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# Institutional Perspectives on the Allocation of Space Orbital Resources: The ITU, Common User Satellite Systems and Beyond

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## ARTICLES

### **Institutional Perspectives on the Allocation of Space Orbital Resources: The ITU, Common User Satellite Systems and Beyond**

*by Steven A. Levy\**

#### I. INTRODUCTION—"SCARCITY" AND THE CALL FOR A NEW REGIME FOR SPACE ORBIT ALLOCATION

**S**pace communication technology is no longer in its infancy. The distribution of communications via satellite to multiple locations across dispersed areas is within the reach of even the poorest nation. However, the primary worldwide institutional arrangements concerned with structuring and implementing the use and exploitation of space communications satellites rely on procedures, norms and processes that were developed when the use of space technology for communication purposes was the exclusive domain of only a few states. Now, by contrast, world attention is beginning to focus upon the critical issue of the appropriate arrangements to ensure, in a time of increasing demand for access to space orbital and frequency resources, that all concerned parties will enjoy "equitable access" to the geostationary orbit (GSO)<sup>1</sup> and associated frequency resources. These demand pressures have created a growing perception of scarcity that in turn challenge the existing regime governing access to and the use of outer space orbit and associated frequency spectrum resources for satellite communication.

Whether the international institutions concerned with the regulation and use of the GSO can cope with the increasing proliferation of space

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<sup>1</sup> The geostationary orbit is that volume of space at an altitude of 35,786 kilometers centered around the plane of the earth's equator in which a satellite can remain approximately fixed relative to the earth. See NATIONAL TECHNICAL INFORMATION SERVICE, U.S. DEP'T OF COMMERCE, FINAL ACTS OF THE WORLD ADMINISTRATIVE RADIO CONFERENCE, vol. 1, art. N1, § 8.13 (Geneva 1979) (unofficial version prepared for U.S. Dep't of State).

systems remains an unresolved issue and is the focus of this article. The growth of communication needs has stimulated demand not only for orbital access, but also for multiple systems designed to meet diverse international, regional, bilateral, domestic and commercial objectives.

The conflicts created by these demand pressures affect a wide range of transnational interests as well as the unilateral objectives of individual states. Although frequently framed as a conflict between technological "have" and "have not" countries, the perceived scarcity of suitable orbit locations and associated frequencies<sup>2</sup> creates dilemmas that are common to virtually all satellite-using nations. Moreover, because international satellite communications have largely been organized through cooperative "common user" satellite system<sup>3</sup> undertakings that are unprecedented in other trade sectors, it is of critical importance to consider both whether and how these habits of cooperation—and the institutional arrangements they have spawned—can cope with demand pressures that on the surface seem to reflect a desire to promote unilateral undertakings in the space communications field. The thesis here will be that cooperative undertakings must continue to be accommodated within the ITU regime for vesting rights of use of the satellite orbit, and, in fact, can better advance the interests of most countries—both developed and developing—than would alternative rights vesting mechanisms that purport to "guarantee" unilateral programs.

#### A. *Overview of the Political Climate*

As of 1971, when the current International Telecommunications Union (ITU)<sup>4</sup> assignment of geostationary orbital positions and spectrum for space services was devised, the United States and the USSR were the only countries capable of launching communication satellites into geostationary orbit. The International Telecommunications Satellite Organization (INTELSAT) was the only international system providing worldwide service, and only a handful of domestic satellite systems were operational.

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<sup>2</sup> This perceived decrease in orbital capacity does not result from the physical frequency constraints of the GSO. Rather, many technical factors, such as polarization discrimination and satellite station-keeping, influence the efficiency of its use. As these technical factors are improved, the capacity of the GSO is expected to increase. D. JANSKY, *WORLD ATLAS OF SATELLITES* 44-63 (1983).

<sup>3</sup> See *infra* notes 26-30 and accompanying text.

<sup>4</sup> The International Telecommunications Union is a multinational organization whose purpose is "to maintain and extend international cooperation between all members . . . for the improvement and rational use of telecommunications . . . [and] to promote and to offer technical assistance to developing countries in the field of telecommunications." INTERNATIONAL TELECOMMUNICATIONS UNION, *FINAL ACTS OF THE PLENIPOTENTIARY CONFERENCE*, Conv. 3 (1982) (available in the office of the Case Western Reserve Journal of International Law) [hereinafter cited as 1982 FINAL ACTS].

Under such conditions, few difficult access issues arose. No ITU member administration that has sought access rights to the geostationary orbit for the purpose of operating a fixed international or domestic satellite system has been denied orbital access by operation of the existing ITU satellite coordination process.<sup>5</sup> This process provides for the implementation and deployment of space systems on an ad hoc basis, provided there is no prejudice to existing or future requirements for space communications facilities.<sup>6</sup> INTELSAT's charter gives it the prerogative of passing on the technical impact, and in certain circumstances the economic effect, on its operations posed by alternative international systems.<sup>7</sup> Nevertheless, INTELSAT has yet to withhold its approval of any potentially competing international system.<sup>8</sup>

The appearance of surface calm, however, is misleading. The regime may have worked well largely because of an atmosphere of perceived abundance in which norms and standards which deal with the principle of unencumbered orbital access are beyond practical reproach. But the surface calm belies a growing uneasiness that the legal standards and largely ad hoc processes by which they are implemented command a diminishing following.

Resolution 3 of the 1979 World Administrative Radio Conference (WARC '79)<sup>9</sup> calls in effect for a comprehensive reappraisal, at the "ORB-85" conference<sup>10</sup> to be convened next year to consider the adequacy of the

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<sup>5</sup> INTERIM WORKING PARTY 4/1, INTERNATIONAL CONSULTIVE COMMITTEE ON RADIO, INTERNATIONAL TELECOMMUNICATION UNION, PROVISIONAL TECHNICAL REPORT FOR WARC-84, Doc. No. 4/286-E, at 116 (June 12, 1981) (available in the office of the Case Western Reserve Journal of International Law) [hereinafter cited as I.W.P. 4/1].

<sup>6</sup> GENERAL SECRETARIAT, INTERNATIONAL TELECOMMUNICATIONS UNION, RADIO REGULATIONS, arts. 11, 13, at RR11-1 to RR11-20, RR13-1 to RR13-16 (1982) (available in the office of the Case Western Reserve Journal of International Law) [hereinafter cited as RADIO REGULATIONS].

<sup>7</sup> Agreement Relating to the International Telecommunications Satellite Organization "INTELSAT," Aug. 20, 1971, art. XIV, 23 U.S.T. 3813, 3853-54, T.I.A.S. No. 7532 [hereinafter cited as INTELSAT Agreement].

<sup>8</sup> INTELSAT has, however, imposed certain limitations upon competing international systems, particularly those serving lucrative high density routes. As concerns technical conflicts between INTELSAT and certain domestic systems, particularly in the Indian Ocean region, the conflicts were resolved and INTELSAT ultimately relaxed the interference parameters that gave rise to the issue. See *infra* notes 122-23 and accompanying text.

<sup>9</sup> Resolution No. 3, Relating to the Use of the Geostationary-Satellite Orbit and the Planning of Space Services Utilizing It, RADIO REGULATIONS, *supra* note 6, at RES3-1 [hereinafter cited as Resolution 3].

<sup>10</sup> See Proceeding Before the Federal Communications Commission, An Inquiry Relating to Preparation for an International Telecommunication Union World Administrative Radio Conference on the Use of the Geostationary-Satellite Orbit and the Planning of the Space Services Utilizing It, Third Notice of Inquiry, General Docket No. 80-741, at 2 n.1 (Oct. 6, 1983) [hereinafter cited as Preparation for ITU WARC]. This conference, entitled

current mechanisms for vesting rights of use of orbit and spectrum. The Resolution was sponsored by certain technologically disadvantaged states which fear that the current regime penalizes their present inability to utilize space resources and allows the use and control of orbit/spectrum to be dominated by relatively few advanced countries. On closer examination, however, there were mixed motivations. The resolution's primary sponsors were a group of less-developed countries (LDCs) who envisioned themselves as regional satellite leaders. They consciously preyed on the visceral concerns of other LDCs who may have been concerned that their present inability to use the GSO would prejudice their access in the future.<sup>11</sup>

As shall be discussed below, prior use of the orbit and spectrum by existing systems does not necessarily confer rights to maintain such use in perpetuity. Nevertheless, the discomfiture of the LDCs over the availability of desirable frequencies at convenient locations has moved them to call for future conferences to consider means "to guarantee in practice for all countries equitable access to the . . . orbit and the frequency bands."<sup>12</sup> These countries argue that ad hoc developments simply cannot be trusted to preserve in practice their abstract rights of access to the satellite orbit.<sup>13</sup>

To look upon this looming conflict solely in north/south and developed/developing country terms is misleading. The greatest uncertainty arises over the availability of positions at optimal locations that permit the use of lower frequency bands which are most suitable for low cost

the World Administrative Radio Conference on the Use of the Geostationary-Satellite Orbit and the Planning of Space Services Utilizing It (Space WARC), will meet in two sessions in 1985 and 1988 under the guidance of the International Telecommunications Union (ITU), an international organization coordinating global telecommunications, of which nearly all nations are members. The ITU short-form reference to the first session is ORB-85.

<sup>11</sup> See, e.g., Srirangan, Wireless Advisor to the Government of India, Some Thoughts on Techno-Economic Considerations and Potentials of Orbit/Spectrum Planning for Developing Countries 12 (Paper Delivered at Inaugural Sess. of Int'l Training Course on Orbit Frequency Planning, Space Applications Centre, ISRO, Ahmedabad, Feb. 16-Mar. 6, 1981) (available at the office of the Case Western Reserve Journal of International Law):

The present pattern of growth of satellite networks and the related step-by-step interference coordination process inevitably place developing countries who are usually later entrants, in a position of disadvantage. In an effort to "protect" networks which have preceded them, they have to accept constraints of some sort and a related penalty. The question, is why should a later entrant, specially one who is already constrained by limited resources, be in this position if he is entitled to an equal right of access to the orbit/spectrum resource?

*Id.* at 13.

<sup>12</sup> Resolution 3, *supra* note 9, at RES3-1.

