

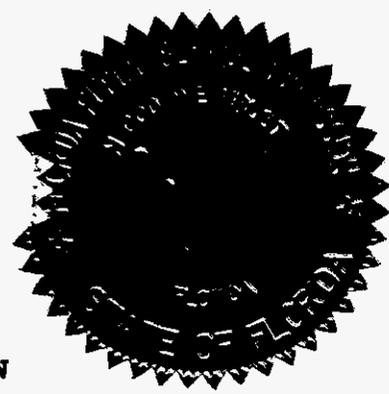
BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

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In the Matter of : DOCKET NO. 960757-TP
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:
Petition by Metropolitan Fiber :
Systems of Florida, Inc. for :
arbitration with BellSouth :
Telecommunications, Inc. :
concerning interconnection, rates, :
terms, and conditions, pursuant to :
the Federal Telecommunications :
Act of 1996. :

Petition by AT&T Communications : DOCKET NO. 960833-TP
of the Southern States, Inc. for :
arbitration of certain terms and :
conditions of a proposed agreement :
with BellSouth Telecommunications :
Inc. concerning interconnection :
and resale under the :
Telecommunications Act of 1996. :

Petition by MCI Telecommunications : DOCKET NO. 960846-TP
Corporation and MCI Metro Access :
Transmission Services, Inc. for :
arbitration of certain terms and :
conditions of a proposed agreement :
with BellSouth Telecommunications, :
Inc. concerning interconnection :
and resale under the :
Telecommunications Act of 1996. :



SECOND DAY - MORNING SESSION

VOLUME 5

Pages 528 through 729

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BEFORE: CHAIRMAN JULIA L. JOHNSON
COMMISSIONER J. TERRY DEASON
COMMISSIONER SUSAN F. CLARK
COMMISSIONER JOE GARCIA
COMMISSIONER E. LEON JACOBS, JR.

DATE: **Tuesday, January 27, 1998**

TIME: Commenced at 9:00 a.m.

PLACE: Betty Easley Conference Center
Room 148
4075 Esplanade Way
Tallahassee, Florida

REPORTED BY: JOY KELLY, CSR, RPR
Chief, Bureau of Reporting
(904) 413-6732

APPEARANCES:
(As heretofore noted.)

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(Transcript follows in sequence from Volume

4.)

CHAIRMAN JOHNSON: I think we're prepared to go back on the record. Good morning.

MS. WHITE: Madam Chairman, before we start, there are some witnesses in the audience that weren't here yesterday, so if you'd like to go on and swear them.

CHAIRMAN JOHNSON: Thank you. If there's anyone here today to testify that was not here yesterday, if you could please stand and raise your right hand. Is there someone else?

(Witnesses sworn.)

CHAIRMAN JOHNSON: Thank you. You may be seated. Any other preliminary matters? Seeing none, I think we're ready for MCI.

MR. ADELMAN: No questions for this witness from MCI.

CHAIRMAN JOHNSON: Okay. Staff?

I'm sorry.

MR. SELF: We have no questions either.

1 A Yes.

2 Q There are two categories relating to
3 customer service. And the first one is LCSC. Is that
4 something that would be required in a retail order?

5 A Depending upon the complexity of the retail
6 order, yes. Things that are as complex as SmartRings
7 and other services where it requires a fairly
8 extensive look at exactly what it's going to take to
9 make that function, then, yes, those are required. It
10 is a way of making sure that that particular site and
11 the particular configuration is servable, will
12 function. And in the case of a subloop, it's a fairly
13 complex process where a CLEC has met us midpoint
14 someplace along the loop, which is not a normal
15 meet-point; not like a central office or a customer
16 prem, and that specific case, I guess, lends a fair
17 amount of complexity to the process.

18 Q What about for a residential order?

19 A No. Residential orders would typically not
20 undergo a service inquiry process.

21 Q Okay. The second category I'd like to look
22 at is outside plant engineering, which is in Line 12.
23 Is that something required in retail order?

24 A Again, both of those centers are part of the
25 service inquiry process, and on some retail orders the

1 more complex ones, again a service inquiry would be
2 processed.

3 A service inquiry is typically handled by
4 the group that receives the order on the front end and
5 there are either one or two groups typically involved
6 in responding to that. Outside plant is one of the
7 groups, and the interoffice capacity management group
8 is the second group. Those two would make sure that
9 your loop facilities are in place to serve it and your
10 interoffice facilities are also in place.

11 And again, on the more complex retail
12 orders, they would typically be involved; on a
13 residential order they would not.

14 Q Looking down into the heading "Service
15 Order," Line 16 there's four categories. The first
16 one is LCSC receives service inquiry. Is that
17 required for a retail order?

18 A There is a center that receives the service
19 request. Similar in some respects to the LCSC, where
20 somebody does take a phone call typically on a
21 residential order from a customer. So that particular
22 function is there in retail and residential services.

23 Q How about WMC coordinates dispatch
24 technicians?

25 A Yes. On retail orders that center would

1 also be involved.

2 Q Also for residential?

3 A Yes.

4 Q And ACAC turns up service to the ALEC?

5 A There is a center that is responsible for
6 overseeing the turn up of residential-type services.
7 They are a residential-type center. They are
8 equivalent to the this one, although the functions
9 that are performed from a residential perspective are
10 not anywhere as complex as the one that the ACAC does.
11 So there is a service in residential services that
12 does the function. Its processes and functions are
13 not quite as complex as this one.

14 Q When you say "not quite as complex," could
15 you give me an idea of the comparison and the
16 complexity? Does one take significantly more time
17 than the other, is what I'm asking?

18 A Just a broadbrush estimate I'd say maybe
19 like 20% compared to 100% as far as the complexity of
20 a RRC residential center that is turning up a service
21 versus the ACAC. And, again, that's due to the nature
22 of the unbundled element, and the fact -- the way
23 these are done, it's a fairly complex process to
24 unbundle it, separate it. A network that is typically
25 integrated into an end-to-end network where you go all

1 the way in some cases from a termination on a switch
2 to a termination at a premise that is an integrated
3 network to one that you have broken into unbundled
4 elements. Just the sheer nature of fragmenting that
5 and breaking it into pieces, and the management of
6 those pieces, and being able to hand them off at
7 points that are typically not handoff points to a
8 competitor, makes it complex.

9 Q Okay. Looking in the next heading, which is
10 "Engineering." Does AFIG stand for additional
11 facility inventory group?

12 A Assignment facilities inventory group.

13 Q Does AFIG assign cable pairs according to
14 FRN and rules. Is that something required in the
15 retail order?

16 A The AFIG is involved, not necessarily the
17 facility reservation number. The facility reservation
18 ties to the fact that somebody has previewed that
19 process and those facilities, and has tied a certain
20 facility that's been verified to a service request.
21 The AFIG is involved. They manage all of the outside
22 loop facilities, or the vast majority of the outside
23 plant loop facilities are managed by the AFIG. They
24 are involved in residential orders also; not to the
25 extent that they are shown on here.

1 Again, typically a normal residential order
2 and that process is a lot simpler than the unbundled
3 element process.

4 Q Looking at the next heading, "Connect and
5 Turnup Test." Line 27 is ACAC dispatches appropriate
6 work groups. How about that? Is that something
7 required in a retail order?

8 A On residential services, again typically
9 there are two centers that do that; the WMC makes sure
10 that the technicians are out there to perform the
11 work, and typically on residential services you have a
12 broader time where a service will be turned up. It's
13 either an a.m. or p.m. type appointment in most cases.

14 And the residential repair center, or is
15 there a center that manages that, that would make sure
16 a final test has been run on it, but they are not
17 involved again to the point that the ACAC is. Not
18 anywhere near the involvement. Again, I would think
19 maybe a 10 to 20% estimate as far as overall work
20 compared to this total work.

21 Q Okay. How about Line 28? "I&M makes cross-
22 connect at the cross-connect box."

23 A Yes. That one is also involved in the
24 turnup of residential services. The installation
25 group is the one that goes out there and actually --

1 if a cross-connect is needed, if a termination is
2 needed they do that.

3 Q And finally in the heading "Travel," I&M
4 incidental travel time that's not captured in the NID
5 drop investment. Is that something required?

6 A The same thing. That's tied to the
7 installation work that showed up in Line 28. And,
8 again, it's part of the dispatch to turnup applicable
9 and residential services also.

10 Q Okay. Thank you.

11 I'd like to turn your attention now to
12 Witness Lynott's late-filed deposition exhibits 3 and
13 5. Do you have that in front of you?

14 A Yes.

15 Q If you would, look at Page 1 of 3 of that
16 exhibit. Looking at Lines 1 through 10, the top of
17 that chart, do you see a list of work groups there?
18 In BellSouth's cost study, do any of the work groups
19 listed in these line contain ALEC-specific OSS cost?

20 A I'm not sure what you mean by ALEC-specific.
21 They are responding, I guess, to the turnup of a
22 service, and in the turnup of that service have
23 specific functions to perform. Some of these centers
24 are the centers that perform that function on retail
25 services. In the case of the customer point of

1 contact, and in the case of the ACAC, those centers
2 were set up specifically to respond to ALEC needs as
3 far as single points of contacts and a point where
4 their trouble reports and turn up of certain services
5 are coordinated through. So, I'm sorry, I may not be
6 answering your question. But, again, they are
7 responding to a service request.

8 Q Okay. Are those costs what you would refer
9 to as fallout resolution costs rather than ALEC-
10 specific OSS costs?

11 A I'm sorry, again, I'm not sure --
12 ALEC-specific OSS, these centers use OSS as their
13 operational support systems in performing their
14 services. There are certain systems that each of
15 these centers rely on to be able to receive, process,
16 dispatch technicians. But each of these centers is a
17 center that exists and has people to perform a
18 function, to handle fallout or to handle, in the case
19 where they are not driven by fallout, there are
20 physical things that need to be done, either in the
21 central office or at the customer prem on those
22 circuits.

23 MS. KEATING: Thank you, Mr. Landry.
24 Those are all of the questions Staff has.

25 CHAIRMAN JOHNSON: Okay. Exhibits? Any

1 redirect?

2 **MR. ROSS:** Just two quick questions, Madam
3 Chairman.

4 **REDIRECT EXAMINATION**

5 **BY MR. ROSS:**

6 **Q** Mr. Landry, yesterday Mr. Lemmer, on behalf
7 of AT&T, asked you about fallout in the access world,
8 and he made a reference about PIC changes. Is the
9 fallout -- could you explain the fallout in the access
10 world as you were using that term and describe whether
11 or not that has anything to do with PIC changes?

12 **A** As I explained yesterday, that a PIC change
13 is a fairly simple process. It's a simple translation
14 in the switch where you're moving a customer from one
15 interexchange carrier to another. Although there's
16 probably some fallout -- and, again, I'm not familiar
17 with MARCH -- there's going to be some fallout of the
18 translations process into that switch.

19 The process, and the complexity of the
20 process, for a PIC change is not anywhere's near the
21 complexity of the process to disconnect a loop and
22 terminate it in a collocated space. The unbundled
23 loop has a number of technical parameters that all
24 have to be considered and taken into account. They
25 all have to be correct for that whole process to

1 function and to function mechanically.

2 Q Mr. Landry, you were also asked by
3 Mr. Lemmer about any overlap between the work
4 functions performed by the ACAC and the WMC. Do you
5 recall those questions?

6 A Yes.

7 Q I believe you indicated there was no
8 overlap. Could you explain why it is, in your
9 opinion, there's no overlap between those work
10 centers?

11 A Yes. Typically the WMC has a center charge
12 with the general management of technicians in a
13 particular geographic area. The technicians are there
14 to perform given amounts of work. That center makes
15 sure that the technicians are there; that the system
16 that loads them out -- in this case, WAFA, has been
17 loaded. The WMC will handle expedites. If there's
18 any overtime to be worked, again, the WMC gets
19 involved in that. They make sure the technicians are
20 available to perform the work.

21 The ACAC, on the other hand, handles very
22 specific circuits. In a general area the WMC may have
23 dispatched five to ten technicians to work a general
24 amount of work. Only one or two of those circuits may
25 be tied to an ACAC function. If I were to try to pick

1 a parallel, I guess, the WMC might be like a general
2 contractor making sure that the people are there to
3 work on a building. That the painters are there, the
4 builders are there, the people that put carpeting are
5 there. The ACAC might be what you think of as
6 specific forman on the floor that is responsible for
7 making sure that everything on that one floor is
8 finished, and that the floor can be turned over to a
9 specific occupant or the person who is going to own
10 that, and that everything is completed and is in good
11 order per what the customer specified. That would be
12 the best parallel that I could give in comparing a WMC
13 function to an ACAC function.

14 **MR. ROSS:** No further questions,
15 Chairman Johnson.

16 **CHAIRMAN JOHNSON:** Okay. Exhibits?
17 Exhibit 16?

18 **MS. KEATING:** Staff moves 16.

19 **CHAIRMAN JOHNSON:** Show it admitted without
20 objection.

21 (Exhibit 16 received in evidence.)

22 **CHAIRMAN JOHNSON:** Thank you, sir. You are
23 excused.

24 (Witness Landry excused.)

25 **MS. WHITE:** BellSouth calls Walter Reid.

1 Q And did you also cause to be filed rebuttal
2 testimony consisting of 9 pages and one exhibit on
3 December 9th, 1997?

4 A That's correct.

5 **MR. TWOMEY:** Chairman Johnson,
6 Commissioners, in addition to these revisions, there
7 was a revised Exhibit 3 to Mr. Reid's testimony that
8 was omitted from his testimony on December the 9th.
9 The revised exhibit was distributed to the parties
10 yesterday. The information contained therein was
11 included in the model that was filed on December 9th.
12 The actual piece of paper was simply omitted so we're
13 going to ask it be revised as well. I don't believe
14 there's any objection.

15 Q At this time, Mr. Reid, do you have any
16 additions or modifications to your testimony?

17 A No, I do not.

18 Q If I asked you the same questions in your
19 prefiled direct and prefiled rebuttal, would your
20 answers be the same?

21 A Yes, they would.

22 **MR. TWOMEY:** At this time, Chairman Johnson,
23 BellSouth moves into the record the testimony of
24 Walter S. Reid, both direct and rebuttal as though
25 read from the stand.

1 **CHAIRMAN JOHNSON:** It will be inserted as
2 though read.

3 **MR. TWOMEY:** And would like Exhibits WSR-1
4 through 6, and that will include revised exhibits 3, 4
5 and 5, inserted into the record as well as exhibits.
6 I believe the next exhibit number is 17.

7 **CHAIRMAN JOHNSON:** It will be marked as 17,
8 and identified as WRS-1 through 6, with revised -- you
9 said 3, 4 and 5?

10 **MR. TWOMEY:** Yes. Thank you.

11

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1 **BELLSOUTH TELECOMMUNICATIONS, INC.**
2 **DIRECT TESTIMONY OF WALTER S. REID**
3 **BEFORE THE**
4 **FLORIDA PUBLIC SERVICE COMMISSION**
5 **DOCKET NOS. 960833-TP, 960846-TP, 960757-TP, 960916-TP, 971140-TP**
6 **NOVEMBER 13, 1997**

7
8
9

10 Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND
11 POSITION WITH BELLSOUTH TELECOMMUNICATIONS, INC.

12

13 A. My name is Walter S. Reid and my business address is 675 West
14 Peachtree Street N. E., Atlanta, Georgia. My position is Senior Director
15 for the Finance Department of BellSouth Telecommunications, Inc.
16 (hereinafter referred to as "BellSouth", or "the Company").

17

18 Q. BRIEFLY OUTLINE YOUR EDUCATIONAL BACKGROUND AND
19 BUSINESS EXPERIENCE IN THE TELECOMMUNICATIONS
20 INDUSTRY.

21

22 A. I received bachelor and master of science degrees in industrial
23 engineering in 1969 and 1971, respectively, from the Georgia Institute
24 of Technology. I was employed by BellSouth in November, 1971, as a
25 management trainee in the Comptrollers Department in Jacksonville,

1 Florida. Since that time, I have held various positions of increasing
2 responsibility in the areas of budget and forecast preparation, cost
3 accounting, separations, and regulatory matters. I was transferred to
4 my current position at Company Headquarters in October, 1987.
5 Overall, I have over 26 years experience dealing with the financial
6 issues of the Company.

7

8 Q. WHAT ARE YOUR CURRENT RESPONSIBILITIES?

9

10 A. I am responsible for the preparation and analysis of the Company's
11 financial results, the provision of accounting and cost information
12 requested in proceedings before state regulatory commissions and the
13 coordination of other regulatory activities related to accounting and
14 finance.

15

16 Q. HAVE YOU TESTIFIED PREVIOUSLY REGARDING FINANCIAL
17 ISSUES IN STATE REGULATORY PROCEEDINGS?

18

19 A. Yes. I have testified in Florida proceedings for many years. Most
20 recently, I testified in Florida in Docket No. 96-358-C regarding the
21 appropriate resale discount for BellSouth. I have also testified in
22 numerous regulatory proceedings in Alabama, South Carolina,
23 Georgia, Kentucky, Mississippi, North Carolina, and Tennessee.

24

25

1 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS
2 PROCEEDING?

3
4 A. The purpose of my testimony in this proceeding is to address the
5 appropriate methodology for including a reasonable amount of forward-
6 looking shared and common costs in BellSouth's Total Service Long-
7 Run Incremental Cost ("TSLRIC") plus Shared and Common cost
8 studies (BellSouth Cost Studies). In its Order No. PSC-96-1579-FOF-
9 TP ("Order") issued December 31, 1996, the Florida Public Service
10 Commission stated, "Upon consideration of the evidence in the record
11 and based on the Act, we find it appropriate to set permanent rates
12 based on BellSouth's TSLRIC cost studies. The rates are for the
13 unbundled network elements we consider to be technically feasible.
14 The rates cover BellSouth's TSLRIC cost and provide some
15 contribution toward joint and common costs." (Order at page 33).
16 BellSouth's approach for treating shared and common costs consists of
17 a study which develops appropriate shared and common cost factors
18 for use in unbundled network element ("UNE") rate calculations.

19 Q. HAS THE COMPANY PROVIDED ITS STUDY WHICH DEVELOPS
20 THE SHARED AND COMMON COST FACTORS TO THE FLORIDA
21 PUBLIC SERVICE COMMISSION?

22
23 A. Yes. The Company provided the study which calculates the shared
24 and common cost factors as part of the data filed with its revised cost
25

1 studies submitted with the Company's testimony on November 13,
2 1997 and revised on December 9, 1997. In addition, the Company
3 filed its supporting documentation on the shared and common cost
4 study as part of its cost support documentation.

5
6 Q. FROM A HIGH LEVEL PERSPECTIVE, CAN YOU BRIEFLY
7 DESCRIBE BELLSOUTH'S APPROACH FOR TREATING SHARED
8 AND COMMON COSTS AS A COMPONENT OF UNE RATES?

9
10 A. Yes. The ultimate objective of BellSouth's methodology, which I have
11 depicted on my Exhibit WSR-1, pages 1 through 3, is to split the
12 Company's total forward-looking cost of business between its
13 wholesale and retail functions and to specifically identify three major
14 categories of wholesale costs: 1) wholesale direct costs; 2) the portion
15 of shared costs attributed to wholesale; and 3) a reasonable portion of
16 common costs applicable to wholesale operations. It is further
17 necessary to split categories (1) and (2) above between those
18 wholesale costs that are related to recurring investment related
19 transactions (UNE related) and those that are related to "other
20 wholesale" transactions, such as non-recurring (e.g., service order
21 activities) or special purpose transactions (e.g., operator services).
22 Shared costs assigned to "other wholesale" are not included in the
23 development of investment related shared cost factors.

24

1 Because the Uniform System of Accounts ("USOA") does not uniquely
2 identify these desired cost categories, a study was required to
3 determine the appropriate amounts to include in each category.
4 Fortunately, the BellSouth Cost Allocation Manual ("CAM") and the
5 reporting procedures which the Company follows to separate its costs
6 on a cost causative basis between regulated and non-regulated costs
7 provided a good model on which to base this study. Therefore, the
8 Company utilized the basic attribution principles of its CAM and the
9 underlying cost pools and sub-pools which it maintains for cost
10 attribution purposes as the underlying methodology for determining the
11 desired breakdown of wholesale costs into categories. The wholesale
12 costs identified through this process are the appropriate costs to apply
13 to a cost methodology that defines the cost for UNEs.

14
15 Once all of these costs are properly categorized, cost factors for use in
16 the BellSouth cost study can be developed. For instance, the
17 relationship between wholesale common costs and the total of
18 wholesale direct and wholesale shared costs yields the common cost
19 factor. In this study, the common cost factor equals 5.30%. Page 1 of
20 WSR-1 illustrates this calculation.

21
22 A second set of factors is derived by determining the relationship, by
23 investment type, between wholesale shared costs related to investment
24 accounts and the associated network investment. These are the
25 shared cost factors. Page 2 of WSR-1 illustrates this calculation.

1

2 A third set of factors reflects the relationship between shared costs and
3 labor costs. These factors are calculated so that shared costs can be
4 included in labor rates. These labor rates are primarily used to
5 compute non-recurring cost study charges or other special purpose
6 charges which have labor components. Page 3 of WSR-1 illustrates
7 this calculation.

8

9 All three types of factors are used as inputs to the BellSouth cost study
10 development methodology described in BellSouth Witness Daonne
11 Caldwell's testimony. Application of these factors in the cost
12 development process allows BellSouth to associate a reasonable
13 amount of forward-looking shared and common costs with each UNE.

14

15 Q. PLEASE DESCRIBE IN MORE DETAIL THE MECHANICS OF
16 BELL SOUTH'S PROCEDURE TO DETERMINE A REASONABLE
17 PORTION OF ITS FORWARD-LOOKING SHARED AND COMMON
18 COSTS FOR INCLUSION IN ITS COST STUDIES.

19

20 A. The starting point in the procedure is BellSouth's regional regulated
21 1995 expenses and regulated mid-year 1995 investment. This data is
22 obtained at a very detailed (cost pool and cost sub-pool) level from
23 BellSouth's financial system which applies the methods and procedures
24 described in the CAM. The primary goal of the CAM is a reasonable,
25 supportable apportionment of total costs between regulated services

1 and nonregulated activities. As a general rule, this methodology for
2 shared and common costs which I am addressing in this proceeding
3 follows the same attribution procedures for the various accounts and
4 cost pools as are identified in the CAM for comparable accounts and
5 cost pools.

6

7 Q. WHAT IS THE NEXT STEP IN BELLSOUTH'S METHODOLOGY?

8

9 A. The next step in the methodology is to develop a projection of
10 expenses and investments for the years 1997-1999. This is
11 accomplished by utilizing 10 months actual cost data from 1996,
12 annualizing the amounts and normalizing the annual cost data for
13 unusual events. These 1996 normalized costs are then converted into
14 forward-looking costs by applying forecasted growth factors and, in the
15 case of investment accounts, factors which reflect the relationship of
16 current cost to original book cost. The application of these factors
17 converts the historical cost data into cost levels that are representative
18 of the forward-looking average costs for the period 1997 to 1999.

19

20 In order to reflect the proper capital carrying costs for investment
21 accounts, annual cost factors are applied to the forward-looking
22 investment amounts. These annual cost factors include the cost of
23 money at 11.25%, income taxes, depreciation expense, and ad
24 valorem taxes.

25

1

2 Q. HOW IS THE FORWARD-LOOKING FINANCIAL DATA ANALYZED?

3

4 A. *BellSouth's study recognizes that total costs can be placed into four*
5 *clearly identifiable categories. First, there are the "direct wholesale*
6 *costs." These are the costs which are clearly and directly assignable to*
7 *the "wholesale" function. Costs of switches, for example, would fit into*
8 *this category. The wholesale direct costs are further divided between*
9 *those that are related to recurring investment costs and those that are*
10 *related to other wholesale transactions such as non-recurring or special*
11 *transactions. The direct costs of providing telecommunications*
12 *services, such as the carrying cost on investment and plant specific*
13 *expenses related to the investment, are segregated by each specific*
14 *investment account.*

15

16 *Second, there are the "direct retail costs." These are the costs which*
17 *are clearly and directly assignable to the "retail" function. All retail*
18 *costs are excluded from the calculation of UNE costs.*

19

20 *Third, there are "shared costs." Shared costs are costs that are*
21 *incurred in the production of two or more products or services by the*
22 *same production process that do not span all activities of the business.*
23 *Typical shared costs include costs for items of general support*
24 *equipment, procurement, engineering expenses, etc. Exhibit WSR-2 to*
25 *my testimony provides a more detailed list of typical shared costs.*

1

2 Fourth, there are "common costs." Common costs are those costs that
3 generally span the activities of the business, and the products and
4 services it produces. These costs are not directly assignable to one
5 product or service, but are necessary for the operation of the business
6 as a whole. Typical common costs are items such as accounting and
7 finance costs, executive costs, etc. A more detailed list of common
8 costs is also shown on my Exhibit WSR-2.

9

10 Clearly, all of those costs which are applicable to the wholesale
11 function (*direct costs, shared costs, and common costs*) must be
12 recovered by UNE rates, while all of those costs applicable to the retail
13 function should be excluded. The difficulties are: (1) separating the
14 "shared costs" and the "common costs" between the "wholesale" and
15 "retail" functions; and (2) attributing the wholesale shared costs to each
16 network investment category.

