日本国総務省総合通信基盤局国際部

ISSN 1346-5317

MPHPT COMMUNICATIONS NEWS

March 18, 2002, Vol. 12, No. 24

Please feel free to use the articles in this publication, with proper credits

Biweekly Newsletter of the Ministry of Public Management, Home Affairs, Posts and Telecommunications, Japan

Second Report on Desirable Pro-Competitive Policies in the Telecommunications Business Field for Promoting the IT Revolution

On February 13, 2002, MPHPT received the second report on "Desirable Pro-Competitive Policies in the Telecommunications Business Field for Promoting the IT Revolution (Inquiry No. 29 of 2000)" from the Telecommunications Council (Chair: Mr. AKIYAMA Yoshihisa).

MPHPT will take appropriate measures based on the report.

For details, refer to the Japanese web site

http://www.soumu.go.jp/s-news/2002/020213_3.html

Outline of the second report on Desirable Pro-Competitive Policies in the Telecommunications Business Field for Promoting the IT Revolution

Chapter 1. Pro-Competitive Policies

1. Changes in the environment affecting pro-competitive policies

(1) In accordance with the "Pro-Competitive Programs for the IT Age" in the first report, the newly amended Telecommunications Business Law, NTT Law and related laws were enacted on November 30. The various related Guidelines were expeditiously prepared.

(2) Although local call rate (MYLINE: dialing parity) and DSL service charges are decreasing, the difference between Japan and other countries still remains, centered on monopolistic charges such as the (monthly) basic charge.

(3) The shift to broadband has made very rapid progress, with the number of DSL service subscribers in Japan exceeding 1.5 million in 2001, and with the start of IP Telephony and FTTH services.

2. Basic approach to pro-competitive policies

The pro-competitive policies can be categorized as following.

(1) Non-structural pro-competitive policies (policies to open networks or separate functions)

Utilizing ex-ante and post-facto regulations to create and maintain a fair and effective competitive environment

(2) Policies promoting new entry from other sectors

Including cross-market entry by electric power utilities, etc., reducing the general level of restrictions through measures such as reviewing the way of classifying types of telecommunications businesses.

(3) Structural pro-competitive policies (policies for capital separation or structural separation)

Applying changes to the structure of carrier organizations.

3. Putting into place a fair and transparent market environment

(1) In addition to attempting to achieve unified management of pro-competitive policies and consumer policies so that there is no occurrence of distortions due to excessive competition, an environment should be created that promotes user independence and enables rational choice when considering the increasing variety and complexity of services available.

(2) The investigation is needed by a study group about the active provision of

CONTENTS

**International Policy Division,
International Affairs Department,
Ministry of Public Management, Home Affairs, Posts and Telecommunications
1-2, Kasumigaseki 2-chome,
Chiyoda-ku, Tokyo 100-8926, Japan**

- **We welcome your comments by:**
  feedback-newsletter@soumu.go.jp
  Fax: +81-3-5253-5924
  Tel.: +81-3-5253-5920
- MPHPT information is available at:
  http://www.joho.soumu.go.jp/eng/

information to consumers, formulation of industrial self-regulation guidelines and "communications service planner" training and other consumer support policies from an overall perspective.

(3) Prompt review of dispute resolution manuals, and in addition to stronger links with the Fair Trade Commission, review the administrative measures system for enforcement addressing violations, and consider strengthening the monitoring setup.

4. Promotion of pro-competitive policies for opening up networks

(1) Continuing to review interconnection rules on an ongoing basis

(2) Putting into place an environment enabling service base competition, e.g. promote resale of public networks including (monthly) basic charges. For that, in addition to clarifying the real demand for resale, start working quickly on considering accurate inspection of system-development costs, those sharing rule and setting of a discount rate for carriers in a meeting founded by MPHPT which is composed of relevant telecommunications carriers.

(3) It is necessary to establish a forum to investigate the merits of, and cost bearing for, opening up OSS. With consideration for the protection of the privacy of individuals, investigation should be given to the scope, etc. of information that should be disclosed.

(4) Concerning the approach to the proper relationship between user charges and network charges, there is need to reach conclusions.

(5) Based on progress in opening up access to poles, ducts, conduits, and other related facilities, and on rule-making in other nations, there is a need to continually review guidelines for rights of way.

5. Promoting pro-competitive policies for separation of functions

(1) It is necessary that the firewall measure preventing people, things and information from being shared between network departments and sales departments should be operated thoroughly, on a NTT East and NTT West voluntary basis.

(2) Offering discounted charges in combination with monopolistic charges such as the (monthly) basic charge is a problem under the Telecommunications Business Law, and there is also a need to carefully examine each individual case of providing discount sets of services including items such as competitive charges when there is a high share. Combining monopolistic charges in other sectors as part of a discount set with telecommunications charges is also likely to be an impediment to fair competition.

(3) If problems occur to undermine fair competition with operation of NTT East and NTT West's subsidiaries, strict application of the firewall regulation based on the amended Telecommunications Business Law is needed.

6. Policies to assure fair competition and promote new entry from other sectors

(1) Simplify the rules for flexible provision of existing fiber-optic networks owned by electric power companies and other public utilities.

Clarify the necessary procedures to promote smooth entry for MVNO (Mobile Virtual Network Operator).

(2) Concerning direct market entry of entities having a dominant position in other sectors, there is a need to give sufficient consideration in each case to safeguard fair competition.

(3) Concerning the approach to classification of the type of telecommunications business, a new way, unlike that under current classification, should address a variety of business developments in readiness for changes in future markets, such as the convergence of communications and broadcasting. Further deliberation is required by the Council in order to find a new way toward lowering the overall level of regulation.

7. Significance and problems for structural pro-competitive policies

(1) In other countries, two different movements can be seen, one in which existing regional carriers move toward structural separation on their own to request deregulation, and one in which the regulatory authorities require the regional carriers to undergo structural separation. In both of these cases, the orientation of the eventual trend is still unclear.

(2) It is necessary to reduce the proportion of the stock held by NTT holding company in the NTT Group companies, and to eliminate its concurrency of board members with NTT DoCoMo and NTT Communications. (Pay close attention to the result of "further investigation" of the NTT voluntary action plan.)

