BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for DIECA Communications, Inc., d/b/a Covad Communications Company For Arbitration of Unresolved Issues in Interconnection Agreement with BellSouth Telecommunications, Inc.	:	**Docket No. 001797-TP** **Filed: May 23, 2001**

JOINT REBUTTAL TESTIMONY AND EXHIBITS OF

ELIZABETH R. Y. KIENTZLE
AND
JOSEPH P. RIOLO

ON BEHALF OF
COVAD COMMUNICATIONS COMPANY

PUBLIC VERSION

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I. INTRODUCTION AND SUMMARY

Q. What is the purpose of your testimony?

A. DIECA Communications, Inc. d/b/a Covad Communications Company ("Covad") has asked us to respond to the testimony and cost studies that BellSouth Telecommunications, Inc. ("BellSouth") filed with the Florida Public Service Commission on April 23, 2001. In doing so, we will specifically address arbitration issues 16, 18, 23 and 24 (with respect to line-sharing costs only).

Q. Ms. Kientzle, please state your name, title and business address.

A. My name is Elizabeth R. Y. Kientzle. I am an independent consultant. My business address is 672 Jean Street, Oakland, CA 94610.

Q. Ms. Kientzle, have you previously filed testimony in this proceeding?

A. Yes. I filed joint direct testimony with Mr. Riolo on April 23, 2001. Exhibit _____ (ERYK/JPR-1) to that testimony describes my qualifications and relevant experience.

Q. Mr. Riolo, please state your name, title and business address.

A. My name is Joseph P. Riolo. I am an independent telecommunications consultant. My business address is 102 Roosevelt Drive, East Norwich, NY 11732.

Q. Mr. Riolo, have you previously filed testimony in this proceeding?

A. Yes. I filed joint direct testimony with Ms. Kientzle on April 23, 2001. Exhibit _____ (ERYK/JPR-2) to that testimony describes my qualifications and relevant experience.

Q. What role did each witness play in the preparation of this testimony?

A. Although both of us have reviewed and support this testimony in its entirety, each of us assumed primary responsibility for specific segments of testimony. As with our direct testimony, we each rely on the facts and analyses developed by the other in his or her areas of primary responsibility. Specifically:

- Ms. Kientzle is primarily responsible for the costing and pricing issues.
- Mr. Riolo is primarily responsible for technical and engineering issues, as well as terms and conditions.

Q. Please summarize the major points that you address in your joint rebuttal testimony.

A. Our joint rebuttal testimony identifies numerous flaws in BellSouth's direct testimony concerning costs and prices for line-sharing elements. The following summary highlights some of the most significant flaws that we have identified and describes our proposed solutions.

Issue 24 – Line-Sharing Prices

BellSouth's proposed monthly recurring charges for splitters and its nonrecurring charges for line-sharing-related elements are anti-competitive because they are based on costs that far exceed the forward-looking costs associated with efficient line-sharing arrangements. In short, BellSouth has inflated the material costs of splitters and related equipment, added unnecessary and costly testing shelves, vastly overstated the costs of installation, and added potentially duplicative costs. The inadequate documentation of BellSouth's nonrecurring cost study often precludes an analysis of the validity of its input assumptions. It is clear, however, that BellSouth has included unnecessary tasks and inflated task times. Incredibly, BellSouth has even proposed to apply nonrecurring charges for its competitor-owned splitter option, despite the fact that, under this option, Covad would own, install and maintain the splitter in its own collocation space.

The Commission should give little credence to BellSouth's unsupported cost estimates. Instead, the Commission should adopt the prices for each of these elements that we proposed in our direct testimony. Those

prices reflect Mr. Riolo's expert opinion (and the FCC's presumptions) concerning efficient practices and the task times that would result from deploying those practices.

Issue 16 – Splitter Location

Splitters should be located on or near the Main Distribution Frame ("MDF"). When contending that frame-mounted configurations were less efficient, BellSouth failed to account for the variety of resources that a remotely located splitter rack utilizes. Splitter placements that are further from the MDF add significantly to the cost of splitter placement, while potentially increasing the likelihood of trouble/failure. Furthermore, the increased length of the tie cable for remote locations could preclude Covad from providing line sharing to some customers.

Issue 18 – Line-Sharing Intervals

Contrary to BellSouth's contentions, line-sharing orders are simple, pertain to an existing service and can be processed on a fully mechanized or "flow though" basis without any manual intervention. The physical process to provision the loop only takes a few moments to complete. There is no reason that BellSouth should require more than 24 hours to complete that process.

Issue 23 – Test Access

Covad must have direct physical access to the loop at each point of connection so that Covad can properly and expeditiously isolate problems on the loop. Essentially, Covad is asking for the same access BellSouth has to the loop in the central office, only when the loop is carrying both data and

voice traffic. If the Commission nonetheless allows BellSouth to deny Covad such access, then the Commission should require BellSouth to respond to trouble reports within four hours on line shared lines.

II. THE COMMISSION SHOULD REJECT BELLSOUTH'S ANALYSIS OF COSTS FOR LINE SHARING AS EXCESSIVE AND NON-FORWARD-LOOKING.

Issue 24: Are the Rates Proposed by BellSouth for Unbundled Loops and Line Sharing Compliant with TELRIC Pricing?

Q. What prices does BellSouth seek to impose on competitors for line-sharing arrangements?

A. BellSouth has proposed a series of charges specific to line-sharing arrangements, most of which relate to the splitter. These include the following:

- J.4.1 – Splitter (BellSouth-Owned) per 96-line capacity (recurring and nonrecurring);
- J.4.2 – Splitter (BellSouth-Owned) per 24-line capacity (recurring and nonrecurring);
- J.4.3 – Splitter per line activation (recurring and nonrecurring);
- J.4.4 – Splitter per subsequent activity per rearrangement (nonrecurring);
- J.4.6 – Splitter (Competitor-Owned) (nonrecurring);

- J.4.7 – Splitter (Competitor-Owned) per occurrence of each group of 24 lines (nonrecurring);

Apparently, BellSouth also intends to apply an additional "service order" charge (the "N" elements) to each order. [*See* BellSouth cost study documentation (provided as Exhibit WBS-1), page stamped 000050.] In addition, BellSouth has proposed disconnect charges that would apply to each of the elements listed above.

Q. Are the line-sharing prices that BellSouth has proposed in this proceeding reasonable?

A. No. In short, BellSouth has inflated the material costs of splitters and related equipment, added unnecessary and costly testing shelves, vastly overstated the costs of installation, added potentially duplicative costs, and loaded nonrecurring costs with unnecessary and unsupported tasks. We detail in the sections below BellSouth's numerous incorrect assumptions and suggest adjustments to compensate for the study's more obvious flaws.

Exhibit _____ (ERYK/JPR-5) provides a comparison of our proposed line-sharing prices, BellSouth's proposed prices, and BellSouth's prices adjusted as detailed in this section.

A. Recurring Charges.

1. BellSouth-Owned Splitters (Elements J.4.1 and J.4.2).

Q. Does BellSouth's study reflect the most efficient, least-cost approach to providing splitters?

A. No. As we noted in our direct testimony, the most efficient arrangement for line sharing would be to implement frame-mounted splitters (or to mount splitters within 25 feet of the frame) and to wire connections from Covad's collocation cage directly to those splitters. Any other arrangement adds unnecessary costs, for which BellSouth must bear responsibility as the cost causer.

BellSouth has assumed a less efficient rack-mounted splitter configuration. (We discuss the issue of splitter placement further in Section III below.) Furthermore, BellSouth's own documentation shows that it has overstated the recurring costs for BellSouth-owned splitters. The analysis that we present below attempts to correct exaggerations in BellSouth's cost study based on BellSouth's own proposal, should the Commission choose to work with BellSouth's analysis. Hence, the corrected results we report herein are conservatively high relative to the costs that BellSouth could achieve if it fully implemented the efficient practices that we assumed in developing the cost basis for the prices that we proposed in our direct testimony. To adopt prices that are consistent with a forward-looking, efficient cost-based methodology,

the Commission should instead rely on the prices recommended in our direct testimony, also presented in Exhibit _____ (ERYK/JPR-5) to this testimony.

