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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington D.C. 20554

FEB - 8 1993

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of:)
)
VERILINK CORPORATION)
)
Petition for Rulemaking to Amend)
the Commission's Part 68 Rules)
to Authorize Regulated Carriers)
to Provide Certain Line Build Out)
Functionality as a Part of Regulated)
Network Equipment on Customer Premises)

RM-8158

**COMMENTS OF
INTEGRATED NETWORK CORPORATION**

Integrated Network Corporation ("INC"), by its undersigned counsel, hereby submits these comments in response to the Commission's January 8, 1993 public notice concerning the above-captioned petition for rulemaking ("Petition") filed by Verilink Corporation proposing to amend Part 68 of the Commission's Rules to permit carriers to provide line build out ("LBO") functionality in the transmission path of 1.544 Mbps ("DS-1") services as a component of regulated network equipment located on customer premises. Verilink specifically requested that Sections 68.308(h)(2) e amended to delete subsections (ii) and (iii) of that rule.^{1/}

^{1/} Section 68.308(h)(2) identifies three signal attenuation settings for NCTE -- Option A, B, and C with a value of 0 db, 7.5 db and 15 db -- that can be selected at the time of installation. Verilink's proposed amendment would delete reference to Options B and C leaving Option A (at 0 db) the only LBO attenuation setting to be selected.

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INC supports Verilink's Petition. The rule amendments proposed by Verilink, if adopted, will reduce unnecessary customer dissatisfaction arising at the installation of customer premises equipment ("CPE"), facilitate implementation of the ANSI DS-1 Metallic Interface Standard, and eliminate equipment redundancies. Further, permitting carrier-provision of LBO in the DS-1 transmission path will encourage the deployment of advanced digital transmission technologies and the modernization of the U.S. telecommunications network infrastructure. Grant of Verilink's Petition will therefore serve the public interest.

BACKGROUND

INC, headquartered in Bridgewater, New Jersey, is a leading designer and manufacturer of innovative digital network products which enhance the capabilities of the existing public switched network to serve the growing user demand for digital services. INC's network equipment permits carriers to offer business customers universal access to advanced voice and data services, including Integrated Services Digital Network ("ISDN") services, switched bulk data/file transfer, bridging between local area networks, high-speed facsimile, graphics and encrypted voice and video, without undertaking costly wholesale equipment replacement. As a manufacturer of innovative, cost-effective network technologies, INC has a direct interest in, and is well-qualified to comment on, Verilink's proposal to amend the Part 68 Rules in a way that will reduce customer dissatisfaction,

encourage the expanded deployment of DS-1 services, and simplify the provisioning of ISDN and other advanced digital services.

Verilink requests in its Petition that the Part 68 Rules be amended to permit carriers to provide line build out functionality as a part of regulated interface devices on customer premises in the DS-1 transmission path. Verilink observes in its Petition that LBO attenuation is a functionality that is already present in regulated network equipment pursuant to the Commission's earlier decisions regarding network channel terminating equipment ("NCTE") and loopback testing.^{2/} Petition at 3-4. The Petition also asserts that the requested amendment will facilitate implementation of the American National Standards Institute ("ANSI") DS-1 Metallic Interface, ANSI BSR T1.403 standard.^{3/} Petition at 12-13.

Verilink notes that the Commission has previously denied a request by BellSouth for a declaratory ruling or, in the alternative, a waiver of the Commission's Rules to permit carrier-provision of LBO in the DS-1 transmission path.^{4/} In the 1991 BellSouth Order, the Commission denied BellSouth's

^{2/} Amendment to Sections 64.702 of the Commission's Rules and Regulations (Third Computer Inquiry), 2 FCC Rcd. 3072 ("Phase II Order").

^{3/} See ANSI, American National Standard for Telecommunications: Carrier-to-Customer Installation - DS-1 Metallic Interface (1989).

^{4/} See BellSouth Petition for Declaratory Ruling or, Alternatively, Request for Limited Waiver of the CPB Rules to Provide Line Build Out (LBO) Functionality as a Component of Regulated Network Interface Connectors on Customer Premises, DA 91-664 (released June 6, 1991) ("BellSouth Order").

request chiefly for procedural reasons and invited interested parties to address the issues raised by Bellsouth's request in a rulemaking proceeding. For the reasons stated below, INC believes that the proposed Part 68 rule amendment authorizing carriers to provide LBO in the DS-1 transmission path as a part of regulated network equipment on customer premises will serve the public interest and should be adopted.

I. CARRIER-PROVIDED LINE BUILD OUT IN THE DS-1 PATH WILL SIGNIFICANTLY SIMPLIFY CUSTOMER INSTALLATIONS

As discussed in Verilink's petition, when DS-1 is delivered over copper transmission medium, the proper level of LBO will be determined by the loss between the network interface and the last carrier-provided line regenerator. Accordingly, proper LBO levels turn on the internal engineering design arrangement of the serving carrier. As a result CPE customers frequently must consult with their serving carriers (often after first seeking guidance from manufacturers) to determine which level of LBO should be used for the customer's particular circumstances.

INC believes that the existing coordination process whereby users find it necessary to confer with the serving carrier (and/or manufacturer) to adjust the LBO furnished through CPE is inefficient and burdensome. INC agrees with Verilink that this "joint engineering" process generates significant customer dissatisfaction. INC accordingly supports the proposed rule revision because carrier provision of LBO in the DS-1

transmission path would greatly simplify customer installations and eliminate this source of customer confusion and dissatisfaction. Regulated carrier provision of LBO will minimize customer service complaints and questions at CPE installation and reduce carrier and manufacturer expenses incurred in addressing customer service inquiries based on LBO levels. Further, if adopted, the amendment will avoid the incidence of network harm -- in the form of crosstalk -- that can result if customer misadjustment of LBO settings causes excessive signal levels to be introduced into the network.