(3) If a fundamental review of NTT's management system is considered necessary, one potential choice is the structural separation of NTT East and NTT West's wholesale department and retail department. The merits and demerits of the approach at the current stage are clarified.

8. Prospects of pro-competitive policies

Further considerations divide into two stages.

1) Pro-competitive policies -- Stage 1
Proceed with opening up network access such as resale of public networks and opening up of OSS, together with rigorous firewalls to provide functional separation. Furthermore, there are expectations for new entry from other sectors and increased new market entry when the business category classification is revised.

2) Pro-competitive policies -- Stage 2
Stage 1 considers a variety of non-structural pro-competitive policies. Of those, if the resale of public networks and access to fiber-optic networks, which the report gives special emphasis to, have not been implemented despite proper requests from competitors, and sufficient competition cannot be seen in regional telecommunications markets after two years, fundamental review of NTT's management system will be quickly required. In such a case, various options should be considered such as full capital separation and separation of wholesale and retail operations.

9. Action program for putting a pro-competitive environment into place

Clearly define the timing for implementation of each of the policies outlined above.

Chapter 2 Universal Service

1. Basic viewpoint regarding introduction of universal service fund

(1) In the situation where competition will intensify in local telecommu-

nications markets, particularly in urban areas, it will probably become difficult to maintain provision of universal service with the cost burden falling solely on NTT East and NTT West.

(2) In order to ensure the continued provision of universal service (i.e. basic telecommunications services), a fund system under which carriers other than NTT East and NTT West also bear an appropriate share of the cost should be introduced so that costs are borne by those who benefit.

Note: Carriers providing universal service will be those designated by the Minister of Public Management, Home Affairs, Posts and Telecommunications as Eligible Telecommunications Carriers.

2. Scope of universal service

(1) The scope of universal service takes in subscriber telephones, public booth telephones, and emergency calls.

(2) Although competitive charge reductions have been implemented, local calls continue to be within the scope of universal service, and the uniform rates are taken to be the basis.

3. Approach to net cost calculation rules

(1) The method of calculating the net cost involved in universal service provision will be by taking the net cost to be that part of the red ink in unprofitable areas that is not offset by black ink in profitable areas. This "offsetting" method will be used for the time being.

(2) In order to enable a swift shift to a benchmarking system (i.e. a system of calculation focusing only on costs under which costs in excess of a certain level are added), consideration will be given to switching to such a system when the fund system is reviewed a certain time (expected to be approximately two years) after its launch.

(3) The long-run incremental costs (LRIC) methodology is used to calculate costs.

Note: Certain adjustments will be made concerning the calculation of costs (accounting costs) relating to operations involving the use of designated facilities. Costs not deemed essential to maintaining universal service and costs required to compete with other carriers, for example, will be deducted.

4. Approach regarding rules on sharing of costs

(1) The carriers bearing a share of the costs should be those benefiting from subscriber lines, etc. (including carriers providing services other than voice transmission services).

(2) The share of costs should be calculated in proportion to carrier's sales. However, calls between mobile phones not benefiting from the use of subscriber lines, etc. may be excluded from the calculation of the proportional share of costs.

5. Other items to be considered in terms of system operation

(1) As a basic rule, the fund should come into play when a net cost arises.

(2) Consideration should be given to measures to alleviate the effect of sudden changes in costs borne by carrier management.

(3) In designing the actual system, a variety of simulations will be conducted while awaiting the revision of the LRIC model. Further consideration should then be given to the fund system's actual design based on the results of these simulations, and related cabinet and ministerial ordinances will be drawn up with a view to their entry into legal force in June 2002.

(4) After its introduction, the fund system should be periodically reviewed and revised as necessary (approximately every two years).

Chapter 3 International Competitiveness

1. The concept of "Sovereignty in the field of telecommunications"

(1) "Sovereignty in the field of telecommunications" can appropriately be thought of in terms of the sum of any societal system and policy means that together ensure and support national security in the field of telecommunications.

(2) Further investigation is required for the clauses relating to national emergencies, which should be appropriately reflected in the framework of studies on national emergency legislation by the government as a whole.

2. Restrictions on foreign investment likely to be harmful to national security

(1) Now that the WTO General Agreement on Basic Telecommunications has come into force, restoration of traditional foreign capital restrictions and establishment of new but similar restrictions are not desirable.

(2) Strengthening implementation of the Foreign Exchange and Foreign Trade Control Law

1) In order to maintain Type I telecommunications business as a type of industry in which the advance notice system for foreign investment is applied, moves are required at the international level to retain the treatment of such business as bearing on national security and so exempted from liberalization under the OECD Code of Liberalization.

2) There needs to be further consideration within the government regarding how to strengthen the application of the Foreign Exchange and Foreign Trade Control Law in a framework that can reflect the opinions of entities actually responsible for national security, such as the National Security Council of Japan, at the initial screening stage.

3. Ensuring important telecommunications in emergencies

(1) In the US, the National Communications System (NCS), which is linked directly to the National Security Council, was established in 1963 after the Cuban missile crisis. Then, after AT&T was split up, the National Coordinating Center for Telecommunications (NCC) was established in 1984 with the cooperation of many carriers. The NCS and the NCC have a permanent staff of over 100 individuals, and apparently consume a significant proportion of the national budget.

(2) In Japan too, it is necessary to give a certain legal foundation to activities and frameworks that strengthen the links between many carriers including NCCs, not just to NTT Group members, and to consider how to strengthen them, including the provision of public assistance in event of necessity.

(3) The Government and the carriers in-

volved urgently need to start considering policies in cooperation with one another to develop and introduce an efficient emergency telecommunications system, similar to GETS in the US, which can insure any important calls, from any terminals regardless of whether it is mobile or fixed, unlike the current priority call system.

