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BELLSOUTH TELECOMMUNICATIONS, INC.  
REBUTTAL TESTIMONY OF W. KEITH MILNER  
BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION  
DOCKET NO. 020507-TL  
DECEMBER 23, 2002

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

A. My name is W. Keith Milner. My business address is 675 West Peachtree Street, Atlanta, Georgia 30375. I am Assistant Vice President - Interconnection Operations for BellSouth. I have served in my present role since February 1996.

Q. ARE YOU THE SAME W. KEITH MILNER WHO PREVIOUSLY FILED DIRECT TESTIMONY IN THIS DOCKET?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. I respond to the direct testimony of Mr. Joseph Gillan, filed on behalf of the Florida Competitive Carriers Association ("FCCA"), which includes Alternative Local Exchange Carriers ("ALECs"). In particular, I respond to

1 Mr. Gillan's claims about the alleged lack of alternatives for FCCA  
2 members in providing voice customers with a Digital Subscriber Line  
3 ("DSL") service.

4  
5 Q. DO FCCA MEMBERS CURRENTLY HAVE THE CAPABILITY TO  
6 PROVIDE DSL SERVICE TO CUSTOMERS?

7  
8 A. Yes. Contrary to the efforts of Mr. Gillan to portray BellSouth as  
9 anticompetitive while complaining that FCCA members have no practical  
10 alternatives to provide DSL service to its customers, the fact is that all of  
11 the elements that FCCA members need to provide DSL service are  
12 already available either as unbundled network elements ("UNEs") or as  
13 elements that FCCA members can and should provide for themselves.  
14 FCCA members are in no way foreclosed from providing their own DSL  
15 service; moreover, apparently some FCCA members do provide some  
16 type of DSL service. Exhibit WKM-1. To the extent that FCCA members  
17 do not provide DSL service in Florida, this is a business decision made by  
18 individual members.

19  
20 WKM-1 shows that FCCA members AT&T Communications of the  
21 Southern States, Inc., BTI Corporation, Mpower Communications Corp.,  
22 Network Telephone Corporation, Nuvox Communications, Inc., and MCI  
23 WorldCom provide some type of DSL service according to their respective  
24 Internet websites.

25

1 Other FCCA members, such as ITC^DeltaCom Communications, Inc.  
2 ("DeltaCom"), currently provide Broadband services using DS1  
3 technology. DeltaCom is able to provide a high-speed Broadband  
4 technology to its customers today, and, if DeltaCom or any other ALEC  
5 desired to provide DSL service to its customers, the ability to do so is  
6 available, despite any implication otherwise by Mr. Gillan.

7  
8 Q. DOES BELLSOUTH OFFER UNEs THAT WOULD ENABLE FCCA  
9 MEMBERS TO PROVIDE THEIR OWN DSL SERVICE TO CONSUMERS  
10 RECEIVING THEIR VOICE SERVICE?

11  
12 A. Yes. Any FCCA member may acquire unbundled elements from  
13 BellSouth in order to create and market its own DSL services: Collocation  
14 of Digital Subscriber Line Access Multiplexers ("DSLAMs") in BellSouth's  
15 central offices allows an ALEC to provide its data services to those voice  
16 customers served entirely by copper loops (that is, customers who are not  
17 served by Digital Loop Carrier ("DLC")). For those voice customers who  
18 are served by DLC, there are at least two ways FCCA members can  
19 provide high-speed data service to those customers. One option would be  
20 for the FCCA member to perform an electronic Loop Make-Up and locate  
21 an available copper loop from the demarcation point (end user's Network  
22 Interface Device ("NID")) all the way to the FCCA member's collocation  
23 arrangement in the central office. Then, the FCCA member would  
24 "reserve" the copper loop and issue an order for that copper loop and the  
25 customer's service would be moved from the DLC to the copper loop.

1 Another option for the FCCA member would be to do what BellSouth does  
2 for itself. The FCCA member could collocate its DSLAM at the BellSouth  
3 Remote Terminal ("RT") site. To transport the data from the end user to  
4 the RT site, the FCCA member could either purchase the existing copper  
5 sub-loop from the demarcation point between the network and the end  
6 user and the RT or purchase an additional copper sub-loop, both of which  
7 BellSouth offers as UNEs. To transport the data from the RT site to the  
8 FCCA member's collocation arrangement at the central office, the FCCA  
9 member could purchase unbundled sub-loop feeder. Various forms of  
10 unbundled sub-loop feeder are available such as DS-1, DS-3, and OC-3.  
11 Alternatively, the FCCA member could provide its own equivalent of loop  
12 feeder from its collocation arrangement to the RT. Therefore, once the  
13 FCCA member collocates its DSLAM at the RT site, all of the capabilities  
14 needed to provide voice and data service to serve an end user that is  
15 served by BellSouth DLC facilities are available to the FCCA member.

16

17

18

19

20

21

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25

Q. ON PAGE 9 OF HIS TESTIMONY, MR. GILLAN IMPLIES THAT CUSTOMERS DO ALL THE WORK TO MAKE FASTACCESS<sup>®</sup> OPERATIONAL. WHAT IS INVOLVED IN BELLSOUTH PROVISIONING DSL, EVEN WITH A SELF-INSTALL?

