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1 **BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

2 **REFILED REBUTTAL TESTIMONY**

3 **OF**

4 **TALMAGE O. COX, III**

5
6 **Q. Please state your name, business address, employer and**
7 **current position.**

8
9 **A.** My name is Talmage O. Cox, III. My business address is
10 6360 Sprint Parkway, Overland Park, Kansas, 66251 I am
11 employed as Manager of Service Cost for Sprint/United
12 Management Company. I am testifying on behalf of
13 Sprint-Florida, Inc. and Sprint Communications L.P.
14 (hereafter referred to as "Sprint").

15
16 **Q. Are you the same Talmage O. Cox, III that submitted**
17 **direct testimony on behalf of Sprint?**

18
19 **A.** Yes, I am.

20
21 **Q. What is the purpose of your Testimony?**

22
23 **A.** To clarify the deficiency of the interoffice transport
24 costing process that BellSouth Telecommunications,
25 Inc. (hereafter referred to as "BellSouth") utilized

1 in the completion of their interoffice transport cost
2 studies. I will also make recommendations on how the
3 interoffice transport cost study process should be
4 corrected.

5

6 **Q. What position have BellSouth witnesses D. Daonne**
7 **Caldwell and Alphonso J. Varner proposed concerning**
8 **the geographic deaveraging of transport?**

9

10 A. BellSouth's witnesses have proposed that it is not
11 necessary to deaverage interoffice transport cost
12 studies and that a per mile cost structure reflects
13 geographic deaveraging.

14

15 **Q. Please display and discuss the cost structure proposed**
16 **by BellSouth for interoffice transport.**

17

18 A. The following is the cost structure as shown on Ms.
19 Caldwell's exhibit, DDC-4, Page 4 of 14.

	Description	Statewide Average
D.4.1	Interoffice Transport Dedicated DS1 Per Mile	\$ 0.2035
D.4.2	Interoffice Transport Dedicated DS1 Facility Termination	\$ 93.31

20

1 Certainly looking at these results one can see that
2 they are statewide averages and do not reflect
3 deaveraged cost study results. Studies clearly
4 indicate that a mile of cable that has an OC48
5 terminal attached to it would produce a significantly
6 cheaper per unit cost of the fiber than if it had an
7 OC3 terminal attached. The primary cost drivers for
8 interoffice transport are the bandwidth of the
9 terminal and utilization/demand on the SONET Ring,
10 both of which BellSouth has averaged in their proposed
11 prices.

12

13 **Q. Will a per mile cost structure adequately deaverage**
14 **costs for geographic differences, as asserted by**
15 **BellSouth witnesses Ms. Caldwell and Mr. Varner?**

16

17 A. No. While distance is a variable in the cost of
18 transport, distance is not one of the primary cost
19 drivers. The two primary drivers of the cost of
20 transport are the following:

- 21 • bandwidth of the terminal utilized (OC3, OC12,
22 OC48)
- 23 • utilization/demand on the SONET RING

24

1 **Q. Has BellSouth adequately reflected traffic volume**
2 **(Associated Variables) in the development of its**
3 **interoffice transport costs?**

4
5 **A. No.** While BellSouth did utilize different ring
6 designs with different size terminals, these studies
7 were completed for each individual ring design.
8 Then a probability factor (percentage) was applied to
9 the cost of each ring design to develop a single,
10 weighted average. The entire process simply resulted
11 in a single statewide average, not in compliance with
12 the FCC's mandate to reflect geographic deaveraging.

13
14 The largest single determinant in the unit cost of a
15 DS1, DS3, OC3 or OC12 transport circuit, is the volume
16 of telecommunications traffic transmitted over a
17 specific transport route. This volume of traffic, or
18 demand, determines both the appropriate capacity
19 sizing of the terminal equipment and fiber cable.
20 Additionally, it defines the units over which these
21 costs are spread. In cost determination, this basic
22 principle is referred to as utilization. As volumes of
23 traffic vary across specific transport routes, so does
24 the sizing and utilization of terminals and fiber
25 cable, and ultimately the resulting unit costs. This

1 concept is illustrated in a series of exhibits, which
2 were submitted with my direct testimony.

