

C

DA 93-823

FEDERAL COMMUNICATIONS COMMISSION (F.C.C.)

*1 IN THE MATTER OF
AMERICAN TELEPHONE AND TELEGRAPH COMPANY
CICI, INC.
GTE HAWAIIAN TELEPHONE COMPANY INCORPORATED
MCI INTERNATIONAL, INC.
SPRINT COMMUNICATIONS COMPANY LIMITED PARTNERSHIP
TRT/FTC COMMUNICATIONS, INC.
WORLD COMMUNICATIONS, INC.

JOINT APPLICATION FOR AUTHORIZATION UNDER SECTION 214 OF THE COMMUNICATIONS ACT
OF 1934, AS AMENDED, TO CONSTRUCT, OPERATE AND ACQUIRE CAPACITY IN AND OPERATE
A HIGH CAPACITY DIGITAL SUBMARINE CABLE NETWORK BETWEEN AND AMONG THE UNITED
STATES MAINLAND, THE UNITED KINGDOM AND FRANCE.

File No. I-T-C-93-062

Adopted: July 7, 1993; Released: July 16, 1993

**4810 MEMORANDUM OPINION, ORDER AND AUTHORIZATION

By the Acting Chief, Common Carrier Bureau:

1. The Commission has under consideration the above-captioned Joint Application [FN1] filed on January 8, 1993 by seven United States International Service Carriers (hereinafter referred to as Joint Applicants). [FN2] The Joint Applicants seek authority, pursuant to Section 214 of the Communications Act of 1934, as amended, 47 U.S.C. § 214 (1982), and Section 63.01 of the Commission's Rules and Regulations, 47 C.F.R. § 63.01, to construct and operate a high capacity digital submarine cable system, known as the **TAT-12/TAT-13** Cable Network (**TAT-12/TAT-13**), extending from the United States mainland to the United Kingdom, then directly to France, and then directly back to the United States mainland. **TAT-12/TAT-13** will be jointly owned by the Joint Applicants and by foreign telecommunications entities in the following countries: Australia, Austria, Belgium, Canada, China, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Hong Kong, Hungary, Ireland, Italy, Japan, Korea, Luxembourg, Mexico, Netherlands, Norway, Philippines, Poland, Portugal, Singapore, Slovakia, Spain, Sweden, Switzerland, Taiwan, Turkey, and the United Kingdom. The Joint Applicants propose that **TAT-12/TAT-13** will be operational on August 31, 1996.

2. The Joint Applicants also seek authority to (a) acquire capacity in **TAT-12/TAT-13**; (b) acquire, by lease, such extension facilities as may be required to

extend capacity in **TAT-12/TAT-13**; (c) activate and operate capacity in **TAT-12/TAT-13** and in the extension facilities for the provision of their respectively authorized telecommunications services; (d) convey to their correspondents or to non-owners, half-interests, on an indefeasible right of user (IRU) basis, in certain capacity currently wholly assigned to a Joint Applicant, as necessary for such IRU recipients to provide their authorized services over **TAT-12/TAT-13**; and (e) multiply through the use of Digital Circuit Multiplication Equipment (DCME) the bearer channels acquired herein, thereby deriving up to the maximum attainable channels (to the extent such authorization is required for an individual Applicant).

3. The Joint Application was placed on public notice on January 6, 1993. No comments were received.

I. THE APPLICATION

*2 4. The Joint Applicants will use **TAT-12/TAT-13** to supplement their existing facilities in providing the services which each is currently furnishing or which each may subsequently furnish. [FN3] **TAT-12/TAT-13** will extend in a loop configuration from a landing point at the cable station at Green Hill, Rhode Island, to the cable station at Lands End, United Kingdom, to the cable station at Penmarch, France, to the cable station at Mastic Beach, New York, returning to the cable station at Green Hill, Rhode Island via a terrestrial tie cable. **TAT-12/TAT-13** will be connected in the United States mainland with U.S. domestic networks. In addition, it will be extended by suitable facilities to the terminals of other international communications systems, including other cable terminals and satellite earth stations. This will enable **TAT-12/TAT-13** to be used for services between and among the U.S. mainland, the United Kingdom, France, and points beyond.

5. The existing international facilities used by the Joint Applicants for services between the United States and those locations proposed to be served by the proposed capacity of **TAT-12/TAT-13** consist of satellite and submarine cable circuits. The satellite circuits between the U.S. earth stations and the INTELSAT Atlantic Ocean Region (AOR) satellite are acquired by the Joint Applicants from the Communications Satellite Corporation (Comsat) pursuant to Comsat's applicable tariffs and are used in conjunction with connecting circuits between the AOR satellites and foreign earth stations provided by the Joint Applicants' foreign correspondents. The AOR satellites and transatlantic submarine cable facilities used to provide these services are listed in the Application at p. 7.

6. The Construction and Maintenance Agreement (C & MA), [FN4] initialed on April 30, 1992, defines the proposed cable network in terms of Segments for ownership purposes. **TAT-12/TAT-13** will consist of eight such Segments. Segments A, B, C and D are, respectively, the cable station at Green Hill, Rhode Island; the cable station at Lands End, United Kingdom; the cable station at Penmarch, France; and the cable station in Mastic Beach, New York. Segment E is the submarine cable

linking Segments A and B; Segment F is the submarine cable linking Segments B and C; Segment G is the submarine cable linking Segments C and D; and Segment H is the terrestrial cable linking Segments A and D.