A. Provisioning FastAccess<sup>®</sup> DSL service is more involved than plugging-in the Asymmetrical Digital Subscriber Line ("ADSL") modem, loading software, and installing a low-pass filter in a telephone outlet as in the case of a self-install.

1 BellSouth's provisioning of FastAccess<sup>®</sup> DSL service involves many  
2 mechanized processes and systems. The service order causes the  
3 SWITCH (not to be confused with a switching system) and Loop Facility  
4 Assignment Control System ("LFACS") assignment systems to assign a  
5 spare DSLAM port that adds ADSL capability (DSLAM port) to the existing  
6 Plain Old Telephone Service ("POTS") line. The service order  
7 assignments instruct the central office technicians and/or field technicians  
8 to physically wire/cross-connect the ADSL facility into the POTS loop.  
9 (The ADSL service will not work if the central office and/or field cross  
10 connects have not been done.) The completion of this step delivers the  
11 DSLAM capability to the end-user. However, DSL service is not  
12 provisioned until the DSLAM equipment/port is activated for the service.  
13 The service order mechanically notifies the Network Management System  
14 ("NMS") which DSLAM equipment and port was assigned. The NMS  
15 completes the provisioning process by creating a path referred to as the  
16 Private Virtual Circuit ("PVC") through the DSL network into the  
17 Asynchronous Transfer Mode ("ATM") network and then forward to the  
18 Internet Service Provider ("ISP"). Of course, the ISP must also activate its  
19 facilities to make the ADSL service work.

20  
21 Q. CAN THE FCCA MEMBER COLLOCATE ITS EQUIPMENT WITHIN  
22 BELLSOUTH'S RTs?

23  
24 A. Yes. If sufficient space exists within a DLC RT, BellSouth will allow the  
25 FCCA member to collocate its DSLAM in the RT, regardless of whether

1 BellSouth has installed its own DSLAM at that RT. If sufficient space does  
2 not exist within the DLC and BellSouth has installed its own DSLAM at the  
3 DLC RT location, then BellSouth will make good-faith efforts to augment  
4 the space at that DLC RT, such that the FCCA member can install its own  
5 DLSAM at that DLC RT. In the very unlikely event that BellSouth could  
6 not accommodate collocation at the particular RT where BellSouth has a  
7 DSLAM, BellSouth will unbundle the BellSouth packet switched network at  
8 that RT in accordance with FCC requirements. If sufficient space does not  
9 exist within the DLC RT and BellSouth has not installed its own DSLAM at  
10 that DLC RT location, then BellSouth will file a collocation waiver request  
11 with this Commission for that DLC RT site.

12

13 Q. IS INSTALLING DSL EQUIPMENT "PROHIBITIVELY EXPENSIVE IF  
14 NOT IMPOSSIBLE" FOR THE FCCA, AS MR. GILLAN SUGGESTS ON  
15 PAGE 11 OF HIS TESTIMONY?

16

17 A. No. The FCCA members and BellSouth face the same business risks  
18 relative to deployment of infrastructure necessary to provide DSL services  
19 to customers. The technology became available to both parties at the  
20 same time, and at that time, BellSouth had no inherent advantage in  
21 provisioning DSL services. However, BellSouth made a conscious  
22 business decision, and took on the corresponding risk, to offer DSL  
23 service to its customers, and BellSouth immediately began investing  
24 capital dollars in Florida to deploy the necessary equipment. Because the  
25 FCCA members have not provided BellSouth with responses to its

1 discovery requests, BellSouth is not clear on what decisions specific  
2 FCCA members have made relative to DSL deployment; however, the  
3 FCCA members certainly had the ability to make similar deployment  
4 decisions. Now the FCCA comes to this Commission requesting that the  
5 rules be changed to afford its members all of the benefit of providing DSL  
6 service, with none of the investment and related risks.

7  
8 When BellSouth provides its own DSL service where DLC is deployed,  
9 BellSouth must locate DSLAM equipment at the DLC RT location to  
10 access the copper sub-loop to the end user. If FCCA members desire to  
11 provide DSL service where DLC is deployed, the FCCA member should  
12 likewise collocate its DSLAM equipment at the DLC RT location. This will  
13 allow the FCCA member to provide the high speed data service in the  
14 same manner as does BellSouth.

15  
16 It is remarkable that while Mr. Gillan states, "Entrants must either attempt  
17 to duplicate BellSouth's DSL-footprint (which would be prohibitively  
18 expensive if not impossible) or forego competing for customers desiring  
19 such services," to offer its own DSL service, he does not offer one shred of  
20 evidence to support the statement. For example, there are no market  
21 analyses, financial projections, capital expense reports, or any other  
22 documents attached to Mr. Gillan's testimony from which any conclusions  
23 can be drawn about the cost required for FCCA members to provide DSL  
24 service to its voice customers.