<sup>13</sup> See generally Rutkowski, *Six Ad-Hoc Two: The Third World Speaks Its Mind*, SATELLITE COM., Mar. 1980, at 22; Srirangan, *supra* note 11.

satellite systems.<sup>14</sup> In terms of technology, the perception that the satellite orbital arc is diminishing may ultimately be proven false.<sup>15</sup> At present, the concern over orbital access is shared by the developed and the developing world. The historic U.S. "open skies" policy<sup>16</sup> has had to be modified to acknowledge and incorporate the fundamental scarcity of available orbital resources. As the U.S. Federal Communications Commission (FCC) has warned, "[W]e can no longer warrant that we will be able to grant every orbital assignment that may be requested by qualified applicants."<sup>17</sup>

Until the scarcity problem can be diminished by the use of new technology, difficult allocation choices, both internationally and domestically, must be made to determine who may be eligible to utilize scarce orbital resources. At the international level, the scarcity perception has stimulated support for comprehensive a priori planning. According to this plan, orbital positions and frequencies would be allocated to reserve orbital positions and frequency assignments for all countries, regardless of their present need or capability to use these resources.<sup>18</sup> Such a regime would represent a radical change from the status quo and would impose a con-

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<sup>14</sup> Primarily, the congestion is severe only in a part of the 6/4 GHz band "due, mainly, to its relatively benign propagation characteristics and the ready availability of technology which has become cost effective because of intensive use." INTELSAT, OBJECTIVES AND FRAMEWORK OF REPORTS TO ADMINISTRATIONS/SIGNATORIES OF INTELSAT'S PREPARATION FOR WARC-ORB-85, BG-57-66E, at 5 (Nov. 23, 1983) (available in the office of the Case Western Reserve Journal of International Law) [hereinafter cited as OBJECTIVES AND FRAMEWORK].

<sup>15</sup> See *infra* note 31 and accompanying text.

<sup>16</sup> *In re* Establishment of Domestic Communications-Satellite Facilities by Non-Governmental Entities, 22 F.C.C.2d 86 (1970) (report and order), 35 F.C.C.2d 844 (1972) (second report and order), *reconsideration granted in part* 38 F.C.C.2d 665 (1972).

<sup>17</sup> Proceedings Before the Federal Communications Commission, Licensing of Space Stations in the Domestic Fixed-Satellite Service and Related Revisions of Part 25 of the Rules and Regulations, CC Docket No. 81-704, at 36, para. 76 (Apr. 27, 1983) [hereinafter cited as Licensing of Space Stations]. The Commission in response to perceived scarcity has implemented two comprehensive orbital assignment plans, the second at substantially reduced spacing intervals over the first. *Id.* at 2-3. To accommodate the second group of assignments, the FCC was forced to invoke, on extremely short notice, a strict cut-off on new applications. *In re* Processing of Pending Space Station Applications in the Domestic Fixed Satellite Service, 90 F.C.C.2d 1, 4 (1982). The FCC's most recent processing guidelines are calculated to discourage a flood of pro-forma applications, in order to avoid the administratively exhausting task of comparative evaluation. Licensing of Space Stations, *supra*, at 50-51, paras. 103-04. Moreover, the FCC has encouraged trading of assigned locations as a means of allowing the marketplace to rectify deficiencies in the Commission's assignment plan. *Id.*

<sup>18</sup> *Cf.* Resolution 3, *supra* note 9, at RES3-1 (admitting the need for equitable access while noting that "the use of the . . . satellite orbit by individual countries . . . can take place at various points in time, based on . . . the availability of the resources at their disposal").

siderable detriment to those countries that have become accustomed to the relatively loose regulation of the present order. The existing regime has given them, as early entrants, the advantage of almost automatic access to GSO and frequency resources.

Whether such formal, and potentially limiting, procedures would be an improvement over the present regime by allocating frequencies, positions, coverage areas, power and other parameters of operation on strictly a country-by-country basis has never been conclusively established. All states do not necessarily require nor insist upon dedicated allocations and their needs may, moreover, best be served by collective access. The compromises that will be necessary to reconcile all the conflicting claims may be such as to leave all participants worse off than they are in the present ad hoc coordination regime.<sup>19</sup> Diminishing resources and mutually exclusive claims of entitlement are not circumstances that lend themselves to Pareto optimality.<sup>20</sup> On the other hand, a "common user" approach<sup>21</sup> which recognizes that many, if not all, national and international service requirements may be met on a collective basis, can work best if multilateral systems are given explicit recognition in whichever allocation system is devised.

### *B. Opportunity and Conflict—National Objectives versus Common User Approach*

It is problematic whether selective, common user approaches to orbital access can coexist with the nationalist sentiments that drive the movement toward alternate ITU regimes for orbit/spectrum resource allocation. The position of the principal supporters of Resolution 3 is that equitable access to the GSO can best be assured through a regime of prior designations of specific slots and frequencies on a country-by-country basis.<sup>22</sup> However, this view completely fails to recognize that *in practice* sovereign countries have *chosen* to achieve their access requirements and objectives through participation in common user systems operated under the auspices of multilateral institutions. From the standpoint of almost every country, the major providers of satellite services now and in the foreseeable future will be multi-user systems involving almost all ITU

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<sup>19</sup> See COMMUNICATIONS STUDIES AND PLANNING INTERNATIONAL, INC., WARC '77 AND ITS IMPLICATIONS FOR RARC '83, at 1-5 sec. 11 (Apr. 1983) (report for the U.S. Delegation to the Regional Administrative Radio Conference) (available in the office of the Case Western Reserve Journal of International Law) [hereinafter cited as WARC '77 IMPLICATIONS].

<sup>20</sup> V. PARETO, MANUEL D'ECONOMIC POLITIQUE (1909), cited in E. MANSFIELD, MICROECONOMICS 433 (1970) ("A change that harms no one and improves the lot of some . . . is an improvement . . .").

<sup>21</sup> See *infra* notes 26-30 and accompanying text.

<sup>22</sup> See Resolution 3, *supra* note 9.

members. Moreover, there are strong technical, economic and political arguments for giving explicit recognition to multi-user systems as favoring technical and economic efficiencies in the use of spectrum and geostationary orbit.<sup>23</sup>

The oversight in Resolution 3 may be no accident. The most vocal proponents of a priori planning, India, Indonesia and Brazil, have sought to enhance the international service dimension of their domestic systems in direct competition with common user international systems as a means of promoting their regional influence. Tension between these regional states, on the one hand, and INTELSAT, on the other, has developed in recent years regarding spectrum and geostationary orbit assignments within the limited portions of the geostationary arc useful for international service.<sup>24</sup> The ambitions of these countries impel them to attempt to enhance their option to build separate domestic and regional systems in which they enjoy a far more prominent role than would be possible in a universal body, such as INTELSAT.<sup>25</sup>

Most ITU member states, particularly LDCs, would be wise to reject narrowly-based a priori orbit and spectrum assignment approaches, particularly assignments by country. Such a regime explicitly fails to recognize the needs and requirements of common user systems for access to orbit and spectrum resources necessary to satisfy the common and dedicated service requirements of their member states. The principal common user systems<sup>26</sup> function under the joint sponsorship and direction of their membership and are organized pursuant to international treaties.<sup>27</sup> Mem-

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<sup>23</sup> OFFICE OF TECHNOLOGY ASSESSMENT, RADIO FREQUENCY USE AND MANAGEMENT, IMPACTS FROM THE WORLD ADMINISTRATIVE RADIO CONFERENCE OF 1979, at 121-23 (1982) [hereinafter cited as OTA REPORT].

<sup>24</sup> See OBJECTIVES AND FRAMEWORK, *supra* note 14, at 2. Other countries are motivated purely by nationalistic aspirations. For example, some countries have asserted sovereignty over those segments of the geostationary orbit that lie directly over their respective territories. See Final Minutes of the Second Meeting of Equatorial Countries on the Geostationary Orbit 7 (Apr. 8, 1982); Gorove, *The Geostationary Orbit: Issues of Law and Policy*, 73 AM. J. INT'L L. 444, 450-59 (1979).

<sup>25</sup> See Levy, *INTELSAT: Technology, Politics and the Transformation of a Regime*, 29 INT'L ORGANIZATION 655 (1975).

<sup>26</sup> The principle common user systems are the International Telecommunications Satellite Organization (INTELSAT), the International Maritime Satellite Organization (INMARSAT), the European Telecommunications Satellite Organization (EUTELSAT) and the INTERSPUTNIK International System and Organization of Space Communications (INTERSPUTNIK).

<sup>27</sup> See, e.g., INTELSAT Agreement, *supra* note 7; Convention on the International Maritime Satellite Organization [hereinafter cited as INMARSAT Agreement], Sept. 3, 1976, 31 U.S.T. 1, T.I.A.S. No. 9605; Agreement on the Constitution of a Provisional European Telecommunications Satellite Organization "INTERIM EUTELSAT" [hereinafter cited as EUTELSAT Agreement], May 13, 1977, reprinted in SENATE COMM. ON COMMERCE, SCIENCE, AND TRANSPORTATION, 95TH. CONG., 2D SESS., SPACE LAW, SELECTED BASIC DOCU-



ber states exercise direct control over service policy and organizational objectives through a common decision-making structure which is endowed with judicial personality that transcends individual sovereign interests.<sup>28</sup> Unlike national domestic systems, such as PALAPA (whose capacity may be used for regional, as well as domestic service requirements),<sup>29</sup> common or multi-user systems are designed to weigh at least proportionately, if not equally, the interests of all of the sovereign countries affected by and involved in their operation.<sup>30</sup>

Apart from the participatory aspects of these institutions, in which all countries, including the United States, its allies and other countries that rely on their services have a vested interest, the common user approach reflects the technological logic of modern space systems. As FCC Advisory Committee studies have demonstrated, the expanding demand for satellite capacity does not require corresponding increases in the number of geostationary slots, given the emergence of technologies that support shared frequency use and reuse at a particular location.<sup>31</sup> Space platform and cluster satellite techniques point to more efficient multiple and common use of a single orbital location. Even in today's environment, a hybrid INTELSAT satellite can provide C and Ku Band capacity for both international and domestic fixed and international maritime mobile service.<sup>32</sup> The notion of dedicated country-by-country orbit and frequency reservations on the basis of a detailed and rigid international plan simply does not mesh with these emerging service practices. Future optimal development of multi-purpose and multiple use technologies presupposes greater reliance on common user arrangements.

MENTS [hereinafter cited as SPACE LAW DOCUMENTS] 469 (Comm. Print 1978); Agreement on the Establishment of the "INTERSPUTNIK" International System and Organization of Space Communications [hereinafter cited as INTERSPUTNIK Agreement], Nov. 15, 1971, reprinted in SPACE LAW DOCUMENTS, *supra*, at 385.

