

Domestic Preparations Process for WARC-92

Introduction

The United States is influential in international spectrum circles through its leadership in radio technologies and services and its status as one of the largest telecommunications markets in the world. Decisions made regarding spectrum allocations and radio-based services in the United States have substantial impact on world radiocommunication policies and an important influence on spectrum management in other countries. The process by which domestic spectrum policies are set, and the way the United States prepares for international conferences, directly impacts international policymaking.

Unlike most countries, the United States has no central authority that is responsible for domestic or international spectrum policymaking and management. The Communications Act of 1934 divided spectrum management responsibility between the Federal Communications Commission (FCC), an independent agency, and the President.¹ In 1978, Executive Order 12,046 transferred the President's authority to the Secretary of Commerce and created an Assistant Secretary for Communications and Information, who is also the Administrator of the National Telecommunications and Information Administration (NTIA).² Today, domestic spectrum management and policymaking responsibility is shared by the FCC and NTIA. NTIA manages all Federal Government use of the spectrum and also serves as the President's adviser on telecommunications matters. The FCC regulates and manages all commercial and private sector use of the spectrum as well as State and local government use. In international spectrum negotiations and conferences, the

State Department exercises primary authority as the President's representative in foreign policy matters.

WARC Preparation Activities

The process of preparing for WARCs involves four separate, but interdependent, subprocesses. The first, and most open to the public, is the development of proposals by the FCC that reflect the interests and needs of the private sector. Second, NTIA simultaneously coordinates and develops executive branch proposals. This subprocess has been largely closed to the public in the past since the work of the agencies is generally not open to direct public access or input.³ The third subprocess involves the more informal coordination between the NTIA, FCC, and State Department in the development of final U.S. proposals. Staff at the FCC and NTIA work closely and in parallel to ensure that their final recommendations to the State Department are as similar as possible in order to speed the determination of final proposals. The State Department, while not as actively involved in the development of specific WARC positions as the FCC and NTIA, nevertheless plays an important role in ensuring that international political considerations are adequately considered in the final proposals.⁴ Fourth, after proposals have been set, the official U.S. delegation, which is composed of both government and private sector representatives, develops negotiating strategies and backup positions—positions that support the final proposals. The State Department, along with the FCC and NTIA, manages and coordinates the activities of the delegation.

Tension in the preparations process, among government interests, private sector and industry interests, and between the government and the private

¹47 U.S.C., sections 151, 152, 305 (1989).

²Executive Order No. 12,046, reprinted in 1978 U.S. Code Congressional & Administrative News, 9685-9692.

³Following recommendations outlined in its recent report on spectrum management, NTIA has begun opening some of its activities to more public participation. While too late to affect the preparations process for WARC-92, these changes could substantially improve private sector input into future NTIA spectrum management activities, including preparations for future WARCs (see sections on NTIA below). U.S. Department of Commerce, National Telecommunications and Information Administration, *U.S. Spectrum Management Policy: Agenda for the Future*, NTIA Special Publication 91-23 (Washington DC: U.S. Government Printing Office, February 1991), p. 13.

⁴Because the State Department is most concerned with the representation of U.S. policy abroad, it is generally more active in the proposal development process when an issue (or even a whole conference) has specific political overtones or when an issue appears particularly contentious internationally. This varies by issue: the more politically sensitive an issue is, the more the State Department is usually involved. The Department, for example, is usually very involved in preparations for Plenipotentiary Conferences, since they deal more with matters of governance and administration than with the more technical issues that characterize the work of the WARCs.

sector, is an inherent part of the system. Because of this tension, some of the most contentious issues may not be resolved before final proposals are set. In these rare cases, the parties involved continue negotiating, but if agreement cannot be reached, other alternatives are available. The State Department (or one of the affected parties) can, as a last resort, submit the matter to the National Security Council for resolution.⁵ Other alternatives may be available, but are not well-defined. There is no formal mechanism at a level high enough (in the FCC, NTIA and State Department) to resolve such disputes. New procedures may have to be devised to expedite the decision process. However, at these higher policy levels, political compromises often play a more important role in resolving disputes than technical merit or the greater national interest.

In the WARC-92 preparation process there were many areas of intense debate, especially between industry (and the FCC representing those interests) and the Federal agencies, but only one issue remains unresolved. Throughout WARC-92 preparations, government and industry interests clashed over the use of the 1435-1525-MHz band. At the beginning of the preparations process, both Mobile Satellite Service (MSS) providers and the proponents of Broadcasting Satellite Service-Sound (BSS-Sound) sought to use this band, but the Department of Defense (DOD), its aerospace contractors, and some commercial aircraft manufacturers opposed reallocation of the band to protect their use of these frequencies for aircraft testing and other uses (see ch. 1). MSS interests dropped their proposals early in the process, but BSS-Sound advocates have maintained their need for the band.⁶ If not modified, DOD's position on this issue will preclude the United States from using the band for new BSS-Sound applications, even if these frequencies are approved at WARC-92. In that case, BSS-Sound applications in the United States would have to use frequencies different from the rest of the world, and equipment and systems would be incompatible internationally.

Negotiations have been difficult, private sector representatives, complain, because DOD and its

contractors have not released enough data on the use of these frequencies to make a fully informed decision. Executive branch representatives contend that all necessary information has been made available. National security concerns and lack of data have played a role in this dispute. Negotiations between the interested parties continue, and a final proposal on the matter will be submitted in a supplemental proposal to the International Telecommunication Union (ITU) before WARC-92. This case highlights the interaction of domestic and international spectrum policy and demonstrates the need for well-defined procedures for resolving such disputes. The process must balance the national security concerns of the government with the private sector's need for more open access to information about radio frequency use and efficiency.

Institutional Roles

Federal Communications Commission

Structure

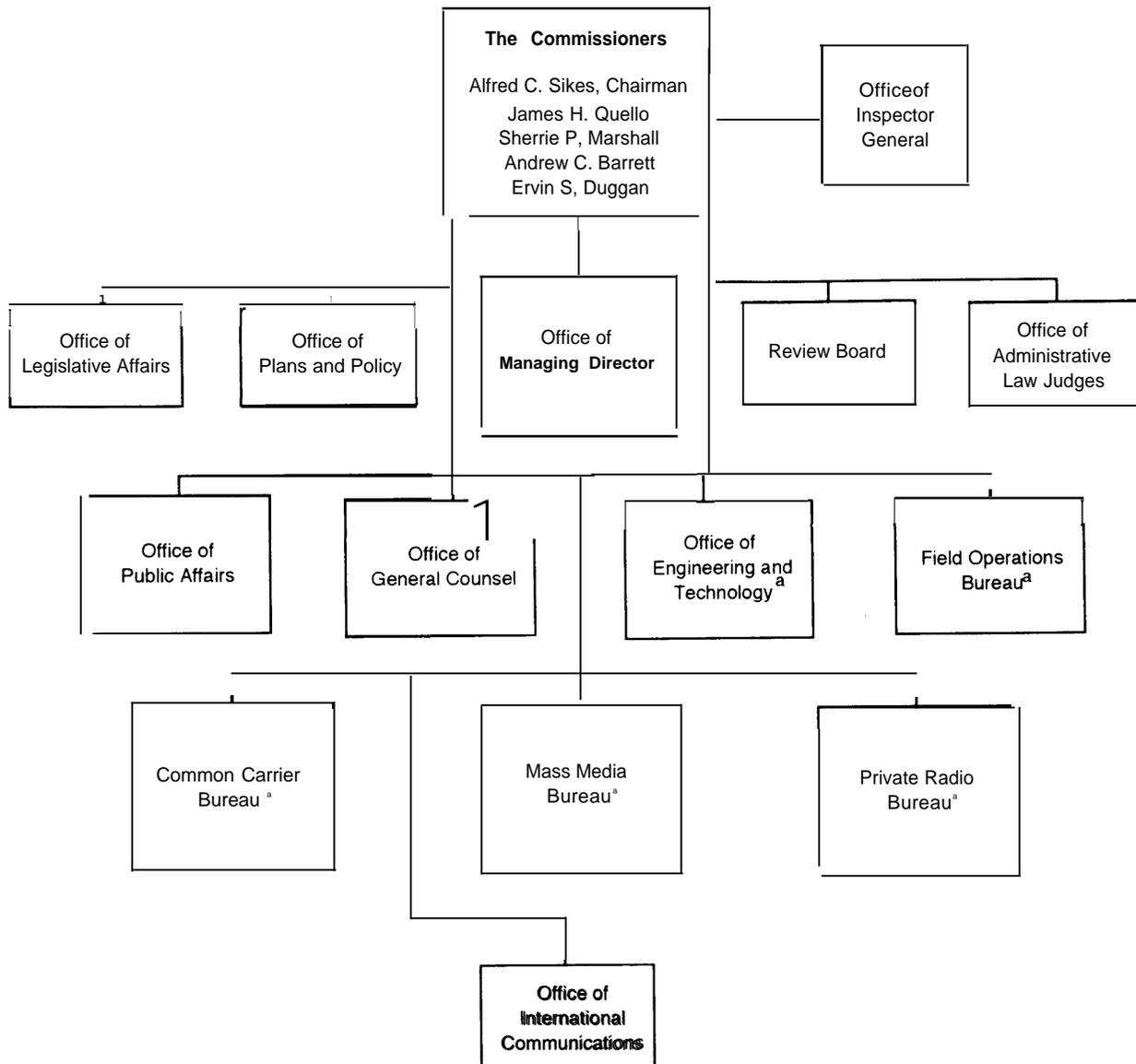
The FCC is functionally divided into bureaus and offices that manage the day-to-day activities of the Commission in radio and wireline communications and develop more long-term plans and policies (see figure 4-1). The majority of the FCC's work involves regulation of the domestic telecommunication industry, but the regulatory bureaus also have staff that deal with international matters as well. The activities of the FCC are directed by five commissioners, who are appointed by the President, confirmed by the Senate, and serve 5-year terms. The President also appoints the Chairman of the FCC, who usually takes the lead in establishing overall policies and direction for the Commission. The current Chairman of the FCC is Alfred C. Sikes.