Q. Please describe how BellSouth developed its reported monthly price for a 96-line capacity splitter.

A. BellSouth has proposed a monthly price of $201.46 for a BellSouth-owned 96-line splitter (element J.4.1). BellSouth's cost analysis for this element begins by estimating the material investment required for three different categories of equipment: 1) a composite of splitter and connected splitter equipment described as "Shelf, Test Eqpt, Plug-Ins & Cabling"; 2) distribution frame space and connecting block equipment; and 3) the bay or rack that houses the splitter shelves. BellSouth develops installed equipment investments by applying several factors to each material investment. The "Material" and "Hardwire" factors and a "Supporting Equipment and/or Power Loading" factor significantly affect splitter investments. BellSouth calculates the final total investment required for a 96-line splitter using factors to estimate associated land investment and building investment.

BellSouth's total reported investment for a single 96-line capacity splitter, $10,011.11, breaks down roughly as follows: 1) 77% for splitters and the related "Shelf, Test Eqpt, Plug-Ins & Cabling"; 2) 12% for land and building investment; 3) 7% for distribution frame space and associated connecting blocks; and 4) 5% for the bay or frame that holds the splitter shelves.

BellSouth then applies a shared cost factor and adds receipts tax and common cost factors to convert the installed investment amount into a monthly element price.

Q. Is BellSouth's presentation of splitter costs sufficiently documented to permit a definitive analysis of the reasonableness of its proposed price?

A. No. BellSouth did not supply complete supporting documentation or detail of its aggregate $4,859 material cost for "Line Sharing Splitter (Shelf, Test Eqpt, Plug-Ins & Cabling)" in its submission. Nonetheless, we were able to piece together a basic understanding of the basis for that investment amount using various BellSouth discovery responses. BellSouth's total material costs in this category break down as: ***BEGIN BELLSOUTH PROPRIETARY

END PROPRIETARY*** [BellSouth's Response to Sprint's First Request for Production of Documents, Item No. 1, Attachment No. 1, Tennessee Regulatory Authority Docket No. 00-00544, also requested in this proceeding as Covad's Second Request for Production of Documents, Item No. 34.]

Q. Are BellSouth's cost estimates for this element reasonable?

A. No. BellSouth's reported base cost of an equipped splitter shelf does not appear unreasonable. However, BellSouth then loads on unnecessary, inflated and duplicative costs.

First, BellSouth's approach to providing testing capability seems excessively costly. BellSouth has assumed that it will install a costly shelf of manual test access jacks ("bantam jacks") to allow Covad to test the high frequency portion of the loop. BellSouth estimates that its chosen testing equipment requires an additional ***BEGIN BELLSOUTH PROPRIETARY END PROPRIETARY*** [*Id.*] in material costs per 96-line splitter arrangement. BellSouth's approach also triggers additional engineering and installation costs.

The incremental investment that BellSouth would incur to obtain a splitter with test point functionality built directly into the splitter cards is likely to be much lower. In fact, BellSouth's own documentation indicates that it could purchase (from its current vendor) splitter line cards with built-in test access for only ***BEGIN BELLSOUTH PROPRIETARY END PROPRIETARY*** 2.3% more than the splitters without test access. [BellSouth's Response to Covad's First Request for Production of Documents, Item No. 32 ("POD 32").] Hence, at the material investment level alone, BellSouth's testing arrangement costs roughly ***BEGIN BELLSOUTH PROPRIETARY END PROPRIETARY*** more than necessary. The sizable increment in investment calls into question the efficiency of the testing arrangement that BellSouth has chosen.

At least one other incumbent local exchange carrier has chosen cards with built-in test access. SBC affiliate Ameritech stated, in Docket Nos. 00-

0312 and 00-0313 before the Illinois Commerce Commission, that it now uses a new model of splitter that includes test point functionality built directly into the splitter card. [Covad/Rhythms Arbitration, Illinois Commerce Commission, Docket Nos. 00-0312 and 00-0313, Hearing Tr. (Smallwood) at 345 and 284.] This increased investment in the splitter equipment itself was more than offset by eliminating the need to purchase, engineer and wire in a separate test point. Inclusion of test point capability in the splitter card also eliminates the additional frame space required for the separate testing jack.

Second, based on a Tennessee discovery response, BellSouth's assumed ***BEGIN BELLSOUTH PROPRIETARY END PROPRIETARY*** cable investment appears to reflect the assumption of "three 100 pair cables for an average distance of 150 feet." [BellSouth's Response to Covad's First Interrogatories, Item No. 15, Tennessee Regulatory Authority Docket No. 00-00544 (*see* Exhibit _____ (ERYK/JPR-6)).] The 150-foot assumption is excessively long for a typically sized central office. Covad has proposed that the splitter be placed on or near the Main Distribution Frame ("MDF"). Placing the splitter on or within 25 feet of the MDF decreases the length of cable needed significantly. Indeed, BellSouth's own analysis notes that it assumes ***BEGIN BELLSOUTH PROPRIETARY END PROPRIETARY*** [BellSouth's Response to Covad's POD 32.] BellSouth should have used a typical, or average, cable length in its cost study, rather than the maximum length. ***BEGIN BELLSOUTH

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Third, without providing any support, BellSouth uses ***BEGIN BELLSOUTH PROPRIETARY END PROPRIETARY*** as its input for the bay shelf material. Other BellSouth internal analysis suggests that this material actually costs only ***BEGIN BELLSOUTH PROPRIETARY END PROPRIETARY*** [*Id.*]

The corrections that we have just discussed, in combination, reduce BellSouth's reported material investment from $4,859 to $3,110 or by 36 percent.

Q. Has BellSouth inflated other material investment inputs?

A. Yes. BellSouth's analysis appears to include at least four other significant errors that inflate its reported material investment. First, although BellSouth provided very little backup for its frame investment, a one-page supporting document for its distributing frame material cost input reveals that BellSouth's actual material cost for the frame is ***BEGIN BELLSOUTH PROPRIETARY

END PROPRIETARY* [*Id.*] Therefore, it appears

that BellSouth's initial "material" only study input is already marked up to include minor/miscellaneous material. BellSouth, however, applies an additional generic "material" cost factor to that amount. Hence, BellSouth is potentially double-recovering the same material costs.

Second, BellSouth's study develops splitter bay costs based on the assumption that a complete bay "has a capacity for 8 splitters [96-line splitter shelves] with each having a corresponding test shelf." [BellSouth's Response to Sprint's First Set of Interrogatories, Item No. 5, Tennessee Regulatory Authority Docket No. 00-00544 (*see* Exhibit _____ (ERYK/JPR-6)).] As we discussed above, however, wiring in additional test shelves is not part of a reasonably efficient design and is not necessary to provide test access to the splitter. Moreover, the capacity of a bay is significantly more than eight splitter shelves. As BellSouth's own documentation indicates, the ***BEGIN BELLSOUTH PROPRIETARY

END PROPRIETARY*** [BellSouth's Response to Covad's POD 32.] Hence, the Commission should increase the number of splitter shelves per bay in BellSouth's analysis to the Siecor-recommended capacity. This change reduces the splitter bay costs by ***BEGIN BELLSOUTH PROPRIETARY END PROPRIETARY***

Third, BellSouth's calculation of connecting block investments also appears to overstate costs. (This discussion pertains only to BellSouth's assumed rack-mounted splitter arrangement. We do not agree that rack mounting is the most efficient arrangement overall.) BellSouth's connecting

block investment assumes that a 96-line rack-mounted splitter arrangement requires four ***BEGIN BELLSOUTH PROPRIETARY

END PROPRIETARY*** That assumption contradicts BellSouth's estimate of the frame capacity required for the 96-line rack-mounted splitter arrangements, a BellSouth own, very specific, depiction of and schematic for the connecting blocks that it planned to deploy and another BellSouth internal cost estimate. [*See* BellSouth's Response to New Entrant's Second Data Request, April 27, 2000, Item No. 4, Attachment A, North Carolina Utilities Commission, Docket No. P-100, Sub 133d (*see* Exhibit _____ (ERYK/JPR-6)), and BellSouth's Response to Covad's POD 32 .] BellSouth's Response to Covad's POD 32 provides an analysis that assumes ***BEGIN BELLSOUTH PROPRIETARY

END PROPRIETARY***. These other sources suggested that BellSouth would only use three connecting blocks. Only three blocks are necessary to implement rack-mounted splitter arrangements. Thus, BellSouth's current assumption of four connecting blocks is not the most efficient usage of connecting blocks for rack-mounted splitters. The Commission should therefore also correct BellSouth's overstatement of connecting block materials.