4. Approach to NTT from the viewpoint of sovereignty in the field of telecommunications, etc.

(1) With regard to the government's obligation to hold NTT holding company shares, then at the stage when disposal of the saleable parts of the Government's holdings (2.1 million shares) is complete, proceeding in the direction of relaxing or abolishing this obligation should be considered with the proviso that no problems would occur in terms of provision of universal service, promotion and dissemination of research in telecommunications technology, etc., nor in terms of fulfilling the role in assuring national security.

(2) From the viewpoint of assuring national security, the foreign capital ownership restrictions of the NTT holding company should not be further reviewed for the time being. But when it is judged that there is no danger of invading "Sovereignty in the field of telecommunications", the deliberation will be needed to abolish it.

5. Approach to national R&D capability

(1) In order to raise the level of national R&D capability in the field of telecommunications, with an awareness of proceeding with R&D in a strategic manner from both industrial and social viewpoints, it is necessary to invigorate the R&D activities in the Japanese region and to proceed with R&D through close collaboration under common understanding among industries, universities and the government.

(2) In practical terms, all of Japan must promote R&D according to the following seven-point basic strategy for R&D.

1) Promoting open style R&D activities
2) Promotion of internationalization of the R&D environment in Japan
3) Investment prioritization according to priority promotion designations
4) Providing appropriate assessments and a competitive environment
5) Strategic implementation of patent acquisition/management and standardization
6) Close collaboration under common understanding among industries, universities and the government.
7) Creating markets through the innovate ideas of individuals

6. Legal responsibility on NTT to promote R&D

(1) Even if NTT's legal responsibility to undertake R&D is not considered to be a hindrance to NTT at the moment, there is a possibility that it may become a large burden as competition becomes intenser in the future. For this reason, based on the policies outlined in 5. above, proceeding in the direction of abolishing the legal responsibility should be considered with the proviso that it can be determined that doing so would produce no major problem in terms of the R&D level of Japan.

(2) Another matter that should be considered is a setup whereby the government may contract out R&D of specific important items to the NTT holding company, etc., with the results being shared by the Japanese people as a whole if these items are essential for the future development of telecommunications technology.

Interim Report of the "Study Group on New Business Models and the Grand Design of Competitive Environments for the New Information and Communications Era" Released

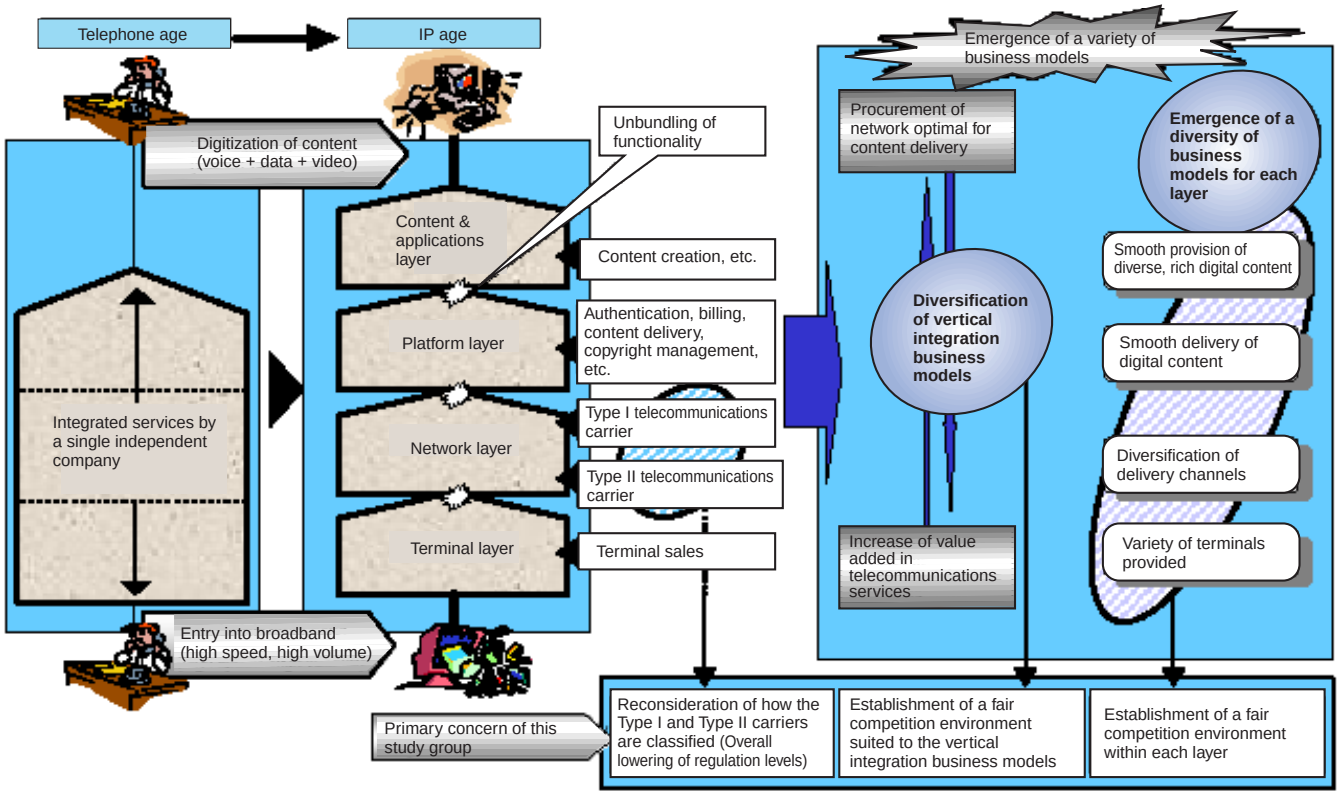
MPHPT has been holding the "Study Group on New Business Models and the Grand Design of Competitive Environments for the New Information and Communications Era" (Chair: Mr. HAMADA Junichi, Dean, Interfaculty Initiative in Information Studies, and Graduate School of Interdisciplinary Information Studies, University of Tokyo) since August 2001. The study group has deliberated on the competitive environments for the telecommunication business field toward the broadband age. At this time, the study group has compiled its outcomes as an interim report.

