Before the FEDERAL COMMUNICATIONS COMMISSION Washington, D.C. 20554

In the Matter of		
2000 Biennial Regulatory Review of)	
Part 68 of the Commission's)	CC Docket No. 99-216
Rules and Regulations)	

COMMENTS OF THE ALLIANCE FOR TELECOMMUNICATIONS INDUSTRY SOLUTIONS (ATIS)

Megan L. Campbell General Counsel 1200 G Street, NW, Suite 500 Washington, DC 20005 202-434-8847

Before the FEDERAL COMMUNICATIONS COMMISSION Washington, D.C. 20554

In the Matter of 2000 Biennial Regulatory Review of Part 68 of the Commission's CC Docket No. 99-216 Rules and Regulations COMMENTS OF THE ALLIANCE FOR TELECOMMUNICATIONS **INDUSTRY SOLUTIONS (ATIS)** TABLE OF CONTENTS Page 1 SUMMARY **COMMENTS** I. **INTRODUCTION** 2 II. ATIS' SUPPORT FOR THE PRIVATIZATION OF CPE 4 TECHNICAL CRITERIA DEVELOPMENT AND OPTION A – THE "GATEKEEPER" SDO III. THE "GATEKEEPER" SDO – QUALITIES AND 6 **CHARACTERISTICS** IV. ATIS AS THE "GATEKEEPER" ORGANIZATION 9

V.

CONCLUSION

11

SUMMARY

By these comments, the Alliance for Telecommunications Industry Solutions (ATIS), declares its support for the Commission's tentative conclusion that the technical criteria for customer premises equipment (CPE) should be established by the industry. Specifically, ATIS supports the concept of the "Gatekeeper" Standards Development Organization (SDO) and the Commission's vision of that organization as a fair, open and diverse body operating under ANSI procedures or its equivalent.

ATIS believes that it is well positioned to be the "Gatekeeper" organization given the ATIS membership, core values and experienced staff. The ATIS membership includes companies from all segments of the industry and the ATIS Board of Directors is representative of this make-up as well. Furthermore, ATIS' neutral nature as opposed to the role of a traditional trade association representing a given segment of the industry, uniquely positions ATIS to be the "Gatekeeper" organization.

Before the

FEDERAL COMMUNICATIONS COMMISSION Washington, D.C. 20554

In the Matter of		
00 Biennial Regulatory Review of t 68 of the Commission's)	CC Docket No. 99-216
Rules and Regulations)	

COMMENTS OF THE ALLIANCE FOR TELECOMMUNICATIONS INDUSTRY SOLUTIONS (ATIS)

The Alliance for Telecommunications Industry Solutions ("ATIS") submits these comments with the Federal Communications Commission (the "FCC" or the "Commission") in response to the FCC's Notice of Proposed Rulemaking ("NPRM"), In the Matter of 2000 Biennial Regulatory Review of Part 68 of the Commission's Rules and Regulations, released May 22, 2000.

I. INTRODUCTION

ATIS supports the Commission's tentative conclusion that "consumers and the industry would be better served if the technical criteria were established by an industry standards-setting process rather than by the Commission." ATIS also shares in the Commission's vision that such an industry process must remain true to the explicit goals of Part 68², be governed by fair and open procedures and include all segments of the industry, as well as other interested parties. Accordingly, the ATIS comments below, focus primarily on the options for privatizing the establishment of technical criteria, ultimately supporting the

¹ 2000 Biennial Regulatory Review of Part 68 of the Commission's Rules and Regulations, CC Docket No. 99-216, *Notice of Proposed Rulemaking* (May 22, 2000) at ¶ 17.

² NPRM at ¶ 30 (to develop technical criteria to protect the wireline telephone network from harm, as defined in our rules; to allow the expeditious approval of terminal equipment for connection to the wireline telephone network; to ensure that technical criteria for CPE are responsive to the needs of new suppliers, new technology and innovative terminal equipment and services; to rely, in developing specific technical criteria to carry out these goals, on nationally recognized standards for the relevant technical aspects of CPE; and, to minimize the duration and expense of any related activities, especially concerning the introduction of new technology, e.g., testing and product approval).

