BELLSOUTH TELECOMMUNICATIONS, INC.

SURREBUTTAL TESTIMONY OF THOMAS G. WILLIAMS

BEFORE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 960786-TL

August 20, 2001

Q. PLEASE STATE YOUR NAME, YOUR POSITION WITH BELLSOUTH TELECOMMUNICATIONS, INC. ("BELLSOUTH") AND YOUR BUSINESS ADDRESS.

A. My name is Thomas G. Williams. I am employed by BellSouth as Product Manager for Line Sharing and Line Splitting for the nine-state BellSouth region. My business address is 3535 Colonnade Parkway, Suite E511, Birmingham, Alabama, 35243.

Q. ARE YOU THE SAME THOMAS G. WILLIAMS WHO FILED DIRECT TESTIMONY IN THIS PROCEDURE?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. I am responding to the testimony of WorldCom witness Mr. Greg Darnell, AT&T witness Mr. Steven Turner and Florida Digital Network (FDN) witness Mr. Michael Gallagher on Line Sharing and Line Splitting issues.

Q. DO YOU AGREE THAT BELLSOUTH MUST PROVIDE ACCESS TO LINE SPLITTERS THAT IT USES FOR ITSELF BECAUSE LINE SPLITTERS ARE "ATTACHED ELECTRONICS" AND, THEREFORE, PART OF THE LOCAL LOOP AS MR. DARNELL STATES ON PAGES 19-21 AND MR. TURNER STATES ON PAGE 18 OF THEIR TESTIMONY?

A. No. BellSouth does not have discrete line splitters in its network for its own use. Therefore, BellSouth has no splitters on any of its loops that could be considered "attached electronics". BellSouth only deploys discrete line splitters at the request of ALECs for Line Sharing. For its own wholesale ADSL offering, BellSouth's DSLAM provides the splitting functionality. In the Third report and Order at ¶175, the FCC was very clear that ILECs have no obligation to provide unbundled access to its DSLAM:

> We conclude that, with the exception of Digital Subscriber Line access Multiplexer (DSLAMs), the loop includes attached electronics, including multiplexing equipment used to derive the loop transmission capacity.

BellSouth's DSLAM performs this splitting functionality and it is technically infeasible to separate the splitting functionality from the remainder of the DSLAM.

Also, this Commission was very clear on this matter (*June 28, 2001 'Final Order On Arbitration', Docket No. 000731-TP In re: Petition by AT&T*

Communication of the Southern States, Inc. d/b/a/ AT&T for arbitration of certain terms and conditions of a proposed agreement with BellSouth Telecommunications, In. pursuant to 47 U.S.C. Section 252) when this Commission presented its Decision, on page 151:

> We conclude that although a splitter may have appeared to be included under the definition of "attached electronics" in the UNE Remand Order, in subsequent orders the FCC clearly rejects arguments that an ILEC should be obligated to provide the splitter, where ALECs engage in "line splitting." Specifically, the FCC rejects AT&T's argument that the splitter should be included as part of the loop as "attached electronics".

Q. MR. DARNELL COMPLAINS ON PAGE 20 OF HIS TESTIMONY THAT BELLSOUTH IS NOT WILLING TO PERMIT LINE SPLITTING BETWEEN ITSELF AND A VOICE CLEC. PLEASE EXPLAIN THIS POSITION.

A. Certainly. First, Mr. Darnell is confusing some terms. As I previously stated in my testimony, Line Splitting is when a voice ALEC provides voice service and a data LEC provides data service over the same loop. BellSouth is not a data LEC and therefore by definition, is not an actively involved party in Line Splitting. Second, BellSouth offers its wholesale ADSL to internet service providers (ISPs), who sell internet service to end users. BellSouth wholesale ADSL is offered through an FCC tariff, which contains the requirement that

the service only be offered where BellSouth is the voice provider. Accordingly, BellSouth is not a 'data provider', but rather a transport provider for the data providers. Lastly, the FCC has repeatedly been very clear in its position that incumbent LECs are not required to continue providing xDSL services when the CLEC provides the voice service. For example, in the Line Sharing Reconsideration Order referenced above, the FCC stated:

> We deny, however, AT&T's request that the Commission clarify that incumbent LECs must continue to provide xDSL service in the event customers choose to obtain service from a competing carrier on the same line because we find that the Line Sharing Order contained no such requirement. (See In Re: Deployment of Wireline Services Offering Advanced Telecommunications Capability, Order No. FCC 01-26 in CC Docket Nos. 98-147, 96-98 (Released January 19, 2001) at ¶26).

The FCC then expressly stated that it's Line Sharing Order

> ... does not require that [LECs] provide xDSL service when they are no longer the voice provider. (Id.)

Q. HAS ANOTHER COMMISSION PREVIOUSLY ADDRESSED THIS ISSUE?

A. Yes. In an arbitration proceeding before the Public Service Commission of South Carolina, IDS Telecom, LLC alleged that it was anticompetitive for

BellSouth not to provide xDSL services over a loop that a ALEC is using to provide voice service. The South Carolina Commission rejected IDS's allegations, stating:

> IDS's allegation is without merit. The FCC recently stated "we deny AT&T's request for clarification that under the Line Sharing Order, incumbent LECs are not permitted to deny their xDSL [data] services to customers who obtain voice service from a competing carrier where the competing carrier agrees to the use of its loop for that purpose." After denying AT&T's request, the FCC reiterated that "[a]lthough the Line Sharing Order obligated incumbent LECs to make the high frequency portion of the loop separately available to competing carriers on loops where the incumbent LEC provides voice service, it does <u>not</u> require that they provide xDSL service when they are no longer the voice provider." Clearly, the FCC has not required an incumbent LEC to provide xDSL service to a particular end user when the incumbent LEC is no longer providing voice service to that end user. IDS' contention that this practice is anticompetitive is therefore not persuasive when BellSouth is acting in accordance with the express language of the FCC's most recent Order on the subject.

See Order on Arbitration, In re Petition of IDS Telecom, LLC for Arbitration of a Proposed Interconnection Agreement with BellSouth Telecommunications, Inc. Pursuant to 47 U.S.C. Section 252(b), Order No. 2001-286 in Docket No.

2001-19-C at 28-29 (April 3, 2001).

Q. DO YOU AGREE WITH MR. TURNER AS HE STATES ON PAGE 5 OF HIS TESTIMONY THAT BELLSOUTH REFUSES TO IMPLEMENT LINE SPLITTING IN FLORIDA EXCEPT IN THE NARROWEST OF CIRCUMSTANCES?

A. No. BellSouth offers the same arrangement to ALECs as that described by the FCC in the Texas 271 Order and the Line-sharing Reconsideration Order. Specifically, BellSouth facilitates Line Splitting by ALECs by cross-connecting an xDSL-capable loop and a port to the collocation space of either the voice ALEC or the data ALEC. The ALECs may then connect the loop and port to a ALEC-owned splitter, and split the line themselves. BellSouth has made it clear to the members of the Line Splitting Collaborative, including AT&T, that it is prepared to accept Line Splitting orders to convert existing UNE-P customers to Line Splitting arrangements. The conversion of UNE-P to Line Splitting is the specific arrangement that that Line Sharing Reconsideration Order addressed. Carrier Notification Letter SN91082407 was distributed to all ALECs informing them that Line Splitting is available as of June 19, 2001. The Carrier Letter is attached as Exhibit TGW-20 and is posted on the BellSouth Interconnection web site. Moverover, BellSouth has always been prepared to offer Line Splitting in that there are no new elements in Line Splitting arrangement. If AT&T wishes to engage in line splitting with an existing UNE-P customer, all it must do is request from BellSouth an unbundled loop terminated to a collocated splitter and DSLAM equipment and

unbundled switching combined with shared transport, to replace its existing UNE-platform arrangement, as specified by the FCC in paragraph 19 of the Line Splitting Order. Additionally, BellSouth allowed members of the Line Splitting Collaborative to prioritize additional scenarios for migration to Line Splitting arrangements. Currently BellSouth and the Line Splitting Collaborative are developing two additional conversion scenarios, which are (1) BellSouth voice service to line splitting and (2) new line splitting customers.