Fourth, BellSouth has further inflated frame costs by assigning frame costs to line-sharing lines assuming three terminations on the frame, perhaps due to its faulty assumption of four connecting blocks. This line-sharing

arrangement requires three terminations on the frame, but all three terminations should *not* be charged to line sharing. One of those terminations is required for the existing POTS line and its share of the frame costs are already assigned to the POTS line. BellSouth should have assigned frame costs to line sharing based on the *additional* terminations needed to accomplish line sharing, *i.e.*, two terminations. In charging line sharing for three terminations, BellSouth is either overstating the number of terminations necessary or double-recovering a portion of the frame costs.

Q. Apart from the apparent cost-inflating effect of BellSouth's incorrect material investment inputs, does the remainder of BellSouth's methodology produce reasonably accurate splitter costs?

A. No. BellSouth's approach inflates the cost that BellSouth will incur to install and make ready splitter shelves in several ways. The most significant of these flaws appear to be that BellSouth's application of materials and installation factors produces unreasonable results and that BellSouth's land and buildings and power factors are inappropriate for the splitter element.

Q. Why is BellSouth's application of materials and installation factors unreasonable?

A. The generic materials and installation factors that BellSouth applies to splitter investments were developed for equipment that is not reasonably analogous to splitter arrangements. Those factors, as BellSouth's own analysis suggests, produce results that are entirely unreasonable and that significantly overstate

the cost that BellSouth might reasonably incur to establish a splitter bay and install splitter shelves in that bay. Overall, BellSouth's application of "Material" and "Hardwire" factors to develop installed investments inflate BellSouth's reported investment by $2,734.34 for "Line Sharing Splitter (Shelf, Test Eqpt, Plug-Ins & Cabling)," by $279.00 for the splitter bay, and by $148.46 for the connecting block and distribution frame. In total, therefore, BellSouth assumed an additional $3,161.80 per 96-line arrangement for engineering, installation and miscellaneous materials (over and above the material costs of the splitter, bay and frame themselves).

In significant part, BellSouth's study misestimates line-sharing-related installation costs because it assumes that the splitter bay and splitter can reasonably be assigned historic "in-plant" factors from its 257C, "Digital Circuit – Pair Gain," equipment account. Unlike pair gain systems, however, splitters and splitter shelves are simple and passive devices. Splitters have no moving parts and are nothing more than a shelf into which splitter line cards are placed and cabling is attached. Thus, splitters bear little in common with sophisticated electronics equipment such as pair gain systems. It is the inappropriate application of the pair gain system factors that directly drives BellSouth's estimates that it will incur $279.00 in expense to place the splitter bay and a whopping $2,734.34 to place the splitter and shelves. Establishing an equipment bay is not "rocket science" and should require only a few hours labor. Installing new splitters, including all the necessary cabling, shelf installation, and placing line cards can likewise be accomplished in but a few

hours. Installing splitter shelves requires practically no additional materials support.

Fortunately, BellSouth appears to have also supplied a direct estimate of the engineering and installation costs required for splitter installations. Specifically, BellSouth analysis indicates that it requires ***BEGIN BELLSOUTH PROPRIETARY

END PROPRIETARY*** [BellSouth's Response to Covad's POD 32 .] This equates to only about ***BEGIN BELLSOUTH PROPRIETARY END PROPRIETARY*** per 96-line splitter arrangement, in stark contrast to the more than $3,000 assumed in BellSouth's study. Although we believe that even this estimate substantially overstates a reasonably efficient cost for placing a splitter arrangement (*i.e.*, for minor material, engineering, installation, *etc.),* we propose using this information from BellSouth's direct estimate as a compromise replacement for BellSouth's use of substantially inaccurate "in-plant" factors.

Q. Why is BellSouth's use of a land and buildings factor inappropriate?

A. BellSouth adds a 0.0078 land and a 0.1267 building investment factor to all of the splitter-related investments discussed above. According to BellSouth witness Mr. Thomas G. Williams' direct testimony and BellSouth's discovery responses, however, the splitter is in a common area. [Williams Direct at 3 and BellSouth's Response to Covad's First Interrogatories, Item No. 16,

Tennessee Regulatory Authority Docket No. 00-00544 (*see* Exhibit _____ (ERYK/JPR-6)).] Competitors are presumably already paying for common area space as part of their collocation charges. (Again, we do not agree that placement in the common area is the most efficient arrangement. This discussion pertains only to BellSouth's proposed configuration.) Therefore, BellSouth's addition of land and building investments based on splitter-related investments would double-recover the cost of land and building investment that competitors are already paying for through collocation charges.

Even if it were not a case of absolute double-recovery, BellSouth's methodology produces results that are unreasonable. The total land and building investment that BellSouth assigns to a 96-line splitter shelf is $1,186.16. Given BellSouth's assumption that its splitter bays will hold eight 96-line splitters, BellSouth would assign $9,489.28 in annual investment ($1,186.16 * 8) or about $790.78 per month per bay. At most, each bay might consume 10 square feet of office space. Given this assumption, BellSouth's methodology assigns building cost to splitter bays at more than *$79 per square foot per month*. That result is, on its face, unreasonable.

To eliminate the apparent double-counting of costs, we recommend that the Commission eliminate the application of the land and buildings factors from BellSouth's splitter cost calculation.

Q. Why is BellSouth's use of a power factor inappropriate?

A. BellSouth applied a "Supporting Equipment &/or Power" loading to all splitter-related investments in its study. Splitters, splitter shelves, *etc.* are passive devices and require no power whatever. BellSouth notes in its Response to Covad's POD 32, that *** **BEGIN BELLSOUTH PROPRIETARY END PROPRIETARY***** Hence, the application of a power factor to these elements violates cost causation and would saddle competitors with recurring power costs for power that they do not consume. Fortunately, BellSouth's workpapers indicate that this factor is composed of distinct components for power and other equipment. [*See* BellSouth cost study, COMPWR98.xls, Summary worksheet.] Therefore, the Commission could simply remove the power component of this factor. For the block and frame investments, the factor without power is 1.0232 as opposed to the 1.1011 factor including power. For the splitter bay and other splitter-related investments, the factor without power is 1.0162 as opposed to the 1.0251 factor including power.

Q. Do all of the problems you have just described apply to BellSouth's calculation for 24-line splitters as well?

A. Yes. Although the preceding discussion addressed BellSouth's calculation of the 96-line capacity splitter installation (element J.4.1), BellSouth used the same calculations and methodology to develop its price for the 24-line

capacity splitter as well (element J.4.2). Hence, all of the issues that we raised above apply to that element as well.

Q. Based on your analysis, how could the Commission correct BellSouth's reported recurring splitter cost?

A. As we noted above, BellSouth has not presented detail sufficient to allow a complete understanding of what is included in its study. Hence, we cannot adjust BellSouth's analysis with any reasonable degree of accuracy. Should the Commission nonetheless wish to make use of BellSouth's analysis, we recommend the following adjustments to compensate for the study's more obvious flaws. The step-by-step adjustment amounts reported herein are dependent on the order in which the various corrections are applied, due to the application of factors. If the corrections are performed in a different sequence, the relative change at each step can vary substantially. The final cumulative result of all charges would not, however, be affected.

- Adjust BellSouth's claimed investment for "Line Sharing Splitter (Shelf, Test Eqpt, Plug-Ins & Cabling)" to a reasonable level. This adjustment reduces BellSouth's reported monthly price for the 96-line splitter from $201.46 to about $138.27 and for the 24-line splitter from $50.37 to about $34.57.
- Correct BellSouth's estimate of the number of splitter shelves per bay. This adjustment reduces BellSouth's reported monthly price for the

96-line splitter to about $133.63 and for the 24-line splitter to about $33.41.

