ballot first at the subcommittee level and then at the T1 level, allowing ample opportunity for review and comment. "No" votes must be accompanied by a technical explanation of the basis for opposition and attempts are always made to resolve all comments and reach consensus. Ultimately, every comment and its resolution are published and the public is advised of the balloting.

17. Some T1 decisions are approved by simple majority (e.g., the decision to undertake new projects), and others require two-thirds approval (e.g., draft standards). However, draft standards have never been approved on these numbers alone. ANSI procedures require consensus for approval of standards, and consensus requires substantial agreement among all directly and materially affected interest groups. Standards-setting in T1 is therefore a process which involves robust debate among all interest groups. In this process, representatives to T1 are motivated by the desire to develop technically good standards which further the business or other goals of their organizations. Final standards require consensus approval in each of four different interest categories (manufacturing, exchange, interexchange, and general interest, including users). From a practical point of view, the consensus required to establish a standard is unanimous or near-unanimous approval. Hence, no RBOC, nor even all exchange carriers (RBOC and non-RBOC) acting together, can impose a standard opposed by manufacturers, interexchange carriers, or users.

18. No group consisting of a small minority of all the voting members can control the standards process either by controlling committee leaderships* or by attendance at committee, sub-committee or working group meetings. Assertions to the contrary (such as in paragraph 16 of the affidavit of Peter Guggina submitted by MCI) are wrong. Certainly, participation in standards meetings is voluntary work, and volunteers are needed to do that work. More volunteers would be welcome, but in any event, ANSI rules clearly separate the approval process from the underlying work. Moreover, committee and sub-committee leaders are elected by all members, and the RBOCs clearly lack the votes to dominate this process, just as they lack the votes to control standards directly.

19. ANSI and T1 due process rules prevent committee and sub-committee leaders from simply declaring their position to be the consensus of the group. The assertion in paragraph 17 of the Guggina Affidavit that "it is often easy for the RBOCs to [incorrectly] declare their position to be the consensus of the

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* Presently the T1 chairman is from an interexchange carrier member of the Committee (COMSAT).

group" is absurd.* Moreover, contrary to Mr. Guggina's assertion in paragraph 18, ANSI guidelines require that consensus reached in a working group must be reviewed industry-wide and voted upon at both the committee and sub-committee levels before it can become a standard. Working group participation is open to all who are willing to provide resources to further the necessary initial formulation of a proposed standard. No due process abuse is possible, since even if the working group consisted entirely of RBOCs (or manufacturers or interexchange carriers), the draft would still have to be submitted to, voted on, and consensus reached by the appropriate sub-committee and full T1 committee.

20. Although standards are "voluntary" in the sense that compliance is not legally compelled, compliance is not "voluntary" in the sense that a carrier or manufacturer can readily choose to ignore a standard. For example, an exchange carrier which wished to ignore an established standard would find it impossible or at best extremely difficult to deal with other exchange and interexchange carriers which expected to be

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* See page 4, n. 6, supra, for a discussion of ECSA and T1 conformance with ANSI due process requirements. Compliance with ANSI due process rules is required to obtain (and retain) accreditation, and is also required for ANSI publication of standards approved by an accredited standards body. If T1 were run in the manner suggested by Mr. Guggina, ANSI would have withdrawn T1's accreditation and rejected T1-approved standards. That, of course, has not happened.

able to interconnect using that standard, manufacturers which made equipment incorporating that standard, and users who expected to obtain and interconnect with services using that standard. Hence, no RBOC can afford to ignore an established standard.