17

18 Q. HOW HAS BELL SOUTH ACCOMPLISHED THIS SEPARATION OF
19 "SHARED COSTS" AND "COMMON COSTS"?

20

21 A. The process BellSouth has followed to reach this goal has two
22 fundamental steps. First, the "shared costs" are segregated into cost
23 pools similar to those utilized in the CAM. The costs accumulated in
24 these cost pools are attributed to "wholesale" and "retail" functions as I
25 will describe below.

1

2

In the second step, the "common costs" are apportioned between

3

"wholesale" and "retail" functions based on the relative proportion of the

4

direct and shared costs that have been assigned to these functions.

5

6

Q. CAN YOU PROVIDE A MORE DETAILED EXPLANATION OF THE

7

FIRST FUNDAMENTAL STEP YOU MENTIONED ABOVE?

8

9

A. Yes. The costs which are treated as shared costs can be segregated

10

into cost pools because the historical data which was obtained at the

11

beginning of the process was collected at the cost pool or cost sub-pool

12

level. This detail was maintained as the historical data was projected to

13

forward-looking data. Therefore, the forward-looking shared costs can

14

be identified by cost pool.

15

16

Next, attribution factors, such as central office equipment ("COE")

17

investment percentages and the relative percent distribution of salary

18

and wages, are developed. These factors are similar to the attribution

19

bases described in the CAM. When the factors are applied to the

20

respective shared costs accumulated in the various cost pools, the

21

result, which takes more than one iteration, is the assignment of the

22

shared costs to either: 1) a related "wholesale" network investment

23

category (pair gain equipment, buried cable, etc.); 2) the "other

24

wholesale" category; or 3) the "retail" category. Shared costs which are

25

not assignable to one of these categories after two iterations of the

1 attribution process are treated as common costs. Wholesale shared
2 costs assigned to an investment category are used to calculate the
3 shared cost factor for that investment item. A shared cost factor is the
4 ratio of the shared cost assigned to a particular type of investment
5 divided by the projected average investment. My Exhibit WSR-3
6 provides the various shared cost factors calculated by this analysis.

7

8 Q. HOW ARE FORWARD-LOOKING COMMON COSTS TREATED IN
9 BELLSOUTH'S METHODOLOGY?

10

11 A. Forward-looking common costs are proportionally split between
12 wholesale common costs and retail common costs. The wholesale
13 common cost factor is then calculated as the ratio of total wholesale
14 common costs divided by the total of wholesale direct costs and
15 wholesale shared costs. This wholesale common cost factor is an input
16 in the development of the UNE costs as described in Ms. Caldwell's
17 testimony. My Exhibit WSR-4 demonstrates the calculation of the
18 wholesale common cost factor.

19

20 Q. HOW ARE THE FACTORS DEVELOPED FOR USE IN
21 CALCULATING LOADED LABOR RATES?

22

23 A. First, salaries and wages are accumulated on a basis consistent with
24 specific work force groups. Next, shared costs attributable to salaries
25 and wages are accumulated on a basis consistent with the

1 development of the respective work force group's labor rate. A factor is
2 then developed for each work force group by dividing the attributed
3 shared costs (human resources, office equipment, motor vehicles, land
4 and building space, etc.) by the related salaries and wages. This factor
5 is applied to the salary and wage portion of the incremental labor rate
6 for each work force group, and the result is added to the incremental
7 labor rate to determine the loaded labor rate. My Exhibit WSR-5
8 provides a list of the work force group factors used in the BellSouth
9 cost studies.

10

11 **Q. PLEASE SUMMARIZE YOUR TESTIMONY.**

12

13 **A. My testimony provides a reasonable and supportable method for**
14 **determining forward-looking shared and common costs attributable to**
15 **the provision of unbundled network elements. The outputs of this**
16 **methodology are a set of wholesale shared cost factors by investment**
17 **category, as reported on my Exhibit WSR-3, a wholesale common cost**
18 **factor of 5.30%, as shown on Exhibit WSR-4, and a set of shared cost**
19 **factors for use with labor rates. These factors represent the**
20 **appropriate level of forward-looking shared and common costs for**
21 **inclusion in BellSouth's cost studies.**

22

23 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

24

25 **A. Yes.**

1 **BELLSOUTH TELECOMMUNICATIONS, INC.**
2 **REBUTTAL TESTIMONY OF WALTER S. REID**
3 **BEFORE THE**
4 **FLORIDA PUBLIC SERVICE COMMISSION**
5 **DOCKET NOS. 960833-TP, 960846-TP, 960757-TP,**
6 **960916-TP, 971140-TP**
7 **DECEMBER 9, 1997**
8
9 Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND POSITION
10 WITH BELLSOUTH TELECOMMUNICATIONS, INC.
11
12 A. My name is Walter S. Reid and my business address is
13 675 West Peachtree Street N. E., Atlanta, Georgia.
14 My position is Senior Director for the Finance
15 Department of BellSouth Telecommunications, Inc.
16 (hereinafter referred to as "BST", or "the Company").
17
18 Q. ARE YOU THE SAME WALTER S. REID WHO FILED DIRECT
19 TESTIMONY IN THIS PROCEEDING?
20
21 A. Yes. I filed direct testimony in this proceeding on
22 behalf of BST on November 13, 1997, with certain
23 revisions filed on December 9, 1997.
24
25 Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

1

2 A. The purpose of my rebuttal testimony is to respond to
3 the comments of other parties in this proceeding
4 regarding the appropriate amount of shared and common
5 costs to include in the total cost of unbundled
6 network elements (UNEs).

7

8 Q. PLEASE IDENTIFY THE WITNESSES IN THIS PROCEEDING TO
9 WHOM YOUR REBUTTAL TESTIMONY WILL RESPOND.

10

11 A. My rebuttal testimony will respond to the positions
12 which are presented in the testimonies of AT&T and
13 MCI Witnesses Mr. John C. Klick and Mr. John P.
14 Lynott regarding the appropriate level of shared and
15 common (overhead) costs.

16

17 Q. WHAT WILL YOUR REBUTTAL TESTIMONY SHOW RELATIVE TO
18 THESE WITNESSES POSITIONS?

19

20 A. My rebuttal testimony will show that even though
21 these witnesses allege that the 10.4% overhead rate
22 used in their cost models represents a competitive
23 overhead rate, BST's shared and common costs
24 methodology is an appropriate procedure which
25 produces reasonable results. A simple analysis of

1 the shared and common cost factors which BST has
2 utilized in determining its total costs for UNEs
3 clearly demonstrates that the amount of shared and
4 common costs included are reasonable and
5 representative of efficient, forward-looking costs.

6

7 Q. BASED ON THE TESTIMONIES WHICH HAVE BEEN FILED IN
8 THIS PROCEEDING, PLEASE SUMMARIZE THE ISSUES RELATED
9 TO THE LEVEL OF SHARED AND COMMON COSTS WHICH HAS
10 BEEN PROPOSED.

11

12 A. Mr. Klick's testimony presents AT&T's and MCI's
13 Collocation Model. In that model, he uses a 10.4%
14 markup to estimate common overhead costs.
15 Mr. Lynott's testimony presents AT&T's and MCI's Non-
16 Recurring Cost (NRC) Model. In that model, he uses a
17 10.4% variable overhead loading. In the Non-
18 Recurring Cost Model Description, page 17, under item
19 10, Variable Overhead, he states, "This input
20 represents the loading variable overhead expenses not
21 already captured in the model. The default is 10.4%
22 and is derived from Hatfield Model support
23 documentation."

24

25

1 This apparently is the same 10.4% used by Mr. Klick
2 and presumably is also based on the Hatfield Model.
3 Although the Hatfield Model was not filed in support
4 of the 10.4% overhead rates used by Mr. Klick and Mr.
5 Lynott, I am familiar with the calculation of the
6 10.4%.

7
8 Beginning on page 15 of 43 of Exhibit JCK-1, Mr.
9 Klick claims that the 10.4% is based on the variable
10 support expense in competitive industries (such as
11 the interexchange industry). Based on my review of
12 the Hatfield Model, the 10.4% is actually calculated
13 from AT&T's 1994 expense and revenue data as reported
14 to the Federal Communications Commission in its ARMIS
15 reports. On page 8 of his testimony, beginning at
16 line 20, Mr. Klick states that, "...it is important
17 that ILECs *prove* the nature and magnitude of any
18 forward-looking costs that they seek to impose on
19 potential entrants." While my testimony does not
20 address the methodologies used in either the
21 Collocation Model or the NRC Model, I will
22 demonstrate through a simple analysis that the
23 "nature and magnitude" of BellSouth's shared and
24 common cost are reasonable.

25

1 SIMPLE ANALYSIS OF SHARED AND COMMON COST FACTORS

2

3 Q. HOW IS BST'S SIMPLE ANALYSIS OF THE SHARED AND COMMON
4 COST FACTORS STRUCTURED?

5

6 A. The simple analysis of the shared and common cost
7 factors compares the level of the forward-looking
8 factors which BST has proposed in this proceeding to
9 the factors which would have been produced if BST had
10 merely used historical data in its methodology. In
11 addition, a comparison is made between BST's proposed
12 common costs factor and the 10.4% variable overhead
13 factors which Mr. Klick and Mr. Lynott have testified
14 are reasonable.

15

16 Q. DO YOU HAVE AN EXHIBIT WHICH DISPLAYS THE COMPANY'S
17 ANALYSIS?

18

19 A. Yes. My rebuttal Exhibit WSR-6, pages 1 through 4,
20 displays BST's analysis. The first three pages of
21 this exhibit compare BST's proposed shared and common
22 cost factors in this proceeding to factors which
23 would have been produced if BST had used historical
24 data to calculate these factors. These historical
25 factors were computed by replacing all of the expense

1 and investment development factors (factors used to
2 convert the historical data to projected amounts) in
3 BST's Shared and Common Costs Model with the number 1
4 (one). The resulting output reports from this
5 computation are the factors which would have resulted
6 from the use of 1995 historical results to compute
7 the shared and common costs factors.

8
9 Also, shown on these pages is the percent change
10 between the historical factors and the proposed
11 forward-looking factors. This percent change
12 demonstrates the significant reductions in shared and
13 common costs which BST has incorporated in its
14 forward-looking methodology.

15
16 Page 4 of the analysis provides three separate
17 calculations of the common cost factor using the
18 Hatfield formula. The first calculation illustrates
19 the common cost factor calculated in the Hatfield
20 Model using AT&T's historic data for 1994. This
21 results in the 10.4% common cost factor adopted by
22 AT&T/MCI witnesses. The second calculation uses the
23 Hatfield formula to calculate a common cost factor
24 with BST's historic data for 1994 as the input
25 values. The third calculation uses the Hatfield

1 formula to calculate a common cost factor with BST's
2 projected data as the input values.

3

4 Q. PLEASE SUMMARIZE THE RESULTS OF BST'S ANALYSIS.

5

6 A. The analysis shown on Rebuttal Exhibit WSR-6 clearly
7 demonstrates that BST's shared and common cost
8 factors are forward-looking and reflect significant
9 operational improvements. The comparison of BST's
10 proposed shared and common cost factors to historical
11 based factors shows that: BST's forward-looking
12 shared cost factors are on average approximately 32%
13 lower than historical levels; BST's proposed common
14 cost factor is 31% lower than historical levels; and
15 BST's shared labor factors are on average
16 approximately 10% higher than historical levels. The
17 shared labor factors are higher due to the fact that
18 operational improvements significantly impact the
19 denominator of the equation (i.e., salaries and
20 wages) as well as the shared costs which constitute
21 the numerator. It is clear from this comparison that
22 BST has incorporated significant operational
23 improvements in its forward-looking factors.

24

25

1 With regard to the analysis of the Hatfield Model's
2 common cost factor, the analysis shows that the
3 common cost factor included in BST's cost studies is
4 actually significantly lower than the 10.4% rate used
5 in the Hatfield Model. BST's analysis shows that a
6 common cost factor calculated using the Hatfield
7 Model's formula and BST's forward-looking projections
8 of expense underlying its shared and common cost
9 factors, produces an equivalent factor of only 6.4%.

10

11 This factor differs from the 5.30% common cost factor
12 shown on Revised Exhibit WSR-4 of my direct testimony
13 because some of the expense accounts which BST has
14 treated as shared costs are treated as common costs
15 in the Hatfield Model's formula. The calculations
16 for the 6.4% comparative common cost factor treats
17 all expense accounts as they are treated by the
18 Hatfield Model's formula. This allows an apples to
19 apples comparison between BST's and the Hatfield
20 Model's common cost relationships.

21

22 Q. WHAT CONCLUSION HAVE YOU DRAWN FROM THIS COMPARISON?

23

24 A. The Hatfield Model's calculation of the 10.4% common
25 cost factor is developed from 1994 AT&T embedded

1 operating data. According to AT&T and MCI Witness
2 Mr. Klick at page 10 of his direct testimony;
3 "Insofar as the 10.4% markup captures all of the
4 relevant overhead costs, it includes any element-
5 specific costs and a reasonable share of any common
6 overhead costs." If Mr. Klick's contention is true,
7 then BST's common cost markup included in its cost
8 studies is, if anything, too low.

9

10 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

11

12 A. Yes.

13

14

15

16

17

18

19

20

21

22

23

24

25

1 (Exhibit 17 marked for identification.)

2 Q (By Mr. Twomey) Mr. Reid, do you have a
3 brief summary of your testimony?

4 A Yes, I do.

5 Q Would you please give it?

6 A Yes, I will. And I have an exhibit I want
7 to pass out. It's WSR-6 to my rebuttal testimony that
8 I'll describe at one point in my summary.

9 Good morning, Commissioners. I'm here today
10 to explain to you how BellSouth treats shared and
11 common costs in its cost studies, and to respond to
12 the comments made by other parties regarding
13 BellSouth's procedures.

14 I will begin my summary by describing the
15 types of costs that are included in shared and common
16 cost. Typical shared costs are motor vehicle
17 expenses, general purpose computer expenses, office
18 equipment expenses, et cetera, which are necessary for
19 the production of two or more products or services.
20 Common costs, on the other hand, are those costs that
21 are generally incurred by the business as a whole,
22 such as the cost for the company's accounting
23 department.

24 There's no question that shared and common
25 costs must be considered in unbundled network element

1 cost studies. Other state and federal regulators who
2 have addressed this issue acknowledge that shared and
3 common cost should be consider in the UNE cost
4 studies. In addition, all parties who have filed
5 testimony in this proceeding regarding the treatment
6 of shared and common costs seem to agree that some
7 measure of these costs need to be recovered in the UNE
8 prices.

9 BellSouth's methodology for treating shared
10 and common cost is a forward-looking procedure that
11 utilizes cost causative principles to develop
12 appropriate shared and common cost factors.

13 The application of these forward-looking
14 shared and common cost factors to the appropriate cost
15 elements in the cost studies results in the inclusion
16 of a reasonable amount of shared and common costs in
17 the total cost of each UNE.

18 BellSouth's methodology utilizes historical
19 data as the starting point to develop a projection of
20 average cost and investments for the period 1997 to
21 1999. Cost causative principles, primarily the same
22 as those derived -- or excuse me, described in
23 BellSouth's cost allocation manual, or CAM, were
24 utilized to attribute various projected shared cost
25 amounts to accounts which are representative of

1 specific unbundled network elements.

2 The CAM methodology is a methodology that
3 has been used for numerous years to attribute cost to
4 nonregulated products or services. Projected costs
5 were also attributed by this process to a common cost
6 category for use in developing the common cost factor.

7 I would like to turn now to my rebuttal
8 testimony. In my rebuttal I address the position
9 regarding shared and common cost treatment which was
10 taken in the direct testimony by witnesses from AT&T
11 and MCI. These witnesses indicate that shared and
12 common costs used in cost studies should be
13 forward-looking and they recommend that a 10.4% common
14 cost factor is appropriate.

15 My rebuttal testimony presents a simple
16 analysis which demonstrates that BellSouth's
17 methodology results in a reasonable forward-looking
18 amount of shared and common costs in the total cost
19 for UNEs. A quick review of the exhibits to my
20 rebuttal testimony will demonstrate this fact. Now,
21 I'd like to describe the exhibits to my rebuttal
22 testimony.

23 The simple analysis which I performed was
24 basically two-pronged. The first three sheets of the
25 exhibit represent an analysis which I did going in to

1 our shared and common cost model and using just 1995
2 actual results as the input.

3 Q Mr. Reid, are you referring to WSR-6 which I
4 have made part of hearing exhibit 17, correct?

5 A That's correct. Rebuttal exhibit WSR-6.

6 The first page of that exhibit represents
7 the analysis -- in the TELRIC study the common cost
8 factor was 5.30% based on forward-looking data. If I
9 had used just 1995 data, and inputted into the
10 methodology the same way that I did the
11 forward-looking data, I would have had a factor of
12 7.69 computed. That indicates that there's a 31%
13 reduction in the factor that I'm using based on the
14 fact I used the forward-looking data. So I think
15 that's a significant representation of productivity in
16 the study.

17 The second page of Exhibit WSR-6 is the
18 shared cost comparison. Likewise, here I inputted the
19 1995 data to the cost model, and using that data, the
20 weighted average of the shared cost factors would be
21 .0497 compared to the weighted average in the cost
22 study of .0337. So that would have been a 32% -- in
23 fact, I had a 32% lower number by using the
24 forward-looking data than I did with using 1995 actual
25 data.

1 Page 3 of Exhibit WSR-6 is the shared labor
2 comparison. And in this case, using 1995 data
3 actually produced approximately a 10% higher composite
4 average than was used in the -- excuse me, used in the
5 TELRIC study was about 10% higher than with 1995
6 actual data. The reason here is because salaries and
7 wages is the denominator of the equation and it was
8 impacted by productivity as well.

9 And my final sheet of the exhibit WSR-6
10 provides another analysis. In this analysis I compare
11 the Hatfield Model's 10.4%, which is the common cost
12 factor used in the Hatfield Model, to BellSouth data
13 using the same calculation methodology.

14 The Hatfield Model uses AT&T 1994 results
15 reported to the FCC in order to develop the 10.4% that
16 is recommended by AT&T and MCI witnesses. Using BST
17 historical data for 1994, the same report to the FCC,
18 ARMIS Reports, Form M, I would have produced a 9.7%
19 factor, which would indicate that BellSouth at that
20 point was very comparable to the level that AT&T
21 and -- that the AT&T and MCI witnesses have used as a
22 competitive level of common cost.

23 Using BST's projected data in the same
24 formula, I would have derived a common cost factor of
25 6.4%, which indicates the common cost factors in my

1 study are certainly very comparable, and, in fact,
2 very conservative compared to the AT&T and MCI model.

3 That completes my summary.

4 Q Thank you.

5 MR. TWOMEY: Chairman Johnson, the witness
6 is available for cross examination.

7 MR. COX: Before we begin cross examination
8 of Mr. Reid, Staff would ask that the packet we
9 distributed identified as WSR-7 be marked as
10 Exhibit 18.

11 MR. TWOMEY: No objection.

12 MR. COX: That includes the January 13,
13 1998, deposition transcript of Mr. Reid, the
14 deposition and late-filed exhibit numbers 1 through 8
15 and the errata sheet to his deposition.

16 CHAIRMAN JOHNSON: WSR-7 would be marked as
17 Exhibit 18.

18 (Exhibit 18 marked for identification.)

19 MR. SELF: I have no questions.

20 MR. LEMMER: Go morning, Madam Chairman.

21 Tom Lemmer again for AT&T. Good morning,
22 Commissioners.

23

24

25

CROSS EXAMINATION

1

2 **BY MR. LEMMER:**3 **Q** Good morning, Mr. Reid.4 **A** Good morning, Mr. Lemmer.

5 **Q** The shared and common factors that you are
6 presenting testimony regarding result from the
7 calculation of a numerator and a denominator that
8 results in a percentage calculation; isn't that
9 correct?

10 **A** That's correct.

11 **Q** And numerator is a grouping together of
12 certain costs. Fair statement? In other words, if
13 it's a shared factor we're talking about the numerator
14 is a collection of costs that have been denoted as
15 shared costs?

16 **A** That's correct.

17 **Q** And if we're talking the common factor,
18 we're talking about a numerator that's a grouping
19 together of common costs?

20 **A** I'll agree with that.

21 **Q** If you would turn to your direct testimony,
22 and I'm looking at Exhibit WSR-2, please. Do you have
23 that, sir?

24 **A** Yes, I have that before me.25 **Q** The first page of that exhibit, it says at

1 the top "Typical Shared Costs" then there's a listing
2 of certain costs under that heading. Do you see that?

3 A I see that.

4 Q What you're saying on this exhibit is the
5 types of costs that are listed here, general purpose
6 computers, information management, et cetera. These
7 activities generate costs that are denoted as shared
8 costs by BellSouth, correct?

9 A That's correct.

10 Q Now, can you tell me which one of these
11 types of costs, if any, are caused because BellSouth
12 engages in activities relating to the ordering,
13 provisioning or installation of services?

14 A Ordering -- would you -- excuse me, would
15 you repeat that?

16 Q Can you tell me looking at this listing
17 under costs under Typical Shared Costs, which of these
18 types of costs, if any, are incurred because BellSouth
19 engages in activities relating to the ordering,
20 provisioning and installation of services?

21 A Well, a number of these would be incurred
22 because of those activities and are associated with
23 those activities. For example, the general purpose
24 computer expense would certainly be something that
25 would be required to handle ordering, provisioning of

1 services and so forth. Human resources expense would
2 certainly be supportive and associated with the
3 employees that are doing the ordering and provisioning
4 and so forth.

5 Q Let me try the question from another angle.
6 Any of these typical shared types of costs that you
7 see on Exhibit WSR-2, would any of those costs cease
8 to exist if there were no activities relating to
9 provisioning, ordering and installation?

10 A Some portion of those costs potentially
11 would cease to exist, yes.

12 Q Do you have any information as to how much
13 of any of these particular categories of cost would
14 not be incurred if there were no ordering,
15 provisioning, installation activities?

16 A No, I do not. We have determined cost
17 causative measures which associate these expenses with
18 the various unbundled network element activities. And
19 we have used that cost causative basis to --
20 associated with it, and that's certainly in the study
21 and can be followed throughout the study.

22 For example, human resources, the associated
23 driver there that we've used is salaries and wages,
24 which links it to the employees that the human
25 resources department, human resources expenses, are

1 associated with. So that's the linkage there.

2 Q Would human resources costs change in, say,
3 1998 if BellSouth were to, say, increase its ordering
4 or turnup of services by 10%?

5 A I don't know. It would depend on the impact
6 that would have on the employee force count that we
7 had and on the human resources support thereof.

8 We have linked this expenditure with a cost
9 driver that it's linked to, which is salaries and
10 wages. We are trying to compute a forward-looking
11 cost methodology that would link our expenditure
12 types, the shared and the common costs, to the
13 provision of unbundled network elements. And I think
14 we've accomplished that. I can't tell you if we
15 varied by 10% what the end result would be in each one
16 of these expenditures, but I can tell you that there's
17 a cost causative linkage there that we've represented
18 in the study.

19 Q You would agree with me, wouldn't you, that
20 continuing to look at human resources as a example,
21 that if BellSouth were to add one additional
22 technician in 1998 for purposes of dealing with
23 service installations or installations of unbundled
24 network elements, that that would not impact the level
25 of human resource cost; isn't that correct?

1 A I would say most likely there would be an
2 indetectable level associated with the addition of one
3 technician. Now, if it was someone hired off the
4 street, obviously human resources expenditures would
5 be required to accomplish that hiring.

6 Q That's not my question. My question is will
7 human resources costs increase -- I'm not asking
8 whether they do some activities relating to that
9 individual -- I'm asking whether the costs of human
10 resources will increase because BellSouth hired that
11 one technician?

12 A Well, if it was an incremental increase in
13 the force count, and let's say we hired someone off
14 the street, there would be some incremental human
15 resources cost associated with that.

16 Q So there would be additional people hired
17 into human resources because you hired one technician?

18 A Not necessarily additional human resources
19 people, but there would be work performed by the human
20 resources organization that would probably have some
21 incremental expenditure associated with it.

22 No, I won't quibble with you here about one
23 employee added to a force count the size of BellSouth.
24 It's probably not going to be distinguishable. But
25 there will be some incremental cost there for the

1 hiring function. There's going to have to be some
2 certainly paperwork involved with that. There's going
3 to have to be probably meetings and background checks
4 on the individual and so forth.

5 Q But all of the people involved in those
6 activities, the paperwork, the background checks are
7 already employees of BellSouth being paid a salary,
8 correct?

9 A Most likely, in that particular example that
10 you're giving.

11 Q So then the hiring of this one technician
12 would not cause an increase in the amount of costs
13 incurred by the human resources department.

14 MR. TWOMEY: I'm going to object to the form
15 of the question. He's asked and answered that
16 question twice by my count.

17 CHAIRMAN JOHNSON: Is there a response?

18 MR. LEMMER: I'll just move on. Madam
19 Chairman, I'll just move on.

20 CHAIRMAN JOHNSON: Okay.

21 Q (By Mr. Lemmer) Mr. Reid, I'd like to show
22 you a document. It is Exhibit 11 to Mr. Lerma's
23 testimony.

24 MR. LEMMER: Madam Chairman, we don't need
25 to mark this as an exhibit. It will be introduced

1 through Mr. Lerma's testimony. I'd like to use it for
2 discussion purposes. (Hands documents out to
3 Commissioners and witness.)

4 Q (By Mr. Lemmer) Mr. Reid, have you seen
5 this document before? (Witness examines document.)

6 A Yes, sir.

7 Q And this is a document that BellSouth filed
8 with the Georgia State Commission and was used in
9 response to a BellSouth production and a document
10 request in South Carolina; isn't that correct?