"Gatekeeper" Standards Developing Organization (SDO) Option, and provide information regarding the paradigm for such an organization based on ATIS' extensive experience as the sponsor and secretariat for SDOs and other industry standards-setting bodies. In addition, the ATIS comments submit that ATIS would be an effective gatekeeper SDO.

ATIS sponsors and provides support to fourteen (14) open industry committees and forums, including ANSI-accredited Committee T1. The primary purpose of ATIS is to promote timely resolution of national and international issues involving telecommunications standards and the development of operational guidelines through the sponsorship and support of open industry forums. These open forums address such issues as network interconnection, interoperability testing, network outage analysis, installation, testing and maintenance, ordering and billing, network services integration, telecommunications fraud prevention, electronic data interchange, and spectrum compatibility.³

The fourteen committees and forums are: (1) the Carrier Liaison Committee (CLC), which oversees the consensus resolution of "equal access" and network interconnection issues arising on an industry-wide basis; (2) the Ordering and Billing Forum (OBF), which deals with issues of access ordering, provisioning, billing, carrier selection and subscription, directory services, and toll free Service Management System Number Administration; (3) the Network Interconnection Interoperability Forum (NIIF), which addresses issues including interconnection architecture, testing, installation and maintenance, network management, rating and routing; (4) the Industry Numbering Committee (INC), which develops the North American Numbering Plan Administration guidelines pertaining to such areas as central office codes and thousands block number pooling and addresses issues associated with number resource optimization and expansion planning of the NANP; (5) the Telecommunications Fraud Prevention Committee (TFPC), which has amongst its efforts the development of procedures for distribution of suspect telephone numbers as well as exchange carrier guidelines for centrex clip-on fraud; (6) the Telecommunications Industry Forum (TCIF), which gives practical application to standards on electronic data interchange, bar coding and standard coding language as well as the development of implementation guidelines on electronic bonding for the telecommunications industry; (7) the Protection Engineers Group (PEG), which develops contributions for submission to accredited standards committees on electrical protection; (8) Standards Committee O5, an accredited standards committee for wood poles and other wood products used in the construction of electrical supply and communication lines; (9) the Network Reliability Steering Committee (NRSC), which analyzes network outage data, initiates corrective actions as well as preparing FCC reports on these outages and serves as the industry's liaison to the NRIC: (10) the Network Services Integration Forum (NSIF). which deals with multiple technology integration issues; (11) the Internetwork Interoperability Test Coordination (IITC) Committee, which manages the cross industry testing program for network reliability, including high-speed link and Next Generation Network testing; (12) the Data-Aware Transport Activity (DATA) which addresses interoperability issues and demonstrates vendor interoperability to facilitate rapid implementation of data-aware SONET/SDH transport; (13) Generic Requirements Users Group (GRUG), which plans to identify and provide tools/recommendations to develop guidelines and operating procedures that facilitate interoperability of existing and emerging telecommunications products and services; and

II. ATIS' SUPPORT FOR THE PRIVATIZATION OF CPE TECHNICAL CRITERIA DEVELOPMENT AND OPTION A – THE "GATEKEEPER" SDO

As mentioned previously, ATIS supports the establishment of technical criteria for Customer Premises Equipment ("CPE") through the industry standards-setting process. ATIS' support is premised on many of the same reasons the Commission identified in the NPRM. ATIS believes that the shift of these responsibilities to the industry standards-setting process has the potential to drastically decrease the time requested to develop such criteria, thereby allowing advanced services and equipment based on new technology to make it to the market faster. In addition, ATIS argues that this activity is best placed in the hands of the industry where the experts reside and, as the Commission points out, the industry as a whole has a vested interest in the protection of the network for their economic well-being.⁴ Nonetheless, ATIS strongly supports the Commission's comments regarding the need for this activity to be conducted in a fair and open process with broad representation from all industry segments.