21. For all of these reasons, neither an RBOC nor anyone else is able to "block" or "stall" standards progress without technical justification. Indeed, the essence of the standards process is that any organization may raise any objection, but only objections with technical merit prevent the adoption of otherwise meritorious standards. Claims to the contrary (e.g., in paragraphs 11 and 12 of Mr. Guggina's affidavit) are wrong.* For example, Mr. Guggina claims that the RBOCs "stalled" the development of standards relating to Intermediate Signaling Network Identification ("ISNI") capability. He neglects to mention, however, that the proposal in question would have unjustifiably prevented all LECs (not just RBOCs) from selecting the interexchange carrier to carry LEC signalling messages that

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* MCI, more than any other entity, frequently opposes standards desired by the rest of the industry. For example, MCI voted "no" 6 times on the 28 T1 letter ballots during the period from November 1989 to October 1990 (Letter Ballots 191 through 218). The total of the "no" votes cast by the 7 RBOCs, Bellcore, GTE, AT&T (which has two votes because it is both a manufacturer and an interexchange carrier) and U.S. Sprint was three (one each by Ameritech, Pacific Bell and AT&T Communications, for a total of one-half of MCI's "no" votes).

support intraLATA and exchange access services, even though there was no technical reason why the RBOCs could not have such capability. He also neglects to point out that other segments of the industry did not support the proposal the RBOCs allegedly "stalled." Finally, he neglects to mention the compromise position reached by the standards participants which permits LECs to select the vendor for services they need while LEC customers select the vendor for services they need. This compromise position will be voted on in the near future.

22. Mr. Guggina's accusation that the RBOCs introduced a "red herring" to stall a post-dial delay study, being conducted under the aegis of CLC, is similarly misleading. See Guggina Aff. at ¶ 12. Once again, Mr. Guggina neglects to mention the nature of the alleged "red herring." In this case, the so-called "red herring" was a highly relevant and incontrovertible fact -- a customer's perception of post-dial delay is based on the time between dialing and hearing either a ring or a busy signal. This fact was eventually recognized in the industry forum, a compromise study was conducted, and the results were published.

23. Once standards are established, they are incorporated into the process by which the RBOCs obtain the network equipment they need. For example, Bellcore's Technical Advisory/Technical Requirement ("TA/TR") process is a method used by the RBOCs to

provide both manufacturers and service providers with generic specifications concerning the equipment the RBOCs expect to need in their networks. TAs/TRs support the procurement processes of individual RBOCs, but each RBOC is free to adopt, modify or ignore Bellcore TAs/TRs. TA/TR documents incorporate relevant standards, and are also shaped by Bellcore's knowledge of industry capabilities and needs, which is largely based on Bellcore's frequent contacts with manufacturers and service providers. The availability of TA/TR documents is advertised in Bellcore's monthly DIGEST of Technical Information, which is available to anyone.

24. Bellcore also uses the Technical Requirements Industry Forum ("TRIF") process to obtain input from the industry on proposed generic requirements. A TRIF typically explains and clarifies the text of a TA, stimulates comments so that the text of the TA can be improved, and addresses technical questions. The TA/TR process therefore involves multiple public opportunities for those involved in equipment provision and others, including Information Service Providers ("ISPs") and other service providers, to comment on proposed network requirements. Similarly, Advanced Intelligent Network ("AIN") forums run by Bellcore have had participants from many facets of the industry. There is no justification for referring to such processes as "a private standards process run by Bellcore." See Guggina Aff. ¶ 22. Indeed, as even RBOC opponents have pointed

out (see the report of Dr. Lee Selwyn submitted by the Ad Hoc Telecommunications Users Committee at pp. 14-15), the RBOCs have absolutely no incentive to limit equipment choices via the TA/TR process or in any other way.

25. As explained above, Bellcore's equipment specification processes are open to all interested parties, including service providers, users and user associations, as well as manufacturers. Allegations (e.g., Guggina Aff. ¶ 28) that Bellcore deals "only" with "switching, computer and software vendors" are wrong, and in any event reflect a fundamental misconception of the power and role of such vendors in determining switch -- and hence RBOC -- capabilities. Switching, computer and software vendors are a very numerous and powerful group, and constitute, for example, nearly a majority of the voting members of T1, as well as a clear majority of the voting members of the X3 and TR41 committees described in paragraph 14, supra. Even if (contrary to fact) Bellcore dealt "only" with such vendors, such vendors would have a powerful incentive to protect and expand network functionality and "openness", because these vendors sell compatible equipment to, literally, everyone -- RBOCs, other LECs, IXCs, users, and ISPs. These vendors tend to support (or at least not oppose) RBOC provision of information services, presumably because they recognize that they, unlike established ISPs, would benefit from competition-driven expansion of the information services market.