Although the FCC has long maintained a commitment to international activities, there has been no ongoing, formally recognized structure within the Commission for coordinating WARC preparations. Rather, conference preparation activities have been carried out in a variety of ways. For many past conferences, the Chief of the FCC's Office of Engineering and Technology (OET) directed Com-

⁵In preparation for the 1979 WARC, for example, Voice of America (VOA) wanted additional spectrum for high frequency broadcasting, a proposal which the Department of Defense opposed. VOA took its case to the National Security Council, where its proposal was eventually accepted.

⁶The FCC included such a need in its final recommendations to the Department of State, but did not identify the specific size or location of the band. See Federal Communications Commission, "An Inquiry Relating to Preparation for the International Telecommunication Union World Administrative Radio Conference for Dealing With Frequency Allocations in Certain Parts of the Spectrum," Gen Docket No. 89-554, Report, 6 FCC Rcd 3900 (1991).

Figure 4-1-Organization of the U.S. Federal Communications Commission



^aIn addition to the Office of International Communications, these bureaus and offices also have staff working on WARC issues.

NOTE: This chart represents lines of policy and judicial authority. It should be noted that the Office of Managing Director has management and administrative authority over all other offices and bureaus with the exception of the Office of Inspector General.

SOURCE: Office of Technology Assessment and Federal Communications Commission, 1991.

mission efforts, drawing together the needed staff and coordinating the Notice of Inquiry (NOI) process. Prior to the 1979 WARC, for example, the Commission established a Conference Preparatory Group within the Office of the Chief Engineer (now OET) specifically to address WARC preparations. However, because of the specialized nature of the conferences that were scheduled for the future, the

office was disbanded several years after the 1979 conference. There appeared to be a less obvious need for a central focus for international activities, and staff and responsibilities for international matters were dispersed to various operating bureaus and offices where they remain. This division has worked because many issues on the WARC agendas overlap with domestic concerns. Thus, staff are familiar with

the basic technological and spectrum issues that WARCs address, and individual staff members have built up a wealth of experience in international conference preparation work.

After the 1979 WARC, international telecommunications advisors, appointed by the Chairman, oversaw FCC conference preparations. Individual bureaus also assumed responsibility for preparing for some of the conferences that dealt specifically with their areas of expertise, often coordinating with OET. Preparations for the Mobile Services WARC in 1987, for example, were concentrated in the Private Radio Bureau.

The FCC's initial preparation for WARC-92 was coordinated by OET, primarily through its Spectrum Engineering Division, and involved staff from many offices. Staff in the Private Radio Bureau worked on WARC issues in 3-30-GHz range, although they are not identified as "international" staff. The Mass Media Bureau has international staff that coordinate broadcast plans with Mexico and Canada as well as specialists in WARC broadcasting issues such as BSS-Sound and high-definition television (HDTV). Staff in the Common Carrier Bureau are responsible for several of the issues in the 1-3-GHz band. The Field Office Bureau has also been involved in WARC preparations. The Office of International Communications (OIC) was established after preparations had already begun, but was actively involved in the latter stages of the process.

Office of International Communications-h
January 1990 the Commission created OIC to coordinate the FCC's international activities and policy development, not only for spectrum matters, but for all areas of international telecommunication policy. The decision appears to have been, in part, a response to the upcoming WARC, but more generally reflects the Chairman's desire to establish a focal point in the Commission for international matters. It also signals recognition of the larger importance of international telecommunication issues for the domestic policy process—the consequences of liberalization, regionalism, and global networks on U.S. companies and domestic regulation.

According to the FCC Order that established OIC, the functions of the Office are to:

(1) Ensure the integration of Commission international policy activities; (2) ensure that the Commission's international policies are uniform and consistent; (3) assume the principal representational role for Commission activities in international fora; and (4) serve as the focal point for international activities. The Director of International Communications will provide coordination among Bureaus with regard to development of international policy, representation of this policy and participation in international conferences. Additionally, the Director will facilitate Commission guidance of Bureaus's international activities.⁷

It is important to note, however, that the new OIC: "will not replace the existing bureaus in the execution of the various international responsibilities."

The Order gives OIC a broad mandate for coordinating the FCC's international telecommunication policy development, and OIC's activities are not confined to spectrum-related or WARC preparation issues. However, the ironically constrained nature of this mandate has caused several problems in the early life of the Office relating to its international spectrum activities. First, although the FCC received more than 300 resumes for seven professional positions, it was apparently difficult to attract staff who were experienced in international spectrum matters. While the FCC has a wealth of highly skilled personnel with extensive expertise in international radiocommunications, many observers believe that senior FCC staffers with such background were wary of moving to the new Office either because of the short life of the conference preparation group in the early 1980s or because they preferred to remain in active policymaking roles rather than merely coordinating policy development. Also, concern that the bureaus would not be able to replace the experienced staff who moved to OIC may have slowed the staffing of the Office. For whatever reason, a senior international engineer was not hired (from outside the FCC) until almost a year after OIC was created.

Second, OIC has had difficulty establishing its role and functions in regard to international spectrum matters, especially in its early months. On one hand, the emphasis in the Order establishing OIC on "coordination" may unduly narrow the scope of

747 CFR 0.5 (1990).

⁸Ibid.

OIC's activities in policy development, and hamper its efforts to effectively address the problems identified in the Order. Many radiocommunication policy observers feel the office does not have enough power to set policy and lacks strong institutional authority. It is important to reiterate, however, that the stated function of OIC is not to decide policy, but only to:

provide coordination among Bureaus and Offices with regard to development and representation of international policy and participation in international conferences.⁹

This function leaves unclear exactly what kind of input OIC can have in the policy development process, and what role the Office can or will play in *setting* international radiocommunication policy. A more aggressive mandate may be needed to ensure the long-term effectiveness of the Office. Other observers, however, complain that OIC has sometimes gone beyond its mandate in presenting FCC positions abroad and has claimed too much power for itself in international negotiations.

In the long run, it is unclear how strong a role OIC will be able to play within the FCC in establishing priorities for bureau activities in support of international conferences. The FCC maintains that OIC has sufficient authority to carry out its mandates, and that the Office's ability to fulfill its functions is no longer in question. The Commission, for example, points to OIC's success in integrating the views of the FCC on a number of matters, including specific WARC-92 issues and the planning of bilateral meetings with other countries on telecommunication matters. Without direct lines of authority, however, the ability of OIC to direct the bureaus' work in preparation for international conferences and effectively coordinate preparation activities is still uncertain. The required level of cooperation and coordination will depend on the interpersonal relationships between the Director of OIC and the bureau chiefs. Some analysts believe that OIC will not be able to pull together the various constituencies that characterize the bureaus. These constituencies can cause conflict between bureaus on specific courses of action, and it is not clear that OIC yet has the power or ability to meld these opinions into coherent, unfiled FCC positions.

Finally, because OIC's mandate encompasses all international communication issues, of which WARC preparation is only one part, some analysts are concerned that WARC-related activities may suffer if adequate staff or funds are not assigned to them. The interests of the Director will determine how effective and aggressive OIC is in developing and coordinating spectrum policy. On the other hand, the increasing recognition of the importance of international spectrum decisions for domestic telecommunications policy and the potential regularization of the radiocommunication conference structure of the ITU may give added impetus to OIC's spectrum activities.

Although the role of OIC in international spectrum activities is still evolving, some of its specific functions are beginning to jell. OIC's main role in international spectrum activities will be to represent the FCC in bilateral negotiations and at conferences. It will also act as a "traffic cop," for the bureaus involved in international activities, coordinating their activities, and sifting through the positions of various constituencies. It will have to continue to work closely with OET to develop international spectrum policy, a functional arrangement that mirrors the division of responsibility between NTIA's Offices of International Affairs and Spectrum Management (see below). Finally, OIC will serve as the principal liaison between the FCC, NTIA and State Department on international spectrum matters. Currently, the director of OIC and the chief engineer are meeting with their counterparts in NTIA and the State Department to coordinate the upcoming bilateral negotiations the United States will conduct in preparation for WARC-92.

Because OIC is relatively new, and because the Office and its staff are still settling in and staking out their own role in the U.S. international radiocommunication policy process, the long-term future of OIC is far from clear. As a creation of Chairman Sikes, and with little institutional memory or historical power, the Office could conceivably be disbanded when he leaves the Commission. At this relatively early stage in its life, OIC is very dependent on high-level support for effectiveness. An important determining factor in the long-term success of the Office will be how effective the Director is in carving out a specific role and responsibilities, both within the FCC and in relation to NTIA and the State

Department, and how effectively these responsibilities are carried out. Winning over skeptics outside the FCC will take time and effort as the Office continues to mature. Ensuring continuity in both OIC's staff and policies, and maintaining cooperative working relationships with NTIA, the State Department, and the private sector will be critical in determining the long-term success of OIC.