- Correct BellSouth's assumptions regarding the number of connection blocks and frame terminations. These adjustments reduce BellSouth's reported monthly price for the 96-line splitter to about $129.31 and for the 24-line splitter to about $32.33.
- Replace BellSouth's inaccurate use of generic "in-plant" factors, such as the "Digital Circuit Equipment – Pair Gain" factor, with BellSouth's own more reasonable direct estimates of the cost that BellSouth will actually incur to place splitter arrangements. This adjustment reduces BellSouth's reported monthly price for the 96-line splitter to about $100.76 and for the 24-line splitter to about $25.19.
- Eliminate the application of the land and buildings factors from the splitter element. This adjustment reduces BellSouth's reported monthly price for the 96-line splitter to about $90.39 and for the 24-line splitter to about $22.60.
- Remove the power component of the "Supporting Equipment &/or Power" loading. This adjustment reduces BellSouth's reported monthly price for the 96-line splitter to about $89.11 and for the 24-line splitter to about $22.28.

Cumulatively, these estimated corrections reduce BellSouth's recurring price for a 96-line splitter from $201.46 to $89.11, a 56% decrease. That result is substantially closer to the $0.89 per line or $85.44 per 96 lines

recommended in our direct testimony. With the same corrections, BellSouth's recurring price for a 24-line splitter drops from $50.37 to $22.28.

Q. Are the adjustments you have just suggested an aggressive or complete set of the corrections that the Commission should implement before making any use of the BellSouth analysis?

A. Not at all. We have focused on addressing the more substantial errors that can be shown with relative economy and that remain within the context of the basic line-sharing arrangement and assumptions in BellSouth's study. Not only does the result not reflect a least-cost, efficient arrangement, our corrections are not even as aggressive as those that some of BellSouth's own analysis would suggest. BellSouth's Response to Covad's POD 32 shows that BellSouth has calculated that it can install ***BEGIN BELLSOUTH PROPRIETARY

END PROPRIETARY*** Either figure is *lower* than the price proposed in our direct testimony.

2. Recurring Per-Line Activation Costs (Element J.4.3).

Q. What per-line recurring charge is BellSouth proposing in conjunction with line sharing?

A. BellSouth and Covad have agreed on an interim recurring per-line activation charge of $0.61 per month.

B. Nonrecurring Charges.

1. BellSouth-Owned Splitters (Elements J.4.1 and J.4.2)

Q. What is the basis for the nonrecurring charge that BellSouth proposes to impose for implementing either a 24-line or a 96-line capacity splitter arrangement?

A. The following table reproduces *all* of the detail that BellSouth has made available concerning the basis for its proposed $377.72 nonrecurring charge for both 96- and 24-line splitters. [*See* BellSouth cost study, FLLineSh.xls, Input_NRC (also provided as Exhibit WBS-1 at page stamped 000511).]

Table 1

BellSouth Nonrecurring Cost Study Inputs/Source Data for

Elements J.4.1 and J.4.2 – 96- and 24-Line Splitter Installations

Item/Description	Source	Hours
Network	COSMOS / SWITCH	4.00
Engineering	Circuit Capacity Management	3.00
Engineering	Complex Resale Support Group	0.74
Engineering	Complex Resale Support Group	0.67
Total		**8.41**

Q. Is BellSouth's support for its study adequate?

A. No. Indeed, BellSouth's "support" for its proposed $377.72 charge is so inadequate that we cannot determine even generally what activities BellSouth believes should be included in the cost basis for this charge. BellSouth provides no hint, for example, regarding what its "Network" group will supposedly spend 4 hours doing, what its "Engineering" group will spend 3 hours doing that constitutes "Circuit Capacity Management" or what its "Complex Resale Support Group" might require 1.41 additional hours to accomplish. When one recalls that BellSouth seeks to recover the "installed" cost of splitters through its proposed recurring prices (*i.e.*, the nonrecurring charge should not be recovering installation costs), it is hard to fathom why BellSouth imagines this nonrecurring charge to be necessary.

It is likewise impossible to know how BellSouth arrived at the finding that the nonrecurring cost associated with 96-line and 24-line splitter capacity

is identical. Some estimates are rounded (*e.g.*, 4 hours for "Network"), but others reflect apparent precision (*e.g.*, the two decimal place accuracy of the time estimate that BellSouth provides for the two "Complex Resale Support Group" lines and the fact that it has divided that time into two different lines). Therefore, we suspect that BellSouth may have combined multiple methods and sources in this single study. The discrepancy in levels of precision also suggests that, at least in some cases, BellSouth probably has additional study detail that it chose to withhold.

In other proceedings, BellSouth has testified that the "Circuit Capacity Management" and "Network" Groups are "building" a database and assigning circuits to the splitter. Nonetheless, BellSouth offers no direct testimony explaining why any of this work involving order services or inventorying functions cannot and should not be done by fully functional, forward-looking Operations Support Systems ("OSS"). If the unknown tasks that BellSouth reports in its cost study really take as much human intervention as reported here (a wholly unsupported conclusion given the paucity of documentation supplied to buttress these assumptions), it would seem this is an area ripe for electronic system upgrades. Thus, a forward-looking cost for such work would be zero.

Finally, BellSouth's direct testimony is entirely silent on even the most basic questions such as who developed the study inputs and how those inputs were developed. The complete absence of a basis for BellSouth's reported

costs precludes any reasonable understanding of them. This Commission should not adopt such entirely baseless charges.

Q. Were you able to obtain any additional detail concerning the basis for BellSouth's nonrecurring cost assumptions for the splitter?

A. In response to discovery in North Carolina, BellSouth provided a single page with additional description of the activities included in some of its work group level aggregate task times. [*See* BellSouth's Response to New Entrants' Second Data Request, April 27, 2000, Item No. 20, Attachment A, North Carolina Utilities Commission Docket No. P-100, Sub 133d (*see* Exhibit _____ (ERYK/JPR-6)).] However, BellSouth did not provide any information whatsoever for the largest portion of the time – 4 hours for the "COSMOS/Switch" group. And, unfortunately, the limited descriptions that BellSouth did provide are too vague to be of much use.

For example, BellSouth provides a single (one sentence) description of tasks that the "Circuit Capacity Management" group performs. As that same group is included in the nonrecurring cost estimate per splitter installation (element J.4.1) and per line-sharing line ordered (element J.4.3) and BellSouth seems to describe both studies on the same page, it is impossible to know with certainty which activities BellSouth has supposedly included in which nonrecurring cost. Certainly BellSouth's limited description, which suggests that this group orders and keeps an inventory of splitters, seems insufficient to account for either the per-splitter-shelf or the per-line time assigned to this

group. The description of tasks performed by the "Complex Resale Support Group," which at least only appears in the per-shelf nonrecurring cost analysis, appears to be almost entirely unnecessary as this group is described as solely tracking the splitter request before handing it off to the "Circuit Capacity Management" group.

As we discussed in our direct testimony, the function of placing splitters into a central office is a simple one. Moreover, as is correct, BellSouth includes the cost of installing and wiring the splitters in the recurring splitter cost and price. Therefore, we cannot fathom how BellSouth arrived at its conclusion that it will require an additional 8.4 hours of labor per splitter arrangement.

Given BellSouth's complete failure to explain, let alone to substantiate, its reported costs, the Commission should reject BellSouth's proposed nonrecurring price for these elements entirely.

Q. Do you have any other indication that BellSouth's assumed tasks and task times are inappropriate?

A. Yes. Even the sketchy description that BellSouth supplied in North Carolina makes clear that BellSouth has assumed a high degree of manual processing. Such manual processing has no place in any forward-looking cost study — it is even less acceptable given that BellSouth proposes to charge Covad for *automating* line-sharing orders. As Mr. Pate indicates in recent Georgia testimony,

> the Telcordia solution offers electronic processing of Line Sharing service requests allowing flow-through within BellSouth's OSS. This includes the ability to *inventory and assign BellSouth facilities and splitters* ... These capabilities provided by the Telcordia solution translate into reliable, fast, and accurate processing of CLEC Line Sharing service requests. [Pate Direct, Georgia Public Service Commission Docket No. 11900-U, November 13, 2000, at 18, emphasis added (*see* Exhibit _____ (ERYK/JPR-6)).]

Apparently, BellSouth has forgotten to reflect these flow-through processing efficiencies in its nonrecurring cost study. Covad has agreed, on an interim basis, to pay a recurring charge of $0.61 per line-shared line per month to fund OSS upgrades for line-sharing arrangements. Having agreed to pay for the upgrades, Covad is surely entitled to the benefit of those upgrades in the remaining cost study assumptions.