3

4 **Q. Please illustrate the effects of terminal bandwidth**
5 **OC3, OC12, OC48 (Associated Variables) in the**
6 **development of transport costs.**

7

8 A. The following table shows the results from an exhibit
9 (Exhibit TOC-1 T. Cox Direct Testimony) that was filed
10 with my direct testimony. This table illustrates the
11 effects on cost when different size terminals are
12 utilized.

Terminal Size	# of Terminals	Terminal Utilization	Total Ring Miles	DS1 Unit Costs	Percent Decrease
OC3	3	.67	30	\$ 132.51	
OC12	3	.67	30	\$ 71.47	46.06%
OC48L	3	.67	30	\$ 61.86	53.32%
OC48A	3	.67	30	\$ 48.09	63.71%

13

14 Please note how the DS1 unit costs decrease as larger
15 terminals are deployed. The percent decrease is
16 calculated in relation to the item shown with a OC3
17 terminal size. This analysis indicates that as
18 traffic volumes or demand increases, larger terminals
19 with increased capacity are used. Use of larger
20 terminals associated with increased traffic volume
21 results in greater economies and lower unit costs.

1

2 **Q. Please illustrate the effects of utilization**
3 **(Associated Variables) on a SONET ring in the**
4 **development of transport costs.**

5

6 **A.** The following table shows the results from an exhibit
7 (Exhibit TOC-2 T. Cox Direct Testimony) that was filed
8 with my direct testimony. This table illustrates the
9 relationship of increased demand driving down unit
10 costs.

Terminal Size	# of Terminals	Terminal Utilization	Total Ring Miles	DS1 Unit Costs	Percent Decrease
OC48A	3	30%	30	\$ 91.23	
OC48A	3	40%	30	\$ 71.71	21.40%
OC48A	3	50%	30	\$ 59.97	34.27%
OC48A	3	60%	30	\$ 52.16	42.83%
OC48A	3	70%	30	\$ 46.58	48.94%
OC48A	3	80%	30	\$ 42.39	53.54%

11

12 Please note how the DS1 unit costs decrease as
13 utilization increases. The percent decrease is
14 calculated in relation to the item shown with 30%
15 utilization. This analysis indicates that as traffic
16 volumes or demand increases, with the same bandwidth
17 terminals the increased traffic volume results in
18 greater economies and lower unit costs.

19

1 **Q. Please illustrate the effects of distance (Associated**
2 **Variables) in the development of transport costs?**

3
4 A. The following table shows the results from an exhibit
5 (Exhibit TOC-3 T. Cox Direct Testimony) that was filed
6 with my direct testimony. This table illustrates the
7 relationship of increased distance and the effect on
8 unit costs.

Terminal Size	# of Terminals	Terminal Utilization	Total Ring Miles	DS1 Unit Costs	Percent Increase
OC48A	3	67%	30	\$ 48.09	
OC48A	4	67%	40	\$ 50.17	4.33%
OC48A	5	67%	50	\$ 52.25	8.65%
OC48A	6	67%	60	\$ 54.34	13.00%
OC48A	7	67%	70	\$ 56.42	17.32%
OC48A	8	67%	80	\$ 58.50	21.65%

9
10 It is obvious that as the distance around a transport
11 ring increases, more fiber cable must be placed,
12 thereby increasing the cost of bandwidth on that ring.

13
14 In summary, unbundled transport unit costs vary
15 between specific geographic points due to the
16 underlying variances in the traffic volumes, distances
17 and ring designs that commonly occur in the network.
18 In order to properly estimate the geographic-specific
19 forward-looking cost of unbundled transport

1 facilities, the impact of these geographic-specific
2 factors must be considered.

3

4 **Q. Please describe some of the BellSouth exchanges and**
5 **what kind of transport systems probably exist.**

6

7 A. The following displays a count of wire centers by
8 exchange name. A list of these wire centers can be
9 found in the BellSouth cost calculator under the state
10 deaveraged results.

11	Ft. Lauderdale	10 wire centers
12	Jacksonville	13 wire centers
13	Miami	24 wire centers
14	Orlando	6 wire centers

15 Based on my experience with transport networks (ring
16 designs), I would expect there to be multiple OC48
17 SONET rings in these exchanges. These rings would
18 most likely have utilizations in the range of 60 - 80
19 %. Based on the way a statewide average was developed
20 in the BellSouth cost study, the per unit DS1 cost for
21 BellSouth in these exchanges should be substantially
22 less than the current mid-nineties cost results as
23 proposed by BellSouth. In reviewing the utilization
24 table contained in the BellSouth cost model, the
25 utilization factors for the OC48 terminals are in the

1 range of 20% - 40%, depending on what type of OC48
2 terminal being used.