11 A I believe that's correct.

12 Q The pages of this particular exhibit, the 17
13 pages, have to do with BellSouth's projection of cost
14 growth factors for 1997 through 1999; is that correct?

15 A That's correct.

16 Q And the pages that you have in your hand are
17 not included in the cost study provided to this
18 Commission here in Florida; isn't that correct?

19 A I thought they were, but I -- I thought that
20 these exhibits were included.

21 Q Now, the focusing over on Pages 8 and 9 in
22 particular of this document, if you would please, the
23 various growth factors that you see indicated on Pages
24 8 and 9 of rebuttal exhibit number 11 to Mr. Lerma's
25 testimony, they were not based upon BellSouth's budget

1 forecast for 1997 through 1999, are they?

2 A Not directly. They were prepared by our
3 budget organization based on input from our network
4 organization to the budget group. But basically our
5 procedure here was to prepare a reasonable and
6 supportable projection that could be simply verified
7 and that you could look at the assumptions we would be
8 using for growth and productivity offsets and so
9 forth.

10 Q Let's look at Page 8 of this exhibit. The
11 one that says "Growth Factors" on the top?

12 A Yes.

13 Q There are two sources indicated for growth
14 factors on this page, correct?

15 A That's correct.

16 Q And one of them is BSRTPI, do you see that?

17 A I see that.

18 Q That stands for BellSouth regional telephone
19 plant index; isn't that correct?

20 A That's correct.

21 Q That appears several times on this page and
22 there is a consistent statement of growth factors for
23 each of the three years, 3.4 in 1997, 3.5 in 1998, 3.5
24 in 1999. Do you see that?

25 A I see that.

1 Q Now, is there any report for these figures
2 that have been provided to this Commission?

3 A The support is included in this package.
4 Basically these are forecasted telephone plant index
5 percentages, or growth rates, which are certainly
6 reasonable on the face of the document, and they are
7 provided by our budget organization as our best
8 estimate of the growth rate that would be associated
9 with these accounts that are listed as BSRTPI as the
10 source.

11 Q Now, you indicate that you believe these
12 numbers are reasonable?

13 A Yes, that's correct.

14 Q Isn't it true that the particular
15 percentages reflected on this Page 8 don't reflect any
16 impact on future cost levels due to improvements in
17 technology?

18 A I would agree that the TPI itself, it does
19 not include the technology impacts that you are
20 describing. However, the forecast methodology that we
21 applied, we did include a number of productivity
22 aspects that took that into account.

23 Q But for these particular percentages here,
24 it does not reflect any cost impacts, cost reductions
25 through improvements in technology; isn't that

1 correct?

2 A That's my understanding based on the TPI
3 calculations.

4 Q And similarly these growth factors on this
5 page for the BSRTPI labeled "inputs" don't reflect any
6 impact on productivity improvements; isn't that
7 correct?

8 A That's my understanding for the TPI
9 percentages themselves. Again, there are a number of
10 ways that we have included productivity in our study.

11 Q Isn't it also true that these particular
12 BSRTPI percentages don't reflect any assessment of how
13 competition, the advent of competition is going to
14 impact BellSouth's cost?

15 A I don't believe they would include the
16 competition. But again as I said before, that's in
17 our study and it's taken into account in the way we
18 perform the study. This is just one piece/part of the
19 study you're pointing out here.

20 Q Now, the other growth factor specified on
21 Page 8 are from network. Do you see those?

22 A Yes, I see those.

23 Q And again those apply growth factors by
24 year; you have 5.1 for 1997, 4.5 for 1998, 4.2 for
25 1999. Do you see those?

1 A I see those.

2 Q And is the derivation of those particular
3 numbers shown anywhere in this particular document
4 attached to Mr. Lerma's rebuttal testimony?

5 A Yes. The derivation of those numbers is on
6 the next page, which is Page 9 of 17 of the exhibit.

7 Q And looking at this Page 9 of 17 there's a
8 series of numbers at the top that lead down to a
9 number that says "load driven expense." Do you see
10 that?

11 A Yes, I see that.

12 Q And then there are numbers at the bottom
13 under the term "Other Factors." Do you see that?

14 A I see that.

15 Q Now, looking at the load driven expense
16 numbers that you see, 5.1, 4.5, 4.2, those are the
17 numbers that are used over for the network inputs that
18 we see over on Page 8; isn't that correct?

19 A That is correct.

20 Q The factors that you see at the bottom of
21 that page have a minus sign in front of them. What
22 does that indicate?

23 A The minus sign would be a reduction.

24 Q And it would be -- from a mathematical point
25 of view when you say reduction, if you're looking at

1 the column for 1997 for load driven expense it says
2 5.1 and then for other factors it sums down to a minus
3 4.4. So if you netted those two you would have a .7
4 figure, isn't that correct?

5 A That is correct mathematically. That
6 wouldn't be the appropriate thing to do.

7 We have taken a procedure where we have
8 identified the cost drivers that we determine were the
9 most appropriate for looking at network-related
10 expenses, and that's shown on the upper half of the
11 sheet and that's the load change. In other words, we
12 looked at what type of load is driving our
13 expenditures in the network area, and that was related
14 to the number of access lines we're gaining, the
15 inward movement we have, the increase in access lines.
16 Those are typical measures in the telephone business
17 of the load that you're experiencing.

18 We had productivity changes or offsets
19 against that load change that were estimated by our
20 network organization, and then that netted down to a
21 load driven expense percentage.

22 Now, the other factors are from our network
23 organization, but they are more goal oriented from the
24 network standpoint. They are not specific items. In
25 fact, one of the largest ones itself says

1 "unspecified." These are just goals or stretches that
2 the network organization is trying to incorporate in
3 this information that would relate more to a budgeted
4 level.

5 Now, what we have done in place of these
6 other unspecified items is we've gone in and
7 specifically priced out the impact of the 11,300 force
8 reduction, which was a known item, and, in fact, does
9 have a impact on these other factors. But we
10 specifically calculated it out and overlaid the
11 calculation on the end result. So we have substituted
12 for these other factors which were unspecified and
13 budget driven.

14 Q So if I understand what you're saying, the
15 other factors listed on Page 9 that we're looking at
16 were not specifically used for purposes of determining
17 shared and common costs projections?

18 A No, they were not. Not the factors
19 themselves. Again, as I said, we certainly priced out
20 the effect of our force change that we have announced
21 and have proceeded with. We also normalized a lot of
22 results for 1996 that were in the book data but were
23 abnormal, such as we had a hurricane in North
24 Carolina, we eliminated that from the data. We had
25 the Olympics in Georgia, we took that out. So we did

1 do some adjustments that really would be reflected in
2 budget changes year to year as well.

3 Q Now, I believe regarding the other factors
4 you stated that these were goal oriented numbers in?

5 A Yes.

6 Q And by goal oriented you mean that these are
7 goals that are given to various managers to achieve in
8 a particular year; isn't that correct?

9 A Somewhat. Basically they are focused on
10 that area of goals for specific managers to meet, but
11 it's more of what I would -- in the past here in
12 Florida I've testified on our forecasting methodology,
13 and we've discussed things called stretch. And it's
14 similar in nature to what would be called a stretch.
15 It's -- the company's, obviously, in looking out into
16 the future, trying to maintain certain earnings
17 forecasts and so forth. So when it comes to a budget,
18 in setting a budget, in some cases the specifics on
19 how you would get to a certain earnings level are not
20 there at the time you're doing the budget. So it's
21 more of a goal oriented, expenses are going to have to
22 go down by a certain amount or else revenues would
23 have to be higher in order to meet your budgeted
24 goals.

25 So these are more in the line of the stretch

1 or the goal oriented way to meet an earnings objective
2 when you're putting a budget together.

3 Q But the purpose of a stretch that relates
4 to cost is to incentivize managers to reduce cost;
5 isn't that correct?

6 A In this particular case it's that, but it's
7 also to set up a budget that would meet your earnings
8 objectives. So whether the expenditure level can
9 actually be achieved or not is not so much the issue
10 at that point as it is in setting the overall budget
11 to reach an objective.

12 Q Let me ask you to go back to Exhibit 2 to
13 your direct testimony.

14 A I'm there.

15 Q We talked a little bit about shared costs,
16 and then there's a grouping called typical common
17 cost, which include, for example, accounting and
18 finance. And my question to you is does BellSouth
19 incur additional accounting and finance costs when it
20 hires an additional employee?

21 A Well, I think we're probably going to go
22 down the same road we did with the human resources.
23 Again, from a incremental standpoint, you're going to
24 have to have payroll related expenses associated with
25 the addition of a new employee. Common costs are a

1 little bit further distance from a cost causative
2 basis than are typical shared costs, although there
3 would be some accounting in finance related cost. I
4 would agree that, for example, on filling out our tax
5 return you probably wouldn't have any additional tax
6 return expenses, or in recording the books and records
7 of the company you probably wouldn't see an
8 incremental amount, but you could have some. But the
9 typical common cost, the cost causation linkage is not
10 as identifiable there.

11 **MR. LEMMER:** That's all I have. Thank you.
12 Thank you, Mr. Reid.

13 **CROSS EXAMINATION**

14 **BY MR. BOND:**

15 **Q** Good morning.. I'm Tom Bond on behalf of MCI
16 Telecommunications.

17 **A** Good morning, Mr. Bond.

18 **Q** Mr. Reid, you relied on CAM, that's
19 BellSouth's cost allocation manual for your analysis;
20 is that correct?

21 **A** Yes. To a large extent we have cost
22 causative drivers that are identified in our cost
23 allocation manual, or CAM, that are used to associate
24 expenditures, or to attribute expenditures between
25 related and nonrelated services. And we utilize to

1 the maximum extent we could those same cost causative
2 drivers in associating our shared costs with accounts
3 that are related to unbundled network elements.

4 Q And is it correct CAM has been used for
5 years in rate of return proceedings?

6 A Yes, since around 1988, when it was first
7 implemented, I believe, it's been used for the purpose
8 of separating regulated and nonregulated.

9 Q So in other words, you referred to something
10 developed and used in rate base rate of return
11 proceedings for your analysis?

12 A Basically what we did was utilize
13 intelligence and information that has been developed.
14 Granted, it was developed in rate of return days.
15 It's specified in a lot of cases by the FCC as far as
16 the type of methodology that would yield a cost
17 causative result. Yes, I would agree that it was
18 developed during a rate base regulation year.
19 However, that's no reason to throw away good
20 knowledge.

21 MR. BOND: I have no further questions.

22 Thank you.

23 MR. COX: Staff has no questions.

24 CHAIRMAN JOHNSON: Commissioners.

25 COMMISSIONER DEASON: Mr. Reid, when you

1 were going over your Exhibit WSR-6 you were making
2 some comparisons of forward-looking results with
3 historical results, and you indicated a trend there,
4 but there was -- for shared labor factor the
5 forward-looking data resulted in a higher number than
6 historical.

7 **WITNESS REID:** Yes, it did.

8 **COMMISSIONER DEASON:** Why was that?

9 **WITNESS REID:** The main reason I attribute
10 that to it is that denominator of the equation is
11 salary and wages, which would have been impacted by
12 some of the productivity that we included in the study
13 as well. The expense development factors in
14 forecasting out to 1997 to 1999 are applied against
15 the salaries and wages, which would -- since it's the
16 denominator in the equation, it would have been
17 impacted by the productivity as well as the numerator.
18 The numerator is basically shared costs that are
19 attributed based on salaries and wages. So that was
20 basically the reason.

21 The other two categories, the shared cost
22 factors and the common cost factor, have more
23 influence in the denominator from investment related
24 items because, for example, in the shared cost factor
25 the denominator is average investment, and as that

1 goes out into the future, it doesn't have as much of
2 the offset to productivity necessarily as the expense
3 levels.

4 I'll also mention that on the investment
5 related, we used a current cost to book cost ratio,
6 which stated the investment at a current cost level so
7 that increased the denominator there as well.

8 **COMMISSIONER DEASON:** For the labor factor,
9 which is on Page 3 of Exhibit 6, because of the
10 productivity, are you saying that even though the
11 factor which is .43, it's higher than historical is
12 because the productivity is being applied against a
13 smaller base on a going-forward basis, or am I looking
14 at it too simplistically?

15 **WITNESS REID:** I'm not sure I totally
16 captured your comment there, Commissioner.

17 **COMMISSIONER DEASON:** If you were strictly
18 going to use historical data -- I assume this is,
19 under the historical data column the .39, that is a
20 factor that was a result -- a weighted average factor
21 of all of those items above.

22 **WITNESS REID:** That's correct.

23 **COMMISSIONER DEASON:** If you were going to
24 use historical data, what would you have used that
25 .39 factor for?

1 **WITNESS REID:** The .39 factor is itself not
2 used in the study.

3 **COMMISSIONER DEASON:** I know, but --

4 **WITNESS REID:** It's representative of the
5 weighted average of all of the factors that would have
6 been used in the study if historical data had been
7 used.

8 **COMMISSIONER DEASON:** The items above, if
9 historical data were going to be used, just take the
10 very first one, address and facility inventory. How
11 would the .4322 have been used in the cost study?

12 **WITNESS REID:** It would have been used as a
13 part of the direct labor -- or excuse me, of the labor
14 rate that's involved in the TELRIC study or in the
15 cost study. It would have been a component of the
16 labor rate, as was the .4813, which was actually used
17 in the TELRIC study.

18 **COMMISSIONER DEASON:** But the .43 would have
19 been applied to historical data to have resulted in
20 whatever the cost result was of your cost study,
21 correct? Or would it have been applied to a
22 forward-looking basis?

23 **WITNESS REID:** It would have been applied on
24 a forward-looking basis. In the study it would have
25 just been using historical data.

1 The way the historical data column was
2 computed, we have in the study what we call expense
3 and investment development factors, which are really
4 the projected average for 1997 to '99, divided by the
5 1995 actual. It's a conversion factor to convert it
6 into forward-looking data.

7 The way I computed this is I just went into
8 the model and replaced those forward-looking
9 conversion factors with the number 1, which when
10 applied against the '95 data, just extended the '95
11 data into the study as the only data used.

12 **COMMISSIONER DEASON:** I guess the difficulty
13 I'm having, I'm trying to reconcile, is the reason
14 you've indicated that the factor has gone up using
15 forward-looking information is because of
16 productivity, but it results in a higher factor.

17 **WITNESS REID:** Yes, sir, but it affects both
18 the numerator and denominator.

19 **COMMISSIONER DEASON:** That's what I'm trying
20 to get to.

21 **WITNESS REID:** The denominator of this
22 equation as salaries and wages, and the numerator is
23 shared cost or it's -- attributed based on salaries
24 and wages. A lot of the shared cost would be salaries
25 and wages related or other expenditure related. And

1 in this particular example, of applying just
2 historical data, this one would have gone up.

3 Now, if you look at the methodology that
4 other parties have used in the proceeding, or in the
5 Hatfield Model basically, they are basically using
6 1995 ARMIS data and developing a ratio between expense
7 and investment, and in many cases using that or
8 adjusting it by a 50% factor or something, and using
9 it in their study.

10 What we've done is in the TELRIC study we've
11 got a factor we developed by taking projected shared
12 cost, dividing it by projected salaries and wages, and
13 we use that in our study, but we're applying it to the
14 forward-looking investment, or the forward-looking
15 labor requirements. So you get a productivity --

16 **COMMISSIONER DEASON:** Which has productivity
17 selected there as well.

18 **WITNESS REID:** Yes, that's correct. That's
19 another way we get productivity in here.

20 **COMMISSIONER DEASON:** Thank you.

21 **CHAIRMAN JOHNSON:** Any other questions?

22 **MR. TWOMEY:** Just a few questions,
23 Chairman Johnson.

24
25

REDIRECT EXAMINATION

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BY MR. TWOMEY:

Q Mr. Reid, do you remember Mr. Lemmer asking you questions about Lerma Rebuttal Exhibit 11, Pages 8 and 9?

A Yes, I do.

Q In response to one of Mr. Lemmer's question you indicated that BellSouth had reflected productivity in other ways in the study. Do you remember that response?

A Yes, I recall that.

Q Would you explain how BellSouth reflected productivity in the cost studies?

A Yes. And there are several ways that we've reflected it in the cost study.

One is a Page 9 of 17, when we were developing the load driven expense factors, we included a network operations productivity offset against the load of about -- well, of 2.9% per year, which is included in the calculations.

In addition to that, the document that's attached to Mr. Lerma's testimony, AR-11, on later sheets, documents, where we have normalized 1996 data for things like hurricanes -- we took Hurricane Fran out, we took the olympics out, normalized to take out

1 separations cost of employees leaving the payroll. We
2 then grew the expenses based on these growth factors,
3 which included the 2.9% productivity offset for the
4 network areas. We then overlaid the result by
5 reducing those end expenses for the 11,300 employee
6 force count reduction we're experiencing. We priced
7 that out and subtracted those expenses out, so that
8 loaded in some additional productivity.

9 Then when we developed the factors, as I was
10 explaining to Commissioner Deason, the factors are
11 just that, relationships of projected expense to
12 projected investment, we use those factors, though, in
13 the TELRIC study, to apply against forward-looking
14 investments or forward-looking labor amounts, which
15 have productivity built into them themselves because
16 they are least cost forward-looking in nature.

17 So of the application of the factor to the
18 forward-looking investment adds an additional amount
19 of productivity in there. So in a number of ways
20 productivity works its way through this study.

21 **MR. TWOMEY:** Thank you, Chairman Johnson. I
22 have no further questions.

23 **CHAIRMAN JOHNSON:** Exhibits? We have 17
24 which was BellSouth's.

25 **MR. TWOMEY:** Yes.

1 and address for the record?

2 A Yes. My name as Daniel M. Baeza. And my
3 address is 6451 North Federal Highway, Fort
4 Lauderdale, Florida Zip code 33308.

5 Q And your last name is B-A-E-Z-A?

6 A Yes, that's correct.

7 Q By whom are you employed and in what
8 capacity?

9 A I'm employed by BellSouth
10 Telecommunications. I am the Director of
11 Infrastructure Planning for Mississippi, Alabama,
12 Louisiana and Florida.

13 Q Have you caused to be prefiled in this case
14 direct testimony consisting of 25 pages?

15 A Yes, I did.

16 Q Do you have any changes to that testimony at
17 this time?

18 A No.

19 Q If I were to ask you those same questions
20 that are contained in your testimony today, would your
21 answers be the same?

22 A Yes.

23 **MS. WHITE:** I'd like to have the direct
24 testimony of Mr. Baeza inserted into the record as
25 though read. Madam Chairman? I'd like to have the

1 testimony of Mr. Baeza inserted into the record as
2 though read.

3 **CHAIRMAN JOHNSON:** It will be inserted into
4 the record as though read.

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1 BELLSOUTH TELECOMMUNICATIONS, INC.
2 DIRECT TESTIMONY OF DANIEL M. BAEZA
3 BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION
4 DOCKET NOS. 960833-TP, 960846-TP, 960757-TP, 971140-TP, 960916-TP
5 NOVEMBER 13, 1997

6

7

8 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

9

10 A. My name is Daniel M. Baeza. My business address is 6451 North
11 Federal Highway, Fort Lauderdale, Florida.

12

13 Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

14

15 A. I am employed by BellSouth Telecommunications, Inc. (hereinafter
16 referred to as "BellSouth" or "the Company") as a Director in
17 Infrastructure Planning for the states of Florida, Alabama, Mississippi,
18 and Louisiana.

19

20 Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND,
21 WORK EXPERIENCE, AND CURRENT RESPONSIBILITIES.

22

23 A. I received a bachelor of science degree in electrical engineering in
24 1974, and a master of science degree in electrical engineering in 1979,
25 both from the University of Miami. Also, I have qualified as a registered

1 professional engineer in the state of Florida. For the past twenty-three
2 years, I have been an employee of BellSouth. From 1974 to mid-1979,
3 I held various assignments within the Florida Planning and Engineering
4 Department, including circuit engineering, switch engineering, and
5 engineering staff. In 1979 I joined the Network Operations Department
6 as a budget analyst and software developer. I returned to the Network
7 Planning and Engineering Department in 1982 and managed the
8 operation of the E911 automatic location identification system for
9 BellSouth. In 1987, I accepted a rotational assignment with Bell
10 Communications Research in New Jersey, providing project
11 management for the development of new operations support systems.
12 In 1990, I returned to Planning and Engineering in Florida. I presently
13 hold the position of Director in Infrastructure Planning where I
14 am responsible for interoffice facility, switching, and fundamental loop
15 planning.

16

17 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

18

19 A. As a Director in Infrastructure Planning, I know and understand the
20 technology that is deployed in the BellSouth network today and how
21 that network is expected to evolve in the future. The purpose of my
22 testimony is to bring to bear that knowledge in discussing the
23 appropriateness of the network design underlying BellSouth's
24 unbundled network element cost studies. Additionally, I will provide
25 definitions for certain network terminology used in the study and

1 discuss the appropriateness of certain key assumptions on which the
2 study is founded.

3

4 Q. PLEASE DESCRIBE THE NETWORK INFRASTRUCTURE DESIGN
5 USED IN THE COST STUDY.

6

7 A. As is the case with any good cost study, the network design of a
8 TSLRIC study should (1) include forward-looking, incremental costs,
9 and (2) be based on the incumbent LEC's existing wire center locations
10 and the most efficient technology available. My testimony focuses on
11 this last point.

12

13 Q. WHAT TECHNOLOGIES ARE ASSUMED IN THE COST STUDY?

14

15 A. The interoffice infrastructure in the study consists of fiber transmission
16 facilities with sufficient electronics to provide for both 64 kbps (voice
17 grade) and 1.544 mbps (DS1) of transmitted information. This design
18 incorporates SONET OC3, OC12 and OC48 rings.

19

20 The loop design provides for copper loops for distances from the
21 central office up to 12 kilofeet. Distances beyond 12 kilofeet are
22 designed to be served with digital loop carrier (DLC) and fiber feeder
23 facilities. For the majority of the loops served by DLC, Next Generation
24 Digital Loop Carrier is provided.

25

1 For loops less than 12 kilofeet, the designs reflect the use of 26 gauge
2 copper cable, and if required, 24 gauge cable as feeder facilities. All
3 distribution plant cable has been designed to use 26 gauge cable as
4 well. Bridged tap in the feeder and distribution plant is designed to a
5 maximum of 2500 feet.

6

7 All of the technical terms and designs mentioned will receive greater
8 treatment further in the body of my testimony.

9

10 Q. PLEASE DEFINE SONET OC12 RINGS, DIGITAL LOOP CARRIER,
11 NEXT GENERATION DIGITAL LOOP CARRIER AND BRIDGED TAPS
12 AS THEY RELATE TO THIS DESIGN.

13

14 A. SONET stands for Synchronous Optical Network. It is a family of
15 transmission channels that provide for speeds from ~DS3 (45Mb/s) to
16 2.4 Gb/s and higher. "OC" stands for Optical Carrier and, in
17 conjunction with a numerical identifier, indicates the transport rate at
18 which information is carried. Thus, a SONET OC12 facility would be a
19 synchronous optical network facility operating at "Optical Carrier rate
20 12" (or 600 mb/s). Such a facility would carry in excess of 8,000
21 narrowband channels of up to 64 Kb/s each.

22

23 The use of SONET Rings in this design provides the most efficient
24 interoffice design. Not only are greater transport bandwidths available
25 with SONET, optical interfaces become standardized allowing for cost

1 efficiency. This technology also provides self-healing capabilities that
2 prevent many service interruptions and improves the reliability of the
3 network. Digital Loop Carrier (DLC) is equipment used in the loop to
4 multiplex multiple voice grade circuits onto one or more DS1 facilities
5 for transmission to the central office switch. The remote terminal, so
6 called because it is in the field (i.e., loop), takes the voice grade circuits
7 from the distribution plant and performs the multiplexing function. Once
8 the DS1s reach the central office switch, termination is provided on a
9 Central Office Terminal (COT). The COT performs analog-to-
10 digital/digital-to-analog functions in the process of demultiplexing the
11 DS1s to voice grade circuits. This method of demultiplexing allows the
12 DLC to operate in universal mode. Universal merely means providing
13 the ability to demultiplex to a voice grade level and terminate that circuit
14 wherever it needs to go. This is as opposed to integrated technology
15 which terminates the DS1s into the switch without an intervening
16 demultiplexing/analog to digital conversion step. The universal
17 operation is used in both Series 5 DLC and Next Generation DLC.
18 Integrated DLC is not used in the cost study since BellSouth must be
19 able to provision a loop on a stand-alone basis.

20

21 As it relates to the cost study's network design, DLC provides for a
22 more efficient use of facilities by reducing the number of copper pairs
23 required in the feeder plant. In the case of this study, Next Generation
24 DLC (NGDLC) was used in the design for the vast majority of DLC
25 requirements. NGDLC is a new loop transport platform. NGDLC

1 enables greater flexibility and increased capabilities over DLC including
2 integrated add-drop multiplexing, modular channel shelves and timeslot
3 interchange. These advantages increase the efficiency of the
4 infrastructure design.

5

6 In the design of a distribution route, a single pair of wires comprising a
7 telephone line may be routed from the central office to several streets
8 within a subdivision. When that pair is assigned on one of the streets
9 to become a customer's telephone line, the pair of wires on the other
10 streets becomes unusable and is referred to as bridged tap. Bridged
11 tap refers to that situation where a cable pair exists in two different
12 locations. The pair of wires can be used in either location, but not in
13 both. The unused portion of the pair is called "bridged tap". The
14 network design of the cost study only uses bridged taps to a maximum
15 of 2500 feet so that signal degradation can be minimized.