WARC Preparation Activities

The FCC's role in the WARC preparation process is to represent the interests of the public and gather private sector views on the specific WARC items. The Commission uses a number of mechanisms to collect this information.

Inquiry Process—The primary method the FCC uses to gather information is its public inquiry process. Before making a decision, the FCC publishes a Notice of Inquiry (NOI) in the *Federal Register* that discusses the background of the issue(s) addressed in the notice and poses questions about possible courses of action the Commission might take. The public is invited to file comments with the Commission that will be considered in reaching a final decision, which takes the form of a final Report.

For WARC-92, the Commission issued a series of three NOIs.¹⁰ The first, released in December 1989, sought comments on the proposed agenda for the upcoming WARC (the final WARC-92 agenda was not adopted by the ITU Administrative Council until June 1990) and proposals regarding frequency needs for several services including high frequency broadcasting, mobile services, BSS-Sound, HDTV, and new space services. In September 1990, the Commission adopted a Second NOI in response to the specific agenda released by the ITU. The Second NOI sought comments on the expanded agenda items and reaction to specific proposals for U.S. positions that had been developed up to that point. A Supplemental NOI was released in March 1991 further refining questions in the Second NOI, but primarily concentrating on digital audio broadcast-

ing (BSS-Sound), Mobile Satellite Services (MSS), low-Earth orbiting satellites (LEOS), and future public land mobile telecommunication systems (FPLMTS). In June 1991, the Commission released a Report that outlines final FCC recommendations to the State Department on the positions the United States should take on each WARC agenda item.¹¹ Combined with input from NTIA, these recommendations were used to establish the official U.S. proposals for WARC-92.

In addition to the WARC inquiry, the Commission has several other proceedings or formal inquiries underway that overlap with the issues addressed in the WARC inquiry.¹² How the various proceedings affect each other, and the degree that domestic decisions will conform to the international allocations made at WARC-92 is uncertain. Submitting proposals to the WARC does not commit the United States to using a service authorized at the conference, nor does it commit the United States to use the same frequencies domestically. It will be possible after the WARC is completed for the FCC to conduct any proceedings necessary to implement disputed services. For example, it seems unlikely that the Commission will propose rules allocating and governing personal communication services before international agreements are reached at the WARC. In the case of BSS-Sound and LEOS, several applications have been filed at the FCC to provide such services (see app. C), and the FCC has received comments regarding those applications. This should give the Commission some (limited) sense about the public interest implications for this service. However, because of the short time involved, WARC positions had to be established before a full Commission proceeding could be concluded.

The result is that the FCC's WARC inquiry process has superseded Commission action on other matters. For example, the NOIs contained proposals for LEOS systems. However, the FCC has conducted no formal proceedings to determine the public interest requirements, parameters, and standards for these services.¹³ Critics charge that the

¹⁰Federal Communications Commission, "An Inquiry Relating to preparation for the International Telecommunication Union World Administrative Radio Conference for Dealing With Frequency Allocations in Certain Parts of the Spectrum," Gen Docket No. 89-554, *Notice of Inquiry*, 4 FCC Rcd 8546 (1989); *Second Notice of Inquiry*, 5 FCC Rcd 6046 (1990); *Supplemental Notice of Inquiry*, 6 FCC Rcd 1914 (1991).

¹¹*Report*, op. cit., footnote 6.

¹²Among others, these include Notices of Inquiry for personal communication services and digital audio broadcasting and application proceedings for LEOS (above and below 1 GHz), HF broadcasting, MSS, HDTV, and PCS for data applications.

¹³The FCC has, however, placed on public notice and received comments on applications for such services and Petitions for Rulemaking that have been filed seeking Commission action on allocations and service rules for LEOS systems (below 1 GHz).

Commission skipped a step by bypassing the vital public interest part of the process. Instead of deciding these issues in the proper domestic context (a separate NOI), the FCC has forced interested parties to fight a battle of filings in the WARC proceeding, unnecessarily cluttering the preparation process. Critics believe that the Commission has assumed for the purposes of the WARC that these services are in the best interests of the country and has gone about formulating positions to support them. They also contend that this amounts to the FCC prejudging the issue—granting unfair advantage to some service providers over others.

The FCC was caught in a problem of timing. There may not have been enough time for the Commission to complete a full inquiry into LEOS systems and services. This concern is complicated by the fact that LEOS systems operating at frequencies above 1 GHz were not even proposed until well after the WARC inquiry had begun. There is also concern in the FCC that completing a domestic proceeding would reduce the flexibility of U.S. proposals at the WARC. FCC actions on personal communications services (PCS) and digital audio broadcasting (DAB) may provide a model for how such issues could be worked out in the future. In these cases, domestic proceedings were begun, but are not expected to be completed before the WARC concludes. The results of WARC-92 will be used as input to the domestic process before a final decision on these services is reached.

The FCC Commissioners vote on the final Report that outlines the Commission's recommendations to the State Department on WARC-92 issues. While the Commissioners' staffs track the issues involved and the development of the proposals, it is not clear, given the wide range of important topics the Commissioners must address, how closely individual Commissioners have been able to follow WARC preparations or how knowledgeable they are about the technologies, services, and issues involved. Some participants in the WARC preparations have expressed disappointment that the Commissioners were not more actively involved in the preparations process, given the broad scope and long-term importance of WARC-92 issues.

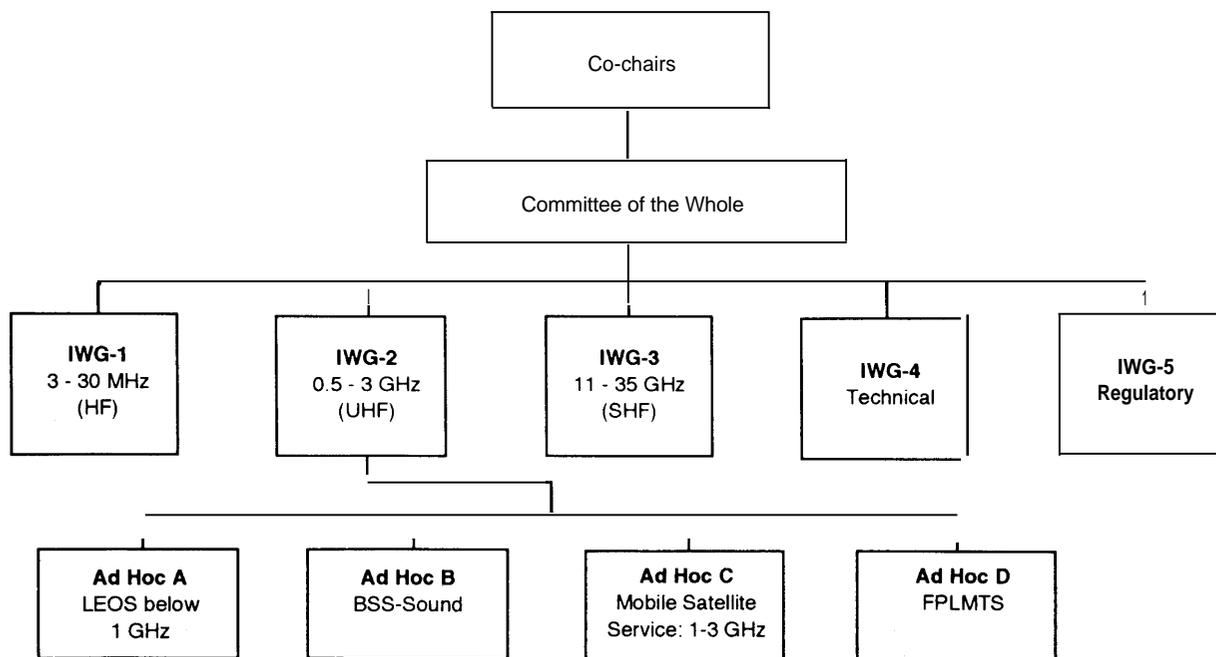
Industry Advisory Committee—In addition to the formal inquiry process, the FCC created an Industry Advisory Committee (IAC) in January 1990 to provide direct private sector input to the Commission on WARC matters. The IAC actually played a dual role in the FCC's WARC preparation process. It was a commenter on the NOIs and it developed some of the proposals later included in the FCC's final Report. Thirty-five representatives were named to the IAC, representing all areas of the private sector, including manufacturers, service providers, and user groups.¹⁴ The Committee was cochaired by FCC Commissioner Sherrie Marshall and Frank Urbany of BellSouth. The IAC's task was to consider the needs of the U.S. private sector for the WARC, discuss the recommendations proposed by the FCC in its NOI proceeding, and propose possible WARC positions. The IAC submitted its final report to the FCC in April 1991; its charter expires in November 1991.

The IAC split its substantive work into three Informal Working Groups (IWGs), a technical committee and a regulatory committee (see figure 4-2). IWG-1 dealt with WARC issues in the 3-30-MHz band, primarily the HF broadcasting issues. IWG-2 dealt with some of the most controversial issues on the agenda, those in the 500-3000-MHz band (0.5-3 GHz), including LEOS, BSS-Sound, Mobile Satellite Service, and FPLMTS. IWG-2 created four Ad Hoc groups (A to D), to consider each of these issues separately. IWG-3 considered items on the agenda in the frequency bands above 10 GHz, including HDTV. The technical and regulatory committees played little role in the IAC process since most of their responsibilities were accomplished in the three IWGs. Participation in the substantive work of the IWGs was open to the public—not just members of the IAC—and was very broad.

