ITC-214-19920604-00119

Citation
7 F.C.C.R. 7758
1992 WL 690854 (F.C.C.), 7 F.C.C.R. 7758, 7 FCC Rcd. 7758
(Cite as: 1992 WL 690854 (F.C.C.), 7 FCC Rcd. 7758)
C

Search Result

Rank 3 of 10

Database
FCOM-FCC

DA 92-1559

***1** IN THE MATTER OF
AMERICAN TELEPHONE AND TELEGRAPH COMPANY
CICI, INC.
GTE HAWAIIAN TELEPHONE COMPANY INCORPORATED
IT & E OVERSEAS, INC.
MCI INTERNATIONAL, INC.
SPRINT COMMUNICATIONS COMPANY
LIMITED PARTNERSHIP TRT/FTC COMMUNICATIONS, INC.
JOINT APPLICATION FOR AUTHORIZATION UNDER SECTION 214 OF THE COMMUNICATIONS ACT OF 1934, AS AMENDED, TO CONSTRUCT, ACQUIRE CAPACITY IN AND OPERATE A HIGH CAPACITY DIGITAL SUBMARINE CABLE NETWORK BETWEEN AND AMONG THE UNITED STATES MAINLAND, THE STATE OF HAWAII, THE ISLAND OF GUAM AND JAPAN
File No. **I-T-C-92-179**

Adopted: November 12, 1992; Released: November 27, 1992

MEMORANDUM OPINION, ORDER AND AUTHORIZATION

****7758** By the Chief, Common Carrier Bureau:

1. The above-captioned Joint Application [FN1] was filed on June 4, 1992, by American Telephone and Telegraph Company ("AT & T"), CICI, Inc., d/b/a IDB International ("IDB"), GTE Hawaiian Telephone Company, Incorporated ("HTC"), IT & E Overseas, Inc. ("IT & E"), MCI International, Inc. ("MCII"), Sprint Communications Company Limited Partnership ("Sprint"), TRT/FTC Communications, Inc. ("TRT/FTC"), (hereinafter collectively called the Joint Applicants). The Joint Applicants seek authority, pursuant to Section 214 of the Communications Act of 1934, as amended, 47 U.S.C. § 214 (1982), to construct and operate a high capacity digital submarine cable network, known as TPC-5, extending between and among the United States Mainland, Keawaula in the State of Hawaii, the Island of Guam, and Japan. TPC-5 will be jointly owned by the Joint Applicants and 37 foreign telecommunications administrations and carriers. The Joint Applicants propose that TPC-5 be operational by December 31, 1996.

2. The Joint Applicants also seek authority to: (a) acquire capacity in TPC-5; (b) acquire, by lease or on an Indefeasible Right of User (IRU) basis, such extension facilities as may be required to extend capacity in TPC-5; (c) convey to its correspondents, or to non-owners, half interests on an IRU basis in certain capacity currently wholly assigned to a Joint Applicant; and (d) activate and operate capacity in TPC-5 and in the aforementioned facilities for the provision of their respectively authorized telecommunications services.

3. The Joint Application was placed on public notice on June 10, 1992. STC Submarine Systems Inc. ("STC") filed comments requesting the Commission to condition the requested Section 214 authorization and accompanying cable landing license. [FN2] The Joint Applicants [FN3] filed a Reply to which STC subsequently responded.

I. THE APPLICATION

4. The Joint Applicants will use TPC-5 to supplement their existing facilities

for providing international and domestic service. [FN4] TPC-5 capacity will be extended by suitable facilities to the borders of other TPC-5 participating countries or to the terminals of other international communications systems, including other cable terminals and satellite earth stations, resulting in services between and among the U.S. Mainland, Hawaii, Guam and Japan.

***2** 5. The TPC-5 Construction and Maintenance Agreement (C & MA), [FN5] initialed on February 6, 1992, defines the proposed cable system in terms of segments for ownership purposes. TPC-5 will consist of twelve segments. [FN6] Each cable segment of TPC-5 will consist of two fiber pairs. One fiber pair will be used for service while the other will be used for restoration. The "loop" configuration of TPC-5, along with a fully redundant restoration pair, provides 100 percent fiber-on-fiber restoration and route diversity within the network, resulting in a much higher circuit reliability. The TPC-5 operating capacity of 4.8 Gigabits per second (Gbit/s) for each fiber pair, service and restoration, consists of 32 Basic System Modules (BSM) operating at 155 Megabits per second (Mbit/s), with each BSM consisting of ****7759** 63 Minimum Investment Units (MIUs). [FN7] The Design Capacity per fiber pair is 2,016 MIUs. For voice services, digital circuit multiplication equipment (DCME) can be employed to derive about 150 virtual voice paths from a MIU, for a per fiber pair capacity of over 300,000 virtual voice paths. The Joint Applicants also state that TPC-5's new lightwave amplification repeaters will deploy the latest in digital lightwave technology in the Pacific Ocean Region (POR) and will provide users with an ever widening range of technological alternatives and services.

6. The estimated total cost of TPC-5 is $1,348 million. The Joint Applicants' share of costs is $705.6 million, which will be allocated proportionally to each U.S. owner, by segment, based on their percentage ownership interest in each segment contained in Schedule B of the C & MA. The estimated costs include neither the U.S. carriers' cost for interest during construction, currently projected at $229 million for the network, nor the cost of DCME, which is not considered part of the cable network. Fixed costs (95%) include the submarine cable, the repeaters, the terminal transmission equipment and the high voltage power plant. Suppliers' cost-incurred items (5%) include the costs associated with cable laying, route survey, plowing and burial of the cable, project management, owners' inspection and amounts payable for customs duties and value-added taxes.

7. The Joint Applicants' collective voting interest in TPC-5 is 50.65 percent, with ownership interests in Segments G, H, I and J divided principally between AT & T and KDD. [FN8] Segments T1 and T2 will be owned by AT & T and KDD respectively. [FN9] The allocation of capital and operating and maintenance costs of Segments A-J, T1, and T2 are shared by the Joint Applicants, with AT & T's share at 34 percent and KDD's at 14 percent. [FN10] The Joint Applicants also show capacity assigned to each of the owners upon which the costs are based. [FN11] These capacity assignments, based on forecasted demand through 2010, contemplate each Joint Applicant's proposed utilization of DCME. The Joint Applicants note that current capacity assignments reflect 52 percent of Design Capacity. Both prior and subsequent to the Network Ready for Service (RFS) date, December 31, 1996, carriers, including non-owners of TPC-5, may acquire TPC-5 capacity by IRU, lease or other mutually agreed upon arrangements.

