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TRADE IN TELECOMMUNICATIONS SERVICES

Note by the Secretariat

I. Introduction

Developments relating to technological innovation and diffusion, new 1. policy and regulatory frameworks, market structures and the sophistication of available telecommunications services have greatly affected the telecommunications services industry over the last decade. The industry is moving away from what has traditionally been a public utility organized along monopoly lines and offering a limited and largely undifferentiated set of services to an industry at the forefront of technological change, supplying an increasing diversity of services and products. By accelerating the speed and efficiency of transmitting information worldwide, modern telecommunications technology is significantly affecting the realm of international services transactions, both by allowing for new or improved services which enter directly into international trade and by enhancing the tradeability of traditional services.

2. In this process, traditional boundaries and borderlines between telecommunications and other areas like computer or broadcast services, between what is a good and what is a service, between trade and investment in telecommunications services, as well as among different service definitions in the telecommunications field itself are becoming increasingly blurred.

Trade in telecommunications services is important both in economic 3. and public policy terms. In economic terms, as economies in both developed and developing countries become more information-intensive, expenditures on services are projected to rise relative to goods, and it is expected that the share of both telecommunications goods and services will continue to grow as a percentage of world trade. Moreover, the development of globally interconnected telecommunications networks contributes to the expansion of trade in a host of other service sectors such as financial services, professional services, information services, insurance and travel. Trade in telecommunications services is also important because the service component of many manufactured products is rising. The ability of goods-producing industries to remain internationally competitive can indeed be expected to rely increasingly on the availability of

competitively-priced intermediate telecommunications service inputs. The expanding role of trade in telecommunications services is important for both developed and developing countries as economy wide gains derive from more efficient telecommunications systems.

4. From a public policy perspective, policy-makers are grappling with the legal, institutional and regulatory changes that the provision and use of new telecommunications services and products require. With divergent market entry possibilities challenging long-standing telecommunications industry practices, differences in national perceptions of how national interests can be best served have brought telecommunications services issues to the fore.

5. This background note highlights some of the trade policy considerations which may be relevant in the telecommunications services sector. The note consists of three parts. Firstly, it describes the activities comprising the telecommunications services sector and takes up some of the definitional considerations which are relevant in this respect. Secondly, it describes ways in which trade in telecommunications services may occur. Thirdly, it provides a brief overview of the objectives and rationales for the regulation of telecommunications services.

II. <u>Telecommunications services activities</u>

6. At the national level, telecommunications administrations in virtually all countries have traditionally been the sole suppliers of relatively undifferentiated telecommunications services provided on a progressively more universal basis by state sanctioned monopolies. These services have typically included local and long-distance voice telephony services over the public-switched network, private leased lines, few if any value-added services and no resale or sharing of telecommunications capacity. The monopolies have often also been responsible for approving the attachment of terminal equipment to the network itself.

7. The bulk of international telecommunications activity is still mainly voice communications. This requires a telecommunication carrier in country A to interconnect its infrastructure with a telecommunication carrier in country B. While in most cases services providers have

¹The ITU's World Administration Telegraph and Telephone Conference (WATTC-88), the Canada-U.S. Free Trade Agreement, the Australia-New Zealand Protocol on Trade in Services, the European Commission Green Paper initiatives, the telecommunications trade provisions contained in the U.S. Omnibus Trade and Competitiveness Act of 1988, challenges to the INTELSAT monopoly, and the recent bilateral International Value-Added Networks (IVAN) agreements between Japan and the United States, the United Kingdom and the United States, and Japan and the United Kingdom may all be seen as responses to the changes referred to above.

traditionally been monopoly providers within their own countries, recent changes in domestic regulatory regimes have meant that one, or both, could now be operating in a competitive environment. At the international level, the technical and administrative framework for telecommunications transport services has been undertaken within the context of the International Telecommunication Convention and its Regulations under the auspices of the International Telecommunication Union (ITU)². International telecommunications activity is also facilitated through international organizations, such as the International Telecommunications Satellite Organization (INTELSAT) and the International Maritime Satellite Organization (INMARSAT), as well as through transoceanic cable consortia.