7. **TAT-12/TAT-13**, comprised of 2 fiber pairs between each cable station, will employ AT & T's SL2000 technology, operating at 4.8 Gbps on each fiber pair. One fiber will be used for service while the other will be used for restoration. The "loop" configuration in conjunction with a fully redundant restoration pair provides 100% fiber-on-fiber restoration and route diversity within the network, resulting in high circuit reliability. The operating transmission capacity will be 60,000 64 kbps circuits per fiber or 300,000 virtual voice circuits when Digital Circuit Multiplication Equipment is employed. The SL2000 system uses optically amplified bit-rate insensitive repeaters, bit-rate sensitive repeaters, bit-rate sensitive terminal equipment, and dispersion-shifted fiber. This fiber differs from 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. This reduces loss in the cable. The bit-rate insensitive repeaters have fewer active components and are based on Erbium Doped Fiber Amplifiers, which also use fewer components and therefore reduce the likelihood of malfunction. The **TAT-12/TAT-13** terminal equipment will employ the STM-1 CCITT Synchronous Digital Hierarchy standard interface at 155 Mbits/s, which is the Basic System Module. Thirty-Two Basic System Modules will be used in each fiber pair of Segments E, F, and G; and in each fiber pair in Segment H.

*3 8. The estimated total cost of **TAT-12/TAT-13** will be based on a two-pair fiber loop system is \$756 million. The Joint Applicants' share of costs is \$345.2 million, or about 45.66 percent of the total project costs based on investment shares. The estimated cost does not include interest during construction, estimated at \$133 million, or costs of DCME, which will be added later to accommodate future demand. About 80 percent of the costs of Segments E, F, G, and H will be on a fixed price basis, with the remaining 20 percent on a cost-incurred basis. Items such as the submarine cable, repeaters, terminal transmission equipment and high voltage power plant will be furnished on a fixed price basis. Items such as the cable laying, route survey, plowing and burial of cable, project management, owners' inspection and amounts payable for customs duties and value added taxes will be handled on a cost-incurred basis. Under the terms of the C & MA, the co-owners will bear the capital and operational and maintenance costs of **TAT-12/TAT-13** in accordance with Schedule B of Attachment B to the Joint Application. See Appendix A hereto.

9. The capacity assignments in **TAT-12/TAT-13** are based on the forecasted demand of each of the Joint Applicants through the year 2010. Capacity assignments to the parties are indicated in Schedules C-1 through C-5 of Attachment B to the Joint Application. See Appendix B hereto. The C & MA provides for the admission of other carriers as owners, up to the Ready for Provisional Acceptance

(RFP) date which is planned to be August 31, 1996. Also, both prior and subsequent to the RFP date, carriers may acquire **TAT-12/TAT-13** capacity by IRU, lease or other mutually agreed upon arrangements. As of the date of initialing the C & MA, interests in the 4,032 MIUs [FN5] of the Design Capacity of **TAT-12/TAT-13** have been assigned to existing **TAT-12/TAT-13** owners and that is referred to as Notional Capacity. The remaining capacity is referred to as the Unassigned Capacity. The Unassigned Capacity is held collectively by the Co-owners in common and undivided shares in the same proportions as their percentage ownership interest as shown in Schedule B of Attachment B of the Joint Application. See Appendix B hereto. **TAT-12/TAT-13** Notional Capacity may be increased at the request of any Co-owner. See Joint Application, Attachment B, para. 13(a).

10. The Joint Applicants state that their proposed construction of **TAT-12/TAT-13** will serve the public interest by meeting the telecommunications needs of the Joint Applicants and their correspondents in the Atlantic Ocean Region (AOR) during the period 1996-2010. With transatlantic capacity of 4,032 MIUs for each cable segment, the equivalent of over 600,000 virtual voice circuits, **TAT-12/TAT-13** is described as a significant part of the common carrier network designed to meet specific service requirements for additional digital cable facilities in the AOR. Moreover, the Joint Applicants note that **TAT-12/TAT-13** will provide additional digital connectivity to the existing and planned TAT-8, TAT-9, TAT-10, TAT-11, TCS-1, and PTAT-1 Cable Systems. The Joint Applicants claim that the **TAT-12/TAT-13** introduces a new level of restoration capability to submarine cable facilities as a result of its unique loop configuration and completely redundant restoration fiber pair. This will provide 100% fiber-on-fiber restoration and route diversity within the network, which will result in a much higher circuit reliability. They assert that both inter-AOR cable system restoration capability, through diversity, and increased customer satisfaction for digital submarine cable backup for private networks will be provided by **TAT-12/TAT-13**.

*4 11. The Joint Applicants claim, the loop configuration design of **TAT-12/TAT-13**, its lightwave amplification technology and the fact that the operation and maintenance of ****4812** the network will be under the direct control of the common carriers using it to carry their own telecommunications traffic, will enhance overall reliability. They note that **TAT-12/TAT-13** will have state-of-the-art performance that will prevent it from losing any call in progress in the event of either a cable cut on a segment or failure of the fiber. Moreover, they assert that **TAT-12/TAT-13** will satisfy the operational requirements of the Department of Defense (DOD) in the AOR, because it enhances both path and media diversity and because it responds to DOD's statement that "reliance on satellite services for certain requirements is not possible due to technical limitations." North Atlantic Telecommunications Needs, 1991-2000, CC Docket No. 79-184, Comments of DOD, p. 11 (Feb. 16, 1988). The Joint Applicants also assert that **TAT-12/TAT-13** will promote international comity because it is already 50 percent subscribed and over 45 carriers and telecommunications administrations, including those representing

34 different countries, are participating as owners.

