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August 1, 2000

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Florida Public Service Commission
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RECORDS AND REPORTING

RE: Docket No. 990649-TP; Investigation into Pricing of Unbundled Network Elements

Dear Ms. Bayo:

Enclosed for filing on behalf of Supra Telecom are the original and fifteen (15) copies of David A. Nilson's Direct Testimony.

Sincerely,

Mark Buechele/sme

Mark Buechele
General Counsel

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1 **SUPRA TELECOMMUNICATIONS & INFORMATION SYSTEMS, INC.**
2 **DIRECT TESTIMONY OF DAVID A. NILSON**
3 **BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**
4 **DOCKET NOS. 990649-TP**
5 **AUGUST 1, 2000**

6
7
8 Q. PLEASE STATE YOUR NAME AND ADDRESS

9
10 A. My name is David A. Nilson. My address is 2620 SW 27th Avenue, Miami, Florida
11 33133.

12
13 Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPICITY?

14
15 A. I am the Chief Technology Officer of Supra Telecommunications and Information
16 Systems, Inc. ("Supra Telecom").

17
18 Q. PLEASE DESCRIBE YOUR BACKGROUND AND WORK EXPERIENCE.

19
20 A. I have been an electrical engineer for the past 26 years, with the last 22 years spent
21 in management level positions in engineering and quality, and regulatory
22 departments. In 1976,after spending two years working in the microwave industry
23 producing next generation switching equipment for end customers such as AT&T

1 long lines and ITT, I was part of a three-man design team that produced the
2 world's first microwave integrated circuit. This job involved extensive work with
3 various government agencies. At that time, our design was considered the "holy
4 grail" of the microwave industry and was placed in production for AT&T within
5 30 days of its creation. This job also involved communications equipment design
6 work with various government entities covered by United States Departments of
7 Defense security restrictions. I spent several years in quality control management,
8 monitoring and trouble-shooting manufacturing process deviations, and serving as
9 liaison and auditor to our regulatory dealings with the government. I spent 14
10 years in the aviation industry designing communications systems, both airborne
11 and land-based, for various airlines and airframe manufacturers worldwide. This
12 included custom designed hardware originally designed for the Pan American
13 Airlines call centers, and the HF long range communications system controllers
14 used on Air Force One and Two and other government aircraft. In this job I was
15 also responsible for validation design testing and FAA system conformance
16 testing. Since 1992 I have been performing network and system design consulting
17 for various industry and government agencies, including the Argonne National
18 Laboratories. I am the principal architect of Supra's ATM backbone network and
19 our central office design.

20

21

22

1 Q. HAVE YOU EVER PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

2

3 A. Yes, I testified before this Commission in numerous generic dockets and in various
4 disputes between Supra Telecom and BellSouth.

5

6

7 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

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9 A. The purpose of my testimony is to address the issues identified in this proceeding,
10 including the following previously identified issues set forth on the list of issues: 1,
11 2(a), 2(b), 3(a), 3(b), 4(a), 4(b), 10, 11 and 12.

12

13 Q. WHAT FACTORS SHOULD THE COMMISSION CONSIDER IN
14 ESTABLISHING RATES AND CHARGES FOR UNES (INCLUDING
15 DEAVERAGED UNES AND UNE COMBINATIONS)?

16

17 A. Under the TELRIC model and the FCC's pricing rules found in 47 C.F.R. §§ 51.503 -
18 51.513, this Commission should only consider a forward-looking network design
19 based upon the most efficient technology currently available, with the cost of such
20 equipment and assets being spread out (or amortized) over the economic or true
21 useful life of the equipment.