16

17 These technologies I have just described are appropriate for the
18 underlying design of an unbundled network element cost study. They
19 meet the criteria for providing the least cost most efficient technology
20 available as well as offering the advantages of current technological
21 innovation.

22

23

24 Q. THE COST STUDIES THAT ARE BEING PRESENTED BY
25 BELLSOUTH ARE BUILT ON A NUMBER OF ASSUMPTIONS,

1 INCLUDING SUCH THINGS AS "UTILIZATION" LEVELS AND THE
2 NECESSITY FOR WHAT IS CALLED "BRIDGED TAP". CAN YOU
3 ADDRESS THESE ASSUMPTIONS AND THEIR VALIDITY?
4

5 A. Yes. In any study which seeks to calculate what something will cost in
6 the future, it is necessary to make assumptions about future conditions.
7 For instance, what technology will be deployed in the interoffice
8 network next year, or two years from now? We have a number of
9 techniques for making such assumptions. In most cases, these
10 "assumptions" are estimates that BellSouth subject matter experts can
11 make based on their experience with the network and their knowledge
12 of what has occurred in the past with regard to that network and what
13 new technologies will be available in the future. I will address certain of
14 these assumptions and explain why they are valid and appropriate for
15 these studies.
16

17 Q. PLEASE EXPLAIN THE FACTORS THAT DETERMINE
18 "UTILIZATION" FACTOR AND "FILL" FACTOR LEVELS IN THE
19 NETWORK.
20

21 A. One of the primary assumptions in BellSouth's cost studies involves
22 the "fill" factors or the "utilization" factors that we use as we plan and
23 place our network. Obviously a 600 pair cable that only has 300 pairs
24 working, or a utilization factor of 50%, presents the situation where the
25 working 300 pairs have to recover, all other things being equal, the cost

1 of the 300 spare pairs. In some respects it might be better if there were
2 450 or 500 working pairs so the cost of each pair would be minimized in
3 terms of the spare capacity that has to be maintained. On the other
4 hand, while you do not want to have 300 spare pairs laying idle, if you
5 are digging a trench and putting cable down Flagler St. in Miami, you
6 want to put enough cable in the first time so that you do not have to dig
7 the street up again in six months in order to lay a second cable to meet
8 the additional demand for service in that area. It should be obvious,
9 but I will say so anyway, that the major cost in placing cable, as in the
10 example above, is not in the difference in the cost of a 300 pair cable
11 and a 600 pair cable, but in the cost of digging up the street to place
12 the cable. Clearly you want to place cable, and for that matter, any
13 plant, in a manner which minimizes the cost of doing so, whether you
14 are talking about the actual cost of placing the plant, or the cost of
15 carrying spare capacity.

16
17 Further, the "utilization" of the network turns in many instances on the
18 portion of the network which is being reviewed. A good example is the
19 difference in the "utilization" factors for feeder and distribution plant. In
20 the feeder plant, we expect a utilization factor of about 70%, while in
21 the distribution plant, the fill factor would be expected to range around
22 40%.

23

24 Feeder fill factors or utilization rates represent the number of assigned
25 pairs versus the number of available pairs. This measurement for both

1 copper and fiber is taken at the main distributing frame of each switch
2 on which feeder cable terminates. Not only is it aggregated at the wire
3 center switch for initial measurement, but is further aggregated to
4 provide a state total utilization rate. BellSouth's copper feeder
5 utilization rate runs generally around 70% and 75% for fiber. There are
6 good reasons why that is so.

7
8 BellSouth's analyses indicate that the most economic feeder cable
9 deployment alternative is to size the cable to meet between seven and
10 ten years of demand. That means that in a relatively constant growth
11 rate environment, we would reinforce a feeder cable route every ten
12 years or so. So, why isn't the utilization rate at 100% if cable is sized
13 for seven to ten year demand? The reasons are several. First, actual
14 growth is never constant. A feeder cable sized for ten year demand in
15 1987 may or may not have achieved the forecasted demand by 1997.
16 If demand moved faster than the forecast, relief may have occurred
17 earlier than anticipated and, as such, caused the utilization rate on that
18 feeder to lower with the availability of more pairs on additional cable
19 diluting the original feeder cable utilization rate. Also, growth may not
20 have transpired according to prediction, resulting, again in a lower than
21 anticipated utilization rate.

22
23 Secondly, some pairs or fibers in a feeder cable may be unusable
24 because of defects. This obviously lowers the utilization rate on that
25 cable.

1

2

Finally, cable only comes in so many sizes. BellSouth has to consider the economic efficiency of standardizing on certain size cables. This can sometimes result in the placement of more pairs or fibers than are needed because of available packaging. The greater economic necessity is served though the individual feeder utilization rate may suffer slightly.

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The results of the factors I have described above have caused BellSouth's feeder utilization rates to run approximately 70% for copper and 75% for fiber feeder for many years. Exhibit DMB-1 to my testimony demonstrates that BellSouth has a better than average utilization rate as compared to other RBOCs. I do not expect these factors to change dramatically over time.

In the case of distribution utilization, BellSouth will place a distribution cable down a street according to the number of forecasted units to be served and the number of projected lines per unit. Now, since cable only comes in certain sizes, an exact match of cable size to pairs forecasted may never take place. This begins the creation of less than 100% utilization.

The lessening of the fill factor goes on from that point. Take this example for instance. A new distribution route is required to serve

1 a new subdivision. The subdivision will provide homes for 25 families.
2 It will consist of one main street with 7 houses and three side streets
3 with 6 houses each.

4
5 BellSouth's review and sizing of this new route would be to place 1.5
6 pairs for each living unit. (As an aside, 1.5 pairs per living unit is the
7 BellSouth default where specific requirements are not known. The
8 number can be less or more.) In order to do so, a 25 pair cable would
9 have to be placed down each street. So what happens to utilization
10 with this example?

11
12 First of all, you start out with 1.5 pairs per unit calculating out to 10.5
13 pairs on the main street and 9 pairs on the side streets. So you start
14 with an approximate average 37.5% utilization factor if all pairs are
15 occupied. If only one house per street acquires any additional line
16 service, the factor lowers even more since that 1.5 pair per unit doesn't
17 get used by every unit. Also, some families move out and others move
18 into the subdivision, causing churn in the pairs and some pairs become
19 defective. All of these instances effect the fill on that cable. So it's
20 easily seen that, in the distribution, fill factors are lowered by a variety
21 of situations. Those factors are:

22

23 -The very frequent mismatch between cable sizes
24 and houses on a street.

25 -The need to account for future demand without the

1 expense and disruption of deploying more facilities.

2 -The probability of defective pairs.

3 -The need to account for churn requirements.

4

5 BellSouth has found that these utilization limiting factors are constant in
6 most cases, particularly in the distribution environment. It should be
7 noted that even with growth in additional line requirements, ALEC
8 demand for unbundled loops will cause even more churn for
9 BellSouth's facilities. In BellSouth, one in five access lines disconnect
10 or move at a given location. That activity doesn't always occur
11 concurrently. In placing cable, consideration also has to be given to
12 churn and sufficient pairs must be available to handle dual or
13 nonconcurrent service activity which is likely to increase with the
14 presence of multiple Local Exchange Companies. As a result, cable
15 sizing requirements will increase, and thus help ensure that utilization
16 factors will remain relatively constant.

17

18 While we do not measure our fill factor at the individual route level, the
19 examples I have provided demonstrate how these experiences clearly
20 affect our overall fill factor even when measured at a more aggregate
21 level. In short, our experience has shown that our actual distribution
22 plant, on average, has a "fill" factor of about 40% and our actual feeder
23 plant has a "fill" factor of 70% for copper and 75% for fiber. There is no
24 reason to believe that our experience in the future will be different

25

1 Q. PLEASE EXPLAIN THE DIFFERENCE BETWEEN "OBJECTIVE" AND
2 "ACTUAL" FILL FACTORS.

3

4 A. You have to understand the difference between an "objective" fill
5 factor and the "actual" fill factor in order to appreciate why it is
6 appropriate to use projections of the actual fill factors in cost studies.
7 Consider for example a central office switch approaching exhaust.
8 Eventually, the switch completely exhausts, and does not have the
9 capacity to add a single customer. If the company waits until the day
10 that happens, some folks are going to be without telephone service for
11 a long time. Therefore, we don't wait until plant is exhausted to plan its
12 replacement or expansion. Instead, we set a target and when we
13 reach that target, we begin planning to replace or expand the facility in
14 question. For instance, we may know that when a switch hits 90% of
15 its ultimate capacity, we had better have a second switch ready to turn
16 on. In order to accomplish that, we may have to begin when that first
17 switch hits 70% capacity, because of the lead times involved. Those
18 targets, the objective fill factors that we plan for, are just that, targets.
19 They do not represent the level at which the network is operating. In
20 fact, in my example, where one switch was either replaced or
21 expanded, the actual utilization rate would vary widely depending on
22 the date the utilization was checked. On the day of exhaust, the switch
23 would be operating at 100%. On the day after, the replacement switch
24 or the expanded switch, could be operating at 50% or lower.

25

1 Q. PLEASE SUMMARIZE YOUR POINTS REGARDING UTILIZATION
2 FACTORS?

3

4 A. I have looked at the Florida state feeder and distribution utilization
5 factors for BellSouth. (They are 65.70 for copper feeder, 38.80 for
6 copper distribution, and 74.0 for fiber feeder.) They are reasonable
7 and represent what I believe that our utilization factors will be in the
8 future. The Commission knows, of course, and other parties to the
9 proceeding should know as well that we have not planned our network
10 and the utilization factors we have in order to increase or decrease our
11 costs to new entrants in the local telephone service arena. We have
12 planned our networks to serve our customers efficiently and effectively
13 and that fact is reflected in our utilization factors.

14

15 Q. CAN YOU PROVIDE SOME ADDITIONAL INFORMATION ON WHY
16 BELLSOUTH USES A MINIMUM SIZE CABLE OF 25 PAIRS?

17

18 A. Yes. BellSouth has determined that 25 pair cable is the most
19 economically efficient cable size to use in our network. Savings from
20 standardizing to a 25 pair minimum rather using a variety of smaller
21 sizes provides BellSouth with the ability to gain economies of scale
22 when negotiating with cable vendors. Additionally, savings are accrued
23 from reduced inventory and warehousing needs and reduced training
24 and administrative costs.

25

1 Instead of making the loop less expensive, using a smaller size could
2 lead to higher costs. The truth is that one-sixth of a six pair cable is
3 more expensive than one-twenty fifth of a 25 pair cable. Frankly, the
4 major cost is the installation of the cable. In that light, BellSouth finds it
5 more economic to lay enough cable the first time to serve forecasted
6 future demand, thus preventing further digging up of streets and
7 driveways and saving the costs such activity would incur. Finally, not
8 only are smaller cable sizes more expensive, but because they use
9 coarser gauge wire, we consider them inappropriate to a forward
10 looking design.

11

12 Q. ARE THERE DEVICES AVAILABLE TO RAISE UTILIZATION RATES?

13

14 A. Yes. Specifically, the Digital Additional Main Line or DAML is
15 frequently mentioned for utilization rate increases by allowing the
16 placement of smaller distribution cables. The assertion that DAML
17 is more economical than provisioning additional cable pairs is only true
18 on a selected basis. DAML is less expensive if demand is only
19 temporary. If demand is permanent and ongoing, the correct solution is
20 to size the distribution cable to provide for the projected demand.

21

22 Q. PLEASE EXPLAIN WHAT "BRIDGED TAP" IS AND HOW IT IS
23 REFLECTED IN THE NETWORK?

24

25

1 A. We have attempted to engineer our existing network in the most
2 efficient manner and presumably we and others will do the same in the
3 future. This means that we will do things that at first blush may seem
4 confusing. "Bridged tap" is one of those things, although I understand
5 that even AT&T has agreed that a reasonable amount of "bridged tap"
6 in the network is necessary.

7

8 Simply stated, "bridged tap" refers to that situation where a cable pair
9 exists in two different locations. The pair of wires can be used in either
10 location, but not in both. The unused portion of the pair is called
11 "bridged tap".

12

13 A common example of where this occurs is in a subdivision. To
14 illustrate how this occurs, imagine a subdivision that has a main street,
15 with 20 houses, and a cross street that runs off of and perpendicular to
16 the main street so that the streets form a "T". For our purposes, we will
17 assume the cross street has another 20 homes on it. A hundred pair
18 distribution cable might be run down the main street in front of all of the
19 houses on the main street. At the cross street, a second fifty pair
20 distribution cable might be "tapped" into the first cable. That is, at the
21 cross street, a fifty pair cable might be multiplied onto the hundred pair
22 cable that runs down the main street of the subdivision. If the cable
23 pairs in the 100 pair cable are numbers 1 to 100, it should be easy to
24 see that 50 of the pairs that enter the subdivision run the length of the
25 main street and the length of the cross street. If a pair is used at the

1 first house on the cross street, it obviously cannot be used further on
2 down the main street beyond the point where the multiple was made.
3 The portion beyond the splice is "bridged tap". On the other hand, if
4 the house on the cross street disconnects its service, the pair is freed
5 up and a subscriber who lives on the main street beyond the multiple
6 could then use the pair. In such circumstances, it is clearly preferable
7 to have a reasonable amount of "bridged tap" than to have to run a
8 second cable from the central office to serve the cross street.

9
10 Some might say that tapering and splicing cable to serve the cross
11 street would be more efficient. That isn't necessarily the case.
12 Opening the sheath, cutting the cable and splicing the new cable are
13 not free. As well, costs are incurred in training, warehousing and
14 inventorying splicing equipment and in the maintenance of those
15 splices. Bridged tap reduces the need for these expenditures where it
16 can be used.

17
18 This example also can be used to illustrate another form of "bridged
19 tap". When a cable pair is used to serve the first house in the
20 subdivision, that cable pair continues to exist in the 100 pair cable
21 beyond the point where the first house's drop wire is spliced.
22 However, it is clear that the additional length of the already utilized
23 cable pair cannot be used again. This is actually called "end tap" and,
24 as can be seen, is unavoidable.

25

1 Our planning involves a reasonable amount of both types of "bridged
2 tap". It is unavoidable, and in the case of my first example, is actually
3 desirable in many cases, since it avoids the necessity of building
4 additional plant to serve our customers.

5

6 Q. THE STUDY ASSUMES THAT AERIAL CABLE DROP LENGTH IS AN
7 AVERAGE 250 FEET AND BURIED CABLE DROPS ARE AN
8 AVERAGE OF 200 FEET. CAN YOU EXPLAIN WHERE THESE
9 FIGURES CAME FROM?

10

11 A. Yes. These assumptions were derived via a review by a BellSouth
12 Subject Matter Expert (See Exhibit DMB-2 for a list of BellSouth SMEs
13 providing assumptions to the cost study) of the average length of aerial
14 and buried drops in the states of the BellSouth region. The method
15 used to acquire this information consisted of contacting the Installation
16 and Maintenance Managers in the state for information based on their
17 knowledge of the areas they serve. These managers are responsible
18 for the installation of drop wire and would have the best working
19 knowledge of average lengths without actually measuring individual
20 drops. The Subject Matter Expert averaged their responses and
21 provided a state total. Additionally, for buried service wire, the
22 BellSouth group that administers master contracts for burying the drop
23 was consulted and provided footage information from those contracts
24 as a cross check. The assumptions therefore were developed from

25

1 actual BellSouth information that considered the variety of
2 demographics for drops in the region.

3

4 Drop wire really only comes into play at the residential
5 and small business level. Apartment buildings , strip shopping
6 centers, malls and office buildings don't have drop wire. Obviously,
7 in residential areas, drop length will vary. In Florida, a fair amount of
8 the state is rural. The same is true of a great deal of the BellSouth
9 region. BellSouth chose to use state statistics rather than use old loop
10 surveys covering the entire nation. Any calculation using national data
11 like that supplied by the 1983 loop survey made available from
12 Bellcore that includes the New York City, Boston, Los Angeles and
13 Chicago will reflect drop lengths heavily influenced by dense
14 metropolitan environments. A more rural environment, by its nature,
15 contains drops that can be quite long. Additionally, even suburban
16 areas are not made up of 100% quarter acre lots and houses next to
17 the street. Other assumptions used by other models, such as houses
18 and buildings being place closer to the front of a lot to mitigate snow
19 removal, simply don't apply in Florida as it might in New York or
20 Illinois.

21

22 I believe that the drop lengths reflect in BellSouth's unbundled loop
23 study accurately reflect the demographics of Florida. Additionally, I
24 believe that there is no basis to conclude that length of these drops
25 would be expected to change in the future. While changes in

1 demographics will occur over time, it is highly unlikely that such
2 changes will be apparent within the "long run" element of this study.

3

4 Q. HOW DOES THE STUDY HANDLE ADSL/HDSL?

5

6 A. The assumption used in the network design for this cost study is that
7 only the transmission facility will be provided. Using a transmission
8 facility only assumption limits the provisioning of ADSL/HDSL to
9 compatible loops of 100% copper at a distance from the central office
10 of 9 kilofeet for HDSL and 18 kilofeet for ADSL. The assumption is that
11 BellSouth will provide the copper pairs where available, and it will be up
12 to the service provider to install the necessary equipment to provide the
13 ADSL/HDSL capability. This approach allows a requesting service
14 provider the least complicated access to the customer as far as costs
15 for the loop. I must make an important point here. These types of
16 loops are not standard loops and may require substantial non-recurring
17 costs to provision. Any offering of such loops must make provision for
18 the substantial non-recurring costs associated with these kinds of
19 loops.

20

21 Q. ARE THERE OTHER ISSUES THAT NEED TO BE MADE CLEAR IN
22 SO FAR AS THE STUDY ASSUMPTIONS ARE CONCERNED?

23

24 A. Yes, there are a few more. I will handle these by topic as follows:

25

1 STRUCTURE:

2 Some cost study models assume that sharing of structures such as
3 poles, conduit and trenches occurs 100% of the time. This is a
4 ludicrous assumption. It is in BellSouth's best interest to share
5 structure because it is the most economic course of action. We have
6 official practices on how to provide shared structure. It isn't, however,
7 the most practical or possible course all the time.

8

9 In the case of trenching, timing is a prevailing issue. In a multitude of
10 developments, power is required up front, so the electric utility
11 company comes in early and digs trenches to bury its facilities. For
12 BellSouth it would be a poor economic decision to place investment
13 that will not be used just to joint trench.

14

15 Joint use of poles is the most prevalent arrangement. Even in this
16 arena, joint use may not always be possible. In the case of joint use
17 with a power company, high voltage lines eliminate the possibility due
18 to the interference they cause to telecommunications. If the company
19 owning the pole must make costly adjustments to accommodate a
20 sharing utility, the cost would be passed along to the requester and
21 may not make the shared use an economic choice. With the
22 Telecommunications Act, the cost of any rearrangement must be born
23 by the cost-causer and may eliminate sharing on the basis of
24 economics.

25

1 Conduit is a third possible sharing arrangement. Customarily,
2 BellSouth has owned the vast majority of conduit it uses. Although
3 power companies own conduit, safety issues preclude most sharing
4 possibilities. Until the advent of ALECs, telecommunication utilities
5 sharing has not been in great demand. BellSouth allows sharing in
6 conduits we own only with other communications carriers.

7

8 **BUILDING ENTRANCE TERMINALS:**

9 Although unexposed plant should not require costly station protection, it
10 is very difficult to determine positively that no exposure to electrical
11 interference (lightening or power contact) exists. In a very metropolitan
12 environment where everything is underground, it may be possible to
13 leave off station protection. In most cases, in my opinion, it is better to
14 be safe than sorry. BellSouth has an obligation to protect its
15 customers, their service, our craftspeople and our equipment from
16 damage stemming from such exposure. One would assume that an
17 ALEC would have the same desire.

18

19 **MULTIPLE VENDORS:**

20 Certain ALECs contend that BellSouth should always provide prices for
21 technology used in its cost study from the least cost vendor. If we were
22 pricing a hypothetical fairy tale network, that would be an appropriate
23 method. We are not doing any such thing. We are providing costs for
24 an unbundled network element based on a forward looking narrowband

25

1 network design. It is inappropriate to suppose that the least cost
2 vendor is always satisfactory from a technological perspective.

3

4 In the same vein, the use of multiple vendors is an appropriate
5 activity. It would be imprudent of BellSouth to participate in
6 exclusive vendor relationships when multiple vendors allow better price
7 leverage and greater ability to meet technological demand.

8

9 REMOTES PER OC3 RING:

10 An average of ten remotes has been quoted by the ALECs as the
11 appropriate assumption for the number of remotes on an OC-3 Ring.

12 In fact, in some instances that may well be true. In other instances, all
13 the capacity is used up at the first node, precluding any additional. It is
14 BellSouth's experience that an average of three nodes is appropriate
15 for the design of this loop cost study.

16

17 SIX VS FOUR FIBER SONET RINGS:

18 BellSouth's six fiber SONET Ring design considers the needs of our
19 customers to have continuous quality service. With two fibers to
20 transmit, two fibers to receive and two fibers for system upgrades and
21 rapid service restoral, we can assure this fact. One would think that a
22 competitive environment would require this type of service
23 assurance to attract and keep subscribers. BellSouth considers such
24 a design to be part of a forward looking cost effective narrowband
25 network.

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EXPENSIVE OPTICAL LINE INTERFACE UNITS:

It has been stated that BellSouth uses the most expensive Optical LineInterface Unit (OLIU) Card for the Lucent DDM2000 OC-3 SONET multiplexer. While it is true that the long range OLIU card is not always necessary in the loop, there are very good reasons to use it. First the difference in material price at a DS0 level is very small. In the DDM2000 system, the difference is an additional \$.12 per card or \$.24 for the two cards the system requires. For the Fujitsu FLM-150 system, there is no difference in material price between intermediate and long range optic cards. For the LiteSpan 2000 system, the material price is an additional \$1.09 at the DS0 level.

In addition to these small price differences, there are significant advantages to stocking only one card that can be used for all applications. Inventory and stocking procedures are simplified which reduces costs. Installation, testing and maintenance are also made much easier when only one type of OLIU is required.

HIGH PRICED DS1 PLUG-IN CARDS:

Certain ALECs have asserted that BellSouth selected the highest priced DS1 plug-in card for the DDM2000 thus inflating the multiplexer investment. The same situation as that found in the OLIU requirement applies here; stocking and inventory procedures are simplified with use of one type of card causing a reduction in costs. There are also

1 maintenance reasons for using these particular cards. These cards are
2 equipped for performance monitoring. Availability of such a feature
3 minimizes service outages and reduces dispatch time for service
4 technicians. While the price difference at the DS0 level between the
5 two cards is \$3.26 for the DDM2000, it is only \$.75 for Fujitsu
6 equipment. Finally, Fujitsu is considering not offering the DS1 card.

7

8 Q. PLEASE SUMMARIZE YOUR TESTIMONY.

9

10 A. My testimony has described the network design used as the
11 infrastructure basis in the unbundled network element cost studies,
12 defined certain complex technical terminology, provided the basis for
13 the use of that technology, and discussed certain assumptions about
14 infrastructure design that have been misunderstood by some.

15

16 The design of the infrastructure and the assumptions relating to that
17 design are founded on well understood industry principles of
18 engineering. The assumptions and methodology are consistent with
19 the requirements of cost studies in general and provide the most
20 efficient technology available for the provision of a reliable narrowband
21 telecommunications network.

22

23 Q. DOES THAT CONCLUDE YOUR TESTIMONY?

24

25 A. Yes, it does.

1 Q (By Ms. White) Mr. Baeza, did you have any
2 exhibits associated with your testimony?

3 A Yes. Two exhibits.

4 Q And were these exhibits prepared by you or
5 under your direction and supervision?

6 A Yes, they were.

7 Q Do you have any changes to those exhibits?

8 A No.

9 MS. WHITE: Madam Chairman, I'd like to have
10 the exhibits attached to Mr. Baeza's direct testimony
11 marked as Exhibit 19 for identification.

12 CHAIRMAN JOHNSON: It will be marked as
13 Exhibit 19. It's a composite exhibit then?

14 MS. WHITE: Yes. Consisting of the two
15 exhibits to Mr. Baeza's direct testimony.

16 CHAIRMAN JOHNSON: Okay.

17 (Exhibit 19 marked for identification.)

18 Q (By Ms. White) Mr. Baeza, do you have a
19 summary of your testimony?

20 A Yes, I do.

21 Q Would you please give that.

22 A Yes. The purpose of my testimony is to
23 describe the network design used in the unbundled
24 network element cost studies. I've defined certain
25 complex technical terminology and provided the basis

1 for the use of that technology.

2 In constructing the network design,
3 forward-looking least cost technology as used, digital
4 switching, fiber interoffice facilities, SONET
5 standards and next generation digital loop carrier
6 form the basis for the design elements. These
7 components make up a forward-looking realistically
8 achievable network.

9 As discussed in my testimony, the cost study
10 assumes next generation digital loop carrier deployed
11 in a nonintegrated fashion using the TR-008 feature
12 package. Let me explain why this is appropriate when
13 designing unbundled network elements.

14 Today BellSouth Telecommunications provides
15 a service to its retail customers that we refer to as
16 basic local exchange service. This service is
17 provided by taking two network elements, a switch and
18 a loop, and integrating or bundling them together to
19 provide this service.

20 We also offer this service to ALECs at
21 wholesale via our resale offering. In addition to our
22 resale offering, we also offer to the ALECs the
23 ability to buy parts of our network so they can
24 develop their own services.