[FN12]
***3** 8. The Joint Applicants state that AT & T and KDD will likely supply portions of TPC-5. Contracts are being negotiated for AT & T to supply Segments G, H, T1 and approximately one half of Segment J, and for KDD to supply Segments I and T2 and approximately one-half of Segment J. The Joint Applicants expect that a multitude of United States subcontractors located through out the country will participate in the construction or provision of materials for the project. [FN13]

9. In addition, the Joint Applicants note that portions of the TPC-5 cable will use AT & T's latest SL2000 technology, which relies on digital lightwave amplification technology and dispersion shifted optical fiber that will increase capacity and reliability of previous submarine technology. The network interface equipment will also employ the STM-1 CCITT Synchronous Digital Hierarchy (SDH) standard that will further enhance monitoring and reliability, as well as interoperability. The Joint Applicants add that TPC-5's network reliability is enhanced by the use of this innovative technology. Since the SL2000 technology uses optically amplified repeaters that have been designed with far fewer active components than regenerative repeaters, the likelihood and number of component malfunctions is minimized. Furthermore, TPC-5 introduces innovative self-healing (self-restoration) technology which ensures 100 percent digital fiber optic reliability for TPC-5. Moreover, TPC-5's fully redundant restoration fiber pair can serve as an alternative restoration source for submarine cable systems in the POR in the event of an outage.

10. The Joint Applicants state that the placing into service of TPC-5 is expected to be followed by a rapid growth of reliable, secure and economically priced telecommunications services based upon digital lightwave technology. In addition, the Joint Applicants state that TPC-5 will provide the third common carrier fiber optic submarine cable directly linking the U.S. Mainland and Hawaii, and the second common carrier fiber optic submarine cable directly linking the U.S. Mainland and Japan. With a transpacific capacity of 2,016 MIUs per fiber pair, the Joint Applicants state that TPC-5 is a significant part of the common carrier network designed for the POR. Furthermore, they note that TPC-5 will provide additional digital connectivity to the existing and planned HAW-4/TPC-3, HAW-5, TPC-4, G-P-T, H-J-K, PacRimEast, PacRimWest and TASMAN-2 Cable Systems and introduce a new level ***7760** of restoration capability to submarine cable facilities in the POR as a result of its unique loop configuration with a completely redundant restoration fiber pair. Moreover, the Joint Applicants note that TPC-5 will allow digital restoration for other cable systems in the POR and will significantly increase the number of transmission paths across the Pacific Ocean, thereby enhancing service reliability. Finally, path diversity among the U.S. Mainland, Hawaii, Guam and Japan will be enhanced by the additional facility at Coos Bay, Oregon.

II. DISCUSSION

***4** 11. The Joint Applicants seek authority to construct and operate TPC-5 to begin service in late 1996 to meet their telecommunications capacity needs and those of their correspondents in the POR during the 1996-2010 time frame. We have reviewed the Joint Application under the public convenience and necessity standard of Section 214 of the Communications Act of 1934, as amended, and

conclude that implementation of TPC-5 in 1996 will serve the public interest. Accordingly we grant the Joint Application subject to certain conditions. [FN14]

A. The Need for the TPC-5 Cable Network

12. Section 214 of the Communications Act requires that the Commission make a finding that the public convenience and necessity will be served by authorization of the facilities requested in the Joint Application by determining "whether the specific facility chosen and the use to be made of that facility are required by the public convenience and necessity." [FN15] In making this determination, we traditionally have considered such factors as demand, cost, media and route diversity, restoration, intramodal and intermodal competition, technological innovations and international comity. [FN16]

1. Demand, Capacity and Demand Flexibility

13. We conclude that projected circuit demand, along with other factors, supports the construction and operation of TPC-5 to meet the telecommunications needs of the Joint Applicants and their correspondents in the POR during the 1996-2010 time frame. The circuit demand data for TPC-5, provided by the Joint Applicants under a confidential cover, forecasts the number of 64 Kbit/s bearer circuits to be activated during the period of 1996 through 2000. [FN17] Based on these forecasts, we find that existing digital submarine cable systems in the POR (TPC-3 and TPC-4) will be unable to meet the Joint Applicants' circuit demands within the first three years of TPC-5's operation. According to the Joint Applicants' forecasted requirements, their demand for TPC-5 cable circuits in 1998 will be 23,998 Minimum Assignable Units of Ownership (MAUOs) which exceeds the total Design Capacity of TPC-3 and TPC-4 combined. [FN18] The Joint Applicants' forecasts suggest that demand by the year 2000 will be 31,695 MAUOs, well in excess of capacity of existing digital cable systems in the POR, and 52.4 percent utilization of TPC-5's capacity. Furthermore, we traditionally have recognized a need to ensure sufficient demand flexibility to avoid service disruptions caused by saturated facilities. [FN19]

14. We recognize that there are uncertainties inherent in long-range traffic projections, [FN20] but new technology that increases capacity, reliability and quality is likely to spur demand for new digitized services and could very well stimulate circuit demand beyond the Joint Applicants' projected traffic forecasts. Circuit costs of TPC-5 will be lower than previous cable systems [FN21] which should exert beneficial downward pressure on the rates for international circuitry as well as stimulate increased demand. Moreover, TPC-5's self-healing technology will also make it more attractive to customers with specific requirements for fiber optic cable facilities for data transmission and who prefer to have similar facilities for restoration in the event of an outage. These factors should also stimulate user demand since, in addition to the need for raw transmission capacity, user demand is similarly determined by user requirements for digital technology, route and media diversity, advanced digital cable restoration capabilities, security and cost-effectiveness. [FN22] In light of the above and the new technology introduced by this cable network, we conclude TPC-5 is justified.

***5** 2. Quality of Service

15. Media and Route Diversity. Media diversity enhances service reliability through the use of more than one transmission medium, satellite or cable, to

carry a correspondent's traffic. Like media diversity, route diversity enhances service reliability by increasing the number of independent routes that carry traffic to a given location. As a rule, the more independent routes serving a given location, the greater the ability to restore one that fails.

16. We conclude that the introduction of TPC-5 as proposed will enhance media and route diversity by adding another independent cable route. Service reliability would be substantially improved since the number of circuits affected by a service interruption on a particular route or routes would be minimized and the ability to restore service via another cable facility would be enhanced. TPC-5 is designed to operate as part of an integrated common carrier **7761 digital facilities network in the POR. It will provide critical digital interconnection with HAW-3/TPC-2, HAW-4/TPC-3, TPC-4, G-P-T, H-J-K, AZCAN, ASEAN, OLUHO, OKITAL, NPC, TAIGU, TAILU and TASMAN-2 and will provide future interconnection with HAW-5, PacRimEast and PacRimWest cable systems. It will also provide additional direct submarine links between the U.S. Mainland, Hawaii, Guam and Japan.