1 Notwithstanding the Eighth Circuit's most recent ruling in Iowa Utilities Board, et al.
2 v. Federal Communications Commission, Case No. 96-3321 (8th Cir., July 18, 2000),
3 Supra Telecom believes that this Commission should continue pricing UNEs under
4 the FCC'S previous methodology. Nevertheless, even if this Commission were to
5 consider the Iowa Utilities Board case, the FCC's previous methodology would still
6 provide significant guidance on pricing. For example, any new model should still be
7 forward-looking, however under the Iowa Utilities Board case, current costs would be
8 relevant, but only for as long as current equipment is being depreciated. Once the
9 current equipment has been depreciated, the forward-looking model would require
10 the ILEC to invest in the most efficient equipment and design available. This
11 Commission is already deciding the issue of depreciation lives for various UNEs.
12 The ILECs should be required to provide the current time in service of each and
13 every piece of equipment comprising the UNEs to be priced. An average time in
14 service should then be compared to the depreciation life established by this
15 Commission for that UNE. To the extent the average time in service of the actual
16 equipment is less than the established useful life, current costs would only be
17 considered as a weighted-average of the remaining useful life. If it is discovered that
18 the average equipment life is longer than the Commission's established useful life for
19 the UNE, then the cost model should give no consideration to current costs (since by
20 definition, the equipment is fully depreciated on a forward-looking basis and thus
21 current costs would no longer be relevant).

22

1 In addition to the above, estimated costs should be based upon actual projected costs
2 using the above assumptions. Thus, there should be no non-recurring costs imposed
3 on situations where such a cost will never be incurred. For example, conversions of
4 service "as is" require nothing to be changed and therefore the provision of servicing
5 existing UNE loops and ports should incur no conversion costs. For recurring costs,
6 the Commission must follow the assumptions made in the TELRIC model. Finally,
7 consideration should be given to such real world considerations such as line-sharing;
8 particularly, Digitally Added Main Lines (DAML) which are becoming more
9 prevalent with time. DAMLs allow ILECs such as BellSouth to provide service to
10 multiple customers over the same loop. When this actually occurs with an ALEC's
11 customers, the ALEC should only be required to pay a pro-rata recurring cost for that
12 loop. Real world considerations also exist for matters such as line conditioning,
13 where the number of impediments on loops such as load coils and bridge-taps vary
14 from loop to loop. In order to verify these potential costs and to accurately assess in
15 advance the cost of providing service to any particular customer, it is important that
16 ALECs be given full access to all technical information about the ILEC's network;
17 including such databases as LFACS which provide detailed information about each
18 loop and circuit path. To date, ILECs such as BellSouth have flatly refused to
19 provide such information in order to prevent ALECs from knowing the actual cost
20 associated with line conditioning. Therefore, in order to ensure the fair
21 apportionment of costs, consideration must be given for real-world considerations.
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Q. WHAT IS THE APPROPRIATE METHODOLOGY TO DEAVERAGE UNES
AND WHAT IS THE APPROPRIATE RATE STRUCTURE FOR DEAVERAGED
UNES?

A. The appropriate methodology for deaveraging UNEs is one that attempts to accurately assess the true potential cost of the UNE utilizing the TELRIC model assumptions as established previously by the FCC; and if necessary, as modified by the Eighth Circuit as previously described. Thus for example, under the TELRIC assumptions, there should be little or no difference in the cost of switching ports, regardless of where those ports are installed. However, with respect to loops, the true TELRIC cost of a loop depends primarily on its length. Therefore, loops should be deaveraged based upon loop length as opposed to wire centers. In this regard, loop lengths should be broken down into categories of shortest available loop length between connection points. Supra Telecom suggests the following categories of loop lengths: (a) 0 to 3,000 feet; (b) 3,001 to 6,000 feet; (c) 6,001 to 9,000 feet; (d) 9,001 to 12,000 feet; (e) 12,001 to 15,000 feet; (f) 15,001 to 18,000; (g) 18,001 to 21,000 feet; (h) 21,001 to 24,000 feet; and (i) greater than 24,000 feet. Pricing of loops would be the same in each loop length category. Pricing would be accomplished by taking the total loop costs and apportioning that cost into each category on a weighted-average basis, using the median loop length of each category (and 25,500 for the last category) as the apportioning factor. Using the above suggested loop

1 length categories, subloops can be priced under this same methodology. Given the
2 fact that current switching technology does not require load coils for extended loop
3 lengths, all forward-looking loops should experience the same forward-looking costs
4 regardless of the service being provided.

5

6

7 Q. FOR WHICH OF THE FOLLOWING UNES SHOULD THE COMMISSION SET
8 DEAVERAGED RATES?

9

10 (1) LOOPS (ALL)

11

12 A. This Commission should set deaveraged rates for all loops, including subloops. All
13 loops should be deaveraged based upon categories of loop lengths. Since current
14 switching technology does not require load coils for extended loop lengths, all
15 forward-looking loops should experience the same forward-looking costs regardless
16 of the service being provided. Moreover, under the Eighth Circuit's recent ruling,
17 current costs should also not cause any price differentiation with respect to the service
18 being provided since any line conditioning costs would be recovered separately.