2. Competitor-Owned Splitters (Elements J.4.6 and J.4.7)

Q. Has BellSouth proposed nonrecurring prices for line-sharing splitters, even when Covad buys its own splitter and places it in its own collocation space?

A. Yes. BellSouth has inexplicably proposed to apply two nonrecurring charges for its "CLEC/DLEC Owned Splitter in the Central Office" option. Under

this option, Covad would own, install and maintain the splitter in its own collocation space. Nonetheless, BellSouth proposes to charge $115.29 "per "line splitter order document (LSOD)" (element J.4.6) and $57.72 "per occurrence of 24 lines" (element J.4.7). BellSouth has likewise proposed disconnect charges for these elements.

Q. Do all of the problems you described in the previous section apply to BellSouth's calculation of nonrecurring costs for competitor-owned splitters as well?

A. Yes. Although the preceding discussion addressed BellSouth's calculation of the nonrecurring cost for a BellSouth-owned and -installed splitter (elements J.4.1 and J.4.2), BellSouth used basically the same methodology to develop its nonrecurring price for the "CLEC/DLEC Owned Splitter in the Central Office" (elements J.4.6 and J.4.7). BellSouth does report fewer steps and less work time for the "CLEC/DLEC" splitter arrangement. However, the "Complex Resale Support Group" time that BellSouth includes is identical and the remaining tasks and times that BellSouth's analysis assumes are likewise unexplained.

Q. Do the activities that BellSouth included for the "CLEC/DLEC" option make sense?

A. No. Again, BellSouth has assumed that for the "CLEC/DLEC" option, Covad will own the splitter and will install the splitter in Covad's collocation area. It is curious, therefore, that BellSouth has included such times as, for example,

one hour for "Circuit Capacity Management" in its proposed nonrecurring per splitter cost for this option (element J.4.6). Recall that the only description BellSouth has provided for this group indicates that the cost is for the tasks of ordering and inventorying splitters. It is difficult to imagine why BellSouth believes a competitor should pay BellSouth for any such tasks when *Covad purchases and installs its own splitter in its own collocation area.* It is similarly difficult to understand why the involvement of the "Complex Resale Support Group" would be required for this element, particularly given that this group's main job seems to be handing off the order to the "Circuit Capacity Management" group. BellSouth has assumed 2.4 hours of effort for element J.4.6, all of which seems entirely unnecessary. The Commission should therefore reject the entire cost reflected in element J.4.6.

BellSouth's proposed element J.4.7 is equally mysterious. BellSouth states only that the "[n]onrecurring cost (J.4.7) per occurrence of each group of 24 lines (48 pair) associated with the LSOD also applies." [BellSouth cost study documentation (also provided as Exhibit WBS-1) at Section 6, page 14 (stamped 000050).] Element J.4.7 consists entirely of an assumed 1.5 hours on connection and 0.25 hours at disconnection per 24 lines for the"COSMOS/Switch" group to perform some undefined manual work. Again, BellSouth provided no description of this work effort, let alone supporting documentation. This apparent manual effort to enter records in BellSouth's systems would cost competitors another $57.72 per each 24 lines. This additional, unsubstantiated manual record-keeping charge seems entirely

inconsistent with BellSouth's simultaneous proposal to charge competitors for automation effort. Keep in mind, too, that BellSouth has proposed a separate nonrecurring per-line activation charge. The Commission should reject the entire cost reflected in element J.4.7 until such time as BellSouth provides a compelling reason that the corresponding record-keeping activities are necessary and cannot be automated.

3. Per-Line Activation (Element J.4.3)

Q. What is the basis for the additional nonrecurring charge per initial line that BellSouth proposes to impose on a per-line basis?

A. The following table reproduces *all* of the detail that BellSouth has made available concerning the basis for its proposed $37.02 charge (additional lines on the same order would be $21.20). [*See* BellSouth cost study, FLLineSh.xls, Input_NRC (also provided as Exhibit WBS-1 at page stamped 000511).]

Table 2

BellSouth Nonrecurring Cost Study Inputs/Source Data for

Element J.4.3 – Line Sharing Splitter – per Line Activation

Item/Description	Source	Hours
Engineering	Circuit Capacity Management	0.0833
Engineering (8 min x 35% fallout)	Assignment Facility Inventory Group	0.0467
Connect & Test	Work Management Center	0.0500
Connect & Test	CO Install & Mtce Field - Ckt & Fac	0.4167
LST – Engineering (15 min x 10%)	Circuit Capacity Management	0.0250
LST – Eng (8 min x 35% fallout x 10%)	Assignment Facility Inventory Group	0.0047
LST – Connect & Test (# min x 10%)	CO Install & Mtce Field - Ckt & Fac	0.0550
LST – Connect & Test (60 min x 10%)	Installation & Maintenance	0.1000
LST – Travel (30 min x 10%)	Installation & Maintenance	0.0500
Total		**0.8313**

Q. Is BellSouth's support for its study adequate?

A. No. BellSouth's "support" for its proposed per-line installation charge suffers from the same lack of support as does its proposed per-shelf nonrecurring charge. For example, it is impossible to determine even such basic information as how many cross-connection jumpers BellSouth assumes that it must place and remove or how much time BellSouth assumes each activity will take. Again, BellSouth's failure to detail the basis for its study inputs

deprives Covad of any reasonable opportunity to analyze and respond to BellSouth's results.

Q. Does BellSouth's reported cost appear reasonable?

A. No. Even the summary-level data that BellSouth has provided reveals several substantial flaws in BellSouth's analysis.

First, BellSouth has included two engineering tasks, one of which involves the "Circuit Capacity Management" group. Because line sharing rarely requires any engineering, we fail to understand why this group would need to be involved. We also note that BellSouth's presumption of a 35% fallout rate for manual work to the "Assignment Facility Inventory Group" reflects an unreasonably inefficient level of fallout and is entirely unsupported. Indeed, we question why the Assignment Facility Inventory Group is involved in line-sharing provisioning at all. Because line sharing involves adding on to existing service, the Assignment Facility Inventory Group could only be required to resolve fallout relative to loop assignment if the information in BellSouth's databases regarding its existing retail or wholesale account is in error. Hence, this cost would inappropriately require competitors to fund the cleanup of BellSouth's embedded records. If the supposed assignment error is related to the (recently placed) splitter facilities, the error should typically be returned to the competitor for correction and charges by BellSouth are, once again, inappropriate. Therefore, we recommend the removal of both engineering times.

Second, BellSouth has overstated the central office time necessary to provision a line-sharing arrangement. BellSouth has assumed that it will require 25 minutes to connect and test the line. This process should easily be accomplished in less than 10 minutes on average. Interestingly, in its recent Georgia line sharing cost study, BellSouth assumed only 15 minutes for this task. [*See* BellSouth cost study documentation (Exhibit DDC-1), Georgia Public Service Commission Docket No. 11900-U, November 13, 2000, at page stamped 000349 (*see* Exhibit _____ (ERYK/JPR-6)).] BellSouth has provided no explanation for the increase, nor, in fact, any description of the tasks included. Therefore, we recommend that the Commission use BellSouth's earlier estimate of 15 minutes.

Finally, BellSouth includes five tasks, prefaced with the acronym "LST," that BellSouth apparently claims will occur on 10% of line-sharing orders and that appear to relate to engineering and outside plant work activities. Our best guess (given BellSouth complete lack of description of these tasks and our knowledge that line-sharing orders will not typically require any engineering or outside plant work activities) is BellSouth has assumed that 10% of line-sharing orders will require a "Line and Station Transfer." A Line and Station Transfer occurs when a subscriber's outside plant facility is transferred to a different facility, so as to free up the original facility for use on another service. In this context, a Line and Station Transfer might be required to switch an end user's existing pair, which will not support line sharing for some reason, to a pair that can support line sharing.

BellSouth apparently intends to use Line and Station Transfers as a routine means of supplying its own DSL services. BellSouth's internal company documents state:

*****BEGIN BELLSOUTH PROPRIETARY**

END PROPRIETARY*** [Outside Plant Engineering Methods and Procedures for BellSouth® ADSL Service, 915-800-019PR, at 7, Sept. 30, 1999, which BellSouth provided in response to AT&T's Request to for Production of Documents 62 in Florida Public Service Commission Docket 990649-TP (also requested in this proceeding as Covad's Second Request for Production of documents, Item No. 35).]