26. Similarly, the allegations (see Guggina Aff. ¶¶ 25-27) concerning Bellcore's alleged "control" of the assignment of new Numbering Plan Area ("NPA") codes are incorrect, omit important facts and grossly mischaracterize virtually every alleged "fact". Mr. Guggina also fails to mention that administration of the North American Numbering Plan involves considerable effort to seek industry consensus (similar to the standards process) and that, when warranted, the FCC steps in. Moreover, NPA codes (i.e., Area Codes such as 212 for parts of New York City) are hardly unlimited resources, the issuance of which would have "no effect" on the RBOCs. It is also misleading to state that "interexchange carriers . . . asked Bellcore to assign an unused NPA code" (emphasis added), implying that only one code was requested. The interexchange carriers asked for one code each, and at least one carrier suggested a need for multiple NPA codes for each carrier.

27. Finally, the claim that Bellcore "proposed a new dialing plan that violated existing [CCITT] Recommendations and could not be implemented without major changes in the foreign telephone networks" is utterly false. In fact, Bellcore explicitly confirmed with the appropriate CCITT subject matter expert, the CCITT Rapporteur for Question 4/11 (Numbering), that the proposed solution conformed to all applicable CCITT Recommendations. This same Rapporteur conferred with numerous foreign administrations to determine whether Bellcore's proposed

solution would cause them difficulty, and reported back that the administrations polled had indicated that there was no difficulty at all and that the plan could be implemented in a very short time frame.

28. Turning to the subject of the interaction between the Public Switched Network ("PSN") and information services, three general, incorrect allegations have been made by the opposing affidavits alleging potential anti-competitive activities by the RBOCs in their provisioning of the PSN. The first is that the RBOCs could use the PSN to discriminate directly against the customers of ISPs. The second is that the RBOCs could use the PSN to harm the basic telecommunications services provided to the ISPs. The third is that the RBOCs could design and develop the PSN in such a way that RBOC information services would have functions and features not available to other ISPs. None of these allegations is correct.

29. Many of the oppositions to information services relief state that a large percentage of information services are available from the home or office "only" over ordinary phone lines, and allege that the RBOCs could selectively harm the calls over the PSN that involved information services provided by ISPs. See, e.g., affidavit of Robert Mercer submitted by the American Newspaper Publishers Association. For the reasons stated in the following paragraphs, this allegation is absurd.

30. As to the outgoing calls (calls made by the ISP's customer), when information services are provided over a voice circuit, whether by utilizing audio means or low-speed data via a modem, the RBOC "sees" the transmission as a "plain old telephone" call, and therefore cannot readily identify, much less single out and degrade, the calls that carry information services provided by an ISP (to be effective, all outgoing calls from all telephones would have to be monitored). Further, even if an RBOC could identify information services calls to ISP competitors over the PSN, there is no practical way for an RBOC to selectively harm the transmission quality or reliability of those calls on an automated basis. Moreover, the PSN is so intricate and interrelated that any attempt to selectively degrade service, even if it were possible, would have a rippling effect through other portions of the network, degrading the overall performance of the network and harming the "bread and butter" of the RBOCs. This would be highly injurious to the public reputation of the telephone company for reliable service and a direct threat to its revenues. Finally, the information service customer virtually always has alternate routes to

particular service providers.* Since the vast majority of data bases are served by intermediaries**, where the digits dialed do not identify the ISP, it would be technically infeasible to discriminate at the origination end against targeted services accessed through those intermediaries, because the RBOC would not know which ultimate service or data base the customer was accessing.

31. As to calls arriving at the ISP's centralized service point or data base (after the network has funnelled the traffic at a node into one large, dedicated trunk group), there is also no realistic possibility of harm by the RBOC at the terminating end. First, those "last mile" trunks are frequently ordered from the RBOC by an interexchange carrier (such as AT&T), rather than by the ISP. AT&T would clearly be in a position to know

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* The typical data base can be reached through multiple networks, such as BT Tymnet, Telenet, and Meadnet, and perhaps indirectly through other services (e.g., Sabre through Prodigy, Dow Jones through MCI mail). A BOC gateway may supply another point of connection, 800 numbers yet another. Telenet alone in fact services some 3000 hosts. Each of those hosts typically supports access to dozens or hundreds of different data bases. Thus, even for services entirely dependent on the telephone network, there are usually many possible points of connection.