The IAC played a crucial role in the development of the FCC's proposals for final WARC positions. Its work, however, is difficult to characterize. At first glance, it appears that the IAC was supposed to develop unified industry positions and present them to the FCC. In this regard, the IAC was successful in some areas (HF broadcasting), but not in others (MSS allocations). Because the IAC failed to reach

¹⁴Some observers have noted that the IAC is composed primarily of traditional telecommunications companies, who are heavy users of existing services. Proponents of innovative services, they claim, were fewer in number. Given the number of new proposals advanced and defended in the IAC process, this claim is doubtful.

Figure 4-2—Organizational Structure of the Industry Advisory Committee



KEY: IWG=Interim Working Group; HF=high frequency; UHF=ultrahigh frequency; SHF=superhigh frequency; LEOS=low-earth orbiting satellites; FPLMTS=future public land mobile telecommunication systems; BSS=Sound-broadcast satellite service-sound.

SOURCES: Office of Technology Assessment and Federal Communications Commission, 1991.

consensus on many issues, some observers have expressed disappointment with final IAC outcomes. The contentious nature of many of the issues made consensus a nearly impossible goal.

Some, however, argue that the IAC was never conceived to be a decisionmaking body and that expecting common industry positions to be developed for all issues is unrealistic—too many competing, parochial interests were involved. Some observers have even characterized the IAC process as little more than “make believe,” an exercise with little hope of success. The reality of the situation lies somewhere in between. The IAC was successful in negotiating some unified positions, but the conflicting demands of different industries, the participation of a large number of representatives, and the more complex nature of domestic radiocommunications made consensus impossible to achieve in other areas.

The most important factor limiting the IAC’s ability to determine common industry positions was its operation as a consensus body with members who were proponents and opponents of certain services

and technologies. Further, participation in the substantive work of the IWGs was a self-selecting process. These factors led to a belief among many observers that some of the participants involved were more interested in advancing their own parochial interests than in developing consensus or working for the overall benefit of the United States. These problems were complicated because there was no formal mechanism to finally resolve disputes. On some issues, closure was not possible. Some have suggested that issues should be decided by voting. Once a vote is polled, all parties would have to abide by the decision of the group. A number of problems complicate such an approach. Votes might be traded on various issues, thereby further politicizing the process. In addition, practical questions remain, such as what should constitute agreement, a majority, two-thirds, unanimous?

The real value of the IAC is not gauged by the number of issues it settled or formal industry positions it developed, rather it is the process and work of the IAC itself. The IAC contributed substantially to FCC deliberations on a number of levels. First, the IAC provided the private sector a

public forum to discuss and debate their ideas and proposals face-to-face. The IAC process stimulated discussion, prompted technical studies, narrowed issues, and refined industry requirements, giving industry representatives a chance to resolve disagreements and present a united front to the FCC. This open public interaction and negotiation speeded the process, and raised the status of the IAC proposals and recommendations. The IAC's collective positions were more persuasive than individual proposals would have been. The IAC process reduced the chaos of dealing with individual proposals by weeding out the least desirable—presenting the FCC with a more cogent, limited selection of options than it would have gotten in the NOI process.

Another important benefit of the IAC deliberations was the wealth of technical material it produced. Early in the WARC preparations process, much of the regulatory and technical analysis came from industry in the form of technical requirements for services and technical studies. These studies relieved the Commission of the pressure of responding to every proposal and petition with its own technical and regulatory analysis. In relation to LEOS, for example, geostationary satellite service providers and the FCC were initially concerned that the new LEOS services operating in frequencies below 1 GHz would interfere with existing services. The Commission indicated that without a study showing the feasibility of sharing, new systems might not be approved. Industry did the study and negotiations progressed. This background was extremely valuable to the FCC in reaching final decisions.¹⁵ In relation to LEOS systems above 1 GHz, concerns about the ability of the proposed systems to share the spectrum with other (geostationary satellite) MSS providers have not been resolved.

Finally, the meetings of the IAC and the IWGs provided an invaluable opportunity for informal contacts between IAC/IWG participants and FCC staff. FCC representatives were usually present at the meetings of the IAC and its working groups—allowing for an important informal exchange of views and discussions between industry and FCC representatives. Representatives from NTIA also

attended many of the meetings, providing indirect input to NTIA from the private sector.

The members of the IAC and the IWGs were generally happy with the FCC participation in their activities and felt that the process was effective within limits. Their opinions on the outcome of the IAC process, however, reflected the ambiguous nature of the IAC noted above. Different observers had different expectations. These differing opinions, in turn, reflect a lack of clarity as to what the IAC could realistically accomplish. In retrospect, it is unclear what the IAC's function was really supposed to be. If the IAC is to develop or represent consolidated industry positions, it may have to be constituted differently, or require a change in working and decisionmaking styles. In the future, the FCC must clearly establish its expectations for such private sector groups.

Implications

The WMC preparation process has become more difficult over the last decade. Several factors are affecting the FCC's ability to execute its WARC role effectively. First, the FCC and the WARC preparation process have been significantly affected by the rapid pace of technology development. In the past, there were fewer technologies and services, private sector interests were less divisive, and fewer government staffers were involved. Today, the FCC must consider the views of a larger number of private sector participants and reconcile increasingly diverse views with those of the Federal Government.

Second, FCC officials have little more access to government spectrum use data than the private sector. It is extremely difficult for both the Commission and the private sector to develop proposals for the WARC without adequate information. In the case of L-band proposals (see ch. 1), for example, the Federal Government, through NTIA, has made the use of these bands almost non-negotiable. There is no way for the FCC to independently determine exactly which frequencies are being used, how much, or if they are being used efficiently.¹⁶ There is concern in the Commission and the private sector that the FCC does not have adequate information to make informed decisions in such cases.

¹⁵Some advocate making such studies a more integral part of the IAC process from the very beginning. This could improve the efficiency of the process and allow more timely discussion and decisions.

¹⁶Negotiators in the executive branch claim that similar problems of access exist for data on commercial spectrum use.

Third, the FCC lacks the personnel and financial resources to effectively and efficiently prepare for the 1992 (or a future) WARC. There are few staff members assigned exclusively to WARC preparations. The technical staff working on WARC issues are spread throughout the agency, according to their individual specialties. This has two effects. First, staff have regular duties in addition to WARC preparations; they cannot devote their full time and attention to WARC preparations. Second, staff have several constituencies to represent, including the industry they regulate as well as the bureau they work for. Internal dissension among staff over domestic policy and resources may preclude timely and effective policymaking in regard to the WARC.

Finally, the FCC serves political constituencies and interests as do other government agencies, and political factors can play a major role in deciding which proposals go forward and which do not. Decisions are not always based on solely technical merit or the public interest. The case of LEOS is an example. There has been no domestic public interest assessment of LEOS, nor is there evidence of broad global support for such a system. LEOS systems (operating in the frequencies above 1 GHz) are not even explicitly included in the WARC-92 agenda. Nevertheless, the United States will support LEOS above 1 GHz through its proposal to allocate spectrum to MSS applications, where there appears to be greater need and more widespread support for additional spectrum.¹⁷

National Telecommunications and Information Administration

Description

The NTIA is responsible for developing and promoting executive branch telecommunications policy. It is to:

serve as the President's principal adviser on telecommunications policies, [and] provide for the coordination of the telecommunications activities of the Executive Branch.¹⁸

It is also the agency responsible for administering the Federal Government's use of the radio frequency spectrum. In this role it works closely with the FCC

to coordinate the National Table of Frequency Allocations.¹⁹

In the international arena, Executive Order 12,046 defines the responsibilities of NTIA:

The Secretary of Commerce shall develop and set forth, in coordination with the Secretary of State and other interested agencies, plans, policies and programs which relate to international telecommunications issues, conferences, and negotiations. The Secretary of Commerce shall coordinate economic, technical, operational and related preparations for United States participation in international telecommunications conference and negotiations. The Secretary shall provide advice and assistance to the Secretary of State on international telecommunications policies to strengthen the position and serve the best interests of the United States, in support of the Secretary of State's responsibility for the conduct of foreign affairs.²⁰

NTIA plays a substantial role in the WARC preparation process. As the agency responsible for managing the Federal Government's use of the radio frequency spectrum, NTIA oversees the preparation of Federal Government WARC proposals and coordinates executive branch policies with the FCC. NTIA's work in the preparation process culminates with a final report similar to the FCC's (in form and content) that is submitted to the State Department for integration into the final U.S. WARC proposals.