8. Technological developments, which have created innovative ways to provide traditional telecommunications services as well as encouraging the development of entirely new telecommunications network-based services (see below), new technological possibilities for facility competition, and user demands, have all challenged the long-standing monopoly framework for the provision of telecommunications services. These pressures have led, <u>inter alia</u>, to increased demand for liberalization in the access and use of leased circuits, in the emergence of value-added network providers (see below) seeking access to customers in foreign countries, and in the development of separate satellite systems. In the process, the provision and use of telecommunications services has been increasingly viewed in some countries as having trade policy implications.

9. As telecommunications services have become increasingly diverse and sophisticated, governments and inter-governmental organizations have developed different classifications of telecommunications services for policy and regulatory purposes. The International Telecommunication Union has recently referred to telecommunications services as comprising traditional services which include voice telephony, message telegraphy, telex, facsimile, data transmission and a number of other telecommunications services which are limited essentially to transmission and switching functions. These are distinguished from value-added services where additional functions beyond transmission and switching are incorporated into the service offering (for example, call-forwarding, electronic mail or other telecommunications management features, teletex or videotex, remote data processing and broadband services).

10. Beginning in the early 1970's, regulatory authorities in the United States developed the basic/enhanced distinction as an attempt to separate those telecommunications services which could be considered as common carriage, and therefore subject to regulatory restrictions, from those which could be offered competitively. Similarly, in Western Europe the distinction between basic and value-added services (which is largely a

²The annex to this note describes the disciplines and arrangements of the ITU. While drawing on MTN.GNS/W/16, the annex provides an update of recent developments in the activities of the ITU, including WATTC-88.

synonym for enhanced services) has been mainly used as a means to identify areas where competition with telecommunications administrations could be allowed.

11. While no internationally-agreed definition of what constitutes a basic or an enhanced service exists, certain service offerings such as local and long distance telephone services have nonetheless tended to be treated as basic telecommunications services, while other service offerings like electronic mail have generally been regarded as enhanced telecommunications services. The basic/enhanced distinction was developed essentially for regulatory purposes and designed to avoid extending regulations applicable to common carriers to other service providers or to areas which have traditionally been unregulated. It has also had as its objective to determine those areas where services could be provided competitively without resulting in economic harm to the basic telecommunications operators, and to set conditions for monopoly carriers who wished to supply services in markets which were open to competition. Increasingly, however, unstable market boundaries and rapid technological change are rendering such a distinction inoperative as computer or cable firms move into telecommunications market segments which have traditionally been regarded as basic services.

12. Recognizing the difficulty in clearly demarcating between basic and value-added services, countries have increasingly introduced the notion of reserved services. A reserved service is viewed as one where special or exclusive rights are given to a telecommunications administration to provide a service which has public interest criteria attached to it. All other telecommunications services which are not designated as reserved could, on the basis of this concept, be open to competitive provision.

13. Problems which emerge at the national level in attempting to define basic and value-added telecommunications service become more complex at the international level. This is related to differences in the interpretation of terminology as well as the increasing diversity of market structures across countries. Within the International Telegraph and Telephone Consultative Committee (CCITT) of the ITU, and as evidenced by deliberations at the recent World Administrative Telegraph and Telephone Conference (WATTC-88), experts given the mandate to define the new telecommunications services found little common ground as to how to distinguish between categories of existing and emerging telecommunications services or how to come up with clear definitions of either basic or value-added services. Nevertheless, where liberalized telecommunications

³For example, voice telephony services are increasingly capable of being enhanced - such as call forwarding and other tele-management services - through the addition of new features defined by software or terminal equipment capabilities.

policies have been implemented, increased international trade in telecommunications services can take place, even if differences remain in national regulatory frameworks.

14. There are four other distinctions of relevance from a trade policy perspective. These are: services and equipment, services and facilities, services and information, and transactional services and telecommunications network-based services.

15. National and international telecommunications infrastructures are composed of different kinds of equipment consisting of transmission (copper or fibre optic cable, satellites), fixed links (land lines or earth stations), switching equipment of various types, and customer premises equipment, which are the actual attachments to the network.

16. In many cases the provision of certain telecommunications services is closely linked to the ability of attaching terminal equipment to the network. Such equipment has a high services- content (e.g. telecommunications software) and may on balance be seen as being more of a service than a good.