<sup>28</sup> INTELSAT Agreement, *supra* note 7, 23 U.S.T. at 3840 (art. X); INMARSAT Agreement, *supra* note 27, 31 U.S.T. at 10 (art. 15); EUTELSAT Agreement, *supra* note 27, SPACE LAW DOCUMENTS at 475-76 (art. 8); INTERSPUTNIK Agreement, *supra* note 27, SPACE LAW DOCUMENTS at 390-92 (art. 12).

<sup>29</sup> PALAPA is the popular name of the Indonesian domestic communications satellite system.

<sup>30</sup> INTELSAT Agreement, *supra* note 7, 23 U.S.T. at 3824-47 (arts. VI-XI); INMARSAT Agreement, *supra* note 27, 31 U.S.T. at 6-11 (arts. 9-16); EUTELSAT Agreement, *supra* note 27, SPACE LAW DOCUMENTS at 474-76 (arts. 7-8); INTERSPUTNIK Agreement, *supra* note 27, SPACE LAW DOCUMENTS at 390-92 (art. 12).

<sup>31</sup> FEDERAL COMMUNICATIONS COMMISSION, FIRST ADVISORY COMMITTEE REPORT, ITU WARC ORB 85, at 2-13 (Dec. 1983) [hereinafter cited as FCC ADVISORY COMMITTEE REPORT].

<sup>32</sup> *International Communication and Information Policy: Hearings Before the Subcomm. on Arms Control, Oceans, International Operations and Environment of the Senate Comm. on Foreign Relations*, 98th Cong., 1st Sess. 136 (1983) (testimony of Richard Colino, Director General, INTELSAT) [hereinafter cited as *Int'l Communication Hearing*].

For these reasons, the United States should press for spectrum and orbital assignment procedures that provide a legal means of affording recognition of the resource needs of common user institutions. For several reasons, this will be a difficult but necessary negotiating factor at ORB-85. The first reason is that the ITU convention affords rights and recognition with respect to frequency and geostationary orbit use only by the sovereign countries that comprise its membership. The status of multi-user organizations is correspondingly weaker. Secondly, the history of Resolution 3 and, in particular, the attitudes of its primary Third World sponsors does not encourage the prospect for major proposals to strengthen multi-user access.

Nevertheless, as demonstrated in this article, the present scheme of bilateral coordination under Articles 11 and 13 of the ITU Radio Regulations accommodates, to a significant extent, the objectives of those ITU members who wish to rely on international common user organizations. This scheme allows the institutions to actively participate in the process through the device of a Notifying Administration, which can act on behalf of the international institution.<sup>33</sup> Moreover, the ITU coordination procedures are explicitly accounted for in the treaties and agreements that control the principal common user institutions.<sup>34</sup> Finally, the ITU processes are legally consistent with the rights and duties created under these treaties with respect to the reconciliation of the use of the orbit and frequency by these institutions and their member states.

By contrast, a priori planning proposals as presently conceived virtually ignore common user systems as such. The problem that arises is that such regimes recognize only member states as eligible recipients of assignments of orbit/spectrum, whereas a very large part of the international communications of ITU member states is met through the facilities of international common user institutions. Even if this deficiency could be surmounted, under a priori approaches or variants thereof, such as arc segmentation,<sup>35</sup> the range of services that might be provided at a given

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<sup>33</sup> RADIO REGULATIONS, *supra* note 6, at RR11-1 to RR11-20 (art. 11) and RR13-1 to RR13-16 (art. 13).

<sup>34</sup> INTELSAT Agreement, *supra* note 7, 23 U.S.T. at 3844 (art. X(a)(xxiii)); INMARSAT Agreement, *supra* note 27, 31 U.S.T. at 6 (art. 8(4)); EUTELSAT Agreement, *supra* note 27, SPACE LAW DOCUMENTS at 471 (preamble); INTERSPUTNIK Agreement, *supra* note 27, SPACE LAW DOCUMENTS at 389 (art. 7).

<sup>35</sup> In arc segmentation, portions of the orbital arc would be allocated for international, regional or domestic systems exclusively. See I.W.P. 4/1, *supra* note 5, at 98. However, the arc does not lend itself to such rigid compartmentalization. For example, satellites in the U.S. "domestic" arc can be used readily for international and regional services. See, e.g., *In re Application of American Satellite Company*, 88 F.C.C.2d 178 (1981); *In re Application of Satellite Business Systems*, 88 F.C.C.2d 195, 198 (1981). Conversely, INTELSAT provides domestic services to over 20 countries from orbital positions selected for their international service potential. See INTELSAT Doc. BG-55-38E, Attachment 1 (June 1983).

location may be limited to those specifically identified by a plan.

### C. Reform Alternative

To expect that the current coordination regime will continue unchanged is unrealistic, although the establishment of new mechanisms for vesting international rights using the existing regime as a legal benchmark is feasible. Specifically, bilateral consultations between and among sovereign states and common user organizations, conducted under ITU auspices, remain the basic mechanism for the resolution of conflicting requirements for orbit and spectrum. At the same time, specific elements of the existing regime should be reconstituted to modify those features which are objectionable to developing states and to introduce procedures that accommodate the growing role of international common user systems. The ORB-85 agenda does not call for the adoption of particular planning methods.<sup>36</sup> The principal U.S. objective in 1985, therefore, should be to persuade the world community to articulate principles that would allow the present coordination regime to be preserved.

The criticism of the existing regime as a self-perpetuating scheme for the benefit of advanced countries can be partially defused. Appropriate recognition must be given to the fact that in practice virtually all countries satisfy at least some of their requirements for space services through common user arrangements. Indeed, this concept can have strong appeal to a growing number of developing states. Specifically, recent proposals to meet Third World satellite requirements, particularly along "thin" routes,<sup>37</sup> confirm that these needs often can be satisfied both through new and existing international common user systems.<sup>38</sup> The alternative for those countries currently unprepared to construct their own dedicated systems would be to rely on the domestic systems of neighboring countries over which they have no administrative, operational or legal control.

Proponents of preserving the existing regime to the fullest extent, such as the United States, must be prepared to make the necessary concessions to preserve the essential aspects of the existing regime. These countries must support revisions to the existing regulations that favor existing, rather than proposed, systems. Unless changed, certain provisions of the ITU regulations can be construed as allowing priority access on a

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<sup>36</sup> Preparation for ITU WARC, *supra* note 10, at 1-3 app. B. The agenda specifically authorizes the First Session of ORB-85 to establish "guidelines for regulatory procedures pertaining to space services" and to consider alternative approaches to "planning" to meet the equitable access objectives of Resolution 3. *Id.* at 2 app. B.

<sup>37</sup> That is, routes with relatively limited traffic volumes.

<sup>38</sup> *E.g.*, INTERNATIONAL TELECOMMUNICATION UNION, TELECOMMUNICATION FOR DEVELOPMENT 88-91 (June 1983) (available in the office of the Case Western Reserve Journal of International Law) [hereinafter cited as TELECOMMUNICATIONS FOR DEVELOPMENT].

first-come, first-serve basis.<sup>39</sup> Rather, the intent of the regulations should be clarified to emphasize the *mutual* responsibility of existing and proposed systems to accommodate one another's orbit and frequency requirements. At the same time, as a legal matter, the United States should be prepared to advocate the position that conflicts between individual states and common user institutions should be resolved consistently with any independent treaty obligations imposed by the charter of the common user organization. A corollary of this proposition holds that when a conflict exists between a common user system and a state that is not bound by a treaty, equitable access objectives are satisfied by any accommodation that confers the greater good to the greater number of states. Thus, common user systems, as defined herein, would have rights equal to, but not necessarily greater than, those of independent systems sponsored by individual administrations acting outside of a common user framework.

The foregoing principles should be integrated into the existing coordination procedures. For example, they should frame any recommendations to be made by the International Frequency Registration Board (IFRB) or such other ITU organ that may be designated to assist in the resolution of those conflicts where bilateral processes have failed to produce a consensus among the affected parties.

A complete resolution of the controversy surrounding the current coordination mechanisms requires more than incorporation of these principles in the existing framework. Apart from the political undercurrents underlying Resolution 3 of WARC '79,<sup>40</sup> the growth and proliferation of satellite systems and technology have created demand pressures that may strain the capacity of the existing regime to process and resolve all competing claims. Therefore, the creation of one or more institutional checks upon the coordination process should be instituted. These safeguards should be designed to address the concern that the bilateral system, as a practical matter, deprives the less technologically advanced states of direct access to the GSO. These checks could include a range of alternatives, such as periodic review of the results of the coordination process by the IFRB, or other appropriate ITU organs, from the perspective of equitable access principles to be developed at ORB-85.

Alternatively, the review responsibility could be vested in periodic regional or world administrative conferences with provision for ongoing ITU expert monitoring of future spectrum and orbit needs of its members. However, the existing coordination mechanisms would remain the initial vehicle for the vesting of orbit/spectrum rights in lieu of turning the decision-making process over to the less predictable, and more rigid,

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<sup>39</sup> See *infra* notes 79-83 and accompanying text.

<sup>40</sup> See *supra* notes 9-11 and accompanying text.

operation of a world conference. This proposal is consistent with Method 4 proposed by the Interim Working Party 4/1 (IWP 4/1). Method 4 recommends that bilateral consultations under current procedures be subject to interim adjustments of assigned orbit locations and frequencies through multilateral conferences as service requirements and objectives become better defined.<sup>41</sup> However, this recommendation would limit the function of any such periodic conference to the evaluation of the results of bilateral coordination in terms of their conformity with equitable access principles, including those that give due recognition to international common user systems. In effect, this article recognizes, as does the Federal Communications Commission, that the current procedures create an ad hoc "plan."<sup>42</sup> Defenders of the status quo must nevertheless be prepared to allow political adjustments of the results of that process through the intervention of the ITU, whether by means of an existing organ or through the intervention of special regional or world conferences convened for the narrow purpose of recommending such adjustments.

## II. INSTITUTIONAL IMPACTS: OVERVIEW

In the circumstances of perceived orbit and spectrum scarcity, the institutional stakes are formidable. The legitimacy and credibility of the International Telecommunications Union (ITU) as an authoritative institution is certainly at stake because orbital and spectrum assignment policies necessarily embody value judgments concerning political rights that control current coordination procedures.

