1	1,124,157.2	10,073.9
Other stamps	205,037.5	202,195.9	2,841.6
Total non-operating revenues	2,490,130.8	2,502,965.3	(12,834.5)
Capital revenues			
Borrowings	579,800.0	554,500.0	25,300.0
Share of accommodation and equipment	18,151.7	53,542.8	(35,391.1)
Total capital revenues	597,951.7	608,042.8	(10,091.1)
GRAND TOTAL	7,169,569.2	7,177,619.1	(8,049.9)

Expenditures

¥ million

	FY2000	FY1999	Increase/(Decrease)
Operating expenditures			
Overhead (Note 1)	753,934.1	766,888.9	(12,954.8)
Mail expenses	1,737,842.1	1,778,615.3	(40,773.2)
Postal savings and money order expenses	856,956.8	815,953.4	41,003.4
Postal Life Insurance expenses	489,766.0	499,651.1	(9,885.1)
Transfer to other accounts (Note 2)	19,791.6	23,466.3	(3,674.7)
	3,858,290.6	3,884,575.0	(26,284.4)
Building and construction expenditures	203,095.5	277,951.2	(74,855.7)
Reimbursement of government securities and loans	604,470.0	530,378.0	74,092.0
Non-operating expenditures			
Revenue stamps	1,163,587.4	1,176,123.3	(12,535.9)
Vehicle weight taxation stamps	1,136,270.0	1,114,495.1	21,774.9
Other stamps	206,054.9	200,705.0	5,349.9
	2,505,912.3	2,491,323.4	14,588.9
TOTAL	7,171,768.4	7,184,227.6	(12,459.2)

Notes: This table is based on accounting principles used by government agencies in Japan.
    1. Overhead are costs for such MPT sections as Personnel, Accounting, and Headquarters Staff.
    2. This item consists primarily of interest payments on loans and is transferred to other government accounts.

Table 17 Postal Service Account (Profit and Loss Statement and Balance Sheet)

Profits

¥ million

	FY2000	FY1999	Increase/(Decrease)
Mail receipts	2,055,216.5	2,060,448.5	(5,232.1)
Postal money orders and Giro receipts	71,866.6	67,305.9	4,560.7
Receipts from other accounts or agencies	1,828,429.5	1,812,651.3	15,778.2
Miscellaneous receipts	125,974.1	126,205.3	(231.2)
Refund of reserve for depreciation	53,957.2	52,415.3	1,541.9
Miscellaneous profit	210.0	110.7	99.3
Net loss for the year	22,322.2	66,019.7	(43,697.5)
TOTAL	4,157,976.1	4,185,156.8	(27,180.7)

Debits

¥ million

	FY2000	FY1999	Increase/(Decrease)
Current assets			
Cash	2,055,789.4	3,737,374.8	(1,681,585.4)
Cash in transit	226,391.8	542,004.5	(315,612.7)
Money in trust (Note)	2,884,358.0	1,844,034.1	1,040,323.9
Deposit	318,477.9	473,408.5	(154,930.6)
National Treasury	3,957.9	8,255.5	(4,297.6)
Advance payments	8.1	2.6	5.5
Outstanding income	8,093.1	3,897.7	4,195.4
Returned funds	24,218.2	22,655.0	1,563.2
Unsettled trust funds	3,701.8	3,702.1	(0.3)
Unreceivable funds from Postal Savings Special Account	3,973.6	850.6	3,123.0
Unreceivable funds from Bank of Japan, etc.	62.5	36.3	26.2
	5,529,032.3	6,636,221.7	(1,107,189.4)
Fixed assets			
Land	3,088,770.9	3,088,082.0	688.9
Buildings	1,936,734.4	1,888,539.6	48,194.8
Structures	1,177,444.8	1,131,094.9	46,349.9
Machines and equipment	976,899.3	9,44,165.1	32,734.2
Superficies, etc.	1,441.6	1,441.6	0.0
Patent rights, etc.	57.2	238.4	(181.2)
Beneficial rights to real estate trust operations	9,999.8	9,999.8	0.0
Work in progress	37,245.9	45,562.1	(8,316.2)
	7,228,593.9	7,109,123.5	119,470.4
Overseas assets	2.4	2.4	0
Unsettled money of Ryukyu Postal Services	74.0	74.0	0
Reserve for price adjustment	195.8	195.8	0
Cashier's unsettled money	4.8	--	4.8
Net loss for the year	22,322.2	66,019.7	(43,697.5)
TOTAL	12,780,225.4	13,811,637.1	(1,031,411.7)

Losses

¥ million

	FY2000	FY1999	Increase/(Decrease)
Overhead	753,934.1	766,888.9	(12,954.8)
Mail expenses	1,737,842.1	1,778,615.3	(40,773.2)
Postal Savings expenses	856,956.8	815,953.4	41,003.4
Postal Life Insurance expenses	489,766.0	499,651.1	(9,885.1)
Transfer to General Account	1,984.0	2,205.7	(221.7)
Interest	17,807.5	21,260.6	(3,453.1)
Depreciation	222,874.6	226,415.8	(3,541.2)
Assets written off	76,774.3	74,155.3	2,619.0
Other losses	36.7	10.7	26.0
TOTAL	4,157,976.1	4,185,156.8	(27,180.7)

Note: This table is essentially an rearrangement of Table 15 based on commercial accounting principles. It differs from Table 15 in that revenue items such as borrowings are not listed in the profits column, whereas expenditure items such as depreciation are entered in the losses column.