17. When interconnected and interoperable, this switching and transmission equipment constitutes a facility (often referred to as a network) over which a full range of telecommunications services can be provided. From a policy and regulatory standpoint, facilities or networks are typically treated differently from the services which may be provided through them. Some countries have adopted facilities-based regulatory regimes which make a distinction between Type I and Type II carriers. Type I carriers, which own and operate networks/facilities and provide basic telecommunications transport services, are typically subject to entry and foreign ownership restrictions. Type II carriers, on the other hand, typically use facilities provided by Type I carriers and offer network-based services on a competitive basis.

18. Attempts have been made to differentiate information - the message or content which passes over the telecommunication infrastructure - from the carriage function performed by telecommunications operators. The information itself is viewed in such cases as having a value over and above the carriage function, but is not usually of direct relevance to telecommunication carriers. Telecommunications users, both individual and corporate, as well as the countries into and out of which information moves, may however raise considerations relating to, for example, privacy, culture or national security.

19. Transactional services and telecommunications network-based services are relatively new concepts which have been developed to respond to rapid technological change, changing market structures and services definitions relating to telecommunications. The concept of transactional services treats telecommunications as an intermediate service necessary for the supply of a variety of other services - such as banking services and travel

services - which enables suppliers and users of those services to execute market transactions in a more efficient and effective manner. The salient characteristic of these new services is that, although dependent on telecommunications networks, the primary focus of the service activity is essentially unrelated to telecommunications. Nevertheless, for many of these new services liberalized access and use of specialized telecommunications functions are viewed as being important for efficient service provision and enhancing competitiveness.

20. The telecommunications network-based services concept represents an attempt to circumvent the need to precisely define telecommunications services by creating a broad, umbrella concept which can subsume the entire complex of network-dependent services. The concept encompasses all services that combine information production, manipulation, storage and/or distribution, with the use of telecommunications facilities and software functions. This concept thus draws attention to the telecommunications networking element that is common to a growing group of disparate services, an ever increasing subset of which may be seen as adding value to the telecommunications transport function.

III. Trade in telecommunications services

21. The primary characteristic of trade in telecommunications services is that it takes place predominantly through the interconnection and interoperability of national telecommunications systems. The need for interconnection and interoperability is becoming increasingly important because of the growing number of participants - most through public-switched networks but also through private facilities - involved in the provision and use of telecommunications services.

22. For trade purposes, the treatment on telecommunications services needs to consider five aspects:

- form of trade;
- preferred mode of delivery;
- market structure;
- regulatory treatment, domestic and international;
- network access and use.

23. Within each of these categories, various matters could be examined. With respect to the form of trade, these include the cross-border provision of services, the cross-border movement of consumers as well as the cross-border movement of factors of production. With respect to the preferred mode of delivery, considerations relate to establishment, commercial presence, non-establishment as well as the requirement to establish. With respect to market structures, the degree of market concentration and the characteristics of ownership are relevant. As far as domestic and international regulatory treatment is concerned, considerations include the licensing of facilities, pricing arrangements, cost-accounting practices, technical standards, interconnection practices and transparency provisions. Matters relating to network access and use include the availability of public switched services, availability of leased-line services, availability of international facilities, attachment of terminal equipment of the network and the access to and use of information and other content services.

24. The provision of telecommunications services internationally overwhelmingly involves the cross-border provision of a service using the public-switched network or private lines leased from national telecommunications administrations.

25. The provision of satellite communications capacity such as that provided by INTELSAT, has been considered by some as a public, co-operative, non-profit - though still commercial - corporation providing global satellite communications rather than international trade. However, in cases where alternative facilities such as private transoceanic cables or private satellite systems are concerned, where competition among countries for third-party transit services applies, or where telecommunications network-based services are provided internationally through public or private networks, such cross-border services transactions may perhaps be considered as traded services - particularly as in many countries these services are available on a competitive basis.

26. The cross-border movement of consumers would seem to have little direct relevance for telecommunications services. In instances where telecommunications network-based services may be provided competitively in foreign markets, matters relating to the mobility of factors of production, both capital and labour, may be expected to gain in significance.