With the goals and benefits discussed in the above paragraph, ATIS considered the three Options set forth by the Commission in the NPRM and believes that Option A, the "Gatekeeper" SDO, provides the best paradigm for the privatization of the establishment and publication of CPE technical criteria. Our rationale is as follows.

ATIS does not support Option B where the Commission would not designate any particular SDO or organization as a central authority, but rather require local exchange carriers (LECs) to allow CPE that complies with any national standards-setting organization criteria to connect to the public switched telephone network (PSTN). Option B has the potential of resulting in multiple standards and forum shopping, both creating unnecessary burdens and costs for carriers and manufacturers, likely to be passed on to consumers, where alternative devices and confusion are certain. In addition,

finally, (14) Committee T1 which develops interconnection and interoperability standards, technical reports and technical requirements for the US telecommunications networks.

⁴ NPRM at ¶18.

without the guarantee of ANSI procedures or other equivalent procedural safeguards, the technical criteria developed by some national standards-setting organizations may not be accomplished with the representation of, or the well-being of the industry as a whole in mind.

ATIS does not support Option C either, believing that Option C does not further the main goal of the NPRM to make the process for the establishment of CPE technical criteria faster and more responsive to technical innovation. Option C would still require a rulemaking and, as acknowledged by the Commission, "the time and resources required to change federal regulations in accordance with the Administrative Procedure Act (APA) have prevented, in some cases, the Part 68 rules from keeping pace with technological innovations."

ATIS strongly supports Option A or the "gatekeeper" SDO. The concept of a "gatekeeper" organization charged with establishing and publishing technical criteria for CPE developed pursuant to ANSI procedures for consensus bodies alleviates the concerns identified with the other options and furthers the Commission's goals in this NPRM. First, with a central authority point in place, the potential for multiple standards, forum shopping and confusion is minimal. Second, all CPE technical criteria will be developed under the same fair and open processes allowing for participation by all industry segments and other interested parties. Third, the process for CPE technical criteria would be accomplished in the spirit of due process and openness observed under the current rulemaking regime but, in a manner faster and more responsive to industry innovation.

⁵ NPRM at \P 1.

⁶ NPRM at ¶ 9.

III. THE "GATEKEEPER" SDO – QUALITIES AND CHARACTERISTICS

ATIS agrees with the Commission's tentative conclusion that the "gatekeeper" SDO or organization should be ANSI-accredited but acknowledges it would be equally sufficient if the "gatekeeper" organization follows the ANSI procedures for consensus in the manner discussed in these comments. ANSI accreditation would ensure that the "gatekeeper" organization itself is open and comprised of a balance of interests. The qualities that ANSI accreditation attribute are necessary whether the "gatekeeper" organization is establishing technical criteria itself, or whether it is endorsing technical criteria developed by other SDOs. ATIS envisions the "gatekeeper" organization as acting in both roles of developer and endorser, as appropriate. The goal of the "gatekeeper" organization would be to establish CPE technical criteria, whether by developing or endorsing such criteria, in a fair and open manner with the most competent resources available. The "gatekeeper" organization would also ensure that industry work efforts are not redundant. Accordingly, where a given technical criteria development project makes sense in another SDO, the "gatekeeper" organization would endorse that work and the resulting technical criteria provided that the ANSI procedures for consensus bodies were observed. ATIS anticipates that representatives from interested all segments of the industry would be active in the "gatekeeper" organization.

Expanding on the general qualities of openness and balance, ATIS believes the "gatekeeper" organization should also observe procedural safeguards ensuring due process. All ATIS committees and forums incorporate the following core principles into their procedures and, ATIS believes that the "gatekeeper" organization would benefit from these principles as well.

• All meetings shall be open.

⁷ ATIS acknowledges that the "gatekeeper" organization, while open to all, may need to limit the number of voices involved in the decision-making process to a smaller number of representatives from all interested parties.