The study group will continue to deliberate on the competitive environments in the telecommunications business field for the broadband age with the aim of compiling its final report in June 2002. For details, refer to the Japanese web-

site:
http://www.soumu.go.jp/s-news/2002/020130_1.html

and the English website:
http://www.soumu.go.jp/joho_tsusin/eng/Releases/Telecommunications/news020130_1.html

Basic view of layer-focused competition policies



The Study Group on New Business Models and the Grand Design of Competitive Environments for the New Information and Communications Era

How Competitive Environments in the Telecommunications Business Field Should Be Established in the Broadband Age

Basic approach to establishing rules for competition

- Ensure the transparency and predictability of the system
- Establish rules that promote competition
- Ensure due process

Variety of actions that can foster competition

- Implement regular reviews of effective competition
- Create close interaction between the dispute resolution process among carriers and establishing the rules for competition
- Create close interaction between Telecommunications Business Law and Antimonopoly Act
- Establish guidelines for competition
- Value the importance of protecting users

1. Inter-layer business models and competitive environments

(1) Assessment of inter-layer business models

- Expect to see market competition stimulated on many different axes through a joint business model where multiple companies join together.

(2) Inter-layer businesses models developed by dominant carriers

- Strictly enforce fair competition guidelines related to the authorization of NTT East/West expanding its scope of business activity as well as asymmetrical regulations (regulations for dominant carriers).
- Look carefully at the status of NTT East/West subsidiaries advancing into higher-level layers, and examine how to adopt newly revised measures as required.

2. How competitive environments should be established within each layer (practical

(1) Network layer

- Simplify company licensing procedures for companies dedicated only to providing wholesale telecommunications services (within the fiscal 2001)
- Quickly draw up "Guidelines for Becoming a MVNO (Mobile Virtual Network Operator)" (provisional name)"
- Draw up "Standard Procedures for Providing Fiber Optic Networks to Telecommunications Carriers" (provisional name) for local governments

(2) Platform layer

- Set self-regulation standards for a best effort model of Internet service quality (start examining within standardization organizations)
- Specify "prohibited practices" within the November 2001 competition guidelines (drawn up in conjunction with the Fair Trade Commission) with respect to transactions between mobile telecommunications carriers and content providers (during a review in one year)

(3) Terminal layer

- Examine the use of UIM (User Identity Module) as electronic authentication cards, the release of locks on UIM cards, and the achievement of number portability, etc. (organize a group for this investigation).

3. What a framework for competition within the telecommunications business should be

- From the viewpoint of promoting the introduction of new business models for the broadband age, it is necessary to lower overall regulation standards as much as possible and create a competition framework that is clear and predictable.
- With respect to a desirable framework for telecommunications business, it is necessary to examine a variety of choices, including reevaluating the applicable range of Type I and Type II categories, separating the service sector (retail sector) from the network sector (wholesale sector), and so on.

A final report will be put together by the end of June 2002.

Toward Realization of Optimal Frequency Allocation

In a situation whereby radio spectrum resources in Japan have been stretched to the limit, MPHPT submitted a bill to amend the Radio Law, which contains survey and publication of actual radio spectrum usage and expansion of disclosure of radio station license information, to the 154th Ordinary Session of the Diet on February 22, 2002 in order to address the problem of radio spectrum demand for wireless access and other new radio systems, and further facilitate radio spectrum usage in the private sector. The outline of the bill is as follows:

Summary of the Bill to Amend the Radio Law

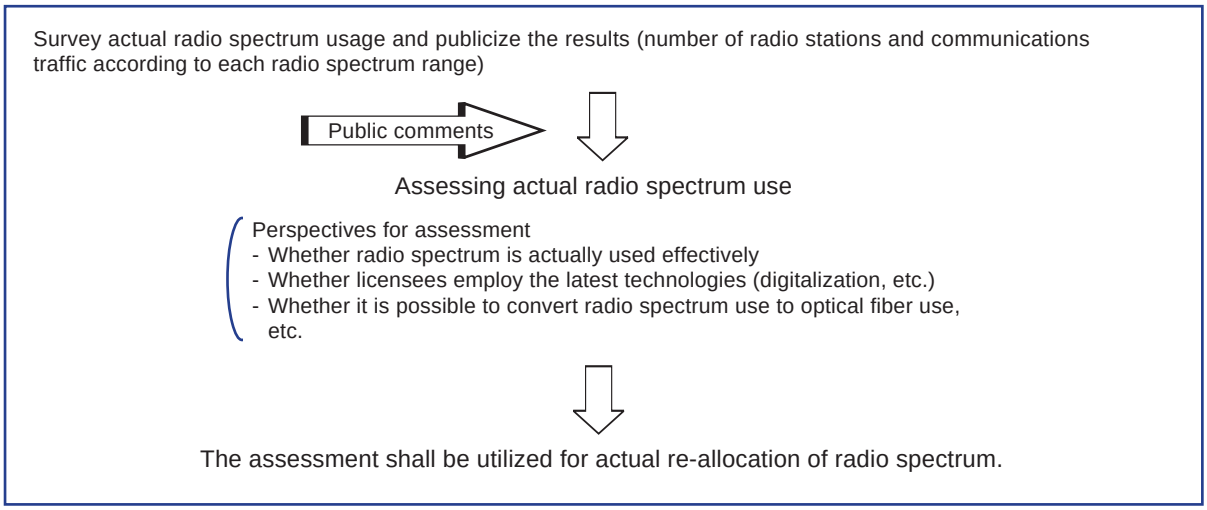
[Objective]

In order to address the problem of shortage of radio spectrum resources and radio spectrum demand for new radio systems such as wireless access and to further facilitate radio spectrum usage in the private sector, MPHPT will take measures to survey and publicize actual radio spectrum usage and expand disclosure of radio station license information.

[Content]

1) Survey, assessment, and publication of actual radio spectrum usage

In order to contribute to the reallocation of radio spectrum, which is necessary in realizing the most suitable use of radio spectrum in line with progress very made in technological innovation, the Minister shall survey actual radio spectrum usage and publicize the results at approximately three year interval, and based on public comments, assess to what degree radio spectrum is being used effectively.