27. The provision of national treatment, the notion of preferred mode of delivery and improving market access raise the question of how foreign suppliers of services can access domestic telecommunications services markets, on what terms, and by what means. The fact that many telecommunications services are provided on-line and at a distance has usually meant that telecommunications providers in one country have not required a commercial presence in the other country in order to provide international telecommunications services. Matters relating to establishment, non-establishment and commercial presence might thus be expected to arise most directly with regard to the provision of telecommunications network-based services in a foreign country or private end-to-end services involving investment in satellite ground stations or landing rights for cables. The preferred mode of delivery could involve a range of possibilities. Establishment might in some instances be deemed necessary in order for an alternative private network using satellites or cables to be constructed and operated. In other instances, a network-based service provider might prefer non-establishment and merely use the public-switched network or lease lines to access customers from abroad. Alternatively, the same service provider may wish to have a commercial presence in a foreign country in order to market its services.

28. Matters relating to regulation are particularly important in determining the extent and manner in which trade in telecommunications services takes place. Issues attracting regulatory attention in most countries include market structures, ownership conditions, licensing requirements, pricing policies, technical standards and interconnection arrangements.

29. Market structures - whether monopoly, competition or mixed - are important in determining entry possibilities and whether and how trade in telecommunications services takes place. For example, an increasing number of countries now treat telecommunications network-based services as domestically competitive and, in effect, internationally-traded. Ownership restrictions - not only with regard to foreign ownership and control but also public ownership or ownership concentration - are widespread in both developed and developing countries. Such restrictions, however, often relate to facilities ownership rather than services provision and may not necessarily inhibit trade in telecommunications services. Likewise. licensing requirements especially for facilities - such as the use of the radio frequency spectrum, construction approvals and rights of way - can also influence whether and how trade in telecommunications services takes place through the establishment of conditions which must be met by foreign providers.

arrangements - whether drawn 30. Domestic pricing up by public telecommunications operators or set or supervised by domestic regulatory authorities - are another instrument which may determine whether and how trade in telecommunications services can take place. Deviations from cost-based pricing of telecommunications services, volume-sensitive pricing of leased lines, or access charges for the provision of network-based services are all examples which might be cited of how cross-border trade in Moreover, telecommunications services could be affected. technical standards and type approval procedures for the attachment of equipment to the network or interconnection arrangements among operating entities in different countries are also potentially important.

31. Trade in telecommunications services influenced may be hv international disciplines and arrangements. The recently adopted International Telecommunication Regulations, which are concerned only with telecommunications services offered to the public and the underlying means of transport, allow special arrangements to be made between member states, place emphasis on national sovereignty, and mention the right of member states to grant or withhold authorization for telecommunications services and to services providers within their own territories. More generally, standards and interconnection tariffication, accounting, technical activities of the CCITT and its various study groups - although only recommendations and not binding on ITU member-states - overlay and often influence domestic regulatory action.

32. The ability to trade telecommunications services may also be seen as relating in important ways to the issue of network access and use. Each country possesses both the sovereign authority and policy-making capacity

either to restrict or open access to its national telecommunications system. Network access and use are influenced by factors relating to policy, technical and national security considerations. The availability of public-switched and private leased line capacities as well as facilities international are key determinants of trade in telecommunications services. Where this capability is not available, as in some developing countries, or where the terms and conditions for use of the public-switched network, private leased lines or international facilities are unattractive, this may hinder the ability for prospective services providers to enter foreign markets or force them to use alternative arrangements, such as bypass strategies. Attachment of terminal equipment to networks, in particular that relating to software and other components necessary for interconnectivity and interoperability, is also an increasingly important feature of international telecommunications network access and use. This affects how trade in telecommunications services can take place, and indeed, whether it can take place at all.

IV. Regulation and Regulatory Motivation and Objectives

33. The range of regulations affecting the provision and use of telecommunications services is extensive; they originate predominantly at the national level (and sometimes at the sub-national level) and are overlaid with international regulations. The spectrum of regulatory practices include controls on entry, restrictions on use of infrastructure, ownership restrictions, licensing requirements, pricing and rate of return issues, cost accounting, standards-setting, type approval and interconnection practices.

34. In addition to sector-specific regulations, the telecommunications services sector is sometimes subject to regulations of a more general nature, relating to, for example, domestic competition policies, tax policies, industrial development strategies and privacy laws which can affect the operation of the telecommunications services sector.

35. The institutional structures for telecommunications regulation vary greatly among countries. Some developed countries have a long tradition of separating regulatory from operating agencies while other countries are only now moving in that direction. Meanwhile, some - mostly developing countries - make no such separation.

