

EXECUTIVE OFFICE OF THE PRESIDENT

# OFFICE OF TELECOMMUNICATIONS POLICY

ACTIVITIES AND PROGRAMS

1972 - 1973

### FORLWORD

Calendar 1972 was the second full year of operation of the Office of Telecommunications Policy. The following report summarizes the principal activities of the Office in the four broad areas of its concern, and sets forth the principal programs contemplated during the present year. Omitted are those activities related to internal organization and management, and also to routine operations, such as review of legislation referred for comment by the Office of Management and Budget.

#### I. DOMESTIC COMMUNICATIONS

#### A. Common Carrier Communications

Common carrier communications is for the most part a monopoly public utility service provided by the Bell System and independent telephone companies. The performance of the industry has come under increasing criticism in recent years, and it has been proposed that various segments of common carrier operations be opened to competition. In response to such proposals the carriers have asserted that the benefits of economy of scale and operational integrity derived from integrated ownership and operation far outweigh any potential customer benefits from competition.

OTP has initiated several investigations into these questions. The ultimate aims of these studies are, first, to develop recommendations as to which aspects of common carrier operation can safely be opened to increased competition, and which should remain under integrated control; and, second, to determine the regulatory principles and practices best designed to ensure that noncompetitive operations remain efficient and innovative.

Principal studies and findings to date include the following:

#### 1. Domestic Satellite Communications

OTP has consistently found that there are insufficient economies of scale in domestic satellite communications to warrant government restriction of competition. It therefore recommended to the FCC that any technically and financially qualified applicant be allowed to establish and operate satellite systems on a competitive basis, and participated in the FCC hearings on this subject. Subsequently, the FCC adopted what is essentially an open entry policy with respect to the provision of communications services via domestic satellites.

#### 2. Specialized Communications Carriers

The entry of new communications carriers offering "specialized" services (generally any services other than public telephone, e.g. data, private line, video interconnection) in competition with the existing telephone carriers was approved in principle by the FCC, but a number of issues which could determine the practical feasibility of competitive entry were left unresolved-such as the allowable monopoly pricing response and inter-

To assess the implications of these issues for longrange public policy, OTP initiated three major programs. First, OTP undertook a major study to identify and quantify scale economies in the provision of all significant voice, data, and video common carrier servies by individual functional areas (i.e., long-haul transmission, toll switching, local distribution, terminal supply, and general provision of service). This is necessary in order to decide where monopoly should be protected from competition or is inevitable, from where it is not. OTP also explored various pricing policies with a view toward determining which of these policies would promote the greatest efficiency in the monopoly area, as well as prevent hidden subsidies from arising, and best promote

Second, OTP began to investigate the technical and economic implications of alternative interconnection policies which, among other factors, will be a major determinant as to whether competition in the supply of terminal equipment (e.g., telephone and data sets) to be used with the existing telephone network is viable. This investigation will serve as the basis for recommendations for new legislation or regulatory policy.

Finally, OTP began an examination of the benefits and feasibility of a brokerage market--i.e., a market in the resale of communications services by non-common carriers--and an evaluation of possible impact of removing current restrictions on such activities on common carrier operations, revenues, revenue requirements and service arrangements under various policy alternatives.

Taken together, these three programs will provide guidelines for public policy regarding the major structural characteristics desirable in this industry group.

3. Common Carrier Regulation

Even if it is feasible to allow new communications services to develop on a competitive, rather than monopoly basis, and to introduce competition into selected existent aspects of common carrier operations, this will affect only about 10-20% of current total common carrier operations. Most common carrier operations, notably the public telephone service, will continue to be monopolistic for some time.

Effective regulation of monopolies is necessary to prevent investments in inefficient facilities, excessive rates and profits, technological obsolescence, service degradation, and other problems, but it is difficult for government to second-guess a large public utility on detailed investment and operating decisions. For this reason, in the coming year OTP will continue to explore the desirability of encouraging better public performance of regulated utilities through improved policies rather than increasingly detailed regulation.

a. <u>Depreciation Programs</u>: The common carrier industry is heavily capital intensive, requiring sums for the expansion and replacement of facilities of close to \$10 billion per year. OTP is very much concerned with the cost of obtaining such large amounts of capital, as well as the impact of the demand for such capital. Consequently, it is carrying out a study of common carrier depreciation policy with the aim of determining how capital can be generated internally under various depreciation alternatives, at what costs, and to whom; and also how depreciation policies generally can affect the rate at which new technologies capable of reducing both capital and operating costs are implemented. Common carrier equipment is typically depreciated over very long periods corresponding to the expected physical life of the equipment, although the useful life is often much shorter due to rapid technological advances. This is only one aspect of depreciation policies that affect common carrier financial decisions and customer rates; other aspects are disposition of fixed asset salvage, separation of depreciable and nondepreciable investments, and purchasing policies of common carriers along with the pricing policies of their suppliers. In 1972, OTP made an overall investigation of the depreciation practices, objectives, effects, and alternatives in the common carrier industry.

b. Accounting Programs: OTP is also conducting an in-depth study of the FCC's Uniform System of Accounts for common carriers, the objective of which is to identify the full range of operating incentives implied for the carriers by this regulatory reporting system and the effect these in turn have on the quality and cost of

service. One of the study's major findings to date is that the classification for capital facilities costs and for operating costs bears no relationship to the classification for service revenues, and thus the Uniform System currently can provide little or no guidance in assessing the reasonableness of the rate of return for particular services. Other issues which will be considered within the study this coming year are the types of incentives and controls under the existing system of accounts that govern the classification of expenditures as either capital or operating costs, the treatment of asset salvage, and the method of tax accounting. Additionally, the possibility of making certain changes with respect to station connection accounting and installation procedures--changes which could add substantially to common carrier cash flow as well as to customer options in instrument selection, payment and rearrangements -- will be explored.