2) Expansion of disclosure systems concerning radio station information

The Minister may provide radio station information (except radio stations for national security, police and other crucial services) to a person wishing to establish a radio station to enable examinations to be conducted on interference with other radio stations within the limits of the requirement for the interference examinations. If information is provided, it is necessary to prohibit the use of obtained information for purposes other than the intended purpose.

[Available information (stipulated by the applicable ministerial ordinance of MPHPT) and disclosure method]

i) License information (location of radio stations by scale of municipalities, frequencies in use, antenna power, etc.) is provided to the public on the web.

ii) Detailed information (details of radio station location, antenna type, antenna gain, etc.) is disclosed based on an application only for the purpose of interference examinations (while prohibiting the use thereof for purposes other than the intended purpose.)

[Date of enforcement]

The law is planned to be enforced as of the date stipulated in the applicable cabinet order with the following schedule:

1) For survey on actual radio spectrum use, in autumn of 2002;
2) For expansion of information disclosure systems concerning radio stations, March 2003.

Outline of the Bill to Amend the Radio Law

I. Content of Amendment

1. Matters related to disclosure, etc. of information concerning radio stations

1) The Minister of Public Management, Home Affairs, Posts and Telecommunications (hereinafter referred to as "the Minister") shall publicize items of radio station license stipulated in the applicable ministerial ordinance of MPHPT on the Internet or by other methods. (Article 25 Paragraph (1))
2) The Minister, at the request of the person, wishing to conduct the interference examination necessary when the person in question establishes his or her own radio station or in other necessary situations, may provide necessary information on the radio equipment's construction design and other items related to radio stations. The person who has obtained said information shall not use or provide said information for purposes other than interference examinations. (Article 25 Paragraphs (2) and (3))

2. Matters related to survey, etc. of actual radio spectrum usage

1) The Minister shall conduct a survey on items necessary in assessing actual radio spectrum usage (hereinafter referred to as "actual usage survey") at approximately three-year interval, in order to promote measures for that contribute to the effective use of radio spectrum in a comprehensive and well planned manner, and, if necessary, conduct an ad hoc actual usage survey on limited range of spectrum or services, etc. (Article 26-2 Paragraphs (1) and (2))
2) The Minister shall assess to what degree radio spectrum is being used effectively based on the results of the actual usage survey, taking trends in technological innovations, demand related to radio spectrum and international trends concerning radio spectrum allocation into consideration. (Article 26-2 Paragraph (3))
3) The Minister shall publicize an outline of results of the actual usage survey and assessment thereof. (Article 26-2 Paragraph (4))
4) The Minister may, if necessary in creating or changing the Frequency Allocation Plan, based on results of the assessment, conduct a survey on the technical and economic affects on licensees brought about by the creation or change of said Frequency Allocation Plan. (Article 26-2 Paragraph (5))
5) The Minister may, to the extent necessary for conducting the actual usage survey, etc., request a licensee to report on necessary items. (Article 26-2 Paragraph (6))

3. Others

Necessary provisions for penalties and other provisions shall be created.

II. Date of enforcement

This Law shall, basically come into force as of the date stipulated in the applicable cabinet order not later than six months from the day of promulgation.

"Study Group on IP Network Technology" Compiles Report

On February 22, 2002, MPHPT released the report compiled by the "Study Group on IP Network Technology" (Chair: Professor SAITO Tadao, Chuo University). In June 2001, the study group was held to deliberate on technological issues concerning IP networks.

The outline of the report is as follows:

1. Background

Technologies for public switched telephone networks (PSTNs), Japan's current major communications networks, are internationally recognized as high quality ones. The PSTNs, based on detailed technical standards, are consisting of hierarchical networks to provide telephony services.

On the contrary, Internet protocol (IP) technology, which constitutes the basics of and is derived from computer communications, including local area networks (LANs) and the Internet, is utilized for IP networks with the purpose of providing telephony service through interconnection with existing PSTNs.

The quality of telephony service with the VoIP (Voice over IP), voice communications technology utilizing Internet Protocol (IP), has been drastically improved as a result of the recent technological development. This has led to the popularization of interconnection between the IP network and public switched telephone networks (PSTNs). In addition, upon adoption in March 2001 of "Opinion D" to facilitate the introduction and widespread use of IP telephony at the ITU World Telecommunication Policy Forum (WTPF), studies on international standardization and a numbering plan concerning IP telephony are henceforth seen being accelerated on a global scale.

2. Outline

1) Speech quality of IP telephony

Based on studies in standardization organizations, such as ITU-T, ETSI, TIA, and existing regulatory frameworks, the end-to-end speech quality of IP telephony is classified into three: Class A (equivalent to fixed telephones), Class B (equivalent to cellular telephones) and Class C. In particular, for voice communications, Class C quality is required. In addition, VoIP service providers and VoIP terminal equipment vendors are required to affix appropriate marks, etc. on VoIP products in accordance with the classification.

2) Methods for assessing quality of IP telephony

As for methods, conditions, etc. for assessing quality of IP telephony, based on trends in international standardization at ITU-T, ETSI, etc., domestic standardization organizations are required to lead studies thereon.

3) Desirable technical standards concerning quality of IP telephony

In order to make technical standards applicable to various IP telephony service, VoIP service providers shall, in the same manner as the existing technical standards, set forth standard values with recognition of the MPHPT Minister and maintain thereof.

4) Numbering plan for IP telephony

Telephone numbers (telephone numbers of IP telephony) assigned to terminals (IP telephony terminals), connected 24 hours a day to IP networks via DSL, cable TV, etc., to be called by general subscriber telephones shall be decided.

5) Formulation of examination standards concerning telephone numbers

In order to use numbers fairly and effectively, examination standards shall be formulated where applications for allocation of numbers including numbers of IP telephony are filed.

6) Preparation for and study on ENUM (Electronic Numbering)

Upon introduction of ENUM, matters (management/operation systems for ENUM DNS servers) to be taken into consideration shall be studied. The outcomes of the study will be utilized for contributing to deliberations at ITU, the Internet Engineering Task Force (IETF), etc.