The Commission should ensure that BellSouth is treating Line and Station Transfer costs consistently across all of its unbundled network element and retail cost studies and is not proposing a scheme that results in double-recovery of those costs. Line and Station Transfers are a routine part of outside plant maintenance and repair. The ongoing expense for such activity is typically and appropriately treated in cost analysis as a recurring expense. Hence, contrary to BellSouth's proposed treatment for DSL competitors, Line and Station Transfer costs are normally captured as a small portion of the recurring expense that is assigned to all loops. The Commission should disallow Line and Station Transfer costs until such time that BellSouth can demonstrate that: 1) the imposition of Line and Station Transfer costs will not double-recover costs already included in its loop cost analysis; and 2) the treatment of those costs as nonrecurring for DSL competitors is consistent with BellSouth's treatment of those same costs in other instances. At a minimum, the Commission should ensure that BellSouth provides data competitors with line and station transfers on request. Although competitors are already entitled to such transfers — if, as seems likely, the retail customer has paid for them through loop rates — it is doubly important that competitors receive this benefit if BellSouth is allowed to impose additional costs for line and station transfers.

Q. Given this analysis, how could the Commission correct BellSouth's reported costs?

A. As we noted above, BellSouth has not presented detail sufficient to verify how it determined task times for any task in its study — including those that are clearly necessary such as placing cross-connection jumpers. Hence, it is impossible to develop a revised result using the BellSouth data that has any reasonable level of verifiability or certainty. If, however, the Commission chooses to use the BellSouth data, it should, as we discussed above, eliminate the inappropriate engineering tasks, reduce the central office connect time and eliminate "LST" related tasks. With these corrections, BellSouth's study inputs would be as shown in the following table.

Table 3

PARTIALLY CORRECTED

BellSouth Nonrecurring Cost Study Inputs/Source Data for Element J.4.3 – Line Sharing Splitter – per Line Activation

Item/Description	Source	Hours
Connect & Test	Work Management Center	0.0500
Connect & Test	CO Install & Mtce Field - Ckt & Fac	0.2500
Total		**0.3000**

If one applies an estimated labor rate of $40 to these task times, BellSouth's corrected cost becomes $12.00, which is reasonably close to the

\$11.17 estimate for placing two jumper and removing one (with the related support tasks) that we proposed in our direct testimony.

4. Per Subsequent Activity Per Line Rearrangement (Element J.4.4.)

Q. What is the basis for the additional nonrecurring charge "per subsequent activity" that BellSouth proposes to impose on a per-line basis?

A. The following table reproduces *all* of the detail that BellSouth has made available concerning the basis for its proposed \$32.78 charge (additional lines on the same order would be \$16.38). [*See* BellSouth cost study, FLLineSh.xls, Input_NRC (also provided as Exhibit WBS-1 at page stamped 000511).]

Table 4

BellSouth Nonrecurring Cost Study Inputs/Source Data for

Elements J.4.4 – Line Sharing Splitter

Per Subsequent Activity Per Line Rearrangement

Item/Description	Source	Hours
Engineering (8 min x 35% fallout)	Assignment Facility Inventory Group	0.0467
Connect & Test	Work Management Center	0.1000
Connect & Test	CO Install & Mtce Field - Ckt & Fac	0.6167
Total		**0.7633**

Q. Is BellSouth's support for its study adequate?

A. No. Again, BellSouth's has not attempted to explain or support its study inputs and assumptions. For example, it is impossible to determine even such basic information as how many cross-connection jumpers BellSouth assumes that it must place and remove or how much time BellSouth assumes each activity will take.

Q. Does BellSouth's reported cost appear reasonable?

A. No. Once again, BellSouth has increased its assumed central office time from 22 minutes in its recent Georgia line-sharing study [*see* BellSouth cost study documentation (Exhibit DDC-1), Georgia Public Service Commission Docket No. 11900-U, November 13, 2000, at page stamped 000349 (*see* Exhibit _____ (ERYK/JPR-6))] to 37 minutes here, with no explanation. BellSouth also again presumes a 35% fallout rate for manual work to the "Assignment Facility Inventory Group," which reflects an unreasonably inefficient level of fallout and is entirely unsupported.

For these reasons, if the Commission makes any use of BellSouth's unsupported study, it should reduce BellSouth's proposed price by at least 50%.

III. THE COMMISSION SHOULD ESTABLISH EFFICIENT, NON-DISCRIMINATORY CONFIGURATIONS, TERMS AND CONDITIONS FOR LINE SHARING.

Issue 16: Where Should the Splitters Be Located in the Central Office?

Q. BellSouth has proposed locating splitters remotely on a relay rack. Is this the most efficient configuration?

A. No. As we explained in our direct testimony, splitters should be located on or near the MDF. Splitter placements that are further from the MDF add significantly to the cost of splitter placement, while potentially increasing the likelihood of trouble/failure. Furthermore, the increased length of the tie cable for remote locations could preclude Covad from providing line sharing to some customers.

Q. Does BellSouth contend that mounting splitters on the frame (as proposed by Covad) is technically infeasible?

A. No. Mr. Williams admits at page 2 of his direct testimony that "BellSouth recognizes that locating splitters on a central office frame is technically feasible."

Q. Is BellSouth's support for its study adequate?

A. No. Again, BellSouth's has not attempted to explain or support its study inputs and assumptions. For example, it is impossible to determine even such basic information as how many cross-connection jumpers BellSouth assumes that it must place and remove or how much time BellSouth assumes each activity will take.

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Q. Does BellSouth contend that mounting splitters on the frame (as proposed by Covad) is technically infeasible?

A. No. Mr. Williams admits at page 2 of his direct testimony that "BellSouth recognizes that locating splitters on a central office frame is technically feasible."

Q. On page 3 of his direct testimony, Mr. Williams claims that a frame-mounted splitter arrangement is "inefficient due to the frame space it requires." Is he correct?

A. No. Mr. Williams claim is apparently based in part on the fact that a frame-mounted configuration would require six connecting blocks on the frame, as opposed to the four blocks he claims would be needed for the rack-mounted architecture BellSouth prefers. However, Mr. Williams has failed to account for the variety of resources that a remotely located splitter rack utilizes (*e.g.*, the relay rack/bay, the pathway/ladder racks to hold the cabling, supports for the ladder rack, floor space occupied by the bay and its associated aisle space).

Mr. Williams goes on to explain that the "frame-mounted architecture proposed by Covad would cause BellSouth to prematurely exhaust its frame." [Williams Direct at 3.] However, given the high percentage of loops that are served over fiber in Florida [*see* BellSouth's Response to Rhythms' Interrogatory 83, FPSC Docket No. 990649-TP (see Exhibit _____ (ERYK/JPR-6))], we are puzzled by Mr. Williams' concern. (Fiber loops do not use MDF space.) BellSouth should not have frame congestion problems.

Q. Has BellSouth provided sufficient justification for this proposed interval?

A. No. Mr. Williams indicates that:

> It may be possible to provision line sharing loops is some cases in less than three days if all information flows correctly through all of BellSouth's provisioning systems. However, if orders fall out for manual handling, three days will be required. Therefore, to be sure all parties, including the end user, have appropriate expectations; three days after the return of the firm order confirmation is the appropriate interval. [*Id.*]

Line-sharing orders are simple, pertain to an existing service and can be processed on a fully mechanized or "flow though" basis without any manual intervention. [*See, e.g.*, Pate Direct, Georgia Public Service Commission Docket No. 11900-U, November 13, 2000, at 18 (*see* Exhibit _____ (ERYK/JPR-6)).] Keeping in mind that line sharing by definition uses existing (operational) voice lines, "fall-out" requiring manual assistance should be limited to a very small percentage of orders.

The physical process to provision the loop outlined by Mr. Williams on page 5 of his direct testimony (not all of which we agree is necessary) only takes a few minutes to complete. There is no reason that BellSouth should require more than 24 hours to complete that process.

reports promptly. BellSouth should at the very least be required to "clear" each report of data trouble within four hours by isolating the problem inside or outside the central office and transferring the wire. Otherwise, Covad will be severely disadvantaged in comparison to BellSouth's retail DSL services.