### B. Cable Television and Broadband Communications

Broadband cable systems represent a new communications medium which can increase consumer choice in television programming and provide many new communication services hitherto unavailable. The immediate effect of cable expansion, however, is to disrupt some of the distribution practices of the existing television industry and to threaten the economic position of some broadcast stations and copyright owners. There is urgent need for policies to guide the development and regulation of cable in such a fashion that its enormous benefits can be rapidly achieved without depriving the society of its healthy programming industry and its essential broadcasting services.

In 1972, OTP undertook a series of studies and investigations to identify and illuminate particular aspects of broadband cable development that require policy consideration, and to develop policy recommendations.

Two of these studies have been completed:

 (a) A study of the present and projected costs of broadband cable systems, to serve as a basis for estimating future growth patterns and rates of development of cable distribution systems;

(b) A study directed to the development of an industry simulation model to be used in conjunction with the results of (a) and (c), below, to predict future industry development.

A third study has yielded significant information and is close to completion:

(c) A study on projected consumer demand for cable television as a function of population and market characteristics, to enable the formulation of alternative regulatory policies appropriate for different economic environments.

In addition, the following study was initiated in January of 1973:

(d) A study to determine the most economical ways of conserving and enhancing broadband communications services in low density rural areas, where cable technology may not be economically feasible.

In addition to these studies, OTP has provided supporting analysis and developed alternative policy options for the President's Cabinet committee on cable television. In this work it has examined, among other matters, the economic and social effects of vertical integration in the production and distribution of cable television programming; the probable impact of expected cable growth on the broadcast and copyright industries; the problems of access to the cable media by all segments of the public and industry; and considerations pertaining to joint ownership of broadcast, cable, and telephone facilities. Policy alternatives pertaining to these various matters were developed for consideration by the Cabinet committee. The results of this activity have been presented to the committee, which is expected to complete its report in the near future.

A significant achievement in the cable television field was resolution of the long-standing controversy concerning distant signal importation, that is, cable use of signals broadcast by out-of-market television stations. The distant signal question involved complex, interrelated issues such as CATV's need to offer this service in order to attract capital and begin its growth, the effect of distant signal competition upon the economic stability of local radio and TV stations, program suppliers' need for copyright protection, and the public need for a wide diversity of quality program services. Since OTP believed that delay and uncertainty would be harmful to the public interest, it agreed to act as mediator in the dispute. The principal private parties ultimately agreed upon a compromise plan, the main feature of which was to supplement the then existent FCC rules with regulatory and legislative copyright and exclusivity provisions. Main elements of this plan were ultimately reflected in rules which the FCC adopted in March of 1972. Congress is still considering the copyright provision of the plan, the main element of which is to establish a schedule of fees governing the use of copyrighted programs, or if such a schedule cannot be agreed on, compulsory arbitration. OTP will retain its interest in this area and follow developments closely.

In addition to the above activities, OTP is coordinating, with HUD and HEW as major participants, the design of a demonstration program that would show effective and economical uses of broadband communications for the delivery of public services and would allow industry to test earlier than otherwise possible the potential of broadband communications for innovative non-public services. The program would be a joint government and industry undertaking that would ultimately benefit both the private and public sectors. During 1973, OTP will continue its coordination of interagency effort, and will guide the demonstration program through its various stages, including the planning of specific experiments, the selection of demonstration sites, and the enlisting of state and local government participation. Finally, also during 1973, OTP will initiate a study to evaluate the economics of allowing consumers to purchase television programs directly over cable. This study will enable an assessment of the desirability and feasibility of such systems and their potential role within the broadcasting and cable industries.

C. Broadcasting

### 1. Public Broadcasting

The Public Broadcasting Act of 1967 created a framework for educational and instructional broadcasting, largely as envisioned by the Carnegie Commission on Educational Television. However, the means of establishing a stable source of federal support funds which would avoid detailed government oversight of program content, was left unresolved and has remained so. In addition, the years since 1967 have witnessed the development of important new technologies for which no provision is made in the Public Broadcasting Act.

During the past two years, OTP sought to achieve amendments to the Act which would eliminate both these deficiencies. It consulted with interested organizations in public broadcasting and with the relevant agencies of government, and reviewed a range of approaches to new legislation.

Last year, OTP worked with the Congress and submitted a bill providing for an additional year of funding for CPB and assuring federal funding of individual public broadcast stations. Congress, however, adopted a different bill which would have increased the federal funding of public broadcasting by more than \$115 million over a period of two years. As a practical matter, the bill would have undercut any hope of resolving the various problems that have developed in public broadcasting regarding its structure and the various relationships between the local stations and the national organizations. Consequently, the President vetoed the bill.

In the coming year, OTP will prepare legislative proposals to continue funding of public broadcasting by the Federal Government.

### 2. License Renewal Policy

One of the major broadcasting controversies of recent years has involved the triennial license renewal process. Although all can agree that a broadcaster who has performed well in the public interest should have his license renewed, the Congress, FCC, and the courts have struggled with the questions of what is good performance and what standard should be used to judge the incumbent licensee's performance in the face of a challenge to his renewal application.

Because the search for standards comes at a time when community interest in licensee performance is strong and when competition for licenses is increasing, a certain amount of undesirable instability has been injected into the broadcasting industry. The regulatory process has become frought with delay and uncertainty, and the industry's ability to serve the public has suffered.

Late in 1971, OTP developed and proposed for public discussion a wide-ranging series of suggestions for modifying the Communications Act of 1934, one of which dealt with license renewal policy. OTP pointed out the dangers of adopting renewal standards that lead to government supervision of program content. It proposed for discussion a more "neutral" renewal standard that would place the primary emphasis on the licensee's being attuned to the programming needs and interests of his local audience. Using this standard, a premium would be placed on the obligation to be directly responsive to community problems and issues; licensees who had met this obligation would be assured license renewal. This would lead to needed stability in an industry that must make relatively long-term commitments to public service.

In December of 1972, following further study of the license renewal process, OTP proposed that the legislative provisions governing license renewals be revised. It proposed an amendment to the Communications Act of 1934 which would make four revisions in the present renewal process: the extension of the term of license from three to five years; the requirement that policies concerning qualifications to hold a license be made solely through rulemaking; the establishment of specific procedures to be used in the event that a renewal application is challenged by a competing application; and finally, the prohibition on use by the FCC of predetermined performance criteria to be used in evaluating renewal applications.