25

1 Q. HAVE YOU ATTEMPTED TO DETERMINE WHETHER IT WOULD BE  
2 COST PROHIBITIVE FOR INDIVIDUAL FCCA MEMBERS TO DEPLOY  
3 THEIR OWN DSLAMS IN ORDER TO OFFER DSL SERVICE?  
4

5 A. Yes. Even though Mr. Gillan has not provided any facts to support his  
6 claim about the "prohibitively expensive" costs allegedly required for an  
7 FCCA member to offer DSL service of its own, I have examined such  
8 costs using a business case provided by an ALEC in a recent arbitration in  
9 Kentucky. Starting with this business case, and by making appropriate  
10 cost adjustments, it is clear to me that it would not be cost prohibitive for  
11 any ALEC to deploy its own DSLAMs in offering DSL service.  
12

13 Q. PLEASE PROVIDE THE DETAILS OF THIS BUSINESS CASE TO  
14 WHICH YOU REFERRED EARLIER.  
15

16 A. This business case was developed by an ALEC in Kentucky, ostensibly to  
17 illustrate the costs involved in deploying DSLAMs. Because the DSLAM  
18 costs that the Kentucky ALEC assumed were significantly inflated, I  
19 requested list price information from several DSLAM suppliers for  
20 equipment that would be needed to serve 250 customers out of a given  
21 central office, which is the same assumption as was used by the Kentucky  
22 ALEC in its business case. Attached to my testimony, as Exhibit WKM-2,  
23 is a copy of correspondence from three suppliers providing the list prices  
24 for such equipment. I obtained price information for DSLAM equipment  
25 that transmits data in Ethernet protocol, as the ALEC assumed in its



1 business case, and for DSLAM equipment that transmits data in ATM  
2 protocol, as does BellSouth for itself.

3

4 Q. WHAT IS THE EFFECT ON THE "BOTTOM LINE" ON THE BUSINESS  
5 CASE RESULTING FROM THE USE OF LOWER, MORE REALISTIC  
6 DSLAM EQUIPMENT COSTS?

7

8 A. The business case shows a significant Internal Rate of Return. Internal  
9 Rate of Return is the discount rate, which equates the present value of a  
10 project's expected cash inflows to the present value of the project's  
11 expected costs. Thus, Internal Rate of Return is the expected rate of  
12 return for the project. Using the DSLAM costs per the list price information  
13 set forth in Exhibit WKM-2 and taking the Kentucky ALEC's other cost  
14 inputs at face value, the Internal Rate of Return would be 46.2% for the  
15 Copper Mountain solution (Page 1 of Exhibit WKM-3). Likewise, for the  
16 Alcatel solution, the Internal Rate of Return would be 34.9% (Page 2 of  
17 Exhibit WKM-3). Finally, the use of the new style Net to Net DSLAM line  
18 card yields an Internal Rate of Return of 25.5% (Page 3 of Exhibit WKM-  
19 3). These are healthy rates of return and, in my opinion, are sufficient for  
20 ALECs to successfully enter the DSL market rather than simply relying  
21 upon DSL service from BellSouth.

22

23 Exhibit WKM-3 attached to my testimony sets forth the information  
24 presented in the Kentucky ALEC's analysis, with the only changes being  
25 the revised DSLAM cost information I obtained for the Copper Mountain

1 solution (Pages 1 and 2 of Exhibit WKM-2), the Alcatel solution (Pages 3  
2 and 4 of Exhibit WKM-2) and the Net to Net solution (Page 5 of Exhibit  
3 WKM-2).

4  
5 Q. WHAT OTHER FACTORS WOULD FURTHER IMPROVE THE  
6 CALCULATED FINANCIAL RESULTS?

7  
8 A. I used list price for the DSLAM equipment because I am unaware of what  
9 discount from list price the manufacturer actually extends to the FCCA or  
10 to any other ALEC. Thus, any discount that the FCCA actually receives  
11 would improve Cash Operating Margin on a dollar for dollar basis. Let me  
12 be clear, the prices I used to adjust the Kentucky ALEC's business case  
13 are manufacturers' list prices; they are not the prices BellSouth does or  
14 would pay for such equipment. BellSouth is often able to negotiate  
15 volume or other discounts with its suppliers, and I would expect the FCCA  
16 to have the ability to do likewise. However, I have not attributed any such  
17 discounts to the cost information set forth herein.

18  
19 Q. WHAT WOULD YOU CONCLUDE FROM THE RESULTS OF THE  
20 ABOVE MENTIONED BUSINESS CASE?

21  
22 A. Assuming the costs for the Kentucky ALEC are comparable for FCCA  
23 members and assuming the use of accurate DSLAM cost information, it is  
24 clear that FCCA members would earn a sufficient return on investment  
25 that would allow FCCA members to successfully compete in the DSL

1 market using their own equipment.

2

3 Q. ARE THERE OTHER ALTERNATIVES AVAILABLE TO FCCA MEMBERS  
4 TO PROVIDE DSL SERVICE TO CUSTOMERS?

5

6 A. Yes. Should FCCA members own and operate their own DSLAMs,  
7 another alternative for FCCA members would be to enter into a Line  
8 Splitting arrangement with another ALEC by which this ALEC would  
9 provide the DSL service to the FCCA member's voice customers. Given  
10 these options, Mr. Gillan's claim that FCCA members have no competitive  
11 alternative to BellSouth's DSL service ring hollow. The FCCA members  
12 have viable options to provide DSL service to their voice customers but  
13 have simply elected, as a business matter, not to pursue them.