- Written agendas shall be prepared and publicly disseminated in advance of all meetings. The meeting notice and agenda shall be timely and provide adequate information about the matters to be discussed.
- Adequate and accurate record keeping shall be maintained through the taking of minutes or notes at all meetings. The minutes or notes shall be subsequently published and made available to all participants and any interested party.
- While a participant may raise any industry matter appropriately within the scope of
 the committee's mission, participants shall discuss and attempt to resolve companyspecific issues directly with the individual participant involved, outside of the forum's
 activities.
- Substantive discussions are limited to issues that are appropriately within the scope of the committee's mission and that do not involve cost, price, market allocation or other antitrust-sensitive matters.
- Resolution of issues shall be by consensus.
- Prior to finalizing the resolution of an issue, there shall be an appropriate notification
 on the proposed resolution with opportunity for the industry to review it and provide
 comments.
- There shall be careful consideration of all views and objections.
- Unresolved comments or objections shall be reported and maintained on the record.
- There shall be a defined appeals process.

Together, these principles serve as safeguards, ensuring that due process is afforded to all interested parties and protecting the organization, to the greatest extent possible, from activities that could result in antitrust difficulties. Notwithstanding, ATIS understands the need for the "gatekeeper" organization to work with speed. ATIS believes that the "gatekeeper" organization can operate consistent with the ANSI procedures for consensus with streamlined, minimal process. In fact, it is conceivable that the "gatekeeper" organization could operate in an electronic environment.

Operating under the principles defined above, the "gatekeeper" organization would serve as the central authority point for the establishment of CPE technical criteria. As

mentioned above, other SDOs (i.e., ATIS Committee T1, TIA TR-41 or IEEE) may develop the criteria. In cases where other SDOs develop the technical criteria, the "gatekeeper" organization would not readdress the substance of the criteria but rather endorse and publish the technical criteria provided due process was afforded during the development stage. The "gatekeeper" organization would act as a point of appeal for a party claiming that due process was not afforded. The "gatekeeper" organization would act in a project management function by monitoring the work done in other SDOs to ensure that there is no overlap and also by defining the appropriate venue for new work. This latter function would include the establishment and/or oversight of the expedited interim standard process required by the Commission to address requested exceptions within sixty (60) days. And finally, the "gatekeeper" organization, where appropriate, could form a working group to develop technical criteria should it be determined that such criteria are needed and not being addressed by an existing SDO.

Finally, with respect to the qualities and characteristics of the "gatekeeper" organization, the Commission raises several questions in the NPRM that ATIS would like to comment on at this time. The Commission requests comment on whether ANSI-accreditation is sufficient to ensure fairness in the establishment of technical criteria. ATIS believes that ANSI-accreditation, observed in the spirit discussed above, will ensure a necessary and appropriate level of fairness. While ATIS acknowledges that not all ANSI-accredited SDOs observe the same levels of openness, balance and due process, ATIS believes the ANSI auditing procedures and reports can assure that the "gatekeeper" organization and other SDOs involved in the development of CPE technical criteria are observing sufficiently fair practices. Additionally, the ANSI procedures, as well as the envisioned "gatekeeper" organization, afford an avenue for appeal to any interested party who believes the process is anything less than fair.

_

⁸ NPRM at ¶ 49.

⁹ NPRM at ¶ 45.

¹⁰ ATIS agrees with the distinction made by the Commission in paragraph 47 of the NPRM. Where the ANSI procedures state that participation shall be open to all persons who are directly and materially affected by the activity, ATIS believes the "gatekeeper" organization should be open to any interested party.

The Commission also requests comments on whether it is necessary to extend the force of law to the technical criteria established by the "gatekeeper" organization. ¹¹ ATIS agrees that the Commission should extend the force of law to the established technical criteria. Such action highlights the Commission's continued involvement and the importance of protecting the network for all industry segments.