Q. DO YOU AGREE WITH MR. TURNER AS HE SAYS ON PAGE 10 OF HIS TESTIMONY THAT BELLSOUTH REFUSES TO PROVIDE OPERATIONAL PROCESSES FOR ALECS TO ENGAGE IN LINE SPLITTING?

A. No. In addition to the Carrier Notification Letter SN91082407 mentioned above, the BellSouth Business Rules For Local Ordering was updated on the BellSouth Interconnection web site June 29, 2001 to include instructions that ALECs may use to order Line Splitting arrangements. Also, BellSouth is voluntarily hosting a weekly Line Splitting industry collaborative for the express purpose of working with ALECs in the development, refinement and enhancement of operational processes relating to Line Splitting. The BellSouth Line Sharing Collaborative web site has additional information to assist ALECs ordering of Line Splitting. This site contains the following documents:

- UNE-P to Line Splitting Order Process Flow

- Line Splitting Ordering Document (LSOD)
- Line Splitting DOC Detailed Instruction Document
- Line Splitting Trouble Receipt Flow Data Trouble

This web site can be found at the following hyperlink: http://www.interconnection.bellsouth.com/markets/lec/line_sharing_collab/blsc_linesplitting.html

If AT&T wishes to order Line Splitting arrangements, the information is readily available to allow it to do so.

Q. DO YOU AGREE WITH MR. TURNER, AS HE STATES IN PAGE 11 OF HIS TESTIMONY, THAT IT IS DISCRIMINATORY FOR BELLSOUTH TO PROVIDE A LINE SPLITTER TO DATA LECS FOR LINE SHARING BUT NOT LINE SPLITTING?

A. No. In its Line Sharing Order, the FCC found that "incumbent LECs may maintain control over the loop and splitter equipment and functions. In fact, both the incumbents and the competitive LECs agree that, subject to certain obligations, the incumbent LEC may maintain control over the loop and the splitter functionality, if desired." (Emphasis added.) Line Sharing Order, ¶ 76. Likewise, "incumbent LECs must either provide splitters or allow competitive LECs to purchase comparable splitters as part of this new unbundled network element." (Emphasis added.) Line Sharing Order, ¶ 146. The Illinois Commission confirmed the FCC's ruling in an arbitration decision between

Covad and Ameritech; specifically discussing Paragraphs 76 and 146 of the Line Sharing Order: "These paragraphs clearly indicate that Ameritech is under no legal obligation to make available Ameritech-owned splitters; rather, Ameritech has the option to own splitters." Covad Communications Company, Petition for Arbitration Pursuant to Section 252(b) of the Telecommunications Act of 1996, Rhythms Links, Inc., Petition for Arbitration Pursuant to Section 252(b) of the Telecommunications Act of 1996 (Covad/Rhythms Illinois Arbitration Award), 00-0312, 00-0313, August 17, 2000. There, the Illinois Commission indicated that the Texas, California, and Pennsylvania commissions permitted, but did not require, ILEC owned splitters.

BellSouth's Line Sharing offering currently includes a BellSouth owned splitter as well as a ALEC owned splitter option. Any argument that BellSouth should also be required to own the splitter in a line splitting arrangement penalizes BellSouth for electing to exceed the regulatory requirements set forth in the Line Sharing Order. Further, because the FCC's Line Sharing Order provided the incumbent with a choice about splitter ownership, this Commission should not require BellSouth to own the splitter in a line splitting environment.

Q. HAS THIS COMMISSION PREVIOUSLY RULED ON THIS ISSUE OF BELLSOUTH PROVIDING THE SPLITTER IN LINE SPLITTING ARRANGMENTS?

A. Yes. In the AT&T and BellSouth Telecommunications, Inc. Arbitration,

DOCKET NO. 000731-TP, ORDER NO. PSC-01-1402-FOF-TP Issued: June 28, 2001, the Florida PSC ordered:

> BellSouth shall be required to allow AT&T access to the spectrums on a local loop for voice and data when AT&T purchases a loop/port combination, alternatively referred to as "line splitting." In order to facilitate "line splitting," BellSouth shall be obligated to provide an unbundled xDSL-capable loop terminated to a collocated splitter and DSLAM equipment, and unbundled circuit switching combined with shared transport at TELRIC rates. However, BellSouth will not be required to provide the splitter in a line splitting arrangement. (Emphasis added.)

Q. MR. TURNER SAYS ON PAGES 12, 13, AND 20 OF HIS TESTIMONY SAYS THAT IF ALECS PROVIDE THE SPLITTER THE SERVICE OUTAGE WILL BE LONGER BECAUSE OF MULTIPLE CROSS-CONNECTIONS AND COORDINATION BETWEEN BELLSOUTH AND THE ALEC. DO YOU AGREE WITH THIS DESCRIPTION?

A. No. A short interruption of voice service is always required when wiring the loop to a splitter, regardless of who owns the splitter. The combined voice and data service must be connected to the splitter for Line Splitting orders. BellSouth will run a collocation cross-connection to the ALEC provided cable, and another from a second ALEC cable termination to send the voice signal to the voice port. This arrangement is no more complicated and will result in no

greater interruption of voice service than if BellSouth were to use cross-connections to its own splitter leased by the ALEC. Mr. Turner's reference to "coordination" is confusing. There is no coordination between BellSouth and the ALEC for Line Sharing or Line Splitting end-user orders. As AT&T will discover when they submit their first order with the required cable assignments, BellSouth will perform the work on or prior to the due date.

Q. DO YOU AGREE WITH MR. TURNER AS HE SAYS ON PAGE 14 THAT BECAUSE THERE IS NO TECHNICAL BARRIER TO PROVIDE SPLITTERS AND BECAUSE BELLSOUTH WILL PROVIDE SPLITTERS WHEN IT RETAINS THE VOICE CUSTOMER THAT IT IS BEING DISCRIMINATORY?

A. No. As I previously stated, BellSouth should not be penalized for electing to exceed the regulatory requirements set forth in the Line Sharing Order, which clearly states that ILECs may own the splitter but are not required to do so. Splitters are not UNEs. BellSouth does not have discrete line splitters in its network for its own use. The only discrete splitters BellSouth has deployed have been at the request of ALECs for Line Sharing. Additionally, Mr. Turner complains that because BellSouth is not providing the splitter, ALECs will be required to use collocation. Clearly, the FCC envisioned the use of collocation for ALECs to provide advanced services. In paragraph 19 of the Line Splitting order referenced above, the FCC said, "For instance, if a competing carrier is providing voice service using the UNE-platform, it can order an unbundled xDSL-capable loop terminated to a collocated splitter and DSLAM equipment

and unbundled switching combined with shared transport, to replace its existing UNE-platform arrangement with a configuration that allows provisioning of both data and voice services." (Emphasis added). The provision of xDSL requires collocation because the DSLAM must be located in the central office. AT&T can place its splitter in the same collocation space with the DSLAM. In fact, DSLAMs are available with an integrated splitter. Further, Mr. Turner's statements about service disruption due to an ALEC provided splitter has no credibility. The temporary disruption associated with connecting a splitter will be the same regardless of who owns the splitter.