3. Subject in the future

1) Promotion of standardization concerning IP network technology

In order to promote IP telephony and smooth introduction of IP networks, and so that domestic technology can contribute to international standards, standardization concerning IP network technology shall be promoted.

2) Promotion of interconnection

In order to facilitate interconnection among various networks, technical conditions for interconnection shall be established in collaboration with standardization organizations, service providers and relevant businesses.

3) Security measures, etc.

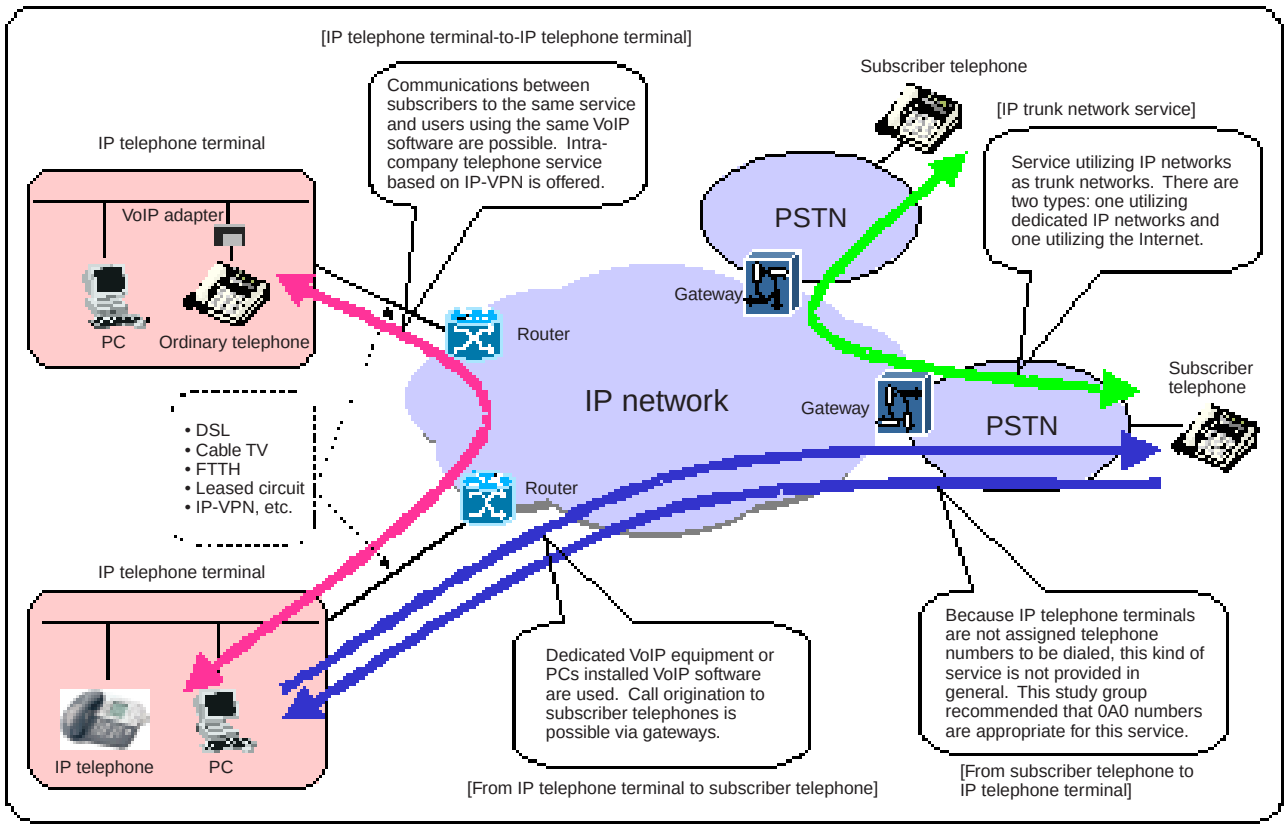
In order to protect IP networks against threats from cyberterrorists, security measures shall be implemented and understood by the public, including R&D, creation of liaison/cooperation system between the public and private sectors, and security measures for users.

4) Ensuring emergency/essential communications

In order to ensure emergency/essential communications using IP telephony, not only telecommunications carriers but also the national government shall implement R&D efforts aimed at playing a leading role in this field.

5) Measures for introducing IPv6

In order to promote the shift from IPv4 to IPv6, measures shall be studied, taking into consideration shortage of IPv4 address space.



This study group proposed as follows:
• It is appropriate that, regarding all types of IP telephony services, end-to-end speech quality be explicitly displayed in order to have consumers easily understand quality display; and
• It is necessary that the public and private sectors promote standardization activities in establishing quality assessment methods for IP telephony service, in order to adequately compare each service quality.

"Study Group into Space Communications for the Formation of an Advanced Information and Telecommunications Network Society" Releases Final Report

Since May 2001, MPHPT has been holding the "Study Group into Space Communications for the Formation of an Advanced Information and Telecommunications Network Society" (Chair: Mr. FUJITA Shiro, Advisor, NTT Data Corp.) to study future direction of space communications for forming an advanced information and telecommunications network society, taking into consideration user needs for space communications in the advanced information and communications infrastructure. The study group recently compiled its findings as the final report.

The outline of the final report is as follows:

Final Report on "Study Group into Space Communications for the Formation of an Advanced Information and Telecommunications Network Society" [Essential Points]

1. Approach by the government toward the formation of an Advanced Information and Telecommunications Network Society

- Implementation of IT Basic Law in January 2001
- Decide upon "e-Japan Priority Policy Program" in March 2001
- State objectives of "Ultra-high data rate Internet test satellite 2005 launch and 2010 practical application"
- Research by this group into space communications for the formation of an IT society based on this.

2. Situation and trends in space communications

(1) Development of space communications
- Revise regulations in advance of other telecommunications infrastructure.
- Main role in convergence of telecommunications and broadcasting such as CS broadcasting
- Wide spread of GPS for car navigation, etc.

(2) Shift in format of use
- Use of communications shifting from mainly public use to satellite Internet.
- Realization of digital multi-channel satellite broadcasting.
- Number of plans for new broadband satellites and positioning systems overseas.