Credits

¥ million

	FY2000	FY1999	Increase/(Decrease)
Borrowed capital			
Outstanding payments	668,313.1	583,487.8	84,825.3
Money in custody	4,261,425.5	5,699,558.8	(1,438,133.3)
Outstanding settlement to Bank of Japan	423,274.1	190,781.8	232,492.3
Transfer from General Account	12,320.2	12,320.2	0.0
Debts	883,858.0	908,528.0	(24,670.0)
	6,249,190.9	7,394,676.6	(1,145,485.7)
Own capital			
Proper capital	186.5	186.5	0.0
Capital transferred from other accounts	1,392,095.9	1,373,944.2	18,151.7
Reserve for revaluation of fixed assets	2,889,905.1	2,896,880.0	(6,974.9)
Accumulated funds	237,349.4	303,369.1	(66,019.7)
	4,519,536.9	4,574,379.8	(54,842.9)
Reserve for depreciation	2,011,497.6	1,842,580.3	168,917.3
Cashier's unsettled money	--	0.4	(0.4)
TOTAL	12,780,225.4	13,811,637.1	(1,031,411.7)

Note: Money in trust refers to money held in trust by the Bank of Japan.

Table 18 Postal Savings Account (Profit and Loss Statement)

Profits

¥ million

	FY2000	FY1999	FY1998
Interest received from Ministry of Finance Trust Fund Special Account	6,890,830	7,863,057	9,090,538
Interest on loans	14,952	33,351	29,532
Miscellaneous receipts	742	601	604
Net loss for fiscal year	1,323,067	1,878,512	633,715
TOTAL	8,229,591	9,775,521	9,754,389

Losses

¥ million

	FY2000	FY1999	FY1998
Paid interest			
Interest for ordinary savings	41,407	28,379	64,442
Interest for collection savings	1,086	1,820	2,704
Interest for Teigaku Savings	7,074,128	8,661,673	8,604,376
Interest for housing savings	28	39	46
Interest for education savings	59	75	73
	7,116,708	8,691,986	8,671,641
Miscellaneous expenditures	3,042	1,508	1,619
Transfers to Postal Services Special Account	1,109,841	1,082,027	1,081,129
TOTAL	8,229,591	9,775,521	9,754,389

Table 19 Postal Savings Account (Balance Sheet)

Debits

¥ million

	FY2000	FY1999	FY1998
Assets			
Deposit in Bank of Japan	0	0	0
Temporary deposit in Bank of Japan	50,949	6,866	9,735
Deposit in Trust Fund Special Account	247,359,042	257,655,972	255,610,312
Loans to depositors	819,184	978,113	977,539
Unsettled Postal Services Special Account	2,239,591	3,318,163	46,302
Accrued revenues	17,370	29,863	29,352
Unsettled Postal Savings money	87,750	831,751	858,208
Transfers to Postal Services Special Account	993,730	975,578	946,197
Net loss for fiscal year	1,323,067	1,878,512	633,715
TOTAL	252,890,683	265,674,818	259,111,360

Credits

¥ million

	FY2000	FY1999	FY1998
Liabilities			
Ordinary savings			
Ordinary savings	40,633,421	30,990,882	28,357,911
Dormant savings	132,756	61,186	50,520
	40,766,177	31,052,068	28,408,431
Collection savings	577,354	631,330	696,671
Teigaku Savings	208,580,110	228,276,740	223,471,749
Housing savings	3,273	3,813	4,177
Education savings	6,696	6,285	5,703
Accrued expenses	1,137,331	1,805,535	1,791,471
Unsettled loan money	3,863	4,657	5,052
	251,074,804	261,780,428	254,383,254
Reserve funds	1,815,879	3,894,390	4,728,106
TOTAL	252,890,683	265,674,818	259,111,360

Note: Article 2 of the Special Law for Securing Necessary Funds upon Carrying over Liabilities in the National Budget's General Account (Law of 1998 No. 137) stipulates that 200 billion yen be transferred from Postal Savings Funds to the General Account from FY 1998 through 2002, or a total of 1 trillion yen over the five-year period. For FYs from 1998 through 2000, 200 billion yen was deducted from Postal Savings Funds' reserve funds and transferred to the General Account.