25 To do this we have unbundled or unintegrated

1 our network so that ALECs can purchase individual
2 network elements, such as a loop or a switch port.
3 The nature of this unbundled or unintegrating of the
4 network is where the discussion around integrated
5 digital loop carrier becomes important. By nature of
6 unbundling or unintegrating the network, we've broken
7 the connection between the switch and the loop apart.
8 Yet integrated digital loop carrier by definition
9 provides a bundling of the switch and loop together.
10 Thus by definition it's impossible to provide
11 unbundled or unintegrated network technology that is
12 designed to bundle or integrate those individual
13 network elements together.

14 Additionally, I've covered several network
15 assumptions that underlie the network design that are
16 commonly mischaracterized or misinterpreted by the
17 intervenors. Among those, utilization factors, bridge
18 tap, cable sizes and drop wires seem to comprise the
19 major assumptions at issue. Let me briefly summarise
20 utilization factors.

21 These are factors that represent how much of
22 a given facility, such as a loop, is used in relation
23 to what has been installed.

24 There are a number of elements that define
25 how utilization factors come to be what they are. Our

1 opposition would have you believe that a network can
2 be provisioned so incrementally that the utilization
3 factor would be in the 70% to 90% range. This just
4 isn't the case. It's not possible to provision cable
5 facilities one demand at a time. Cables come in
6 finite sizes, 25, 50, 100 pairs and so on. Demand
7 must be forecasted by numbers of living units to be
8 served and the cable laid in a manner that marries
9 size to demand.

10 Sizing the cable to meet forecasted demand
11 over a specified time frame prevents needless
12 additional installation expense and minimizes the
13 disruption to customer lives from digging up their
14 yards and blocking thoroughfares. When all of these
15 elements are considered, utilization necessarily is
16 lower than the theoretically perfect number calculated
17 by the ALECs testifying in this case.

18 There are other network assumptions that are
19 contested by our opposition. These issues have
20 importance in and of themselves, but in the interest
21 of time, I'll forego a more detailed explanation. I
22 will say, however, that our opposition has taken the
23 opportunity to misconstrue BellSouth's assumptions
24 with the purpose of gaining lower prices at the
25 expense of appropriate design requirements.

1 The assumptions used in the development of
2 BellSouth's unbundled network element cost studies are
3 valid. These assumptions use a forward-looking least
4 cost design for provisioning realistic elements in a
5 narrowband voice grade environment. Thank you.

6 **MS. WHITE:** Mr. Baeza is available for cross
7 examination.

8 **CHAIRMAN JOHNSON:** Okay.

9 **MS. KEATING:** Madam Chairman, Staff would
10 ask its exhibit for this witness be marked for record.
11 Staff asks DMB-3 which is the deposition transcript,
12 deposition exhibits and late-filed deposition exhibits
13 from Mr. Baeza's January 16th deposition be marked as
14 Exhibit 20.

15 **CHAIRMAN JOHNSON:** We'll mark it as
16 Exhibit 20. Short title DMB-3.

17 **MS. KEATING:** Thank you.

18 (Exhibit 20 marked for identification.)

19 **MR. HATCH:** Madam Chairman, before you go
20 any further, I have one minor preliminary matter. I'd
21 like to enter an appearance for Ms. Lauren Seeger of
22 the law firm Morris, Manning & Martin in Atlanta,
23 Georgia. She's a member of the Georgia bar and I'd
24 move for her admittance before the Commission on a
25 limited basis for this proceeding.

1 **CHAIRMAN JOHNSON:** Okay. And your name was
2 Seeger?

3 **THE WITNESS:** Yes. My name is Seeger.
4 S-E-E-G-E-R. Laureen is L-A-U-R-E-E-N.

5 **CHAIRMAN JOHNSON:** Thank you.

6 **MS. SEEGER:** Good afternoon, Commissioners
7 and Madam Chairman.

8 **CROSS EXAMINATION**

9 **BY MS. SEEGER:**

10 **Q** Hello, Mr. Baeza.

11 **A** Hello.

12 **Q** Now, are there any other witnesses from
13 BellSouth testifying in this proceeding about the
14 actual network design assumptions in BellSouth's
15 model?

16 **A** None to my knowledge.

17 **Q** So you're the person that we should direct
18 all questions to concerning the appropriateness of the
19 design assumptions then?

20 **A** Yes.

21 **Q** And the purpose of your testimony is to talk
22 about the fact that those design assumptions are
23 forward-looking, correct?

24 **A** Yes.

25 **Q** And least cost?

1 A Yes.

2 Q And I want to clarify what you mean by
3 forward-looking. Do you mean forward-looking over the
4 next three years, or do you mean forward-looking as --
5 forward-looking as what could be possible in the
6 future?

7 A I don't really think forward-looking was
8 ever defined as a finite number of years. In the case
9 of these studies, forward-looking defines in the
10 immediate future, and I'd be hard pressed to come up
11 with whether it's a one-year, two-year or three-year
12 look.

13 Q All right. Now, before we get into some of
14 the main issues of your testimony, I'd like to ask you
15 some follow-up questions to questions directed to
16 Ms. Caldwell in this proceeding.

17 There were certain questions to her about
18 dedicated outside plants and loops. And for the
19 record, can you state what exactly those are?

20 A No, I don't know what the questions are.

21 Q No. Can you state for the record or define
22 what a dedicated loop is?

23 A Oh, I'm sorry. I misunderstood your
24 question.

25 A dedicated loop is one that terminates at a

1 network interface device at the living unit and is
2 dedicated to that living unit.

3 Q And by "dedicated" does that mean that if
4 it -- if the customer who resides in that living unit
5 moves, the loop is still connected for the next
6 person?

7 A The loop is still physically connected to
8 that living unit, yes.

9 Q And Ms. Caldwell indicated that we should
10 direct questions to you concerning the percent of
11 installed loops in Florida which are dedicated. What
12 is that percent?

13 A You know, I don't really know, but let me
14 offer an opinion.

15 If a loop terminates at a network interface
16 device, it is dedicated, so essentially all of the
17 loops that terminate at a NID are dedicated to those
18 living units.

19 Q All right. I also have some questions for
20 you concerning fill factors or utilization factors.

21 First of all, do you define both of those
22 terms in the same manner, the term "fill factor" and
23 the term "utilization rate"?

24 A Yes, I would.

25 Q And what is your definition of utilization

1 rate?

2 A Utilization would be the number of available
3 units, whatever the units happen to be, over -- I'm
4 sorry, under the number of units that are actually in
5 use.

6 Q And the way that BellSouth's cost model
7 works in this proceeding is that it applies these
8 utilization rates to make current users of physical
9 outside plant pay for the full cost of that plant,
10 correct?

11 A I'm sorry, to make current users --

12 Q Of the existing outside plant pay for the
13 full cost of that plant.

14 A Yes.

15 Q All right. At your deposition I'd asked you
16 certain questions about whether defective cable
17 distribution pairs were included in the numerator and
18 denominator of the utilization rate calculation in
19 BellSouth's model, and you did not know, but you filed
20 a late exhibit, and it's already been made part of the
21 record as -- it's Page 92 of Staff Exhibit No. 20. Do
22 you have that in front of you?

23 A I don't have it here. Oh, wait a minute.

24 92?

25 Q Yes.

1 A Yes.

2 Q And this is Item No. 1 of the late-filed
3 exhibits to your deposition, correct?

4 A Yes.

5 Q And there the request was is the defective
6 pair rate taken out of the numerator or the
7 denominator when calculating filler utilization
8 factors? And response here is that defective pairs
9 are counted as available when considering utilization.

10 Does that mean then that defective pairs are
11 included in the denominator of the utilization rate
12 calculation?

13 A That would be correct.

14 Q The second response here is that defective
15 pairs are not removed from the numerator. Does that
16 mean that defective pairs could be counted as actually
17 being used by a customer?

18 A Defective pairs are available for use. They
19 would not be actually used by a customer by nature of
20 the fact that they are defective.

21 Q Okay. And the defective pair rate for cable
22 distribution plant in Florida and for feeder
23 distribution plant is roughly 10%, correct?

24 A For distribution, roughly between 9.5 and
25 11%.

1 Q All right. So that means that basically
2 when calculating the utilization rate, the
3 denominator, the denominator which reflects available
4 pairs includes -- 10% of that number is for defective
5 pairs, correct?

6 A Yes.

7 Q So to the extent that that defective pair
8 rate is too high, that would understate utilization,
9 correct?

10 A If I understand your question correctly I
11 believe what you're saying is if the defective pair
12 rate -- if the defective pairs are counted as
13 available, that that would understate the utilization
14 rate.

15 Q No, that's not the question. And I'll
16 rephrase it if there's any confusion?

17 A Yes.

18 Q Because of the way that defective pairs are
19 counted in calculating the utilization rate, if that
20 defect pair rate is too high -- let's say in a
21 forward-looking network design that could be reduced
22 significantly, if in BellSouth's model that defective
23 pair rate is not forward-looking and it's too high,
24 that would tend to understate utilization, correct?

25 A I don't understand what you mean by too

1 high. Can you help me with that?

2 Q Versus what a forward-looking network would
3 have in it. Let's say a forward-looking network would
4 only have a 3 or 5% defective pair rate, but BellSouth
5 assumes in its cost model, or in actual use, has a
6 defective pair rate of between 9 and 11%. So if
7 BellSouth's defective pair rate is too high, the way
8 that it incorporates that into the utilization rate
9 would understate possible utilization that could exist
10 in a forward-looking network, correct?

11 A No, I don't believe so. What you're asking
12 is if we define available pairs to include defective
13 pairs, is that appropriate or not? And then finally
14 is the number of defective pairs in line with what is
15 reasonable?

16 I can tell you the number of defective pairs
17 is a reasonable number. And we feel that they can be
18 made available for use because, for the most part --
19 and I cannot guarantee that every defective pair can
20 be repaired -- but for the most part the defective
21 pairs can be repaired if necessary.

22 Q And what is the cost of repairing -- the
23 typical cost of repairing a defective pair?

24 A I don't know. I read somewhere that it was
25 \$42, but I don't know that for a fact. That was my

1 recollection of a number I read somewhere.

2 Q All right. And in tying the defective pair
3 rate to the actual utilization rate, it may be easier
4 to get an answer to that previous question I had by
5 referring to your testimony. And do you have a copy
6 of that in front of you?

7 A Yes.

8 Q Will you turn to Page 11, please? At least
9 there, beginning on Lines 12 on Page 11, and ending
10 with Lines 3 on Page 12, you explain in your prefiled
11 testimony here that the probability of defective pairs
12 impacts the fill factor and possibly lowers it,
13 correct?

14 A Yes.

15 Q Can you describe for the record here,
16 Mr. Baeza, what actions BellSouth has taken to
17 decrease the occurrence of defective pairs?

18 A Well, in general there are things that are
19 done as procedural activities when installing cable
20 pairs to limit the defective pair rate, and these have
21 been in place for many years, namely, training to make
22 good splices, teaching care to prevent a pair from
23 being nicked inadvertently and possibly shorted.

24 So these are ongoing training procedures
25 that I cannot point specifically to a -- any kind of

1 recent program or anything other than what has always
2 been ongoing.

3 All right. Also with regard to utilization
4 rate, Ms. Caldwell, in her testimony indicated that
5 she did not know if the experts who determined that a
6 utilization rate in BellSouth's existing network would
7 not improve going forward in the future. She doesn't
8 know whether those experts consider the effects of
9 competition. Do you know whether the BellSouth
10 experts who decided that the utilization rate may not
11 improve going forward consider the effects of
12 competition?

13 A Yes. The effects of competition were
14 considered, and it was determined that there would be
15 minimal effect to the utilization rates.

16 Q And that conclusion, or that statement that
17 you made, is based on what discussions that you have
18 had with those experts?

19 A I did not personally discuss this with the
20 subject matter experts. However, this is a topic that
21 is discussed fairly frequently in BellSouth, namely,
22 the effects of competition. And it is our intent to
23 have our plant available for our customers and to have
24 plant available for ALECs for resale, so we attempt to
25 factor all those things in.

1 Q All right. Let me make this clear then. So
2 you're not aware, are you, of any particular analysis,
3 or specific analysis that's occurred within BellSouth
4 concerning the actual and potential impact of
5 competition on the distribution utilization rate?

6 A I cannot point to a particular study. I
7 don't know if there is a published document or not,
8 no.

9 Q And do you recollect the identity of the
10 individuals who told you that competition may not
11 improve the utilization rate of BellSouth's
12 distribution plant going forward?

13 A Again, we have a number of subject matter
14 experts. I can probably make a list of names
15 available, but I don't have them at my fingertips
16 right now.

17 Q Okay. You also, in your direct testimony
18 filed in this proceeding, talk about the wisdom of
19 using bridge tap. Could you explain, for the record,
20 what bridge tap is?

21 A Sure. Bridge tap is a cable pair that
22 terminates at a network interface device but also has
23 an extension of that cable pair terminating -- or not
24 terminating, excuse me -- I'm trying to think of a
25 good word -- I'll just say moving down another avenue,

1 so to speak, and available for, you know, possible
2 reuse.

3 Q So basically a bridge tap is cable that runs
4 past the home that's actually using that cable. Is
5 that a fair description of it?

6 A Well, technically what you're describing is
7 an end tap, but for our purposes, yes, that's correct.

8 Q All right. And basically it's cable -- an
9 extension of an original cable pair that's not -- that
10 the cable pair has been assigned but there's extra
11 yardage out there that's been laid in BellSouth's
12 network?

13 A Extra -- I didn't hear your word.

14 Q Extra yardage of that cable pair.

15 A Footage, yes. We deal in feet.

16 Q Okay. And in BellSouth's cost model they
17 assume that there's a bridge tap in every one of the
18 sample loops, correct?

19 A No, I don't believe it was every one of the
20 sample loops but there is some bridge tap in the
21 model, yes.

22 Q Assumed. Okay.

23 Now, is one of the rationales, as you state
24 in your testimony, for assuming that bridge tap would
25 exist in a forward-looking network -- is one of your

1 rationalizations that that cable could possibly then
2 be used by a customer in a different location in the
3 future?

4 A Well, yes, but not at the same time as a
5 current customer is using it.

6 Q Is there any other reason than that for
7 BellSouth, assuming the existence of bridge tap in a
8 forward-looking network?

9 A Yes. The other reason for having a bridge
10 tap pair is in the event of a pair going defective, it
11 is quicker generally to restore the customer service
12 using an existing vacant pair, in which case we might
13 be using the bridge tap pair, and reterminating
14 another customer, or we may just, in fact, have that
15 bridge tap pair vacant and use it for the customer, in
16 other words, change out the pair.

17 Q Basically, and correct me if I'm wrong, the
18 rationale for assuming bridge tap in the loop sample
19 of BellSouth's cost model is that it could be used; it
20 could possibly be used in the future, correct?

21 A Yes.

22 Q All right. How often, what percentage of
23 the bridge tap in BellSouth's network has actually
24 been used in the last five years?

25 A I don't know. I don't know that we have

1 records on that.

2 Q Now, you're responsible and you're
3 testifying in this matter as an individual with
4 knowledge of the network in Florida, correct?

5 A Yes.

6 Q Do you have a rough idea of how often
7 BellSouth actually uses bridge tap in its existing
8 network?

9 A No, I hate to not be able to provide an
10 answer, but I really don't know what percentage. To
11 my knowledge we don't have records on that. We change
12 out pairs and that's the end of it.

13 Q All right.

14 A I don't know that we code it out in such a
15 way that we could go back and identify which one was a
16 bridge tap and which one wasn't.

17 Q Let me ask it this way then, at different
18 points in your career you were actually in the field,
19 correct?

20 A Well, yes. (Laughter)

21 Q And did you -- were you ever involved --

22 A I'm not proud of that.

23 Q Actually --

24 COMMISSIONER GARCIA: As opposed to what
25 you're doing now?

1 **WITNESS BAEZA:** Touche'.

2 **Q** **(By Ms. Seeger)** Are you personally aware
3 of any situations in which BellSouth has used bridge
4 tap?

5 **A** I have not personally done it -- I'm
6 personally aware of it; I've seen it done. But I've
7 not done it myself.

8 **Q** And you have no opinions to the frequency of
9 it?

10 **A** That's correct.

11 **Q** Also another thing that could affect
12 BellSouth -- now BellSouth's assumed utilization rate
13 for cable distribution plant in this model is 38.8%,
14 correct?

15 **A** Yes.

16 **Q** Now, do you know what the utilization, the
17 actual utilization rate in other states in BellSouth's
18 region is for cable distribution plant?

19 **A** Yes. I really didn't have them memorized
20 but I can rattle them off, but they range in the 40%
21 range. 35 to 41 or 42. I think there's even one that
22 goes as high as 52.

23 **Q** And aren't most of the actual utilization
24 rates for BellSouth's cable distribution plant in its
25 region higher than the utilization rate in Florida?

1 A No, they are all right around that, 38, 39,
2 40%.

3 Q Okay. And if one state, for example, as you
4 testified, had a cable distribution plant utilization
5 rate of 52%, you are nonetheless asking this
6 Commission to assume that no matter what BellSouth
7 would do in the future, its actual cable distribution
8 utilization rate of 38.8% would not improve?

9 A That's correct. Florida is a very dynamic
10 state. One in five loops are touched every year.
11 This is higher than the other states in many cases, so
12 I do not foresee anything changing in the immediate
13 future that would allow that utilization rate to
14 increase substantially.

15 Q You said something interesting in that
16 answer. You used the word "immediate." Does that
17 mean that you're not giving an opinion as to whether a
18 forward-looking network or long-term utilization rate
19 could be improved?

20 A No. What I meant by that is for the
21 purposes of a TELRIC study, you know, long run
22 incremental cost is just that; it doesn't really imply
23 ten years or anything like that. It's for the
24 purposes of that study.

25 Q And, in fact, at your deposition you

1 identified some actions that BellSouth is undertaking
2 to attempt to improve the distribution rate for cable
3 plant going forward in the long term, correct?

4 A Can you refer me to a page?

5 Q Page 63 of your transcript.

6 A What line?

7 Q Beginning at Line 3 and Line 14, and the
8 question is "At your deposition you identified and
9 described some efforts that BellSouth was undertaking
10 which could possibly improve the utilization --

11 A Oh, yes --

12 Q -- of going forward."

13 A -- yes, yes. Yes. Let me explain that.
14 That's a very good point.

15 What we're looking at now is what I'll
16 loosely term the next generation of distribution plant.

17 And this is bringing fiber closer to the
18 living unit. We have a very, very small fraction,
19 less than a percentage point, of optical network unit,
20 ONUs, that are fiber fed from a DLC location. And
21 from that ONU, we can serve four to six living units
22 with a copper extension.

23 So what that does is that moves the fiber
24 closer to the living unit, but as I said, it's a very,
25 very small percentage. It's less than a percentage

1 point and I don't really remember the number.

2 And given that much of our plant is already
3 embedded, we're not going back and digging up existing
4 plant and installing ONUs. That would, obviously, be
5 prohibitive. So that's what that was referring to.

6 Q But if BellSouth had originally -- or was
7 installing their network now using ONUs, there would
8 be an opportunity, would there not, to experience, in
9 a forward-looking network, design architect, a much
10 higher utilization rate than 38.8%?

11 A No, I don't believe so. And once again, use
12 of an ONU is very nascent at this point. There's not
13 a lot out there. If I can put in 100,000 units a
14 year, it still wouldn't move that percentage to -- in
15 any appreciable bit.

16 Q It wouldn't move that percentage off of
17 BellSouth's embedded network, correct?

18 A No. I said this is really not replacing the
19 embedded network. This would be on new starts, new
20 subdivisions, for example.

21 Q Okay. So let me make this clear then. If
22 you're installing a new subdivision, BellSouth might
23 consider ONU technology to more efficiently design
24 that network?

25 A Yes, we might consider that.

1 Q Okay. All right. Now, isn't it true that
2 another factor in BellSouth's study and in BellSouth's
3 actual network, which could possibly contribute to the
4 low utilization rate, is the fact that BellSouth plans
5 on -- and has assumed in its cost study, a minimum of
6 25-pair cable running down each street?

7 A Yeah. Our smallest cable size is 25-pair.
8 It's distribution, by the way.

9 Q Distribution. Correct.

10 And at your deposition -- and I'll refer you
11 to Page 74, do you have that in front of you?
12 Actually, let's start on Page 73 at Line 15.

13 A Yes.

14 Q And I asked you a question there, "In
15 BellSouth's existing network, does it have cable
16 plant, cable distribution plant, that is utilizing
17 fewer than 25 pairs?" And you answered that question
18 with "None to my knowledge," correct?

19 A That's correct.

20 Q And I asked you again, "In the whole state
21 of Florida." And you answered, "Right." Correct?

22 A Right. And then I went on to say that.

23 Q Can I finish?

24 A Oh, sorry.

25 Q And then I asked again "When you say none to

1 your knowledge," I asked, "are you saying you haven't,
2 you're not sure, or are you saying that you are pretty
3 certain that there is none?" And you answered "We
4 don't use anything less than 25-pair distribution."
5 Correct?

6 A Yes.

7 Q Okay. Now, in this case BellSouth filed, as
8 part of Exhibit 13, which was their cost model, they
9 filed an Appendix A to that cost model that was a
10 diagram of each of the actual loop designs of the
11 loops in BellSouth's loop sample, correct?

12 A Yes.

13 Q All right. And then BellSouth has
14 redesigned those loops to assume 25-pair distribution
15 cable at a minimum, correct?

16 A Yes.

17 MS. SEEGER: May I hand the witness --

18 Q (By Ms. Seeger) Mr. Baeza, what I'm now
19 handing you are some excerpts from Appendix A to
20 BellSouth's cost model, and Mr. Hatch will pass out
21 some of these excerpts to the parties. (Hands
22 document to witness and Commissioners.)

23 Q And, Mr. Baeza, you're here to testify about
24 the appropriateness of the design assumptions and
25 BellSouth's loop sample, correct?

1 A Yes.

2 Q What I've handed you are the actual designs
3 of certain loops of BellSouth in the state of Florida?

4 A Yes.

5 Q And for the record, I've handed you Bate
6 stamp -- I've handed you 1995 Loop Survey Diagrams for
7 loops, I think, 111, 112, 114, 183, 191, 201, 257 and
8 259.

9 Now, Mr. Baeza, on each one of these pages
10 there's -- on the left-hand side of the diagram in the
11 middle of the page there's the word "CO", does that
12 represent central office?

13 A Yes, that's correct.

14 Q Then there's a series of sets of numbers,
15 the first one on the first page for Loop Sample 111,
16 for example, says "3600-26," do you see that?

17 A Yes.

18 Q What does that mean?

19 A That's 3600 pair, 26 gauge.

20 Q Then going on to the far right of that
21 diagram there's the words "8PR 45C" does that mean 8
22 pair, 45 gauge?

23 A Yes. Yes.

24 Q And on loop sample 112, on the far right
25 that's a 12-pair cable in that actual loop. That's 45

1 gauge, correct?

2 A Yes -- no, not 45 gauge. It looks like 45
3 "C", I think that's an accounting code. I can't
4 really read it.

5 Q 45C, all right. And each one of these pages
6 I've handed you, as they are diagramed -- and as they
7 currently exist, actually, in BellSouth's region in
8 Florida for these loops, use lower than a 25-pair
9 cable, correct?

10 A Well, understand, though, that that's the
11 drop wire. It's not --

12 Q Why do you say that's the drop wire?

13 A Well, because that's what it is.

14 COMMISSIONER CLARK: Mr. Baeza, are you
15 saying is it's what goes from the road to the house?

16 WITNESS BAEZA: From the pedestal.

17 COMMISSIONER CLARK: -- as opposed from the
18 loop down the street.

19 WITNESS BAEZA: Right.

20 COMMISSIONER CLARK: So your position for
21 loops, distribution loops, your position is still you
22 use the 25 gauge.

23 WITNESS BAEZA: Yes, ma'am.

24 Q (By Ms. Seeger) Thank you for clarifying
25 that. I was wondering. What about the way that this

1 is written indicates to you that these pairs of cable
2 lower than 25 are actually the drop wire?

3 A Well, that's the drop wire; that's the last
4 piece going to the house or to the living unit.

5 Q So this actually goes to the NID when
6 there's a 12-pair, 4-pair, 8-pair cable that actually
7 goes to the NID on the outside of the house?

8 A To some kind of network interface device.
9 I'm assuming these are all homes, but yes, to a NID.

10 Q All right. Now, I want to ask you about
11 some other assumptions about BellSouth's network loop
12 sample, and one is the average or estimated length of
13 the drop wire which we were just talking about. And
14 it's true, is it not, that BellSouth assumes that each
15 drop wire in its redesigned loop sample ranges from
16 between 200 and 250 feet depending on whether it's a
17 business user or a residential user?

18 A The 200 to 250 really referred to buried and
19 aerial cable.

20 Q Okay. So that's what BellSouth's model
21 assumes as far as length of the drop wire?

22 A Yes.

23 Q And you're here to testify about of the
24 reasonableness of that assumption, correct?

25 A Yes.

1 Q Now, it's true, is it not, that you did not
2 personally participate in any survey from which those
3 numbers were derived?

4 A That's correct.

5 Q And have you seen any documentation that
6 reflects the procedures or the methodology of the
7 survey that was conducted by BellSouth to arrive at
8 those numbers?

9 A We have a document that I believe it was
10 labeled POD 51 that shows that.

11 Q Is that the document that I think was
12 presented at your deposition that included the actual
13 result --

14 A Yes.

15 Q -- of the survey.

16 A Yes.

17 Q My question was more have you seen any
18 documentation or notes concerning the methodology of
19 how BellSouth arrived at those ultimate numbers?

