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Witness:	John Lube
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Sponsoring Party:	Southwestern Bell Telephone Company
Case No:	TO-2000-322

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SOUTHWESTERN BELL TELEPHONE COMPANY

CASE NO. TO-2000-322

Surrebuttal Testimony

of

John Lube

February 2000

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

FILED[3]
FEB 10 2000
Missouri Public Service Commission

In the Matter of the Petition of	)	
DIECA Communications, Inc	)	
D/B/A Covad Communications Company	)	TO-2000-322
for Arbitration of Interconnection	)	
Rates, Terms, Conditions and Related	)	
Arrangements with Southwestern	)	
Bell Telephone Company	)	

AFFIDAVIT OF JOHN P. LUBE

STATE OF TEXAS)
) SS
CITY OF DALLAS)

I, John P. Lube, of lawful age, being duly sworn, depose and state:

1. My name is John P. Lube. I am presently General Manager - Network Services for SBC Operations Inc.

2. Attached hereto and made a part hereof for all purposes is my surrebuttal testimony.

3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge and belief.

John P. Lube

Subscribed and sworn to before me on this 1st day of February 2000.

HATTIE C. WYATT
NOTARY PUBLIC
State of Texas
Comm. Exp. 09-17-2000

Notary Public

Q. PLEASE STATE YOUR NAME, TITLE, AND EMPLOYER?

A. My name is John P. Lube. I am General Manager-Network Services for SBC Operations, Inc.

Q. ARE YOU THE SAME JOHN P. LUBE THAT FILED DIRECT AND REBUTTAL TESTIMONY IN THIS PROCEEDING?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. The purpose of my surrebuttal testimony is to respond to certain positions expressed in the rebuttal testimony of Covad's witnesses Terry L. Murray, John C. Donovan and Bernard Chao, and the Staff's witnesses Anthony Clark and Myron E. Couch. The areas I will address include (1) SWBT's loop qualification process, (2) SWBT's loop conditioning related to load coils, bridged tap and repeaters, and (3) SWBT's position on technical publications.

1. SWBT'S LOOP QUALIFICATION PROCESS

Q. COVAD'S WITNESSES AND STAFF'S WITNESSES REFER TO "MECHANIZED LOOP QUALIFICATION" IN THEIR REBUTTAL TESTIMONIES. CAN YOU EXPLAIN THE DIFFERENT TYPES OF MECHANIZATION ASSOCIATED WITH THIS PROCESS?

A. Yes. I'll start with mechanized data. Some loop make-up information used for loop qualification has been inventoried in a database. As such, this is mechanized data. SWBT can access this mechanized data today to provide part of the loop qualification information for both CLECs and SWBT's advanced services affiliate, SBC Advanced Solutions, Inc. ("ASI").[1] However, other loop make-up information used for loop qualification does not reside in a mechanized database. Thus, a manual look-up of this information is required. The FCC has determined that SWBT is not required to create a mechanized inventory of this manual information (see Lube Direct, page 5).[2] In addition, the Texas Public Utility Commission has clarified in its Order Approving Interconnection Agreements [approving interconnection agreements between: [(a) SWBT and Rhythms, Links, Inc.; and (b) SWBT and Covad] that:

> incumbent local exchange carriers (ILECS) do not need to catalogue (or "inventory") and make available to competitors actual loop makeup information through automated systems when it has no such information available to itself.[3]

As explained in my rebuttal testimony (pages 6 and 7), SWBT will add information to the mechanized database in the normal course of operation, but will not achieve even the level of mechanization assumed in the cost study in the foreseeable future.

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[1] ASI serves the retail xDSL customers previously served by SWBT.
[2] FCC 99-238, Third Report and Order and Fourth Further Notice of Proposed Rulemaking in CC Docket No. 96-98 ("In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996"), released November 5, 1999 ("UNE Remand Order"), paragraph 429.
[3] Public Utility Commission of Texas, Order Approving Interconnection Agreements, Docket Nos. 20226 and 20272, February 7, 2000, page 2).

Q. IS THIS POINT ALSO ADDRESSED IN THE "ATTACHMENT DSL" AGREED TO BY BOTH COVAD AND SWBT DURING THE NEGOTIATIONS WHICH PRECEDED THIS ARBITRATION?

A. Yes. Attachment DSL (see Schedule 1 to my surrebuttal testimony) reflects the parties' agreement on all DSL issues other than prices, which will be determined in this proceeding. With regard to this specific issue, paragraph 5.4.1 of Attachment DSL states:

> In accordance with the UNE Remand Order, where SWBT has not compiled loop qualification information for itself, SWBT is not required to conduct a plant inventory and construct a database on behalf of requesting carriers.

Q. WHAT IS MECHANIZED ACCESS?

A. Mechanized access (also referred to as electronic access) is the ability to electronically access and obtain information that resides in a mechanized database. The FCC has required SWBT to provide such electronic access for loop qualification information, stating that "to the extent [SWBT's] employees have access to the information in an electronic format, that same format should be made available to new entrants via an electronic interface."[4] Neither the CLECs nor SWBT's advanced services affiliate, ASI, has electronic access today. But, as I have previously testified, SWBT is already working on making such access to its mechanized loop qualification data equally available to both CLECs and ASI (see Lube Direct, page 6 and Lube Rebuttal, page 7).

[4] UNE Remand Order, paragraph 429.

Q. WHAT POSITION HAS MS. MURRAY TAKEN IN HER REBUTTAL TESTIMONY?

A. Ms. Murray states that "Covad is not, however, asking the Commission to order SWBT to 'mechanize' access to any data that are not already contained in SWBT's existing electronic databases. Instead, in this arbitration, Covad is asking for access to SWBT data that is already mechanized" (Murray Rebuttal, page 3). Ms. Murray acknowledges on page 4 of her rebuttal testimony that manual loop qualification activities may be required to obtain information not already contained in a mechanized database.

Q. MR. DONOVAN ASSERTS THAT ALL RELEVANT LOOP MAKE-UP INFORMATION SHOULD ALREADY BE MECHANIZED. DO YOU AGREE?

A. No. Prior to the advent of the newer digital services, SWBT had no business need to place loop make-up information in a mechanized database. However, SWBT has been mechanizing loop make-up information where actual demand for the newer digital services has occurred (see Lube rebuttal, page 6). As a result, the different types of loop make-up information exist in SWBT's mechanized databases only to the extent shown in my rebuttal testimony (pages 3 and 4). In addition, as I stated above, the FCC and the Texas arbitrator have acknowledged that not all such information is already mechanized by SWBT.