As the Chairman of the U.S. delegation to the 1979 World Administrative Radio Conference (WARC '79) explained:

If economic efficiency were the sole consideration, the task of developing an optimal allocations scheme would be difficult enough given the many different communications services that must be accommodated in any given portion of the spectrum. . . .

In international negotiations, however, the difficulty of constructing an efficient set of allocations . . . is almost the least problem. Far greater is the problem of accommodating the demands of different nations in varying stages of technological and economic development, not to mention divergent political perspectives.<sup>43</sup>

This task is becoming increasingly difficult, particularly as dominant communications states, including the United States, begin to feel disaf-

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<sup>41</sup> I.W.P. 4/1, *supra* note 5, at 101-02.

<sup>42</sup> See Preparation for ITU WARC, *supra* note 10, at 11, para. 25; Licensing of Space Stations, *supra* note 17, at 25, para. 56.

<sup>43</sup> Robinson, *Regulating International Airwaves: The 1979 WARC*, 21 VA. J. INT'L L. 18-19 (1980).

ected by a perceived shift within the organization from emphasis upon efficiency objectives to the pursuit of more overt political aims.<sup>44</sup>

The political argument for a priori planning ignores the practical reality that access to the geostationary orbit/spectrum is achieved through a variety of institutional alternatives. These include international, regional and shared use of domestic systems. To the extent that each country presently enjoys the ability to meet its foreseeable domestic and international requirements for space communication service by resort to any or all of these options, equitable access objectives may technically be achieved without requiring detailed country-by-country orbit/spectrum allotments. Less developed states, in particular, tend to rely more heavily on regional or global alternatives to dedicated systems. They have not been coerced into such reliance but, rather, have been attracted by the greater efficiencies and economies of operation of shared user arrangements that conform with actual service requirements and objectives.

Despite the rhetoric in favor of dedicated allotments, the common user approach, as described by the U.S. Office of Technology Assessment (OTA), has increasingly come to characterize orbit/spectrum development. As the OTA has explained, such an approach to satellite system development and management presents "an alternative to contention for geostationary satellite orbit slots."<sup>45</sup> The OTA relies on the fact that although many countries have a visceral concern that satellite orbit locations are rapidly being preempted on a first-come, first-serve basis, their requirements are for satellite *service*, not satellite *orbit* locations.<sup>46</sup> The OTA thus recommends that geostationary orbit (GSO) planning be based on the assumption that domestic satellite capacity will in all likelihood be made available to such states on a joint use basis under an existing global institution such as INTELSAT or through other institutions modeled after the global body.<sup>47</sup> Currently, such a trend is manifest both in terms of the increasing use, and ultimately the conscious planning, of multilateral systems to provide regional or domestic services for the benefit of individual member states or groups of states.<sup>48</sup>

As a legal matter, equitable access is not necessarily defined in terms of entitlements of individual states. Indeed, the preamble of the basic charter of INTELSAT, a major common user institution, establishes that INTELSAT was created "with the aim of achieving a single global commercial telecommunications . . . network" providing "the most efficient

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<sup>44</sup> See Study of Long Range International Telecommunications and Information Goals of the United States, 47 Fed. Reg. 49,694 (1982).

<sup>45</sup> OTA REPORT, *supra* note 23, at 121.

<sup>46</sup> *Id.* at 122.

<sup>47</sup> *Id.* at 122-23.

<sup>48</sup> FCC ADVISORY COMMITTEE REPORT, *supra* note 31, at 4-15.

and economic facilities possible consistent with the best and most *equitable* use of radio frequency spectrum and of orbital space."<sup>49</sup> In addition to pursuing its primary objective of providing international public telecommunications services within the meaning of its charter, INTELSAT has promoted on a collective basis the individual service aspirations of a number of its member states. The INTELSAT Agreement authorizes the provision of capacity for "domestic public telecommunications services on a non-discriminatory basis to the extent that the ability of INTELSAT to achieve its prime objective is not impaired."<sup>50</sup> Since 1975, INTELSAT has provided domestic lease capacity to more than twenty countries pursuant to this provision.<sup>51</sup>

There are a number of existing and proposed common user alternatives. Many of these, like INTELSAT, are associated with a multilateral institutional arrangement which must be accommodated within the present or any future rights vesting mechanism for access to geostationary orbit. Thus, the current Secretary-General of ITU has proposed a system sharing concept denominated GLODOM.<sup>52</sup> Its name reflects a global approach to the major telecommunication challenge of bringing low cost domestic telecommunication service to developing countries.<sup>53</sup> GLODOM involves common user sharing of technology and common management and operation of the associated satellite facilities.<sup>54</sup>

Conversely, domestic satellite systems are consistently adapted to satisfy the requirements of other countries and even to provide regional services.<sup>55</sup> International rights vesting regimes therefore must also provide flexibility to enable the evolution of particular systems to satisfy service requirements that may not have been envisioned when the systems were initially planned or launched.

Moreover, new technology makes it less appropriate over time to attempt to classify facilities in terms of a rigid set of service criteria. Space platforms will accommodate domestic and international requirements on a single facility, thus making optimal use of the orbit/spectrum resources

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<sup>49</sup> INTELSAT Agreement, *supra* note 7, 23 U.S.T. at 3814 (preamble).

<sup>50</sup> *Id.* at 3820 (art. III(c)).

<sup>51</sup> See *supra* notes 35 and 48.

<sup>52</sup> TELECOMMUNICATIONS FOR DEVELOPMENT, *supra* note 38, at 78. GLODOM is an abbreviation for "global" and "domestic." *Id.*

<sup>53</sup> *Id.*

<sup>54</sup> See *id.* at 78-79.

<sup>55</sup> For example, U.S. and Canadian domestic systems are available to meet bilateral requirements and to provide backup capacity for each country's domestic needs. As acknowledged in a 1972 United States-Canada agreement, "special circumstances [exist] where it would be in the interest of . . . our countries not to preclude our domestic telecommunications systems from providing assistance to one another." *U.S. and Canada Clarify Agreement on Telecommunications Satellites*, 68 DEP'T ST. BULL. 145, 146 (1973).

at a single orbital location.<sup>56</sup> Such developments, coupled with refinements in interconnectivity of satellite systems, portend that the notion of a single purpose domestic, regional or international system is fast becoming obsolete.<sup>57</sup> The trend of satellite system development would proceed more rapidly toward integrated, multipurpose networks, but for the political, strategic or commercial motivations to maintain separate facilities under the aegis of individual states. A technologically driven orbit/spectrum planning regime would eschew any constraints upon flexibility necessary to accommodate integrated approaches and to allow for their evolution over time. Such rationality is dramatically opposed to equitable access guarantee proposals that necessarily fix the development of systems to those service applications and coverage accounted for in a dedicated orbit/spectrum assignment to a sovereign country, particularly since new technologies, like space platforms, will likely be organized under the auspices of multilateral institutions.<sup>58</sup>

The sufficiency of the present, or any proposed alternative international, regime concerned with the coordination, management or regulation of the use of a satellite orbit should be judged in terms of its ability to afford adequate recognition to the multiplicity of potential actors that will serve as vehicles for access. The regime must also possess flexibility to allow the systems to evolve to serve a variety of requirements beyond those that prompt their initial establishment.

Whether present institutions involved in the management of space communications and the allocation of the relevant resources are sufficient, should the existing coordination procedure be changed radically, is

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<sup>56</sup> The European Space Agency is proceeding with the definition phase of an "L-Sat" facility in response to a number of converging factors including:

- [1. The] increase in capacity requirements for satellites dedicated to a single type of service;
- [2. The] increase in demands on satellite design sophistication to find ways around the shortage of spectrum as service demands grow;
- [3. The] introduction of new types of satellite-based service operating with small ground terminals and hence putting more demands on the space segments;
- [4. The] *use of a single satellite to support several payloads dedicated to different service types over the same coverage area, leading to space segment economies; [and]*
- [5. The] *use of a single satellite with a general purpose-type payload for several types of service, again for economic reasons.*

B. Herdan, Programme Manager, European Space Agency, European Multipurpose Telecommunication Satellite: Development Plans 205, 208 (1980) (published by American Institute of Aeronautics and Astronautics, Inc., No. 80-0508) (emphasis added).

<sup>57</sup> A. Rutkowski, Office of Science and Technology, Federal Communications Commission, *The Impact of New Technology on Satellite Radiocommunication* (Nov. 10, 1982).

<sup>58</sup> D. Smith, *Institutional Configuration for Large Space Communications Structures: A Basis for the Development of International Space Communications Norms 5-7* (1979) (prepared for the International Commission for the Study of Communications Problems).



not clear. Although it is a regime that is rooted in considerations of national sovereignty that are increasingly removed from the reality of space system exploitation and development, the present regime has been able, due to its flexibility, to develop a basis to afford protection to national, non-national and multilateral systems. A shift toward a more rigidly structured environment may preclude this flexibility.

### III. THE BASIC ITU INSTITUTIONAL FRAMEWORK

Although it is properly regarded as the primary international agency for the harmonization of international practices in the telecommunications sector, the ITU has not been constituted as a supranational regulatory regime. Lacking even a permanent charter,<sup>59</sup> its Convention, as modified at the periodic Plenipotentiary Conference recently held in Nairobi, embraces as a basic principle the "sovereign right of each country to regulate its telecommunication[s]."<sup>60</sup> Consistent with the historical reluctance of member states to endow it with an authoritative role, decision-making responsibility within the ITU is dispersed among a variety of organs arranged in a complex institutional structure.<sup>61</sup> Accordingly, ITU's member states have not delegated their sovereignty to a permanent ITU commission or other standing organ. The Plenipotentiary Conferences, at which each member delegation casts a single vote, are retained as the "supreme organ" of the ITU.<sup>62</sup> The International Frequency Registration Board (IFRB), the organ that is central to the ITU's international radio regulation function, is not empowered to exercise authoritative control over ITU members' use of spectrum.<sup>63</sup> Instead, the IFRB oversees a process of bilateral coordination of spectrum utilization within parameters defined by the ITU Convention and Radio Regulations.<sup>64</sup> In addition, the IFRB manages conflict resolution among competing sovereign claims for spectrum use and associated satellite orbital positions.<sup>65</sup> Although its tasks

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<sup>59</sup> In contrast with a charter type organization, consisting of a permanent constitution and very strict and limited procedures for amendment, the ITU's Convention is subject to periodic review, modification and amendment by simple majority vote of member states at regularly scheduled Plenipotentiary Conferences. Article 6 of the Convention requires such conferences to be held at least every five and no less than every six years. 1982 FINAL ACTS, *supra* note 4, at Conv. 5.