20 A I don't have a document that shows it. I
21 can describe the process.

22 Q And that to a certain extent is described in
23 your testimony. A couple more questions about that.

24 Did you speak directly with the individual
25 from the state of Florida who determined that the

1 average drop wire length for aerial and buried cable
2 in Florida was 200 to 250 feet?

3 A No, I did not speak directly. There were 14
4 individuals that provided input to that to a subject
5 matter expert.

6 Q Then did you speak directly to the subject
7 matter expert?

8 A No, I did not.

9 Q Do you know whether the individuals who
10 performed that drop wire survey weighted the various
11 drop lengths in the state of Florida. In other words,
12 in there were a 100 drop wires that were five feet
13 long, and 20 drop wires that were hundred feet long,
14 if those numbers, in deriving an average, were
15 weighted?

16 A No, I cannot tell you if they weighted them,
17 but I can also tell you it would be highly unusual --
18 in fact, I think it would be impossible in a residence
19 to get a five foot drop.

20 Q Oh, I understand. This is a hypothetical.

21 A Oh, okay.

22 Q Your answer is that you don't know whether
23 he weighted --

24 A That's correct.

25 Q -- the result -- okay.

1 And do you know how many residences or
2 businesses were reviewed to determine what the average
3 drop length was in Florida?

4 A There were 175 residences and 174
5 businesses, I believe.

6 Q And those are the number of residences and
7 businesses in the loop sample, correct?

8 A That's correct.

9 Q All right. Now, my question was for the
10 survey, the drop survey that was done by BellSouth to
11 arrive at its average numbers in its cost model, do
12 you know how many residences and businesses were
13 reviewed by the subject matter experts in coming up
14 with this average number of 200 to 250 feet?

15 A No, I do not.

16 Q Do you know whether in arriving at the
17 figure of 200 to 250 feet the individuals who
18 performed the survey included in that average
19 apartments that have zero drops in many instances?

20 A No, I don't think there were any apartments
21 in there. I don't know that for a fact, but I don't
22 think so.

23 Q So if apartments were include in the survey,
24 that might reduce the average drop length, correct?

25 A If you were to put zero drops, add it to the

1 numerator and the denominator, remain the same, then
2 yes, that would be true.

3 Q All right. Do you know --

4 A Of course, then you'd have riser cable. I
5 don't know how that was calculated.

6 Q You just don't know?

7 A No, I don't know.

8 Q Okay. All right. Now, there was some
9 questions as well posed to Ms. Caldwell about ESSX
10 loops not having been included in the loop sample
11 underlying BellSouth's cost model. How many ESSX
12 loops are there in BellSouth's region in Florida?

13 A I don't know if I have that number with me
14 or not. Let me just take a quick look. (Pause)
15 Nope, sorry.

16 Q Do you know what percentage of BellSouth's
17 loops are ESSX in Florida?

18 A No. That was a number I used to know but
19 unfortunately I do not remember.

20 Q And ESSX loops in general are shorter loops
21 than other loops, correct?

22 A In general, yes.

23 Q So that to the extent that such loops were
24 not included in BellSouth's cost model, the average
25 length of loops might be overstated, correct?

1 A If you assume that ESSX loops are
2 representative loops. Obviously, if you again add a
3 small number to the numerator and -- in that same
4 small number the denominator, your percentage will go
5 down. But again, ESSX loops are not typical loops.
6 They are mileage sensitive so they don't really want
7 to make them very long.

8 Q Ms. Caldwell was also asked about HDSL and
9 ADSL technology. And that's new technology in Florida
10 for BellSouth, correct?

11 A Well, it's -- it's not real, real new. I
12 mean it's been talked about in technical papers for
13 quite a while.

14 A ADSL. HDSL has been around for a little
15 bit.

16 Q And Ms. Caldwell indicated in her cross
17 examination that you might know the degree to which
18 ADSL technology will be employed in the future. To
19 what degree will ADSL technology be employed in the
20 future in Florida?

21 A Third degree. I'm sorry. (Laughter)
22 That's a very difficult question. Right now
23 we're running a trial of ADSL in the Birmingham area.
24 ADSL is viewed as one of several
25 technologies that will be able to provide high speed

1 access and predominantly high speed access to the
2 Internet.

3 Currently ADSL works only on a copper loop.
4 I think at some point in the future it will work on
5 digital loop carrier as well. But currently it is
6 limited to copper, and it's limited to 18 kilofeet
7 nonloaded pair. So it has a few technological
8 barriers associated with it at this point.

9 Q All right. Another question concerning drop
10 wires in Ms. Caldwell's examination. Commissioner
11 Clark asked Ms. Caldwell what the incremental cost
12 would be of assuming five drop wires per residence in
13 the model as opposed to two drop wires per residence.
14 And Ms. Caldwell referred or deferred that particular
15 question to you.

16 Do you know what the incremental cost would
17 be if BellSouth's cost model would assume two drop
18 wires per residence instead of five?

19 A I don't know offhand but we're talking
20 pennies per foot. There's very little difference
21 between a two pair and a five pair. You know, the
22 more pairs you have in that sheath, the cost per foot
23 does not go up linearly. It's very, very small.

24 Q Are you responding with respect to material
25 cost, or are you --

1 **A** Material cost, yes.

2 **Q** All right. So you're not responding with
3 respect to the cost model and how it would take that
4 material cost and possibly add a utilization rate and
5 loading factors, are you?

6 **A** No.

7 **Q** Okay.

8 **COMMISSIONER CLARK:** Mr. Baeza, I needed
9 something clarified with respect to that same point.
10 Would you look on Page 11 of your testimony?

11 **WITNESS BAEZA:** Yes.

12 **COMMISSIONER CLARK:** You indicate that
13 BellSouth's review and sizing of its new route would
14 be to place 1.5 pairs for each living unit. How does
15 that reconcile with five pairs in a drop?

16 **WITNESS BAEZA:** It doesn't match up with
17 five pairs in a drop. This particular paragraph was
18 citing an example for when we don't know anything
19 about the demographics of the area.

20 But to your question, a 5-pair drop is for
21 BellSouth an economic minimal size that allows us some
22 flexibility if a pair, or even a couple of pairs, get
23 damaged, or if a customer requests a separate
24 telephone number, separate line in the house.

25 **COMMISSIONER CLARK:** You're not answering my

1 question.

2 **WITNESS BAEZA:** I'm sorry.

3 **COMMISSIONER CLARK:** How can you have five
4 pairs in a drop if when your -- if when you serve a
5 subdivision you assumed 1.5 pairs per living unit?

6 **WITNESS BAEZA:** That's the distribution
7 going to the pedestal. Then from the pedestal to the
8 network interface device, we would install that 5-pair
9 drop wire.

10 **COMMISSIONER CLARK:** Well, let me just ask
11 this question: If every household used just two of
12 those pair, you would exceed the capability of -- it's
13 not the feeder -- it's the loop cable, wouldn't you?

14 **WITNESS BAEZA:** Well, no, because with
15 bridge tap we have the capability of wiring additional
16 drops to that house. By using a bridge tap design,
17 that allows us to average -- in this case, this was
18 averaging 1.5 pairs per living unit, allows us to
19 average 1.5 pairs per living unit. But we could
20 physically terminate more than 1.5 pairs per living
21 unit using bridge tap. And with a drop wire, of
22 course, we could move those pairs from the
23 distribution pedestal to the network interface device.

24 **COMMISSIONER CLARK:** Let's go back to my
25 question.

1 Suppose you have -- I guess you use seven
2 houses on the main street and six house on each side
3 of the street. And you're going to use the 25-pair
4 cable? If you assume each house needs two pair, is
5 that loop cable going to be sufficient?

6 **WITNESS BAEZA:** Okay. I think I understand
7 where your question is going.

8 If, let's say, we had a seven-house main
9 street and two side street that had six houses each.

10 **COMMISSIONER CLARK:** Three sides.

11 **WITNESS BAEZA:** Three. Excuse me. In that
12 case that's 25 pairs. We have to put in this case 50
13 pairs if you wanted two pairs per living unit.

14 **COMMISSIONER CLARK:** What I'm having trouble
15 understanding is why you would send in five pairs to a
16 house when the cable you're putting down the street
17 will not accommodate the five pairs to each house.

18 **WITNESS BAEZA:** That's correct. It will not
19 accommodate five pairs to each house, but it could
20 accommodate five pairs to some of the houses using the
21 bridge tap design.

22 See, what happens is -- let's do it with a
23 simple example so that I don't get balled up in the
24 math.

25 Let's say, for example, we have ten houses

1 and it's just along a line. And at the end of that
2 street we have two houses going along the cross
3 street. And let say we chose to use a 25-pair cable
4 just for illustration sake. And let's say we --

5 **COMMISSIONER CLARK:** Wait a minute. That's
6 what you do use. Right?

7 **WITNESS BAEZA:** Yes.

8 **COMMISSIONER CLARK:** Okay.

9 **WITNESS BAEZA:** I was saying in lieu of
10 maybe a 50-pair cable.

11 **COMMISSIONER CLARK:** All right.

12 **WITNESS BAEZA:** Let's say it's a 25-pair
13 cable. And, of course, a 25-pair cable would extend
14 to the end of that street. And again for illustration
15 sake, we'll say two pairs per living unit average.
16 Those ten houses would generate 20 pairs required.
17 Now, the houses on the side street, the two houses,
18 require an additional two pair each -- yeah, two pair
19 each. So you'd have -- we'd have 24 pairs. Excuse
20 me, I have to put another couple of houses to make it
21 interesting. Let me put two more houses on the side
22 street so I have a total of four.

23 **COMMISSIONER GARCIA:** Is that in addition to
24 the ten you began with?

25 **WITNESS BAEZA:** Yes. And I'm working this

1 as I go along, so I may have to modify it again. Let
2 me think. No, we'll leave it with the two houses and
3 I apologize for doing that.

4 So we have 24 pairs required. And we have
5 placed a 25-pair cable down the main street, and then
6 we have bridge tapped that cable so that another cable
7 runs across those two houses. And, you know, let's
8 forget that there's only two houses. Perhaps we're
9 assuming more houses will be built.

10 MS. WHITE: Excuse me. Would it help if we
11 brought in a easel and drew a picture?

12 COMMISSIONER CLARK: Here's my only problem.
13 I can accept the fact that it makes sense to send in
14 to a house five pair of wires. Because I think with
15 people having computers and more people doing business
16 at home it probably makes sense to do that. But I
17 have difficulty reconciling that with the notion that
18 the wire you send down the street would not
19 accommodate some greater percentage of those people
20 living on the street until you have at least two pair.
21 I don't understand why you would -- for one purpose
22 you use 1.5 per pairs per living unit, but, in fact,
23 you install five. Does that make sense?

24 COMMISSIONER GARCIA: I think what he was
25 addressing is possibilities and what you're addressing

1 is averages, right?

2 **WITNESS BAEZA:** Yes. You're talking -- and
3 this illustration is talking averages. But the
4 numbers that actually will physically terminate in a
5 home may be one, may then zero, may be five. So our
6 design accommodates that. The 5-pair drop wire is an
7 economical drop wire that encompasses all possible
8 cases -- all reasonable possible cases. We even have
9 homes in South Florida have ten pairs energized and
10 working, so that in that case the 5-pair wouldn't
11 help.

12 But for all practical purposes a 5-pair drop
13 is sufficient for all possible needs, and we don't
14 have to go back and dig up the yard or reenforce it.

15 So when you look at this illustration in my
16 testimony, this particular example is for a housing
17 subdivision that we have no knowledge of. We don't
18 know what the demographics are going to be. So, yes,
19 that 1.5 pairs per living unit would be sufficient.
20 Again, the first house might take one, the second
21 house might take four. So our design accommodates
22 that flexibility.

23 **COMMISSIONER CLARK:** Okay. I think I
24 understand. Thanks.

25 **WITNESS BAEZA:** Sure.

1 Q (By Ms. Seeger) I have another question
2 following up on that.

3 You've assumed in the cost model -- and
4 basically this underlies what you're charging AT&T
5 for -- that there are -- that every house could
6 possibly use five lines, and, therefore, have five
7 drop wires assumed for each residence, correct?

8 A Well, we assumed the possibility that up to
9 five lines could be used, yes.

10 Q What percentage of BellSouth's customers in
11 Florida currently use five lines?

12 A I don't know.

13 Q Is that a relatively high percentage of
14 BellSouth's customers or a relatively low percentage?

15 A Gosh, I just don't know. I know in my
16 personal experience I have three lines, three distinct
17 phone numbers. I know places in my neighborhood that
18 have more than five lines but I cannot give you an
19 opinion on the number.

20 Q You don't know.

21 A In BellSouth.

22 Q Okay. And if there are only two drop wires
23 attached to a NID at a customer's residence, and let's
24 say I'm that customer and I say "I would like three
25 lines in my home." Is there anything that BellSouth

1 can do to install that third line without putting
2 another drop in?

3 A Well, if it were -- it were a rush job and
4 you needed to put the third line in, we could use a
5 DAML.

6 Q That's what I thought. And a DAML is a
7 technology that's available to add up to two
8 additional lines per residence, correct?

9 A No. To add one additional line per line.

10 Q Okay. And a DAML is something that attaches
11 to the NID?

12 A A DAML is ino two places. DAML stands for
13 digital additional main line. And what that does is
14 derives an additional virtual pair, and it does it by
15 multiplexing the signal coming into the NID from the
16 living unit onto the one pair, one physical pair. And
17 then at the central office it's demultiplexed into two
18 pairs. So there's electronics on both ends.

19 Q And one of the benefits of DAML technology
20 is that it can be used as needed as opposed to
21 installing it up front to fulfill ultimate demand,
22 correct?

23 A Well, it can be used on a demand basis.
24 It's not cheap, and it requires a site visit, of
25 course.

1 Q Okay. All right. One last question or line
2 of questioning for you. In BellSouth's cost model it
3 assumes that BellSouth's feeder utilization rate, it's
4 not going to improve in the future and, therefore,
5 utilizes BellSouth's actual utilization rate of copper
6 feeder plant of about 65%, correct?

7 A Yeah, I think it's 65.8.

8 Q Okay. And in your testimony you talk about
9 the fact that that should be okay because that's a
10 better-than-average rate of some other RBOCs that you
11 identify in your testimony, correct?

12 A Yes. I believe it was Exhibit 1 of my
13 testimony that showed the average across.

14 Q And you're not stating that that's a
15 better-than-average feeder utilization rate of all
16 RBOCs, just the ones you list there in your testimony?

17 A Right.

18 Q Correct?

19 A Restate that. I didn't quite catch what you
20 said.

21 Q You're not stating in your testimony that
22 BellSouth's actual feeder utilization rate for cooper
23 in Florida of 65% is a better-than-average feeder
24 utilization rate for all RBOCS in the country, just
25 the ones --

1 A Not Florida per se. This is a BellSouth
2 number. But it's quite in line with the other RBOCs.
3 The only anomaly you see there is specific to leases.
4 We don't know where that number came from. We suspect
5 that's an error, but that's what was published.

6 Q You call a feeder utilization rate of 92%,
7 you call that an anomaly but actually that's what's
8 been published by that RBOC as their actual feeder
9 utilization?

10 A We'd have to challenge it if it came to
11 that. That's not a reasonable number.

12 Q And the question is are you advocating to
13 this Commission that better than average is okay for
14 Florida as opposed to what's actually potentially
15 available in a forward-looking network?

16 A No. All I was attempting to show was that
17 our numbers were in line with what the industry
18 practices are.

19 You know, ideally in an ideal world people
20 don't move and people don't change services, and we
21 could size all of our plant exactly as required, but
22 obviously that's not the case. So that utilization
23 factor is a very reasonable factor in the industry.

24 Q All right. And you're asking this
25 Commission to assume that it won't improve -- or that

1 A Sure. A digital loop carrier takes analog
2 distribution pairs and samples it, multiplexes it --
3 in other words, puts them on the same pipe, so to
4 speak, and transports it the central office where it
5 is demultiplexed and carried to the switch port.

6 It uses a technology called "sampling", as I
7 mentioned, and it's been shown theoretically and
8 imperically, that if you sample at twice the highest
9 frequency -- in this case the highest frequency is
10 said to be 4,000 hertz -- so if you sample it twice
11 the highest frequency, you can reproduce that signal
12 accurately on the other end. And empirical studies
13 have shown that voice samples, sampled at 8,000
14 samples per second, and quantized at 8 bits per sample
15 to be a reasonable reproduction of the voice
16 frequency.

17 Q And in layman's terms, what is a universal
18 digital loop carrier. When you refer to universal DLC
19 in your prefiled testimony, what are you talking
20 about?

21 A Okay. An universal digital loop carrier is
22 a digital loop carrier system that, once again,
23 multiplexes the analog signals at the customer end, at
24 the living end, into one pipe and carries it to the
25 central office, and then is demultiplexed before it is

1 terminated in the switch.

2 Q And for purposes of the cost study sponsored
3 by BellSouth in this proceeding, BellSouth has assumed
4 deployment of universal digital loop carrier
5 technology, correct?

6 A Yes.

7 Q But universal digital loop carrier
8 technology is not the least cost most efficient
9 digital loop carrier technology, is it?

10 A Well, you have to be careful with that,
11 because in order to provide an unbundled loop, the
12 only avenue we have available that is economic is the
13 universal DLC.

14 Q I understand. We'll get to that. But even
15 BellSouth itself, and your group in doing network
16 planning, does not intend to deploy universal digital
17 loop carrier technology in Florida. It intends to
18 deploy integrated digital loop technology; isn't that
19 correct?

20 A To the extent possible we would put in
21 integrated, although you can't always put it in
22 either. But, again, let me point out that the study
23 was not what we're doing per se, but what would
24 accommodate this unbundled loop.

25 Q I understand. But, in fact, in response to

1 a data request, and during discussion at your
2 deposition, you agreed that BellSouth, and your group
3 at BellSouth, intends to have deployed in Florida, by
4 the year 2005, 75% of its digital loop carriers as
5 integrated digital loop carriers; isn't that correct?

6 A Yes.

7 Q And integrate digital carriers utilize the
8 TR-303 protocol, correct?

9 A It could also use TR-008.

10 Q And those protocols are the most efficient
11 software and protocols for purposes of digital loop
12 carries, correct?

13 A I'm afraid I cannot debate the relative
14 efficiency but they are the standard.

15 Q The forward-looking state-of-the art; is
16 that correct?

17 A Again, I have to tell you, it's the
18 standard. If a new standard came out that was better,
19 you know, we would look to that.

20 Q Well, presumably protocols become the
21 standards because the industry determines they are
22 superior to previously deployed technology, correct?

23 A Ideally, yes. I could cite you examples
24 where that hasn't happened, but that would be for
25 another case.

1 Q But we don't have any reason to believe that
2 the TR-303 Protocol is an exception to that rule?

3 A No. We think it's an okay standard.

4 Q So the assumption BellSouth has made for
5 purposes of the cost study, which I appreciate is
6 being presented in the UNE, or unbundled network
7 element environment, BellSouth has assumed deployment
8 of the universal digital loop carrier technology; not
9 the integrated digital loop carrier technology,
10 correct?

11 A And that would be the TR-008 interface.

12 Q So you've assumed the universal digital loop
13 carrier technology, but you are assuming the TR-303
14 Protocol; is that correct?

15 A No, no, no. TR-008 for that study.

16 Q So not the industry standard, correct?

17 A No, that is an industry standard; make no
18 mistake --

19 Q But it's the industry standard not for the
20 integrated digital loop carrier, correct?

21 A No. You can still transport integrated on
22 TR-008.

23 Q But where BellSouth deploys integrated
24 digital loop carrier, it does not use the TR-008; it
25 uses TR-303, correct?

1 A Actually we have virtually no TR-303 as of
2 yet. We have one location, I think.

3 Q But you plan to deploy TR-303 integrated
4 digital loop --

5 A Yes.

6 Q -- integrated loop carrier in the future?

7 A In the future.

8 Q If we were talking in terms of the
9 forward-looking network in Florida, we would be
10 talking about integrated digital loop carrier
11 deploying TR-303, correct?

12 A Yeah. Let me qualify that a little bit. I
13 don't want to mislead you. TR-303 works with NGDLC;
14 next generation digital loop carrier. There are still
15 going to be cases where because demand is not as
16 great, an NGDLC cabinet can take up to 2,000 loops,
17 there will still be areas where we would use the
18 smaller DLC, which is the 96-loop carrier.

19 Q Now, where BellSouth provides to its
20 customers a loop and a port in a combined fashion, you
21 have made the judgment that the integrated digital
22 loop carrier is the best technology, going forward,
23 correct?

24 A Yes.

25 Q But for this study why BellSouth would

1 deploy a loop and a port in a UNE environment to the
2 customer of an ALEC, BellSouth has assumed the
3 universal digital loop carrier technology, not the
4 integrated digital loop carrier technology, correct?

5 A That's correct.

6 Q Thank you.

7 MR. ADELMAN: No further questions.

8 CROSS EXAMINATION

9 BY MR. SELF:

10 Q Mr. Baeza, I'm Floyd Self representing
11 WorldCom. I just have a couple of questions.

12 A How do you do.

13 Q In response to a question from Ms. Seeger, I
14 think I heard you say that one in five loops are
15 touched each year. Did I hear that correctly?

16 A Yes.

17 Q And is that a high percentage?

18 A Yes, I think so. 20% of your base is
19 touched.

20 Q And why is that occurring?

21 A Movement, disconnects, new connects.

22 Q Would it also include maintenance upgrades
23 and such?

24 A Yeah, I suppose so. There's a possibility
25 of that, too, although I don't -- I don't have a

1 breakdown of that number.

2 Q Okay. Would it include situations, for
3 example, where if loop conditioning was required for a
4 customer, when you went out to check on that group of
5 loops that contained that particular loop for that
6 customer, would you, in fact, perform maintenance on
7 all of the loops that are in that, perhaps that binder
8 group or that box or that area, however you define it.
9 Is that possible?

10 A Oh, let's see. If we were to go out and
11 do -- and repair defective pairs, we would not go out
12 to do one; we would do whatever was in that particular
13 cross box or maybe that pedestal even.

14 I really don't -- I cannot remember a case
15 where we group loop conditioning -- and I think what
16 you're talking about when you say loop conditioning is
17 doing things like removing loading coils, for example.

18 Q Yes.

19 A So I do not have any recollection that we
20 would go out and do that a bunch at a time. But I
21 can't tell you we don't either. I don't know.

22 Q Okay. That's fine. Thank you.

23 MR. SELF: I have no further questions.

24 CHAIRMAN JOHNSON: Staff.

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CROSS EXAMINATION

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BY MS. KEATING:

Q Good morning, Mr. Baeza. Just a couple of questions.

A Sure.

Q I'd like to refer you to BellSouth's response to Staff's Interrogatory No. 70, and that's now part of Exhibit 5.

A Yes.

Q I just want to clarify a statement in there. That response states in part "that cross boxes are generally sized using one-third in and two-third out ratios."

A Yes.

Q So, in other words, the ratio of distribution to feeder cable in a cross-box is approximately two to one; is that correct?

A Yes.

Q Why isn't there an one-to-one ratio of feeder pair to distribution pair?

A I'm sorry?

Q Why isn't there an one-to-one ratio?

A Okay. Well, once again I'll refer us back to the bridge tap example. We would have more distribution pair out there because we try and size

1 the distribution for the ultimate, and we use the
2 industry standard cross boxes that are designed for
3 one-third in and two-thirds out -- in fact, if you saw
4 it physically, the feeder cable would come up through
5 the center and the distribution punchdowns would fan
6 out on either side of it. So it's for the purposes of
7 flexibility of utilization.

8 Q So, in other words, it's due to BellSouth's
9 use of the bridge tap design. Is that what you're
10 saying?

11 A That's a primary driver, yes.

12 MS. KEATING: Thank you, Mr. Baeza. Madam
13 Chairman, that's all Staff has.

14 COMMISSIONER CLARK: I have one question.

15 Would you look at Page 23 of your testimony.
16 And on Lines 10 through 15 you talk about an average
17 of ten remotes have been quoted by the ALECs. And I
18 take it you're refuting that. But then you talk about
19 nodes as opposed to remotes.

20 WITNESS BAEZA: Yes.

21 COMMISSIONER CLARK: Can you explain that
22 more fully. Why is the ten remotes incorrect? Is
23 that what your point is?

24 WITNESS BAEZA: I'm sorry. "Node" and
25 "remote" in this case would be synonymous.

1 **COMMISSIONER CLARK:** So you're saying an
2 average of three remotes is appropriate as opposed to
3 ten remotes.

4 **WITNESS BAEZA:** Yeah. In this case, remote
5 locations. It's a minor point, but you could have
6 several DLC's at that one remote location.

7 **COMMISSIONER CLARK:** Let me just ask this
8 question. Is your purpose for making that point to
9 say the cost would be more or less under what the
10 ALECs are suggesting?

11 **WITNESS BAEZA:** The ALECs are suggesting the
12 cost should be lower because they are saying you can
13 put ten remotes on a ring; whereas, we feel our design
14 is appropriate with three.

15 **COMMISSIONER CLARK:** Okay.

16 **CHAIRMAN JOHNSON:** Redirect.

17 **MS. WHITE:** Yes. I just have a few
18 questions.

19 **REDIRECT EXAMINATION**

20 **BY MS. WHITE:**

21 **Q** Mr. Baeza, in reponse to some questions from
22 Commissioner Clark and Ms. Seeger you're talking about
23 a 25-pair cable, do you recall that?