Q. DO YOU AGREE WITH MR. TURNER THAT WITHOUT BELLSOUTH PROVIDING THE SPLITTER ALECS ARE PRECLUDED FROM COMPETING FOR CUSTOMERS WHO WISH TO OBTAIN ADVANCED SERVICES OVER A SINGLE LOOP, AS HE SAYS ON PAGE 14?

A. No. Splitters are relatively inexpensive compared to other data equipment required to provide end-users high-speed data service. If an ALEC wishes to provide xDSL services or partner with a data provider to offer xDSL service to its end users over the high frequency spectrum of UNE loops, it must have a DSLAM located in the serving central office. This type of data service requires a DSLAM. Without a DSLAM there is no xDSL. Also, xDSL service is very distance sensitive. Except for remote terminal line sharing, which Mr. Turner does not address, I know of no way to provide xDSL service and not have a collocated DSLAM in the serving central office. Therefore, if AT&T intends to provide xDSL services, it will have a collocated DSLAM or will

have access to a DSLAM belonging to a data partner. It can place the splitter in the same collocation space where the DSLAM resides. In fact, many providers use a DSLAM with an integrated splitter.

Additionally, the FCC was very clear in paragraph 19 of the Line Splitting Order that it intended that the ALECs would "provide its own splitter". The FCC further states in paragraph 18 of the order that "two competing carriers join to provide voice and data services through line splitting".

Q. DO YOU AGREE WITH MR. TURNER'S ALLEGATION ON PAGE 20 THAT BELLSOUTH IS ATTEMPTING TO "LOCK-UP" THE DSL MARKET BEFORE ALECS HAVE A CHANCE TO PROVIDE BUNDLED SERVICES?

A. Absolutely not. Nothing is preventing AT&T and other ALECs from offering bundled services today. Mr. Turner's allegation is belied by the facts. According to Scott C. Cleland of Precursor Group, a leading independent research group, 73% of existing residential households with broadband data service have cable modems and 26% are served by DSL. Precursor Group Newsletter, February 22, 2001. This newsletter is Exhibit TGW-21. In addition to the cable modem option, there are numerous data LECs providing data services, from which end users may select. Customer choice is prevalent.

Q. DO YOU AGREE THAT A SPLITTER IS THE SAME AS BRIDGED TAP OR LOAD COILS AS MR. TURNER ALLEGES ON PAGE 19 OF HIS

TESTIMONY?

A. No. Mr. Turner takes the strange position that a splitter is like bridged tap. Bridged tap is an engineering technique of extending a loop so that it could serve additional locations and adds flexibility, and therefore, efficiency to the BellSouth network. Load coils are devices that improve voice quality, especially on long loops. I am confused by Mr. Turner's point that, because the FCC allows ALECs to request removal of bridged tap and load coils to allow data services, BellSouth is obligated to provide a piece of equipment that does not exist in BellSouth's network, except when ordered by a ALEC for line sharing.

Q. DOES BELLSOUTH PLAN TO REMOVE SPLITTERS, AS MR. TURNER STATES ON PAGE 21 0F HIS TESTIMONY?

A. No. BellSouth is not proposing removing a splitter if the end user wishes to continue receiving data service from an existing data provider, but wishes to migrate to another voice provider. If a data ALEC engaged in line sharing is providing its own splitter and also has an agreement to use the high frequency spectrum of the winning voice ALEC's UNE loop, there would be no wiring change and no service interruption, and the end user certainly would not lose its data service, as Mr. Turner alleges. Likewise, if a data LEC in a line sharing arrangement is leasing a splitter from BellSouth and also has an agreement to use the winning voice ALEC's high frequency spectrum, there would be no service interruption, nor loss of data service. In other words, in

both of these situations, it is BellSouth's plan that there be no wiring changes, and therefore, no interruption of the end user's data service.

Q. DO YOU AGREE WITH MR. TURNER'S DISCUSSION ON PAGE 21 AND 22 OF THE FLORIDA PSC'S RULING THAT BELLSOUTH DID NOT HAVE TO PROVIDE SPLITTERS FOR LINE SPLITTING?

A. No. Mr. Turner's description is flawed. First, as Mr. Turner points out on page 17 of his testimony, the Texas Public Utilities Commission did approve SBC's application for long distance relief without owning a splitter in line splitting arrangements. Later, an arbitrator ruled that SBC should own the splitter in line splitting arrangements. There is no requirement anywhere, however, that BellSouth own the splitter for 271 compliance. Moreover, the Florida PSC has already ruled in the AT&T arbitration that BellSouth does not have to provide splitters for line splitting.

Q. DO YOU AGREE WITH MR. TURNER AS HE SAYS ON PAGE 24 OF HIS TESTIMONY THAT BELLSOUTH SHOULD PROVIDE SPLITTERS "LINE-AT-A-TIME"?

A. No. First, as I've previously described, BellSouth has no obligation to provide splitters for line sharing or line splitting. Line splitters are not a piece of discrete equipment that BellSouth has in its network for its own use. The splitter functionality is performed within the DSLAM for BellSouth's own xDSL offering. BellSouth provides line splitters at the request of data ALECs

to provide line sharing to their end user customers.

The splitter equipment selected by BellSouth when it provides the splitter for line sharing has 96 or 144 ports, depending upon the supplier. A requirement to deploy an entire shelf of 96 or 144 ports for an ALEC that seeks a single port would be extremely inefficient, and would increase the cost to the ALEC accordingly. BellSouth allows the ALECs to purchase a 96 port splitter compliment, or in 24 or 8 port options.

In addition to being substantively incorrect, Mr. Turner's testimony on this point is a prime example of AT&T's unwillingness to ever be satisfied. The 8 port option was part of a settlement between BellSouth and the Data Coalition (a ALEC conglomerate consisting of the major players in the DSL market including Covad) in the Georgia xDSL Proceeding, which BellSouth agreed to extend region-wide. It is extremely unreasonable for AT&T to request more from this Commission than was agreed to in a region-wide settlement reached between BellSouth and the Data Coalition. If the ALECs who actually use line sharing and line splitting to provide service to local customers are satisfied with 8 ports, AT&T, who is only arguing the point on a theoretical level, should be as well.

Q. MR. TURNER CLAIMS ON PAGE 25 THAT BELLSOUTH DOES NOT PROVIDE THE SAME LEVEL OF SUPPORT FOR UNE-P WHEN IT IS PART OF A LINE SPLITTING CONFIGURATION AS IT DOES FOR UNE-P VOICE SERVICES. DO YOU AGREE WITH MR. TURNER?

A. This is nonsense. First, BellSouth does not have discrete line splitters in its network for its own use. Therefore, BellSouth has no splitters on any of its loops that could be considered "part of the loop". BellSouth only deploys discrete line splitters at the request of ALECs. Second, as I explained above, a UNE-P is a loop and port combined in BellSouth's network. A UNE-P does not require any additional elements, nor does UNE-P require collocation. When the loop and port are separated by other equipment and collocation, it no longer meets the definition of UNE-P and the configuration is more complex and contains additional items.

Q. DO YOU AGREE WITH MR. TURNER AS HE CLAIMS ON PAGE 26 THAT ALECS SHOULD HAVE TO PAY ONLY LOOP-PORT "SWITCH AS IS" COMBINATION FOR A LINE SPLITTING ARRANGEMENT?