Structure

Prior to 1983, all international spectrum activities were handled by NTIA's Office of Spectrum Management (OSM). In 1983 NTIA created the Office of International Affairs (OIA), which now has primary responsibility for international telecommunication policy (see figure 4-3). At the same time, a Conference Preparatory Program (similar to the group established in the FCC) was established within OIA specifically to coordinate international conference preparations and WARC-related activities. The program was abolished several years later as part of a general reorganization of NTIA. NTIA believed, as did the FCC with its group (see above), that such activities could be convened as needed. Today, one person in OIA coordinates most of NTIA's prepara-

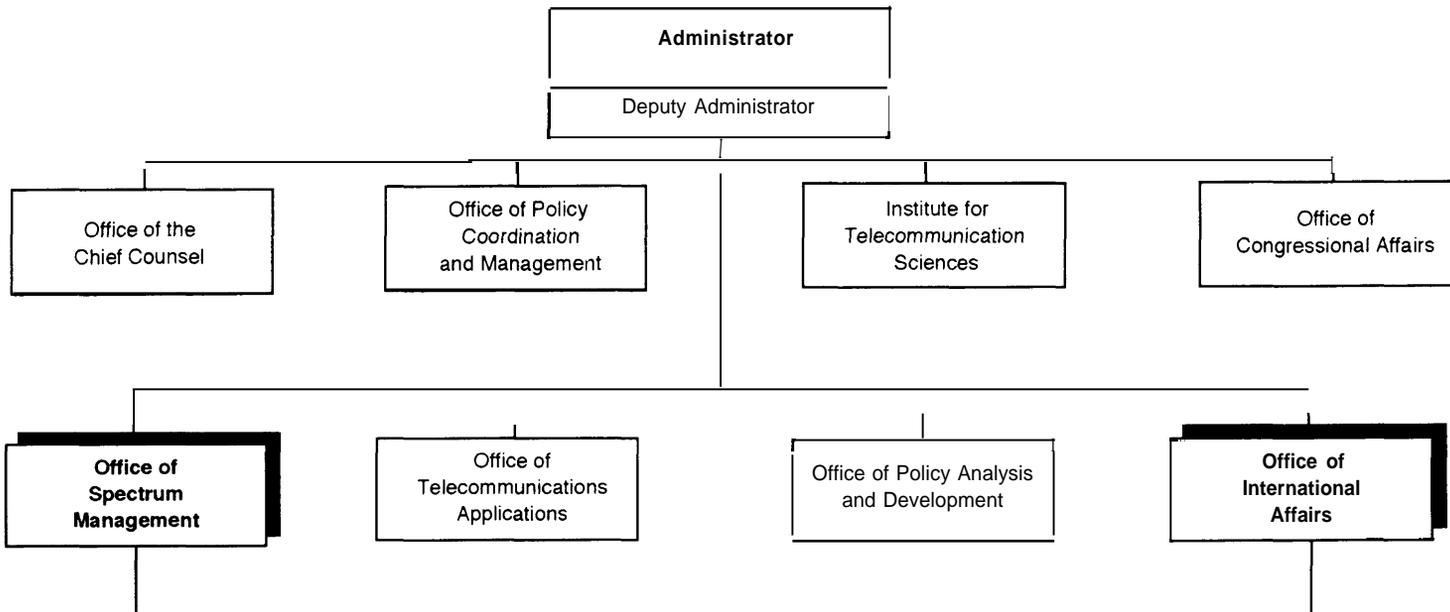
¹⁷See ch. 1 for a more complete discussion of the controversy surrounding LEOS (above 1 GHz) at WARC-92.

¹⁸Executive Order NO. 12,046, op. cit., footnote 2, sections 2-401 and 2-405, P. %87.

¹⁹The National Table of Frequency Allocations combines the U.S. Government Table of Allocations and the FCC Table of Allocations.

²⁰Executive Order No. 12,046, op. cit., footnote 2, section 2404, p. 9687.

Figure 4-3-Organization of the U.S. National Telecommunications and Information Administration



- .Manages Federal use of spectrum to ensure efficiency and effectiveness
 - Makes approximately 80,000 frequency assignments annually
- .Reviews major planned systems to ensure spectrum availability
 - Chairs the 23-agency interdepartment radio advisory committee (IRAC), which plans for future use of Federal Government spectrum
- .Provides technical expertise to support U.S. participation in international telecommunications spectrum conferences
 - .WARC '92
 - HF broadcasting WARCS

- Develops and advocates international telecommunications policies
 - Separate satellite systems
 - COMSAT instructional process
 - Liberalization of foreign telecommunications regulation
- .Coordinates U.S. preparation for, and participation in, international conferences
 - .CCITT/CIR standards
 - .WARC '92
 - HF broadcasting WARCS
 - .ASEAN conference
- .Participates in bilateral telecommunications trade negotiations
- .Provides technical/policy assistance to developing countries

KEY: CCITT=International Telegraph and Telephone Consultative Committee; CCIR=International Radio Consultative Committee; HF=high frequency; ASEAN=Association of Southeast Asian Nations.

SOURCES: Office of Technology Assessment and National Telecommunications and Information Administration, 1991.

tions for WARC-92, with help from individuals in both OIA and OSM. OSM continues to supply extensive policy advice and technical assistance to OLA in WARC matters, and is responsible for the day-to-day spectrum management activities of the Federal Government (see figure 4-3). OSM also leads NTIA's participation in the activities of the International Radio Consultative Coremittee (CCIR) (see ch. 3). Other government agencies, including Voice of America, National Aeronautics and Space Administration, the Federal Aviation Administration, and the FCC, provide technical WARC support through papers and technical studies.

In addition to the coordination and technical work done by OIA and OSM, several other entities within the Department of Commerce and NTIA have roles in the WARC-92 preparations process.

Interdepartment Radio Advisory Committee—*The Interdepartment Radio Advisory Committee (IRAC) predates NTIA, having been established in June 1922.²¹ The IRAC advises the Secretary of Commerce on spectrum matters and is the principal forum through which Federal Government spectrum activities are coordinated and managed.²² Currently, the IRAC has approximately 20 members from Federal Government agencies and a liaison from the FCC. The organization of the IRAC includes three permanent subcommittees (Frequency Assignment, Spectrum Planning, and Technical) and a number of ad hoc committees that study specific spectrum issues. IRAC meetings are not open to the public for security reasons, although a public comment/presentation period has been added to the beginning of each meeting.*

*Ad Hoc 206—*Within the IRAC, Ad Hoc Committee 206 was established in mid-1989 to coordinate executive branch preparations for WARC-92, and was responsible for developing Federal Government proposals for the WARC. Since it is a subcommittee of IRAC, membership in Ad Hoc 206 is limited to government agencies (approximately 15 Federal agencies actively participated in the work of Ad Hoc 206), and because of the classified nature of many of the issues addressed, the public was not allowed to attend meetings. Ad Hoc 206 was chaired by NTIA's Office of International Affairs, and divided its work

into four subgroups: high frequency (3-30 MHz), 1-3 GHz, above 20 GHz, and international regulatory affairs, each also chaired by NTIA staff from either OSM or OIA. The work of these groups was closely coordinated with the official FCC liaison to facilitate the development of common positions and FCC staffers also acted as liaisons with the four substantive subgroups. Ad Hoc 206 finished its work in May 1991. It is still in force, but inactive.

The objective of Ad Hoc 206 was to develop U.S. government proposals for WARC-92. The group developed papers that were submitted to OIA, OSM, and IRAC; prepared position papers for meetings of the CCIR's study groups (see ch. 3); and provided input to the U.S. group preparing for the Inter-American Telecommunications Conference (CITEL) Working Group meetings. Although IRAC/Ad Hoc 206 is the titular focal point of executive branch WARC preparations, it is important to note that the IRAC group itself does not develop proposals. Individual members draft proposals that are then reviewed and reworked in Ad Hoc 206. IRAC/Ad Hoc 206 served more as a controller, enabling the various agencies to forward their positions for response by others. In addition, IRAC/Ad Hoc 206 did not develop detailed proposals on all WARC-92 issues. It concentrated primarily on issues directly related to Federal Government activities, such as the space service proposals. In the case of proposals involving commercial or private sector interests, such as the mobile services, the FCC took the lead in drafting proposals that were then shared with NTIA/IRAC/Ad Hoc 206. This division of labor has prompted some critics in the private sector to complain that IRAC and Ad Hoc 206 functioned mostly as reviewers or censors, passing or blocking specific proposals, and that much of the substantive work was actually done by staff of the FCC and members of industry.

Frequency Management Advisory Council/Spectrum Planning Advisory Committee—*The Frequency Management Advisory Council (FMAC) was established in 1965 to provide private sector advice to the executive branch agency responsible for managing government use of the spectrum—first the Office of Telecommunications Policy within the*

²¹For more information on early IRAC and spectrum allocation, see Stanley D. Metzger and Bernie R. Burrus, "Radio Frequency Allocation in the Public Interest: Federal Government and Civilian Use," *Duquesne University Law Review*, vol. 4, No. 1, 1965-66, pp. 1-96.

²²For more information on the role of IRAC, see NTIA, *U.S. Spectrum Management Policy*, op. cit., footnote 3.

White House, and beginning in 1978, NTIA. April 1991, the FMAC was rechartered as the Spectrum Planning Advisory Committee.

The original FMAC was composed of 15 to 20 representatives from industry appointed by the Secretary of Commerce for 2-year terms. Membership included individuals with technical or administrative experience in spectrum matters—with a balance of views. The FMAC was directed to:

review, as appropriate, recommendations of the IRAC; review the progress of electromagnetic compatibility programs; and provide recommendations for United States positions on spectrum matters with respect to International Telecommunication Union conferences.²³

The Chair of the FMAC was the Associate Administrator of OSM.

Historically, the role of the FMAC was limited. Without a statutory base of power outside the informal backing of the Administrator of NTIA, the aggressiveness of the FMAC in pursuing outside, private sector interests was diminished. Agendas for FMAC activities were set by NTIA through the Chair, making the Chair extremely important in guiding the Council and determining its aggressiveness. As a result, the FMAC was primarily a reactive body, responding to the initiatives and requests of NTIA. In large part, the activism of the FMAC reflected and depended on the activism of NTIA as a whole. The current Administrator of NTIA, Janice Obuchowski, emphasizes the role of the private sector, so the FMAC was perhaps the focus of greater attention during her tenure than in the past.