Q. MR. DONOVAN STATES THAT ONLY CERTAIN ITEMS OF LOOP QUALIFICATION INFORMATION ARE DESIRED BY COVAD (DONOVAN

REBUTTAL, PAGE 6). ARE THE ITEMS DESIRED BY COVAD AVAILABLE TODAY IN SWBT'S MECHANIZED DATABASE?

A. As shown in my rebuttal testimony (pages 3 and 4), the four items desired by Covad are available as mechanized data for only 20% of SWBT's copper loops. As also noted in my rebuttal testimony (page 3), SWBT's loop qualification study assumes this information is available as mechanized data for 80% of SWBT's copper loops, clearly underestimating the amount of manual effort required by SWBT for the foreseeable future.

Q. MR. COUCH SUGGESTS THAT SWBT COULD USE A HARRIS 105A REMOTE TEST UNIT TO PRE-QUALIFY ALL OF ITS LOOPS (COUCH REBUTTAL, PAGE 3). WHAT IS A 105A REMOTE TEST UNIT?

A. The Harris Model 105A Remote Test Unit (RTU) is central office equipment that can test copper loops connected to the central office switch. The loop testing can be performed from the central office by accessing the loop through the switch, or remotely by dialing a test number through the loop to access the 105A RTU through the switch.

Q. CAN THE 105A RTU TEST SPARE LOOPS?

A. No. The 105A RTU can access a loop or be accessed from a loop only through a switch. Therefore, it is of no use for spare loops.

Q. WHAT TYPES OF TESTS CAN BE PERFORMED WITH A 105A RTU?

A. The 105A RTU can be used to determine the length of a loop, detect the presence of loading, detect shorts or grounds, and perform other tests (e.g., balance and noise) related to POTS. However, it cannot detect other loop make-up information associated with xDSL loop qualification in the FCC's SBC/Ameritech Order,[5] such as the presence, location, and length of bridged tap.

Q. CAN THE 105A RTU BE USED, AS MR. COUCH APPEARS TO SUGGEST IN HIS REBUTTAL TESTIMONY (PAGE 3), TO POPULATE ACTUAL LOOP MAKE-UP DATA IN A MECHANIZED DATA BASE FOR ALL OF SWBT'S LOOPS?

A. No. As explained above, the 105A RTU can access only working POTS loops. Also, it is not capable of identifying all of the required loop qualification information.

Q. CAN THE 105A RTU BE USED TO QUALIFY LOOPS FOR XDSL?

A. No. It does not perform tests in the frequency ranges required for xDSL operation.

Q. CAN THE 105A RTU BE UPGRADED OR ENHANCED TO IDENTIFY ADDITIONAL LOOP QUALIFICATION INFORMATION FOR XDSL OR QUALIFY LOOPS FOR XDSL?

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[5] FCC 99-279, Memorandum Opinion and Order in CC Docket No. 98-141 ("In re Applications of Ameritech Corp., Transferor, and SBC Communications Inc., Transferee, For Consent to Transfer Control of Corporations Holding Commission Licenses and Lines Pursuant to Section 214 and 310(d) of the Communications Act and Parts 5, 22, 24, 25, 63,

A. No. The 105A RTU does not support or interface with auxiliary equipment capable of identifying more loop qualification information or performing xDSL qualification testing. A Harris Communications representative confirmed that the Wide Band Test Pack mentioned by Mr. Couch in his rebuttal testimony (page 3) is not compatible with the 105A RTU.

Q. HAS SWBT DEPLOYED THE 105A RTU IN MISSOURI?

A. SWBT has deployed the 105A RTU only in some locations in Missouri. And, for the technical reasons explained above, this equipment is not used by SWBT anywhere for xDSL.

Q. HAS SWBT DEPLOYED THE HARRIS WIDE BAND TEST PACK AND ASSOCIATED TESTING EQUIPMENT IN MISSOURI?

A. No.

Q. MR. DONOVAN ALSO ALLEGES THAT THE EFFORT TO OBTAIN LOOP MAKE-UP INFORMATION IS INCORRECTLY DOUBLE-COUNTED BECAUSE IT IS INCLUDED IN SWBT'S LOOP QUALIFICATION COST STUDY AND IN SWBT'S LOOP CONDITIONING COST STUDY. CAN YOU ADDRESS THIS ALLEGATION?

90, 95 and 101 of the Commission's Rules"), released October 8, 1999 ("SBC/Ameritech Merger Order"), paragraph 374.

A. Yes. This effort is not incorrectly double-counted in SWBT's cost studies because the manual look-up of this information is separately required for both loop qualification and loop conditioning.

Q. WHY ARE SEPARATE LOOK-UPS REQUIRED FOR LOOP QUALIFICATION AND LOOP CONDITIONING?

A. Manual loop records are pulled and reviewed by the engineer for each request for loop qualification. If loop qualification determines that billable loop conditioning is needed, it is Covad's decision whether to request that conditioning to be performed by SWBT. Because Covad may choose to not proceed with the billable conditioning, the manual loop records are re-filed after completion of loop qualification. There is no practicable way for the engineer to hold this information in abeyance just in case Covad decides to request the conditioning. As a consequence, these records must be re-pulled and re-analyzed, if and when the request for loop conditioning is received from Covad, so that SWBT's engineer can then begin to prepare the work order for the conditioning.

Q. MR. CLARK RECOMMENDS ELECTRONIC ACCESS TO ALL LOOP QUALIFICATION INFORMATION BY JULY, 2000, FOR BOTH THE DATAGATE AND EDI INTERFACES (CLARK REBUTTAL, PAGE 5). CAN YOU COMMENT ON HIS RECOMMENDATION?

A. Yes. SWBT is currently striving to provide electronic assess to actual loop qualification information by the date specified in the Texas arbitrator's award in the Texas Public Utility Commission's Docket Nos. 20226 and 20272. The same system modifications

used to accomplish this electronic access in Texas can also be used by SWBT in Missouri. As a consequence, the date recommended by Mr. Clark should be achievable. However, as explained above, this electronic access will not be to all actual loop information for all loops, but instead, to that amount of actual loop information that already exists in a mechanized database. As I have shown above, the Texas arbitrator agrees that the arbitration award does not impose a requirement to convert actual loop information from manual records into additional mechanized data.