A. No. "Switch-as-is" means that no changes are required. When changing from UNE-P to line splitting, wiring changes are required. First, let me clarify Line Sharing and Line Splitting. With Line Sharing, the incumbent local exchange carrier ("ILEC"), BellSouth in this case, shares its voice line with a data local exchange carrier ("LEC"). In a Line Sharing arrangement, BellSouth provides the voice service to the end user. The data LEC provides xDSL data service to the end user over the high frequency spectrum of the same loop. Exhibit TGW-22 attached to my rebuttal testimony shows the architecture for central office based Line Sharing with a BellSouth-provided splitter.

The central office architecture that BellSouth uses for its retail voice service is

shown in Exhibit TGW-23. When an ALEC wins a voice customer from BellSouth and migrates the voice service to UNE-P, no wiring changes are required. A UNE-P is a combined loop and port as shown in Exhibit TGW-24. The loop and port are combined in BellSouth's network. A UNE-P does not require any additional elements nor does UNE-P require collocation. A review of Exhibit TGW-23 and Exhibit TGW-24 reveal that the central office architectures are identical. In a Line Splitting arrangement, a carrier using an unbundled network element platform, or UNE-P, to provide voice service to one of its customers would "split" the loop and allow another carrier (other than BellSouth) to provide data services to the same customer over the higher frequency portion of the same loop. When a carrier with a UNE-P combination enters into a Line Splitting arrangement with another carrier, however, the loop that had been serving the customer is no longer combined with the port. Instead, central office work is performed to cross-connect the loop to a splitter, which the ALEC owns. In a Line Splitting arrangement, the UNE-P is replaced by a UNE loop, port, and two collocation cross connections. The splitter separates the frequency used to provide the voice service from the frequency used to provide the data services. From there, another cross-connection is used to carry the voice signal to the port on the switch, while the data signal is carried on the ALEC's data network. Thus, the loop and port are no longer combined but, rather, separated by two collocation cross-connections and a piece of ALEC provided equipment. Exhibit TGW-25 depicts a Line Splitting arrangement. As can be clearly seen, this Line Splitting arrangement bears little resemblance to the UNE-P arrangement show in Exhibit TGW-24.

Concerning migration from Line Sharing to Line Splitting, if the original Line Sharing arrangement was established with a Data LEC-owned splitter, then BellSouth would not be involved with the splitter provisioning and, accordingly, any decisions regarding use of the splitter would be left up to the Data LEC. If, however, the original Line Sharing arrangement were established with a BellSouth-owned splitter, then BellSouth would allow the Data LEC to continue leasing the BellSouth splitter under the following conditions:

- The existing Data ALEC remains the end user's advanced services provider, and
- The Data ALEC has an agreement with the Voice ALEC to use the upper frequency spectrum of the loop to continue providing the advanced services.

Q. HAS THE FCC RULED ON THE MATTER OF LINE SPLITTING IN UNE-P ENVIRONMENT?

A. Yes. The Federal Communications Commission ("FCC") was very clear in its Texas 271 order (Application by SBC Communications Inc, Southwestern Bell Telephone, and Southwestern Bell Communications Services, Inc d/b//a Southwestern Bell Long Distance, CC Docket No. 00-65, June 30, 2000) that while ILECs are obligated to facilitate Line Splitting, ILECs are not obligated to own the splitter in a Line Splitting arrangement. In paragraph 325 the Commission states:

The Commission's rules require incumbent LECs to provide requesting carriers with access to unbundled loops in a manner that allows the requesting carrier "to provide any telecommunications service that can be offered by means of that network element. As a result, incumbent LECs have an obligation to permit competing carriers to engage in line splitting over the UNE-P where the competing carrier purchases the entire loop and provides its own splitter. And in paragraph 327 of the same order, the Commission states:

> We reject AT&T's argument that SWBT has a present obligation to furnish the splitter when AT&T engages in line splitting over the UNE-P. The Commission has never exercised its legislative rulemaking authority under section 251(d)(2) to require incumbent LECs to provide access to the splitter, and incumbent LECs therefore have no current obligation to make the splitter available.

Q. IS MR. GALLAGHER CORRECT WHEN HE SAYS, ON PAGE 6 OF HIS TESTIMONY, THAT FDN IS UNABLE TO PROVIDE DSL SERVICE TO APPROXIMATELY 70% OF FLORIDA END-USERS BECAUSE OF THE PRESENCE OF BELLSOUTH DLCs?

A. No. FDN has the same options available to them as BellSouth has for itself. If FDN wants to provide DSL service to customers served by DLC, FDN has the ability to do so. All of the necessary components are available thorough collocation and UNE offerings that will allow FDN to serve end user customers, regardless of the facilities serving the end user.

Q. DO YOU AGREE WITH MR. GALLAGHER AS HE SAYS ON PAGE 8 OF HIS REBUTTAL TESTIMONY THAT BELLSOUTH DOES NOT OFFER PRODUCTS THAT WOULD ENABLE CLECS TO PROVIDE HIGH-SPEED DATA SERVICE TO CONSUMERS WHO ARE SERVED BY DLC LOOPS WHERE THE ALEC IS THE VOICE PROVIDER?

A. No. ALECs are not precluded from offering DSL service where Digital Loop Carrier ("DLC") is deployed. When BellSouth provides its own ADSL service where DLC is deployed, BellSouth must locate Digital Subscriber Line Access Multiplexer ("DSLAM") equipment at the DLC location. Through the collocation process, currently offered by BellSouth, an ALEC that wants to provide xDSL where DLC is deployed also can collocate DSLAM equipment at BellSouth DLC remote terminal ("RT") sites. This will allow the ALEC to provide the high speed data access in the same manner as BellSouth. BellSouth will attempt in good faith to accommodate any ALEC requesting such collocation access at a BellSouth DLC RT site that contains a BellSouth DSLAM. In the very unlikely event that BellSouth cannot accommodate collocation at a particular RT, where a BellSouth DSLAM is located, BellSouth will unbundle the BellSouth packet switching functionality at that RT in accordance with FCC requirements. BellSouth, therefore, provides ALECs the same opportunity to offer DSL service where DLC is deployed as BellSouth provides itself.

Additionally, BellSouth will allow ALECs to offer its end-users resold BellSouth voice service with BellSouth's ADSL Service. If the ALEC is an

ISP, it could purchase the BellSouth wholesale ADSL transport service. If the ALEC is not an ISP, it could provide BellSouth® FastAccess® Internet Service as an authorized sales representative (ASR) or independently contract with an ISP of its choice.

Q. DO YOU AGREE WITH MR. GALLAGHER, AS HE SAYS ON PAGE 11 OF HIS REBUTTAL TESTIMONY THAT FDN IS NOT ALLOWED TO OFFER VOICE AND HIGH-SPEED DATA ON THE SAME TELEPHONE LINE?

A. No. There are at least two ways ALECs can use to provide high-speed data service to consumers who are served by DLC loops where the ALEC is the voice provider. One option would be for the ALEC to perform an electronic Loop Make-Up and locate an available copper loop from the demarcation point (end user customer's Network Interface Device) all the way to their collocation space in the CO. Then, they would 'reserve' the loop and issue an order for that copper loop. Another option for ALECs would be to do what BellSouth does for itself. The ALEC could collocate its DSLAM at the BellSouth RT site. To transport the data from the end user to the RT site, the ALEC could either purchase the existing copper sub loop from the demarcation point to the RT or purchase an additional copper sub loop, both of which BellSouth offers as UNEs. To transport the data from the RT site to the ALEC's collocation area at the Central Office, the ALEC could purchase a sub loop feeder UNE DS1,DS3, and OC3 sub loop feeder. Therefore, once the ALEC collocates its DSLAM at the RT site, all of the parts needed to complete a voice and data

combination to serve an end customer that is served by BellSouth DLC facilities are available to the ALEC.