Over its lifetime, subcommittees of the FMAC examined specific issues (in response to NTIA interests), such as trunking for government agencies and CITELE (see below), but, by and large, the FMAC did little substantive work. The one area in which the FMAC had substantial input was in NTIA's study of U.S. spectrum management. Council members worked closely with NTIA over the course of the study and provided advice on implementing the recommendations in the report. The FMAC's role in preparing for WARC-92 was limited, because posi-

tions for the Council to respond to were not finalized. The FMAC was also not deeply involved in past WARCs, although it was active in preparing for Plenipotentiary Conferences. The FMAC on several occasions, however, indicated strongly the need to establish delegations for WARCs sooner, and for the United States to reevaluate its policies regarding zero budget growth for the ITU.

Many felt that the FMAC could have been more effective in presenting its views and that the members of the FMAC, highly qualified and experienced individuals, could reflect the views of industry effectively if given the opportunity. Members garnered prestige by serving on the FMAC and turnover was low. Many recommendations contained in the spectrum report involve "opening" the Federal process to more private sector involvement, and the FMAC was the focus for several of those recommendations. The report proposed, for example, to broaden the membership of the FMAC to include government representatives, and to:

... expand its role to include a strategic planning function. . . . This advisory committee could address both specific, immediate problems and long-term issues to assist NTIA and the FCC in developing rational, unified spectrum management plans and policies based on the best interests of the nation as a whole.²⁴

As a result of these recommendations, in April 1991, the FMAC was rechartered as the Spectrum Planning Advisory Committee. While the basic functions of the FMAC were carried over to the new Committee, its mandate was broadened to include a strategic planning function and its membership was expanded to include government representatives.²⁵ It will still function only in an advisory capacity.

FMAC Subcommittee—In addition to the activities related to WARC-92, NTIA also examined the functions and effectiveness of CITELE (see box 3-B) in relation to regional and U.S. telecommunication interests. A special subcommittee of the FMAC was established in July 1990 to prepare draft proposals for the CITELE VI conference scheduled for Septem-

²³NTIA, *U.S. Spectrum Management Policy*, op. cit., footnote 3, p. 27.

²⁴Ibid., p. 28.

²⁵The new Committee will consist of 15 private sector representatives and 4 Federal Government participants, each appointed for a 1-year term. The Committee is expected to meet at least twice a year or more, if necessary.

ber 1991.²⁶ The subcommittee's approximately 30 members were mostly from the private sector, but government representatives from the NTIA, FCC, State Department, NASA, National Science Foundation, and U.S. Information Agency also participated. Members of the subcommittee regard the working partnership between government and private sector representatives leading to the development of U.S. proposals as a major accomplishment. The subcommittee examined the organization of CITELE, evaluated U.S. interests in the conferences, and discussed the role CITELE could play in future regional and international telecommunications policymaking.²⁷ Upon presentation of its final report to NTIA, the work of the subcommittee was finished and it was abolished in April 1991.

The work of the subcommittee reflects the growing importance of Latin America and the Caribbean in international telecommunications negotiations, especially in the ITU. The changes suggested by the subcommittee are too late to affect planning for WARC-92, but there is increasing pressure in the government to improve the effectiveness of CITELE in order to forge stronger common positions for the Western Hemisphere at future world conferences. Many in the United States see CITELE as a way to counter the increasing power of the European countries in international radiocommunications, and an improved CITELE could give the United States another (stronger) forum for pursuing its agendas at future WARC's. Private sector interest in CITELE reflects the growing importance of the region as a market for telecommunications equipment and services. Many members of the private sector as well as government policymakers from the United States and other countries of the region view CITELE as a valuable forum for discussing the region's telecommunication needs and addressing common telecommunication issues.

Implications

To the outsider, the conference preparatory structure at NTIA seems mostly informal and ill-defined. While preparation procedures do exist, the long experience and collegiality of the staff is vital in

allowing the process to work effectively. This process works now, but staff turnover through job changes or retirement and the lack of younger experienced staff could devastate the process. Possible changes in the ITU and regularization of conference schedules present an opportunity for NTIA to reevaluate its conference preparatory structure and processes.

The process for coordinating the exchange of views between NTIA and FCC is structured but also largely informal. The FCC's liaison to the IRAC also serves as the liaison to Ad Hoc 206, and other members of the Commission staff work with the four subgroups. NTIA staff (usually the chairs of the subgroups) attended meetings of the IAC and the IWGs to get informal private sector input and work with FCC staff in developing government positions. Much informal work took place between NTIA and the private sector Chair of the IAC.

NTIA has been criticized in a number of areas for its spectrum management practices and policy development.²⁸ In contrast to the FCC inquiry process and the role of the IAC, which are considered accessible and open to the public, the WARC preparation process at NTIA, and more broadly among all government agencies, is widely seen as closed off from public participation. In its recent report, NTIA recommended several changes that could substantially improve the domestic spectrum management process—changes that could alter the ways in which WARC preparations are conducted. Some of these changes have already been implemented. To increase private sector participation in its activities, for example, NTIA has begun opening IRAC meetings with a public comment/presentation period. This may broaden the domestic policymaking process—opening NTIA deliberations on international proceedings to greater public participation and improving industry input into the Federal Government's WARC preparation process.

Several other improvements in the NTIA preparations process have been suggested. First, a full-time permanent subcommittee of the IRAC responsible for international radio conference preparations (sim-

²⁶That meeting will consider the organization and functioning Of the CITELE conference structure and could recommend changes that would increase CITELE's stature and effectiveness-making it more of a force in regional and international (WARC) telecommunications policy.

²⁷The subcommittee's findings and recommendations are detailed in its final report: U.S. Department of Commerce, National Telecommunications and Information Administration, 'United States Preparations for the 1991 Inter-American Telecommunication Conference [CITELE],' Washington, DC, April 1991.

²⁸NTIA itself summarized these criticisms in *U.S. Spectrum Management Policy*, op. cit., footnote 3.

ilar to Ad Hoc 206) could be created. Second, the Radio Conference Preparatory Program that existed early in the 1980s could be revived. Expansion and improvement of WARC activities will require additional personnel and funds that may be difficult to get.

The arcane nature of international radiocommunication policymaking, combined with the relatively low level occupied by NTIA in the Department of Commerce structure have made it difficult for NTIA to pursue international spectrum issues as aggressively as some would like. For the past several years, for example, a battle (for staff and resources) has been fought within the Department of Commerce between NTIA/OIA and the trade sections over responsibility for international telecommunications trade. A failed attempt was made in 1989 to subsume NTIA under another division within the Department of Commerce. Such a demotion would have made it even more difficult for NTIA to carry out its international activities. Raising the status of NTIA—through clarification or amendment of Executive Order 12,046—could remedy some of the problems of funding and prestige. In July 1991, H.R. 3031, the NTIA Organization and Authorization Act, was introduced. This legislation, if passed by the Congress, would codify the authority of NTIA as outlined in Executive Order 12,046, and could add legitimacy to its policy role.

Department of State

Description

According to Executive Order 12,046, the role of the State Department in international telecommunications is to represent the United States at international meetings:

With respect to telecommunications, the Secretary of State shall exercise primary authority for the conduct of foreign policy, including the determination of United States positions and the conduct of United States participation in negotiations with foreign governments and international bodies. In exercising this responsibility the Secretary of State shall coordinate with other agencies as appropriate, and, in particular, shall give full consideration to the Federal Communications Commission's regulatory and policy responsibility in this area.²⁹

Compared to the FCC and NTIA, the State Department's role in the WARC preparation process is limited, especially in the initial stages. It helps determine the broad directions and focal points of overall U.S. policy and attends the meetings of the IRAC, but does not actively participate in the development of specific proposals, leaving that work to the FCC and NTIA. The State Department monitors the preparations process and helps resolve disputes, but its most important function early in the preparations process is representing the United States, with technical support from the FCC and NTIA, at preliminary bilateral and multilateral international negotiations. The State Department also coordinates U.S. WARC activities with the ITU and handles the procedural and administrative duties related to the WARC, including correspondence with the ITU, meeting deadlines, and submitting all official documents.

The State Department becomes more active in WARC preparations in the final stages of the process. The Department is responsible for determining the official U.S. WARC proposals to be submitted to the ITU based on the recommendations of the FCC and NTIA. Usually, these recommendations are nearly identical, having been previously coordinated by FCC and NTIA, but in some cases, issues cannot be reconciled and are left unresolved. In these cases, the Department has the authority to set final proposals (see below for the case of BSS-Sound in WARC-92 preparations).³⁰ The State Department also is responsible for designating the official U.S. delegation that will attend WARC-92 (based on lists submitted by FCC, NTIA, and the State Department itself) and for appointing an official Head of Delegation, who is granted temporary Ambassador status for the WARC.

The primary role of the State Department is to promote U.S. interests and proposals abroad and to ensure that they are presented as effectively as possible. It represents U.S. interests in bilateral meetings between the United States and other countries and in multilateral fora such as CITEL and the WARC itself. Its main contributions come, however, after final proposals have been set, and the United States turns its attention to the preparation of negotiating strategies and preliminary negotiations. The Department will act as the lead agency coordinat-

²⁹Executive Order No. 12,046, op. cit., footnote 2, section 5-201, p.

³⁰The State Department does not, however, have the legal authority to overturn FCC and NTIA determinations.

ing all negotiations in preparation for the WARC, including the extensive travel and meetings scheduled for late 1991. At the WARC, the Head of the U.S. delegation assisted by the State Department will coordinate the presentation of U.S. policy in all meetings.