3. Future Direction of Space Communications

(1) Placement of space communications in the telecommunications infrastructure
- Using synchronous and wide area features, construct an economical network by mutual completion of satellite and terrestrial infrastructure
- Basic telecommunications infrastructure that is essential not only from an economic point of view but also from the standpoint of anti-disaster.

(2) Roles that should be played by space communications in the formation of an advanced information and telecommunications network society

i) Multicast distribution of content
Through the distribution of synchronous content by satellite, a total network can be built combining the merits of satellite and terrestrial communications, with terrestrial lines transmitting 1-to-1 communications.

ii) Mobile telecommunications service that covers 100% area including broadband services
In completing the terrestrial mobile communications service, it is expected that such service covering 100% of the area including broadband can be developed using satellites.

iii) Establishment of an International Internet network
For countries in the Asia-Pacific region that do not have an established telecommunications infrastructure, international Internet services can be provided immediately using satellites.

iv) Correct the information divide by providing services to remote areas
For areas where provision of a high-speed, high-volume relay network to include remote islands is troublesome, it is expected that satellites will be used to swiftly correct the information divide by enabling connection to high-speed Internet while infrastructure is being established.

v) Provision of high-precision positioning with foundations such as ITS-GIS etc.
High-precision positioning nationwide is possible by sending corrective information from quasi-zenith satellites positioned at acute angles.

vi) High-Reliability Internet Network
Through controlled switching of satellite routes when failure or congestion in the Internet network occurs, enables improved reliability whole network.

(3) Necessary technologies from now
In order to develop new applications based on the place and role of space communications, R&D and orbit verification is required into
i) Ultra-high data rate Internet test satellite
ii) Quasi-Zenith satellites

(4) Economic waves and effect of space communications

i) Ultra-high data rate Internet test satellite
Direct effect: 78.9 billion yen
Indirect effect: 2,799.7 billion yen
Induced effect: 6,053 billion yen

ii) Quasi-Zenith satellites
Market scale for services aimed at domestic cars only (10-year total)
Approximately 200 billion ~ 1.1 trillion yen

4. Issues in Space Communications

(1) Technology issues
→Establishment of new technologies

(2) Market issues
→Cultivation of new applications in applicable areas

(3) Time-related issues
→Timely application of services

(4) Economic issues
→Reduction in costs

(5) International issues
→Securing of frequencies and orbits

5. Actions to be taken

(1) Promotion of R&D
i) Ultra-high data rate Internet test satellite
ii) Quasi-Zenith satellites
ii) Other foundational technologies
(2) Cultivation of sophisticated use of satellites
i) Joint international tests to promote sophisticated IT use
ii) Approach to using satellites in remote areas.
iii) Approach to high-reliability Internet use
(3) Establishing new methods of R&D
i) Joint use of test measures utilizing variety of satellites such as large-scale, piggy-back, small, commercial satellites
ii) Inclusion of measures to increase incentives for private application such public appeal research, and entrusted research.
iii) Release R&D satellites as a test bed and provide competitive funds for application research.
iv) Expected that a new institution made up of 3 space institutions including NASDA will link with CRL to fulfill and strengthen space development in the IT field.
(4) Policies to reduce communications costs and earth station costs
i) Practical use of ultra-high speed satellite communications technology
ii) Standardization of earth station and communications protocols
(5) Securing of frequencies and orbits
i) Securing necessary frequencies and orbits to realize Quasi-Zenith satellites for WRC-03

"Third International Forum on Advanced Satellite Communications in the Asia-Pacific Region" Held in Tsukuba City

On February 19 and 20, 2002, in Tsukuba City, Ibaraki Prefecture, MPHPT held the "Third International Forum on Advanced Satellite Communications in the Asia-Pacific Region" with the participation of satellite communications experts from telecommunications administrations, telecommunications carriers and research institutes.

In recent years, many countries around the world are implementing advancement initiatives for information and communications infrastructures, such as high-speed and high-capacity networks.

In the Asia-Pacific region, there are cities with world's most advanced information and communications infrastructures, while on the other hand, there are areas located under severe natural conditions, such as the vast ocean or steep mountains, these preventing such areas from constructing terrestrial infrastructures essential for advancing information and communications, including fiber-optic networks. As a result, the region as a whole is behind other regions in the implementation status of information and communications infrastructures.

Since 1999, MPHPT, in cosponsorship with the National Space Development Agency of Japan (NASDA) and the Communications Research Laboratory (CRL), has been holding the international forum as an opportunity for opinion and information exchanges among people in this field. The forum is also part of the "ultra-high data rate satellite communications technology" R&D project.

At the Tsukuba International Congress Center, the venue of the forum, a total of more than 200 speakers, panelists and visitors got together from the Asia-Pacific region, these being 10 countries that include Australia, China, Fiji, etc., in

addition to people from Luxembourg, France, UN international organizations such as the Economic and Social Commission for Asia and the Pacific (ESCAP).

As the first keynote speech, Mr. Edward ASHFORD, SES-GLOBAL, spoke on "Standardization concerning satellite Internet, in particular, standardization efforts in Europe." His presentation illustrating hot issues including the current status of the satellite Internet in the EU attracted many audiences.

Dr. IIDA Takashi, President of CRL, gave the second keynote speech entitled "Japan's satellite communications R&D program and international joint experiments," introducing CRL's research activities and R&D projects such as "Wideband InterNetworking engineering test and Demonstration Satellite (WINDS)," the Quasi-Zenith Satellite, etc., international joint satellite communications experiments, as well as long-term R&D targets for 30 years.

After the keynote speeches, three panel sessions by theme were held in order to promote in-depth discussions. Outlines are as follows:

Panel Session 1: "Anticipated applications suitable for satellite communications"

Each panelist introduced the current status and future challenges of their satellite communications projects. The following proposals and opinions were made:

- Judging from trends in existing satellite communications business, use of IP applications and digital multichannel broadcasting will be spread.
- In the Asia-Pacific region, there are several successful network operation involving practical distance learning and telemedicine utilizing satellites. Thus, it is important that these systems be wholly interconnected.
- Cost-effectiveness of total satellite systems including earth stations is essential.