Q. IS FDN'S POSITION CONCERNING BELLSOUTH'S REFUSAL TO PROVIDE ITS DATA SERVICE WHEN ALECS ARE PROVIDING THE VOICE SERVICE REASONABLE?

A. No. What FDN is asking is for BellSouth to provide access to BellSouth's wholesale ADSL service on a UNE loop that FDN is using to provide voice service to an FDN end-user. As previously discussed, this request is contrary to anything currently contained in any FCC orders.

In the Line Sharing Reconsideration Order (*Deployment of Wireline Services Offering Advanced Telecommunications Capability*, Order No. FCC 01-26, CC Docket Nos. 98-147, 96-98, January 19, 2001), for instance, the FCC stated, "We deny, however, AT&T's request that the Commission clarify that incumbent LECs must continue to provide xDSL service in the event customers choose to obtain service from a competing carrier on the same line because we find that the *Line Sharing Order* contained no such requirement." *See In Re: Deployment of Wireline Services Offering Advanced Telecommunications Capability*, Order No. FCC 01-26 in CC Docket Nos. 98-147, 96-98 (Released January 19, 2001) at ¶26. The FCC then expressly stated that its *Line Sharing Order* "does not require that [LECs] provide xDSL service when they are no longer the voice provider." *Id.*

Additionally, in Order No. PSC-01-0824-FOF-TP that was entered in the MCI WorldCom Arbitration (Docket No. 000649-TP), the Florida Public Service Commission found at section XIII, page 51:

> "While we acknowledge WorldCom's concern regarding the status of the DSL service over a shared loop when WorldCom wins the voice service from BellSouth, we believe the FCC addressed this situation in its Line Sharing Order." The FCC states that "We note that in the event that the customer terminates its incumbent LEC provided voice service, for whatever reason, the competitive data LEC is required to purchase the full stand-alone loop network element if it wishes to continue providing xDSL service." FCC 98-147 and 96-98 ¶ 72.

The FCC does not requires BellSouth to provide its data service over loops where BellSouth is no longer the voice provider. If an ALEC purchases a UNE loop, the ALEC becomes the voice provider. Therefore, BellSouth is not required to provide data service over that loop.

Q. DO YOU AGREE WITH MR. GALLAGHER AS HE STATES ON PAGE 13 OF HIS REBUTTAL THAT BELLSOUTH IS REQUIRED TO OFFER ITS DSL SERVICE ON A DISCOUNTED WHOLESALE BASIS?

A. No. BellSouth offers its wholesale ADSL to ISPs, who sell internet service to end users. BellSouth's wholesale ADSL is offered through an FCC tariff, which contains the requirement that the service only be offered where

BellSouth is the voice provider.

Q. SHOULD BELLSOUTH BE ALLOWED TO OFFER ITS WHOLESALE ADSL OFFERING ONLY WHERE BELLSOUTH IS THE VOICE PROVIDER AS MR. GALLAGHER INDICATES ON PAGE 13?

A. Yes. As I previously stated, BellSouth offers its wholesale ADSL to ISPs, who sell internet service to end users. BellSouth wholesale ADSL is offered through an FCC tariff, which contains the requirement that the service only be offered where BellSouth is the voice provider. Additionally, in the Line Sharing Reconsideration Order referenced above, the FCC stated:

> "We deny, however, AT&T's request that the Commission clarify that incumbent LECs must continue to provide xDSL service in the event customers choose to obtain service from a competing carrier on the same line because we find that the Line Sharing Order contained no such requirement." *See In Re: Deployment of Wireline Services Offering Advanced Telecommunications Capability,* Order No. FCC 01-26 in CC Docket Nos. 98-147, 96-98 (Released January 19, 2001) at ¶26.

The FCC then expressly stated that it's *Line Sharing Order*

> "does not require that [LECs] provide xDSL service when they are no longer the voice provider." Id.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

EXHIBIT TGW-20
CARRIER NOTIFICATION LETTER
MAY 23, 2001
Consisting of 1 page

BELLSOUTH

BellSouth Interconnection Services
675 West Peachtree Street
Atlanta, Georgia 30375

Carrier Notification
SN91082407

Date: May 23, 2001

To: Competitive Local Exchange Carriers (CLECs)

Subject: CLECs - Line Splitting Service Information Package, Version 1

This is to advise that BellSouth's Line Splitting Service will be available on June 19, 2001.

The Line Splitting Information Package, Version 1, will be posted to the BellSouth Interconnection Services' Web site on May 25, 2001, and may be reviewed at the following address:

http://www.interconnection.bellsouth.com/products/index.html

If you have any questions, please contact your BellSouth account team representative.

Sincerely,

ORIGINAL SIGNED BY JIM BRINKLEY

Jim Brinkley – Senior Director
BellSouth Interconnection Services

EXHIBIT TGW-21
PRECURSOR GROUP NEWSLETTER
FEBRUARY 22, 2001
Consisting of Two (2) Pages

Precursor Group®
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1801 K Street, N.W. Suite 315 Washington, D.C. 20006-1301
Phone 202.828.7800 • Fax 202.828.7801 • www.precursorgroup.com

Scott C. Cleland

February 22, 2001

How Broadband Deployment Skews Economic/Business Growth

Summary: Precursor believes many do not appreciate the **broad investment and economic implications of the highly skewed nature of current broadband deployment.** While nearly all large businesses in the U.S. *already have* broadband service, only around 6.5 million or roughly 6% of residential households have broadband—73% cable modem and 26% DSL (see attached chart). More importantly, **investors are missing entirely the broad implications of meager broadband deployment to small and medium enterprises (SMEs)** that employ less than 100 employees. Investors should care because **SMEs comprise roughly 85% of U.S. business firms, 40% of employment, and one-third of the nation's economic output.** The broadband deployment contrast between large businesses and SMEs is stark. Only about **6% of SMEs have broadband** and this segment is almost exclusively DSL (~90% see attached chart). Precursor has discovered that the SMEs, which need broadband most, are also the least likely to get broadband deployment. That's because distance from network hubs increases the business need for broadband at the same time distance increases cost of deployment. Precursor believes this **broadband skew has broad under appreciated implications for productivity and earnings growth.** If large companies, which enjoy broadband productivity gains, are experiencing slower growth, this signals relatively greater trouble for SMEs, which are not enjoying broadband productivity gains. This could be a **hidden negative precursor for economic growth because SMEs are the primary driver of national job and economic growth** and productivity is a key driver of earnings growth.