19

20 (2) LOCAL SWITCHING

21

1 A. This Commission need not set deaveraged rates for local switching since the cost of
2 this UNE should be the same regardless of where the UNE is provided.

3

4 (3) INTEROFFICE TRANSPORT (DEDICATED AND SHARED)

5

6 A. The pricing of Interoffice Transport should be deaveraged in such as way as to charge
7 for this use on a per "airline" mile basis (i.e. straight line distance of the transport
8 being provided) and time usage over the economic life of the transmission media.

9 This can be accomplished by determining the total cost of all inter-office transport
10 divided by the total distance of transport laid (on a per mile basis), then further
11 divided by the total economic life of the transmission media on a per second basis.

12 Shared transport should utilize the same pricing structure as dedicated transport (i.e.
13 distance traveled on a per second basis), except that this rate should further be
14 reduced by the percentage of usage with respect to the total capacity of the transport
15 media. Additionally, if there are any quality of service considerations (such as
16 transmission priority), the shared transport costs should be adjusted on a weighted-
17 average basis for the quality of service being provided.

18 In either case, the facilities termination portion of the inter-office transport should not
19 be deaveraged since the cost (if any) should be the same regardless of where the UNE
20 is provided.

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22 (4) OTHER (INCLUDING COMBINATIONS)

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A. Considerations and price reductions should be given for line sharing; particularly current line sharing using the DAML technology previously described.

Q. WHAT ARE xDSL CAPABLE LOOPS?

A. xDSL capable loops are copper loops with no load coils, and in some instances no bridge taps. The length of xDSL capable loops should not be arbitrarily set at any distance as the current state of the art allows service provisioning throughout the 18,000 to 33,000 foot range, depending on equipment vendor. Alternately this Commission could set different classes of xDSL capable loops based upon loop length and modulation capability as done by SouthwesternBell.

Q. SHOULD A COST STUDY FOR xDSL-CAPABLE LOOPS MAKE DISTINCTIONS BASED ON LOOP LENGTH AND/OR THE PARTICULAR DSL TECHNOLOGY TO BE DEPLOYED?

A. Cost studies for xDSL capable loops should consider loop lengths as described previously. There should be no difference in pricing of copper loops and xDSL loops, except that where applicable, line conditioning costs should be amortized over the remaining economic life of the loop and recovered on a recurring rate basis.

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Q. WHICH SUBLOOP ELEMENTS, IF ANY, SHOULD BE UNBUNDLED IN THIS PROCEEDING, AND HOW SHOULD PRICES BE SET?

A. All subloops and elements should be unbundled. Additionally, ports on digital loop carrier should also be deaveraged; both on a dedicated use basis and on a shared use basis.

Q. HOW SHOULD ACCESS TO SUCH SUBLOOP ELEMENTS BE PROVIDED, AND HOW SHOULD PRICES BE SET?

A. For dedicated use, access should be given to the entire subloop. The unbundled price for each subloop should be set based upon categories of loop lengths as previous described in reference to deaveraging loop costs. For share use, subloop cost should be further reduced by the proportion of channels available for use on the subloop. For example, if a particular subloop serves ninety-six subscribers, the cost of that subloop should be apportioned by ninety-six, with each carrier bearing their proportionate share of customers served by the shared subloop. With respect to ports, if dedicated, the ALEC should pay for the amortized cost of the port on a recurring charge basis. However, if the port is shared, then each carrier should pay the pro-rata

1 cost of the amortized port based upon the percentage of their customers being served
2 by that port.

3

4

5 Q. WHAT IS THE APPROPRIATE RATE, IF ANY, FOR CUSTOMIZED
6 ROUTING?

7

8 A. The only charge for customized routing (above transport costs) should be the average
9 cost of labor to program the customized route.

10

11 Q. WHAT ARE THE APPROPRIATE ASSUMPTIONS AND RATES, IF ANY, FOR
12 LINE CONDITIONING, AND IN WHAT SITUATIONS SHOULD THE RATE
13 APPLY?