12. The Joint Applicants note that **TAT-12**/TAT-13 will provide significant economies, with an estimated original capital cost of a 64 kbps half-channel (half MAUO) of \$6,300 for a US-UK or US-France circuit. [FN6] The circuit unit costs for a virtual voice channel in **TAT-12**/TAT-13 will be further reduced through the addition and use of digital circuit multiplication technology, which can derive nominally 150 virtual voice channels from a MIU (30 MAUOs). Joint Applicants add that any inefficient investment decisions (e.g., constructing facilities that are not required) would be solely at the expense of a carrier's shareholders. They point out that the Commission, in the TPC-4 Order, [FN7] indicated that competitive conditions, the elimination of circuit loading guidelines, and the implementation of price cap regulation of AT & T [FN8] have made it appropriate to give U.S. International carriers wider latitude in determining what facilities to construct and when to place such facilities in service. These factors, they assert, will serve to protect the public interest.

II. DISCUSSION

13. The Joint Applicants seek authority to construct and operate the digital **TAT-12**/TAT-13 network by no later than June 1993 to permit the manufacture of various components to allow for the installation, laying, and testing necessary to permit complete activation of **TAT-12**/TAT-13 by August 31, 1996. 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 **TAT-12**/TAT-13 in 1993 will serve the public interest. Accordingly, we grant the Joint Application subject to certain conditions. [FN9]

*5 A. The Need for the **TAT-12**/TAT-13 Cable Network

14. [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. The standard we employ is "whether the specific facility chosen and the use to be made of that facility are required by the public convenience and necessity." [FN10] 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. [FN11]

1. Demand and Capacity

15. Under the traditional form of demand analysis that we have applied in authorizing the construction and operation of submarine cable systems, we conclude that projected circuit demand, along with other factors, supports the commencement of operation of **TAT-12**/TAT-13 to meet the telecommunications needs of the Joint Applicants and their correspondents in the AOR through year 2010. The Commission has

recognized that user demand is determined not only by the need for raw transmission capacity, but also by such user requirements as digital technology, route and media diversity, digital cable restoration capability, security and cost-effectiveness.

16. The Joint Applicants have provided their circuit demand forecasts for **TAT-12/TAT-13**, [FN12] which is scheduled to be placed in operation in late 1996. The Joint Applicants anticipate that **TAT-12/TAT-13** will be 33% and 54% filled in 1997 and 2000, respectively. [FN13] Meanwhile, existing cables in the AOR will continue to be filled. The total number of circuits, normalized for comparison to equivalent 64 kbps circuits, forecast to be activated on TAT-8, TAT-9, TAT-10 and TAT-11 in 1997, according to the Joint Applicants, will be 29,696, which represents 74% of the capacity of those cables owned by the Joint Applicants. By year 2000, 32,964 circuits will be activated, or 83% of total capacity. [FN14] In 1997, the total demand on all AOR cables used by the Joint Applicants, including **TAT-12/TAT-13**, will be 44,539 circuits, more than the total available capacity of TAT-8, TAT-9, TAT-10 and TAT-11, viz., 39,910 circuits in that year. In the year 2000, some 56,774 circuits will be needed. The overall fill rate for the existing cables by all carriers from 1997 onward supports the need for the additional capacity to be provided by ****4813** proposed **TAT-12/TAT-13**, especially when viewed with the advantages of media and route diversity, restoration capability, and technological innovations discussed below.

17. We recognize that there are uncertainties inherent in long-range traffic projections, 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 forecasts provided by the Joint Applicants. The cost efficiencies of the proposed **TAT-12/TAT-13** cable, with its routing diversity and restoration capability, discussed below, may further stimulate demand. In view of the foregoing, we conclude that the proposed construction **TAT-12/TAT-13** for operation in 1996 is justified based on demand.

***6** 2. Quality of Service

18. Media and route Diversity. We previously have found that increasing media and route diversity to strengthen service reliability is of decisional significance in our public interest determination to authorize the construction of transoceanic facilities. [FN15] Media diversity enhances service reliability through the use of more than one transmission medium, satellite or cable, to carry a correspondent's traffic. As a result, an increase in media diversity protects against the systemic failure of one medium, route, or path. Diversity enhances service reliability by increasing the number of independent routes that carry traffic to a given location. It is closely related to the ability to restore circuits in case of a facility failure. As a rule, the more independent routes serving a given location, the greater the ability to restore one that fails. Thus, an increase in route or path diversity is the natural consequence of the in-

troduction of another facility into a region.

19. We conclude that the introduction of **TAT-12**/TAT-13 as proposed will enhance route diversity by adding another independent cable route. Service reliability would be improved because the channel capacity affected by a service interruption on a particular route or routes would be further minimized, and the ability to restore service via another digital cable facility would be enhanced. Moreover, the loop feature of the **TAT-12**/TAT-13 network, coupled with its spare optic fiber pair, will ensure nearly instant restoration, as discussed below, as well as effective diversity both within the network itself and between submarine cables.

20. Restoration. Restoration pertains to the ability to maintain service in the event of a facility outage. **TAT-12**/TAT-13 will provide restoration capability for AOR facilities in general, both by its loop design, which permits essentially uninterrupted service even if the cable is severed at one location, and by the availability of other submarine cables, such as TAT-11, TAT-9 and TAT-8. The Commission has previously recognized that, although satellite capacity provides a satisfactory restoration alternative for cable, 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 that may be best accommodated by fiber optic cable facilities. [FN16]

21. The introduction of **TAT-12**/TAT-13 in 1996 to accommodate demand for digital cable facilities would provide an additional restoration alternative in the AOR. As a result, there will be digital cable facilities available in the event any other cables are disrupted by an outage. Moreover, the introduction in **TAT-12**/TAT-13 of very high capacity transmission capacities, in the order of 4.8 Gbps, coupled with loop configuration design, lightwave amplification technology, and direct control of the common carriers using the cable for their own traffic, make this network highly resistant to disruption by outage and uniquely restorable in the event of an outage. We conclude that the design of **TAT-12**/TAT-13 will enhance service reliability of existing cables and provide an improvement of overall AOR telecommunications reliability.