<sup>60</sup> *Id.* at Conv. 1 (preamble).

<sup>61</sup> See Jacobson, *ITU: A Potpourri of Bureaucrats and Industrialists*, in R. COX & H. JACOBSON, *THE ANATOMY OF INFLUENCE: DECISION MAKING IN INTERNATIONAL ORGANIZATION* 59, 61 (1973).

<sup>62</sup> International Telecommunication Convention, Oct. 25, 1973, art. 5, 28 U.S.T. 2495, 2513, T.I.A.S. No. 8572 [hereinafter cited as ITU Convention].

<sup>63</sup> See Robinson, *supra* note 43, at 8-9.

<sup>64</sup> See Jacobson, *supra* note 61, at 75.

<sup>65</sup> *Id.*

are largely ministerial, within narrow limits the IFRB is empowered to render substantive judgments pertaining to an administration's conformity with the applicable procedures for establishing rights to use of particular frequencies.<sup>66</sup> The IFRB may also reach findings regarding the potential for harmful interference.<sup>67</sup> However, the IFRB's overall role and function indicates that its authority over member conduct derives from procedural regulation rather than from decision-making edicts.

Rights vesting in the area of frequency/orbital use is presently governed by two overriding principles: (1) the right to international protection from "harmful interference,"<sup>68</sup> and, (2) the need for conformity between the ITU Convention and Regulations. These principles permeate the text of both instruments.<sup>69</sup> Thus, the Regulations provide that member administrations "shall not assign to a station any frequency in derogation of either the Table of Frequency Allocations . . . or the other provisions of these Regulations, except on the express condition that harmful interference shall not be caused to services carried on by stations operating in accordance with the provisions of the Convention and of these Regulations."<sup>70</sup> The procedures defined in the Convention and Regulations provide the mechanism for securing interference-free use of radio resources.

The IFRB's institutional role is primarily to confirm or ratify the outcome of the governing process rather than to adjudicate or enforce the non-interference obligation. Thus, as has been noted, one of the IFRB's important functions is to judge whether a planned introduction of frequency assignment has met the relevant procedural protocols.<sup>71</sup> On the other hand, the Regulations are designed so that the affected member administrations initially address the issue of harmful interference,<sup>72</sup> with the IFRB intervening principally in the event that bilateral coordination has broken down.<sup>73</sup> The IFRB's ultimate findings on a given use of frequency are intended to confirm the end result of the bilateral process<sup>74</sup> by appropriate notification in the Master Register. While the degree of compliance with ITU procedures and technical parameters may affect the

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<sup>66</sup> *Id.*

<sup>67</sup> *Id.*

<sup>68</sup> The Radio Regulations define harmful interference as that which "seriously degrades, obstructs, or repeatedly interrupts a *radiocommunication service* operating in accordance with these Regulations." RADIO REGULATIONS, *supra* note 6, at RR1-21 (art. 1, § 7.4, para. 163). See also *id.* at RES68-1 (Resolution 68).

<sup>69</sup> See, e.g., *supra* notes 6 and 62.

<sup>70</sup> RADIO REGULATIONS, *supra* note 6, at RR6-1 to RR6-2 (art. 6, § 4, para. 342).

<sup>71</sup> See *supra* note 66 and accompanying text.

<sup>72</sup> See generally RADIO REGULATIONS, *supra* note 6, at RR11-1 to RR11-20.

<sup>73</sup> See, e.g., *id.* at RR13-3 to RR13-4 (art. 13, § 8, paras. 1502-05).

<sup>74</sup> *Id.* at RR13-11 to RR13-12 (art. 13, § 20, paras. 1552-56).

IFRB's classification of an entry for registration purposes,<sup>75</sup> actual causation of interference does not preclude an ITU administration from insisting that its facility be listed in the Master Register.<sup>76</sup> Cessation of use of a frequency over an extended period or use that does not conform to previously notified characteristics can provoke cancellation or modification of an entry in the Master Register.<sup>77</sup>

#### IV. LEGAL SOURCES OF INTERNATIONAL CONTROVERSY OVER THE RIGHTS VESTING PROCESS

An evaluation of the adequacy of the existing rights vesting regime for frequency and orbital assignments should not be framed in terms of traditional international issues such as the conflict between community goals and sovereign prerogatives. Rather, the fundamental issues must be assessed in terms of the adequacy of the bilateral consultation system, embodied in the present regime, to satisfy all competing claims of use. The current process gives minimal consideration to issues other than interference protection and conformance with the established rules.

The process is ostensibly neutral as applied to countries in varying stages of development. The procedures do not tend to perpetuate the advantages of the first user of spectrum.<sup>78</sup> More importantly, the regulations allow a variety of institutional user arrangements. They protect unilateral, multilateral, shared or common user satellite systems equally. Because the ITU is nation-state oriented, the natural question is whether a more rigid and detailed scheme of frequency allotments under ITU auspices would adequately recognize common user alternatives, which might conserve scarce orbit/spectrum resources.

Current ITU procedures are largely unchanged from those originally adopted at the 1971 Extraordinary Conference.<sup>79</sup> They are designed to implement the equitable access notions subsequently endorsed in Article 33 of the 1973 Convention.<sup>80</sup> By defining equitable access in terms of countries' "*needs and the technical facilities at their disposal*," the pre-

<sup>75</sup> For example, all frequency assignments put in use are entered into column 2(c) of the Register. *Id.* at RR13-12 (art. 13, § 22, para. 1558). Those that do not conform with ITU requirements may be provisionally entered with a special notation in the remarks column. *Id.* at RR13-11 (art. 13, § 20(5), para. 1556).

<sup>76</sup> Article 13, § 22(2), para. 1559 requires cessation of interfering operations, but does not require cancellation of registration. *Id.* at RR13-12.

<sup>77</sup> See *id.* at RR13-13 to RR13-14 (art. 13, §§ 25-29, paras. 1569-75).

<sup>78</sup> Compare G. CODDING & A. RUTKOWSKI, *THE INTERNATIONAL TELECOMMUNICATION UNION IN A CHANGING WORLD* 275 (1983), with D. LEIVE, *INTERNATIONAL TELECOMMUNICATIONS AND INTERNATIONAL LAW: THE REGULATION OF THE RADIO SPECTRUM* 55-62 (1970).

<sup>79</sup> Final Acts of the World Administrative Radio Conference for Space Telecommunications, July 17, 1971, 23 U.S.T. 1527, T.I.A.S. No. 7435.

<sup>80</sup> ITU Convention, *supra* note 62, 28 U.S.T. at 2529, T.I.A.S. No. 8572.

sent regime emphasizes the requirements of those countries, or groups of countries, which can establish the near term or present capability to exploit orbit/spectrum resources.<sup>81</sup> Existing users are protected against future applications that portend potentially harmful interference or otherwise may be inconsistent with ITU regulations and procedures.<sup>82</sup> Indeed, harmful interference is defined in terms of degradation, obstruction or repeated interruption to an existing "radiocommunication service operating in accordance with these Regulations."<sup>83</sup> The regulations simultaneously contemplate that existing users will accommodate new entry, although the onus initially falls upon proposal for new use.

The existing regime thus is not a first-come, first-serve system that forecloses subsequent entry. Subsequent users are obliged "to explore all means of meeting [their] requirements, taking into account the characteristics of the geostationary satellite networks of other systems, and *without considering the possibility of adjustment to systems* of other administrations."<sup>84</sup> However, if no such means can be found, the administration concerned is free to apply to other administrations to solve these difficulties.<sup>85</sup> Prior users are required to consider adjustments to their systems to accommodate the access requirements of the requesting party, including "relocating one or more of its own geostationary space stations involved, or by changing the emissions, frequency usage . . . or other technical or operational characteristics."<sup>86</sup> These practical obligations are reflected more generally in Resolution 2 of the WARC-'79 Final Acts.<sup>87</sup> The resolution reflects a measure of sensitivity to concerns that the present inability of developing states to make use of satellite orbits will allow others to completely consume available orbits.<sup>88</sup> The resolution addresses this issue directly:

*[H]aving in mind that the use of the allocated frequency bands and fixed positions in the geostationary-satellite orbit by individual countries or groups of countries can start at various dates depending on the requirements and readiness of technical facilities of countries;*

*resolves (1) that registration with the IFRB of frequency assign-*

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<sup>81</sup> *Id.* at 2529-30 (emphasis added). The regulations have not as yet been modified to take account of the revisions to article 33 adopted at Nairobi in 1982. These revisions replace the reference to needs and ability, with a proviso that defines equitable access in terms of stage of development and special geographic situation. 1982 FINAL ACTS, *supra* note 4, at Conv. 24 (art. 33, para. 131).

<sup>82</sup> See *infra* notes 84-89 and accompanying text.

<sup>83</sup> See RADIO REGULATIONS, *supra* note 6, at RR1-21 (art. 1, § 7.4).

<sup>84</sup> See, e.g., *id.* at RR11-2 (art. 11, § 3(2)(a), para. 1051) (emphasis added).

<sup>85</sup> *Id.*

<sup>86</sup> *Id.* at RR11-2 to RR11-3 (art. 11, § 3(2)(b), para. 1052).

<sup>87</sup> *Id.* at RES2-1 to RES2-2 (Resolution 2).

<sup>88</sup> *Id.*

ments for space radio-communication services *and their use* should not provide any permanent priority for any individual country or groups of countries and *should not create an obstacle to the establishment of space systems by other countries.*<sup>89</sup>

The existing process accordingly protects subsequent users through the establishment of safeguards against preemptive restrictions of space orbit and associated spectrum. For example, the initial formal publication of a proposed satellite may not commence earlier than five years, nor later than two years before bringing into service each satellite network of the planned system.<sup>90</sup> Conversely, when a recorded frequency assignment has not been in use for two or more years, it ordinarily will not be factored into coordinations with subsequent proposed orbit/spectrum assignments.<sup>91</sup> The ITU procedures also provide for purging the Master Register of recorded assignments that have fallen into permanent disuse.<sup>92</sup>

Thus, ITU procedures accommodate emerging requirements for orbit/spectrum, while limiting the ability of states to arbitrarily preempt other uses of the geostationary orbit. Indeed, the inability of a user to effect coordination of frequency and orbital assignments with users of prior assignments does not foreclose use of the proposed location. The Radio Regulations explicitly provide that an uncoordinated assignment may be utilized and protected against future interference, even in the face of an adverse finding on the issue of potential interference to prior assignments.<sup>93</sup> If such a station is operated without in fact causing harmful interference for four months after the date that the earlier assignment is registered for use, it is entitled to be given the same consideration as earlier recorded assignments.<sup>94</sup>

Perhaps the main virtue of the existing ITU procedures is their consistency with coexisting regimes, including those established under the auspices of global and regional multilateral organizations. The ITU does not formally protect the activities of international organizations as such

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<sup>89</sup> *Id.* (emphasis added).