Panel Session 2: "Development of applications utilizing the Engineering Test Satellite (ETS-VIII) and international collaboration"

NASDA reported R&D status of ETS-VIII, examples of systems, technical conditions derived from local conditions in implementing experiments, methods for burden sharing in cooperation, etc. Panelists made the following proposals and opinions:

- Distance learning and environmental monitoring systems as applications for experiments were proposed.
- As a future direction of satellite mobile communications service employing S-band, which ETS-VIII utilizes, 3G mobile telephone-class high-speed/broadband and Internet data transmission functions are vital elements.
- In areas with many islands, where submarine cables are not sufficiently installed, use of satellite systems, in particular, satellite systems with features coping with rapid deployment of IT, is indispensable.

Panel Session 3: "Development of applications utilizing WINDS and international collaboration"

CRL reported R&D status of WINDS. Panelists made the following proposals and opinions:

- R&D on applications such as distance learning and telemedicine were proposed.
- Joint experiments utilizing sectoral IP joint platforms are proposed.
- As for establishment of cooperation schemes, it is desirable that multilateral expert groups be established in each application field (distance learning, telemedicine, etc.).
- As regards roles of participating institutes including cost sharing, the following and other methods are to be studied:
- Japan accepts almost all burdens.
- Each telecommunications carrier coordinates parties in their country.
- Each institute participates in construction of earth stations and local facilities.

MPHPT will, based on valuable proposals and opinions obtained during this forum, strive to form a consensus with economies in the Asia-Pacific region regarding international joint experiments utilizing the ultra-high data rate Internet satellita, then implement the international collaborative experiments.

MPHPT will hold this international forum annually until 2005, the year WINDS is scheduled for launch.

"2002 Forum on the Results of the POST-PARTNERS Experiments" Held

Since FY1996, MPHPT has been promoting the "POST-PAn-pacific Regional Telecommunications Network Experiments and Research by Satellite (POST-PARTNERS) PROJECT," an international joint experiments using satellite communications for the purpose of verifying the effectiveness of satellite communications in areas including human resources development, technology transfer and education/medicine, with five countries in the Asia-Pacific region (Fiji, Indonesia, Malaysia, the Philippines and Thailand).

On February 22, 2002, the "2002 Forum on the Results of the POST-PARTNERS Experiments" was held at Chiyoda Media Plaza sponsored by the POST-PARTNERS Promotion Council (Chair: Mr. KATO Hidetoshi).

At the meeting, the following results of the experiments being conducted under the project for these six years were presented. Also, at the closing of the meeting, the joint statement for further deployment of international collaborative experiments was adopted by all participants, leading to a successful conclusion of the meeting.

Major results

1) Distance education of foreign languages using satellite communications (National Institute of Multimedia Education: NIME)
2) Japanese-language education support project using satellite (The Japanese-Language Institute, Urawa, the Japan Foundation)
3) Interactive environment of satellite communications for distance education (The University of Electro-Com-

munications)
4) Experiments on utilization of the POST-PARTNERS PROJECT and Satellite Conferencing System (SCS) (Tokai University)
5) International cooperative medical experiments using satellite communications (I Digital Media Inc.)
6) Result outlines of the POST-PARTNERS PROJECT at King Mongkut's Institute of Technology Ladkrabang (King Mongkut's Institute of Technology Ladkrabang: KMITL)
7) Result outlines of the POST-PARTNERS PROJECT at Phuket Technology School (Phuket Technology School)
8) Result outlines of the POST-PARTNERS PROJECT at Chiang Mai University (Chiang Mai University)
9) Rainfall attenuation measurement experiment in Malaysia (Universiti Sains Malaysia)
10) Wave science and telecommunications technology in the tropical regions (Bandung Institute of Technology: ITB)
11) Result outlines of the POST-PARTNERS PROJECT in the Philippines (Ateneo de Manila University)
12) SCS-POST-PARTNERS cooperation experiments (National Institute of Multimedia Education: NIME)
13) Relaying video conferencing using satellite links of the POST-PARTNERS PROJECT and terrestrial high-speed network (Communications Research Laboratory)
14) Satellite signal propagation experiment in the equatorial area and satellite communications networks in the Asia-Pacific region (Communications Research Laboratory)

2002 FORUM ON THE RESULTS OF THE POST-PARTNERS EXPERIMENTS

February 22nd, 2002
Chiyoda Media Plaza

JOINT STATEMENT on the POST-PARTNERS PROJECT

International joint information and communication experiments using satellites, known as the "POST-PARTNERS PROJECT," have been conducted by Japan and countries in the Asia-Pacific region since 1996, based on the results of the PARTNERS PROJECT. As this project draws to a close, we recognize that we share the following understanding.

Information communication technology (ICT) has been promoted on an unprecedented scale and made a significant impact on politics, economies, cultures, and other social areas, over the past decade.

We have contributed to the construction of the information communication infrastructure in the Asia-Pacific region by conducting joint satellite experiments in the field of education, medicine, and science.

However, countries in the Asia-Pacific region lack financial resources, required knowledge and skills and are further handicapped by geographical problems. It is therefore important to realize an environment in which everyone can have access to a high-speed and secure information and communications infrastructure at affordable prices.

We, therefore affirm that it is necessary to collaborate on further projects following the POST-PARTNERS PROJECT to resolve the outstanding issues that remain.

It is our mission to make full use of the results of the POST-PARTNERS PROJECT to set the stage for a new project, and encourage the construction of an advanced information and communications infrastructure.

When we set up the new project, we should take into consideration such factors as a combination of satellite and terrestrial systems, development of new application programs and development of human resources.

Finally, the POST-PARTNERS PROJECT has proved to be contributed to mutual understanding, education and research collaboration, and human resources development in the Asia-Pacific region and we declare our intention to work together on the enhancement of an advanced information and communications infrastructure and development of cooperation for the benefit of all.

The Forum of the POST-PARTNERS Experiments