*7 3. Cost Analysis

22. The Joint Application estimates the total cost of **TAT-12**/TAT-13 to be \$756 million, with the Joint Applicants' share projected to be \$345.2 million, representing about 45.66 percent of the total project cost based on investment shares in the network. This represents an over-all cost of \$187,500 per MIU, based on a transatlantic capacity of 4,032 MIUs for each cable segment. The Joint Applicants' estimated original capital cost of a 64 kbps half-circuit (half-MAUO) is approximately \$6,300. This figure, they claim, will further decrease as the unassigned capacity is utilized by increasing the National Capacity, [FN17] at which time the cost per half-MAUO will be approximately \$3,100. A comparison of the costs for previously authorized digital cable facilities in the AOR demonstrates

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that **TAT-12**/TAT-13 will continue the trend of providing increased capacity while reducing circuit costs. For example, the cost of a TAT-11 half-MAUO between the U.S. and U.K. is \$9,600. The cost of a TAT-8 half-MAUO is \$22,200. The cost of a similar unit of capacity on TAT-9 varied between \$10,000 and \$14,000 per half-MAUO.

4. Technological Innovations

23. In determining the need for additional facilities in a region, the Commission normally considers the extent to which the proposed facilities will introduce new technology. In the past, for example, the introduction of digital fiber optic technology was compelling, whereas straightforward improvements in readily available laser technology would not of itself necessarily constitute technological innovation. While digital technology is already available in cables in the AOR, the innovations represented by **TAT-12**/TAT-13 are significant in several respects. The incorporation of a loop configuration will permit an increase in network reliability because even if the cable is disrupted the alternative route around the loop will permit continuity of connectivity. The operating transmission capacity of 60,000 64 kbps circuits per fiber or 300,000 virtual voice circuits when Digital Circuit Multiplication Equipment is employed also provides a marked increase in overall capacity, compared with the TAT-11 capacity of 252 ****4814** MIUs per fiber. [FN18] The use of bit-rate insensitive repeaters having a minimum of active components and using Erbium Doped Fiber Amplifiers for optical amplification reduces the likelihood and number of component malfunctions, increasing the overall reliability of the SL2000 network. The SL2000 system utilizes Dispersion Sifted Fiber which mitigates the effects of fiber dispersion and allows operation for up to 9,000 kilometers. The combination of these features and improvements provides much higher capacity and lower circuit cost.

5. Competition Considerations

24. We have previously recognized that the enhancement of both intermodal and intramodal competition can be expected to spur providers of both international satellite and cable facilities to keep their services innovative and their prices low. [FN19] We find that introduction of **TAT-12**/TAT-13 will enhance intramodal competition in the AOR and encourage both private and common carrier cable operators to innovate and price their offerings in a manner that is calculated to attract and retain customers. We also find that introduction of **TAT-12**/TAT-13 will increase intermodal competition with INTELSAT and potential separate satellite system providers and thereby spur existing providers to 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.

*8 6. International Comity

25. Our decisions authorizing the construction and operation of transoceanic submarine cable systems historically have recognized that correspondent acceptance is an important public interest factor. [FN20] Forty-five foreign carriers and telecommunications administrations from thirty-four countries have agreed that the **TAT-12/TAT-13** network design and 1996 service date will meet the projected service needs of their customers. Thus, we conclude that **TAT-12/TAT-13** will promote international comity.

B. The Effect of Price Cap Regulation

26. Having determined that there is a need for the introduction of the **TAT-12/TAT-13** cable network in 1996, we also note that current competitive conditions and regulatory approaches provide the Joint Applicants with the incentive to make rational economic decisions and not engage in unnecessary construction of facilities. [FN21] 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 because the burden of such investment would fall on stockholders and not ratepayers. [FN22] Thus, the Joint Applicants' decision on what facilities to construct and when to place them in service should also be based on these factors. [FN23]

III. 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 **TAT-12/TAT-13** Cable Network, having an operational capacity of 4.8 Gbps (plus similar restoration pair capacity), to become operational in 1996.

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 \(1976\)](#). [FN24] 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), the application, File No. I-T-C-93-062, of the Joint Applicants (AT & T, CICI d/b/a IDB, HTC, MCII, Sprint, TRT/FTC, Worldcom) IS GRANTED, subject to the following terms, conditions, and limitations, and the Joint Applicants are authorized to:

(a) construct and operate the **TAT-12/TAT-13** Cable Network as proposed herein;

(b) acquire and activate capacity in the **TAT-12/TAT-13** Cable Network, on an ownership basis, in accordance with the interests specified in Appendix B;

(c) acquire capacity, by lease, in such connecting facilities as may be required to extend capacity in the **TAT-12/TAT-13** Cable Network to certified points;

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

***9** (e) activate and operate capacity in **TAT-12/TAT-13** and aforementioned extension facilities for the provision of the Joint Applicants' authorized telecommunications services to certified points.