The Commission requests comments on whether the "gatekeeper" organization should be treated as a Federal Advisory Committee (FAC) under the Federal Advisory Committee Act (FACA). ¹² ATIS believes that the "gatekeeper" organization should not be treated as a FAC. The activities to be performed by the "gatekeeper" organization and the relationship between it and the Commission do not fit squarely within the scope of the FACA where the Commission is not advocating that the output of the "gatekeeper" organization be "advisory" in nature. ¹³ The Commission consistently stated in the NPRM that it prefers to minimize its role in the establishment of technical criteria and rather declare the technical criteria developed by the "gatekeeper" organization to be presumptively valid without substantive review unless an appeal is sought. ¹⁴ Furthermore, the primary purpose of the FACA is to ensure public notice of activities, balance in participation, adequate record-keeping and reasonable cost controls, all of which may be accomplished by observing the ANSI procedures, or some equivalent, for consensus bodies with the assistance of a qualified secretariat.

IV. ATIS AS THE "GATEKEEPER" ORGANIZATION

ATIS believes that it is well positioned to be the "gatekeeper" organization given the diverse ATIS membership, the core values upon which it has built its open and fair processes and its experienced staff. The ATIS membership includes companies from all

¹¹ NPRM at ¶ 21.

¹² NPRM at ¶ 33. 5 U.S.C. App. 2; 41 C.F.R. §§ 101-6.1001 to 101.6-1035 (GSA Federal Advisory Committee Management Regulations).

¹³ 5 U.S.C. App. 2; 41 C.F.R. § 101-6.1002.

segments of the industry and the ATIS Board of Directors is representative of this make-up as well. ATIS membership includes: local exchange carriers, interexchange carriers, manufacturers, competitive local exchange carriers, data local exchange carriers, wireless providers, cellular providers, broadband providers, software developers and internet service providers. A complete list of the ATIS member companies and the companies comprising the ATIS Board is attached at Appendix A to these comments. As further evidence of the diverse participation in ATIS activities, a list of companies active in Committee T1 and its technical subcommittees is included as Appendix B to these comments. Accordingly, the ATIS core values and the ATIS staff direction is formulated and influenced by a diverse representation of the industry's segments.

Along a similar theme, ATIS is uniquely positioned to be the "gatekeeper" organization given its neutral nature. ATIS is not a traditional trade association and does not engage in lobbying for any one industry segment or interest group. Instead, ATIS advocates the industry forum or standards-setting process as an effective vehicle for resolving complex technical, operational, and business issues, as well as an alternative or compliment to government regulation.

Should ATIS be the "gatekeeper" organization, the organization would have the benefit of the ATIS staff that is highly knowledgeable of the ANSI procedures having sponsored Committee T1 for sixteen years. In fact, ATIS has consistently passed the ANSI audits for all of its accredited committees.

And finally, the ATIS committees and forums have long shared a reputation as being governed by fair and open processes giving validity to the work product. Should the "gatekeeper" organization be ATIS, the core principles set forth in Section III above would be incorporated into the organizations process to the appropriate degree.

 $^{14}\,$ NPRM at ¶¶ 34 and 39.

Comments of ATIS CC Docket No. 99-216 June 23, 2000

V. CONCLUSION

In conclusion, ATIS supports the Commission's efforts to privatize the establishment and publication of technical criteria for CPE. Further, ATIS supports the concept of the "gatekeeper" organization as a central focal point for this work. ATIS believes that it is uniquely qualified to be the "gatekeeper" organization given the arguments set forth in these comments.

Respectfully submitted,

Megan L. Campbell General Counsel ATIS 1200 G Street, N.W. Suite 500 Washington, D.C. 20005 202-434-8847 mcampbel@atis.org

ATIS MEMBERS

Mid-Plains Telephone

Marconi Communications Agilent Technologies, Inc.

MCT Telecom Alaska Communications Systems

Albion Connect, Inc.

Alcatel USA

Moapa Valley Telephone Co. **ALLTEL Communications** Nebraska Central Telephone Co. Amherst Telephone Co. **NewSouth Communications**

Armstrong Telephone Co. Nokia, Inc.

AT&T Nortel Networks

North Pittsburgh Telephone Co. Bell Atlantic

BellSouth North-Eastern Pennsylvania Telephone Co.

Bentleyville Telephone Co. Northern Arkansas Telephone Co.