17. Restoration. Restoration pertains to the ability to maintain service in the event of a facility outage. TPC-5 offers a unique self-healing fiber-on-fiber restoration system that provides consumers with 100 percent restoration capability for TPC-5 in the event of an outage. Although the Commission has previously recognized that satellite capacity provides a satisfactory restoration alternative for cable, we also have recognized that absolute reliance on satellite facilities to meet restoration needs and increased demand may not be in the best interests of users that may have specific communications requirements better accommodated by fiber optic cable facilities. [FN23] TPC-5's self-healing (self-restoration) design is facilitated by the ring or loop architecture of the cable network which, in the event of an outage in one segment, enables traffic to be instantaneously re-routed to the appropriate segment of the restoration fiber pair with no discernable difference in transmission quality. This fast switching capability is made possible by the use of SDH technology which provides a standard interface that will permit flexible drop-insert multiplexing capabilities and cross-connect functions that should simplify multiplexing and demultiplexing.

18. The new SDH technology and fully redundant fiber pair introduced by TPC-5 reduces the Joint Applicants' reliance on existing cable and satellite facilities for restoration in the event of a failure of a TPC-5 segment, which is particularly important as TPC-5's own Design Capacity could not be restored by existing cable or satellite technology. The self-healing feature is also significant since reliance on existing cable or satellite facilities as a restoration alternative is subject to the availability of circuits.

*6 3. Cost Analysis

19. The Joint Applicants estimate the total cost of TPC-5 to be $1.348 billion, with their share projected to be $705.6 million. The estimated original capital cost of a 64-Kilobits per second (Kbit/s) half channel (half-MAUO), based on the levels subscribed at the first Data Gathering Meeting, is approximately $3,000 for a Guam-Japan Circuit, $11,900 for a U.S. Mainland-Hawaii-Guam circuit and $9,000 for U.S. Mainland-Japan circuit. The Joint Applicants note that the unit cost of a virtual voice path in TPC-5 will be

further reduced through the use of digital circuit multiplication technology, which can derive nominally 150 virtual voice channels from a MIU (30 MAUOs). A comparison of the costs for previously authorized digital cable facilities in the POR demonstrates that TPC-5 will continue the trend of providing increased capacity while reducing per circuit costs. For example, the cost of a half-MAUO on a fully subscribed TPC-4 Japan-U.S. Mainland segment was $11,545 and a half-MAUO on HAW-4/TPC-3 was $40,000. The estimated cost for a half-MAUO on a fully subscribed TPC-5 is $4,900 for a U.S. Mainland-Japan circuit, and $8,000 for a U.S. Mainland-Hawaii-Guam-Japan circuit.

4. Technological Innovations

20. In addition to demand, it is necessary to consider factors such as promoting the development and rapid implementation of new technologies and service quality in determining the timing of the introduction of new facilities. The Commission has a long standing policy of favoring the development and rapid implementation of new technologies. [FN24] The proposed TPC-5 Cable Network will introduce significant technological developments into the submarine cable field which in turn will provide substantial benefits to users. Portions of the TPC-5 cable will use AT & T's latest SL2000 technology, which is based on a unique packaging of components and technology using, for the first time, optically amplified bit-rate insensitive repeaters, bit-rate sensitive terminal equipment, and dispersion-shifted fiber in a submarine cable system. [FN25] As the Joint Applicants noted, the optically amplified repeaters have been designed with far fewer active components than regenerative repeaters and as a result the likelihood and number of component malfunctions is minimized. Use of these repeaters and other components will permit a fiber pair in TPC-5 to operate at 4.8 Gbit/s, resulting in the operating fiber pair being capable of providing 60,480 MAUOs. This is eight times the capacity provided by TPC-4 which operates at 565 Mbit/s and provides 7,560 MAUOs per fiber pair. [FN26] The new technology for use in TPC-5 will also significantly reduce the cost per MAUO. The cost per half-MAUO on the direct U.S. Mainland to Japan route over TPC-5, when the cable is fully utilized, is projected to be $4,900--less than half of the $11,545 cost per half-MAUO for the direct U.S. Mainland to Japan route on TPC-4.

5. Competition Considerations

***7** 21. Intermodal and Intramodal Competition. We find that the introduction of TPC-5 will enhance intramodal competition in the POR and encourage both private and common carrier cable operators to innovate and price their ****7762** offerings in a manner that is calculated to attract and retain customers. We also find that the introduction of TPC-5 will increase intermodal competition with INTELSAT and potential separate satellite system providers, spurring existing providers of both cable and satellite capacity to respond competitively. Such competition will give service providers and other users greater choice in selecting facilities and thus will enable them to maintain, or improve and enhance, the economy and efficiency of their operations. The opportunity to choose among a range of facilities further allows service providers to be more responsive to customer needs in terms of price, service quality, and service availability.

22. Competitive Procurement. While expressly supporting the construction of

TPC-5, STC requests the Commission to condition approval of the Section 214 authorization and accompanying cable landing license, as it did in the Pacific Telecom Cable order (PTC), [FN27] by requiring the Joint Applicants to use a fair and open procurement process in awarding the construction contracts for TPC-5. STC claims that such a procurement process has not been used by the Joint Applicants since the procurement of the cable system has been apparently predetermined, with construction to be split between AT & T and KDD. STC asserts that the proposed new technology is not uniquely available from AT & T and that STC, along with other suppliers of systems and component parts, could offer compatible technology. STC also argues that a fair and open procurement process would ensure that consumers will gain the full benefits of competition, such as the lowest cost, most advanced features and the highest quality and reliability, in the supply of communications services and in the construction of the underlying facilities. STC also notes that open procurement reinforces the U.S. government's efforts to open telecommunications markets world wide.

23. Although STC cites Pacific Telecom Cable as precedent for its request that we condition this Section 214 authorization and the accompanying cable landing license, we note that PTC involved only a cable landing license for the North Pacific Cable (NPC), a non-common carrier submarine cable. We have never imposed conditions on procurement practices in a Section 214 authorization. With respect to STC's reference to PTC, the Commission did authorize only a conditional grant of PTC's cable landing license. In that instance, the Commission had specific concerns that foreign interests would be favored over U.S. interests due to the actual foreign ownership of the U.S. end, as well as the potential common foreign ownership of both the U.S. and foreign end, of NPC. Due to those particular concerns, we found it necessary to condition the cable landing license upon PTC's demonstrating that "U.S. entities will be provided a reasonable opportunity to participate in the planning, manufacture, installation, operation and maintenance of the proposed cable."

***8** 24. We believe that the Joint Applicants demonstrate that qualified suppliers will be afforded a reasonable opportunity to participate in the procurement of TPC-5. In this instance, although AT & T technology will be used for the U.S. portion of TPC-5, AT & T will not acquire the cable on a sole source, non-competitive basis. As the Joint Applicants state, the U.S.-supplied segments of TPC-5 will employ approximately 60-65 subcontractors located in more than 15 states to provide components or materials for the construction of TPC-5; moreover, each of these subcontractors will also engage suppliers for components or materials, so that the number of companies affected by the construction of TPC-5 will be considerably greater than the number of immediate subcontractors. [FN28] Furthermore, under price caps regulation, AT & T has the incentive to subcontract with those suppliers that offer a competitive price. Moreover, we believe that the presence of competing cable facilities in the POR, including NPC, will continue to serve as a strong incentive for efficient procurement. As we decided in TPC-4, given these competitive market circumstances, we can find no public interest benefit for involving the Commission in the management of TPC-5 procurement decisions, and we do not believe that it is necessary to condition the grant of TPC-5 on assurances of competitive procurement practices. [FN29]

6. International Comity

25. Forty-four telecommunications administrations and entities from thirty-one foreign locations have agreed that the TPC-5 system design and 1996 service date will meet the projected service needs of their customers. Thus, we conclude that TPC-5 will promote international comity.