14

15 Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

16

17 A. Yes.



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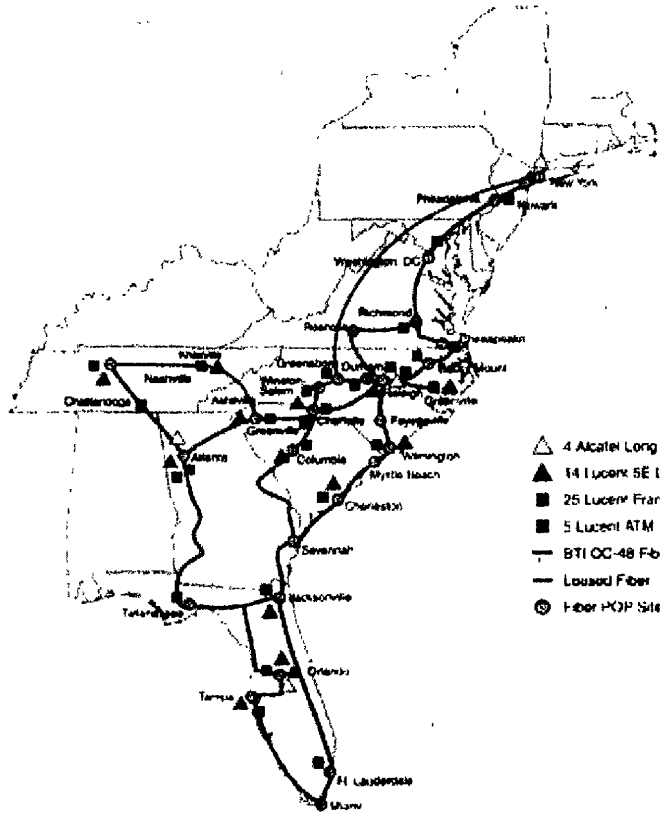
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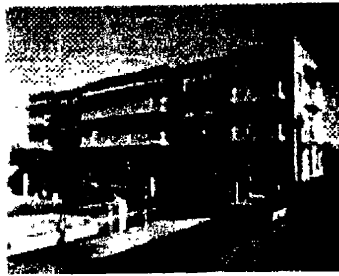
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- NTC Facts
- NTC Footprint
- NTC Milestones
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**DSL Facts**

**DSL Speed Demo**

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PowerLine DSL is 50 to 100 times faster than dial-up, up to speeds of 1.5 Mbps, or roughly equivalent to a T1.

### Affordable

PowerLine DSL delivers T1-comparable speeds to multiple users at a price that's as much as 50% lower than typical T1 costs. There's no better price/performance option available.

### Reliable

PowerLine DSL takes full advantage of your existing telecommunications infrastructure. And it's scalable to your business needs - as your business grows, PowerLine DSL can be upgraded without costly equipment or down-time.

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PowerLine DSL technology provides a dedicated Internet connection via private telephone wires. Unlike traditional dial-up modems or cable modems, PowerLine DSL protects your valuable data with the most secure connection available.

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WorldCom's suite of DSL offerings let you select the service that best fits applications:

- **Internet DSL Office**  
This multi-user DSL solution for business Internet access applicati symmetric bandwidth with available speeds of 128Kb, 384Kb, 768Kb, and 1.0Mb. Standard features include DSL router, multiple static IP ad hosting, email, and WorldCom news server access. This is an ideal SOHO and branch office locations interested in high-speed Interne
- **Internet DSL Solo**  
DSL Solo is a single-user business service for customers interestec speed, cost-effective Internet access. Internet DSL Solo offers asy bandwidth up to 384Kb, static IP addresses, and DSL modem, with existing, active voice lines.
- **Enterprise DSL**  
WorldCom Enterprise DSL is a single or integrated business DSL ar to frame relay and ATM service. This service offers class-of-service seven symmetric speeds ranging from 128Kb up to 1.5Mb. This se business-grade DSL for remote corporate locations, branch offices,
- **Private Label DSL**  
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- **Network Reliability** - WorldCom's DSL service is offered in more markets, and is a direct extension of our backbone network.
- **Flexibility** - WorldCom supports a broad range of network transp application options including Internet, frame relay, ATM, and VPN, Level Agreements (SLAs) on our network.
- **Full Product Portfolio** - Select the DSL service options to best fi requirements, such as DSL line speed, class of service, single or m single or integrated service with multiple Permanent Virtual Circuit
- **Range of Applications** - WorldCom DSL meets a broad range of

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application requirements. It offers remote workers and small- to m  
businesses a high-speed access alternative to traditional leased lin  
corporations can use DSL to extend broadband access to corporate  
resources for remote sites, branch offices, or traveling employees.

**Find out more...**

For more information on WorldCom<sup>SM</sup> products and services for y  
please [contact us online](#) or call us toll-free at 1-800-465-7187.

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BellSouth Telecommunications, Inc.  
 Florida Public Service Commission  
 Docket No. 020507-TL  
 Exhibit WKM-2  
 Page 1 of 5

**Copper Mountain Networks**  
 10145 Pacific Height Blvd  
 Suite 100  
 San Diego, CA 92014  
 (619) 458-1800  
 (619) 410-7283 Fax  
 sales@coppermountain.com

Date: 05/14/02

Copper Mountain Networks

Price Quote: 05/14/02

Product Name and Description	Product Category	Part No	Unit Price	Quantity	Total List Price	Discount	Extended Price
CE200 Base System	Base	200-010-10	\$ 9,995	2	\$ 19,990		19,990.00
CE200 Software	Software	111-007-00	\$ -	2	\$ -		-
SDSL Line Card, 24 ports	Line Module	120-021-10	\$ 4,995	11	\$ 54,945		54,945.00
							\$ 74,935