II. THE PROPOSED PART 68 RULE AMENDMENT WILL FACILITATE THE INTRODUCTION OF ADVANCED DIGITAL NETWORK TECHNOLOGIES AND ENCOURAGE EXPANDED DELIVERY OF DS-1 SERVICES

INC generally supports Commission rules and policies that will facilitate the introduction of advanced network technologies and encourage the delivery of a broad array of digital services to users. Such policies complement the growing public support for rapid modernization of the U.S. public telecommunications infrastructure and helps carriers and equipment vendors to respond to the increasing consumer demand for advanced digital and other network services. Indeed, INC's equipment and technologies address that customer demand by enabling common carriers to introduce advanced digital services immediately without making substantial network equipment investments.

The rule amendment proposed by Verilink will also promote the expanded deployment of DS-1 and other advanced network services. In particular, the proposed rule will facilitate the implementation of the ANSI DS-1 Metallic Interface Standard. The ANSI standard is designed to mitigate problems arising in the process of connecting CPE to DS-1 service facilities by establishing a single pulse template and a uniform signal level from NCTE to the interface.^{2/} The modest rule amendment proposed by Verilink is consistent with the ANSI interface standard to the extent that it will eliminate the need for a joint engineering process between users and carriers and/or manufacturers at the time of CPE connection to DS-1 service facilities.

INC also believes that the customer dissatisfaction generated by the joint engineering process creates an artificial disincentive for DS-1 service. By simplifying equipment and service installation, the proposed rule revision will eliminate an obstacle to widespread use of T1 circuits -- particularly for smaller business users who may be less familiar with more sophisticated telecommunications services and equipment than large business users who typically employ in-house telecommunications personnel. INC submits that the public interest would be served by adopting rule amendments that will promote universal access to and use of DS-1 services. Similarly, INC also supports

^{2/} See BellSouth Order at ¶ 2-4.

Verilink's Petition to the extent that the proposed rule change, if adopted, will "facilitate the introduction of ISDN in the future by simplifying its implementation." Petition at 16.

III. CONSUMERS WILL BENEFIT FROM THE PROPOSED RULE AMENDMENT

The proposed modest change in the Part 68 Rules permitting carriers to provide LBO in the DS-1 transmission path as a part of regulated equipment will serve the public interest by permitting consumers and the CPE manufacturing industry to take advantage of capabilities already present in network equipment. As the Commission recognized in its earlier order concerning Bellsouth's request,^{6/} carriers were authorized to provide LBO functionality in network equipment for the purpose of signal coordination in loopback testing.^{2/} Such LBO functionality is capable of providing signal power attenuation not only for test signals looped back to the network, but also for customer-generated signals. Since LBO functionality is already present in network-provided equipment, no economic or technical justification exists for the Commission's Rules to require that LBO functions for DS-1 transmissions may be provided only by CPE.

Further, such redundancy is particularly wasteful when service is delivered through multiplexers; LBO is necessary only on those DS-1 services delivered via repeatered lines. Where

^{6/} BellSouth Order, at ¶¶ 2-7. .

^{2/} See Phase II Order, 2 FCC Rcd. at 3072.

DS-1 service is delivered over fiber optics, and derived through network multiplexing, LBO attenuation is not required. In that case, CPE equipped with LBO functionality is adjusted to the "Option A" output pulse where LBO is bypassed. Accordingly, as the use of fiber optic media increases, LBO functionality that is incorporated in CPE will add only unnecessary functionality and cost to the consumer.

Elimination of redundant LBO functions is thus an additional reason to adopt the proposed Part 68 rule amendment. Further, the Commission should recognize that such a revision would not harm the CPE industry by imposing a new equipment requirement that would require existing CPE to be retrofitted or replaced. The proposed rule amendment would not render existing CPE obsolete or otherwise devalue such equipment since it would simply permit a carrier to specify that all CPE should be adjusted to the "Option A" signal output level.^{2/} The proposed amendment therefore would not jeopardize competition in the CPE industry or CPE vendors.

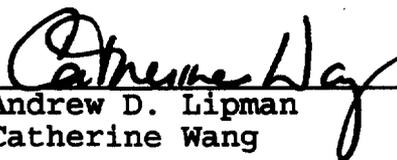
CONCLUSION

For the reasons discussed herein, INC supports the Petition for Rulemaking submitted by Verilink Corporation requesting that the Commission amend the Part 68 rules to permit carrier-

^{2/} Of course, CPE manufacturers could elect to eliminate the redundant functionality in their equipment and compete with other vendors by passing any savings along to their customers.

provision of line build out functionality in the DS-1 transmission path as a part of regulated network equipment located on customer premises.

INTEGRATED NETWORK CORPORATION

By: 
Andrew D. Lipman
Catherine Wang

SWIDLER & BERLIN, CHTD.
3000 K Street, N.W.
Suite 300
Washington, D.C. 20007
(202) 944-4837

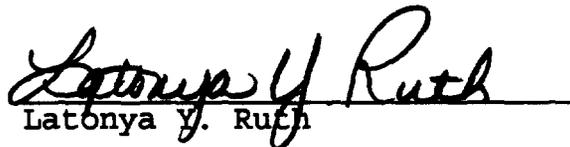
Its Counsel

Date: February 8, 1993

CERTIFICATE OF SERVICE

I hereby certify that on this 8th day of February, 1993, a copy of the foregoing document has been sent by first-class, postage-prepaid mail to the following:

William Buckley
Verilink Corporation
145 Baytech Drive
San Jose, California 95134



Latonya Y. Ruth