3

4 **Q. How should the transport cost be developed for a UNE**
5 **proceeding?**

6

7 A. To correctly recognize the cost characteristics for
8 deaveraging purposes, the cost should recognize the
9 following key items:

- 10 • Reflect geographic-specific characteristics.
- 11 • Reflect geographic-specific terminal bandwidth.
- 12 • Reflect geographic-specific utilization.
- 13 • Reflect geographic, forward-looking ring
14 designs.
- 15 • Reflect the cost on a route-specific basis by
16 geographic area.

17

18 **Q. Does BellSouth's cost study reflect geographic-**
19 **specific cost results?**

20

21 A. No. While they do have forward-looking ring designs
22 (with the exception of the low utilizations), their
23 results are based on a statewide average, as shown on
24 BellSouth witness D. Daonne Caldwell's exhibit DDC-4.

1

2 Q. What kinds of variation in cost can be seen with data
3 from BellSouth's interoffice transport cost study?

4

5 A. The following is a summary of cost results for ring
6 designs 1, 4 and 6, excluding the application of a
7 probability factor and reprocessing individually
8 through BellSouth's cost calculator.

	Description	Ring Design #1	Ring Design #4	Ring Design #6	Statewide Average
D.4.1	I.O. Ded. DS1 Per Mile	\$ 0.1194	\$ 0.1194	\$ 0.3237	\$ 0.2035
D.4.2	I.O. Ded. DS1 Facility Term.	\$72.09	\$ 171.01	\$ 58.36	\$ 93.31

9

10 Design #1 consists of a single OC48 ring design that
11 resulted in cost for both elements below the statewide
12 average. Design #4 consists of three OC48 rings that
13 resulted in cost lower for the per mile element, but
14 higher for the termination element when compared to
15 the statewide average. Design #6 consists of a single
16 OC12 ring design that resulted in a higher cost per
17 mile and a lower cost per termination.

18

19 This clearly indicates, when utilizing the data
20 provided by BellSouth, that there are variations in
21 the cost of interoffice transport. While these
22 results do show variations, they still do not reflect

1 geographic-specific factors, such as specific ring
2 designs and utilization.

3

4 **Q. Could changes be made in BellSouth's costing process**
5 **to reflect geographic-specific cost results?**

6

7 A. Yes. The first step of the process should consist of
8 identifying the forward-looking ring design
9 characteristics on a ring-specific basis by geographic
10 area. The ring design characteristics would consist
11 of the following:

- 12 • Ring-Specific Bandwidth (OC3, OC12, OC48)
- 13 • Ring-Specific Quantity of Nodes
- 14 • Ring-Specific Quantity of Miles (Utilizing
15 existing Wire Center Locations)
- 16 • Ring-Specific Utilization

17 The second step would be to produce route-specific
18 cost results by geographic area reflecting the ring-
19 specific cost characteristics that were identified in
20 step one.

21

22

1 **Q. Should the Florida Public Service Commission approve**
2 **BellSouth's interoffice transport costs presented in**
3 **Docket No. 990649-TP?**

4
5 A. No. BellSouth has not met some of the core
6 requirements associated with the development of cost
7 support for unbundled network elements. The core
8 requirements being that cost have to be deaveraged, at
9 the minimum, into three zones per the FCC.

10
11 In Section 51.507(f) of its Rules, the FCC requires
12 that unbundled network elements be geographically
13 deaveraged into at least three cost-related zones.
14 These can be either the zones established for the
15 deaveraging of interstate transport rates, or zones
16 determined by the state commission.

17
18 Certainly the per unit cost of a DS1 would be lower
19 for the large, urban, high bandwidth areas of Ft.
20 Lauderdale, Jacksonville, Miami and Orlando versus
21 some of the more rural, lower bandwidth areas of
22 Florida. With higher bandwidth demands being one of
23 the fastest growing markets for ILEC's, this UNE
24 should be deaveraged to reflect geographic cost
25 differences caused by placing higher bandwidth SONET

1 terminals and higher utilization/demand on these SONET
2 rings.

3

4 **Q. Does this conclude your testimony?**

5

6 **A. Yes.**