36. The basic motivations for regulating the telecommunications services sector can be grouped into four broad categories. Firstly, there are technical reasons for regulation, both nationally and internationally. The ITU was created in 1865, for example, to ensure interconnection between different national telegraph systems. The promotion of interconnectivity continues to be one of the main tasks of the ITU as it deals with the challenges posed by new telecommunications technologies and services. These technical goals are referred to explicitly in Article 4 of its

Convention and, according to current interpretation, include the efficient provision of international telecommunications services, prevention of harm to the network and the promotion of interconnectivity and interoperability of networks and equipment. At the national level, governments may choose to set their own domestic standards for equipment and terminal attachment to the network. They may also establish the conditions for the interconnection of networks nationally and internationally or may alternatively choose to follow ITU recommendations in this regard.

37. A second broad rationale for regulation is economic in nature and stems from what has historically been viewed as the essential economic characteristic of satisfying "natural monopoly" conditions.⁴ The key to the belief that telecommunications services possessed natural monopoly characteristics was that each country shared the same technology, that this technology was evolving at a relatively slow pace, that there were economies of scale and scope in supply, that economy-wide positive externalities could be reaped through the development of telecommunications infrastructures, and that it was unlikely that the size and long-term nature of the infrastructural investments which telecommunications required could be made by private entities. Some economic support for monopoly provision has also related to the revenue-generating potential of telecommunications for governments, as well as to infant industry considerations.

38. The provision of telecommunications services along monopoly lines has given rise to a variety of economic regulations. These have ranged from the requirement to provide fair and non-discriminatory access to telecommunications facilities and services, to the imposition of common carrier obligations (i.e. universality of provision), to price and rate of return regulation of service providers, to controls on cross-subsidization from monopoly to competitive services, or to controls on the potential abuse of dominant positions.

39. As a result of rapid change in network technology, as well as the emergence of alternative transmission capabilities, the natural monopoly characteristics which were seen as existing in the telecommunications service industry may have become less significant. Some governments have, therefore, rejected the natural monopoly concept as a defence of monopoly supply.

40. A third and closely related rationale for regulation is social in character and stems largely from the objective of promoting the widespread availability of telecommunications services at reasonable cost. This has

⁴A market is considered as having natural monopoly characteristics if the costs of production of a single firm for a range of products or services is less than the cost of production of the same range of products or services by many different independent firms. The implication of the existence of a natural monopoly is that competitive entry would lead to inefficiency and consumer welfare loss.

involved measures such as service obligations placed on telecommunications providers, value-of-service rather than cost-based pricing, and often extensive cross-subsidization between different telecommunications and related services (e.g. long distance/local telephone service, telecommunications/postal services). The pursuit of social objectives through policies relating to the provision of telecommunications services can result in measures which deviate from purely economic considerations.

41. Another rationale for regulation in the telecommunications services sector relates to sovereignty and national security considerations. The ITU Convention fully recognizes "the sovereign right of each country to regulate its telecommunications" and the most powerful reason for exercising that right is to protect national security. All countries wish to ensure control over the essential infrastructure of their national telecommunications systems both for security and policy reasons. These goals are usually pursued through ownership provisions and through licensing of facilities and services (e.g. satellite receiving stations or use of the radio frequency spectrum). In practise, ownership and licensing control often extends to the basic services provided over the telecommunications transport system and this has traditionally been accomplished through monopoly telecommunications provision. In addition, been sovereignty objectives may also have a more explicit public policy purpose countries often choose to regulate the provision of in that telecommunications services in order to achieve development or cultural goals.

policy objectives pursued through regulating the 42. While the telecommunications sector are often broadly similar across countries (for instance, ensuring the provision of universal telecommunications services; promoting network inter-operability; organizing the international provision of telecommunications services; and protecting national sovereignty and security), the means to achieve these goals - and the regulatory philosophies which lay behind them - often differ markedly. Regulations for the monopoly provision of a service differ from the regulatory framework required in a competitive telecommunications market. There are also national differences in the historical development of telecommunications structures. Such regulations may, deliberately or not, limit the competitive provision of services or even prevent trade from taking place.