30. IT IS FURTHER ORDERED, that Joint Applicants are authorized to acquire, by lease, appropriate connecting facilities between the Green Hill, Rhode Island and Mastic Beach, New York 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 switched services, unless authorized to do so by the Commission upon a country-specific finding of resale opportunities ****4815** equivalent to those available under U.S. law, in accordance with [Regulation of International Accounting Rates, 7 FCCRcd 559 \(1991\)](#), recon. granted in part, 7 FCCRcd 7427 (1992), recon. pending.

32. IT IS FURTHER ORDERED, that the Joint Applicants shall make available half-interests in the **TAT-12/TAT-13** 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' interests and 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 Applicants' ownership, management, maintenance, and operation of the cable network as authorized herein, to ensure the most efficient use, of both this cable network and all means of communications between the United States and the Atlantic Ocean Region.

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 [FN25] or CC Docket No. 91-360 [FN26] shall either dispose of any ownership interest in **TAT-12/TAT-13** capacity it is authorized to acquire to any entity on an ownership

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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 **TAT-12**/TAT-13 facility use in the monthly 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. This order is issued under [Section 214](#) of the Communications Act, [47 U.S.C. § 214](#), and Section 0.291 of the Rules, [47 C.F.R. § 0.291](#), 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)).

***10** FEDERAL COMMUNICATIONS COMMISSION
Kathleen B. Levitz

Acting Chief, Common Carrier Bureau

FN1. The Joint Applicants supplemented 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. They also filed additional data to show demand for all current digital submarine cables serving the same points.

FN2. The Joint Applicants include American Telephone and Telegraph Company (AT & T), CICI, Inc. d/b/a IDB International (IDB International), GTE Hawaiian Telephone Company Incorporated (HTC), MCI International, Inc. (MCII), Sprint Communications Company Limited Partnership (Sprint), TRT/FTC Communications, Inc. (TRT/FTC), and World Communications, Inc. (Worldcom).

FN3. Initially, Joint Applicants may not be certified to serve directly all countries or territories which the facilities covered by the Application are capable of serving. Each individual applicant proposing an extension into such countries/territories by means of the **TAT-12**/TAT-13 facilities will be required to seek the appropriate authority as may be required at the time.

FN4. See Attachment B to the Joint Application.

FN5. An MIU is the minimum unit of investment for ownership in the **TAT-12**/TAT-13 network, allowing the use of 2.048 Mbit/s and the additional 420,571.43 bits per second required for multiplexing in each direction. The term MIU is increasingly used in high capacity cable applications. As background, we note that an MAUO (minimum assignable unit of ownership) is an equivalent voice channel (circuit) operating at 64,000 bits per second with an additional 9,684,656 bits per second required for multiplexing for a total of 73,684,656 bits per second in each direction at the System Interface locations. Thirty (30) MAUOs are the equivalent of

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1 MIU.

FN6. The cost per half-MAUO will further decrease, Joint Applicants say, as the Unassigned Capacity is utilized by increasing the Notional Capacity. When the Notional Capacity reaches Design Capacity, the cost per half-MAUO will be approximately \$3,100. See Joint Application at p. 19, n. 5.

FN7. [American Telephone and Telegraph Company et al.](#), 4 FCCRcd 8042 (1989).

FN8. Price Cap Decision, 4 FCCRcd 2873 (1989).

FN9. In a separate decision, we also grant the Joint Applicants' request for a cable landing license pursuant to the Cable Landing License Act. See File No. S-C-L-93-004 (DA 93-822, adopted July 7, 1993).

FN10. [AT & T et al.](#), (TAT-7 Order), 73 F.C.C.2d 248, 256 (1979).

FN11. See, e.g., [AT & T et al.](#) (TAT-9 Order), 4 FCCRcd 1129, 1131 (Com.Car.Bur.1988). 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 F.C.C.2d 353, 355 (1985).

FN12. See n. 1, supra.

FN13. These figures represent the Joint Applicants' aggregated circuit fill rate (ACFR), based on total available Joint Applicant-owned circuits and fill forecasts. The ACFR will be 65% in 2002. The arithmetic averages of the Joint Applicants' individual fill rate forecasts are 74% and 83% for 1997 and 2000, respectively.

FN14. Several of the Joint Applicants will have exhausted capacity available to them on existing cables by 1997.

FN15. See [North Atlantic Facilities Planning](#), 3 FCCRcd 3979, 3986 (1988); [All American Cable and Radio Inc., et al.](#), 67 F.C.C.2d 451, 469 (1978).

FN16. [North Atlantic Facilities Planning](#), 3 FCCRcd at 3987.

FN17. Notional capacity is the cable network capacity which is intended to satisfy requirements through the year 2006. See Schedules C-1 through C-5 of the Joint Application.

FN18. For voice services, digital circuit multiplication systems can be employed to derive approximately 150 virtual voice paths from each MIU, or 37,800 circuits.

FN19. [North Atlantic Facilities Planning](#), supra, at 3989; see also [American Telephone and Telegraph Company](#), 7 FCCRcd 136 (1992) [TAT-11].

FN20. Id. at 3989.

FN21. See [Policy and Rules Concerning Rates for Dominant Carriers](#), CC Docket No. 87-313, 4 FCCRcd 2873 (1989) (Price Caps Order).

FN22. See [American Telephone and Telegraph, et. al.](#), 4 FCCRcd 8042, 8045 (1989) (TPC-4 Decision).

FN23. [Id.](#) at 8046.

FN24. See Joint Application at p. 22.

FN25. See [International Competitive Carrier](#), 102 F.C.C.2d 812, 822 (1985).

FN26. See [International Services Order](#), 7 FCCRcd 7331 (1992).