Billing Concepts Orwell Telephone Co. BTI PBT Telecom, Inc. Cap Gemini Telecommunications Pigeon Telephone Co. CenturyTel Pioneer Telephone Co.

CFW Communications Co. Prism CSI

Chester Telephone Co. Public Service Telephone Co. Cincinnati Bell **Quintessent Communications**

Coastal Communications Owest

ComSouth Telecommunications, Inc. Revenue Communications, Inc. Connexⁿ Technologies Rhythms NetConnections

Cox Communications Rochester Telephone Co., Inc. CT Communications, Inc. Rock Hill Telephone

Data Kinetics, LTD Roseville Telephone Delhi Telephone Co. **SBC** Communications Denver and Ephrata Telephone Sevis Systems, Inc.

e.spire Communications Shenandoah Telephone Co.

East Otter Tail Telephone Company Siemens Information and Communication Networks

Eastex Telephone Coop. Sprint Elkhart Telephone State Long Distance Telephone Company Stayton Cooperative Telephone Co. Enigma, Inc.

Ericsson Inc. Sterling Commerce ESRI. Inc. Swiftel

Excel Sycamore Networks, Inc.

Tekelec Fort Mill Telephone Co.

Global Crossing Telcordia Technologies

Grand River Mutual Telephone Corp. TeleHub Communications Corp. Granite State Telephone Telephone and Data Systems, Inc.

GTE TII Industries

Horizon Chillicothe Telephone United Telephone Mutual Aid Corp.

Illuminet **US LEC Corporation**

Indianhead Telephone Co. US West

Integra Telecom VoiceStream Wireless Corporation

West Carolina Rural Telephone Co-op, Inc. Interstate Telecommunications Co-op

Ironton Telephone Western Datapro Inc.

Lakedale Telephone Co. Western New Mexico Telephone Co., Inc.

Lancaster Telephone Co. Williams Communications Group Lucent Technologies Wood County Telephone Co.

ATIS Board of Directors Member Companies

CHAIRMAN OF THE BOARD Global Crossing, Ltd.

FIRST VICE CHAIRMAN

Siemens Information & Communications Networks, Inc.

SECOND VICE CHAIRMAN SBC Communications

TREASURER CFW Communications Co.

MEMBERS

AT&T

Agilent Technologies, Inc.

Alcatel USA

ALLTEL Communications

Bell Atlantic

BellSouth Telecommunications Bentleyville Telephone Co. Billing Concepts Corporation

CenturyTel

Cincinnati Bell Telephone
CT Communications, Inc.
Denver and Ephrata Telephone
and Telegraph Company
East Otter Tail Telephone Co.
Elkhart Telephone Company

Ericsson, Inc.
GTE Corporation

Illuminet

Lucent Technologies, Inc. Marconi Communications

NOKIA, Inc.

North Pittsburgh Telephone Co.

Nortel Networks

Qwest

Roseville Telephone Company

Sprint

Telcordia Technologies

Telephone and Data Systems, Inc.

US West VoiceStream

COMMITTEE T1 AND ITS TECHNICAL SUBCOMMITTEE **MEMBER COMPANIES**

360NETWORKS FRAMATOME CONNECTORS USA INC.

3COM FUJITSU AMERICA INC.

ADC TELECOMMUNICATIONS INC.

ADTRAN INC.

ADVANCED MICRO DEVICES **AERIAL COMMUNICATIONS**

AIRSPAN COMMUNICATIONS CORP. GTE TELEPHONE OPERATIONS

ALCATEL USA INC.

AMBIENT TECHNOLOGIES

ANRITSU COMPANY

APPLIED MICRO CIRCUITS CORP.

AT&T

AT&T WIRELESS SERVICES, INC.

AWARE, INC. BELL ATLANTIC BELL CANADA

BELLSOUTH CELLULAR CORP. BELLSOUTH TELECOMM. INC.

BOPS INC.

BROADCOM CORPORATION

MARCONI COMMUNICATIONS BROOKS MANUFACTURING CO.