Q. HAVE YOU TESTIFIED THAT SWBT ALREADY PLANS TO HAVE MECHANIZED LOOP QUALIFICATION IN PLACE BY JULY, 2000, AS SUGGESTED BY MR. CLARK (CLARK REBUTTAL, PAGE 6)?

A. My direct testimony (page 6), based upon SWBT's Plan of Record filed last December with the FCC, explained that electronic access would be in place by July, 2000, but only for designed loop information. According to the Plan of Record, electronic access to actual loop information (already inventoried in a mechanized database) would be available by the end of 2000. However, as explained above, SWBT is now striving to provide the electronic access in the timeframe set by the Texas arbitrator's award.

Q. MR. CLARK SUGGESTS THAT MECHANIZED LOOP QUALIFICATION BE IMPLEMENTED AS SOON AS POSSIBLE BY SWBT BECAUSE CLECS "ARE AT AN EXTREME DISADVANTAGE BY HAVING TO RELY ON SWBT (I.E., WITHOUT DIRECT ACCESS) FOR LOOP QUALIFICATION INFORMATION" (PAGE 6). DO YOU AGREE?

A. No. First, SWBT is already implementing, as quickly as possible, the electronic access to that actual loop qualification data which is inventoried in a mechanized database. It is unrealistic to expect the development of these new interfaces to be accomplished instantaneously. Second, as explained in my direct testimony (page 6), the CLECs and SWBT's advanced services affiliate already have equal access to all loop qualification information. In other words, for information that will be available to CLECs via electronic access, SWBT's advanced services affiliate will also receive that same information via electronic access. Conversely, for information available to CLECs only on a manual basis, SWBT's advanced services affiliate must also obtain that same information on a manual basis. Neither a CLEC nor SWBT's advanced services affiliate has any advantage over the other as to the method of access or the amount of information available in a mechanized database.

Q. MR. CLARK ALSO PROPOSES MECHANIZED LOOP ORDERING BY JULY, 2000 (PAGE 5). CAN YOU COMMENT ON THIS PROPOSAL?

A. Yes. First, SWBT is already in the process of enhancing the ordering process for xDSL. These changes are covered in the same operations support systems ("OSS") Plan of Record described in my rebuttal testimony (page 3). Second, in mirroring the proposal for loop ordering from the arbitrator's award in Texas, Mr. Clark fails to realize that ordering processes and intervals are not even a dispute in this arbitration in Missouri, and therefore, should not be the subject of this proceeding.

2. LOOP CONDITIONING

Q. ARE MR. DONOVAN CRITICISMS OF SWBT'S OUTSIDE PLANT ENGINEERING APPROPRIATE (DONOVAN REBUTTAL, PAGES 12 AND 13)?

A. No. Mr. Donovan's depiction of the application of engineering guidelines is unrealistic. Such an idealistic, prescriptive depiction, where virtually no loading and bridged tap exist in the network, certainly serves Covad's desire to incur no financial responsibility for making SWBT's existing network suitable for xDSL. It is this very financial obligation of requesting carriers that the FCC has repeatedly affirmed in its orders.[6]

In building and rearranging SWBT's real network, SWBT's outside plant engineers correctly look to SWBT's engineering guidelines for direction. However, no amount of guidelines can serve as a substitute for sound engineering judgment based upon real world circumstances. These extenuating circumstances include factors such as unexpected customer demand and limited resources. For example, if a new customer moves into an established distribution area ("DA") and requests 100 lines into a building that previously was served by ten lines, the engineer must find a logical and economical way to serve that customer's current and projected demand. Doing so in accordance with rigid guidelines may trigger the placement of a new feeder cable that

[6] For example, UNE Remand Order, paragraphs 192 and 193.

otherwise would not be needed for many years. The time and dollars required to place this additional cable may be not only considerable, but also avoidable simply by using pairs available in another feeder cable that serves other DAs farther down the road. In other words, these available feeder pairs could be extended laterally into the DA where the new customer is located. Rather than cutting off these same pairs beyond the new lateral, it may be prudent to leave them "multipled" at that splice, as long as the resulting amount of bridged tap does not create transmission impairments for existing or future services.

SWBT's engineers are well trained, and are expected to make rational economic decisions, rather than mindlessly adhering to ideal guidelines. Again, such guidelines have a definite purpose, but cannot replace sound judgment based upon real world circumstances.

Q. DOES SWBT AGREE THAT EXCESSIVE BRIDGED TAP EXISTS IN SWBT'S NETWORK, AS SUGGESTED BY MR. DONOVAN (DONOVAN REBUTTAL, PAGES 3 AND 10)?

A. No. SWBT does not allow bridged tap to become excessive for the services used by the overwhelming majority of its customers. SWBT, however, does agree that some of its bridged tap is excessive for digital services such as those provided over xDSL technology. However, the FCC levied no criticisms upon SWBT's existing network design when it said "[o]ur definition of loops will in some instances require the incumbent LEC to take affirmative steps to condition existing loop facilities to enable

requesting carriers to provide services not currently provided over such facilities. ... The requesting carrier would, however, bear the cost of compensating the incumbent LEC for such conditioning."[7]

Again, while engineering guidelines direct SWBT's engineers toward a network with ubiquitous digital capability, such a guideline cannot and will not be realized in every part of SWBT's loop network at the pace suggested by Mr. Donovan. Besides, xDSL technology and its transmission requirements are still in a state of infancy, relative to other digital services. The technology is currently being defined by standards bodies, and yet, is being redefined and improved almost daily.