****4816** APPENDIX A

VOTING INTERESTS IN THE **TAT-12**/TAT-13 CABLE NETWORK
OWNERSHIP INTEREST IN SEGMENTS E, F & G
ALLOCATION OF CAPITAL, OPERATING AND
MAINTENANCE COSTS IN SEGMENTS A, B, C, D, E, F, G & H

APTT	0.32812
BELGACOM	1.46391
BT	20.24230
BTE	1.36295
CYTA	0.15144
DBP-T	7.47097
FT	5.37607
HT	0.10096
ITC	0.37860
LPT	0.07572
MARCONI	0.07572
MCL	5.22463
NPTT	1.23675
NT	0.30288
OTE	0.12620
SFPT	0.20192
SPT-BA	0.02524
SPT-PHA	0.15144
SPTT	1.41343
ST	1.06007
TD	0.22716
TELE2	0.10096
TLFN	0.90863
TPSA	0.47956
TPTT	0.25240

VSNL	0.42908
AT & T	29.15194
DACOM	0.07572
DGJ	0.02524
HKTI	0.17668
HTC	0.02524
IDS	0.20192
IDC	0.75719
ITDC	0.20192
ITJ	0.37860
KDD	2.32206
KT	0.27764
MCII	12.69561
OPTUS	0.07572
OTC	0.42908
PLDT	0.12620
SINGTEL	0.07572
SPRINT	2.62494
TELMEX	0.10096
TLGB	0.15144
TRT/FTC	0.45432
WCOM	0.50480

TOTAL	100.00000

****4817 APPENDIX B**

[Note: The following TABLE/FORM is too wide to be displayed on one screen. You must print it for a meaningful review of its contents. The table has been divided into multiple pieces with each piece containing information to help you assemble a printout of the table. The information for each piece includes: (1) a three line message preceding the tabular data showing by line # and character # the position of the upper left-hand corner of the piece and the position of the piece within the entire table; and (2) a numeric scale following the tabular data displaying the character positions.]

***** This is piece 1. -- It begins at character 1 of table line 1. *****

EASTERN AT & DACOM FT
ACCESS T
PARTIES

APTT	4	0	0
AT & T	34	0	0
BELGACOM	0	0	0
CYTA	1	0	0
DBP-T	30	0	0
FT	42	2	4
HT	2	0	0
ITC	4	0	0
KDD	0	0	0
MARCON	1	0	0
MCII	0	0	0
OTE	2	0	0
SPIT	13	0	0
TLGB	0	0	0
TPTT	2	0	0
VSNL	0	0	0
WCOM	0	0	0

TOTALS 135 2 4
1...+...10...+...20...+..

 ***** This is piece 2. -- It begins at character 28 of table line 1. *****

TAT-12/TAT-13 CABLE NETWORK

MIUS ASSIGNED BETWEEN THE SYSTEM INTERFACES LOCATED AT
 LONG ISLAND AND PENMARCH
 WESTERN ACCESS PARTIES

HKTI	IDC	ITDC	ITJ	KDD	KT	MCII	OTC	PLDT	TELMEX	TLGB	TRT/FTC	WCOM
0	0	0	0	1	1	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	1	0	0	1	0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0	0	0	1	0	0
1	0	0	0	5	0	23	0	0	0	0	0	0
1	1	1	1	8	2	21	1	1	1	0	4	0
0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	1	0	2	0	1	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0	0	0	0	0	0
0	0	0	0	0	0	16	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
1	2	0	1	2	0	8	1	0	1	0	0	1
0	0	0	0	0	0	0	0	0	0	1	0	0
0	0	0	0	0	0	2	0	0	0	1	0	0
0	0	0	0	0	0	2	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	1

4	4	1	2	18	3	77	2	2	2	3	4	2
28.....+...40.....+...50.....+...60.....+...70.....+...80.....+...90.....+...0.....+												

***** This is piece 3. -- It begins at character 106 of table line 1. *****

TOTAL

7
34
2
3
59
90
2
9
0
2
16
2
30
1
5
2
1

265
106...

[Note: The following TABLE/FORM is too wide to be displayed on one screen. You must print it for a meaningful review of its contents. The table has been divided into multiple pieces with each piece containing information to help you assemble a printout of the table. The information for each piece includes: (1) a three line message preceding the tabular data showing by line # and character # the position of the upper left-hand corner of the piece and the position of the piece within the entire table; and (2) a numeric scale following the tabular data displaying the character positions.]

***** This is piece 1. -- It begins at character 1 of table line 1. *****

TAT--12/TAT--13 CABLE NETWORK
MIUS ASSIGNED BETWEEN THE SYSTEM INTERFACES LOCATED
GREENHILL AND PENMARCH
WESTERN ACCESS PARTIES

EASTERN	AT &	FT	IDB	IDC	ITDC	ITJ	KDD	MCII	OTC	SINGTEL	SPRINT
ACCESS	T										
PARTIES											

AT & T	14	0	0	0	0	0	0	0	0	0	0
BELGACOM	0	0	0	0	0	0	1	0	0	0	2
CYTA	1	0	0	0	0	0	0	1	0	0	1
DBP-T	30	0	0	2	0	0	4	23	0	0	0
FT	42	16	1	2	1	2	8	21	1	1	7
ITC	4	0	0	0	0	0	1	2	0	0	1
LPT	0	0	0	0	0	0	0	1	0	0	0
MARCONI	1	0	0	0	0	0	0	0	0	0	0
MCII	0	0	0	0	0	0	0	16	0	0	0
OTE	3	0	0	0	0	0	0	0	0	0	0
SPRINT	0	0	0	0	0	0	0	0	0	0	9
SPT-BA	1	0	0	0	0	0	0	0	0	0	0
SPTT	13	0	0	0	0	0	2	8	0	0	2
TPTT	2	0	0	0	0	0	0	2	0	0	1
VSNL	6	0	0	0	0	0	0	1	0	0	4
WCOM	0	0	0	0	0	0	0	0	0	0	0

TOTALS	117	16	1	4	1	2	16	75	1	1	27
1...+...10...+...20...+...30...+...40...+...50...+...60...+...70...											