The proposed legislation seeks to establish a regulatory environment which allows for competition for the grant of a license, and, at the same time, reduces the uncertainty and instability that has beset the industry.

# 3. Fairness Doctrine and Access to the Broadcast Media

Another critical issue--one that is central to the role of the mass media in an open society--is that of public access to the broadcast media for discussion of and information about controversial public issues. The FCC's Fairness Doctrine requires the broadcaster to make time available for the presentation of contrasting viewpoints once a particular side of a controversial issue of public importance has been expressed. Although not originally contemplated, this "fairness" obligation is now being enforced on an issue-by-issue, case-by-case basis, instead of through an overall evaluation of whether the broadcaster has kept the public well informed, with reasonable time for contrasting views. When enforced in this manner, the broadcaster's journalistic determinations are repeatedly second-guessed by the FCC and the courts, and since these are agencies of government, the decision as to who shall speak on what issues becomes part of the governmental process. This diminishes the "free press" discretion of the licensee and tends to convert broadcasting from a private enterprise activity to a government supervised service.

A major incentive for case-by-case application of the Fairness Doctrine is the fact that individuals' access to the media for discussion of controversial issues can only effectively be achieved through that device. Broadcasters do not ordinarily sell their advertising time for such purposes--partly because they may be compelled to "balance" such presentations in their program time.

In 1971 OTP studied the history of Fairness Doctrine enforcement and the closely related problem of access to the media. As part of the series of suggestions for modifications in broadcast regulation made in October 1971, OTP proposed that there be considered a right of nondiscriminatory access to TV advertising time, accompanied by the elimination of any requirement that paid views be "balanced" by views expressed in program time. In program time, OTP suggested that the fairness obligation ultimately should be enforced by an overall inquiry into the licensee's journalistic responsibility at license renewal time, rather than in the case-by-case fashion now employed.

Under the present structure of broadcasting--the technical scarcity of channels available as broadcast outlets, and the reliance on persons entrusted with these outlets to serve as a vehicle for informing the public--the Fairness Doctrine itself is necessary for the time being as a means of preserving the public's right to be informed. However, the means and mechanisms of enforcing the Doctrine must be improved, and governmental intrusion into program content must be minimized. Enforcement of the Fairness Doctrine through a review of the broadcaster's overall performance and programming at license renewal time, rather than through case-by-case adjudication, would be a step in this direction.

OTP will continue during the present year to explore various alternatives for solving the fairness and access dilemmas. It will seek to assist the Congress and the FCC in devising mechanisms to enhance free expression and to minimize government intervention in the marketplace of ideas.

### 4. Radio Regulation

For many years, radio broadcasting has been regulated as an afterthought to television. Some of the rationales and assumptions, such as scarcity of outlets and restricted entry, which shaped early radio regulation and still justify regulation of television stations, have been rendered meaningless by the phenomenal growth in the number of AM and FM radio stations, offering widely diversified special program services to the public.

In 1971 OTP proposed to the FCC that it undertake an experiment in radio deregulation, with a view toward lessening the regulatory controls on commercial radio programming, commercial practices and other nontechnical operations. The proposal was supported by an OTP Staff Paper setting forth the reasons such an experiment seemed appropriate and promising. In response, the FCC instituted a program to reassess its regulations governing radio, and is in the process of acting on its findings. OTP will continue working with the Commission, broadcasters, and public to provide recommendations as to how radio regulation can be improved.

#### 5. Reruns of Networks Programs

In recent years, the portion of network prime time devoted to reruns of original programs has increased dramatically. The increase in reruns has resulted in a diminution in the variety and creativity of programming available to the public and, by contracting the market for new programs, has threatened the economic underpinnings of the program production industry.

However, it has been unclear what the cause of this change is, and what are the available techniques for dealing with it. On the one hand, the shift to more reruns may be attributable to unfair use by the networks of their monopoly position in buying and distributing programs. Or, on the other hand, the trend may be due to inexorable market forces, such as increases in program production costs not covered by commensurate rises in advertising revenues. Better knowledge of this is required as a basis for determining whether Federal action is necessary.

In view of the importance of this matter to the viewing public and to the health of the program production industry, the President requested that OTP inquire into the causes of increases in network reruns, and, if appropriate, recommend remedial action. OTP is completing its study and is preparing its report for the President.

### D. Federal-State Communications

Issues affecting state and local governments arise in every area of communication policy and in varying contexts. For example, the planning of a national emergency communication system requires state and local participation; regulation of the communications common carrier industry has traditionally been divided between the Federal Government and the states. Regulation of CATV systems has involved both federal and local authorities; public broadcasting and educational communications involve state and local governments to a significant degree; the operation of public safety communications systems (police, fire, ambulance, etc.) is usually under the direct operational control of local officials; and in many cases, local governmental communication facilities and services are funded in whole or in part through federal grant-in-aid programs.

To provide guidance and assistance to state and local governments, OTP undertook and completed the following tasks: (A) a review of the various federal telecommunication assistance programs; (B) the issuance of OTP Circular Number 2 requesting all executive agencies to provide information on their current and planned telecommunications research programs which might affect state and local programs; (C) studies for the states of Hawaii and Alaska to identify their unique communications requirements; (D) the preparation of a Cable Communications Handbook for local government officials to provide a basis for community planning and decision; (E) a conference between communications officials of Hawaii, Alaska and the U.S. Trust Territories to strengthen their communication planning procedures.

To provide national policy guidance to state and local governments on the implementation of the nationwide emergency telephone number "911", OTP has prepared a coordinated national policy, contracted for a community planning handbook on "911" implementation, and provided for the establishment of a federal information clearinghouse on "911."