ANNEX

Disciplines and Arrangements of the International Telecommunication Union (ITU)

International Telecommunication Convention

The ITU, the origins of which date back to 1865, is the oldest specialized agency of the UN. It is composed of 162 Member States and governed by the 1982 International Telecommunication Convention, which is divided into "Basic Provisions" (Preamble and Articles 1 to 52) and "General Regulations" (Articles 53 to 83) and constitutes the basic instrument of the Union, the provisions of which are supplemented by the Administrative Regulations which regulate the use of Telecommunications and are binding on all Members.

Objectives

The Preamble states the objectives of the Union as facilitating peaceful relations, international cooperation and economic and social development among peoples by means of efficient telecommunications services, while fully recognizing the "sovereign right of each country to regulate its telecommunications".

Article 4 of the Convention sets out the "purposes" of the Union which are: "(a) to maintain and extend international cooperation between all Members of the Union for the improvement and rational use of telecommunications of all kinds, as well as to promote and to offer technical assistance to developing countries in the field of telecommunications; (b) to promote the development of technical facilities and their most efficient operation with a view to improving the efficiency of telecommunications services, increasing their usefulness and making them, so far as possible, generally available to the public and (c) to harmonize the actions of nations in the attainment of those ends".

To this end, the Union is required in particular to: "(i) effect allocation of the radio frequency spectrum and registration of radio frequency assignments in order to avoid harmful interference between radio stations of different countries; (ii) coordinate efforts to eliminate harmful interference between radio stations of different countries and to improve the use made of the radio frequency spectrum; (iii) foster international cooperation in the delivery of technical assistance to the developing countries and the creation, development and improvement of telecommunication equipment and networks in developing countries by every means at its disposal, including through its participation in the relevant programmes of the United Nations and the use of its own resources, as appropriate; (iv) coordinate efforts with a view to harmonizing the development of telecommunication facilities, notably those using space techniques, with a view to full advantige being taken of their possibilities; (v) foster collaboration among its Members with a view to the establishment of rates at levels as low as possible consistent with an efficient service and taking into account the necessity for maintaining independent financial administration of telecommunication on a sound basis; (vi) promote the adoption of measures for ensuring the safety of life through the cooperation of telecommunications services and (vii) undertake studies, make regulations, adopt resolutions, formulate recommendations and opinions, and collect and publish information concerning telecommunication matters".

Features and Coverage

The Convention, in its "Basic Provisions", provides for the Union's structure comprising the Plenipotentiary Conference (as the supreme organ of the Union normally convened every five to six years), Administrative Conferences for consideration of specific telecommunication matters (of which world conferences also periodically update and revise the Administrative Regulation, while regional conferences deal only with specific telecommunication questions of a regional nature), the Administrative Council (meeting annually and acting on behalf of the Plenipotentiary Conference) and the four permanent organs, i.e. the General Secretariat; the International Frequency Registration Board (IFRB); the International Radio Consultative Committee (CCIR) and the International Telegraph and Telephone Consultative Committee (CCITT).

As far as telecommunications in general are concerned, Articles 18 to 32 of the Convention place emphasis on the establishment, operation and maintenance of an efficient worldwide telecommunications network. Members agree to ensure the establishment, under the best technical conditions, of the channels and installations necessary to carry on the rapid and uninterrupted exchange of international telecommunications, to maintain these channels and installations in proper operating conditions and to keep them abreast of scientific and technical progress. In addition, Members agree to take all possible measures, compatible with the system of telecommunication used, with a view to ensuring the secrecy of international correspondence subject to the conditions stipulated in Article 22. Article 28 stipulates that the provisions regarding charges and the various cases in which free services are accorded are set forth in the Administrative Regulations annexed to the Convention. Article 29 deals with "Rendering and Settlement of Accounts". Article 30 deals with the monetary unit to be used in the composition of accounting rates and the establishment of international accounts.

While Members recognize the right of the public to correspond by means of the international service of public correspondence, they also reserve their right to stop the transmission of any private telegramme and to cut off any other private telecommunications which may appear dangerous to the

security of the State or contrary to their laws, to public order or to decency. The Convention permits Members to suspend international telecommunications services for an indefinite time, either generally or only for certain relations and/or for certain kinds of correspondence, outgoing, incoming or in transit, provided that they immediately notify such action to each of the other Members through the Secretary-General. Finally, Members accept no responsibility towards users of the international telecommunication services, particularly as regards claims for damages.