The CopperEdge DSLAM is available with the following WAN interfaces:

- Ethernet WAN Included
- DS3 ATM @ \$8,995
- DS3 FR @ \$8,995
- Quad T1 FR @ \$4,995
- V.35 (2 ports) @ \$2,995
- T1 DVA ATM @ \$10,495

**Terms**  
 Payment terms - Net 30 days on approved credit  
 FCA Copper Mountain Networks, San Diego, CA, USA  
 One year warranty hardware only, 30 days software only  
 This price quotation is valid for 30 days from date of quotation



**DSLAM Costs**

284 ADSL Ports - CopperMountain

Qty	Description	Unit Price	Extended
2	CE200 Base System	\$ 9,995	\$ 19,990
2	CE200 Software	-	-
11	SDSL Line Card, 24 ports	4,995	54,945
<b>TOTAL</b>			<b>\$ 74,935</b>
<b>Annual Maintenance (15%)</b>			<b>\$ 11,240</b>
<b>Maintenance Ammortized Monthly (/12)</b>			<b>937</b>

0



HD CO DSLAM - HARDWARE CAPACITY FOR 432 LINES, EQUIPPED WITH LINE UNITS FOR 252 LINES						
MBOS MODEL:		BBSWADSL20				
CONFIGURATION:		HIGH DENSITY CO DSLAM WITH 1 RACK, 2 SHELVES				
Part Number	Description	MNEMONIC	Qty	LIST PRICE	EXTENDED PRICE	
CO DSLAM-432: MBOS Model BBSWADSL20						
3EC16911AC	Configured Equipment Rack 2 Shlf - 7'	HLTR-A	1	\$ 18,515	\$	18,515
3EC16866AA	Extender Cable, Short		2	\$ 130	\$	260
3EC16661AA	DS3 NT	D3NT-A	2	\$ 5,807	\$	11,614
3EC16663AA	DS3 I/O Module	HD3I-A	1	\$ 109	\$	109
3EC16687AA	Alarm Control Unit	AACU-C	1	\$ 981	\$	981
3EC16435AA	Extender Unit	ADSE-B	2	\$ 2,464	\$	4,928
3EC16689AA	Continuity Test Unit	HCTU-A	1	\$ 245	\$	245
3EC16526AA	ADSL Line Termination Unit (12 lines per card)	ADLT-J	21	\$ 2,148	\$	45,108
3EC16883AB	Low Pass Filter CO (12 lines per card)	HLPC-B	21	\$ 493	\$	10,353
<b>Unit Total:</b>	<b>CO DSLAM-432: MBOS Model BBSWADSL20</b>		<b>1</b>		<b>\$</b>	<b>92,113</b>

### DSLAM Costs

252 ADSL Ports - Alcatel

Qty	Description	Unit Price	Extended
1	Configured Equipment Rack 2 Shlf - 7'	\$ 18,515	\$ 18,515
2	Extender Cable, Short	\$ 130	\$ 260
			\$ -
2	DS3 NT	\$ 5,807	\$ 11,614
1	DS3 I/O Module	\$ 109	\$ 109
1	Alarm Control Unit	\$ 981	\$ 981
2	Extender Unit	\$ 2,464	\$ 4,928
1	Continuity Test Unit	\$ 245	\$ 245
			\$ -
21	ADSL Line Termination Unit (12 lines per card)	\$ 2,148	\$ 45,108
21	Low Pass Filter CO (12 lines per card)	\$ 493	\$ 10,353
<b>TOTAL</b>			<b>\$ 92,113</b>
Annual Maintenance (15%)			\$ 13,817
Maintenance Ammortized Monthly (/12)			1,151



Net to Net

Date: 05/21/02

Price Quote: 05/21/02

Product Name and Description	Product Category	Part No	Unit Price	Quantity	Total List Price	Discnt	Extended Price
Chassis	Base	IPD12000	\$2,195	1	\$ 2,195		2,195.00
Mgmt Module	Software	MUM-200-2	\$6,995	1	\$ 6,995		6,995.00
ADSL Line Cards	Line Module	AAM8000-24	\$9,995	11	\$ 109,945		109,945.00
<u>Uplink Module</u>	Line Module	UIM200	\$ 195	1	\$ 195		195.00
							<b>\$ 119,330</b>