Q. MR. COUCH CLAIMS THAT "CUT THROUGH DROPS" ELIMINATE THE NEED FOR BRIDGED TAP (COUCH REBUTTAL, PAGE 7). IS HE CORRECT?

A. No. A "cut-through" (or "connect-through") often refers to the cross-connect between the feeder pair and the distribution pair being left in place at the feeder-distribution interface ("FDI"). This practice is generally cost-effective for the primary loop serving each living unit (i.e., home); that is, when someone moves out of the home, the connect-through allows service to be established at the same home more efficiently when another customer moves into that home. However, connect-throughs do not exist

[7] FCC 96-325, First Report and Order in CC Docket No. 96-98 ("In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996"), released August 8, 1996 ("Interconnection Order"), paragraph 382.

on all other pairs in a distribution area ("DA") because there are more distribution pairs in a DA than there are feeder pairs from that DA back to the central office. In addition, connect-throughs are not used on all feeder pairs to the DA because doing so would eliminate the flexibility provided by the FDI. Therefore, the existence of connect-throughs between some feeder and distribution pairs in a DA does not eliminate the need for bridged tap on other feeder pairs (e.g., some feeder pairs connected to multiple FDIs), or other distribution pairs (e.g., end tap on reassignable pairs).

Q. MR. COUCH ALSO CLAIMS BRIDGED TAP RESTORAL IS UNNECESSARY (COUCH REBUTTAL, PAGE 8). DO YOU AGREE?

A. No. As I explained in my rebuttal testimony (pages 23 and 24), restoral of bridged tap may be the only way a new customer can use a pair from which the bridged tap was previously removed to provide xDSL. In other words, if there are no pairs available to provide service to a new customer, and another loop could be extended to that customer by restoring bridged tap previously removed from that loop, then restoral of bridged tap would be not only appropriate, but also necessary.

Q. MR. DONOVAN STATES THAT THE COST OF REMOVING A REPEATER SHOULD CONSIST OF JUST THE PLACEMENT OF A "SHUNT PLUG" INSIDE THE REPEATER HOUSING THAT IS CURRENTLY SPLICED TO THE REQUIRED LOOP (DONOVAN REBUTTAL, PAGE 9). DO YOU AGREE WITH MR. DONOVAN?

A. No. First, it must be remembered that, when providing a loop for xDSL, SWBT will not select a loop with any type of existing digital repeater except as a last resort.

Second, some repeaters are hardwired to the loop, such as an ISDN repeater. In this instance, a "shunt plug" (otherwise known as a "through-connect adapter") is not an option; the repeater must be physically disconnected from the loop.

Third, if the only available pair is in a binder group with working T1 lines, SWBT will advise Covad of this as part of the loop qualification information. In this instance, it is probable that Covad would not want to use that pair, because of the potential for interference between T1 and xDSL.

Fourth, if Covad were to request the loop with the T1 repeater, SWBT's engineer would review the expected future need for a T1 repeater on that loop. If the engineer determines that the repeater is not needed in the future, a work order will be issued to disconnect the loop from the repeater housing. Conversely, if the engineer determines that a T1 repeater may be needed on this loop in the future, a "shunt plug" (otherwise known as a "through-connect adapter") could be placed in the repeater housing for that loop. However, in this instance, other T1 repeaters are most likely working in that binder group, and, as described above, Covad may not want to use that loop anyway.

If Covad requests loop conditioning, and the conditioning consists of disconnecting the loop from a T1 repeater housing, that activity would be recovered through SWBT's

proposed loop conditioning charges. On the other hand, if a through-connect adapter were to be used for that loop, SWBT would still incur substantial cost for that activity, and should likewise be reimbursed.

Q. MR. CLARK RECOMMENDS A LIMIT ON LOOP CONDITIONING CHARGES IN HIS REBUTTAL TESTIMONY (PAGES 9 AND 10). DO YOU AGREE WITH HIS PROPOSAL?

A. No. First, Mr. Clark has proposed the payment of loop conditioning charges for only four out of every 100 loops between 12,000 and 17,500 feet provided by SWBT to Covad. He appears to base this percentage on SWBT's estimated amount of pairs less than 18,000 feet that have load coils.[8] One fallacy of this approach is that it does not account for any of the situations where non-loaded pairs less than 18,000 feet require the removal of bridged tap.

Second, this proposal ignores SWBT's commitment to find suitable loops, where no conditioning is required, as often as possible. As I stated in my rebuttal testimony (page 18), SWBT will even perform a line and station transfer ("LST") of a working POTS service at no charge to the CLEC if doing so will prevent the need for loop conditioning for xDSL.

[8] See Lube Rebuttal, page 17.

Third, Mr. Clark appears to rationalize the need for this plan based on comments made by Covad at a recent meeting between the Staff and Covad (Clark Rebuttal, page 9). In his testimony, Mr. Clark states that "Staff learned that Covad has had experiences in other states in which the incumbent LEC applied conditioning charges to a substantially high percentage of loops ordered by Covad." As I explained in my direct testimony (pages 9 and 10), SWBT will charge Covad for billable conditioning only when Covad requests such conditioning.

Fourth, the mechanics of Mr. Clark's proposal are flawed. According to his plan, if eight out of the first 100 loops between 12,000 and 17,500 feet required conditioning, SWBT would be allowed to charge for conditioning on only four loops. However, if the next 100 loops in this length range required no conditioning, there would be no conditioning charges for that group of 100 loops. As a consequence, SWBT would not have been allowed to achieve 4% on a cumulative basis. Obviously, Covad would have the incentive to order large groups of loops which require conditioning in order to avoid conditioning charges on all but the first four loops. In addition, Mr. Clark's proposal would not even allow SWBT to recover the costs of any of the special record keeping and billing procedures that would be required to implement the proposal.

Fifth, Mr. Clark's testimony regarding his proposal is inconsistent. Page 9 of his rebuttal testimony refers to loops between 12,000 and 17,500 feet as a basis for his proposal. Page 10 addresses only the upper end of this length range, stating "[t]he limit would not apply to conditioning charges for loops over 17,500 feet." Then, on page 19,

the summary of his recommendations does not even refer to the length of loops to which the limit would apply. This summary version would exacerbate the flaws in the recommendation because load coils appear on loops longer than 17,500 feet much more frequently than 4% of the time.

Mr. Latham also addresses this proposal in his surrebuttal testimony.

Q. DOES MR. CLARK ADDRESS BULK CONDITIONING IN HIS REBUTTAL TESTIMONY?

A. Yes. Mr. Clark's rebuttal testimony (page 12) refers to the Texas arbitrator's erroneous finding that "SWBT's internal practices called for conditioning of at least 50 pairs in a binder group at a time." As I explained in my rebuttal testimony (pages 16 and 17), SWBT has not and does not perform bulk conditioning of loops for xDSL.