** As of late 1988, Telenet (now called SprintNet) supported 3,000 connected hosts. Telenet, like other networks (e.g., MCI mail) also interconnects with others that operate gateway services. For example, through Telenet it is possible to connect to the EasyNet gateway service, which itself connects over 800 databases from 12 host services including Dialog, NewsNet, Vu/Text, and Questel. EasyNet may also be accessed via BT Tymnet.

what level of service to expect over that trunk group, would have the ability and desire to monitor service on the group, and would be directly harmed by any significant degradation of service on the group. Second, since the trunk group is typically a large group, carrying great quantities of traffic, this is a primary target for alternate network providers (such as Teleport and Metropolitan Fiber Systems, Inc.). Satellite, radio, fiber, or other dedicated facilities are all potential bypass alternatives for such a high-density route.

32. Even if an RBOC had such capabilities, and decided to implement such destructive programs, in order to benefit itself, it would have to selectively harm the information services calls in such a way that the customer would: 1) be aware that the information services portion of his calling was being significantly degraded, and 2) conclude that such degradation was sufficient to cause the customer to switch to that RBOC (and not just to another ISP). Tampering with the network on such a grand scale would be harmful to the RBOC's primary business, and would necessarily be patently obvious and provable by ISPs, interexchange carriers, regulatory bodies, and the courts. The risks of such an illegal scheme would be great while the benefits would be virtually nil.

33. The second general way in which it is alleged that RBOCs could discriminate against ISPs by utilizing the PSN is

equally absurd. Mr. Mercer, on page 11 of his affidavit, states that ISPs are dependent on the RBOCs for such ordinary telephone needs as "news gathering and for customer listing of classified advertisements", implying that the RBOCs could provide poor phone service to ISPs in order to gain a competitive advantage. The improbability of such discrimination becomes apparent upon closer analysis. While it is true that theoretically an RBOC could degrade the basic phone services of a competing ISP, no RBOC could gain a competitive advantage in the information services arena by doing so.

34. In order for an RBOC to <u>competitively</u> disadvantage an ISP by harming the ISP's basic phone service, the RBOC would have to do one of two things. One would be to degrade overall phone service to the ISP to such an extent that the ISP's customers would recognize the degradation and switch to the RBOC's information service. Alternatively, the basic phone service provided to a competitor ISP would have to be degraded to the point that the ISP would be unable to effectively gather news or even make basic telephone calls, and therefore be put out of business and driven from the market. Clearly, either action would be readily apparent not only to the ISP's customers, but to the competing ISP, regulatory bodies, and the courts, and would be a nonsensical course for an RBOC to follow. Moreover, any such attempt to degrade the service of enough ISPs to make a competitive difference would necessarily

involve a massive conspiracy among many hundreds or thousands of RBOC employees (someone has to decide to degrade an ISP's service, someone else has to do it, someone else has to ignore the resulting complaints, someone else has to ignore the attempts to escalate the complaint, and finally the PSCs, which sooner or later get all significant unresolved complaints, must be powerless or unwilling to rectify the matter). Such massive conspiracies simply are not realistic.

35. The third general allegation that the PSN could be used in an anti-competitive way is stated in, for example, the affidavit of Lee Selwyn submitted by the Ad Hoc Telecommunications Users Committee. The fundamental charge is that the Advanced Intelligent Network (AIN) is being developed in such a way that RBOC information services will have network functions and capabilities that are not available to other ISPs. That allegation is clearly wrong, both because the designers of AIN have no such intent and because, as explained in the next paragraph, federal and state regulation clearly prohibits such discrimination. The RBOCs are also criticized at great length for not making the proposed network as "open" as

Mr. Selwyn and others would like.* The "insufficiently open network" argument is wrong both in its premise and in its alleged effect. First, a major underlying premise of the AIN design is to provide a more "open" network. Second, even if Mr. Selwyn's allegations that the AIN will not be adequately "open" were true, there would still be no feasible way for an RBOC to thereby gain a competitive advantage.