USING COPPER MOUNTAIN DSLAMS

Year by Year Summary		Yr.1	Yr.2	Yr.3	Yr.4	Yr.5	Total
New Loops - Annual		132	118	0	0	0	250
Total Loops - To-Date		132	250	250	250	250	
Average annual loop months		2.02	3.02	3.75	3.75	3.75	
<b>Cash Inflows</b>							
NRC Revenue		\$ 13,200	\$ 11,800	\$ -	\$ -	\$ -	\$ 25,000
50%	MRC Business Revenue	\$ 34,538	\$ 97,138	\$ 119,825	\$ 119,825	\$ 119,825	\$ 491,452
50%	MRC Residential Revenue	\$ 21,279	\$ 60,440	\$ 74,925	\$ 74,925	\$ 74,925	\$ 308,494
Total Cash Inflows		\$ 69,017	\$ 169,378	\$ 194,850	\$ 194,850	\$ 194,850	\$ 822,946
<b>Cash Outflows</b>							
<b>Direct Costs</b>							
<b>Start-up Costs</b>							
Collocation Buildout (PHR-5)		\$ 12,589	\$ -	\$ -	\$ -	\$ -	\$ 12,589
Collocation DSLAMs (PHR-6)		\$ 74,835	\$ -	\$ -	\$ -	\$ -	\$ 74,835
DS3 Interoffice Transport Install (PHR-8)		\$ 671	\$ -	\$ -	\$ -	\$ -	\$ 671
Line Sharing Splitter Capacity		\$ 1,137	\$ -	\$ -	\$ -	\$ -	\$ 1,137
<b>NRC:</b>							
Collocation 2-Wire Cross Connects (1st)		\$ 531	\$ 487	\$ -	\$ -	\$ -	\$ 1,018
Collocation 2-Wire Cross Connects (addtl)		\$ 5,308	\$ 4,733	\$ -	\$ -	\$ -	\$ 10,040
Line Share Splitter Activation LINE		\$ 2,608	\$ 2,511	\$ -	\$ -	\$ -	\$ 5,320
<b>MRC:</b>							
Collocation Operations		\$ 11,128	\$ 11,128	\$ 11,128	\$ 11,128	\$ 11,128	\$ 55,840
Collocation DSLAM Maintenance (PHR-6)		\$ 11,240	\$ 11,240	\$ 11,240	\$ 11,240	\$ 11,240	\$ 56,201
Collocation 2-Wire Cross Connects (PHR-6)		\$ 266	\$ 752	\$ 930	\$ 930	\$ 930	\$ 3,808
DS3 Interoffice Transport (Blackhaul)		\$ 31,782	\$ 31,782	\$ 31,782	\$ 31,782	\$ 31,782	\$ 156,910
Internet Service Bus (Bandwidth & Email) (PHR-9)		\$ 3,456	\$ 9,720	\$ 12,000	\$ 12,000	\$ 12,000	\$ 49,176
Internet Service Resal (Bandwidth & Email) (PHR-9)		\$ 1,944	\$ 5,468	\$ 6,750	\$ 6,750	\$ 6,750	\$ 27,682
Line Sharing Splitter LINE Monthly (60 lines)		\$ 7,158	\$ 7,158	\$ 7,158	\$ 7,158	\$ 7,158	\$ 35,789
Line Share Splitter Activation (PHR-7)		\$ 6,375	\$ 18,018	\$ 22,290	\$ 22,290	\$ 22,290	\$ 91,263
Total Direct Costs		\$ 171,328	\$ 102,997	\$ 103,278	\$ 103,278	\$ 103,278	\$ 584,159
Cash Gross Margin \$		\$ (102,311)	\$ 66,382	\$ 91,572	\$ 91,572	\$ 91,572	\$ 238,787
<b>Sales Costs</b>							
SPIF (One-time Commission on Sale)		\$ 5,277	\$ 4,717	\$ -	\$ -	\$ -	\$ 9,994
Marketing Costs (Based on Resl MRC)		\$ 6,503	\$ 3,894	\$ -	\$ -	\$ -	\$ 12,487
Residual (3% Business MRC Revenue)		\$ 1,038	\$ 2,914	\$ 3,588	\$ 3,588	\$ 3,588	\$ 14,744
Total Sales Cost		\$ 12,908	\$ 13,525	\$ 3,588	\$ 3,588	\$ 3,588	\$ 37,225
Cash Contribution Margin		\$ (115,217)	\$ 52,857	\$ 87,974	\$ 87,974	\$ 87,974	\$ 201,562
<b>Operating Costs</b>							
Provision, Pro, Mngl, Cust Serv, Etc.		\$ 3,960	\$ 3,540	\$ -	\$ -	\$ -	\$ 7,500
Provision, Pro, Mngl, Cust Serv, Etc.		\$ 1,880	\$ 1,770	\$ -	\$ -	\$ -	\$ 3,750
Total Operating Costs		\$ 5,840	\$ 5,310	\$ -	\$ -	\$ -	\$ 11,250
Cash Operating Margin		\$ (121,157)	\$ 47,547	\$ 87,974	\$ 87,974	\$ 87,974	\$ 190,312
Total Cash Outflow		\$ 180,174	\$ 121,832	\$ 106,876	\$ 106,876	\$ 106,876	\$ 632,634
Net Cash Flow - Annual		\$ (121,157)	\$ 47,547	\$ 87,974	\$ 87,974	\$ 87,974	\$ 190,312
Net Cash Flow - To-Date		\$ (121,157)	\$ (73,810)	\$ 14,384	\$ 182,338	\$ 190,312	
<b>Validation Results</b>							
Internal Rate of Return (IRR)		48.2%					
Months to Payback on Investment		(46)					
Total Startup Costs		\$ 89,332					