Q. MS. MURRAY CONTINUES TO ASSERT THAT SWBT'S LOOP CONDITIONING COSTS ARE ALREADY RECOVERED IN ITS RECURRING CHARGES FOR AN XDSL-CAPABLE LOOP. CAN YOU COMMENT ON THIS?

A. Yes. Ms. Murray states in her rebuttal testimony (page 6), "[a]s Mr. Donovan and I demonstrated in our direct testimonies, SWBT will recover the relevant costs for providing DSL-capable loops as part of recurring prices that are designed to cover its TELRIC" (emphasis added). Interestingly, in her direct testimony (pages 30 and 31), Mr. Murray stated "the monthly recurring charge for basic 8 dB unbundled loops

reflects the cost of a network that deploys fiber feeder and DLC [digital loop carrier] for long loops (which I would expect to be higher than the recurring cost of an all-copper network)" (emphasis added). Characterizing her speculation as to the relative cost of the fiber/DLC as a demonstration of her position is inappropriate. As I explained in my rebuttal testimony (page 12), the cost of the fiber/DLC loop, at the loop lengths where it is used in SWBT's TELRIC study, is indeed less than the cost of an all-copper loop at those same lengths.

Q. MS. MURRAY STATES THAT SWBT'S PROPOSED CONDITIONING CHARGES ARE DISCRIMINATORY BY COMPARING THEM WITH SWBT'S "PLANNED ACTIONS RELATIVE TO ITS OWN NETWORK" (MURRAY REBUTTAL, PAGE 9). CAN YOU COMMENT ON HER STATEMENT?

A. Yes. SWBT's "planned actions" to which Ms. Murray refers have been publicly announced as "Project Pronto." This network plan consists of the deployment of additional fiber optic cables and next generation digital loop carrier ("NGDLC") terminals, capable of providing xDSL-based services, in SWBT's loop network. Project Pronto does not pre-condition any copper loops, nor does it result in any other forms or instances of loop conditioning. Ms. Murray haphazardly and erroneously uses Project Pronto to characterize SWBT's proposed loop conditioning charges as discriminatory. Nothing could be farther from the truth. First, Project Pronto facilities will be the first-choice facilities (i.e., in lieu of all-copper loops) for xDSL where they have been deployed, and for all carriers whose interconnection agreements include the

associated unbundled sub-loop elements. Second, where these new facilities are not deployed, all-copper loops will be required for xDSL for all carriers. Third, SWBT will continue to avoid the need for loop conditioning for all carriers whenever and however possible, even to the extent of performing Line and Station Transfers ("LSTs"), at no cost to the carriers, to make xDSL-capable loops available. Fourth, even when loop conditioning is the last resort for providing an xDSL-capable loop to a CLEC or to SWBT's advanced services affiliate, any billable loop conditioning will not be performed without the carrier's explicit request for such conditioning. Despite Ms. Murray's claims to the contrary, there is clearly no discrimination in SWBT's copper loop conditioning charges for xDSL, or in its new facility plans for xDSL.

Q. IN HIS REBUTTAL TESTIMONY (PAGE 12), MR. CLARK QUESTIONED THE VALIDITY OF SWBT'S LOOP CONDITIONING STUDY BECAUSE OF STATEMENTS MADE IN YOUR DEPOSITION. CAN YOU COMMENT ON THIS?

A. Yes. Mr. Clark questioned the validity of SWBT's loop conditioning cost study because I did not know whether the non-recurring cost study for the unbundled ISDN BRI loop included the cost for unloading the ISDN loop. Mr. Clark's conclusion is simply unfounded and misguided. I am in SWBT's network organization, and it is the responsibility of SWBT's network organization to provide SWBT's cost study group with the network activities and related costs necessary to provision a particular service or unbundled network element. It is the responsibility of SWBT's cost study and

marketing organizations to determine which cost studies include these costs, and hence, which rates recover these costs.

Mr. Clark also states in his rebuttal testimony (page 13) that "Mr. Lube confesses that he is aware of no study that was performed to determine why SWBT should charge for unloading loops between 12,000 and 17,500 feet, but not for loops less than 12,000 feet." Again, Mr. Clark simply misunderstands the role of my organization. It is my department's responsibility to represent the activities and related costs necessary to unload a loop. SWBT's network organization does not determine what and when SWBT charges a customer under different circumstances like these. In my view, however, it is significant that SWBT has not charged (and will not charge) a CLEC, its advanced services affiliate, or its own previous retail customers for standard conditioning on loops less than 12,000 feet.

3. TECHNICAL PUBLICATIONS

Q. MR. CHAO'S REBUTTAL TESTIMONY DESCRIBES COVAD'S DISAGREEMENT WITH SWBT'S DSL TECHNICAL PUBLICATIONS ("TECH PUBS") IN TEXAS (PAGE 1). WERE YOU AWARE OF THIS DISAGREEMENT?

A. I was aware that Covad had disagreed with SWBT's spectrum management process in the Texas arbitration. It is also my understanding that the Tech Pub dispute in that arbitration was related to this same spectrum management process. This is confirmed

in the Texas arbitrator's award in that proceeding.[9] However, as explained in my rebuttal testimony (pages 26 and 27), this spectrum management process, which SWBT had regarded as necessary for compliance with the FCC's Advanced Services Order,[10] is no longer an issue. In addition, as explained in my direct testimony (page 23), SWBT's DSL Tech Pubs are not at dispute in this arbitration.

Q. ARE YOU AWARE OF ANY CURRENT DISPUTES RELATED TO SWBT'S TECH PUBS?

A. I am aware that Covad had a general dispute with SWBT during the negotiations that preceded this arbitration; this dispute involved SWBT's collocation Tech Pubs. However, I am not aware of any disputes concerning specific provisions in any of SWBT's Tech Pubs that are at issue in this arbitration.

Q. MR. COUCH SUGGESTS THAT SWBT BE ALLOWED TO MODIFY ITS TECH PUBS, BUT THAT THOSE MODIFICATIONS NOT BE ALLOWED TO CHANGE EXISTING AGREEMENTS WITH CLECS. DO YOU AGREE WITH HIS RECOMMENDATION?