***** This is piece 2. -- It begins at character 75 of table line 1. *****

AT

TELMEX TLGB WCOM TOTAL

TELMEX	TLGB	WCOM	TOTAL
0	0	0	14
0	0	0	3
0	0	0	3
0	0	0	59
1	0	0	103
0	0	0	8
0	0	0	1
0	0	0	1
0	0	0	16
0	0	0	3
0	0	0	9
0	0	0	1
0	0	1	26
0	0	0	5
0	2	0	13
0	0	1	1

1	2	2	266

75..80.....+...90.....+....0.

TAT--12/TAT--13 CABLE NETWORK
 MIUS ASSIGNED BETWEEN THE SYSTEM INTERFACES LOCATED AT
 LONG ISLAND AND LANDS END
 WESTERN ACCESS PARTIES

EASTERN ACCESS PARTIES	AT & T	HKTI	IDB	IDC	ITJ	KDD	KT	MCII	OTC	SINGTEL	TRT/FTC	WCOM	TOTAL
AT & T	13	0	0	0	0	0	0	0	0	0	0	0	13
BELGACOM	10	0	0	0	0	1	1	10	0	0	0	0	22
BT	105	3	0	0	1	12	0	63	3	0	7	0	194
BTE	16	0	0	0	0	0	0	8	0	0	1	0	25
DBP-T	35	0	0	0	0	4	0	23	2	0	5	1	70
LPT	1	0	0	0	0	0	0	0	0	0	0	0	1
MCII	0	0	0	0	0	0	0	1	0	0	0	0	1
MCL	49	1	3	3	1	6	1	32	1	0	0	1	98
NPTT	13	1	0	0	0	1	0	6	0	1	0	0	22
NT	3	0	0	0	0	0	0	3	0	0	0	0	6
SFPT	2	0	0	0	0	0	0	0	0	0	0	0	2
SPT-PHA	2	0	0	0	0	0	0	0	0	0	0	0	2
ST	14	0	0	0	0	0	0	5	0	0	1	0	20
TD	1	0	0	0	0	0	0	0	0	0	0	0	1
TELE2	2	0	0	0	0	0	0	0	0	0	0	0	2
TLFN	11	0	0	0	0	0	0	4	0	0	0	0	15
TPSA	7	0	0	0	0	0	0	0	0	0	0	0	7
VSNL	2	0	0	0	0	0	0	0	0	0	0	0	2
WCOM	0	0	0	0	0	0	0	0	0	0	0	2	2
TOTAL	286	5	3	3	2	24	2	155	6	1	14	4	505

[Note: The following TABLE/FORM is too wide to be displayed on one screen. You must print it for a meaningful review of its contents. The table has been divided into multiple pieces with each piece containing information to help you assemble a printout of the table. The information for each piece includes: (1) a three line message preceding the tabular data showing by line # and character # the position of the upper left-hand corner of the piece and the position of the piece within the entire table; and (2) a numeric scale following the tabular data displaying the character positions.]

 ***** This is piece 1. -- It begins at character 1 of table line 1. *****

MIUS
 ASSIGNED
 BETWEEN
 THE SYSTEM
 INTERFACES
 LOCATED AT

EASTERN ACCESS PARTIES	AT & T	BT	DACOM	DOT	DBP-T	HTC	IDB
APTT	3	0	0	0	0	0	0
AT & T	130	0	0	0	0	0	0
BELGACOM	11	0	0	0	0	0	0
BT	105	190	0	1	0	0	2
BTE	17	0	0	0	0	0	0
DBP-T	35	0	0	0	1	1	0
HT	2	0	0	0	0	0	0
LPT	1	0	0	0	0	0	0
MCII	0	0	0	0	0	0	0
MCL	48	0	1	0	0	0	2
NPPT	14	0	0	0	0	0	0
NT	3	0	0	0	0	0	0
SFPT	3	0	0	0	0	0	0
SPRINT	0	0	0	0	0	0	0
SPT-PHA	2	0	0	0	0	0	0
ST	14	0	0	0	0	0	0
TD	2	0	0	0	0	0	0
TELE2	2	0	0	0	0	0	0
TLFN	10	0	0	0	0	0	0
TPSA	8	0	0	0	0	0	0
WCOM	0	0	0	0	0	0	0
TOTALS	418	199	1	1	1	1	4
1...+...10...+...20...+...30...+...40...+...50...							