Implications of Skewed Broadband Deployment: **(1) Distance Matters Much More for Broadband Than Dial-up: (A) Cost:** Unlike narrowband dial-up which requires minor modification of the telecom network, DSL and cable modems require an expensive re-engineering of their respective networks. Thus **the key broadband cost variable is density/distance**: how far away and how far apart the customers are, because density/distance drives average cost. Customer density matters to DSL specifically because speed directly correlates to the distance from the central office. Customer density matters to both DSL and cable because it creates breakeven efficiencies in marketing, engineering, installation, and service. **(B) Revenues:** Customer ability to pay drives average revenues. Relative customer ability to pay is also important because it drives the priority sequence of deployment and also whether deployment can ever reach breakeven in a given area. These cost and revenue realities heavily skew broadband deployment to the biggest cities with the most concentrated business districts and the most affluent, concentrated neighborhoods. Moreover, because cable's entertainment-driven infrastructure almost exclusively serves the residential market, cable modem deployment is unlikely to be a factor for SMEs. Given the financial difficulties that CLECs are experiencing, it looks like the SME market will increasingly become the exclusive domain of DSL. **(2) Broadband Deployment Paradox:** Ironically, the **geographic areas that make the least business sense to deploy to are precisely the businesses that most need broadband to grow.** A substantial portion of U.S. employment is generated by SMEs, and most employment tends not to be located in the densest, highest rent areas where it makes most business sense to deploy broadband. Precursor suggests a *surprising correlation*: those SMEs that require lots of physical space and low rent also tend to have the most mission critical need for broadband. For example: engineering, manufacturing and construction firms that regularly use computer-aided design (CAD) need broadband to transmit schematics/blueprints efficiently; yet only about 10% have broadband. Farmers and construction companies that need equipment parts have a mission critical need for broadband to efficiently scan schematics and participate in auctions for spare parts; yet only about 10% have broadband. Some other small businesses, which need broadband, but tend to be dispersed from where broadband is being deployed include: residential rural doctors (which need bandwidth to view x-rays and CAT scans from hospitals and specialists), travel agents, and printing companies – to name some of the more obvious industries with largely unmet broadband needs. This suggests a **broadband investment cleave that could advantage: large/mid cap over small/micro cap companies;** concentrated/geographically-clustered industries over fragmented and dispersed industries; and high-rent industries over low rent industries. **(3) Home-to-Office Telecommuting Hindered:** To remain a proprietary network, cable broadband networks have been designed to prevent cable customers from being able to link at high speed with DSL—unless it is cable-provided DSL (a de minimis share of SMEs). This effectively prevents a cable modem telecommuter working from home from linking at high speed into their office's DSL network. On a broader scale, it also prevents the creation of integrated suburban-urban metro-wide high-speed networks. This is another hidden drag on future productivity growth. **(4) Broadband Job Flight:** Increasingly states and localities are realizing that broadband is a mission critical utility for business and a core factor in attracting or keeping businesses in a locality or state. Broadband increasingly is a prerequisite for growth. **This has positive implications for relatively broadband rich REITs and negative implications for relatively broadband poor REITs.** ***Geo-economic data source: www.imapdata.com*** * * * * *

Precursor Watch®: Broadband Deployment Outlook

Residential Provider	SME Subs. (000s)	SME Market Share	Estimated Residential Subscribers (000s) 1H99	2H99	1H00	2H00	Total Res. Subs.	Res. Market Share	Est. "Footprint" Growth 2001	2002	2003	Approximate Retail Pricing	Download Speed	Upload Speed	Spectrum (Mhz) Available	% allocated for data
SMALL BUSINESS[1]																
RESIDENTIAL																
Wireline			1H99	2H99	1H00	2H00			■ Deployed ☐ Potenially deployed ☐ Deployment unlikely			☐ Start-up ☐ Monthly				
√ Cable Modem Cable and AT&T	0*	*~0%*	950	750	1,200	1,825	4,725	*73%*				$75 ($0-$150) $40	~2 mbps	128-500 kbps	750	
√ xDSL ILEC, CLEC, IXC	720	*90%*	100	200	555	855	1,710	*26%*				$100 ($0-$200) $40-$50	~768 kbps	90-256 kbps	1	
√ Overbuilders RCN (cable modem)	0	*0%*	13	9	18	27	67	*1%*				$0 ($0-$100) $40	~1.5 mbps	~768 kbps	860	
Terrestrial Wireless[2]																
Digital TV *Geocast/iBlast/WaveExpress* (54-746 MHz)	0	*0%*	0	0	0	0	0	*0%*	Supplemental service; 1-way			n/a	~2 mbps	28-56 kbps	6+	
√ Wireless Local Loop AT&T Digital Broadband (1.8-2.1, 2.3 GHz)	0	*0%*	0	0	3	7	10	*~0%*				$0 ($215 waived) $35	512 kbps-2 mbps	~150	10	
√ MMDS ("wireless cable")[3] Sprint/Worldcom/Nucentrix (2.1, 2.5-2.7 GHz)	11	*1%*	1	0*	0*	0*	1	*~0%*				$150 $40	~1 mbps	~256	~198	
√ LMDS Winstar/Teligent/XO/etc. (24, 28/31, & 39 GHz)	70	*9%*	0*	0*	0*	0*	0*	*0%*	Not targeting residential			n/a	n/a	n/a	n/a	n/a
3G Mobile Wireless Mobile Providers, et. al. (spectrum not yet allocated)	0	*0%*	0	0	0	0	0	*0%*	Not a direct competitor			n/a	56-192 kbps	56-192 kbps	n/a	
Satellite[4]																
√ Starband (Gilat) (Ku band: 10-18 GHz)	0*	*0%*	n/a	n/a	n/a	0*	0*	*~0%*				$575 $60-$70	150-500 kbps	50-150 kbps	n/a	n/a
Hughes DirecPC[5] (Ku band: 10-18 GHz)	23	*0%*[5]	35	0*	0*	0*	35	*0%*[5]	Satellite targets unserved rural areas; DirecPC still 1-way			$215 $50	~400 kbps	28-56 kbps	n/a	n/a
Totals	**824**	***100%***	1,099	959	1,776	2,714	6,548	***100%***								

KEY: (√) Depicts **broadband** service, defined by the FCC as 200 kbps *both ways* (@Home & SBC upload speed is 128 kpbs and Verizon upload speed is 90 kpbs upload speed at prices listed above; a few cable modems and MMDS systems still use dial-up return.) **Footprint:** Assuming ~100m U.S. households, circles depict estimated growth over time. **Pricing/Speed:** We show price/speed packages for broadband *plus Internet service* likely to have mass market appeal; circles depict speed/size of "pipe." (1) SME market shown here excludes businesses using certain high-speed access lines such as ISDN, T-1, T-3, etc. (2) Some spectrum (e.g., 700MHz and unlicensed spectrum) is either not yet available, niche use, or both. (3) Many MMDS 2-way licenses awaiting FCC approval ~1H01. (4) Planned systems include: Skybridge (Ku-band) and WildBlue, Hughes' Spaceway & Teledesic (Ka 18-30 GHz). (5) DirecPC's subscriber totals not included in market share calculation because service uses dial-up return path; 2-way service and new pricing information due out ~1Q01, upload speed will be ~128 kbps. (*) Amount is negligible.

Graphics by Kim Silhanek

EXHIBIT TGW-22
CO-BASED LINE SHARING FUNCTIONAL BLOCK DIAGRAM
Consisting of 1 page