Q. Does that conclude your testimony at this time?

A. Yes, it does.

BellSouth		RECURRING / NONRECURRING			
	LINE SHARING **HOME-RUN COPPER**				
NA	High Bandwidth Portion of Loop	RECURRING	$0.00	NA	$0.00
J.4.1	BellSouth-Owned Splitter, 96-line capacity	RECURRING NRC	$201.46 $377.72	$89.11 $0.00	$85.44 See Notes 1, 2
J.4.2	BellSouth-Owned Splitter, 24-line capacity	RECURRING NRC	$50.37 $377.72	$22.28 $0.00	$21.38 See Notes 1, 2
NA	BellSouth-Owned Splitter, 8-line block	RECURRING NRC	NA NA	NA NA	$7.12 See Notes 1, 2
NA	Covad-Owned Splitter in BellSouth space, 96-Line Shelf	RECURRING NRC	NA NA	NA NA	$9.60 $22.23 (Note 2)
NA	Covad-Owned Splitter in BellSouth space, 24-Line Shelf	RECURRING NRC	NA NA	NA NA	$2.40 $6.24 (Note 2)
NA	Covad-Owned Splitter in BellSouth space, 8-Line Block	RECURRING NRC	NA NA	NA NA	$0.80 $2.08 (Note 2)
J.4.6	Covad-Owned Splitter in Covad collocation space – "per LSOD"	NRC	$115.29	$0.00	NA
J.4.7	Covad-Owned Splitter in Covad collocation space – "per occurrence of 24 lines"	NRC	$57.72	$0.00	NA
J.4.3	Per-Line Activation	RECURRING NRC	No permanent rate (Note 3) $32.07	No permanent rate (Note 3) $12.00	No permanent rate (Note 3) $11.17
J.4.4	"Per subsequent activity per rearrangement"	NRC	$32.78	$0.00 (Note 4)	NA
	FIBER-FED	RECURRING/NRC	NA	NA	See Note 5

Note 1 Installation costs for BellSouth-owned splitters are included in Covad's proposed recurring costs.
Note 2 Tie cable prices should be set per the Covad interconnection agreement. Only one tie cable is required for an efficient line-sharing arrangement.
Note 3 BellSouth and Covad have agreed on an interim recurring price of $0.61 for this element. Pursuant to the agreement, BellSouth will not seek to establish permanent prices for this rate element until the Line Sharing OSS upgrades are fully commercially available.
Note 4 The Commission should reject this unexplained and unsupported element. If the Commission makes any use of BellSouth's study, it should reduce BellSouth's proposed price by at least 50%.
Note 5 The Commission should establish a docket to consider costs and prices for the elements necessary to provide DSL over fiber.

FPSC Docket No. 001797-TP
Exhibit No. ____ ERYK/JPR-5
Page 1 of 1

Includes:

- BellSouth's Response to Covad's First Interrogatories, Item No. 15, Tennessee Regulatory Authority Docket No. 00-00544
- BellSouth's Response to Sprint's First Set of Interrogatories, Item No. 5, Tennessee Regulatory Authority Docket No. 00-00544
- BellSouth's Response to New Entrant's Second Data Request, April 27, 2000, Item No. 4, North Carolina Utilities Commission, Docket No. P-100, Sub 133d
- BellSouth's Response to Covad's First Interrogatories, Item No. 16, Tennessee Regulatory Authority Docket No. 00-00544
- BellSouth's Response to New Entrants' Second Data Request, April 27, 2000, Item No. 20, North Carolina Utilities Commission Docket No. P-100, Sub 133d
- Excerpt from Direct Testimony of Ronald M. Pate, Georgia Public Service Commission Docket No. 11900-U, November 13, 2000 (pages 17-18)
- Excerpt from BellSouth cost study documentation (Exhibit DDC-1), attached to the Direct Testimony of D. Daonne Caldwell, Georgia Public Service Commission Docket No. 11900-U, November 13, 2000, (page stamped 000349)
- BellSouth's Response to Rhythms' Interrogatory 83, FPSC Docket No. 990649-TP

REQUEST: What is the exact number of cables and length of cable assumed in BellSouth's line sharing cost study?

RESPONSE: BellSouth's line sharing cost study assumed three 100 pair cables for an average distance of 150 feet.

REQUEST: Explain how the system capacity for the line sharing splitter bay of 8 (Page 001721, line 40 of the Cost Study) was determined?

RESPONSE: Based on the size of the bay, it has a capacity for 8 splitters with each having a corresponding test shelf.

REQUEST: Reference: wp J.4.1, Line 28 – Please provide a schematic or other document explaining why three blocks on the MDF are required for this particular system.

RESPONSE: Three blocks on the MDF are required to accommodate the termination of a 96-line splitter. A 96-line splitter has 96 terminations. Each termination on the splitter equates to three jumpers (voice -POTS, data -xDSL, line-data and voice). This requires three connecting blocks. See Attachment A.

BellSouth Telecommunications, Inc.
North Carolina Utilities Commission
Docket No. P-100, Sub 133d
New Entrants' Second Data Requests
April 27, 2000
Item No. 4
ATTACHMENT A

66-TYPE BLOCK: USED FOR LINE SHARING SPLITTER (Block # 1)
DATA (xDSL)
VOICE (POTS)
DATA & VOICE (LINE)
Vacant (MC)
(MC = No Connection)

89-TYPE BLOCK USED FOR LINE SHARING SPLITTER (Block # 2)

	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
DATA (xDSL)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
VOICE (POTS)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
DATA & VOICE (LINE)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Vacant (NIC)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R

(NIC = No Connection)

89-TYPE BLOCK USED FOR LINE SHARING SPLITTER (Block # 3)

	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
DATA (ADSL)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
VOICE (POTS)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
DATA & VOICE (LINE)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Vacant (NIC)	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R

(NIC = No Connection)

Item No. 4
Attachment A
Page 1 of 3

FPSC Docket No. 001797-TP
Exhibit No. ____ ERYK/JPR-6
Page 8 of 18

REQUEST: Please describe how BellSouth arrived at the assumption of cable number and length.

RESPONSE: This assumption was based on the method BellSouth assumed the vendor would use to wire the splitter equipment. The length is based on the average distance from the frame where the splitters appear to the CLEC common area, which is the first choice for splitter shelf placement.

REQUEST: Reference: Line Sharing Splitter Data, INPUT-NRC – Please provide a detailed explanation of the tasks performed for each of the categories listed in the "Source" column of the worksheet.

RESPONSE: See Attachment A.

BellSouth Telecommunications, Inc.
North Carolina Utilities Commission
Docket No. P-100, Sub 133d
New Entrants' Second Data Requests
April 27, 2000
Item No. 20
ATTACHMENT A

Circuit Capacity Management
Activities consist of receiving the order for splitter from customer from CRSG, respond to CRSG as to splitter equipment availability, order equipment through normal processes, initiate equipment inventory, initiate cable/pair inventory, respond to CRSG for customer splitter identification, monitor fill (not customer fill but BellSouth spare when new orders come in)

Complex Resale Support Group
Activities include receiving order from CLEC, print and email, log into tracking system, assemble printed documents, prepare folder and hand off to CCM, review and verify data, prepare handoff, close order and file

Assignment Facility Inventory Group
Activities include resolving errors from order fallout, building facility inventory in FACS and handling facility maintenance changes

Work Management Center
Activities include monitoring of the workload, loading work to the CO technicians for dispatch and subsequent closeouts of the assigned work

CO Install & Maintenance - Circuit and Facility
Activities include reviewing orders, connecting and disconnecting customer lines inside the central office, performing testing and administrative activities

Installation and Maintenance

Activities are receiving the task and interpreting it, making the line and station transfer (when required) test to make sure the transfer worked properly and close out the task

receive a response. In the case of LEIS/LEAD, access may be obtained by CLECs for LQS which provides a "yes/no" qualified response.

Issue (5) (b) Line Sharing: How and under what rates, terms, and conditions should line sharing be provided?

Q. WHAT PORTION OF THIS ISSUE ARE YOU ADDRESSING?

A. I will discuss BellSouth's implementation of line sharing as it relates to BellSouth's OSS and BellSouth's associated cost of implementation. The issue relating to Line Sharing rates will be addressed by Ms. Cindy Cox.