According to the special provisions for radio and concerning the rational use of the radio frequency spectrum and of the geostationary satellite orbit, Members shall endeavour to limit the number of frequencies and the spectrum space used to the minimum essential, to provide in a satisfactory manner the necessary services and to apply the latest technical advances as soon as possible. In using frequency bands for space radio services, there is recognition that radio frequencies and the geostationary satellite orbit are limited natural resources and that they must be used efficiently and economically, in conformity with the provisions of the Radio Regulations, so that countries or groups of countries may have equitable access to both, taking into account the special needs of the developing countries and the geographical situation of particular countries. The Members agree that all stations must be established and operated in such a manner as not to cause harmful interference to the radio services or communications of other Members operating in accordance with the provisions of the Radio Regulations. Members retain generally their entire freedom with regard to military radio installations of their army, naval and air forces under the conditions specified in Article 38 of the Convention.

The Convention also contains provisions for dispute settlement. Disputes can be settled through diplomatic channels, or according to procedures established by bilateral or multilateral treaties or by any other method mutually agreed upon. If none of these methods of settlement are adopted, any Member party to a dispute may submit the dispute to arbitration in accordance with a defined procedure.

The General Regulations forming the second part of the Convention contain detailed provisions on the structure and functioning of the various organs of the ITU and also the rules of procedure of conferences and other meetings of the Union. As regards reservations, if any decision appears to a delegation to be of such a nature as to prevent its government from ratifying the Convention or from approving the revision of the Regulations, the delegation may make final or provisional reservations regarding this decision.

The Telegraph and Telephone Regulations

The Telegraph Regulations and the Telephone Regulations (contained in the Final Acts of the 1973 Administrative Telegraph and Telephone Conference) are a model of simplicity and brevity, mainly because of a

decision adopted in 1973 to turn most of the detailed technical, operating and tariff questions over to the International Telegraph and Telephone Consultative Committee (CCITT). This allows for easier updating and makes the treatment of these questions more responsive to the rapidly evolving technology. The great mass of the earlier Telegraph and Telephone Regulations was therefore eliminated and replaced by two sets of very similar provisions which relate the Regulations with the Recommendations of the CCITT. Article 1 of both the Telegraph and Telephone Regulations stipulates that in implementing the principles of the Regulations, administrations or recognized private operating agencies should comply with the CCITT Recommendations, including any instructions forming part of those Recommendations, on any matters not covered by the Regulations. It has, therefore, been concluded that these Recommendations can also be considered as forming part of the ITU legal instruments, though on a level below the provisions of t. rulations themselves.

The stated purpose of the Telegraph Regulations is to lay down the general principles to be observed in the international telegraphic service. The provisions require <u>inter-alia</u> that (1) the circuits and installations provided for in the international telegraph service shall be sufficient to meet all requirements of the service and (2) administrations or recognized private operating agencies shall cooperate, subject to a provision that they avoid technical harm to the facilities of third countries in the establishment, operation and maintenance of the circuits and installations used for the international telegraph service to ensure the best possible quality of service.

The Telephone Regulations are somewhat similar in format and content. The provisions require <u>inter-alia</u> that (1) all administrations or recognized private operating agencies shall promote the provision of telephone service on a world-wide scale and shall endeavour to extend the international service to their national network, (2) they shall designate the exchanges in the territory they serve which are to be regarded as international exchanges, (3) the circuits and installations provided for the international telephone service shall be sufficient to meet all requirements of the service, (4) administrations or recognized private operating agencies shall cooperate in the establishment, operation and maintenance of the circuits and installations used for the international telephone service to ensure the best possible quality of service, (5) they shall determine by mutual agreement which routes are to be used.

Both Regulations contain a general description of the services offered to users, a section concerning operations and a set of definitions. A major portion of these two instruments is made up of rules concerning tariffs and how to apply them. It should be noted that both Regulations stipulate that they shall apply regardless of the means of transmission used, so far as the Radio Regulations do not provide otherwise.