In addition to its direct involvement in the preparations process, one of the more important roles the State Department plays is its coordination and oversight of the national CCIR and International Telegraph and Telephone Consultative Committee (CCITT) committees that function as advisory bodies to the Department. It is through these committees that technical papers written by domestic (often private sector) contributors are prepared, reviewed, and submitted to the (international) CCIR study groups (see ch. 3). The work of the study groups, in turn, is crucial in the international preparation for WARC, establishing the technical bases for the conferences.

Structure

Primary responsibility for international telecommunication policy rests with the Bureau of International Communications and Information Policy (CIP), in the Office of the Under Secretary of State for Economic Affairs. CIP was originally established by the Congress in 1982 as the Office of United States Coordinator of International Communications.³¹ The purpose of this legislation was to establish:

... a central point within the State Department for coordinating the increasingly important issues involving international telecommunications.³²

The office was upgraded to its present Bureau status in 1985, and is currently directed by Ambassador Bradley P. Holmes.

Responsibility within CIP for ITU and WARC-related activities is diffused throughout the Bureau. Specific activities are assigned to individual staff members on the basis of experience and interest. WARC preparation and U.S. participation in the ITU's High Level Committee (HLC), for example, are being coordinated by Ambassador Holmes'

Senior Advisor, CCIR and CCITT activities by a Deputy Director, and activities in CITELE and the ITU's Voluntary Group of Experts by other members of the staff. CIP has a very flat organizational structure that operates more according to overlapping topics than to strict organizational boundaries. CITELE activities, for example, are directly involved in WARC preparations, and staff working in both areas must coordinate closely. This is accomplished through some formal meetings but mostly informally through internal personal interaction.³³

Telecommunications Advisory Committee—The State Department established a Telecommunications Advisory Committee in 1987 to provide private sector input on telecommunications matters. Membership consists of high-ranking representatives from major telecommunications companies. The Committee has been following the proceedings of the HLC, and was briefed by Ambassador Gerald Helman, the U.S. representative to the ITU's High Level Committee, in April 1991. Input by the Advisory Committee to the HLC process, however, has been virtually nonexistent (see below), and in matters relating to WARC-92, the impact of the Advisory Committee is unclear. Some industry representatives believe the Advisory Committee to be mostly show, having little real impact on State Department policy.

Implications

The work of the State Department and CIP in the WARC preparation process is very important, but the constrained nature of CIP's role is the source of many complications in the development and presentation of proposals, and has given rise to uncertainties concerning the Department's (and CIP's) effectiveness. CIP's work is handicapped by several factors. First, the technical nature of the WARC limits CIP's contributions until late in the conference preparation process. CIP does not have sufficient technical staff or resources to become deeply involved in the actual preparation of proposals. This may make it difficult for CIP to substantially affect the course of preparations. Second, it is not clear from the mandates of Executive Order 12,046 exactly what role the State Department should play

³¹Public Law 98-164, Nov. 22, 1983.

³²U.S. Department of State, "Bureau of International Communications and Information Policy," Publication 9860 (Washington, DC: U.S. Government Printing Office, March 1991).

³³There is some question how extensive this interaction actually can be. CIP staff is located in several different locations within the main State Department building.

in setting international radiocommunication policy, including the development of WARC proposals and strategies. Critics have accused the Department of not being aggressively or substantively involved in the development of specific policies or issues. This may result from several factors. Past Directors of CIP may not have interpreted Executive Order 12,046 broadly, resulting in a lack of prominent involvement. It is also possible, because of the way responsibilities are divided, that NTIA and FCC have, in the past, shut out (CIP or deflected its attempts to become more involved earlier in the process, thus discouraging more active involvement. These factors have led critics to charge that CIP contributes little leadership in radiocommunications matters, preferring to wait and see how issues are resolved rather than taking a leading policy role.

On the other hand, CIP staff have been accused of overstepping their authority on occasion. Many of CIP's staff came from FCC and NTIA, are experienced in WARC activities, and are used to taking more of an active role in the preparations process. Such activism, however, is often rebuffed by NTIA and FCC staff, who prefer to work out the technical details themselves, turning issues over to CIP only when specific problems arise. This conflict can carry over to the conference itself, where NTIA and FCC expect CIP staff to limit their activities to administrative matters and let NTIA and FCC technical staffs handle the details of allocations and negotiations in the working groups and committees.

These "turf battles" give rise to tension in the preparations process between the FCC, NTIA, and the State Department. CIP staffers perceive themselves to be an important part of the process, but there is belief among many FCC and NTIA staff that CIP is little more than a rubber stamp for the work accomplished in NTIA and FCC. They believe that when CIP staff understand their own role, and its limitations, the process works smoothly. If, however, CIP staff are perceived to overstep their bounds, the other agencies consider them trouble-

makers. These problems stem from the vague division of international telecommunications authority laid out in Executive Order 12,046. Until roles are more clearly defined and coordination mechanisms firmly in place, CIP's activities will continue to be buffeted by the forces of aggressiveness and passivity.

Several specific criticisms have been made about the way CIP prepares for conferences. First, the Department has been criticized—primarily by industry leaders—for forming delegations and naming Heads of Delegations too late.³⁴ Most critics would prefer that the delegation be formed at least 9 months before the WARC, to allow enough time for the (private sector) delegates to understand the U.S. government's priorities and develop effective negotiating strategies and back-up positions. Even for those delegates that served on the IAC or who have been involved in the preparations process from the beginning, there is a learning curve related to the government's plans for the WARC, and without sufficient lead time, delegates may not understand what the government is trying to accomplish or what the negotiation strategies entail. This reduces the effectiveness of the delegation. As of mid-September 1991, the final list of delegates had not been released, although members had been notified of their selection and had begun to meet. The Head of Delegation, Jan Baran, was not officially announced until late August.

Another problem identified by analysts and past participants is that the Head of Delegation changes from conference to conference.³⁵ Some have complained that lack of continuity makes it difficult for the United States to establish long-term relationships at high levels that could enhance U.S. presence and effectiveness in international meetings.³⁶ On the other hand, some observers play down the importance of such continuity, noting that the participants in the delegations are relatively consistent over the years.³⁷ Without long-lasting personal relationships and trust, negotiation becomes more difficult.

³⁴For a discussion of the issues involved in putting together a delegation, see U.S. Congress, Office of Technology Assessment, *Radiofrequency Use and Management*, OTA-CIT-163 (Washington DC: U.S. Government Printing Office, January 1982).

³⁵Other countries often maintain Heads of Delegation across many conferences.

³⁶Some believe that the FCC's Office of International Communications is attempting to fill this gap. If true, this could be perceived as undermining the State Department's authority. More importantly, the problem indicates a leadership vacuum and the need for a focal point for U.S. spectrum dealings abroad.

³⁷Ironically, the rapid changing of telecommunications officials in many of the Latin American countries has been identified by U.S. government officials as one of the key problems affecting the effectiveness of CITELE.

Finally, some believe that the Head of Delegation is more a political or honorary choice than a choice based primarily on merit. Some Heads of Delegation have had little or no telecommunication experience. However, past Heads have proven to be extremely competent. Troubles at conferences have more often been attributed to institutional failures or lack of effective preparation than to a lack of leadership at the conference. These concerns apply also to the delegation as a whole. The selection process is often political. In addition to the government staff that have been working on the WARC issues, many members of industry wish to participate. The IAC will form the core of the private sector's participation, but there are too many people for too few spots. Filling out the delegation is a matter of achieving a political balance so that all interests are represented.

Although not specifically related to WARC-92 preparations, the State Department has been criticized for its handling of U.S. participation in the activities of the HLC. While the Department was seemingly open to comments from all interested parties in and out of the government, the overall impact of this input is uncertain. In addition, although State Department staff and the Ambassador were available to brief interested parties, there is still a perception among some of those involved that the progress and results of the HLC proceedings were held closely. The consultant report the ITU commissioned, for example, was not released until the final report of the HLC was released.³⁸

Ambassador Helman had staff support from CIP, FCC, and NTIA, but aside from the specific staffers assigned to him, few other government officials had direct input. The extent to which the staff from NTIA and FCC affected the process is uncertain. Participation by the private sector in the HLC process was even more limited, and the impact private sector comments had is also unclear. One problem was the extremely short time the HLC had to do its job and the short periods of time the State Department had for sending out proposals and receiving comments. To oversee the progress of the HLC, both the national CCITT and CCIR committees set up task forces, but they simply could not respond quickly enough in many cases to provide comprehensive comments. Industry representative were illustrated because the process was not open to public scrutiny,

making it difficult to judge how well input was considered, and what goals the State Department was pursuing. Industry was not privy to the ambassador's instructions and had no part in determining final U.S. positions. Indifference or even outright hostility of some members of the private sector to changes in the ITU also may have contributed to their lack of impact.

Private Sector and User Groups

Opportunities for Input

FCC-IAC, Notices of Inquiry—Participation of the private sector in the preparation for WARC-92 has been extensive, and comments from both government and private sector representatives reveal mostly satisfaction with the process and its outcomes. By almost all accounts the FCC takes careful consideration of the work and recommendations of the IAC as well as the comments received in response to the NOIs. FCC staff attendance at the meetings of the working groups fostered effective cooperation and coordination between the Commission and the private sector. Nevertheless, several changes have been suggested to improve the effectiveness and efficiency of the IAC. Some have suggested a switch from operating by competition and negotiation to some form of formal voting. If the objective of the IAC is to develop specific industry proposals, voting may be a solution. But if the most effective role of the IAC is to develop a wide range of proposals and negotiate compromises, voting may actually be harmful. Votes can be traded, voting does not build the same support as negotiation, and rivalries could be deepened rather than resolved. Various industry sectors could try to "stack the vote," and there are practical questions as to who would be allowed to vote—members of the working groups or only members of the IAC. Many private sector representatives regard voting as counterproductive and there is some doubt that companies would participate in such a forum, or support its outcomes, when their positions could be summarily defeated.