B. The Effect of Price Caps Regulation

26. In our TPC-4 Decision, we stated that the price caps system of regulation is a disincentive for carriers to engage in the construction of unnecessary facilities since the burden of such investment would fall on stockholders and not ratepayers. [FN30] Having determined that there is a need for the introduction of the TPC-5 Cable Network in late 1996, we believe that the price caps system of regulation provides added protection against unnecessary investment. We also note that current competitive conditions and regulatory approaches provide those Joint Applicants not subject to price caps regulation with the incentive to make rational economic decisions and not engage in unnecessary construction of facilities. [FN31] In particular, the Commission recognizes that any such unnecessary investment by Joint Applicants not subject to price cap regulation requires them to have the ability to raise rates to recoup such investment. As a result, those Joint Applicants not subject to price caps that raise rates above those set by the marketplace to recover imprudent investments risk the loss of potential customers. [FN32]

****7763** CONCLUSION AND ORDERING CLAUSES

27. In view of the foregoing, we find that the present and future public convenience and necessity require the construction of the TPC-5 Cable Network, to become operational in December 1996.

***9** 28. Based on the information provided by the Joint Applicants, we conclude that the grant of the requested authorization will not have a significant effect on the environment as defined in Section 1.1307 of the Commission's Rules and Regulations implementing the National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321-4335 (1976). [FN33] Consequently, no environmental assessment is required to be submitted with this Joint Application under Section 1.1311 of the Commission's Rules.

29. Accordingly, IT IS ORDERED that, pursuant to Section 214, 47 U.S.C. § 214 (1982), application File No. **I-T-C-92-179** of the Joint Applicants (AT & T, IDB, HTC, IT & E, MCII, Sprint and TRT/FTC) IS GRANTED, subject to the following terms, conditions, and limitations, and the Applicants are authorized to:

(a) participate in the construction and operation of the TPC-5 Cable Network as proposed herein;

(b) acquire and activate capacity in the TPC-5 Cable Network, on an ownership basis, in accordance with the interest indicated in Appendix 5;

(c) acquire capacity, by lease, in such domestic connecting facilities as may be required to extend capacity in the TPC-5 Cable Network;

(d) utilize digital circuit multiplication equipment to derive additional voice paths from the circuits (MIUs) authorized herein, in accordance with the appropriate Commission authorizations; and

(e) activate and operate capacity in the TPC-5 Cable Network and aforementioned extension facilities for the provision of the Applicants' authorized telecommunications services.

30. IT IS FURTHER ORDERED that Applicants, other than AT & T, are authorized to acquire, by lease, appropriate connecting facilities between the Coos Bay, Oregon and San Louis Obispo, California cable stations and their respective operating offices in the United States.

31. IT IS FURTHER ORDERED that the Joint Applicants' tariffs must state that its customers may not resell international private lines or connect them to the public switched network for the provision of international basic telecommunications services, unless authorized to do so by the Commission upon a country-specific finding of resale opportunities equivalent to those available under U.S. law, in accordance with Regulation of International Accounting Rates, Phase II, First Report and Order, 7 FCCRcd 559 (1991), petitions for reconsideration pending.

32. IT IS FURTHER ORDERED that the Joint Applicants shall make available half-interests in TPC-5 capacity to such present and future U.S. carriers as may be authorized by the Commission to acquire such capacity.

33. IT IS FURTHER ORDERED that the Commission retains jurisdiction to reallocate U.S. carriers' interest in capacity herein authorized, as the public interest may require, to accommodate additional carriers or otherwise, with, where required, the concurrence of the foreign administration or carriers concerned, and further, jurisdiction is retained by the Commission over all matters relating to the Joint Applicant's ownership, management, maintenance and operation of the cable network as authorized herein to ensure the most efficient use not only of this cable network but of all means of communications between the U.S. and the Pacific Ocean Region.

***10** 34. IT IS FURTHER ORDERED that the Commission retains jurisdiction to review the DCME multiplexing and interworking arrangements and attribution of the costs thereof and to require such changes in the provision of these services and equipment as may be necessary.

35. IT IS FURTHER ORDERED that no Joint Applicant herein that is deemed a dominant carrier pursuant to the Commission's decision in CC Docket No. 85- 107 [FN34] shall either dispose of any interest in TPC-5 capacity it is authorized to acquire to any entity on an ownership basis or dispose of any interest in any such capacity in any way to a non-U.S. telecommunications service provider without prior authorization by the Commission.

36. IT IS FURTHER ORDERED that the Joint Applicants shall include TPC-5 facility use in the monthly Circuit Status Reports filed pursuant to the Commission's Orders. These reports shall be filed no later than the 20th day of each month providing the information for the preceding month.

37. IT IS FURTHER ORDERED that STC's request to condition the Section 214 authorization of TPC-5 is hereby denied.

38. This order is issued under Section 0.291 of the Rules and is effective upon adoption. Petitions for reconsideration under Section 1.106 or applications for review under Section 1.115 of the Rules may be filed within 30 days of public notice of this order (see Section 1.4(b)(2)).