The 1988 World Administrative Telephone and Telegraph Conference (WATTC-88) held in Melbourne, Australia at the end of last year adopted a new set of International Telecommunications Regulations. Among its

features are the right of Member States to authorize the provision of "international telecommunications services to the public" within their territory and to continue to apply CCITT recommendations (which are not binding) as they find appropriate (Article 1.7). As well, there is also a provision to allow for "special arrangements" between members allowing telecommunications administrations or other organizations and persons to cooperate for "the establishment, operation and use of special telecommunications networks, systems, and services in order to meet specialized international telecommunications needs within and/or between the territories of the members concerned, and including, as necessary, these financial, technical or operating conditions observed" (Article 9).

The Radio Regulations

The Regulations, resulting from a general revision of the preceding Regulations have been further partially revised in 1983 and in 1985, and divided in two parts.

The General Provisions in Part A deal with terminology, technical characteristics of stations, frequencies, coordination, notification and registration of frequencies, measures against interference, administrative provisions for stations and service documents, e.g. the international frequency list and the list of ship stations.

Part B of the Radio Regulations deals with provisions relating to groups of services and to specific services and stations, distress and safety communications, aeronautical mobile service and aeronautical mobile-satellite service, maritime mobile service and maritime mobile satellite service and land-mobile service.

It should be noted that it is stated in the Final Acts of the 1979 World Administrative Conference that "should an administration make reservations concerning the application of one or more of the provisions of the Radio Regulations, no other administration shall be obliged to observe that provision, or those provisions, in its relations with that particular administration".

<u>Recommendations of the International Telegraph and Telephone</u> <u>Consultative</u> <u>Committee</u> (CCITT)

The Recommendations as revised and adopted at Malaga-Torremolinos in 1984 and at present applicable are reproduced in the CCITT Red Book which contains some 11 000 pages. The entire set of texts contains all recommendations in force on a wide variety of subjects.

Recommendations published in ten volumes deal, among others, with tariff principles, telephone, telegraph and telematic services, analogue systems, digital networks, integrated services digital network (ISDN), data communication networks and open system interconnections (OSI).

It should be noted that the D Series Recommendations deal with general tariff principles - charging and accounting in international telecommunication services. These recommendations cover a wide range of subjects which include general principles for the lease of international private telecommunication services, special conditions for such lease, costs and value of services rendered as factors in the fixing of rates for private leased facilities, tariff principles applicable to data communication services, charging and accounting in various international services such as the public telegramme, teletext, telex, facsimile, phototelegraph, maritime mobile, telephone and transferred account services, sound-and television-programme transmissions and the settlement of international telecommunication balances of accounts.

It should also be noted that Recommendation I.120 deals with Integrated Service Digital Networks (ISDN). The main feature of the ISDN concept is the support of a wide range of voice and non-voice applications in the same network. A key element of service integration for an ISDN is the provision of a range of services using a limited set of connection types and multipurpose user-network interface arrangements. It is recognized that ISDNs may be implemented in a variety of configurations according to specific national situations. Services supported by an ISDN are the communication capabilities made available to customers by telecommunication service providers. An ISDN provides a set of network capabilities which are defined by standardized protocols and functions and enable telecommunication services to be offered to customers.

Finally, it should be mentioned that CCITT Recommendations are periodically reviewed to ensure that technological developments and operational changes are duly taken into account. Accordingly, they are updated as necessary, every four years, at Plenary Assemblies of the CCITT such as was most recently held at Melbourne in November 1988.

Technical Cooperation

The Technical Cooperation activities of the Union support, in specific and need-oriented ways, the actions of nations in the development of their national and international networks. This cooperation mainly through the provision of advisory services is aimed at improving telecommunication infrastructures in developing countries and involves such activities as the planning, establishment and maintenance of networks, the development of human resources, the establishment of institutions and the strengthening of self-reliance.

Much of the work consists in executing telecommunication projects within the framework of the United Nations Development Programme (UNDP). However, to an increasing extent, recipient countries and third-party donors are calling upon the services of the Union to execute technical cooperation projects. Lately a new dimension has been added to these activities by the establishment of a Centre for Telecommunication

Development which is intended to reinforce the assistance to the multilateral process. The Centre is an experiment in international cooperation with the entry of recognized public telecommunication service providers, the industry and interested governments participating in an advisory board, having responsibility for the programming and managing of the Center's separate and identifiable budget, financed until now on a voluntary programme basis.