36. There is no realistic possibility of an RBOC information service utilizing functionalities or capabilities of the PSN that are not available to ISPs on the same terms and conditions. The FCC's ONA and CEI policies, as well as many local regulatory rules, provide that any network capability available to an RBOC for the provision of information services must be available to all other information services providers on an equivalent basis. Those rules mandate that all network services, as defined by the appropriate regulatory body, must be provided to all information services providers on an equivalent basis. Further, ISPs must be provided network capabilities that

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* Mr. Selwyn alleges that "access will be restricted" in the future deployment of AIN, but he does not provide even one specific example of a requested access arrangement which an RBOC has refused to provide. This is typical of his affidavit, which recites numerous sweeping conclusions about technical matters without the benefit of any technical support. In this regard it is worth noting that the curriculum vitae attached to Mr. Selwyn's affidavit reveals that he has a background in economics, industrial management and regulation, but not in technology.

the RBOCs don't plan to use themselves, so long as the capabilities meet the criteria established by the FCC. Finally, FCC* and local rules are in place to ensure that adequate advance notification is given to ISPs well before added network capabilities are made available generally. It defies reason to think that an RBOC could provide a capability on the PSN which would allow its own information service an advantage and widely publicize that capability to potential information services customers, all without the knowledge of the ISPs and regulatory bodies. There is simply no way for the RBOCs to employ such an anti-competitive tactic in secret. As to RBOC intent, it is clear that the RBOCs chose to move ahead with the AIN, which is consistent with "open network" ONA principles. The RBOCs know, as Mr. Selwyn states on p. 13 of his affidavit, that the AIN has the "potential for a truly open network."

37. Since AIN will not give the RBOCs an anti-competitive advantage over other ISPs, regardless of how "open" it is, Selwyn's argument that the proposed AIN is not as open as it should be is irrelevant to the question of anti-competitive behavior in the information services market. However, I would like to briefly address the allegation that the AIN will not be as "open" as it should be.

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* E.g., 93 FCC 2d 1238 (1983) and CFR 47 (Paragraph 68-110(b)). To the best of my knowledge, compliance with these rules has never been challenged.

38. The Advanced Intelligent Network (AIN) will facilitate information services competition by providing ISPs increased access to the fundamental building blocks of the telecommunications network, thereby significantly increasing the quantity and sophistication of telecommunications-based information services available to the general population. Participation by the RBOCs in offering information services will only serve to increase competition. The design of the AIN is such that the fundamental network building blocks will be modularized so as to permit an open architecture and greatly enhanced interconnectivity and functionality by interexchange carriers and ISPs, in comparison to the existing network.

39. The attempts by Mr. Selwyn and others to "prove" that AIN is not as open as it should be by comparing AIN to the 7-layer Open System Interconnection (OSI) model are fundamentally flawed. First of all, any comparison of OSI principles to AIN is essentially an apples to oranges comparison, since there is no claim (nor could there be) that what is technically and economically feasible in computer protocols is therefore feasible in the PSN. In any event, the AIN will allow ISPs to have access to the resources of the network, while blocking the ability of one user to adversely affect another, as is the basic design of shared networks generally. Moreover, whatever OSI "Layers 5 and 6" would represent in relation to the public switched network (there is

no easy or exact comparison),* there is no truth to the implication that certain classes of interconnection will be reserved to the RBOCs' ISPs. The AIN will make available to all ISPs the capabilities of the network's building blocks. ISPs will have access to all "layers" of the network's functionality, within technical and network integrity constraints.

40. The AIN plan has been developed with the intention of removing many of the limitations associated with today's network. The architecture of today's PSN is dominated by stored program control (SPC) switches whereby the network's intelligence, including network services** applications, is stored within each switch. The RBOCs each own hundreds of SPC switches made by different vendors (e.g., AT&T's 1AESS, 2BESS, 3ESS, 4ESS and 5ESS; Northern Telecom's DMS-10, DMS-100 and DMS-200). As a result, to provide a new service ubiquitously, a telephone company must convince all of its switch vendors to develop the same feature for all of its switch types and then

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* The FCC stated in its Communications Protocol Proceeding 80-756 at 95 F.C.C. 2d 587 (1983), after citing the arguments raised by numerous parties as to the OSI model's ambiguity, that "In sum, there was substantial agreement that this model should not be employed to establish classifications of protocols in refining the treatment of protocol processing under Computer II."