FEDERAL COMMUNICATIONS COMMISSION
Cheryl A. Tritt
Chief, Common Carrier Bureau

FN1. The Joint Applicants supplement their Section 214 Application by filing

individual circuit activation figures under separate cover and under a request for confidentiality pursuant to Sections 0.457 and 0.459 of the Commission's Rules.
FN2. See File No. SCL-92-005.
FN3. Sprint and MCII did not join in this Reply. See Reply at 1.
FN4. Initially, all Joint Applicants may not be certified to serve directly all territories which the facilities covered by the Joint Application are capable of serving. Each individual applicant proposing extension into such territories by means of the TPC-5 facilities will be required to seek appropriate authority as may be required.
FN5. See Attachment B to the Joint Application (filed, June 1, 1992).
FN6. Segments A, B, C, D, E, and F are, respectively, the cable stations at Coos Bay, Oregon (U.S.), San Luis Obispo, California (U.S), Keawaula, Hawaii (U.S.), Tumon Bay, Guam (U.S.), Miyazaki and Ninomiya, Japan. Segment G consists of the whole submarine cable provided between and including the Network Interfaces at Segments B and C. Segment H consists of the whole submarine cable provided between and including the Network Interfaces at Segments C and D. Segment I consists of the whole submarine cable and Network Interfaces provided between and including Segments D and E. Segment J consists of the whole submarine cable and Network Interfaces between Segments F and A. Segment T1 consists of the whole submarine cable and Network Interfaces between and including Segments A and B. Segment T2 consists of the whole submarine cable and Network Interfaces provided between and including Segments E and F. AT & T will own and the other parties will have IRU interests in Segments A, B, C, D, and T1; Kokusai Denshin Denwa Co., Ltd. (KDD) will own and other parties will have IRU interests in Segments E, F, and T2. (See Attachment A).
FN7. A MIU is a 2.048 Mbit/s digital stream jointly assigned between two parties or wholly assigned to a party which is used for purposes of ownership allocation.
FN8. See Appendix 1 (Schedule B of the C & MA) and Appendix 2 (Schedule C of the C & MA). For the purposes of this agreement, Transpacific shall be assigned all of AT & T's interests in the TPC-5 Cable Network within Japan, including its territorial waters, and will be responsible for the capital, operating, and maintenance costs of 34.47 percent of segments I and J within Japan, including its territorial waters.
FN9. See Appendix 3 (Schedule D of the C & MA) which shows IRU interests in Segments T1 and T2.
FN10. See Appendix 4 (Schedule E of the C & MA).
FN11. See Appendix 5A, 5B, 5C, 5D, 5E, 5F, and 5G (Schedule F, G-1, G-2, G-3, G-4, G-5, and G-6, respectively). The interests assigned represent the total Assigned Capacity and the remaining capacity between Assigned Capacity and Design Capacity is referred to as "unassigned capacity."
FN12. However, prior to the RFS date, capacity may also be acquired on an ownership basis.
FN13. Specifically, 60-65 subcontractors located in more than 15 states will participate in the construction or provision of components or material for the construction of TPC-5. See AT & T Supplemental Filing, dated October 13, 1992.
FN14. In a separate companion order, we also grant the Joint Applicants' request

for a cable landing license (File No. S-C-L-92-005) pursuant to the Cable Landing License Act.
FN15. See AT & T et al., (TAT-7 Order), 73 FCC2d 248, 256 (1979).
FN16. See, e.g., AT & T et al. 4 FCCRcd 1129, 1131 (Com.Car.Bur.1988) (TAT-9 Order). See also Policies to be Followed in the Authorization of Common Carrier Facilities to Meet Pacific Telecommunications Needs during the Period 1981-1985 (POR Planning), 102 FCC2d 353, 355 (1985) and North Atlantic Facilities Planning, 3 FCCRcd 3979, 3986 (1988); All America Cable and Radio Inc., et al., 67 FCC2d 451, 469 (1978).
FN17. The Joint Applicants' aggregate demand forecast for TPC-5 from 1996-2000 is 16,508, 20,456, 23,998, 27,798 and 31,695 MAUOs respectively.
FN18. The total design capacity of TPC-3 is 7,560 MAUOs, while TPC-4 has a total design capacity of 15,120 MAUOs, for a total combined capacity of 22,680 MAUOs in the POR. See AT & T et al., Memorandum Opinion, Order and Authorization, File No. I-T-C-85-219, released January 7, 1986 (mimeo 1794) (TPC-3 Decision); AT & T et. al., 4 FCCRcd 8046 (1989) (TPC-4 Decision).
FN19. As in the TAT-8 Decision, we have focused on a 20 percent demand flexibility (i.e., the ability to accommodate a circuit demand 20 percent larger than that forecast) as a reasonable measure of adequate demand flexibility.
FN20. See American Telephone & Telegraph Co., et al., 98 FCC2d 440, 467 (1984) (TAT-8 Decision).
FN21. See infra para. 20.
FN22. American Telephone & Telegraph Co. et al., 7 FCCRcd 445 (1992) (TAT-10 Decision)
FN23. See North American Facilities Planning, 3 FCCRcd at 3987.
FN24. ITT Cable and Radio, Inc., 5 FCC2d 823, 831 (1965). The Commission noted that the technological innovations of the proposed submarine cable system would provide more than five times the circuit capacity of previous cables and would lower per circuit costs, finding that "... orderly and continuing progress in cable technology and its application as an alternative means of providing overseas communications service is in the public interest." In our TAT-8 Decision, we found that demand did not justify placing the cable in service, however, we concluded that the introduction of the new fiber technology and other factors warranted authorizing TAT-8. See TAT-8 Decision, 98 FCC2d at 467 and Policies for Overseas Common Carriers, 84 FCC2d 760, 767-768, (1981).
FN25. Dispersion Shifted Fiber is a single mode fiber optimized for operation with optical amplifier systems in the 1550 nm wavelength region. This fiber differs from standard single mode fiber in that the optical characteristics of the fiber are modified so the minimal pulse spreading or dispersion occurs in the 1550 nm wavelength region rather than in the 1300 nm region. The combination of minimum dispersion and minimum loss maximize the information carrying capacity of the optical transmission systems operating in the 1550 nm region.
FN26. TPC-4 utilizes two working fiber pairs to provide a total of 15,120 MAUOs.
FN27. Pacific Telecom Cable, Inc., 2 FCCRcd 2686 (1987) (Conditional license), 4 FCCRcd 8061 (1989) (Final license).
FN28. The Joint Applicants assert that TPC-5 will benefit the U.S. economy generally and the U.S. submarine cable industry specifically by promoting a

leadership role for U.S. industry in lightwave technology, ensuring that the U.S. submarine cable industry is a viable competitor in the global market.
FN29. See TPC-4 Decision, 4 FCCRcd at 8046. The Commission came to the same conclusion in response to similar comments filed by STC following the public notice of TPC-4.
FN30. Id. at 8045.
FN31. See Policy and Rules Concerning Rates for Dominant Carriers, CC Docket No. 87-313, 4 FCCRcd 2873 (1989) (Price Caps Order).
FN32. See International Competitive Carrier Policies, 102 F.C.C.2d 812, 829 (1985) (International Competitive Carrier); recon. denied, 60 RR2d 1435 (1986); US Sprint Communications Company Limited Partnership, 4 FCCRcd 6279, 6284 (Com.Car.Bur.1989).
FN33. See File No. **I-T-C-92-179**, at p. 23.
FN34. See International Competitive Carrier, at 822.