<sup>90</sup> *Id.* at RR11-1 (art. 11, § 1, para. 1042). Similarly, formal notification that coordination has been concluded with affected administrations may be transmitted no earlier than three years prior to development. *Id.* at RR13-2 (art. 13, § 3, para. 1496).

<sup>91</sup> *See id.* at RR13-5 (art. 13, § 9, para. 1513). Moreover, when such an assignment is brought back into use it is subject to further coordination or analysis by the IFRB as of that date, with respect to potential harmful interference. The IFRB may, on its own motion or upon information supplied by an administration, modify or cancel the registration of such assignments whose use has not been discontinued. *Id.* at RR13-13 to RR13-14 (art. 13, §§ 25-29, paras. 1569-75). The time limit for bringing assignment into use may be extended by four months as of right or for an additional 18 months in "exceptional circumstances." *See id.* at RR13-10 to RR13-11 (art. 13, § 18(4), para. 1550).

<sup>92</sup> *Id.* at RR13-14 (art. 13, § 27, para. 1573).

<sup>93</sup> *Id.* at RR13-4 (art. 13, § 8(d), paras. 1506-08).

<sup>94</sup> *Id.*

since it is a union of sovereign entities. Indeed, the ITU assiduously avoids acknowledging international organizations in their own right. The Convention thus promotes equitable access to space orbit and spectrum for "countries or *groups of countries*."<sup>95</sup> On the other hand, Article 40 of the Convention necessarily provides that "in furtherance of complete international coordination on matters affecting telecommunication, the Union shall cooperate with international organizations having related interests and activities."<sup>96</sup> The Convention also requires that all radio facilities be operated so "as not to cause harmful interference to the radio services or communications of other Members or . . . of other duly authorized operating agencies which carry on radio service, and which operate in accordance with the provisions of the Radio Regulations."<sup>97</sup> This language is broad enough to encompass international organizations.

The Radio Regulations make express provision for advance publication, coordination and notification of satellite systems by individual administrations on behalf of a group of administrations.<sup>98</sup> While recognizing international systems only as coalitions of individual states, rather than in their juridic capacity, the Regulations reconcile ITU sovereignty notions with the collective and authoritative decision-making that characterizes international organizations.<sup>99</sup> For their part, the international institutions charged with the governance of multilateral systems have adapted to the ITU regime.<sup>100</sup> In some cases, organizations have adjusted their internal procedures to conform with ITU's consensual mode of decision-making, giving nations a unilateral veto over joint action. For ITU purposes they thereby eschew more authoritative modes even though simple or super majority rule otherwise governs their collective undertakings.

For example, INTELSAT possesses juridical personality, which includes the authority to establish relationships with international organizations and with states.<sup>101</sup> Yet, INTELSAT's procedures for ITU coordination allow individual members to disavow collective decisions on satellite system design and location in the context of ITU coordination.<sup>102</sup> The INTELSAT Board of Governors is empowered to adopt "decisions . . . concerning notification to the [ITU] . . . of the frequencies to be used for the INTELSAT space segment."<sup>103</sup> However, for purposes of intersystem coordination, INTELSAT decisions must be conveyed to the ITU by an

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<sup>95</sup> 1982 FINAL ACTS, *supra* note 4, at Conv. 24 (art. 33) (emphasis added).

<sup>96</sup> *Id.* at Conv. 27 (art. 40).

<sup>97</sup> *Id.* at Conv. 25 (art. 35).

<sup>98</sup> RADIO REGULATIONS, *supra* note 6, at RR11-1 (art. 11, § 1, para. 1042).

<sup>99</sup> *Id.* at RR11-4 to RR11-10 (art. 11, §§ 6-15).

<sup>100</sup> See *supra* note 34 and accompanying text.

<sup>101</sup> See INTELSAT Agreement, *supra* note 7, 23 U.S.T. at 3822 (art. IV).

<sup>102</sup> *Id.* at 3844 (art. X(a)(xxiii)).

<sup>103</sup> *Id.*

ITU member which serves as a "notifying administration . . . acting in the name and on behalf of a certain number of INTELSAT Administrations," rather than on behalf of the organization.<sup>104</sup> Similarly, the INMARSAT Agreement provides expressly that the party in whose territory the organization is located (i.e., the United Kingdom) "shall coordinate the frequencies to be used for the space segment and shall, on behalf of each Party that consents, notify the [ITU] of the frequencies to be so used . . . as provided in the Radio Regulations annexed to the International Telecommunications Convention."<sup>105</sup> This provision is consistent with the fact that the ITU does not legitimize the claims of international organizations, but, as noted previously, registers assignments only to "countries or groups of countries."<sup>106</sup>

The INTELSAT procedures specifically contemplate that notification to the ITU shall be "only . . . in the name and on behalf of those Administrations which have *agreed* that it should do so, in accordance with the [established] procedures."<sup>107</sup> These procedures provide for internal circulation of the ITU coordination filing among all INTELSAT members and a stringent mechanism to verify their assent to the filing.<sup>108</sup> When the coordination filing involves the resolution of any potential interference by a proposed INTELSAT facility with other satellite systems, individual members may withhold their concurrence from the INTELSAT coordination filing in order to be free to promote, within the ITU process, whatever interest they may have in the separate system.<sup>109</sup>

A more complex set of arrangements applies when INTELSAT acts to protect its own space segment against interference caused by separate systems. Both an ITU procedure and an internal INTELSAT coordination requirement are triggered. As with filings related to the coordination

<sup>104</sup> INTELSAT, PROCEDURES FOR COORDINATION, NOTIFICATION AND PROTECTION OF THE INTELSAT SYSTEM IN ACCORDANCE WITH PROVISIONS OF ARTICLE 9A OF THE ITU RADIO REGULATIONS, BG-19-57E W/1/76 (Rev.1) 1 (Apr. 5, 1977) (available in the office of the Case Western Reserve Journal of International Law) [hereinafter cited as PROCEDURES FOR COORDINATION].

<sup>105</sup> INMARSAT Agreement, *supra* note 27, 31 U.S.T. at 16 (art. 28). *Accord id.* at 6 (art. 8). *See also* EUTELSAT Agreement, *supra* note 27, SPACE LAW DOCUMENTS at 476 (art. 8), which contemplates undertaking of "intersystem coordination . . . [as] necessary in the field of satellite telecommunications."

<sup>106</sup> *See supra* notes 79-81 and accompanying text.

<sup>107</sup> PROCEDURES FOR COORDINATION, *supra* note 104, at 1 (emphasis added). *Accord* INMARSAT Agreement, *supra* note 27, 31 U.S.T. at 16 (art. 28). The Notifying Administrations may also disclaim the proposed coordination. PROCEDURES FOR COORDINATION, *supra* note 104, at 1. Thus, the process presupposes that the Notifying Administration's role is one of a passive liaison between INTELSAT and the ITU, while concurrently pursuing unilateral objectives.

<sup>108</sup> PROCEDURES FOR COORDINATION, *supra* note 104, at 2-3.

<sup>109</sup> *Id.*

of proposed INTELSAT facilities, INTELSAT's ITU filings in response to potential interference on the part of separate systems are subject to the above-outlined internal clearance procedure,<sup>110</sup> but with a significant distinction. INTELSAT cannot simply note the concurrence or nonconcurrency of individual members, but must be prepared to consider revisions to the proposed text of the ITU filing to take into account objections.<sup>111</sup> Ideally, an internal consensus is reached within INTELSAT in order to prevent any divergent opinions within the organization from spilling over into the ITU forum. If such compromise is not reached, the dissenting INTELSAT states are free to express and pursue any reservations regarding INTELSAT's efforts to protect its own system at the expense of their unilateral service undertakings.<sup>112</sup>

In addition to the normal ITU coordination mechanism, INTELSAT evaluates any alternative system proposed by a member state according to separate procedures and technical, and in some cases economic, standards that coexist with the ITU process. The INTELSAT Agreement requires that INTELSAT parties "prior to the establishment, acquisition or utilization of such facilities, shall furnish all relevant information to the [organization]."<sup>113</sup> INTELSAT's Assembly of Parties, which acts upon recommendations and advice of its Board of Governors, expresses its findings regarding the technical compatibility of such facilities with the radio frequency spectrum and orbital space used by the existing or planned INTELSAT space segment.<sup>114</sup> INTELSAT procedures contemplate that the

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<sup>110</sup> See *supra* notes 101-06 and accompanying text.

<sup>111</sup> PROCEDURE FOR COORDINATION, *supra* note 104, at 4.

<sup>112</sup> *Id.*

<sup>113</sup> INTELSAT Agreement, *supra* note 7, 23 U.S.T. at 3854 (art. XIV(d)).