** Mr. Selwyn (at p. 14) apparently misconstrues Bellcore's use of the term "services" to mean "information services". The "services" which the Bellcore document addresses are, however, RBOC-provided basic network services, not information services.

purchase and install the software package in each of its switches.

41. As one of the affidavits* opposing information service relief concedes: "Much of the key to the local network is in the software of the local switch, which in turn is in large measure developed and owned by switch manufacturers." Of course, switch vendors have their own priorities, and produce and sell large feature packages rather than individual features. As a result, any individual feature is seldom simultaneously offered to the RBOCs for all switches in the network. Moreover, even if new feature packages containing identical features were available for all switches simultaneously, simultaneous installation of a new software package on every switch in the network would be impossible. Mr. Mercer, Nina Cornell and others apparently do not recognize that the RBOCs are physically unable to instantaneously provide new services ubiquitously, and therefore wrongly attribute the failure to do so to some anti-competitive intent on the part of the RBOCs. The AIN, which Mr. Selwyn complains of, actually disproves this "intent" theory and will help alleviate Mr. Mercer's difficulties by centralizing the network's intelligence, so that a change made to the central intelligence would simultaneously and ubiquitously provide the new "service" throughout the network. This will provide

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* Affidavit of Roger G. Noll, submitted by the American Newspaper Publishers Association (ANPA), paragraph 68.

advantages to both the RBOCs' ISPs and other ISPs, resulting in increased availability of information services and competition.

42. In short, none of Mr. Selwyn's arguments about the allegedly "insufficiently open" network show either that AIN could harm information service competition or that a more open network would be technologically and commercially feasible. Highly technical questions related to the specifics of network access and "openness" are being addressed by the FCC, and need not and should not also be addressed in detail here.*

43. The network is incredibly complex, interoperable, highly reliable, and ever changing. It carries a broad mix of voice, data, and video traffic. Allowing multiple means of access to the network is often possible and, of course, highly desirable. However, such access must be designed with a manageable set of access mechanisms to insure its integrity and security. Neither ISPs (including RBOC ISPs), nor anyone else (e.g., computer hackers), should be permitted to wander into the network at will, creating and manipulating their own BSEs. The development of the AIN under the FCC's ONA and Enhanced Services

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* The FCC has held numerous proceedings relating to ONA and CEI. In addition, the Coalition of Open Network Architecture Parties ("CONAP") filed with the FCC on November 16, 1990 a "Petition to Investigate" the Advanced Intelligent Network. Mr. Selwyn is listed as an "economic consultant" to CONAP, and the CONAP brief is, in significant part, a verbatim reproduction of Mr. Selwyn's Report as filed with this Court.

rules will insure that the network will evolve toward even more openness over time, but in a manner that balances the two objectives of network integrity and openness. Otherwise, given the sophistication of users accessing the network, there would be a grave danger that network reliability and interoperability would be compromised. The bottom line is, however, that regardless of the "openness" of the PSN at any given point in time, RBOC ISPs will only have access to network functionalities and capabilities available to other ISPs, under the same terms and conditions. These capabilities are well documented and made available to other ISPs in advance of RBOC implementation, thereby insuring a free and open competitive marketplace while the public switched network is evolving.

Casimir S. Skrzypczak

SUBSCRIBED AND SWORN
to before me this ___
day of _____ 1991.

Notary Public

[redacted]

CERTIFICATE OF SERVICE

I, Eileen M. Callahan, certify that a copy of the foregoing Reply Comments of Bell Communications Research (Bellcore) in the matter of Computer III Further Remand Proceedings: Bell Operating Company Provision of Enhanced Services, was served on this 19th day of May, 1995, by First Class United States Mail, postage prepaid, to the following persons:

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