To provide support for public safety telecommunications, OTP is seeking the improvement of the national law enforcement teletype system (NLETS), which services state and local law enforcement agencies in 48 states. OTP is also pursuing an effort to identify the issues that arise from the potential delivery of public services via modern communication methods (CATV, satellites, etc.) with particular emphasis and priority on the communication aspects of the delivery of emergency medical services.

Finally, OTP maintains a continuing program of consultation with state public utility commissions and with the FCC concerning the impact of specialized communication carriers, cable systems, spectrum usage, data communications and other developments in communications which involve regulatory policies and practices. OTP engages in an active dialogue with state and local officials in order to respond to communications problems and issues as they arise.

## E. Mobile Communications

The frequency spectrum available for mobile radio services has been tripled by the FCC in a series of actions taken in 1970 and 1971. The mobile communications industry should no longer be limited by a frequency shortage but will face more clearly classical supply and demand limitations. This will raise a number of issues as to appropriate types of new systems, new services and the institutional structure to support them and the manner in which the larger bloc of spectrum will be sub-allocated among the competing mobile services. The transition from spectrum scarcity to spectrum abundance must be regulated to create an industry structure that is sensitive to future demands for communications services of all types, including improved mobile telephone services for all areas, integrated dispatch services, and public telephone services for domestic aircraft. It is equally important, as the spectrum available for mobile communications expands, to provide for the maximum amount of competition, both in the manufacture and sale of equipment and in the actual provision of service to the public.

In early 1972, OTP commenced a program, using staff, contract, and Policy Support Division resources, to assess the technical, economic, and institutional effects of proposed new mobile systems and services and to formulate policy guidelines for the development of the expanded industry including guidelines for the introduction of competition. It is expected that the results of this program, along with recommendations to the FCC concerning policy guidelines for mobile communications will be forthcoming soon. Additionally, in cooperation with the FCC, DOT, LEAA, HEW, and HUD, OTP will continue to assess the feasibility of a pilot program to demonstrate innovative uses of mobile communications services in support of public safety, emergency health services, highway safety, and transportation in general.

### F. New Technology

During the past decade, there have been radical improvements in communications technology resulting from independent research and development of U.S. industry, research in the academic community, the U.S. space program, and other government-sponsored R&D. These technologies provide opportunities for vastly improved and expanded communications services, which could have significant social and economic effects if exploited properly.

OTP maintains in conjunction with the National Science Foundation and the Department of Commerce, an ongoing study effort designed primarily to identify areas in which new technological advances are occurring and to evaluate the effect of these technologies upon the existing structure of the domestic communications industries. In 1973, OTP plans to identify the current state-of-the-art in the major fields of communications technology, to determine the existence of any gaps in research, and to anticipate any potential future policy problems. If necessary, OTP will recommend policy guidelines regarding the applications of new technology.

### G. Computers and Communications

In recent years, the two separate industries of computers and communications have come to intersect in several important areas. The use of computers in communications has enabled, or made considerably less costly, new modes of transmission, switching, network design, and system administration. Conversely, the use of communications in conjunction with computers has permitted the sharing of data-processing resources and the pooling of information banks, and has provided an access to computers that has opened up new opportunities across the entire spectrum of endeavor, including business, education, and social services, to name only a few.

The concerns in this area are in part common with those of other areas of domestic communications: Determing the division between competition and regulation, and for the latter, defining a governmental role which avoids inhibiting or restricting the flow of ideas and information. At the same time, however, computers and communications pose some issues which are unique, such as the threat to privacy, equal opportunities to information, and the protection of intellectual property rights.

OTP has commenced one program in this area which will be vital to the task of providing policy guidance. It initiated a review of the basic economies which underlie computers and communications, and therefore, to a great extent, control both its own development and the requirements for policy. From this program, it is expected that a basic understanding of this new combination of industries, as well as the analytic tools and concepts needed to guide it, will be developed.

#### II. GOVERNMENT COMMUNICATIONS

### A. Federal Communications Policy and Planning

The Federal Government's own communications consume from 5 to 10 billion dollars per year. The major concerns in this field are avoidance of duplication, effective management of the acquisition of new systems, achievement of compatibility among systems, and satisfactory operating performance.

The major objectives of the OTP program in the area of Federal communications are: first, identifying all the communications activities and resources of the Federal Government; second, determining the needs for effective information exchange among the various departments and agencies; third, promoting economy in the government's use of communications, through sharing of facilities, elimination of duplication, and effective use of commercial services; and finally, encouraging the use of communications to improve productivity and enhance coordination of Federal Government activities. During 1973, arrangements for the interagency coordination required to achieve these objectives will be strengthened and aligned as appropriate with the Administration plan for the coordination of departmental activities. The areas of government communications to be involved are: communications networks, aids for radio navigation, satellite programs, communications of the Executive Office, audio-visual activities, equipment and facilities standards, and procurement practices.

In the previous year, OTP completed a review of all existing studies and analyses pertaining to the integration of the two largest communications networks in the Federal Government, the AUTOVON network and the Federal Telecommunication System. Based on this review, it was decided that the systems should not be merged. However, this review revealed conflicting considerations concerning the degree of interconnection and inter-usage that should be sought. To resolve these conflicts, OTP directed a field test of service to selected military installations to obtain firsthand data relative to economic and service benefits which might accrue as a result of mutuality of service. The test has been completed and the results are being analyzed. Completion of the analysis will provide adequate information upon which to base decisions concerning further integration or interoperability of military and civilian communications activities.

OTP has completed a review of existing and planned radio navigation aids operated or used by various elements of the Federal Government. It has begun work with the affected Federal departments and OMB to (1) coordinate the navigation satellite programs of the various departments; (2) determine the minimum mix of navigation aids and systems to meet government and civilian requirements; and (3) structure a coordinated national navigation program.

It has formulated a plan to designate a single system for long-range general purpose navigation and will issue this plan to the affected department for planning and budgeting guidance and to the civil community for its

The major portion of review of the government's present communications satellite program initiated last year will be concluded in 1973. The collection of information with regard to such programs is nearly complete. Several programs have already been identified for a more detailed analysis which will be aimed at identifying satellite systems which can be (1) reduced or eliminated, (2) consolidated with others, or (3) expanded to serve additional users.