****7764** APPENDIX 1

SCHEDULE B
INVESTMENT SHARES AND VOTING INTERESTS IN THE TPC-5 CABLE NETWORK

PARTIES	PERCENT
APTT (Austria)	0.02826
AT & T	34.46616
BT (U.K)	1.10501
BTE (Ireland)	0.23503
CPRM (Portugal)	0.02826
DACOM (Korea)	1.39406
DBP (Germany)	1.66034
DGT (China)	0.76709
ENTEL (Peru)	0.05651
ETPI (Philippines)	0.02826
FT (France)	0.75263
HKTI (Hong Kong)	1.70173
HTC	1.42398
IDB	0.19780
IDC (Japan)	4.31816
INDOSAT (Indonesia)	0.15076
IT & E	0.08394
ITALCABLE (Italy)	0.50314
ITDC (Taiwan)	2.15062
ITJ (Japan)	6.56775
KDD (Japan)	14.97186
KT (Korea)	3.88483
LPT (Luxembourg)	0.02826
MCII	8.00569
MCL (U.K.)	1.45723
NPTT (Netherlands)	0.14128
NT (Norway)	0.02826

OTC (Australia)	1.16352
PHILCOM (Philippines)	0.16273
PLDT (Philippines)	3.70349
RTT (Belgium)	0.32878
SFPT (Finland)	0.02826
SPTT (Switzerland)	0.32878
STA (Sweden)	0.02826
TAS (Singapore)	0.80150
TD (Denmark)	0.05651
TELEGLOBE (Canada)	0.07563
TELINTAR (Brazil)	0.02826
TELMEX (Mexico)	0.11303
TM (Malaysia)	0.45344
TNZI (New Zealand)	0.10355
TPTT (Turkey)	0.00947
TRT/FTC	0.39560
US SPRINT	6.08239
TOTAL	100.00000

29-Jan-92

****7765** APPENDIX 2

SCHEDULE C
OWNERSHIP INTERESTS IN SEGMENTS G, H, I, AND J

PARTIES	PERCENT
APTT	0.02826
AT & T	34.46616
BT	1.10501
BTE	0.23503
CPRM	0.02826
DACOM	1.39406
DBP	1.66034
DGT	0.76709
ENTEL	0.05651
ETPI	0.02826
FT	0.75263
HKTI	1.70173
HTC	1.42396
IDB	0.19780
IDC	4.31816
INDOSAT	0.15076
IT & E	0.08394
ITALCABLE	0.50314
ITDC	2.15052
ITJ	6.56775
KDD	14.97186

KT	3.88483
LPT	0.02826
MCII	8.00589
MCL	1.45723
NPTT	0.14128
NT	0.02826
OTC	1.16352
PHILCOM	0.16273
PLDT	3.70349
RTT	0.32878
SFPT	0.02826
SPTT	0.32878
STA	0.02826
TAS	0.80150
TD	0.05651
TELEGLOBE	0.07563
TELINTAR	0.02826
TELMEX	0.11303
TM	0.45344
TNZI	0.10355
TPTT	0.00947
TRT/FTC	0.39580
US SPRINT	6.08239
TOTAL	100.00000

NOTE 1: For purposes of this Agreement, Transpacific shall be assigned all of the AT & T interests in the TPC-5 Cable Network within Japan including its territorial waters and shall be responsible for the capital, operating, and maintenance costs of 34.4??10% of segments I and J within Japan, including its territorial waters.

****7766** APPENDIX 3

SCHEDULE D

IRU INTERESTS IN SEGMENTS T1 AND T2

PARTIES	SEGMENT T1 PERCENTAGE	SEGMENT T2 PERCENTAGE
APTT	0.02826	0.02826
AT & T	[FN*] N.A. (NOTE 1)	34.46616
BT	1.10501	1.10501
BTE	0.23503	0.23503
CPRM	0.02826	0.02826
DACOM	1.39406	1.39406
DBP	1.66034	1.66034
DGT	0.76709	0.76709
ENTEL	0.05651	0.05651
ETPI	0.02826	0.02826
FT	0.75263	0.75263

HKTI	1.70173		1.70173
HTC	1.42396		1.42396
IDB	0.19780		0.19780
IDC	4.31816		4.31816
INDOSAT	0.15076		0.15076
IT & E	0.08394		0.08394
ITALCABLE	0.50314		0.50314
ITDC	2.15052		2.15052
ITJ	6.56775		6.56775
KDD	14.97186	*N.A.	(NOTE 1)
KT	3.88483		3.88483
LPT	0.02826		0.02826
MCII	8.00569		8.00589
MCL	1.45723		1.45723
NPTT	0.14128		0.14128
NT	0.02826		0.02826
OTC	1.16352		1.16352
PHILCOM	0.16273		0.16273
PLDT	3.70349		3.70349
RTT	0.32878		0.32878
SFPT	0.02826		0.02826
SPTT	0.32878		0.32878
STA	0.02826		0.02826
TAS	0.80150		0.80150
TD	0.05651		0.05651
TELEGLOBE	0.07563		0.07563
TELINTAR	0.02826		0.02826
TELMEX	0.11303		0.11303
TM	0.45344		0.45344
TNZI	0.10355		0.10355
TPTT	0.00947		0.00947
TRT/FTC	0.39580		0.39580
US SPRINT	6.06239		6.06239

FN* --NOT APPLICABLE

NOTE 1: Segments T1 and T2 are owned by AT & T and KDD respectively. Other Parties have IRU interests in these segments as specified above.

NOTE 2: For purposes of this Agreement, Transpacific shall be assigned all of the AT & T interests in the TPC-5 Cable Network within Japan, including its territorial waters.

****7767** APPENDIX 4

SCHEDULE E
ALLOCATION OF CAPITAL AND OPERATION AND MAINTENANCE COSTS OF SEGMENTS A, B, C, D, E, F, G, H, I, J, T1, AND T2

PARTIES	PERCENT
APTT	0.02826

AT & T	34.46616
BT	1.10501
BTE	0.23503
CPRM	0.02826
DACOM	1.39406
DBP	1.66034
DGT	0.76709
ENTEL	0.05651
ETPI	0.02826
FT	0.75263
HKTI	1.70173
HTC	1.42398
IDB	0.19780
IDC	4.31816
INDOSAT	0.15076
IT & E	0.08394
ITALCABLE	0.50314
ITDC	2.15052
ITJ	6.56775
KDD	14.97186
KT	3.88483
LPT	0.02826
MCII	8.00569
MCL	1.45723
NPTT	0.14128
NT	0.02826
OTC	1.16362
PHILCOM	0.16273
PLDT	3.70349
RTT	0.32878
SFPT	0.02826
SPTT	0.32878
STA	0.02826
TAS	0.80150
TD	0.05851
TELEGLOBE	0.07563
TELINTAR	0.02826
TELMEX	0.11303
TM	0.45344
TNI	0.10355
TPTT	0.00947
TRT/FTC	0.39560
US SPRINT	6.08239
TOTAL	100.00000