 ***** This is piece 2. -- It begins at character 54 of table line 1. *****

TAT--12/TAT--13 CABLE NETWORK

GREENHILL AND LANDS END
 WESTERN ACCESS PARTIES

IDC	IT	IT J	KDD	KT	MCII	OPTUS	OTC	PLDT	SINGTEL	SPRINT	TELMEX
0	0	0	0	0	2	0	0	0	0	1	0
0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	2	0	11	0	0	1	0	2	0
3	1	2	13	1	63	3	4	0	0	11	1
0	0	0	1	0	8	0	1	0	0	2	0
13	2	4	5	4	23	0	2	1	0	16	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	0	0	0	0	0
0	0	0	0	0	2	0	0	0	0	0	0
0	1	0	5	1	31	0	1	1	1	16	0
1	0	1	1	0	6	0	0	0	0	4	0
1	0	0	0	0	0	0	0	0	0	2	0
0	0	0	1	0	1	0	0	0	0	1	0
0	0	0	0	0	0	0	0	0	0	3	0
0	0	0	0	0	1	0	0	0	000	1	0
0	0	0	1	0	5	0	0	0	0	1	0
0	0	1	1	0	2	0	0	0	0	2	0
0	0	0	0	0	0	0	0	0	0	0	0
0	1	0	3	0	4	0	0	1	0	2	0
0	0	0	0	0	3	0	0	0	0	1	0
0	0	0	0	0	0	0	0	0	0	0	0
19	6	9	34	6	162	3	8	4	1	65	1
54...60...+...70...+...80...+...90...+...0...+...10...+...20...+...											

***** This is piece 3. -- It begins at character 129 of table line 1. *****

WCOM TOTAL

WCOM	TOTAL
0	6
0	130
1	31
0	409
0	29
1	108
0	2
0	2
0	2
1	109
0	27
0	6
0	6
0	3
0	4
1	22
0	8
0	2
0	21
0	12
2	2

6	949
129...+...40	

[Note: The following TABLE/FORM is too wide to be displayed on one screen. You must print it for a meaningful review of its contents. The table has been divided into multiple pieces with each piece containing information to help you assemble a printout of the table. The information for each piece includes: (1) a three line message preceding the tabular data showing by line # and character # the position of the upper left-hand corner of the piece and the position of the piece within the entire table; and (2) a numeric scale following the tabular data displaying the character positions.]

***** This is piece 1. -- It begins at character 1 of table line 1. *****

EASTERN AT & BT DACOM DBP-T DGT FT
ACCESS T
PARTIES

	AT & T	BT	DACOM	DBP-T	DGT	FT
APTT	7	0	0	0	0	0
AT & T	190	0	0	0	0	0
BEL GACOM	21	0	0	0	0	0
BT	210	190	0	0	1	0
BTE	33	0	0	0	0	0
CYTA	2	0	0	0	0	0
DBP-T	130	0	0	1	0	0
FT	84	0	2	0	0	20
HT	4	0	0	0	0	0
ITC8	0	0	0	0	0	0
LPT	2	0	0	0	0	0
MARCONI	2	0	0	0	0	0
MCII	0	0	0	0	0	0
MCI	97	0	1	0	0	0
NPIT	27	0	0	0	0	0
NT	0	0	0	0	0	0
OTE	5	0	0	0	0	0
SFPT	5	0	0	0	0	0
SPRINT	0	0	0	0	0	0
SPT-BA	1	0	0	0	0	0
SPT-PHA	4	0	0	0	0	0
SPTT	26	0	0	0	0	0
ST	20	0	0	0	0	0
TD	3	0	0	0	0	0
TELE2	4	0	0	0	0	0
TLFN	21	0	0	0	0	0
TLGS	0	0	0	0	0	0
TPSA	15	0	0	0	0	0
TPTT	4	0	0	0	0	0
VSNL	8	0	0	0	0	0
WCOM	0	0	0	0	0	0

TOTALS 956 190 3 1 1 20
1...+...10...+...20...+...30...+...40....

***** This is piece 2. -- It begins at character 45 of table line 1. *****

TAT12/TAT13 CABLE SYSTEM

MIUS ASSIGNED FOR JOINT USE BY THE PARTIES TO THIS AGREEMENT

U.S.--EUROPE

WESTERN ACCESS PARTIES

HKTI HTC IDB IDC ITDC ITJ KDD KT MCII OPTUS OTC PLDT SINGTEL

Table with 13 columns: HKTI, HTC, IDB, IDC, ITDC, ITJ, KDD, KT, MCII, OPTUS, OTC, PLDT, SINGTEL. Rows contain numerical data values.

0	0	0	0	0	0	0	0	0	0	0	0	0

7	1	8	30	8	15	92	11	465	3	17	5	3
45..	50.....	+...60.....	+...70.....	+...80.....	+...90.....	+...0.....	+...10.....	+...				

 ***** This is piece 3. -- It begins at character 119 of table line 1. *****

SPRINT	TEL MEX	TLOS	TRT/FTC	WCOM TOTAL
1	0	0	0	0 13
0	0	0	0	0 190
4	0	0	0	1 58
11	1	0	7	0 ??
2	0	0	1	0 54
1	0	1	0	0 6
16	0	0	5	2 295
7	2	0	4	0 193
0	0	0	0	0 4
0	0# #0	0 15		
0	0	0	0	0 3
0	0	0	0	0 35
16	0	0	0	2 207
4	0	0	0	0 49
2	0	0	0	0 12
0	0	0	0	0 5
1	0	0	0	0 8
12	0	0	0	0 12
0	0	0	0	0 0 1
1	0	0	0	0 6
2	1	0	0	2 56
1	0	0	1	1 42
2	0	0	0	0 9
0	0	0	0	0 4
2	0	0	0	0 36
0	0	1	0	0 1
1	0	0	0	0 19
1	0	1	0 0 10	
4	0	2	0	0 17

0	0	0	0	0 0

92	4	5	18 14	1961
119...+...30...+...40...+...50...+...				

1993 WL 757127 (F.C.C.), 8 F.C.C.R. 4810, 8 FCC Rcd. 4810

END OF DOCUMENT