Q. PLEASE DESCRIBE BELLSOUTH'S APPROACH TO DEVELOPING OSS FUNCTIONALITY THAT WILL ELECTRONICALLY PROCESS LINE SHARING SERVICE REQUESTS.

A. The vendor solution provided by Telcordia Technologies, Inc. previously described for CLEC xDSL pre-ordering and ordering functionality also has a module to provide the OSS necessary for the pre-ordering, ordering and provisioning of Line Sharing service.

Q. PLEASE SUMMARIZE THE BENEFITS OF THE TELCORDIA SOLUTION FOR LINE SHARING TO BELLSOUTH AND ITS CLEC CUSTOMERS.

A. In addition to those benefits previously described, the Telcordia solution offers electronic processing of Line Sharing service requests allowing flow-through within BellSouth's OSS. This includes the ability to inventory and assign BellSouth facilities and splitters at the pre-specified CLEC meet points. These capabilities provided by the Telcordia solution translate into reliable, fast and accurate processing of CLEC Line Sharing service requests. It provides state-of-the-art technology with the ability to process the anticipated volumes of requests in a cost-effective manner and to build future applications and functionalities.

Q. IS THE SCOPE OF WORK THAT IS TO BE PROVIDED BY TELCORDIA EXCLUSIVELY FOR CLEC OSS CAPABILITIES ASSOCIATED WITH THE CLEC XDSL AND LINE SHARING?

A. No. The majority of the work done in this effort is for OSS capabilities associated with CLEC xDSL and Line Sharing orders; however, Telcordia is performing additional work on Electronic Access Ordering ("EAO") functionality. EAO will provide ASR pre-order functionality for address validations and Connecting Facility Assignment ("CFA") inquiries. Approximately $3.2 million is committed for licensed software Right-to-Use fees associated with EAO.

Excerpt from BellSouth Exhibit DDC-1,
Attached to the Direct Testimony of D. Daonne Caldwell
Georgia Public Service Commission Docket No. 11900-U
November 13, 2000

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Georgia														
2	Inputs for Nonrecurring Costs														
3	Study Period: 2000 - 2002														
4	GA														
5															
6		Item / Description			Cost Element	(For use w/ one NR)		First		Additional		Initial		Subsequent	
7	Element	Description	JFC / JG / WS	Source	Life (mos.)	Install	Disconnect	Install	Disconnect	Install	Disconnect	Install	Disconnect	Install	Disconnect
8								Time in Hours (Hrs)							
9	J.4	LINE SHARING SPLITTER - In the Central Office													
10															
11	J.4.1	Line Sharing Splitter - per Splitter System 96-Line Capacity in the Central Office			41										
12		Network	JG56	COSMOS / SWITCH		4.0000	0.0000								
13		Engineering	34XX	Circuit Capacity Management		3.0000	0.0000								
14		Engineering	221X	Complex Resale Support Group		0.7400	0.0000								
15		Engineering	SDWC	Complex Resale Support Group		0.8700	0.0000								
16		Service Order	230X	LCSC		0.5000	0.0000								
17	J.4.2	Line Sharing Splitter - per Splitter System 24-Line Capacity in the Central Office			41										
18		Network	JG56	COSMOS / SWITCH		4.0000	0.0000								
19		Engineering	34XX	Circuit Capacity Management		3.0000	0.0000								
20		Engineering	221X	Complex Resale Support Group		0.7400	0.0000								
21		Engineering	SDWC	Complex Resale Support Group		0.8700	0.0000								
22		Service Order	230X	LCSC		0.5000	0.0000								
23	J.4.3	Line Sharing Splitter - per Line Activation in the Central Office			41										
24		Engineering	34XX	Circuit Capacity Management				0.0833	0.0000	0.0208	0.0000				
25		Engineering (5 min x 35% fallout)	4M1X	Assignment Facility Inventory Group				0.0467	0.0000	0.0467	0.0000				
26		Connect & Test	4WXX	Work Management Center				0.0500	0.0000	0.0500	0.0000				
27		Connect & Test	431X	CO Install & Mtce Field - Ckt & Fac				0.2500	0.0000	0.1000	0.0000				
28		LST - Engineering (15 min x 10%)	34XX	Circuit Capacity Management				0.0250	0.0000	0.0250	0.0000				
29		LST - Eng (5 min x 35% fallout x 10%)	4M1X	Assignment Facility Inventory Group				0.0047	0.0000	0.0047	0.0000				
30		LST - Connect & Test (5 min x 10%)	431X	CO Install & Mtce Field - Ckt & Fac				0.0330	0.0000	0.0450	0.0000				
31		LST - Connect & Test (60 min x 10%)	410X	Installation & Maintenance				0.0600	0.0000	0.0600	0.0000				
32		LST - Travel (30 min x 10%)	410X	Installation & Maintenance				0.0500	0.0000	0.0000	0.0000				
33		Service Order	230X	LCSC				0.4500	0.0000	0.0450	0.0000				
34	J.4.4	Line Sharing Splitter - per Subsequent Activity per Line Rearrangement			41										
35		Engineering (5 min x 35% fallout)	4M1X	Assignment Facility Inventory Group				0.0467	0.0000	0.0467	0.0000				
36		Connect & Test	4WXX	Work Management Center				0.1000	0.0000	0.1000	0.0000				
37		Connect & Test	431X	CO Install & Mtce Field - Ckt & Fac				0.3700	0.0000	0.1500	0.0000				
38		Service Order	230X	LCSC				0.4500	0.0000	0.0450	0.0000				
39															
40	J.4.199	Line Sharing Splitter - per Splitter System 96-Line Capacity in the Central Office Disconnect			41										
41		Network	JG56	COSMOS / SWITCH				0.0000	2.0000	0.0000	0.0000				
42		Engineering	34XX	Circuit Capacity Management				0.0000	3.0000	0.0000	0.0000				
43		Engineering	221X	Complex Resale Support Group				0.0000	0.7400	0.0000	0.0000				
44		Engineering	SDWC	Complex Resale Support Group				0.0000	0.8700	0.0000	0.0000				
45		Service Order	230X	LCSC				0.0000	0.5000	0.0000	0.5000				
46	J.4.299	Line Sharing Splitter - per Splitter System 24-Line Capacity in the Central Office Disconnect			41										
47		Network	JG56	COSMOS / SWITCH				0.0000	2.0000	0.0000	0.0000				
48		Engineering	34XX	Circuit Capacity Management				0.0000	3.0000	0.0000	0.0000				
49		Engineering	221X	Complex Resale Support Group				0.0000	0.7400	0.0000	0.0000				
50		Engineering	SDWC	Complex Resale Support Group				0.0000	0.8700	0.0000	0.0000				
51		Service Order	230X	LCSC				0.0000	0.5000	0.0000	0.5000				
52	J.4.399	Line Sharing Splitter - per Line Activation in the Central Office Disconnect			41										
53		Engineering	34XX	Circuit Capacity Management				0.0000	0.0833	0.0000	0.0208				
54		Engineering (5 min x 35% fallout)	4M1X	Assignment Facility Inventory Group				0.0000	0.0467	0.0000	0.0467				
55		Connect & Test	4WXX	Work Management Center				0.0000	0.0500	0.0000	0.0500				
56		Connect & Test	431X	CO Install & Mtce Field - Ckt & Fac				0.0000	0.2000	0.0000	0.0833				
57		Service Order	230X	LCSC				0.0000	0.4500	0.0000	0.0450				
58	J.4.499	Line Sharing Splitter - per Subsequent Activity per Line Rearrangement Disconnect			41										
59		Service Order	230X	LCSC				0.0000	0.4500	0.0000	0.0450				
60															

REQUEST: Please identify the overall percentage of loops in BST's current network that are provisioned both with and without Digital Loop Carrier systems (i.e., electronics).

RESPONSE: Based on current network (12/31/1999) data for Florida, the mix of loops with DLC and without DLC is:

DLC	42.4%
Non-DLC	57.6%

RESPONSE PROVIDED BY: W. Keith Milner
Senior Director
675 W. Peachtree St., N.E.
Atlanta, Georgia 30375

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing Joint Rebuttal Testimony and Exhibits of Elizabeth R. Y. Kientzle and Joseph P. Riolo on Behalf of Covad Communications Company has been furnished by (*) hand delivery this 23rd day of May, 2001, to the following:

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