USING ALCATEL DSLAMS

	24					
	79.05					
Year by Year Summary	Yr.1	Yr.2	Yr.3	Yr.4	Yr.5	Total
New Loops - Annual	132	118	0	0	0	250
Total Loops - To-Date	132	250	250	250	250	
Average annual loop months	2.02	3.02	3.76	3.76	3.76	
<b>Cash Inflows</b>						
NRC Revenue	\$ 13,200	\$ 11,800	\$ -	\$ -	\$ -	\$ 25,000
MRC Business Revenue	\$ 34,836	\$ 97,139	\$ 119,923	\$ 118,925	\$ 119,925	\$ 491,452
MRC Residential Revenue	\$ 21,279	\$ 80,440	\$ 74,923	\$ 74,925	\$ 74,925	\$ 308,494
Total Cash Inflows	\$ 69,315	\$ 190,379	\$ 194,850	\$ 194,850	\$ 194,850	\$ 822,948
<b>Cash Outflows</b>						
<b>Direct Costs:</b>						
<b>Start-up Costs</b>						
Colocation Buildout (PHR-6)	\$ 12,586	\$ -	\$ -	\$ -	\$ -	\$ 12,586
Colocation DSLAMs (PHR-6)	\$ 92,113	\$ -	\$ -	\$ -	\$ -	\$ 92,113
DSL Interoffice Transport Install (PHR-6)	\$ 871	\$ -	\$ -	\$ -	\$ -	\$ 871
Line Sharing Splitter Capacity	\$ 1,137	\$ -	\$ -	\$ -	\$ -	\$ 1,137
<b>NRC:</b>						
Colocation 2-Wire Cross Connects (1st)	\$ 531	\$ 487	\$ -	\$ -	\$ -	\$ 1,018
Colocation 2-Wire Cross Connects (Addtl)	\$ 4,308	\$ 4,733	\$ -	\$ -	\$ -	\$ 9,041
Line Share Splitter Activation (PHR-7)	\$ 2,809	\$ 2,511	\$ -	\$ -	\$ -	\$ 5,320
<b>MRC:</b>						
Colocation Operations	\$ 11,128	\$ 11,128	\$ 11,128	\$ 11,128	\$ 11,128	\$ 56,640
Colocation DSLAM Maintenance (PHR-6)	\$ 13,817	\$ 13,817	\$ 13,817	\$ 13,817	\$ 13,817	\$ 69,085
Colocation 2-Wire Cross Connects (PHR-6)	\$ 266	\$ 762	\$ 636	\$ 636	\$ 636	\$ 3,808
DSL Interoffice Transport (Backhaul)	\$ 31,782	\$ 31,782	\$ 31,782	\$ 31,782	\$ 31,782	\$ 158,910
Internet Service Bus (Bandwidth & Email) (PHR-6)	\$ 3,458	\$ 9,720	\$ 12,000	\$ 12,000	\$ 12,000	\$ 49,178
Internet Service Resol (Bandwidth & Email) (PHR-6)	\$ 1,844	\$ 4,468	\$ 6,760	\$ 6,760	\$ 6,760	\$ 27,892
Line Sharing Splitter Capacity	\$ 7,168	\$ 7,168	\$ 7,168	\$ 7,168	\$ 7,168	\$ 35,789
Line Share Splitter Activation (PHR-7)	\$ 8,376	\$ 18,018	\$ 22,290	\$ 22,290	\$ 22,290	\$ 91,263
Total Direct Costs	\$ 191,083	\$ 106,673	\$ 100,666	\$ 100,666	\$ 100,666	\$ 814,220
Cash Gross Margin \$	\$ (122,068)	\$ 83,706	\$ 94,184	\$ 94,184	\$ 94,184	\$ 208,728
<b>Sales Costs</b>						
SPIF (One-Time Commission on Sale)	\$ 6,277	\$ 4,717	\$ -	\$ -	\$ -	\$ 9,994
Marketing Costs (Based on Real MRC)	\$ 6,583	\$ 5,894	\$ -	\$ -	\$ -	\$ 12,477
Residual (3% Business MRC Revenue)	\$ 1,036	\$ 2,814	\$ 3,506	\$ 3,506	\$ 3,506	\$ 14,744
Total Sales Cost	\$ 13,896	\$ 13,425	\$ 3,506	\$ 3,506	\$ 3,506	\$ 37,228
Cash Contribution Margin	\$ (134,972)	\$ 70,281	\$ 90,678	\$ 90,678	\$ 90,678	\$ 171,500
<b>Operating Costs</b>						
Provision, Prog Mngt, Cust Serv, Etc	\$ 3,880	\$ 3,540	\$ -	\$ -	\$ -	\$ 7,500
Provision, Prog Mngt, Cust Serv, Etc	\$ 1,880	\$ 1,720	\$ -	\$ -	\$ -	\$ 3,780
Total Operating Costs	\$ 5,760	\$ 5,260	\$ -	\$ -	\$ -	\$ 11,260
Cash Operating Margin	\$ (140,732)	\$ 65,021	\$ 90,678	\$ 90,678	\$ 90,678	\$ 160,240
Total Cash Outflow	\$ 208,929	\$ 124,408	\$ 100,483	\$ 100,483	\$ 100,483	\$ 834,666
Net Cash Flow - Annual	\$ (144,813)	\$ 44,871	\$ 88,397	\$ 88,397	\$ 88,397	\$ 160,241
Net Cash Flow - To-Date	\$ (144,813)	\$ (96,941)	\$ (96,944)	\$ 74,883	\$ 160,281	
<b>Validation Results</b>						
Internal Rate of Return (IRR)						24.8%
Months to Payback on Investment						(48)
Total Startup Costs						\$ 164,888