14

15 A. Line conditioning involves removing load coils and bridge taps in order to be able to
16 provide xDSL service. In the strictest sense, load coils and bridge taps would not be
17 placed on newly constructed forward-looking xDSL capable loops and therefore
18 under a forward-looking TELRIC model should not be a recoverable cost.

19 Nevertheless, if this Commission is considering line conditioning charges, then the
20 Commission should consider the following. When provisioning xDSL circuits, the
21 ILEC often has many proposed wire circuit routes which may be taken to reach any
22 particular customers. Databases such as LFACs provide information regarding the

1 available loops. It has been Supra Telecom's experience to date that ILECs (such as
2 BellSouth) refuse to provide LFACs data so that the ALEC will have no way of
3 knowing whether or not a particular customer can be provided xDSL service without
4 using a loop that needs to be conditioned. ILECs such as BellSouth will always seek
5 to impose a line conditioning charge, whether or not the line needs to be conditioned
6 and without regard to whether or not the customer can be served via an alternate route
7 which does not require line conditioning. Accordingly, regardless of how this cost is
8 recovered, ALECs should be allowed full access to databases such as LFACs which
9 are needed to determine the quality of the loop and whether or not in the first
10 instance, any line conditioning would be needed.

11 If a line conditioning charge is to be considered, the current state of switch
12 technology is such that load coils are no longer needed to provision basic POTs
13 service; regardless of the loop length. Therefore, once load coils are removed from a
14 circuit path, they will never have to be reinstalled. Thus the removal of load coils
15 should properly be considered to be a network upgrade which should be borne by all
16 potential users of the loop during the remaining useful life of the loop. Therefore, if
17 charged to ALECs, the cost of removing load coils should be recovered as a recurring
18 rate amortized over the remaining life of the loop being conditioned.

19 With respect to bridge taps, some xDSL equipment can tolerate bridge taps and other
20 equipment cannot. If ALECs are to be charged for removing bridge taps, ALECs
21 should have the right in the first instance to specify whether or not they want any of
22 the bridge taps removed from the loop. Moreover, since bridge taps were install in

1 the first instance for BellSouth's flexibility in provisioning service, these costs should
2 already be included in the cost of providing new service. Thus even if this
3 Commission were to consider line conditioning charges, ALECs seeking to provide
4 xDSL service should not be require to pay for the cost of removing any such bridge
5 taps. This process is already well established and supported by SouthWestern Bell.

6

7

8 Q. WITHOUT DECIDING THE SITUATIONS IN WHICH SUCH COMBINATIONS
9 ARE REQUIRED, WHAT ARE THE APPROPRIATE RECURRING AND NON-
10 RECURRING RATES FOR THE FOLLOWING UNE COMBINATIONS:

11

12 (A) "UNE PLATFORM" CONSISTING OF: LOOP (ALL), LOCAL (INCLUDING
13 PACKET, WHERE REQUIRED) SWITCHING (WITH SIGNALING), AND
14 DEDICATED AND SHARED TRANSPORT (THROUGH AND INCLUDING
15 LOCAL TERMINATION);

16

17 A. For an existing service, the cost of a "UNE Platform" should be the combined
18 individual cost of each UNE comprising the platform, and nothing more. For new
19 service, the only additional charge should be the same charge assessed on ALECs for
20 new service for resale accounts, and nothing more.

21

22

1 (B) "EXTENDED LINKS," CONSISTING OF: (1) LOOP, DSO/1
2 MULTIPLEXING, DS1 INTEROFFICE TRANSPORT; (2) DS1 LOOP, DS1
3 INTEROFFICE TRANSPORT; AND (3) DS1 LOOP, DS1/3 MULTIPLEXING,
4 DS3 INTEROFFICE TRANSPORT.

5

6 A. For an existing connections, the cost of "Extended Links" should be the combined
7 individual cost of each UNE comprising the extended link, and nothing more.

8

9

10

11 Q. DOES THIS CONCLUDE MY TESTIMONY?

12

13 A. Yes, this concludes my testimony.

CERTIFICATE OF SERVICE

Docket No. 990649-TP

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished by U.S. Mail to the following parties of record this 1st day of August, 2000.

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