<sup>114</sup> *Id.* at 3853-54 (art. XIV(a)(d)(e)). In addition to technical coordination, INTELSAT requires economic impact coordination relative to space systems that contemplate the offering of "public telecommunications" services (i.e., telephone, message, data, video, etc.). See *id.* at 3816 (art. 1(k)). These services constitute the prime commercial undertaking of the Organization under Article III of its Agreement. This coordination addresses an obligation imposed upon members by article XIV(d) to avoid causing significant economic harm to INTELSAT. Because it transcends the interference considerations that define the scope of ITU decision-making, full analysis of the economic harm aspect of INTELSAT coordination is beyond the scope of this paper. The economic issue is highly controversial, however, insofar as it touches openly on commercial issues concerning the financial viability of INTELSAT and affects the interests of such systems. For example, on economic criteria, INTELSAT has extended only a five-year approval of the operation of the EUTELSAT European satellite system due to its potential to siphon traffic off of INTELSAT's direct routes. See INTELSAT, REPORT OF THE BOARD OF GOVERNORS TO THE SEVENTH ASSEMBLY OF PARTIES PURSUANT TO ARTICLE XIV(D) CONCERNING THE PLANNED EXPANDED USE OF THE EUROPEAN COMMUNICATIONS SATELLITE SYSTEM, AP-7-24E (Sept. 16, 1982) (available in the office of the Case Western Reserve Journal of International Law). For a fuller explanation of the development and scope of INTELSAT economic coordination, see R. COLINO, THE INTELSAT DEFINITIVE ARRANGEMENTS: USHERING IN A NEW ERA IN SATELLITE TELECOMMUNICATIONS



Article XIV process will be concurrent with ITU coordination. The procedures provide for an early informal consultation followed by a more formal process under Article XIV.<sup>115</sup> The informal consultation begins as early as possible, preferably prior to initiation of the ITU process. This initial process is intended "to identify possible problems relating to the eventual establishment of the technical compatibility between the INTELSAT system and the planned separate system [in order to] provide the opportunity for consideration and discussion of alternatives for resolving any problems that might arise."<sup>116</sup>

Formal consultations are commenced thereafter "but well in advance of the proposed establishment, acquisition or utilization of the [separate] facilities."<sup>117</sup> As dictated by the INTELSAT Agreement, the consultation considers the interference potential of "the planned system *into* the existing or planned INTELSAT system," which is different from the mutual interference analysis contemplated under ITU coordination.<sup>118</sup> Moreover, "[a]ny recommendation with respect to Article XIV coordination should contain provisions including those concerning recoordination . . . in the event that a satellite of *the separate system* must be relocated (for example, because of coordination with a third party)."<sup>119</sup>

This further suggests an emphasis upon adaptation of the separate system to the needs and requirements of INTELSAT. Because the Article XIV process transcends the mutual non-interference remedies of ITU regulations, it is important from INTELSAT's perspective that the separate procedure be preserved. Otherwise, INTELSAT is subject to ITU standards and procedures that may not afford it special legal status or recognition vis-à-vis national systems of more limited scope. Nevertheless, the INTELSAT coordination process functions effectively primarily because Article XIV has been implemented to afford a significant degree of mutuality.<sup>120</sup> There have been some cases in which INTELSAT was criticized for employing standards that exceeded ITU interference tolerances,<sup>121</sup> but INTELSAT has since adjusted its interference guidelines in accordance with the ITU WARC '79 Final Acts and CCIR Recommenda-

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(European Broadcasting Union Monograph No. 9, 1973).

<sup>115</sup> INTELSAT, INTELSAT GUIDELINES FOR INTERSYSTEM COORDINATION, BG-43-71E W/9/80, at 2-3 (Sept. 18, 1980) (available in the office of the Case Western Reserve Journal of International Law) [hereinafter cited as INTELSAT GUIDELINES].

<sup>116</sup> *Id.* at 2.

<sup>117</sup> *Id.*

<sup>118</sup> *Id.* (emphasis added).

<sup>119</sup> *Id.* at 3 (emphasis added).

<sup>120</sup> *Int'l Communication Hearing, supra* note 32, at 102-09.

<sup>121</sup> *Id.* See also Colino, *International Cooperation Between Communications Satellite Systems: An Overview of Current Practices and Future Prospects*, 5 J. SPACE L. 65 (1977).

tions.<sup>122</sup> The process is designed to achieve a mutually acceptable result reflected in a coordination agreement, which is "submitted to the IFRB as evidence of successful coordination."<sup>123</sup>

INTELSAT's Article XIV procedures are at least indirectly recognized by the ITU. This indorsement arose at WARC '79 in connection with a U.S. proposal for the allocation of additional frequency spectrums to be used for fixed satellite services, including international services under INTELSAT auspices. At the behest of INTELSAT, the United States proposed to expand the permissible satellite communication band significantly by adding certain 2 GHz frequencies in order to meet anticipated growth and to provide new INTELSAT service requirements.<sup>124</sup> This proposal was rejected by a coalition, mainly of developing countries, which anticipated use of these frequencies for low cost systems independent of INTELSAT.<sup>125</sup> The coalition prevailed and these frequencies were allocated for use in "national and regional systems," omitting the global systems of INTELSAT.<sup>126</sup> However, provision was made for use of the 3400-3700 MHz and 4500-4800 MHz bands for all fixed satellite systems, including INTELSAT.<sup>127</sup> Interim use was authorized on a shared basis, subject to limitations imposed to protect existing utilization of these bands by European countries.<sup>128</sup> The footnotes to the Radio Regulations indicated an intent to recoordinate the competing uses of some of these frequencies on alternative bands.<sup>129</sup>

More importantly, a "Declaration" by a number of developed countries<sup>130</sup> explicitly agreed in principle to support INTELSAT uses of these frequencies.<sup>131</sup> Despite the fact that the band in question was used by these countries for radar service vital to defense purposes, they agreed to use their best efforts to accommodate INTELSAT's requirements by working within "the normal procedures of the INTELSAT Organization."<sup>132</sup>

Despite such acknowledgment of concurrent and co-existing international regimes, the existing ITU coordination process is imperfect from

<sup>122</sup> INTELSAT GUIDELINES, *supra* note 115, at 1, 4-5, 8-9.

<sup>123</sup> *Id.* at 3.

<sup>124</sup> Robinson, *supra* note 43, at 21-22.

<sup>125</sup> *Id.*

<sup>126</sup> See RADIO REGULATIONS, *supra* note 6, at RR8-109 to RR8-110 n.757 (table of allocation to services).

<sup>127</sup> *Id.* at RR8-116 to RR8-119.

<sup>128</sup> *Id.* at RR8-119 n.792.

<sup>129</sup> *E.g., id.* at RR8-116 n.784.

<sup>130</sup> United States, Canada, United Kingdom, Belgium and Australia.

<sup>131</sup> Staff Report to the Commission on the Results of the 1979 World Administrative Radio Conference, reprinted in *WARC-79: Radio Regulations and Final Protocol: Hearing Before the Senate Comm. on Foreign Relations*, 97th Cong., 2d Sess. 15 (1982).

<sup>132</sup> See *id.* at 25 (app. III).

the standpoint of the non-sovereign entities. Nonrecognition of their legal identity undermines their collective actions relative to the use of frequency and orbit. Even though an international body may have reached a binding majority decision on frequency and orbital placement of common user facilities, it can only approach the ITU as a loose federation of individual countries.<sup>133</sup> In its adaptation to the ITU process, the organization must give individual members an opportunity to opt out of collective decisions that otherwise would be binding.<sup>134</sup> Moreover, the organization is forced to rely on the Notifying Administration to convey its coordination filings.<sup>135</sup> Ideally, the Notifying Administration will serve as a "mailbox" conduit to the ITU, even though it may not concur in the coordination filing. The process has worked well in the absence of overt controversy either between the United States and the FCC, which is the Notifying Agent on behalf of INTELSAT, or between the United Kingdom IN-MARSAT Party, which acts as Notifying Agent for the maritime satellite organization and its client institutions. But there is obvious potential for mischief in the event that a Notifying Administration half-heartedly supports or is overtly opposed to a particular filing.

Nevertheless, the present system does function to accommodate common user satellite regimes organized under multilateral auspices. It is at least a vehicle for the participation of international institutions and a rights vesting mechanism for collective or joint use of the space orbit. INTELSAT's own studies have concluded that, although not ideal, the present arrangements "suffice under the present ITU regime, and would undoubtedly suffice if the present ITU regime were to continue largely unchanged."<sup>136</sup> However, as the same study notes ominously, "[I]t is not at all clear that they would be adequate under all the possible planning arrangements that the ITU might adopt at the 1985/1988 Space WARC."<sup>137</sup>

## V. TOWARD A NEW REGIME

The call for a World Administrative Radio Conference (WARC) to consider the issues relating to the use of the geostationary orbit, as expressed in Resolution 3, possibly reflects an attempt to restructure radically the existing ITU rights vesting mechanism. The resolution itself poses the objective of "equitable access" in light of considerations raised

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<sup>133</sup> See *supra* note 95 and accompanying text.

<sup>134</sup> See *supra* notes 107-09 and accompanying text.

<sup>135</sup> See *supra* note 33 and accompanying text.

<sup>136</sup> DIRECTOR GENERAL, INTELSAT, PREPARATIONS FOR WARC 85/88, BG-55-77E W/6/83, at 1 (June 13, 1983) (available in the office of the Case Western Reserve Journal of International Law) [hereinafter cited as PREPARATIONS FOR WARC 85/88].

<sup>137</sup> *Id.*

by such factors as (1) the accelerating worldwide requirement for orbital positions and frequency assignments for space services, (2) the inherent national limitations upon orbit and spectrum availability, and, (3) the unequal capabilities of countries to presently exploit the orbit/spectrum resources.<sup>138</sup> On its face, the Resolution does not necessarily invoke a particular remedy nor necessarily disclaim the status quo. However, the call for a world space radio conference "to *guarantee* in practice for all countries equitable access to the geostationary satellite orbit and [associated] frequency bands"<sup>139</sup> may be prompted by disquiet over the fact, particularly among developing countries, that the present regime does not expressly reserve their future access to the orbit.<sup>140</sup>

Whether, as a legal matter, Resolution 3's mandate for a space WARC entails the adoption of so-called a priori planning methods of orbit/spectrum allocation is immaterial. This method of allocation includes reserving specific slots and frequency assignments for particular countries. Such a reservation system of rights vesting has been associated with some of the principal architects of Resolution 3,<sup>141</sup> particularly the developing countries. Moreover, two of the five "planning" methods officially under consideration within the International Consultative Committee on Radio (ITU CCIR) involve world or regional, detailed, long-term and short-term, a priori allotment planning. Under these methods each ITU member state would be allotted particular orbit locations, associated frequencies and coverage areas.<sup>142</sup> These arrangements among users would replace the current, fluid and dynamic process of bilateral negotiation with the most rigid and inflexible alternative possible—a multilateral treaty that freezes and defines access as of the date of its adoption for the duration of the plan.<sup>143</sup> The deficiencies of this approach have been repeatedly voiced by U.S. policy-makers: "[T]he two most significant deficiencies of the approach have been amply demonstrated. Technical and operational innovation are unnecessarily impaired . . . Nations are induced to seek assignments that are often far beyond their capability to utilize in the foreseeable future, to the possible detriment of other nations."<sup>144</sup>

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<sup>138</sup> Resolution 3, *supra* note 9, at RES3-1.

<sup>139</sup> *Id.* (emphasis added).