A. No. While Mr. Couch's recommended approach may appear simple, it is not appropriate. SWBT simply must be able to make changes to its Tech Pubs to comply

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[9] Public Utility Commission of Texas, Arbitration Award, Docket Nos. 20226 and 20272, pages 36 and 37.

[10] FCC 99-48, First Report and Order and Further Notice of Proposed Rulemaking in CC Docket No. 98-147 ("In the Matters of Deployment of Wireline Services Offering Advanced Telecommunications Capability"), released March 31, 1999 ("Advanced Services Order").

with future regulatory directives and national standards, and to reflect the deployment of new technology in its network. These changes must apply equally to all carriers in order for SWBT to be able to manage its one network that is used by all of these carriers. Covad already states, through its petition for arbitration, that it does not dispute SWBT's ability to make procedural changes in its Tech Pubs. Furthermore, my rebuttal testimony (page 28) explains that Covad's concerns about Tech Pubs unilaterally affecting prices and intervals are unfounded.

Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

A. Yes.

ATTACHMENT xDSL

1.0 Introduction

1.1 SWBT agrees to provide CLEC with access to UNEs (including the unbundled xDSL Capable Loop offerings) in accordance with the rates, terms and conditions set forth in this xDSL Attachment and the general terms and conditions applicable to UNEs under this Agreement, for CLEC to use in conjunction with its desired xDSL technologies and equipment to provide xDSL services to its end user customers.

1.2 Nothing in this Attachment shall constitute a waiver by either Party of any positions it may have taken or will take in any pending regulatory or judicial proceeding or any subsequent interconnection agreement negotiations. This Attachment also shall not constitute a concession or admission by either Party and shall not foreclose either Party from taking any position in the future in any forum addressing any of the matters set forth herein.

2.0 Definitions

2.1 For purposes of this Attachment, a "loop" is defined as a transmission facility between a distribution frame (or its equivalent) in a central office and the loop demarcation point at an end user customer premises.

2.2 For purposes of this Attachment, a "subloop" is defined as any portion of the loop from SWBT's F1/F2 interface to the demarcation point at the customer premise that can be accessed at a terminal in SWBT's outside plant. An accessible terminal is a point on the loop where technicians can access the wire or fiber within the cable without removing a splice case to reach the wire within. The Parties recognize that this is only one form of subloop (defined as the F1/F2 interface to the customer premise) as set forth in the FCC's UNE Remand Order. Additional subloop types may be negotiated and agreed to by the Parties consistent with the UNE Remand Order.

2.3 The term "Digital Subscriber Line" ("DSL") describes various technologies and services. The "x" in "xDSL" is a place holder for the various types of DSL services, including, but not limited to ADSL (Asymmetric Digital Subscriber Line), HDSL (High-Speed Digital Subscriber Line), IDSL (ISDN Digital Subscriber Line), SDSL (Symmetrical Digital Subscriber Line), UDSL (Universal Digital Subscriber Line), VDSL (Very High-Speed Digital Subscriber Line), and RADSL (Rate-Adaptive Digital Subscriber Line)A "DSL-capable loop" is a loop that supports the transmission of DSL technologies

2.4 A "DSL-Capable Loop" is a loop that supports the transmission of DSL technologies.

2.5 A loop technology that is "presumed acceptable for deployment" is one that either complies with existing industry standards, has been successfully deployed by any carrier in any state without significantly degrading the performance of other services, or has been approved by the Federal Communications Commission ("FCC"), any state commission, or an industry standards body.

2.6 A "non-standard xDSL-based technology" is a loop technology that is not presumed acceptable for deployment under Section 2.5 of this Attachment. Deployment of non-standard xDSL-based technologies are allowed and encouraged by this Agreement.

3.0 General Terms and Conditions Relating to Unbundled xDSL-Capable Loops

3.1 SWBT is not in any way permitted to limit xDSL capable loops in favor of provisioning ADSL.

3.2 SWBT will not impose limitations on the transmission speeds of xDSL services. SWBT will not restrict the CLECs services or technologies to a level at or below those provided by SWBT.

3.3 SWBT will provide a loop capable of supporting a technology presumed acceptable for deployment or non-standard xDSL technology as defined in this Attachment.

3.4 SWBT shall not deny a Covad's request to deploy any loop technology that is presumed acceptable for deployment, or one that is addressed in Section 4.5 of this Attachment, unless it has demonstrated to the Commission that Covad's deployment of the specific loop technology will significantly degrade the performance of other advanced services or traditional voice band services in accordance with FCC orders. SWBT will provide Covad with notice prior to seeking relief from the Commission under this Section.

3.5 In the event the CLEC wishes to introduce a technology that has been approved by another state commission or the FCC, or successfully deployed elsewhere, the CLEC will provide documentation describing that action to SWBT and the Commission before or at the time of their request to deploy that technology in Texas. The documentation should include the date of approval or deployment, any limitations included in its deployment, and a sworn attestation that the deployment did not significantly degrade the performance of other services. The terms of this paragraph do not apply during the Trial Period referenced in Section 4.5 below.

3.6 Parties to this Attachment agree that unresolved disputes arising under this Attachment will be handled under the Dispute Resolution procedures set forth in this Agreement.

3.7 Liability

3.7.1 Each Party, whether a CLEC or SWBT, agrees that should it cause any non-standard xDSL technologies to be deployed or used in connection with or on SWBT facilities, that Party ("Indemnifying Party") will pay all costs associated with any damage, service interruption or other telecommunications service degradation, or damage to the other Party's ("Indemnitee") facilities.

3.7.2 For any technology, Covad's use of any SWBT network element, or of its own equipment or facilities in conjunction with any SWBT network element, will not materially interfere with or impair service over any facilities of SWBT, its affiliated companies or connecting and concurring carriers involved in SWBT services, cause damage to SWBT's plant, impair the privacy of any communications carried over SWBT's facilities or create hazards to employees or the public. Upon reasonable written notice and after a reasonable opportunity to cure, SWBT may discontinue or refuse service if CLEC violates this provision, provided that such termination of service will be limited to Covad's use of the element(s) causing the violation. SWBT will not disconnect the elements causing the violation if, after receipt of written notice and opportunity to cure, the CLEC demonstrates that their use of the network element is not the cause of the network harm. If SWBT does not believe the CLEC has made the sufficient showing of harm, or if CLEC contests the basis for the disconnection, either Party must first submit the matter to dispute resolution under the Dispute Resolution Procedures set forth in this Agreement. Any claims of network harm by SWBT must be supported with specific and verifiable supporting information.