USING NET-TO-NET DSLAMS

Year by Year Summary	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Total
New Loops - Annual	132	118	0	0	0	250
Total Loops - To-Date	132	250	250	250	250	
<b>Cash Inflows</b>						
NRC Revenue	\$ 13,200	\$ 14,800	\$ -	\$ -	\$ -	\$ 28,000
MRC Business Revenue	\$ 34,538	\$ 97,439	\$ 119,925	\$ 119,925	\$ 119,925	\$ 491,452
MRC Residential Revenue	\$ 21,278	\$ 60,440	\$ 74,925	\$ 74,925	\$ 74,925	\$ 306,494
Total Cash Inflows	\$ 69,017	\$ 169,379	\$ 194,850	\$ 194,850	\$ 194,850	\$ 822,946
<b>Cash Outflows</b>						
<b>Direct Costs:</b>						
<b>Start-up Costs</b>						
Collocation Buildout (PHR-5)	\$ 12,589	\$ -	\$ -	\$ -	\$ -	\$ 12,589
Collocation DSLAMs (PHR-6)	\$ 119,330	\$ -	\$ -	\$ -	\$ -	\$ 119,330
DS3 Interoffice Transport Install (PHR-4)	\$ 671	\$ -	\$ -	\$ -	\$ -	\$ 671
Line Sharing Splitter Capacity	\$ 1,137	\$ -	\$ -	\$ -	\$ -	\$ 1,137
<b>MRC:</b>						
Collocation 2-Wire Cross Connects (1a)	\$ 531	\$ 487	\$ -	\$ -	\$ -	\$ 1,018
Collocation 2-Wire Cross Connects (addl)	\$ 5,308	\$ 4,733	\$ -	\$ -	\$ -	\$ 10,040
Line Share Splitter Activation (PHR-7)	\$ 2,808	\$ 2,511	\$ -	\$ -	\$ -	\$ 5,320
<b>MRC:</b>						
Collocation Operations	\$ 11,128	\$ 11,128	\$ 11,128	\$ 11,128	\$ 11,128	\$ 55,840
Collocation DSLAM Maintenance (PHR-6)	\$ -	\$ 19,467	\$ 19,467	\$ 19,467	\$ 19,467	\$ 77,868
Collocation 2-Wire Cross Connects (PHR-6)	\$ 266	\$ 752	\$ 830	\$ 830	\$ 830	\$ 3,608
DS3 Interoffice Transport (Backhaul)	\$ 31,782	\$ 31,782	\$ 31,782	\$ 31,782	\$ 31,782	\$ 158,910
Internet Service Bus (Bandwidth & Email) (PHR-8)	\$ 3,458	\$ 9,720	\$ 12,000	\$ 12,000	\$ 12,000	\$ 49,178
Internet Service Resil (Bandwidth & Email) (PHR-8)	\$ 1,944	\$ 5,468	\$ 6,750	\$ 6,750	\$ 6,750	\$ 27,682
Line Sharing Splitter Capacity	\$ 7,158	\$ 7,158	\$ 7,158	\$ 7,158	\$ 7,158	\$ 35,789
Line Share Splitter Activation (PHR-7)	\$ 8,375	\$ 18,018	\$ 22,290	\$ 22,290	\$ 22,290	\$ 91,263
Total Direct Costs	\$ 204,483	\$ 111,223	\$ 111,505	\$ 111,505	\$ 111,505	\$ 650,221
Cash Gross Margin \$	\$ (135,466)	\$ 58,156	\$ 83,345	\$ 83,345	\$ 83,345	\$ 172,725
<b>Sales Costs</b>						
SPF (One-time Commission on Sale)	\$ 5,277	\$ 4,717	\$ -	\$ -	\$ -	\$ 9,994
Marketing Costs (Based on Resl MRC)	\$ 6,593	\$ 6,894	\$ -	\$ -	\$ -	\$ 12,487
Residual (3% Business MRC Revenue)	\$ 1,806	\$ 2,814	\$ 3,598	\$ 3,598	\$ 3,598	\$ 14,744
Total Sales Cost	\$ 12,906	\$ 13,625	\$ 3,598	\$ 3,598	\$ 3,598	\$ 37,225
Cash Contribution Margin	\$ (148,372)	\$ 44,531	\$ 79,747	\$ 79,747	\$ 79,747	\$ 135,500
<b>Operating Costs</b>						
Provision, Proj Mngt, Cust Serv, Etc.	\$ 3,960	\$ 3,540	\$ -	\$ -	\$ -	\$ 7,500
Provision, Proj Mngt, Cust Serv, Etc.	\$ 1,980	\$ 1,770	\$ -	\$ -	\$ -	\$ 3,750
Total Operating Costs	\$ 5,940	\$ 5,310	\$ -	\$ -	\$ -	\$ 11,250
Cash Operating Margin	\$ (154,312)	\$ 39,221	\$ 79,747	\$ 79,747	\$ 79,747	\$ 124,250
Total Cash Outflow	\$ 223,329	\$ 130,058	\$ 115,103	\$ 115,103	\$ 115,103	\$ 698,696
Net Cash Flow - Annual	\$ (154,312)	\$ 39,221	\$ 79,747	\$ 79,747	\$ 79,747	\$ 124,250
Net Cash Flow - To-Date	\$ (154,312)	\$ (114,891)	\$ (35,144)	\$ 44,593	\$ 124,250	
<b>Valuation Results</b>						
Internal Rate of Return (IRR)	25.3%					
Months to Payback on Investment	(51)					
Total Startup Costs	\$ 135,727					