A major consideration in the design of government communications systems is selecting the best means of meeting unique needs, particularly those of the national security community. Special requirements for survivability and security, for example, can be met by highly specialized systems, or by designing general purpose government networks to include these features.

Meeting such requirements creates a dilemma for policy makers. Specialized systems with limited capacity are relatively inefficient for day-to-day use, and seem costly if relegated solely for emergency or backup use. On the other hand, incorporating special features in general purpose systems raises the cost of such systems for all users and can result in an unwarranted expansion of the demand for such features. This dilemma must be taken into account in developing policies and plans affecting Federal for resolving it, including the development of good working relations with the Department of Defense and other national

A study has been completed of the applicability of new communications technology to the unique needs of the Executive Office of the President. Particular emphasis was given to the possible utility of wideband and high speed data services. This study provides guidelines for the introduction of new equipment when and as needed, while ensuring that all equipment fit into an integrated system capable of evolution as technological potential and government needs change. During 1973, key technical and economic questions will be resolved, and a demonstration of selected new capabilities will be begun. This will also provide a basis for recommendations on other inter-agency communications systems.

OTP is conducting an interagency study to improve the management of all audio-visual activities within the Federal Government. This study will review in-house versus contract decisions for the production of audio-visual materials, the volume of and need for government-owned facilities and equipment, and the potential for interagency coordination and cooperation for effective utilization of such facilities and equipment.

An improved process for the development of Federal communications standards has been established with initial emphasis on standards for data communications and standards to promote the interoperability of government communications networks. In 1973, emphasis will on one of the key elements of such networks, modulator-demodulators, or modems.

A review of government policies and practices for the procurement of telecommunications equipment and services has been started. Its goal is to develop updated and improved government policies and practices in the light of recent changes in regulatory practices and in the structure of the industry, particularly the introduction of competitive suppliers of specialized services and interconnecting equipment. One important factor in the study is the clarification and application of the government's policy of maximum reliance on the private sector for the provision of services and facilities. Another is the problem of reconciling conflicting approaches to computer and communications procurement when systems composed of both elements are involved. A third factor of importance which will be considered is the unique and difficult problem relating to the procurement of satellite communication systems and services.

Finally, OTP has established the Government Communications Policy and Planning Council. The Council, consisting of representatives of key Federal agencies, will provide a focal point for bringing the potential benefits of communications technology to all Federal agencies as a means of increasing productivity, coordinating operations, and improving the delivery of services to the public. The Council will enable these benefits to be obtained without costly duplication or bureaucratic delay, and through effective cooperation among all of those responsible for Federal communications policy and planning.

#### B. Emergency Preparedness

The purpose of the emergency preparedness program is to insure that national and Federal communications resources will be available and applied, in emergencies, to meet the most critical national needs. This is a demanding task, because of the numerous contingencies that must be provided for--both with respect to the nature and location of the disruption and with respect to the nature and location of the services which, in one or another circumstance, it must be considered vital to restore. Emergency communications plans and capabilities must comply with three basic principles: first, maximum dual use of facilities for both emergency and routine operations; second, balanced survivability among communications and the facilities which are supported by communications; and third, focusing of responsibility to assure accomplishment. These principles are implemented within the framework of the Federal Government's overall emergency preparedness program, only part of which deals with telecommunications.

Policies and plans for managing the nation's telecommunications resources during war emergencies or natural disasters have been completed. These plans delineate the responsibilities of various Federal agencies regarding telecommunication, and indicate the coordinating arrangements to be used.

In 1972, OTP engaged in a review of the policies and procedures under which critical private line services would be restored by the United States communication common carriers. This review resulted in issuance by OTP of revised policies and procedures for the restoration of such services under a system of defined priorities. Work is now proceeding in conjunction with other Federal agencies to evaluate the currently assigned and requested priorities and to determine whether, and how, the number of priority circuits should be reduced.

With regard to its responsibility of determining policy for warning citizens of attack or of emergencies, OTP in 1971 issued a policy that any use by the public of home radio receivers in a nationwide radio warning system would be strictly voluntary. At that time a number of studies were undertaken to determine the most effective and economical alternative approaches to providing warning. Several of these studies will be completed during 1973, and further actions for improving the provision of warning to citizens will be made.

During 1972, a new manner of activating the Emergency Broadcast System (EBS) was implemented under OTP's direction. Further changes to improve the effectiveness and efficiency of the EBS will be studied and implemented during 1973.

To provide increased understanding of communications problems which arise when natural disasters occur, several actual disaster situations were studied and the lessons learned were incorporated into pertinent plans and procedures. This practice will be continued in order to provide a larger base of experience for evaluating warning and emergency communications systems and procedures.

### C. Computers and Communications

Recent technological advances in the field of computers and communications have produced the potential for several alternative industry structures, for the provision of data processing as well as data communications services. Which of these alternatives will eventually become dominant will be determined both by the regulatory policies adopted by government, and the inherent economic characterisitcs of computers and communications. This process--the emergence of an industry structure--has already commenced; however, many important questions remain unanswered, and many pertinent areas have not even been explored.

The development of hybrid computer-communications systems has significant implications for the Federal Government in two important fields. First, it will affect procurement of the government's own data processing and communications services. In particular, new hybrid systems may allow economies to be obtained through the sharing of network services by departments and agencies now obtaining such services independently. Secondly, the development of hybrid computer-communications systems may lessen the need for the government to design and operate its own hybrid systems, by making these available in the private sector. To assure that government use of computer and communications systems is effective and economic, OTP, during the past year, developed a model of hybrid networks that enables a thorough investigation of the economic implications of alternative system structures, sharing policies, and telecommunications tariff arrangements. During 1973, initial use of the model will be made to study high priority issues, including the economics of system sharing within the Federal Government. Also during 1973, an initial survey will be made of the security issues relevant to shared computer-communications systems, such as the maintenance of personal privacy and the preservation of confidentiality of personal information.