24 **A** I'm sorry. I was coughing.

25 **Q** A 25-pair cable, do you recall a discussion

1 about a 25-pair cable --

2 A Yes.

3 Q -- with Ms. Seeger and Commissioner Clark.

4 Is that the only size of cable that

5 BellSouth uses for distribution?

6 A No. We would also use -- and I believe it's

7 in testimony -- we'd use a 50-pair, 100-pair,

8 200-pair.

9 Q So is 25 the smallest BellSouth uses?

10 A 25 is the smallest increment.

11 Q For distribution?

12 A Yes.

13 Q Mr. Adelman asked you, and I think

14 Ms. Seeger as well, asked you some questions

15 concerning ADSL and HDSL loops?

16 A Yes.

17 Q Those are some of the elements that we're

18 trying to find rates for this this proceeding. Do you

19 agree with that?

20 A Yes.

21 Q Are these types of loops, ADSL and HDSL --

22 are they provided on copper or fiber facilities?

23 A They are provided on copper facilities.

24 Q Is integrated digital loop carrier used with

25 copper facilities for copper loops?

1 **A** Yes, it could. I'm sorry. Let me make sure
2 I understood your question.

3 Are you asking if the distribution pairs are
4 copper or the feeder pairs are copper?

5 **Q** I'm saying if the loop is on copper
6 facilities, can integrated digital loop carrier be
7 used with those copper facilities?

8 **A** Yes.

9 **MS. WHITE:** I have nothing further. Thank
10 you. May Mr. Baeza be excused?

11 **COMMISSIONER DEASON:** Yes. Exhibits.

12 (Witness Baeza excused.)

13 **MS. WHITE:** Exhibit 19, I'd like that to be
14 moved into the record.

15 **COMMISSIONER DEASON:** Without objection,
16 show Exhibit 19 admitted.

17 **MS. KEATING:** And Staff moves Exhibit 20.

18 **COMMISSIONER DEASON:** Without objection show
19 Exhibit 20 is admitted.

20 (Exhibits 19 and 20 received in evidence.)

21 **COMMISSIONER DEASON:** You may call your next
22 witness.

23 **MS. WHITE:** BellSouth calls David Garfield.
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DAVID GARFIELD

was called as a witness on behalf of BellSouth
Telecommunications, Inc. and, having been duly sworn,
testified as follows:

DIRECT EXAMINATION

BY MR. ROSS:

Q Could you state your full name and business
address for the record?

A My name is David Garfield. My business
address is 6 Corporate Place in Piscataway, New
Jersey.

Q By whom are you employed, Mr. Garfield?

A I'm employed by Bell Communications
Research.

Q Mr. Garfield, did you cause to be filed in
this case prefiled direct testimony dated November 13,
1997, consisting of 23 pages?

A Yes, I did.

Q Do you have any corrections to that prefiled
testimony?

A No, I don't.

Q If I were to ask you the same questions
would your answers be the same today?

A Yes, they would.

MR. ROSS: Mr. Commissioner, we'd like to

1 have Mr. Garfield's November 13, 1997, direct
2 testimony introduced into the record as if read from
3 the stand.

4 **COMMISSIONER DEASON:** Without objection it
5 shall be so inserted.

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1 BELL COMMUNICATIONS RESEARCH, INC.

2 DIRECT TESTIMONY OF DAVID GARFIELD

3 BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

4 DOCKET NOS. 960833-TP, 960846-TP, 960757-TP, AND 971140-TP, 960916-TP

5 NOVEMBER 13, 1997

6

7

8 Q. PLEASE STATE YOUR NAME, ADDRESS AND OCCUPATION.

9

10 A. My name is David Garfield. My business address is 3 Corporate Place,
11 Piscataway, New Jersey. I am an engineer in the Business Consulting Services
12 Business Unit of Bell Communications Research, Inc. (hereinafter referred to as
13 "Bellcore"). My area of responsibility relates to the analysis of
14 telecommunications switching equipment for the purposes of determining cost of
15 service.

16

17 Although I am an employee of Bellcore, I am filing this testimony at the request
18 of BellSouth Telecommunications.

19

20 Q. PLEASE GIVE A BRIEF DESCRIPTION OF YOUR EDUCATIONAL
21 BACKGROUND AND WORK EXPERIENCE.

22

1 A. I attended the University of Delaware, graduating with a Bachelor's of Science
2 Degree in Mathematics in 1976 and Rutgers University, graduating with a Master
3 of Science Degree in Applied Mathematics in 1978. I have attended numerous
4 Bellcore and switch vendor courses relating to switching system provisioning and
5 engineering. I have also attended courses related to service cost studies and
6 economic principles.

7
8 My initial employment was with Bell Laboratories in 1978 in Holmdel, New
9 Jersey, in the Local Switching Systems Engineering Department. My initial
10 responsibilities included area planning for remote switching and methodology
11 development for switch replacement studies. I came to Bellcore upon divestiture
12 in 1984, continuing work on switch replacement studies with digital switching
13 systems until 1986, where I briefly worked on DMS-100F model development.
14 Upon conclusion of this work effort, I became involved in CLASS (custom local
15 area signaling services) requirements through 1989, when I transferred to the
16 Business Decision Support organization to work on SCIS. My current
17 responsibilities include model office development for the 5ESS and Fetex-150
18 switching systems and training.

19
20 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?
21

1 A. The purpose of my testimony is to provide an overview of Bellcore's Switching
2 Cost Information System (hereinafter referred to as "SCIS"). This overview will
3 include a description of what SCIS does, who uses it and how it is developed..
4

5 Q. WHAT IS SCIS?
6

7 A. SCIS is a PC-based software application that determines the central office
8 switching investment required to provide telephone subscribers with services and
9 features. It is competitively neutral in that it apportions costs to all users of the
10 switch on the same basis for BellSouth users and Competitive Local Exchange
11 Companies (CLECs). SCIS has been continuously updated to meet the
12 changing needs of its users for over 18 years.
13

14 Q. IS SCIS APPLICABLE ONLY FOR RETAIL BUSINESS PRICING?
15

16 A. No. The versatility and flexibility of SCIS is demonstrated by the fact that SCIS
17 has been approved for use in applications other than retail business pricing. In
18 particular, the use of SCIS has been accepted in two Unbundled Network
19 Element proceedings within Bell Atlantic. The proceedings consist of docket
20 number 96-234, order dated July 9, 1997 in the state of Delaware and docket
21 number A-310203-F0002, order dated August 8, 1997 in the state of
22 Pennsylvania.

1
2 In the state of Connecticut, SCIS has been accepted in an Unbundled Network
3 Element proceeding, docket number 95-06-17, Part A (order dated December
4 20, 1995), Part B (order dated June 5, 1996), and Part C (order dated March 25,
5 1997). Modifications of Unbundled Network Element rates are pending in docket
6 number 97-04-10.

7
8 Finally, on behalf of the FCC, Arthur Anderson made an extensive review of
9 SCIS in 1992 in the context of ONA filings made by several RBOCs. Based on
10 this review, SCIS was "found reasonable" by the FCC for use in determining
11 switching costs.¹

12
13 Q. HOW DOES SCIS DETERMINE SWITCHING INVESTMENT?
14
15 A. Engineering and pricing information obtained from switch manufacturers is
16 combined with a network provider's configuration and demand characteristics to
17 attribute the cost of deploying switching equipment to basic switching functions
18 and features based on the application of generally accepted economic theory.

19
20 Q. WHO USES SCIS?
21

¹ In the Matter of Open Network Architecture Tariffs of BOCs, CC Docket 92-91. Order by the Commission, released December 15, 1993, at para. 79 - 83 (FCC 93-532).

1 A. SCIS is used by all of the Regional Bell Operating Companies except for U.S.
2 West, many independent U.S. Local Exchange Carriers, and several telephone
3 companies outside of the United States.

4

5 Q. WHY WAS SCIS DEVELOPED?

6

7 A. The provisioning of telecommunications services became increasingly complex
8 in the early 1970's. The complexity arose from the proliferation of new
9 technological developments which, in turn, permit the introduction of
10 sophisticated new features and services. Developments in switching technology
11 greatly contributed to this phenomenon. Concurrently, it became increasingly
12 important to obtain a high degree of accuracy in the costing of these
13 sophisticated capabilities for both business decision and tariff purposes.

14

15 Prior to the 1970's, switching was mostly mechanical in nature and was used,
16 primarily, to set up POTS (Plain Old Telephone Service) telephone calls.

17 However, the introduction of computerized electronic switching systems raised
18 questions regarding the costing and pricing for the new vertical services these
19 switches could provide. Indeed, since the new services shared the same
20 switching resources within the switch that provided POTS, it became increasingly
21 important for the telephone companies to have a process whereby they could
22 address the shared equipment phenomenon while accurately identifying the
23 individual cost of these new services. Accurate determination of service costs

1 was essential to the development of just and reasonable rates based on the
2 principle of cost causation and for making informed business decisions.

3
4 In analyzing the intricacies of how such a problem could be solved, it became
5 evident that the solution would be both time consuming and costly. Indeed, the
6 new switches were among the most sophisticated computers ever built with a
7 multiplicity of components that were shared by thousands of users and hundreds
8 of services. Nonetheless, the cost analysis solution evolved as a mathematical
9 model and is called the Switching Cost Information System ("SCIS").

10
11 The underlying mandate of the model was the need to determine the switching
12 costs required to provide *specific* central office feature functionality. For that
13 reason, the model had to be capable of assigning the investment in shared
14 switching resources to various basic switching functions as well as individual
15 features.

16
17 The model not only had to conform to the requirements of that period, but it had
18 to evolve to meet the evolving, and diverse, needs of the user community. SCIS
19 has successfully done so for over 18 years.

20
21 Q. WHAT ARE THE KEY PRINCIPLES THAT GOVERNED THE DEVELOPMENT
22 AND EVOLUTION OF SCIS?

1
2 A. The first principle is that SCIS is objective. That is, a “bottom-up” approach is
3 incorporated into the development of SCIS. This means that, in the development
4 of the models, the individual components of a switch are examined in order to
5 determine what switching functionality causes them to be provisioned. Total
6 switch investment is built up by aggregating individual components based on the
7 demand for the various basic switching functions.

8
9 A top-down approach -- where the total switch investment is considered first and
10 an attempt is made to allocate investment to the various functions -- does not
11 effectively address the shared equipment phenomenon and lacks the certainty of
12 attribution of the basis of causation that is possible with the rigorous analysis
13 needed to implement the bottom-up approach. The bottom-up methodology
14 provides the necessary level of detail to distinguish the use of the switch
15 resources by functionality. Such detail is considered a prerequisite if shared
16 equipment is to be properly assigned to individual services. Thus, one of the
17 underlying principles of SCIS is the development of a set of basic unit resource
18 investments that describe switch provisioning so that the cost of *any* feature,
19 service or switching element can be easily built up from this set.

20
21 The second principle is that the system be forward-looking. The model is based
22 on the latest technology, along with up-to-date vendor pricing and engineering
23 information.

1
2 The third principle is that the system has a long term perspective. This
3 perspective has the desired effect of reducing cost fluctuations resulting from
4 "lumpy" investments and the sequencing of customers and services. For
5 example, the equipment used to connect an individual subscriber with the rest of
6 a switch is typically provisioned in modules that serve many subscribers. The
7 cost of such a module is not attributed entirely to the one customer who happens
8 along just at the point when existing equipment is fully utilized (with subsequent
9 customers having zero cost until the next module is needed). Instead, a pro-rata
10 share of the module is attributable to each new subscriber. This means that
11 services or customers do not artificially benefit, nor are artificially disadvantaged,
12 from the nature of switching equipment and the order of appearance of
13 customers and services.

14
15 The fourth principle is that cost results are based on usage and are competitively
16 neutral. That is, the system expresses the cost of shared equipment as a
17 function of the capacity consumed to perform service specific activities without
18 regard to who is the user of switch capacity. From an objective standpoint,
19 implementation of this principle achieves, among other things, cost causative
20 results and fairness.

21
22 Q. PLEASE ELABORATE ON THE TREATMENT OF GETTING STARTED
23 INVESTMENT IN SCIS.

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A. SCIS determines a getting started investment for each switching system. This investment models the investment for processor related equipment and other equipment independent of switch size and traffic. The limiting resource of the processor complex is realtime (i. e., milliseconds). SCIS apportions the getting started investment based on realtime. Bellcore obtains precise realtime consumption data from the switch vendors for different types of calls and features and incorporates this information into SCIS. As a result, SCIS provides a mechanism to apportion the getting started investment to individual calls and features based on the realtime actually consumed by such calls and features.

This methodology is supported by the reality of constantly-evolving switch capacity. Switch vendors, such as Lucent and Nortel, have constantly evolved the processor complex of their respective digital switching systems in order to stay one step ahead of realtime demand. This evolution has enabled Lucent and Nortel to achieve advertised processor capacities and avoid processor exhaust situations or near exhaust scenarios that result in service degradation. In today's environment of sophisticated subscribers and services, it is improper and unrealistic to assume that even today's processors would not exhaust throughout their life if not upgraded or retrofitted in the future. Assignment of getting started investment to traffic sensitive switching elements properly accommodates such processor growth and evolution, in a manner that tracks its cause: usage.

1
2 Consider Nortel's DMS-100F switching system as an illustration of such switch
3 processor evolution. If a new DMS-100 was purchased in the early 1980's,
4 Nortel supplied their current state of the art processor called NT40. If a new
5 DMS-100 is purchased today, Nortel supplies one of their current state of the art
6 processors, SuperNode 60 or SuperNode 70. The original NT40 processor is no
7 longer available for purchase and can not handle today's realtime demand from
8 subscribers. The SuperNode 60 processor is approximately 6.6 times faster
9 than the original NT40 processor. The SuperNode 70 processor is approximately
10 11 times faster than the original NT40 processor. Nortel is already developing
11 their processor complex beyond SuperNode 70, providing further evidence that
12 even today's processors are not expected to handle the realtime load throughout
13 the life of the switching system.

14
15 As such, BellSouth, using SCIS, apportions the getting started investment on a
16 basis that tracks cost causation, namely, realtime consumption of different call
17 types (line-to-line, line-to-trunk, etc.) and features. There is a strong linkage
18 between processor realtime as a cost recovery mechanism and the getting
19 started investment. This linkage is supported by the precise realtime
20 consumption data obtained by Bellcore from the switch vendors for different
21 types of calls and features. The getting started investment is apportioned to
22 each call type and feature based on actual realtime consumption.

1

2 Q. WHAT SWITCHING SYSTEMS ARE MODELED IN SCIS?

3

4 A. BellSouth uses the SCIS models for Lucent Technologies' 5ESS and Northern
5 Telecom's DMS-100F switches.

6

7 Note, however that there are a total of seven switching systems, referred to as
8 technologies, currently modeled in the U.S. version of SCIS: Ericsson Network
9 Systems' AXE-10; Lucent Technologies' 1AESS, 4ESS, and 5ESS; Northern
10 Telecom's DMS-100F and DMS-10; and Siemens Stromberg-Carlson's EWSD.
11 An additional three technologies - Alcatel's System 12; Fujitsu's FETEX-150 and
12 NEC's NEAX-61E -- are modeled, along with international versions of some of
13 the above systems, for licensees outside of the U.S. The inclusion of these
14 various switching systems in SCIS, using a consistent application of the key
15 principles that comprise the SCIS approach to modeling, demonstrates both the
16 flexibility and soundness of the methodologies employed. In addition, the
17 analysis of these various technologies has provided Bellcore with a
18 comprehensive knowledge of switching equipment and its provisioning.

19

20 Q. HOW IS SCIS IMPLEMENTED?

21

22 A. SCIS is implemented as two distinct, but interrelated, Windows™ applications;
23 SCIS Model Office (SCIS/MO) and SCIS Intelligent Network (SCIS/IN).

1 SCIS/MO determines unit resource investment, and corresponding total
2 investment, for the various basic switching functions. SCIS/IN utilizes the results
3 from SCIS/MO, combining them with the feature - or service-specific demand for
4 basic switching resources (determined by vendor specific switching requirements
5 and customer usage characteristics) to calculate the investment required to
6 provide a given feature or service.

7
8 Q. PLEASE ELABORATE ON SCIS/MO.

9
10 A. SCIS/MO analyzes all switching components for purposes of identifying
11 equipment costs associated with the fundamental switching functions and
12 resources. The investment needed to provide a basic switching function is
13 calculated so that the investment behind any feature or service can be
14 determined by the appropriate aggregation of these SCIS/MO results. Examples
15 of SCIS/MO results, referred to as "basic unit resource investments" are the
16 investment of a central processor millisecond; the non-usage sensitive
17 investment per line termination; the investment per originating + terminating
18 (O+T) CCS; the investment per outgoing + incoming (O+I) CCS; and the
19 investment per a call set-up function (e.g. a terminating call function that reflects
20 the hardware -- provisioned as a function of terminating calls -- needed to
21 provide ringing). The basic unit resource investments that apply to each
22 switching system depend on the switching system architecture and vendor
23 specified engineering rules.

1
2 The SCIS/MO analysis may involve a single office, or multiple offices. If multiple
3 offices are considered in a user's study, the model analyzes each office
4 individually and provides a weighted average output for each basic unit resource
5 investment by switching system. For all offices included in a study that serve as
6 hosts for remote switching entities, investments of the associated remotes are
7 also determined and weighted in with those of the host.

8
9 This weighting process is the basis for the Model Office. In other words, the
10 results of a given SCIS/MO study reflect a "model" office that is representative of
11 entities considered. This approach produces a cost of a particular investment
12 driver (ultimately, a portion of a feature, service or network element) which is the
13 same regardless of the specific switch entity serving the customer, or the
14 particular technology used to provide the switching functionality (e.g. analog vs.
15 integrated digital loop carrier line termination).

16
17 Q. PLEASE ELABORATE ON SCIS/IN.

18
19 A. As mentioned earlier, SCIS/IN aggregates basic unit resource investments
20 quantified by SCIS/MO based on customer usage characteristics and the vendor
21 specified resources required (e.g., processor real time, CCS, signaling packets)
22 to implement a specific feature in the switch. The output of each feature costing
23 algorithm may be expressed on a per call basis, per line, per customer, per

1 group, or other basis, depending on the structures of the tariffs, nature of the
2 feature or service, or purposes of the study. Each feature cost output exhibit
3 includes results categorized by basic unit resource investment. SCIS/IN
4 provides investments for individual features by switch technology. Optionally,
5 these results can be combined together to produce a weighted average result
6 across all considered switching systems.

7
8 Q. HOW IS SCIS/MO DEVELOPED?

9
10 A. The output reports generated by SCIS contain a complex body of analytical
11 work. The primary effort in that work is the establishment of the switching
12 system-specific model used in SCIS/MO. The SCIS/MO model developer
13 creates and maintains this model based on the principles described earlier and a
14 standard methodology that is not dependent on the switch technology. Here is a
15 step-by-step description of the SCIS/MO model development process:

16
17 STEP 1. Detailed methods-of-operation, engineering rules and other technical
18 documents, along with component list prices, are obtained from the switch
19 vendor. This information is studied to determine the overall switch architecture
20 and the functional characteristics of each of the major sub-systems. At the
21 model developer's discretion, sample offices are run through the vendor's pricing
22 and provisioning tool to clarify engineering rules and gain further general
23 knowledge.

1
2 STEP 2. An understanding of the switch architecture and the functionality of the
3 major sub-systems enables the model developer to establish various basic unit
4 resource investments that express the switch equipment costs by function. The
5 cost drivers for these categories are also identified. For example, consider the
6 capability to terminate a line. This functionality is represented by the Line
7 Termination Investment category, into which all equipment used to terminate a
8 line is grouped. The cost drivers of this category include the quantity of lines in
9 the office and the Busy Hour CCS per line. Another example is the Getting
10 Started Investment. This category includes the central processor along with
11 other equipment, that, while not associated with any particular basic switching
12 function, has central processor real time as an investment driver, since (the
13 exhaust of) the real time resource drives the purchase of a new switch.

14
15 STEP 3. Algorithms and formulas are generated that will be translated into the
16 software code that combines various modeling elements -- investment category
17 values, equipment capacities and demand parameters -- based on the office
18 configuration inputs.

19
20 STEP 4. Switch components are analyzed to determine functionality and are
21 "assigned" to the appropriate investment categories. This assignment may be
22 made in multiple or fractional quantities based on the engineering rules. This

1 bottom-up analysis is referred to as the "partitioning process." The results of the
2 partitioning process are the Investment Table entries.

3
4 STEP 5. Sample central offices representing a wide range of traffic volumes and
5 line and trunk quantities are selected for purposes of verification of the resulting
6 model. Each office in this verification set is run through the vendor's pricing and
7 provisioning tool. The total investment reported by the vendor tool is compared
8 against the Total Investment result generated by SCIS/MO. If the difference
9 between the vendor's total and the SCIS total is less than or equal to 2%, over
10 the entire set, then the model is released. If the comparison diverges greater
11 than 2%, analysis is done to determine where the greatest material differences
12 are so that appropriate refinements can be made.

13
14 Q. WHAT IS THE VALUE OF THE SCIS/MO VERIFICATION PROCESS?

15
16 A. The SCIS/MO verification process demonstrates that SCIS/MO correctly models
17 switch engineering rules. Total switch investment is dependent upon quantities
18 of switch equipment which, in turn, are determined by switch engineering rules.
19 The real value of the verification process is its demonstration that SCIS/MO
20 accurately models the switch engineering rules that determine switch component
21 quantities and resulting total investment.

1 Q. HOW IS SCIS/IN DEVELOPED?

2

3 A. The steps required to develop feature costing algorithms are outlined below.

4 Note that the model developer need not perform the following steps in the exact
5 sequence depicted. However, each step must be performed.

6

7 STEP 1. The model developer is informed of new features/services from the
8 vendor and/or users request that an existing feature or service not previously
9 considered by SCIS/IN be modeled.

10

11 STEP 2. The operation of the feature is researched from both the subscriber's
12 viewpoint and the switch resource perspective.

13

14 STEP 3. The types of switch resources being utilized by the feature are
15 identified, including any special hardware required only for vertical services, and
16 the feature activities that consume switch resources are determined (e.g.
17 activation, holding time, etc.). Equations are developed that replicate the use of
18 any special hardware in terms of their respective investment driver (e.g. CCS for
19 a 3-port conference circuit).

20

21 STEP 4. Feature specific switch resources measurements for processor(s) real
22 time (milliseconds), CCS, packet utilization and other basic switching

1 functionality are obtained from the vendor. A determination is also made as to
2 whether or not the switch measures feature usage (e.g. number of activations).

3
4 STEP 5. Possible tariff structures are identified. In order to determine the costs
5 of the feature, it is necessary to identify if any part of the feature is already
6 recovered by existing tariff structures (e.g., the forwarded leg of a call is
7 addressed by the normal POTS tariffs on the forwarding station). These tariffs
8 could be local, toll or long-distance. In the above example of call forwarding, if a
9 station forwards its calls from Washington to California, the access and long-
10 distance tariffs would charge for that forwarded leg of the call.

11
12 STEP 6. Create the actual feature costing algorithms using SCIS/MO basic unit
13 resource investments, user-entered inputs and vendor supplied switch resource
14 measurements (and, if applicable, feature-only hardware). Additional algorithms
15 may be needed to generate the feature investment output in the same format as
16 the possible tariff structures (e.g., Multiline Hunt Groups may be tarified per line
17 or per group).

18
19 STEP 7. For intelligent network services, it is necessary to identify the SS7
20 signaling resources utilized. Once identified, separate algorithms are
21 constructed to define these investments using methodology similar to the above.

22

1 Q. HOW DOES THE SCIS/MO VERIFICATION PROCESS SUPPORT THE
2 VALIDITY OF SCIS/IN?

3

4 A. There are three components to total switch investment related to features.

5

6 1. Basic switching components,

7 2. Feature related hardware, and

8 3. Right-to-use (RTU) fees.

9

10 The SCIS/MO verification process supports the validity of SCIS/IN regarding
11 basic switching components and feature related hardware.

12

13 Some features require a path through the switch to access an announcement
14 system or some other special hardware. The engineering rules related to such a
15 path are identical to those modeled in SCIS/MO. That is, engineering rules
16 related to a switching system path are the same for POTS traffic and feature
17 traffic. Both types of traffic require a path through specific switch components
18 (such as a line interface) and quantities for such components are determined by
19 a single set of engineering rules. Therefore, SCIS/MO basic unit resource
20 investments, such as investment per line CCS, are used to model such
21 investment in the feature algorithms of SCIS/IN. The SCIS/MO verification
22 process demonstrates the accuracy of how these engineering rules are modeled.

1 The resulting basic unit resource investments determined by SCIS/MO are valid
2 for both POTS demand in SCIS/MO and feature demand in SCIS/IN.

3
4 Capacity cost techniques similar to those used in SCIS/MO are used to model
5 feature related hardware, such as special announcements or conference circuits,
6 in SCIS/IN. The SCIS/MO verification process demonstrates the validity of these
7 modeling techniques in SCIS/MO. As such, these proven techniques are used in
8 SCIS/IN as well.

9
10 RTU fees for features are beyond the scope of SCIS/MO and SCIS/IN and are
11 modeled outside of both applications.