Although participation in the preparations process by industry was extensive, the number of individuals and companies involved was relatively small. There is a great deal of overlap in the membership of various private sector groups engaged in WARC

³⁸See Annex 2 in Final Report of the High Level Committee (HLC.) to Review the Structure and Functioning of the International Telecommunication Union, "Tomorrow's ITU: The Challenges of Change," Document 145-E (Geneva: International Telecommunication Union, April 1991).

preparatory activities. The industry participants in the work of the IAC, for example, are roughly the same as those who helped prepare U.S. positions for the CITELE working group. Although there are no rules against entry, the extent of small company participation was limited. The majority of IAC participants represent traditional radiocommunication companies and interests. Some other companies with consultants or lawyers in Washington, DC are also informed about the process, but many smaller companies may remain uninformed or only vaguely aware of the importance of the WARC proceedings and how WARC outcomes may affect them. The Telecommunication Industries Association, among others, tries to bridge this gap for smaller companies by representing those who cannot afford a private consultant.

NTIA—Private sector/industry input to NTIA is less extensive than the FCC. Three factors constrain the private sector's role in executive branch proceedings. First, NTIA's primary constituency (through the IRAC) is not industry, but the Federal Government users of spectrum. As a result, NTIA seems hampered by conflicting functions and mandates. On the one hand, NTIA is the organ of administration telecommunications policy. This would imply that policy decisions be made with input from all relevant sectors of society, including industry, and that a broad range of policy considerations be integrated, including trade. On the other hand, NTIA's primary spectrum duties focus on representing only government interests. As an advocate for the government, NTIA currently does not take direct account of the needs of the private sector in spectrum policy decisions.³⁹ It is also possible in spectrum and radiocommunication matters that government spectrum interests, represented by specific Federal agencies, will prevail over the less-focused interests of trade, for example. NTIA is aware of private sector concerns, and has taken steps to improve private sector involvement in the policy development process, but current efforts to open the NTIA process are too new to judge their effectiveness, and it remains to be seen how well NTIA will be able to reconcile its dual responsibilities to government users and private sector interests in the future.

Second, much of the deliberations and decision-making processes of NTIA remain closed to the public. IRAC meetings, which were previously attended only by government representatives, have only recently been opened to allow some private sector participation. The new Spectrum Planning Advisory Committee (SPAC, formerly the FMAC) provides for private sector input to NTIA on spectrum matters. However, the work of the group has been much more limited in scope and participation than, for example, the LAC. By and large, the FMAC fell short of private sector needs and aspirations. Its ability to be an effective voice for the private sector was limited by its narrow mandate and the nature of the body itself: competing interests and services can cancel each other out as services vie for prominence (broadcasting v. mobile). The new SPAC does, however, serve a useful and important function for its participants. It provides a 'window' into NTIA, allowing members of industry to get a feel for the people making policy at NTIA, and the ebb and flow of interests the agency is concerned with. NTIA has identified this type of informal sharing and cooperation as very important and has recommended ways to increase such interchanges to improve strategic planning efforts.⁴⁰ While some of these recommendations, as noted, have already been acted on, it is still too soon to tell what longer term impacts they will have on opening NTIA's processes and improving domestic spectrum management and WARC preparations.

Third, participants in the WARC-92 preparations process complain that the lack of private sector (or even FCC) access to data on government frequency use makes it very difficult for industry representatives to develop proposals for the WARC. Without access to relevant data, without knowing exactly what frequencies are being used and how, private sector representatives do not know what frequencies are available and what technical considerations might affect their proposals. As a result, the development of new technologies or uses for the spectrum may be inhibited by. A more fundamental issue in providing access to data is first gathering the information. It is not clear that adequate data exists on government spectrum use. Data may be incomplete, outdated, or may not have even been collected.

³⁹-note of this perceived lack of private sector input NTIA has proposed to establish two vice-chairs of the IRAC, one of whom will "coordinate activities of the IRAC with the private sector." NTIA, *U.S. Spectrum Management Policy*, op. cit., footnote 3, p. 22.

⁴⁰*Ibid*, p. 28.

Providing access to data means little if that data is not reliable and complete.

NTIA has proposed several remedies to improve government data and access to it, including: a unified database of spectrum use information combining the frequency lists of both FCC and NTIA, a proposal to declassify some government frequency data, and improved distribution of data either through on-line computer access or compact disc-read-only-memory (CD-ROM).⁴¹ Other improvements and solutions to these problems have been identified, and some of them have already been implemented or are being planned. NTIA has a plan for addressing these issues over the next 2 fiscal years. However, because of resource constraints, it is unclear how many of NTIA's recommendations can and ultimately will be implemented, and how effective they will be. Mechanisms must be put into place to ensure industry access to both relevant data and policymakers if private sector participation in the WARC preparation process is to be effective, timely, and fair.

State Department—The private sector had the least direct input into State Department preparations for WARC-92. This is largely a function of the limited role it plays in the formation of the proposals. Once the official U.S. delegation is formed, State Department officers will become much more involved with industry representatives in the formation of negotiating strategies and as the lead U.S. agency at the WARC itself.

CCIR and CITELE Work—Some of the most important input that industry had on the WARC-92 preparation process is through participation in the work of the CCIR national study groups and through the informal work of the CITELE working group (see box 3-C). Internationally, U.S. industry participates extensively in the work of the CCIR study groups. The participation of the private sector in these groups is one of the most important ways in which the United States can directly and indirectly influence the WARC process.⁴²

Conference Participation

Private sector participation at conferences is somewhat limited, but extremely important. Representatives from the private sector are allowed to participate as official members of the U.S. delegation to WARCs upon filing conflict of interest and financial disclosure statements. The State Department accredits all delegates. Principal spokesmen, however, are usually government representatives from the State Department, FCC, and NTIA. The private sector will be represented by a vice-chair appointed by the head of delegation, to accompany the vice-chairs from the FCC, State Department, and NTIA.

In the past there have been problems with members of industry representing the United States abroad, but they appear to have been resolved.⁴³ Members of the private sector contribute mostly in the conference's working groups and study groups, where their extensive technical experience and expertise is used most effectively.

Industry participants from past conferences complain that government leaders often isolate themselves from industry representatives during the course of the conference, and that the private sector has little say in strategy setting. Government representatives advance positions and pursue goals that had not been previously discussed with all the delegates. This may be necessary at times to react to fast-moving developments, but it circumvents private sector interests. Greater cooperation of government and industry delegates from the inception of the delegation could alleviate some of these problems. Building trust among the members of the delegation is crucial if the United States is to be effective in negotiating from a unified position. Forming delegations earlier and involving the private sector extensively in the preparation of negotiating positions could help achieve this goal.

Improving Private Sector Participation

As the role of the private sector in radiocommunications becomes increasingly important, the United States must find ways to raise the level and effectiveness of private sector input into the U.S.

⁴¹Ibid, pp. 29-32.

⁴²Ch. 3 provides a more in-depth discussion of the U.S. participation in the work of the CCIR and its influence on the WARC proceedings.

⁴³For a full discussion of the problems surrounding private sector participation in international meetings, and the effects on the 1979 WARC, see OTA, *Radio Frequency Use and Management*, op. cit., footnote 34, pp. 60-62.

international spectrum policymaking process, while at the same time protecting U.S. public policy interests.⁴⁴ Changes now underway show recognition of the importance of private sector input, and should be followed through. At the FCC, OIC will serve as a focal point for industry input on an ongoing basis. This should allow FCC international policy and industry perspectives to be more easily coordinated and integrated on an ongoing basis. The activities and problems of the WARC-92 IAC can serve as a learning tool for future FCC advisory committees. With the completion of the IAC's work, industry has no coordinating body and no unified voice to represent its interests before the FCC or the executive branch. Some analysts have called for industry to fund their own IAC to keep close ties and oversee the work of individual companies in the CCIR study groups on a continuing basis. This group could serve as liaison not only to the FCC, but also to the State Department and NTIA, and could be an important link and focal point for industry activities

in international spectrum matters. Changes recommended by NTIA in its spectrum report are far-reaching and could substantially improve the quantity and quality of the private sector input to the executive branch.

Changes on the international scene have propelled the private sector to center stage. Proposed changes in the structure of the ITU and current efforts to increase the level of industry participation in the work of CITELE (see ch. 3) offer the private sector an opportunity to increase its participation in the ongoing radiocommunication policy process. Continued active involvement of the U.S. private sector will be crucial to maintain the technological leadership the United States now enjoys in many radio-communications sectors, and the opening of international bodies to more private sector participation could enhance U.S. effectiveness in international radiocommunication negotiations and conferences.

⁴⁴As private sector participation in U.S. international policy activities increases, questions arise as to what constitutes an "American" company. Many companies that are headquartered in foreign countries have substantial manufacturing and service operations in this country. Should they be allowed to participate in U.S. WARC preparation activities? Whose interests would they represent? The United States may have to revisit policies defining foreign company participation in U.S. policy as contained in section 310 of the Communications Act.