CO-Based Line Sharing Functional Block Diagram

Exhibit TGW-22

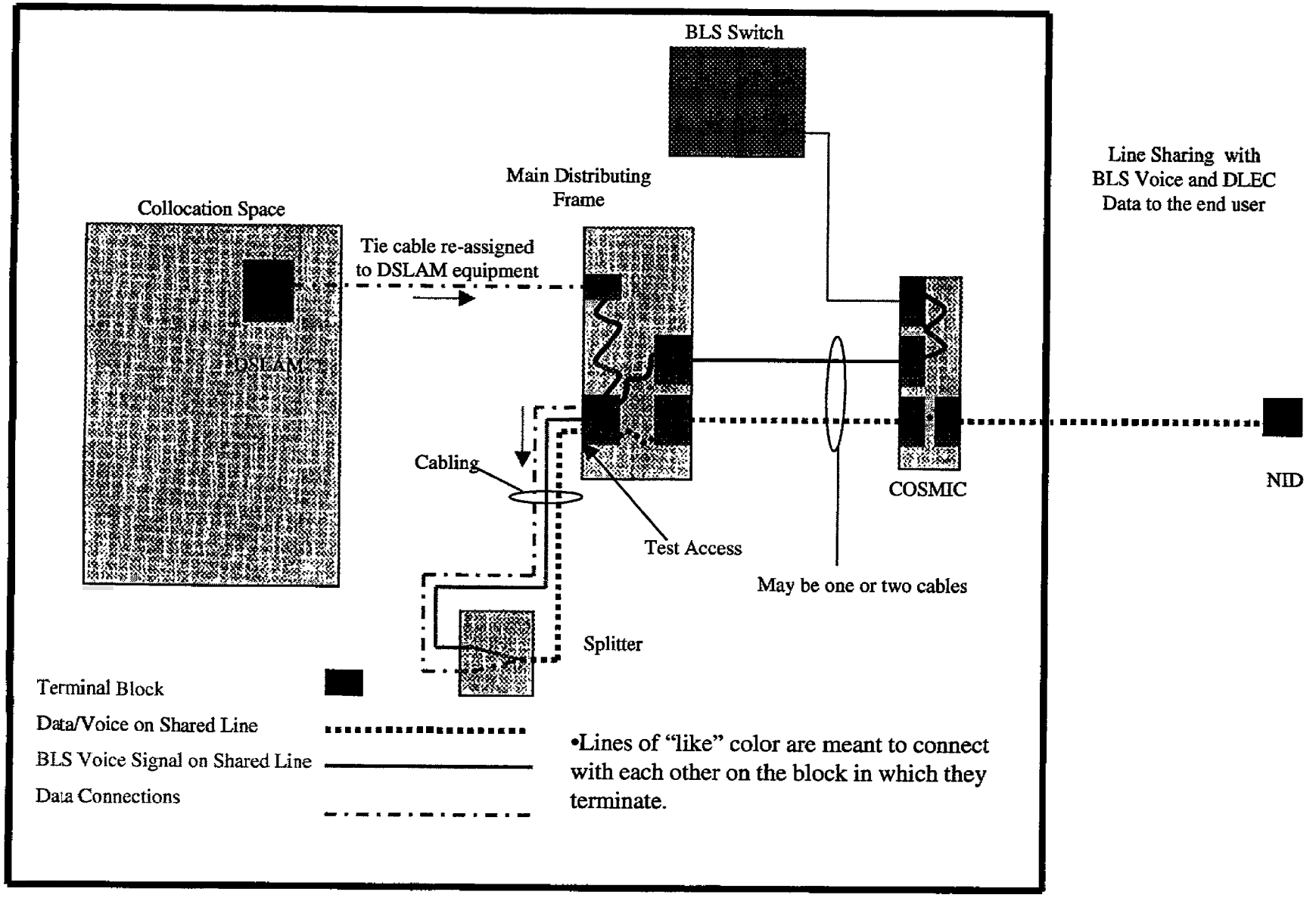


EXHIBIT TGW-23
BELLSOUTH RETAIL VOICE SERVICE
Consisting of 1 page

BellSouth Retail Voice Service

Exhibit TGW-23

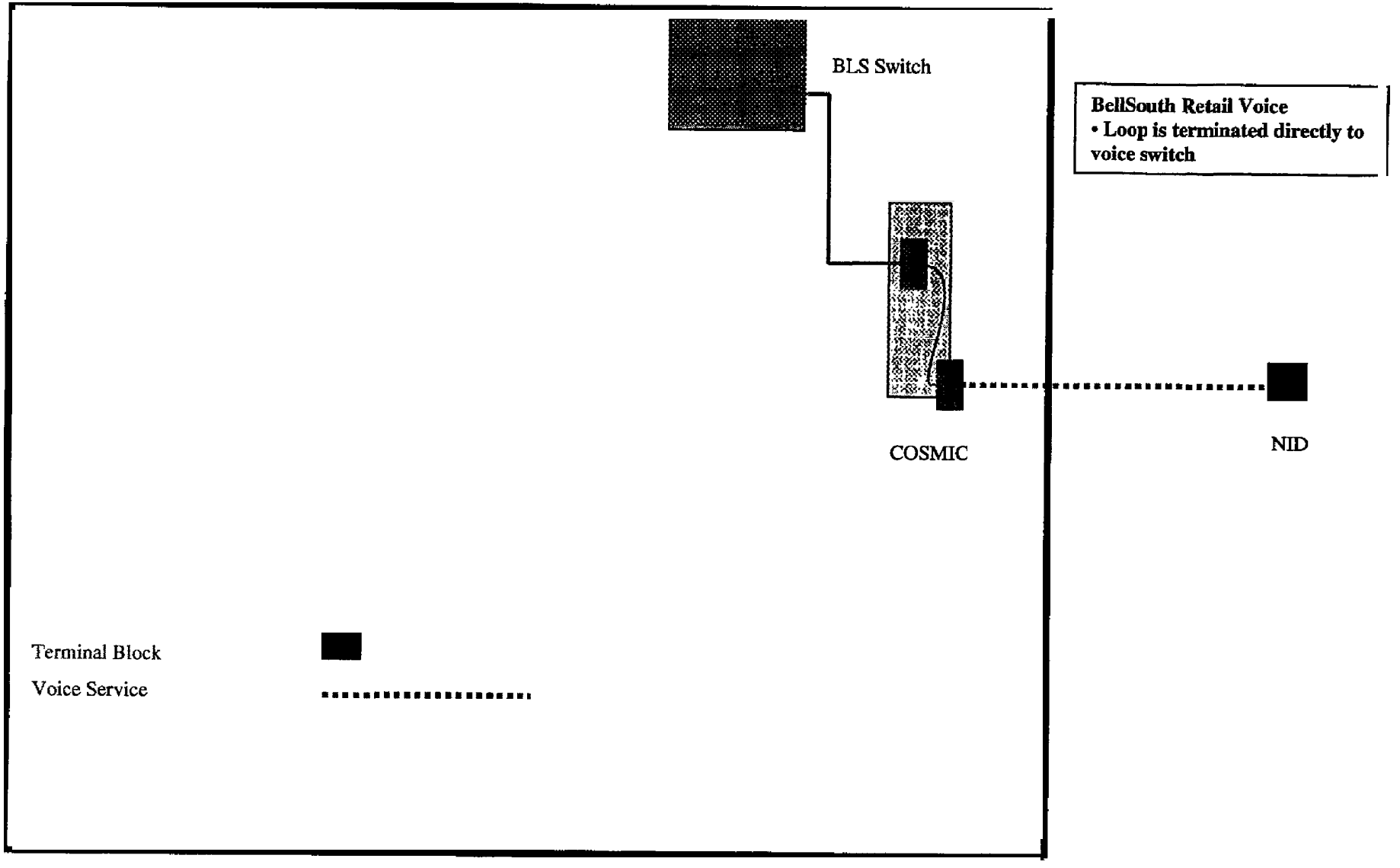


EXHIBIT TGW-24
CLEC VOICE ON BST UNE-P
Consisting of 1 page

CLEC Voice On BST UNE-P