### III. INTERNATIONAL COMMUNICATIONS

# A. International Systems and Facilities

# 1. General Policy and Industry Structure

Since its inception, OTP has conducted a continuing review of the operating and institutional arrangements of the international communications industry.

The structure and performance of this industry have been a concern to Congress and others for many years, and this concern increased with the advent of the new technology of communication satellites and the creation of a chosen instrument (Comsat) to represent United States interests in the international use of this technology. As a result of a highly complex and artificial industry structure (largely the creation of Government regulation), the traditional problems of rate and investment regulation are particularly acute in the international field; and, because of divergent incentives, there are widely divergent views in the industry with respect to the best "mix" of international transmission facilities (i.e., cables and satellites). It thus becomes necessary for the FCC to rule on competing or alternative proposals for new facility construction, and to allocate the traffic among various facilities and carriers, causing strains in foreign relations and in the relations of U.S. industry to foreign carriers.

OTP now has in the final stages of development proposals and recommendations which seek to enhance industry performance through improved incentives within the existing industry structure. These will soon be forwarded to the concerned Congressional committees in response to requests for Administration views on this matter.

### 2. International Communications Satellites for Mobile Communications

### (a) Aeronautical Satellites

OTP has concentrated on developing a U.S. Government position with regard to arrangements with the European nations to evaluate the use of satellite communications in improving **air** traffic control over the high seas. Negotiations with the European Space Research Organization (ESRO) on a coordinated evaluation program commenced in 1971 and were continued during 1972. It is expected that the satellite channels required for the evaluation will be provided by a new entity to be owned jointly by ESRO and a private U.S. company. The State Department, FCC, and DOT/FAA have closely coordinated their interests in this area with OTP throughout this year.

#### (b) Maritime Satellites

OTP has actively participated in intra-governmental policy discussions aimed at providing satellite communications to civilian ships on the high seas. Current international discussion of this subject is taking place in the International Maritime Consultative Organization (IMCO). The U.S. Government is participating in the necessary preparatory work of defining the maritime requirements for satellite services without prejudging operational or organizational aspects of how these services will be provided. Coordination with all agencies interested in this field is continuing.

The Department of Transportation (Coast Guard), the American Institute of Merchant Shipping, and the Department of Commerce (Maritime Administration) have adhered to the view that maritime satellite services will be required well before the end of this decade. OTP has worked with these organizations throughout 1972 to develop policy in the maritime satellite area and to consider the possible relation of such satellites with aeronautical satellites and the INTELSAT system. Study of these matters was continuing as the year ended.

While IMCO deals with many subjects in the maritime area, it has been particularly active in two areas of radio communications, namely, maritime distress communications and maritime satellites. Throughout 1972, OTP has followed the communications work being done in IMCO and continuously provided guidance to the U.S. Delegations attending the various IMCO meetings. Particular note should be taken that IMCO established a Panel of Experts on Maritime Satellites during 1972 that held two meetings during that year, and promises to be more active in 1973.

### 3. Pacific Basin Facilities Planning

In September 1971, AT&T and The Hawaiian Telephone Companies filed with the FCC a request for authority to lay a new submarine cable between the U.S. mainland and Hawaii. This application was subsequently supplemented by a request for authority to lay a new basin-spanning cable system, including links between the continental United States, Hawaii, Guam, Okinawa, and In addition to discussing this proposal with Japan. foreign officials and with the Governor of Hawaii, OTP officers have been engaged in an economic analysis and system study of the Pacific Basin requirements in the decade of the 70's. This study will produce policy guidelines and recommendations concerning the Pacific Basin and new facilities planning to meet projected requirements. OTP expects to complete this work early in 1973 and to coordinate a U.S. position that can be agreed to with other nations, thus avoiding the misunderstanding and bitterness in the international community that has characterized past negotiations.

## 4. International Teleprocessing Systems

Substantial international interest and activity are emerging concerning development of international systems for data transmission and for teleprocessing. During 1972, OTP has engaged in extensive interagency coordination on U.S. interests, activities and policies in this area. In addition, OTP has engaged in international bilateral discussions with Canada, England and Japan, and has coordinated U.S. participation in multilateral meetings on this subject, especially the meetings of the Organization of Economic Cooperation and Development (OECD).

### B. International Organization Activities

### 1. United Nations

In recent years, international communications activities in the U.N. have largely centered on the use of communication satellites to broadcast television programs into the home, directly from one country to another. In 1969 and 1970, the Committee on the Peaceful Uses of Outer Space of the United Nations convened a Working Group

on Direct Broadcast Satellites which rendered reports to the parent committee noting the need for more work to be done in other agencies before the U.N. could meaningfully consider the future of direct broadcast satellites. Subsequent to 1970 a number of important events bearing on this matter The International Telecommunication Union (ITU) occurred. held a World Administrative Radio Conference on Space Telecommunications; the World Intellectual Properties Organization was established; the United Nations Educational, Social and Cultural Organization (UNESCO) adopted a Declaration of Principles relating to the use of direct broadcast satellites; and most recently, the Soviet Union recommended U.N. endorsement of an international convention to control use of broadcast satellites. During 1973. the Legal Subcommittee of the U.N. Committee on the Peaceful Uses of Outer Space and the Working Group on Direct Broadcast Satellites will work on the proposed convention as well as other cultural, social, legal and political aspects of broadcast satellites.

Throughout 1972, in coordination with the State Department, USIA, FCC, and other cognizant agencies, OTP has coordinated and participated in the formulation and presentation in international forums of U.S. Government positions on direct satellite broadcasting. The interagency studies and activities necessary in this area will intensify during 1973, and OTP will continue to discharge its policy coordination function to assure timely and responsive policy formulation.

2. UNESCO

UNESCO is an independent agency of the U.N. charged with promoting international cooperation in the areas of education, social affairs and culture. During 1972, UNESCO convened several meetings to develop guidelines for use of communication satellites in the international distribution, and possible international broadcasting, of radio and television programming. OTP has worked closely with the United States Patent Office, the Department of State, USIA, and the FCC, as well as various interested groups in the broadcasting industry, to establish and maintain a sound and consistent U.S. position on standards, codes of conduct, and protection of intellectual property rights.