3.8 Indemnification

3.8.1 Covered Claim: Indemnifying Party will indemnify, defend and hold harmless Indemnitee from any claim for damages, including but not limited to direct, indirect or consequential damages, made against Indemnitee by any telecommunications service provider or telecommunications user (other than claims for damages or other losses made by an end-user of Indemnitee for which Indemnitee has sole responsibility and liability), arising from, the use of such non-standard xDSL technologies by the Indemnifying Party.

3.8.2 Indemnifying Party is permitted to fully control the defense or settlement of any Covered Claim, including the selection of defense counsel. Notwithstanding the foregoing, Indemnifying Party will consult with Indemnitee on the selection of defense counsel and consider any applicable conflicts of interest. Indemnifying Party is required to assume all costs of the defense and any damages resulting from the use of any non-standard xDSL technologies in connection with or on Indemnitee's facilities and Indemnitee will bear no financial or legal responsibility whatsoever arising from such claims.

3.8.3 Indemnitee agrees to fully cooperate with the defense of any Covered Claim. Indemnitee will provide written notice to Indemnifying Party of any Covered Claim at the address for notice assigned herein within ten days of receipt, and, in the case of receipt of service of process, will deliver such process to Indemnifying Party not later than 10 business days prior to the date for response to the process. Indemnitee will provide to Indemnifying Party reasonable access to or copies of any relevant physical and electronic documents or records related to the deployment of non-standard xDSL technologies used by Indemnitee in the area affected by the claim, all other documents or records determined to be discoverable, and all other relevant documents or records that defense counsel may reasonably request in preparation and defense of the Covered Claim. Indemnitee will further cooperate with Indemnifying Party's investigation and defense of the Covered Claim by responding to reasonable requests to make its employees with knowledge relevant to the Covered Claim available as witnesses for preparation and participation in discovery and trial during regular weekday business hours. Indemnitee will promptly notify Indemnifying Party of any settlement communications, offers or proposals received from claimants.

3.8.4 Indemnitee agrees that Indemnifying Party will have no indemnity obligation, and Indemnitee will reimburse Indemnifying Party's defense costs, in any case in which Indemnifying Party's technology is determined not to be the cause of any Indemnitee liability.

3.9 Claims Not Covered: No Party hereunder agrees to indemnify or defend any other Party against claims based on gross negligence or intentional misconduct.

4.0 Unbundled xDSL-Capable Loop Offerings

4.1 DSL-Capable Loops: For each of the loop types described in Sections 4.1.1 – 4.1.5 below, Covad will, at the time of ordering, notify SWBT as to the type of PSD mask Covad intends to use and will notify SWBT if and when a change in PSD mask is made.

4.1.1 2-Wire xDSL Loop: A 2-wire xDSL loop for purposes of this section, is a loop that supports the transmission of Digital Subscriber Line (DSL) technologies. The loop is a dedicated transmission facility between a distribution frame, or its equivalent, in a SWBT central office and the network interface device at the customer premises. A copper loop used for such purposes will meet basic electrical standards such as metallic conductivity and capacitive and resistive balance, and will not include load coils or excessive bridged tap (bridged tap in excess of 2,500 feet in length). The loop may retain existing repeaters at Covad's option. The loop cannot be "categorized" based on loop length and limitations cannot be placed on the length of xDSL loops. A portion of an xDSL loop may be provisioned using fiber optic facilities and necessary electronics to provide service in certain situations.The rates set forth in Section 11.1 for the 2-Wire Analog Loop shall apply to this 2-Wire xDSL Loop.

4.1.2 2-Wire Digital Loop (e.g., ISDN/IDSL): A 2-Wire Digital Loop for purposes of this Section is 160 Kbps and supports Basic Rate ISDN (BRI) digital exchange services. The 2-Wire Digital Loop 160 Kbps supports usable bandwidth up to 160 Kbps. The rates for the 2-Wire Digital Loop are set forth in Section 11.1 below.

4.1.3 4-Wire xDSL Loop: A 4-wire xDSL loop for purposes of this section, is a loop that supports the transmission of Digital Subscriber Line (DSL) technologies. The loop is a dedicated transmission facility between a distribution frame, or its equivalent, in a SWBT central office and the network interface device at the customer premises. A copper loop used for such purposes will meet basic electrical standards such as metallic conductivity and capacitive and resistive balance, and will not include load coils or excessive bridged tap (bridge tap in excess of 2,500 feet in length). The loop may retain existing repeaters at Covad's option. The loop cannot be "categorized" based on loop length and limitations cannot be placed on the length of xDSL loops. A portion of an xDSL loop may be provisioned using fiber optic facilities and necessary electronics to provide service in certain situations. The rates set forth in Section 11.1 for the 4-Wire Analog Loop shall apply to this 4-Wire xDSL Loop.

4.1.4 4-Wire Digital Loop: A 4-Wire Digital Loop for purposes of this Section is a 1.544 Mbps loop that will support DS1 service including Primary Rate ISDN (PRI). The 4-Wire Digital Loop 1.544 Mbps supports usable bandwidth up to 1.544 Mbps. The rates for the 4-Wire Digital Loop are set forth in Section 11.1 below.

4.1.5 Sub-Loop: In locations where SWBT has deployed (1) Digital Loop Carrier ("DLC") systems and an uninterrupted copper loop is replaced with a fiber segment or shared copper in the distribution section of the loop; (2) Digital Added Main Line ("DAML") technology to derive two voice-grade POTS circuits from a single copper pair; or (3) entirely fiber optic facilities to the end user, SWBT will make the following options available to CLEC. In these three situations above, where spare copper facilities are available, and the facilities meet the necessary technical requirements for the provision of xDSL and allow CLEC to offer the same level of quality for advanced services, CLEC has the option of requesting that SWBT make copper facilities available (subject to Section 4.2 below). In addition, CLEC has the option of collocating a Digital Subscriber Line Access Multiplexer ("DSLAM") in SWBT's RT at the fiber/copper interface point, pursuant to collocation terms and conditions. When CLEC collocates its DSLAM at SWBT's RT, SWBT will provide CLEC with unbundled access to subloops to allow CLEC to access the copper wire portion of the loop. The xDSL subloops (consistent with Section 2.2 above) are defined as outlined in Sections 4.1.1 through 4.1.4 above, but only include the F2/distribution portion of the loop. Where CLEC is unable to install a DSLAM at the RT or obtain spare copper loops necessary to provision an xDSL service, and SWBT has placed a DSLAM in the RT, SWBT must unbundle and provide access to its DSLAM. SWBT is

relieved of this requirement to unbundle its DSLAM only if it permits Covad to collocate its DSLAMs in the RT on the same terms and conditions that apply to its own DSLAM. The unbundling requirement with respect to DSLAMS would attach to such equipment transferred to SWBT's advanced services affiliate. Sub loop pricing may be found in Section 11.1 below.