Table 20 Postal Savings Account for Fund Investment (Profit and Loss Statement)

Profits ¥ million

	FY2000	FY1999	FY1998
Investment revenues	1,971,076	2,084,407	2,060,645
TOTAL	1,971,076	2,084,407	2,060,645

Losses ¥ million

	FY2000	FY1999	FY1998
Interest on borrowings	1,913,098	2,037,820	2,002,136
Miscellaneous expenditures	29,478	30,048	33,026
Transfers to Postal Services Special Account	2,300	3,052	2,517
Net profit for fiscal year	26,200	13,487	22,966
TOTAL	1,971,076	2,084,407	2,060,645

Table 21 Postal Savings Account for Fund Investment (Balance Sheet)

Debits ¥ million

	FY2000	FY1999	FY1998
Assets			
Deposit in Bank of Japan	49,912	8,937	8,644
Other deposits	1,700,617	198,606	224,638
Negotiable securities	45,203,929	48,189,043	45,629,268
Loans to depositors	636	755	943
Trust money	10,540,100	10,540,100	9,340,100
Accrued revenues	690,802	662,501	618,770
Accrued interest on securities purchased	2,603	7,321	33,960
Transfers to Postal Services Special Account	110	110	110
TOTAL	58,188,709	59,607,373	55,856,433

Credit ¥ million

	FY2000	FY1999	FY1998
Liabilities			
FCFD borrowings (Note)	57,350,000	58,850,000	55,150,000
Unsettled fund payable to Postal Services Special Account	3,974	851	2,579
Accrued expenses	435,347	383,334	344,153
Reserve funds	373,188	359,701	336,735
Net profit for fiscal year	26,200	13,487	22,966
TOTAL	58,188,709	59,607,373	55,856,433

Note: FCFD refers to the Postal Savings Fund to Cope with Financial Deregulation.

Table 22 Postal Life Insurance Account (Profit and Loss Statement)

Profits

¥ million

	FY2000	FY1999
Insurance premiums	15,395,373	13,532,076
Investment income	3,985,916	3,765,081
Miscellaneous income	2,238	1,971
Insurance reserve brought forward from the preceding year		
Actuarial reserve	110,092,334	105,374,378
Dividend reserve	5,909,879	6,561,905
Policy claims reserve-life	313,477	332,169
	116,315,690	112,268,452
Fluctuation in value of investment reserve brought forward from the preceding year	242,494	223,844
Transfers to dividend reserve from the surplus brought forward from the preceding year	180,007	208,108
TOTAL	136,121,718	129,999,532

Losses

¥ million

	FY2000	FY1999
Insurance expenses		
Insurance money and annuities	10,006,991	9,306,052
Refunds premiums	1,888,731	1,818,534
Dividends	774,919	928,544
	12,670,641	12,053,129
Expenses		
Consumption tax	122	208
Refunds and compensation	620,059	476,756
	620,181	476,964
Operation expenses (excluding development cost)	685,713	700,929
Grants to the Postal Life Insurance Welfare Corporation	27,789	29,386
Insurance reserve to be carried over to the following year		
Actuarial reserve	115,576,009	110,092,334
Dividend reserve	5,347,037	5,909,879
Policy claims reserve-life	447,883	313,477
	121,370,929	116,315,690
Fluctuation in value of investment reserve to be carried over to the following year	572,859	242,494
Surplus for current year	173,607	180,939
TOTAL	136,121,718	129,999,532

Table 23 Postal Life Insurance Account (Balance Sheet)

Debits

¥ million

	FY2000	FY1999
Entrusted to National Treasury	600,000	600,000
Deposits with Trust Fund Bureau	4,625,977	3,256,117
Deposits with other institutions	5,162,058	4,194,362
Securities	66,059,583	65,848,685
Loans	31,340,211	30,162,688
Funds entrusted to trust banks	13,031,100	11,531,100
Accrued income	944,550	807,991
Accounts receivable	--	54
Transfers to Postal Services Special Account	397,476	397,476
Investments in the Postal Life Insurance Welfare Corporation	442,241	425,543
Fixed assets	28,880	44,287
TOTAL	122,632,075	117,268,303

Credits

¥ million

	FY2000	FY1999
Insurance reserve		
Actuarial reserve	115,576,009	110,092,334
Dividend reserve	5,347,037	5,909,879
Policy claims reserve-life	447,883	313,477
	121,370,929	116,315,690
Accounts payable	45	69
Fluctuation in value of investment reserve	572,859	242,494
Surplus		
Capital surplus	33,771	49,178
Profit surplus		
Surplus brought forward from the preceding year	480,863	479,931
Surplus for current year	173,607	180,939
	654,471	660,870
TOTAL	122,632,075	117,268,303