In May 1972, a meeting of non-governmental experts in Paris under UNESCO auspices endorsed a draft Declaration of Principles relating to the use of satellites for direct broadcasting. The recommended draft Delcaration was circulated by UNESCO in July and was considered and adopted by the UNESCO General Conference in October 1972. The United States strongly opposed the consideration of this Declaration on the procedural grounds that there was insufficient time to study the issues raised by the Declaration, and inadequate coordination with other international organizations. When these concerns were ignored by other countries, the U.S. strenuously voiced its strong opposition to the substance of the Declaration, but was substantially out-voted. Continued effort, growing out of the UNESCO experience in 1972, will shift to U.N. organs which will be active in this area in 1973. OTP will continue extensive work in integrating policy coordination and position formulation.

### 3. International Telecommunication Union

The International Telecommunication Union (ITU), a specialized agency of the United Nations with 143 member administrations, maintains and extends international cooperation for the improvement and rational use of telecommunications of all kinds. The Union uses world conferences of its members to review and update the international regulations needed to assure the smooth flow of global radio and telegraph communications. A principal function is the allocation of radio frequencies among the respective radio services (amateur, broadcasting, fixed, aeronautical mobile, communications satellites, etc.). During the past year, OTP provided guidance and, in some cases, representatives, for U.S. participation in ITU activities. Additionally, matters came up during the year that required OTP personnel to work directly with the ITU headquarters representative in Geneva, Switzerland, and there were two visits during the year of the ITU Secretary-General to Washington.

During 1971, the World Administrative Radio Conference on Space Telecommunications produced agreements that will influence space and satellite matters for the next decade. Throughout 1972, OTP developed the necessary policies and directives to implement these agreements, all of which became effective on January 1, 1973. In September 1973, the ITU will convene a Plenipotentiary Conference to review the entire content of the ITU Montreux Convention of 1965 and to discuss the structure and roles of the ITU. More than 100 nations are expected to attend and participate in this conference. Preparatory work has been in progress for more than a year within the United States. During 1972, OTP has provided policy guidance and assured coordination of U.S. positions on a wide range of issues both within government and within industry. In addition, OTP provided the chairman for an intra-agency group to review and recommend changes in the Convention. Preparatory work for the Plenipotentiary Conference will continue during 1973, and OTP will continue to coordinate and play an active role in this effort.

The ITU maintains two major international coordinating bodies known as the International Consultative Committee on Telegraph and Telephone (CCITT) and the International Consultative Committee on Radio (CCIR). These organizations have numerous technical study groups which examine problems regarding international standards, practices, system planning, and rates applicable to the international communications services. OTP is responsible for coordinating the preparation of U.S. positions for such activities, particularly those dealing with technical and operational aspects of radio frequency spectrum planning, allocation, and use. During 1972, OTP participated in negotiations leading to the revision of the work of the ITU World Plan Committee; and also participated in the CCITT Plenary Assembly which met in Geneva during December of 1972.

A World Administrative Telegraph and Telephone Conference will be held in Geneva in April 1973. OTP is now actively engaged in the preparatory work which is underway for this Conference. It is expected that the existing agreements concerning telephone regulations will be substantially revised so as to permit the United States to become a signatory to these agreements for the first time.

A World Administrative Radio Conference on Maritime Telecommunications is being convened by the ITU in Geneva in April of 1974. The agenda for the conference was published by the ITU in June 1972. However, U.S. preparatory work in anticipation of both the 1974 Conference and its agenda was commenced during the fall of 1971 and continued throughout 1972 and into 1973. Preliminary views of the United States for this conference were published and distributed through the Department of State to the 143 administrations of the ITU for their comments.

#### 4. INTELSAT

The International Telecommunications Satellite Consortium (INTELSAT) is an organization of 83 nations that provides satellite communications on a global basis. New Definitive Arrangements for INTELSAT were concluded in international negotiations in 1972 and enter into force February 12, 1973. Under these arrangements, COMSAT, the U.S. representative, will no longer hold the controlling vote in the global satellite system's governing body, and COMSAT's role as Manager will be limited to technical and operational management of the system's satellites. During the transition to the permanent structure of the Definitive Arrangements, the obligation of OTP to advise COMSAT in its role as U.S. Representative -- in conjunction with the obligations of the Department of State and the Federal Communications Commission--will take on special importance. This is especially so in the preparation for and participation in the crucial initial meetings of the new principal organs of INTELSAT established under the Definitive Arrangements: (1) the Board of Governors, which meets at six to eight week intervals; (2) the Meeting of Signatories, which is convened annually; and (3) the Assembly of Parties, which meets bienially. The Board of Governors and the Meeting of Signatories will convene for the first time during 1973 and the Assembly of Parties will convene for the first time no later than February 1974.

The FCC is beginning to authorize applications for domestic satellite systems, many of which propose to provide services between the mainland and Hawaii, Alaska and Puerto Rico that have heretofore been provided by INTELSAT. The possible transfer of these services from INTELSAT to the new domestic systems could have significant impacts upon the U.S. role in INTELSAT, general foreign policy relationships between the U.S. and other INTELSAT members, and planning for Pacific Basin communications. OTP's role in this area is of considerable importance because OTP is the only governmental entity having responsibility under the Communications Satellite Act of 1962 and pertinent Executive Orders to coordinate domestic and international communication policies. Similarly, OTP has worked in a coordinating role on policies concerning U.S. carrier use of the Canadian domestic satellite system for communication within the U.S. In addition, OTP will continue to work in conjunction with the Department of State and NASA concerning the impact on INTELSAT of proposed regional satellite systems, such as the French-German "Symphonie" system.

#### 5. CITEL

In 1971, the Inter-American Telecommunications Conference (CITEL) became a specialized agency within the Organization of American States and was granted a significantly broader charter signifying its rising importance and influence. In general, CITEL promotes the continuing development of telecommunications in the Americas and conducts studies for the planning, financing, construction and operation of the Inter-American Telecommunications Network. It also deals with questions of regional telecommunications standards and technical assistance. During 1972, OTP participated actively in preparation for and representation at CITEL meetings in Mexico.