12

13

14 Q. WHAT TYPE OF INFORMATION IS NEEDED FROM THE SWITCH
15 MANUFACTURERS TO DEVELOP SCIS?

16

17 A. In order for Bellcore to perform the analyses needed to develop SCIS, certain
18 technical information must be obtained from the vendor of each switching system
19 modeled. This information includes:

20 - long range product development plans and delivery schedules;

21 - detailed technical descriptions of the switch architecture;

22 - current hardware engineering rules and engineered capacities;

- 1 - current unit level prices of individual switching components;
- 2 - universal discounting schemes;
- 3 - automated engineering and pricing tools, for purposes of model verification;
- 4 - detailed service descriptions, including how the switch implements the service;
- 5 - basic switching resource consumption on a per feature or function basis, as
- 6 needed; and
- 7 - documentation that describes where feature traffic measurements may be
- 8 obtained (e.g. usage, activations, or deactivations, etc.).

9

10 Some of this information -- in addition to being needed for analysis purposes -- is

11 stored directly in the SCIS databases (e.g., real times, memory, signaling

12 packets for ISDN services, equipment capacities, etc.) for use by the model

13 algorithms.

14

15 Q. WHAT INFORMATION MUST THE USER PROVIDE?

16

17 A. User inputs can be organized into three categories as follows:

18

19 The first category contains system-level or "Setup" parameters. System-level

20 parameters include both system configuration settings (e.g. default report

21 formats) and values to be used across all offices or features (e.g. discounts).

22 Note that SCIS/MO and SCIS/IN have separate system-level input sets.

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The second category includes the office parameters. These inputs provide hardware configuration information and subscriber demand characteristics on a switch-by-switch basis (hosts, standalones and remotes). Examples of office parameters are line and trunk quantities, line concentration ratios (if known), traffic demand and processor utilization data (hosts only). Office-level inputs are entered into SCIS/MO.

The third category of input is associated with feature and service costing. Each vertical service requires incorporation of a unique data set that is relevant to the feature. Typical SCIS/IN inputs include Busy Hour attempts and holding times. Separate algorithms for each feature combine these inputs with SCIS/MO calculated resource costs to develop feature specific costs.

Q. WHY IS SCIS CONSIDERED PROPRIETARY?

A. SCIS is a trade secret of Bellcore and constitutes valuable intellectual property. It is marketed worldwide and provides commercial value to Bellcore. Public disclosure of such information could adversely impact SCIS's position in the competitive marketplace. SCIS contains the confidential information of various switch vendors, provided to Bellcore pursuant to nondisclosure agreements which preclude Bellcore (and its clients) from disclosing the information to any party absent written consent of the switch vendor. Public disclosure of the switch

1 vendor's competitively sensitive information could adversely impact their position
2 in the switch manufacturing marketplace.

3

4 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

5

6 A. Yes.

1 BY MR. ROSS:

2 Q Mr. Garfield, do you have a summary of your
3 testimony?

4 A Yes, I do.

5 Q Can you give it at this time, please?

6 A Good morning, Commissioners.

7 In developing its switching costs, BellSouth
8 has used Bellcore switching cost information system,
9 also known as SCIS or "SCIS."

10 My testimony provides an overview of SCIS.
11 This includes a description of what SCIS does, who
12 uses it and how it is developed.

13 The switching system is a network element
14 shared by thousands, or possibly ten of thousands of
15 subscribers, and hundreds of features. SCIS solves
16 the complex problem of assigning costs of the shared
17 network element across all subscribers and features.
18 SCIS has been used by most regional Bell operating
19 companies and other telecommunications companies for
20 over 18 years to solve this problem.

21 My testimony demonstrates that SCIS is the
22 most appropriate tool for computing switching costs in
23 BellSouth's unbundled network element study. I
24 believe this to be the case due to four key principles
25 that govern the development and evolution of SCIS.

1 These principles are one, SCIS's objective;
2 two, SCIS is forward looking; three, SCIS takes a
3 long-term perspective, and four, SCIS results are
4 based on usage and are competitively neutral. Let me
5 further explain these principles.

6 SCIS is objective because it is developed
7 using a bottom-up approach. Bellcore obtains detailed
8 engineering information and switch component prices
9 from switch vendors, and incorporates this information
10 into the model development process. The outcome is
11 objective and physically significant results. We can
12 say with certainty where each component of switch is
13 is modeled in SCIS output and in what quantities.

14 SCIS is forward-looking. Forward-looking
15 costs are based on the latest and greatest generation
16 of switching equipment available for purchase today.
17 Historical costs, which are not used in SCIS, are
18 typically more expensive than forward-looking costs
19 due to technological improvements that occur over
20 time.

21 As a result, SCIS models what it would cost
22 today to purchase a switching system based on the most
23 cost-efficient switching technology available. SCIS
24 takes a long-term perspective.

25 Line and trunk interfaces of a digital

1 switch are purchased in modules with relatively small
2 capacities. Once a model is purchased, it's filled up
3 before the next one is purchased.

4 This results in what it called lumpy
5 investment. SCIS smooths out the lumps by attributing
6 a pro rata share of the module to each user. SCIS
7 results are based on usage and are competitively
8 neutral. The cost of shared equipment is based on
9 capacity, allowing both BellSouth users and
10 competitive local exchange companies to pay for their
11 fair share of using such shared equipment.

12 Based on these key principles, SCIS is
13 objective, SCIS is forward-looking, SCIS takes a long-
14 term perspective, and SCIS results are based on usage;
15 I believe SCIS is the most appropriate tool for
16 computing switching costs in BellSouth's unbundled
17 network element study. Thank you.

18 **MR. ROSS:** Madam Chairman, the witness is
19 available for cross.

20 **MR. SELF:** I've no questions.

21 **MR. LAMOUREUX:** Good morning, Commissioners.

22 I'm Jim Lamoureux, again for AT&T.
23
24
25

CROSS EXAMINATION

1
2 **BY MR. LAMOUREUX:**

3 **Q** Good morning, Mr. Garfield. I'm Jim
4 Lamoureux. I think this is one hearing where we
5 haven't met before and I represent AT&T.

6 **A** Good morning.

7 **Q** SCIS is a proprietary model; is that
8 correct?

9 **A** That's correct.

10 **Q** So SCIS is not readily available to the
11 public for public scrutiny, is it?

12 **A** That's correct. However, SCIS has been made
13 available to all interested parties who are willing to
14 sign to the appropriate nondisclosure agreement and
15 that has been done.

16 **Q** And the only way someone could get access to
17 SCIS other than a Bell operating company who purchases
18 SCIS is through a proceeding and by signing a
19 proprietary agreement in such a proceeding?

20 **A** To my knowledge that's true.

21 **Q** At your direct testimony on Page 3 you say
22 that SCIS determines the central office switching
23 investment required to provide telephone subscribers
24 with services and features; is that correct?

25 **A** Could you tell me what lines you're on?

1 Q Page 3 of your testimony, Lines 7 through 9.

2 A That's correct.

3 Q Okay. And is that consistent with my
4 understanding that SCIS was developed in order to cost
5 retail services, not the provision of unbundled
6 network elements?

7 A SCIS was developed to develop -- SCIS was
8 developed to determine costs and it doesn't matter who
9 the user of the costs are, whether they are for --
10 whether they are there to develop retail business
11 services or unbundled network elements, it's
12 independent. Costs are costs.

13 Q When was SCIS developed?

14 A Could you repeat the question?

15 Q When was SCIS developed?

16 A It was before my time. It was originally
17 developed as actually a main frame tool back in the
18 '70s and evolved to a PC-based tool some time in the
19 '80s.

20 Q It was developed long before the concept of
21 an unbundled network element was developed. Would you
22 agree with that?

23 A I would agree with that.

24 Q And its original purpose and development was
25 to support costs associated with tariff filings for

1 services in those tariff filings; is that correct?

2 A That was the application in mind. But
3 again, the primary purpose is to develop costs and
4 they can be used for many purposes.

5 Q Okay. Bellcore updates the SCIS model
6 several times each year to reflect switch
7 manufacturers' hardware and software upgrades; is that
8 correct?

9 A That's correct.

10 Q And is that consistent with your testimony
11 at Page 7, that the model is based on the latest
12 technology along with up-to-date vendor pricing and
13 engineering information?

14 A That's correct.

15 Q Okay. And the version of SCIS that is used
16 can make a significant difference in SCIS outputs,
17 and, therefore, upon rates; isn't that correct?

18 A Sometimes that can happen, sometimes it
19 can't. Sometimes there's very little change from one
20 release to another for one switching system but there
21 is for another. I don't recall the details for every
22 single release.

23 In the case of BellSouth, the only impact I
24 would see is possibly changing the value of the
25 discounts to reflect a different price level of the

1 most recent version versus the one that was run --
2 that was used in a prior release.

3 Q You cite the FCC order on open network
4 architecture that was released December 15, 1993, in
5 support of the SCIS model; isn't that correct?

6 A That's correct.

7 Q Isn't it true that in that order the FCC
8 said that outdated SCIS versions and traffic data can
9 significantly affect SCIS investment studies?

10 A I'm unfamiliar with that part of it in the
11 order.

12 MR. LAMOUREUX: May I approach the witness?
13 (Hands document to witness.)

14 Q (By Mr. Lamoureux) Mr. Garfield, I've
15 handed you my copy of that Order. I think it's Page
16 448 and I'd ask you again if it's true that the FCC
17 found that outdated versions of SCIS can significantly
18 impact the outputs from SCIS.

19 A That's what it says here.

20 I would like to point out that BellSouth ran
21 their studies at the time they did their studies with
22 the most recent version of SCIS that was available at
23 the time.

24 Q Okay. And if you'll flip over to the next
25 page of that order for me, would you agree with me

1 that the FCC also found that it's important to use the
2 most current version of SCIS available? I'll give you
3 a second to look at that page if you need it. (Pause)

4 A That's what they say in there. Again,
5 BellSouth ran the most recent version of SCIS
6 available at the time they did their study. How the
7 study update process works relevant to these
8 proceedings, I don't know.

9 Q What's the current version of SCIS?

10 A We just released version 2.5.

11 Q What's the version of SCIS that BellSouth
12 used for this cost study in Florida?

13 A They ran version 2.3.

14 Q SCIS can be run in either two modes as I
15 understand it: a marginal cost mode and an average
16 cost mode; is that correct?

17 A That's correct.

18 Q And the choice of average or marginal cost
19 modes has a substantial effect on the unit investment
20 developed by SCIS; is that correct?

21 A It may or may not. SCIS produces a number
22 of output results, such as investment per
23 milliseconds, minimum investment per line, investment
24 per minute of use. Average and marginal results are
25 the same for some of those cost categories and they

1 are different for others.

2 Q Could you turn to Page 451 of that FCC Order
3 that I gave you there, Mr. Garfield? I'll give you as
4 much time as you need to look it over, but would you
5 agree with me that the FCC found that the choice of
6 average or marginal cost modes has a substantial
7 effect on the unit investment developed by SCIS?

8 (Pause)

9 A I would need to take some significant time
10 to really read the background information leading up
11 to that. I don't know if they are talking about
12 specific features coming out of IN, or specific
13 results coming out of model office, the other portion
14 of SCIS. But depending on the features and depending
15 on the MO results, average and marginal results can be
16 significantly different or they can be either
17 identical or very close. And we really need to limit
18 the scope of the question to either specific SCIS/MO
19 results or specific features to draw any more
20 conclusions.

21 Q Now, you cited the FCC Order in your
22 testimony?

23 A Yes.

24 Q Have you read the FCC Order?

25 A Not for a long time.

1 Q Okay. Have you read the background that
2 went behind the FCC order?

3 A Repeat the question?

4 Q Have you read the background information
5 that went into developing the FCC order? For example,
6 there's an Arthur Andersen report that's referenced in
7 the FCC order.

8 A I've read the Arthur Andersen report at
9 least five years ago. I haven't read it recently.

10 Q Now, would you agree with me that on Page
11 451 of that FCC Order the FCC said that the choice of
12 average or marginal call modes has a substantial
13 effect on the unit investment developed by SCIS?

14 A I would agree it can have, but it has to
15 be -- you have to be talking about that with respect
16 to a certain feature or a certain output result that
17 comes out of the MO portion. I don't see how that
18 statement can be made uniformly across all features
19 and across all output categories that come out of the
20 model office portion of SCIS.

21 Q All I asked you was did the FCC conclude
22 that?

23 A It looks like they did.

24 Q All right. And, in fact, isn't it true that
25 the average cost mode, in some circumstances, can

1 produce costs that are five to six times higher than
2 the cost generated by the marginal cost mode?

3 A That can happen for features whose
4 algorithms are solely dependent on the investment
5 per millisecond primitive coming out of the model
6 office portion of SCIS. There are lots of other
7 features that depend on that primitive as well as
8 others, and would not have that type of difference.

9 Q Which of those features can be five or six
10 times higher if you run them in the average cost mode
11 rather than the marginal cost mode?

12 A That I don't have off the top of my head. I
13 need to look at features and look at the specific
14 algorithms. I don't know.

15 Q And you're aware that BellSouth ran SCIS in
16 the average cost mode for this cost proceeding; is
17 that correct?

18 A That's correct.

19 Q Would you agree with me generally that the
20 investments that SCIS produces, or costs that SCIS
21 produces, are dependent on the inputs entered into the
22 program?

23 A That's correct.

24 Q When BellSouth, or any other local exchange
25 company, purchases a switch, they commonly receive a

1 discount off the published price for the switch; is
2 that correct?

3 A That's correct.

4 Q Okay. And that discount is one of the
5 inputs that's entered into the SCIS model in order to
6 run the model?

7 A That's correct. Discounts are one of many
8 inputs entered into the model.

9 Q Would you agree with me that that's a fairly
10 important input to put into the model?

11 A It can be. It's one of many inputs. It
12 does have a substantial impact.

13 Q And it has a substantial impact in that that
14 input affects very many of the outputs that are
15 generated by the model; isn't that correct?

16 A That's correct.

17 Q Now, where the inputs in the form of the
18 discounts are too low, the switching costs calculated
19 by SCIS will be too high; is that correct?

20 A That's correct. And the converse is true,
21 if the discounts are too high, the switching costs
22 that would come out of model would also be too low.

23 Q Would you agree with me that it's important
24 to make sure that the actual switching discounts that
25 an ILEC is receiving in practice are used in the model

1 in order to get accurate results out of the model.

2 A That's correct. And I'm not in a position
3 to certify or attest to how BellSouth developed their
4 discounts. We, as model developers, provide
5 mechanisms to model discounts but the user, in this
6 case being BellSouth, would need to justify how they
7 came up with the value that they entered.

8 Q Are you familiar with any of the inputs
9 BellSouth used in running the SCIS model for this
10 proceeding?

11 A I'm not familiar with the values they use,
12 no, other than very high level things like average
13 versus marginal.

14 Q So you really can't say whether BellSouth
15 correctly ran the SCIS model in generating costs for
16 this proceeding, can you?

17 A As far as entering appropriate values for
18 the inputs, that is correct.

19 Q Now, I want to be careful. I'm not asking
20 what BellSouth switch discounts are in their
21 contracts. I'm not trying to elicit that information.
22 I understand that's very proprietary. But if you were
23 to look at a BellSouth contract and see a particular
24 discount, and that discount was not the discount that
25 was used in running the SCIS, would you agree with me

1 that the person running the SCIS had not run it
2 correctly?

3 A Not on the surface I really couldn't agree
4 or disagree.

5 Contracts have lots -- it's my understanding
6 that contracts have -- or discounts are stated in lots
7 of different ways in the contracts. And only in a
8 very, very simplistic way would you see, say, a
9 discount of 20% across the board, you would expect to
10 see that number in the system.

11 Lots of times companies get discounts for
12 subsets of equipment such as one discount for ISDN
13 equipment versus another one for non-ISDN related
14 equipment. Sometimes it goes beyond that. So the
15 discounting arrangements are that the ILECs receive --
16 are usually much more sophisticated than that. So I
17 wouldn't expect to just look at a number on a contract
18 and expect to see it entered into SCIS directly.
19 There has to be some type of analysis going on behind
20 the scenes to develop the ultimate value that's
21 entered into SCIS.

22 Q You did agree with me earlier that it is
23 important to make sure that the actual discounts that
24 a local exchange company is getting in practice are
25 the discounts that are used in running SCIS?

1 A That's correct. But part of that process
2 involves taking the information that's in the contract
3 and developing the appropriate number that goes into
4 the system. There's more to it than just matching a
5 number in the contract to what is in the system.

6 Q Is what you're saying that the form of the
7 number you need to enter into SCIS may not match
8 precisely the form of the discount as it appears on
9 the contract?

10 A Yes.

11 Q Would you agree with me that it's important
12 that you look to the contract as source of the actual
13 discount that the LEC is getting and put that same
14 discount in whatever form it needs to be put into SCIS
15 to run the model?

16 A Yes, I would, assuming it's the appropriate,
17 correct contract that applies to the area under study.

18 Q Okay. Now, you're familiar with the phrase
19 verticle features, I assume?

20 A A little bit.

21 Q Just so we're clear, a vertical feature is
22 something like call waiting or caller ID or something
23 like that that you can order along with your basic
24 local telephone service? Is that generally correct?

25 A That's correct.

1 Q One of the things SCIS does is it costs out
2 the cost of vertical features; is that right?

3 A That's correct, that's one of the things it
4 does.

5 Q Okay. And would you agree with me that the
6 main or primary driver of the cost for vertical
7 features is the capacity of the switch that a vertical
8 feature takes up?

9 A That's correct. The switching -- the
10 resources of the switch that are consumed by vertical
11 features.

12 Q And we're talking about resources, we're
13 talking about computer capacity basically, aren't we?

14 A That's one of them. They may also -- some
15 features need connections to announcements, so there's
16 a talking path through the switch related to that
17 feature to access the announcement. Those are the
18 main ones that come to mind right now.

19 Q Would you agree with me that the primary
20 driver of feature costs is processing time in the
21 switch?

22 A That's one of them. But there are many
23 features, a number of features that require other
24 resources beyond that, such as special hardware for
25 announcements. So in addition to the talking path to

1 access the announcement, you have to the announcement
2 circuits as well.

3 Q Well, wouldn't the fact that processing time
4 be the primary driver of cost for features, be
5 consistent if BellSouth had said that there isn't any
6 significant amount of investment associated with
7 features?

8 A Could you repeat the question?

9 Q Sure. I'm not sure it was very -- well
10 articulated. Try it again.

11 If BellSouth had said there isn't any
12 significant investment associated with features,
13 wouldn't that be consistent with the idea that the
14 primary cost driver of features is processing time?

15 A I'm not sure, because different features
16 consume different amounts of processing resources on a
17 switch. And although the investment for the special
18 hardware for a feature might be minor in totality, it
19 still might be the major cost driver of that
20 particular feature, it may have more investment
21 assigned to it from there than it would from the
22 processor resource.

23 Q When BellSouth, or any local exchange
24 company buys a switch, typically included when it buys
25 that switch is the equipment and capacity to be able

1 to provide vertical features; isn't that correct?

2 A That's correct.

3 Q Now, along with the FCC's overall conclusion
4 about SCIS, which you reference on Page 4 of your
5 testimony, one of the conclusions reached by the FCC
6 in its order is that historical costs associated with
7 plant already in place are essentially irrelevant to
8 the decision to enter a market since those costs are
9 sunk and unavoidable and are unaffected by a new
10 product decision. I'm looking at Page 455. I'm not
11 trying to tax your memory on that.

12 Let me go ahead and repeat my question.

13 Would you agree with me along with the FCC's
14 overall conclusion about SCIS, one of the conclusions
15 reached by the FCC in its order is that historical
16 costs associated with plant already in place are
17 essentially irrelevant to the decision to enter a
18 market since those costs are sunk and unavoidable and
19 are unaffected by a new product decision?

20 A That's what it says here.

21 Q Okay. And because of that, then the FCC
22 determined that prospective costs are the economically
23 relevant costs to use in supporting rates in that
24 decision.

25 A Prospective meaning forward-looking costs?

1 Q Yes.

2 A Is that on the next page?

3 Q I believe it's on 456, but it may also be on
4 455 as well.

5 A I see that.

6 Q So the FCC did conclude that prospective
7 costs are the appropriate costs to use in setting
8 rates in the open network architecture proceeding that
9 was before it?

10 A Yeah. That's what it says here.

11 Q So would you agree with me that in that
12 order, with respect to open network architecture at
13 least, the FCC essentially said it's inappropriate to
14 use historical costs in setting rates?

15 A That's what it says in there. I agree.

16 Q Okay.

17 MR. LAMOUREUX: I have no further questions.

18 CROSS EXAMINATION

19 BY MR. MELSON:

20 Q Mr. Garfield, I'm Rick Melson representing
21 MCI. I've got just a couple of questions for you, and
22 they relate to the use of SCIS to determine the cost
23 of vertical features.

24 Did I understand from your answers to
25 Mr. Lamoureux that part of the cost of the feature is

1 driven by the utilization that that feature makes of
2 switch resources?

3 A That's correct. That's one of the drivers.

4 Q And that includes processor time, is one of
5 the switch resources that is utilized; is that
6 correct?

7 A That's correct.

8 Q So when you price a feature, do you have to
9 provide the SCIS model with some input about how many
10 times that particular feature is used on average by a
11 customer, say, during a month?

12 A Inputs for the features require data, such
13 as busy hour attempts and holding times during the
14 busy hour for those features, and that's how -- that's
15 part of how the switch resource consumption is
16 modeled. However, this is leading up to costs for
17 features, not prices.

18 Q All right. Again, looking at costs for
19 features, when you say busy hour attempts, what
20 specifically do you mean by that?

21 A Well, let's take an example like three-way
22 calling. One input for that would be something like
23 how many three-way calling attempts occur in the busy
24 hour? And that's what drives the engineering of any
25 special hardware that feature would need such as --

1 three-way calling doesn't use -- yeah, such as a
2 conference circuit. And it would also -- that type of
3 data would ultimately lead to the -- contribute to the
4 total load on a processor. Everything is measured or
5 engineered to satisfy demand during a busy hour.

6 Q And so when you're attempting to develop an
7 input for busy hour attempts, in developing the input,
8 do you have to make some assumption about the number
9 of units of in this case three-way calling that you
10 are actually selling to end users?

11 A I don't really have expertise in the area of
12 developing the values for the inputs. That's
13 something that BellSouth does when they develop those
14 values. Again, we, as the developers of the model, we
15 need to know this information in order to properly
16 model anything that's relevant to that feature.

17 Q Let me ask this: When SCIS does develop a
18 cost for a feature, there is some assumption, is there
19 not, in the input value that that feature is actually
20 used -- that feature is actually activated and in use?

21 A Could you just repeat the question?

22 Q I will try to. SCIS is designed to develop
23 costs for features that are used and that make demands
24 on processor time; is that correct?

25 A Well, just features that make demands on

1 processor time as well as other features -- I don't
2 know. There might be features that don't have demands
3 on processor time. I don't know. I don't know what
4 the universal features are. It's driven by what the
5 vendor offers and what the local exchange companies
6 buy from the vendors themselves. That's what drives
7 us to develop of the features in SCIS.

8 Q Let me try it a slightly different way. I
9 think I'm not trying to make a very complicated point,
10 so let me try again. I may be overcomplicating it.

11 If a switch is capable of providing 20
12 different features, and if one of those features had
13 no units of sale, the LEC was never called on to
14 activate that feature, SCIS I assume, if input values
15 were properly input would show that feature has got no
16 cost. Is that a fair statement?

17 A If a local exchange company wasn't selling a
18 feature, I can only see them running that feature in
19 case they are changing their minds and they want to
20 decide to sell it, they need to develop a cost for it.

21 Q And in developing that cost, their input
22 value ought to reflect the total quantity of busy hour
23 attempts that feature will generate?

24 A That's correct. And how that -- again, how
25 that process works would be better answered by someone

1 within BellSouth when they -- in terms of collecting
2 the data they need, to populate the inputs for such
3 features.

4 Q And in this docket you have not reviewed the
5 inputs that BellSouth used in doing its cost
6 development for UNES?

7 A That's correct.

8 MR. MELSON: That's all I have.

9 MS. KEATING: Staff has no questions.

10 CHAIRMAN JOHNSON: Redirect.

11 MR. ROSS: Just two questions, Madam
12 Chairman.

13 **REDIRECT EXAMINATION**

14 **BY MR. ROSS:**

15 Q Mr. Garfield, you were asked by
16 Mr. Lamoureux about the average versus marginal mode
17 of SCIS, do you recall that?

18 A Yes.

19 Q Could you explain briefly the difference
20 between the average and the marginal mode?

21 A Okay. In the average mode the algorithms
22 are designed to ensure total cost recovery by taking
23 total investment and portioning it over demand. In
24 the marginal mode, SCIS is looking at developing the
25 cost for the next unit of demand, such as the next

1 millisecond of real-time or the next line terminated
2 on the switch and so forth.

3 Q Mr. Garfield, you were also asked by
4 Mr. Lamoureux about the use of historical versus
5 forward-looking cost. Do you recall that?

6 A Yes, I do.

7 Q Does SCIS involve the use of historical or
8 does it involve the use of forward-looking switching
9 cost?

10 A As I mention in my summary, SCIS is based on
11 forward-looking costs.

12 MR. ROSS: No further questions,
13 Chairman Johnson.

14 CHAIRMAN JOHNSON: There were no exhibits?

15 MR. ROSS: No exhibits.

16 CHAIRMAN JOHNSON: Okay. You are excused,
17 sir.

18 We're going to take a break until 1:00 for
19 lunch.

20 (Witness Garfiled excused and a lunch recess
21 was taken.)

22 - - - - -

23 (Transcript continues in sequence in
24 Volume 6.)

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