****7768** APPENDIX 5A

SCHEDULE F

HALF MIU CAPACITY ASSIGNED BY PATH

KILOMETERS / PARTIES	USM-HA 4400	HA-GU 6800	GU-JA 2850	JA-USM 8500	USM-GU 11200	HA-JA 9650
APTT	0	0	0	1	0	0
AT & T	1008	1	0	411	212	6
BT	6	0	8	32	1	0
BTE	0	0	0	7	1	0
CPRM	0	0	0	1	0	0
DACOM	0	0	1	49	0	0
DBP	1	0	1	50	6	0
DGT	0	0	6	24	0	1
ENTEL	0	0	0	2	0	0
ETPI	0	0	0	1	0	0
FT	0	0	0	24	2	0
HKTI	0	1	2	10	37	0
HTC	16	25	5	0	0	18
IDB	0	0	0	7	0	0
IDC	0	0	40	136	0	3
INDOSAT	0	0	1	5	0	0
IT & E	0	0	1	0	2	0
ITALCABLE	1	0	1	13	3	0
ITDC	0	1	14	10	46	0
ITJ	0	0	39	206	0	10
KDD	0	0	40	496	0	18
KT	0	0	4	36	76	0
LPT	0	0	0	1	0	0
MCII	42	8	23	168	56	5
MCL	0	0	7	40	7	0
NPTT	0	0	0	5	0	0
NT	0	0	0	1	0	0
OTC	6	0	63	0	12	1
PHILCOM	0	1	3	0	3	0
PLDT	0	6	13	2	91	0
RTT	0	0	0	9	2	0
SFPT	0	0	0	1	0	0
SPTT	0	0	0	9	2	0
STA	0	0	0	1	0	0
TAS	0	1	4	17	7	0
TD	0	0	0	2	0	0
TELEGLOBE	0	0	5	1	0	0
TELINTAR	0	0	0	1	0	0
TELMEX	0	0	0	4	0	0
TM	0	0	3	6	6	1
TNZI	1	0	6	0	0	1
TPTT	0	0	1	0	0	0

TRT/FTC	0	0	0	14	0	0
US SPRINT	131	0	3	99	36	0
TOTAL	1212	44	294	1904	606	64

Note 1: The distance in kilometers of the Paths have been determined based on the cable length of the shortest route between the respective pair of the Nodes for the purpose of calculating the MIU-kilometers of the Parties. The distance of the Tie-Cable Segments will be excluded in the calculation of the MIU-kilometers.

****7769** APPENDIX 5B
SCHEDULE G1
U.S. MAINLAND-HAWAII
PATH ASSIGNMENT OF MIUS IN THE TPC5 NETWORK

JOINTLY ASSIGNED MIUS

PARTIES	OTC	TNZI	TOTAL
DBP	1	0	1
ITALCABLE	0	1	1
US SPRINT	5	0	5
TOTAL	6	1	7

WHOLLY ASSIGNED MIUS

PARTIES	
AT & T	504
BT	3
HTC	8
MCII	21
US SPRINT	63
TOTAL	599

SUMMARY

PARTIES	JOINTLY ASSIGNED	WHOLLY ASSIGNED	HALF MIU INTERESTS
AT & T	0	504	1008
BT	0	3	6
DBP	1	0	1
HTC	0	8	16
ITALCABLE	1	0	1
MCII	0	21	42

OTC	6	0	6
TNZI	1	0	1
US SPRINT	5	63	131
TOTAL	14	599	1212

****7770** APPENDIX 5C
SCHEDULE G2
HAWAII-GUAM
PATH ASSIGNMENT OF MIUS IN THE TPC5 NETWORK

JOINTLY ASSIGNED MIUS

PARTIES	HKTI	HTC	ITDC	PHILCOM	PLDT	TAS	TOTAL
AT & T	0	0	1	0	0	0	1
HTC	1	0	0	0	6	1	8
MCII	0	1	0	1	0	0	2
TOTAL	1	1	1	1	6	1	11

WHOLLY ASSIGNED MIUS

PARTIES	
HTC	8
MCII	3
TOTAL	11

SUMMARY

PARTIES	JOINTLY ASSIGNED	WHOLLY ASSIGNED	HALF MIU INTERESTS
AT & T	1	0	1
HKTI	1	0	1
HTC	9	8	25
ITDC	1	0	1
MCII	2	3	8
PHILCOM	1	0	1
PLDT	6	0	6
TAS	1	0	1
TOTAL	22	11	44

7 F.C.C.R. 7758
(Cite as: 1992 WL 690854, *10 (F.C.C.), 7 FCC Rcd. 7758, **7771)

****7771** APPENDIX 5D
SCHEDULE G3
GUAM-JAPAN
PATH ASSIGNMENT OF MIUS IN THE TPC5 NETWORK

JOINTLY ASSIGNED MIUS

PARTIES	DACOM	DGT	HKTI	IDC	INDOSAT	ITJ	KDO	KT	OTC	TOTAL
BT	0	0	0	0	0	0	0	0	8	8
DBP	0	0	0	0	0	0	0	0	1	1
HTC	0	0	0	2	0	1	2	0	0	5
IT & E	0	0	0	0	0	0	1	0	0	1
ITALCABLE	0	0	0	0	0	0	0	0	1	1
ITDC	0	0	0	2	0	4	6	1	1	14
MCII	0	0	0	5	0	2	7	1	8	23
MCL	0	0	0	0	0	0	0	0	7	7
OTC	1	5	2	3	1	1	11	2	0	26
PHILCOM	0	0	0	0	0	0	3	0	0	3
PLDT	0	0	0	5	0	5	3	0	0	13
TAS	0	0	0	2	0	2	0	0	0	4
TELEGLOBE	0	0	0	0	0	0	0	0	5	5
TM	0	0	0	0	0	1	0	0	2	3
TNZI	0	1	0	1	0	1	3	0	0	6
TPTT	0	0	0	0	0	0	0	0	1	1
US SPRINT	0	0	0	0	0	0	0	0	3	3
TOTAL	1	6	2	20	1	17	36	4	37	124

WHOLLY ASSIGNED MIUS

PARTIES	
IDC	10
ITJ	11
KDD	2
TOTAL	23

SUMMARY

PARTIES	JOINTLY ASSIGNED	WHOLLY ASSIGNED	HALF MIU INTERESTS
BT	8	0	8
DACOM	1	0	1
DBP	1	0	1
DGT	6	0	6

HKTI	2	0	2
HTC	5	0	5
IDC	20	10	40
INDOSAT	1	0	1
IT & E	1	0	1
ITALCABLE	1	0	1
ITDC	14	0	14
ITJ	17	11	39
KDD	36	2	40
KT	4	0	4
MCII	23	0	23
MCL	7	0	7
OTC	63	0	63
PHILCOM	3	0	3
PLDT	13	0	13
TAS	4	0	4
TELEGLOBE	5	0	5
TM	3	0	3
TNZI	6	0	6
TPTT	1	0	1
US SPRINT	3	0	3
TOTAL	248	23	294