It is important that we strengthen U.S.-Latin American relations in the communications area. This can be helped by more active participation by U.S. entities in CITEL affairs. For example, U.S. views concerning the forthcoming ITU Plenipotentiary Conference and the World Administrative Radio Conference will be presented at the CITEL meeting scheduled for June 1973. As part of an overall program to improve U.S relations with Latin America in the communications field, OTP commissioned a study which was completed in 1972, and, in conjunction with the Department of State, is now seeking to implement certain recommendations resulting from it.

### C. Anticipation of Future Problems

The development of communications policy on an ad hoc basis has become a chronic problem, and totally unsuited to the needs of the increasingly complex problems in international communications. Moreover, much policy has been formulated in response to situations after they have reached a critical stage. To correct this problem, policy support studies and activities are being undertaken which will provide a basis for the determination of policy in a more stable environment. A program is under way to gather information needed to formulate policy on existing as well as potential future problems. The information resulting from this program will include data on existing and planned international communication facilities; on all existing and planned specialized, regional and foreign domestic satellite communication systems; on new technological developments and applications; and on development of service and traffic demand forecast models.

#### IV. SPECTRUM PLANS AND POLICIES

There is intense national and international competition for the use of the radio spectrum for all forms of radio transmissions (radio communications, navigation, broadcasting, radar, air traffic control, etc.). In the United States the Federal Government is the largest single user of the spectrum. The Director, OTP, assigns frequencies for these uses, and to this end, OTP coordinates all Federal Government activities related to spectrum management and planning. This includes cooperating with the FCC to develop plans for the more effective overall use of the entire spectrum, for both Federal Government and non-Federal Government purposes.

Specific tasks involved fall basically within the categories of allocation and assignment for particular uses, planning to meet Federal Government and non-Federal Government needs, and evaluation of possible biomedical and other side effects of electromagnetic radiations.

In the allocation and assignment area, much progress was made in the past year. An improved data processing system, 90% completed by the end of the year, and an expanded engineering capability made it possible to improve the management of radio frequencies assigned to Federal Government radio stations, and to permit over 48,000 specific frequency actions taken by OTP during 1972.

Communications-electronics systems of the Federal Government continued to increase in complexity. In order to cope with the technical problems inherent in providing the spectrum support necessary to operate them, improved access to the advice and assistance of skilled experts from within the departments and agencies of the Federal Government was necessary. This was accomplished by the establishment of study groups related to such issues as standards, radio noise abatement, improved telecommunications systems, and frequency sharing. Expanded engineering capabilities were used during 1972 to investigate and conduct analyses to assure radio frequency compatibility (reduction of interference) among systems competing for the same spectrum resources. Specific areas included: Collision Avoidance, Aeronautical and Maritime Satellites, and Altimeters in the 1535-1660 MHz band; Air Traffic Control and Military Radars in the 2700-2900 MHz band; Aeronautical Satellites and Terrestrial Microwave Landing Systems in the 5000-5250 MHz band; Earth Exploration Satellites, Fixed Satellites and Terrestrial Microwave Systems in the 7250-8400 MHz band; and Fixed Satellites, Radionavigation Radars, Fixed

and Mobile Communications, and Space Research all in the 13.4-15.35 GHz band.

OTP plans to continue the development of this engineering and electromagnetic compatibility analysis capability. This is particularly important in light of the OTP directive recently issued in coordination with the Office of Management and Budget which requires Government agencies to ensure spectrum availability prior to budgetary requests for development of communicationselectronics systems.

During the previous year (1971), some 8,000 MHz of spectrum, formerly reserved for exclusive Federal Government use, was made available to the FCC for shared use by non-Federal Government interests. This precedent was continued into 1972, and an additional 1763 MHz of spectrum was similarly made available to the FCC. This effort will be continued in the coming year.

In the category of spectrum planning, the study initiated during the previous year was continued to develop alternative methods for allocation of spectrum resources giving more weight to all relevant technical, economic, and social criteria. Plans for implementing the results of the 1971 World Administrative Radio Conference (WARC) for Space Telecommunications were completed and put into effect as regards the Federal Government on January 1, 1973. Joint efforts with the FCC looking toward allocation planning were continued. With new technologies developing for operation of communications-electronics systems on higher frequencies than before, and with the introduction of lasers, more specific planning will be required for the portion of the spectrum above 10 GHz. The Office will also continue to maintain in a state of readiness the national emergency readiness plan for use of the spectrum, and will monitor Federal Government agency compliance with allocations resulting from past ITU Conference agreements (1967 Maritime WARC and 1971 Space WARC).

In response to some evidence and much apprehension about the hazards of electromagnetic radiations to humans and to the environment in general, the OTP announced a coordinated inter-agency "Program for Assessment of Biological Hazards of Nonionizing Electromagnetic Radiation," in the latter part of 1971. This program, which is interdepartmental in nature, will extend over a five-year period commencing in fiscal year 1974, at a proposed funding level of \$63 million, a portion of which is already included in departmental budget planning. During 1972, OTP guided and coordinated the implementation of the program, i.e., by seeking to increase the level of activity in this area in departments where it would be the most productive, eliminating duplication of effort, and finding ways to avoid gaps in research activities. These efforts will be continued into 1973.

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### FROM THE SENATE COMMITTEE ON COMMERCE

Senator John O. Pastore (D.-R.I.), Chairman of the Subcommittee on Communications, today announced that Dr. Clay T. Whitehead, Director, Office of Telecommunications Policy, has been requested to be present at Committee hearings to be held on Tuesday, February 20, 1973, at 11:00 A.M. in Room 5110, New Senate Office Building.

Dr. Whitehead has been asked to present a progress report on the activities of his office during the past year as well as an outline of the major matters pending before it.

For further information, please contact Nick Zapple, Communications Counsel, 225 9341.