Exhibit TGW-24

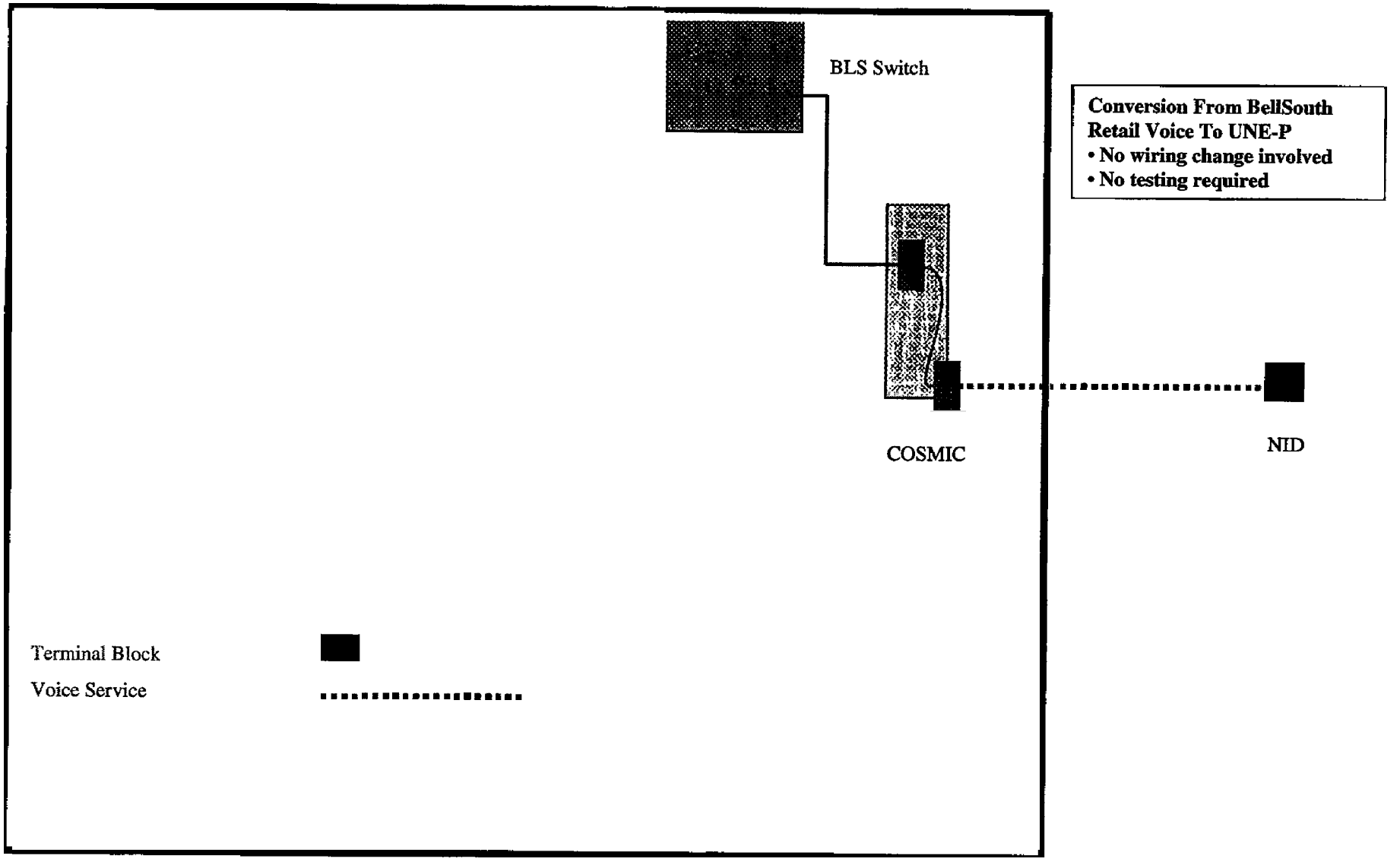
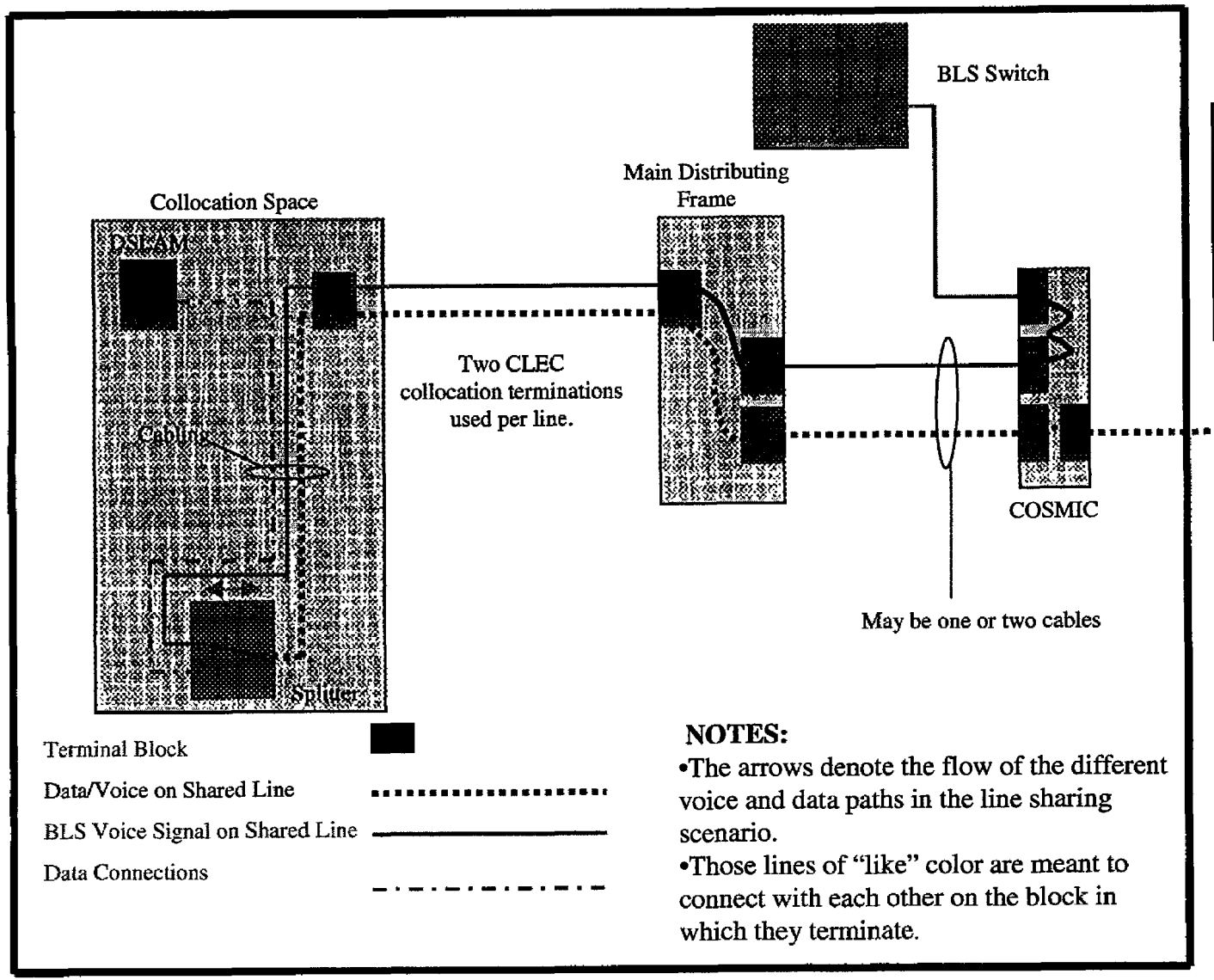


EXHIBIT TGW-25
CO-BASED LINE SPLITTING
Consisting of 1 page

Exhibit TGW-25

CO-Based Line Splitting



Conversion From UNE-P To Line Splitting

- **Remove 1 Cross-Connection**
- **Make 4 new Cross-Connections**
- **Test voice and data**