C.S.I. TELECOMMUNICATIONS CATAPULT COMMUNICATION MEDIAONE LABS CATENA NETWORKS INC. MEGAXESS, INC. CDMA DEVELOPMENT GROUP

CENTILLIUM COMMUNICATIONS, INC

CIENA CORPORATION

CISCO SYSTEMS

COMPAQ COMPUTER CORP. COMSAT CORPORATION CONEXANT SYSTEMS, INC.

COPPER MOUNTAIN NETWORKS

CORNING INCORPORATED

COVAD COMMUNICATIONS CO.

DATUM, INC.

DEFENSE INFO. SYSTEMS AGENCY

ECI TELECOM INCORPORATED

ELASTIC NETWORKS, INC.

ERICSSON INCORPORATED

EXCELSUS TECHNOLOGIES INC.

EXCESS BANDWIDTH CORPORATION

GENERAL COMMUNICATION, INC.

GENERAL DATACOMM INCORPORATED GLOBESPAN SEMICONDUCTOR, INC. GOLDEN BRIDGE TECHNOLOGY INC.

HARRIS CORPORATION HEKIMIAN LABORATORIES

HEWLETT-PACKARD

HITACHI TELECOM (USA), INC. HUGHES NETWORK SYSTEMS, INC.

ILLUMINET

INTEC SERVICES

INTEL CORPORATION

INTERDIGITAL COMMUNICATIONS JATO COMMUNICATIONS CORP. LEVEL ONE COMMUNICATIONS INC.

LG SANSYS, INC.

LUCENT TECHNOLOGIES

MAYAN NETWORKS METALINK INC.

MICROCELL CONNEXIONS MITEL CORPORATION

MOTOROLA INC.

NATIONAL COMMUNICATIONS SYSTEM NATIONAL EXCHANGE CARRIER ASN.

NATIONAL SEMICONDUCTOR

NATL TELECOM & INFO ADMIN-NTIA

NEC AMERICA INCORPORATED NEWBRIDGE NETWORKS CORP. NEXT LEVEL COMMUNICATIONS NOKIA TELECOMMUNICATIONS INC.

NORTEL NETWORKS

NORTHPOINT COMMUNICATIONS

OCEAN DESIGN, INC.

OKI AMERICA INCORPORATED ORCKIT COMMUNICATIONS

COMMITTEE T1 AND ITS TECHNICAL SUBCOMMITTEE MEMBER COMPANIES

ORESIS COMMUNICATIONS, INC.

PACIFIC BELL WIRELESS

PAIRGAIN TECHNOLOGIES INC.

PARADYNE CORPORATION

PECO II. INC.

PMC-SIERRA, INC.

QUALCOMM INCORPORATED

QWEST COMMUNICATIONS

RHYTHMS

ROGERS WIRELESS INC.

RURAL UTILITIES SERVICE

SBC COMMUNICATIONS, INC.

SIEMENS INFO & COMM NTWKS, INC

SILICON AUTOMATION SYSTEMS LTD

SNAPTRACK INC.

SORRENTO NETWORKS INC.

SPRINT - LOCAL TELECOM. DIV.

SPRINT - LONG DISTANCE DIV.

ST MICROELECTRONICS

SYMMETRICOM INC.

SYNACOM TECHNOLOGY, INC.

TEKTRONIX

TELCORDIA TECHNOLOGIES

TELE<COM>PUTER RELIABILITY SVC

TELECOMMUNICATIONS TECHNIQUES

TELLABS OPERATIONS, INC.

TELLIUM, INC.

TEXAS INSTRUMENTS

THOMAS & BETTS CORPORATION

TOLLGRADE COMMUNICATIONS, INC.

TRANSWITCH CORPORATION

TURNSTONE SYSTEMS, INC.

TYCO SUBMARINE SYSTEMS LTD.

U S WEST

US TELEPHONE ASSOCIATION-USTA

VELOCITY COMMUNICATION

VITESSE SEMICONDUCTOR

VOICESTREAM WIRELESS CORP.

WEST COAST LUMBER INSP BUREAU

WESTELL TECHNOLOGIES, INC.

WORLDCOM