<sup>140</sup> Rutkowski, *supra* note 13, at 23. *Accord OBJECTIVES AND FRAMEWORK*, *supra* note 14, at 2.

<sup>141</sup> Rutkowski, *supra* note 13. *Accord Preparation for ITU WARC*, *supra* note 10, at 1-3 app. B.

<sup>142</sup> I.W.P. 4/1, *supra* note 5, at 99-101.

<sup>143</sup> See *id.* for a description of these methods. A third method combines strict planning with periodic conferences to revise technical parameters and regulatory procedures and mechanisms to allow access for new requirements between such conferences.

<sup>144</sup> *Preparation for ITU WARC*, *supra* note 10, at 4, para. 9.

In addition to a deterrent effect upon innovation and the potential danger that a reservation approach would allocate orbit/spectrum to countries without current requirements or capabilities, there is a third, equally critical problem. A multilateral plan cannot fully accommodate cooperative common user approaches to orbital access.

While there is no ITU definition of "planning,"<sup>145</sup> the notion of an *a priori* plan is generally understood to reflect the assignment of specified orbital positions and frequencies to individual countries or groups of countries. This would be accomplished by a detailed reservation plan adopted at a multilateral conference. Such plans may define, for particular countries or groups, the service parameters and objectives, coverage, locations, frequencies, power limitations, interference levels, transmission parameters and other aspects of the use of frequency spectrum at a given location.<sup>146</sup> Although plans may reflect varying degrees of flexibility, they generally are predicated upon known or foreseen requirements for orbit/spectrum use at the time the plan is adopted. The requirements generally must be acknowledged as such by a majority of the delegations to the planning conference. Thus, a plan is necessarily the product of political compromises among sovereign telecommunications administrations.

From the standpoint of common user systems, the political realities of the planning process reflect a serious drawback. The IWP 4/1 document points out, somewhat glibly, that "due to the broad interest . . . in using multi-Administration networks, it *should not* be difficult to accommodate them."<sup>147</sup> This supposition, however, is by no means an assurance that their requirements would in fact be afforded much weight, if at all, at a conference in which they might participate only as observers. Such conferences recognize even existing uses only to the extent they gain political support within the ITU. Again, quoting the IWP 4/1: "Existing networks occupying the orbit may not reflect the interests of all Administrations."<sup>148</sup> Indeed, those allotments accepted at the conference would, as implemented, displace existing networks.

Even assuming that a plan adequately accounted for existing known requirements of common user systems, it would be difficult, and perhaps impossible, to account either for new or unforeseen requirements (i.e., expanded service functions) arising after the plan is adopted or for new common user systems. For example, the Regional Plan adopted for the

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<sup>145</sup> *Id.* at 14, para. 34.

<sup>146</sup> See, e.g., INTERNATIONAL TELECOMMUNICATION UNION, FINAL ACTS OF THE REGIONAL ADMINISTRATIVE CONFERENCE FOR THE PLANNING OF THE BROADCASTING-SATELLITE SERVICE IN REGION 2 (SAT-83) (1983) (available in the office of the Case Western Reserve Journal of International Law) [hereinafter cited as REGION 2 FINAL ACTS].

<sup>147</sup> I.W.P. 4/1, *supra* note 5, at 106 (emphasis added).

<sup>148</sup> *Id.*

Western Hemisphere, while assigning "shared beams" respectively for certain Andean and Caribbean states, necessarily foreclosed all options for the shared use of the "beam" save those expressly recognized by the plan.<sup>149</sup> This approach is extremely short-sighted, as an INTELSAT working paper has observed: "Given the wide range of services that can be provided by a satellite at a single location, and the ability of international organizations to provide a range of these services, it cannot simply be assumed that international organizations should be limited to specific locations exclusively for [a single service]."<sup>150</sup> The IWP 4/1 indeed concedes:

The only provision for accommodation of new requirements in this method is if they do not cause unacceptable interference to those networks within the plan. Under such a constraint, the only ways to accommodate new networks would be if unallotted capacity was in the plan or, if the [planned] requirements occupied all of the capacity when the plan was established, new networks would need to await technological advancements to create additional capacity.<sup>151</sup>

While it would be legally possible to amend a plan, the amendment process, even in the best of circumstances, can be nearly as cumbersome as convening another general conference. The amendment process requires the concurrence of all "affected" parties.<sup>152</sup>

These difficulties are further compounded, because, as already noted, the ITU system does not directly recognize the claims of international common user systems, as such, except indirectly.<sup>153</sup> International organizations simply do not have parity with nation-states in the substantive outcome of ITU deliberations.<sup>154</sup> However, the articulation of equitable access principles that afford such parity in a coordination environment may be feasible. Given the current diversity of providers of satellite service, the resolution of this issue could, but need not, be highly controver-

<sup>149</sup> See REGION 2 FINAL ACTS, *supra* note 146.

<sup>150</sup> PREPARATIONS FOR WARC 85/88, *supra* note 136, at 2, para. 8.

<sup>151</sup> I.W.P. 4/1, *supra* note 5, at 106. A short term plan provides only limited relief from these constraints. *Id.* at 109. "This method [makes] provision for . . . new requirements between conferences. . . . [Moreover], this method would readily accommodate the multi-administration requirements if foreseen when the plan is established." *Id.* at 109 (emphasis added).

<sup>152</sup> See, e.g., REGION 2 FINAL ACTS, *supra* note 146, at 3, part 1. *But see* Broadcasting Satellite Planning Final Acts of WARC '77 which virtually preclude amendments. *Accord* WARC '77 IMPLICATIONS, *supra* note 19.

<sup>153</sup> See *supra* note 95 and accompanying text.

<sup>154</sup> International organizations do participate in an *advisory* capacity in the work of international and regional conferences and the two consultative committees dealing with radio (CCIR) and telephony and telegraphy (CCITT). International organizations also share in the expenses of the Union. See G. CODDING & A. RUTKOWSKI, *supra* note 78, at 187-98.

sial. The "common user" concept articulated above would encompass the relevant institutional actors.

Only a minority of countries are or soon will be capable of enjoying access to space resources through the construction and erection of their own satellite systems. Considering this, logic would suggest strong support for the satisfaction of equitable access claims by means of shared facilities under the auspices of a common, participatory regime:

For many developing countries the likelihood is that several . . . services will be combined and provided in a given country or region by a single system. Since each service needs only a modest capacity space segment, this leads to the conclusion that the most economic solution would be the deployment of satellites to serve large areas with flexible regional/national zonal coverage and a mix of general purpose transponders available for leasing.<sup>155</sup>

In order to succeed, this concept must become powerful enough to overcome ideological, economic and political motivations that support the view that multilateral sharing arrangements are a second-best solution to the access controversy.

The ascendance of political values over technological rationality is pointedly illustrated by certain resolutions of the 1982 United Nations Conference on Exploration and Peaceful Uses of Outer Space (UNISPACE). One resolution exhibited a marked preference for "technological self-reliance," even at the expense of "efficiency of GSO and RF spectrum usage."<sup>156</sup> Thus, spokesmen for "guaranteed" country-by-country access to their space orbit have made the politically expedient, but technically unfounded argument that common user facilities, such as platforms, are "unproven." The UNISPACE resolution states: "[I]t is not yet clear that [the platform] concept will offer the flexibility required by the varying and special needs of these countries, lead to lower cost for each of them and help improve use of GSO and the RF spectrum."<sup>157</sup> Similarly, one of the leading exponents of strict a priori planning, the Indian telecommunications advisor, dismisses the option of utilization of INTELSAT capacity for domestic service applications of developing countries: "This can only be an interim arrangement . . . and as the [domestic] needs grow . . . beyond a certain capacity crossover point, *dedicated domestic/regional* satellites would become attractive."<sup>158</sup>

Such statements betray the true motivation of some of their principal

<sup>155</sup> B. Herdan, *supra* note 56, at 208.

<sup>156</sup> Report of the Second United Nations Conference on the Peaceful Uses of Outer Space, § G, para. 281 (Aug. 1982) [hereinafter cited as UNISPACE Report]. *See also* D. JANSKY, *supra* note 2, at 3.

<sup>157</sup> UNISPACE Report, *supra* note 156, at para. 286.

<sup>158</sup> Srirangan, *supra* note 11, at 12 (emphasis added).

proponents—namely the desire of certain second tier satellite operating states (i.e., India, Indonesia, Brazil) to establish their hegemony over regional telecommunications. In fact, these particular states historically have been directly at odds with INTELSAT over the right to use narrow arc segments that provide coverage in their respective regions beyond their own territories.<sup>159</sup>

## VI. CONCLUSION

Advances in technology which make possible the increased access to satellite resources have nonetheless not been accompanied by a heightened awareness of the need for cooperative rights vesting mechanisms. Sovereignty objectives that are served by a movement toward planning simply are not consistent with the fact that unilateral programs are but one means of securing equitable access to the GSO. A variety of alternatives exist which satisfy access objectives. Assuming that it is no longer tenable to maintain the existing regime, it is nonetheless imperative to prevent the loss of the essential institutional flexibility that is its hallmark.

Thus, the United States and similar highly developed countries who have the greatest stake in maintaining the current, relatively loosely structured regime for GSO access and spectrum use, must nonetheless be prepared to adjust the traditional structure to reflect a more widespread demand for access among less developed states. These reforms would include explicit decision-making criteria and institutional checks upon the existing process to ensure that it accounts adequately for access demands of LDCs. At the same time, these adjustments should be such as to blunt simplistic a priori country-by-country approaches that completely ignore common user access modes.

In a real sense, the issue of ways and means of accommodating common user institutions in the orbit/spectrum rights vesting process is central to the broader equitable access issue. Those countries that are disaffected by the current process may be persuaded to weigh alternatives in terms of their impact upon the ways that they intend to obtain access in practice. An a priori regime tends to weigh access objectives of dedicated systems. The issue confronting technologically disadvantaged states, however, is whether they prefer a planning regime that tends to limit their service options to shared use of regional systems under the control of individual states, or a regime modeled after the present scheme, which expands their options to pursue either dedicated systems or common user

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<sup>159</sup> See Colino, *supra* note 121. Indeed, the most strenuous and zealous advocates of a priori planning in the course of deliberations over Resolution 3 at the 1979 WARC assailed the existing regime based on these very controversies. Rutkowski, *supra* note 13, at 23.



alternatives in which they enjoy active participation and control. When framed in terms of these choices, the existing regime is far more consistent with equitable access goals.