****7772** APPENDIX 5E
SCHEDULE G4
JAPAN-U.S. MAINLAND
PATH ASSIGNMENT OF MIUS IN THE TPC5 NETWORK

JOINTLY ASSIGNED MIUS PARTIES	DACOM	DGT	ETPI	HKTI	IDC	INDOSAT	ITDC	ITJ	KDD	KT	PLDT	TAS	TM	TOTAL
APTT	0	0	0	0	0	0	0	0	1	0	0	0	0	1
AT & T	31	12	0	0	64	3	0	71	218	0	0	4	3	403
BT	0	0	0	0	3	0	0	0	21	1	0	0	1	32
BTE	0	0	0	0	1	0	0	1	1	0	0	0	0	3
CPRM	0	0	0	0	0	0	0	0	1	0	0	0	0	1
DBP	3	0	0	1	1?	0	0	7	1?	?	0	0	0	50
ENTEL	0	0	0	0	0	0	0	0	2	0	0	0	0	2
FT	0	0	0	1	3	0	0	3	1?	1	0	0	0	24
IDB	0	0	1	1	0	0	0	0	5	0	0	0	0	7
ITALCABLE	1	0	0	1	2	0	0	2	0	1	0	0	0	13
LPT	0	0	0	0	0	0	0	0	1	0	0	0	0	1
MCII	0	0	0	2	10	1	8	10	?4	1?	0	7	2	100
MCL	1	0	0	1	10	0	0	4	22	2	0	0	0	40
NPTT	0	0	0	1	1	0	0	1	2	0	0	0	0	8

NT	0	0	0	0	1	0	0	0	0	0	0	0	0	1
NTT	0	0	0	0	2	0	0	1	5	1	0	0	0	?
SFPT	0	0	0	0	0	0	0	0	1	0	0	0	0	1
SPTT	0	0	0	0	3	0	0	1	5	0	0	0	0	9
STA	0	0	0	0	0	0	0	0	1	0	0	0	0	1
TD	0	0	0	0	0	0	0	1	1	0	0	0	0	2
TELEGLOBE	0	1	0	0	0	0	0	0	0	0	0	0	0	1
TELINTAR	0	0	0	0	0	0	0	0	1	0	0	0	0	1
TELMEX	0	0	0	0	0	0	0	0	4	0	0	0	0	4
TRT/FTO	0	0	0	2	1	0	2	3	4	1	0	1	0	14
US SPRINT	0	0	0	0	12	1	3	1?	42	0	2	0	0	??
TOTAL	46	24	1	19	130	8	10	130	400	??	2	17	0	??2

PARTIES	WHOLLY ASSIGNED MIUS
AT & T	4
BTE	2
ITJ	3?
KDD	18
TOTAL	60

SUMMARY

PARTIES	JOINTLY ASSIGNED	WHOLLY ASSIGNED	HALF MIU INTERESTS
APTT	1	0	1
AT & T	403	4	411
BT	32	0	32
BTE	3	2	7
CPRM	1	0	1
DACOM	4?	0	4?
DBP	50	0	50
DGT	24	0	24
ENTEL	2	0	2
ETM	1	0	1
FT	24	0	24
HKTI	10	0	10
IDB	7	0	7
IDC	136	0	136
INDOSAT	?	0	?
ITALCABLE	13	0	13
ITDC	10	0	10
ITJ	13?	3?	20?

KDD	4?0	1?	4??
KT	3?	0	3?
LPT	1	0	1
MCII	100	0	100
MCL	40	0	40
NPTT	??	0	??
NT	1	0	1
PLDT	2	0	2
RTT	0	0	0
SFPT	1	0	1
SPTT	0	0	0
STA	1	0	1
TAS	17	0	17
TD	2	0	2
TELEGLOBE	1	0	1
TELINTAR	1	0	1
TELMEX	4	0	4
TM	??	0	??
TRT/FTC	14	0	14
US SPRINT	??	0	??
TOTAL	17?4	?0	1?04

****7773** APPENDIX 5F
SCHEDULE G5
U.S. MAINLAND-GUAM
PATH ASSIGNMENT OF MIUS IN THE TPC5 NETWORK

JOINTLY ASSIGNED MIUS

PARTIES	HKTI	IT & E	ITDC	KT	OTC	PHILCOM	PLDT	TAS	TM	TOTAL
AT & T	20	2	32	76	3	0	70	5	4	212
BT	0	0	1	0	0	0	0	0	0	1
BTE	0	0	0	0	1	0	0	0	0	1
DBP	0	0	1	0	2	0	3	0	0	6
FT	0	0	1	0	1	0	0	0	0	2
ITALCABLE	1	0	1	0	0	0	1	0	0	3
MCII	6	0	5	0	0	2	10	2	1	26
MCL	5	0	1	0	0	0	1	0	0	7
RTT	0	0	1	0	0	0	1	0	0	2
US SPRINT	5	0	3	0	5	1	5	0	1	20
TOTAL	37	2	46	76	12	3	91	7	6	280

WHOLLY ASSIGNED MIUS

PARTIES

MCII	15
SPTT	1
US SPRINT	8
TOTAL	24

SUMMARY

PARTIES	JOINTLY ASSIGNED	WHOLLY ASSIGNED	HALF MIU INTERESTS
AT & T	212	0	212
BT	1	0	1
BTE	1	0	1
DBP	6	0	6
FT	2	0	2
HKTI	37	0	37
IT & E	2	0	2
ITALCABLE	3	0	3
ITDC	46	0	46
KT	76	0	76
MCII	26	15	56
MCL	7	0	7
OTC	12	0	12
PHILCOM	3	0	3
PLDT	91	0	91
RTT	2	0	2
SPTT	0	1	2
TAS	7	0	7
TM	6	0	6
US SPRINT	20	8	36
TOTAL	560	24	608

****7774** APPENDIX 5G
SCHEDULE G6
HAWAII-JAPAN
PATH ASSIGNMENT OF MIUS IN THE TPC5 NETWORK

JOINTLY ASSIGNED MIUS

PARTIES	DGT	IDC	ITJ	KDD	TM	TOTAL
AT & T	0	0	1	5	0	6
HTC	1	3	6	8	0	18
MCII	0	0	0	5	0	5
OTC	0	0	0	0	1	1
TNZI	0	0	1	0	0	1

TOTAL	1	3	8	18	1	31

WHOLLY ASSIGNED MIUS PARTIES	
ITJ	1
TOTAL	1

SUMMARY

PARTIES	JOINTLY ASSIGNED	WHOLLY ASSIGNED	HALF MIU INTERESTS
AT & T	6	0	6
DGT	1	0	1
HTC	18	0	18
IDC	3	0	3
ITJ	8	1	10
KDD	18	0	18
MCII	5	0	5
OTC	1	0	1
TM	1	0	1
TNZI	1	0	1
TOTAL	62	1	64

****7775** ATTACHMENT A
TABULAR OR GRAPHIC MATERIAL SET FORTH AT THIS POINT IS NOT DISPLAYABLE

FCC
1992 WL 690854 (F.C.C.), 7 F.C.C.R. 7758, 7 FCC Rcd. 7758
END OF DOCUMENT