4.2 SWBT shall be under no obligation to provision xDSL-capable Loops in any instance where physical facilities do not exist. This shall not apply where physical facilities exist, but require conditioning. In that event, CLEC will be given the opportunity to evaluate the parameters of the xDSL service to be provided, and determine whether and what type of conditioning shall be performed at the request of the CLEC.

4.3 SWBT will not impose limitations on the transmission speeds of xDSL services. SWBT will not restrict the Covad's services or technologies to a level at or below those provided by SWBT. For each loop, CLEC should at the time of ordering notify SWBT as to the type of PSD mask CLEC intends to use, and if and when a change in PSD mask is made, CLEC will notify SWBT. Likewise, SWBT should disclose to CLEC information with respect to the number of loops using advanced services technology within the binder and type of technology deployed on those loops. SWBT will use this information for the sole purpose of maintaining an inventory of advanced services present in the cable sheath. If the technology does not fit within a national standard PSD mask, CLEC shall provide SWBT with a technical description of the technology (including power mask) for the inventory purposes. SWBT will keep such information confidential and will take all measures to ensure that CLEC deployment information is neither intentionally nor inadvertently revealed to any part of SWBT's retail operations, to any affiliate(s), or to any other CLEC without prior authorization from CLEC. Additional information on the use of PSD masks can be found in Section 9.1 below.

4.4 In the event that SWBT rejects a request by CLEC for provisioning of advanced services, including, but not limited to denial due to fiber, DLC, or DAML facility issues, SWBT will disclose to the requesting CLEC information with respect to the number of loops using advanced services technology within the binder and type of technology deployed on those loops, including the specific reason for the denial, within 48 hours of the denial. In no event shall the denial be based on loop length. If there is any dispute between the Parties with respect to this Section, SWBT will not deny the loop (subject to Section 3.4 above), but will continue to provision loops until the dispute is resolved in accordance with the Dispute Resolution procedures set forth in this Agreement.

4.5 SWBT will not deny a requesting CLEC's right to deploy new xDSL technologies that do not conform to the national standards and have not yet been approved by a standards body (or otherwise authorized by the FCC, any state commission or which have not been successfully deployed by any carrier without significantly degrading the performance of other services) if the requesting CLEC can

demonstrate to the Commission that the loop technology will not significantly degrade the performance of other advanced services or traditional voice band services.

4.5.1 Upon request by CLEC, SWBT will cooperate in the testing and deployment of new xDSL technologies or may direct the CLEC, at CLEC's expense, to a third party laboratory of CLEC's choice for such evaluation.

4.5.2 If it is demonstrated that the new xDSL technology will not significantly degrade the other advanced services or traditional voice based services, SWBT will provide a loop to support the new technology for CLEC as follows:

4.5.2.1 If the technology requires the use of a 2-Wire or 4-Wire xDSL loop [as defined in this Attachment] , then SWBT will provide with the xDSL loop at the same rates listed for a2-Wire or 4-Wire xDSL loop and associated loop conditioning as needed. SWBT's ordering procedures will remain the same as for its 2-Wire or 4-Wire xDSL loop even though the xDSL loop is now capable of supporting a new xDSL technology.

4.5.2.2 In the unlikely event that a new xDSL technology requires a loop type that differs from that of a 2-Wire or 4-Wire loop [as defined in this Attachment], the Parties shall expend diligent efforts to arrive at an agreement as to the rates, terms and conditions for an unbundled loop capable of supporting the proposed xDSL technology. If negotiations fail, any dispute between the Parties concerning the rates, terms and conditions for an unbundled loop capable of supporting the proposed xDSL technology shall be resolved pursuant to the dispute resolution process provided for in this Agreement.

4.6 Technologies deployed on copper loops must be in compliance with applicable national industry standards; provided, however, Covad can deploy technologies under Section 4.5 above for which applicable national standards have not been adopted.

4.7 If SWBT or another CLEC claims that a service is significantly degrading the performance of other advanced services or traditional voice band services, then SWBT or that other CLEC must notify the causing carrier and allow that carrier a reasonable opportunity to correct the problem. Any claims of network harm must be supported with specific and verifiable supporting information. In the event that SWBT or a CLEC demonstrates to the Commission that a deployed technology is significantly degrading the performance of other advanced services or traditional voice band services, the carrier deploying the technology shall discontinue deployment of that technology and migrate its customers to technologies that will not significantly degrade the performance of other such services.

4.8 SWBT shall not impose its own standards for provisioning xDSL services, through Technical Publications or otherwise, until and unless approved by the Commission or the FCC prior to use.

4.9 SWBT shall not employ internal technical standards, through Technical Publications or otherwise, for its own retail xDSL that would adversely affect wholesale xDSL services or xDSL providers.

Operational Support Systems: Loop Make-Up Information and Ordering

5.1 General: SWBT will provide CLEC with nondiscriminatory access, whether that access is available by electronic or manual means, to its OSS functions as stated in the SBC Plan of Record filed with the FCC on December 7, 1999, or any subsequent revisions or additions to the Plan. This provision will not be construed as an admission by Covad that the Plan of Record is sufficient. In the interim, manual loop make-up data will be provided as set forth below. In accordance with the FCC's UNE Remand order, CLEC will be given nondiscriminatory access to the same OSS functions that SWBT is providing any other CLEC and/or SWBT or its advanced services affiliate.

5.2 Loop Pre-Qualification: Subject to 5.1 above, SWBT's pre-qualification system will provide a near-real time response to CLEC queries. Until replaced with OSS access as provided in 5.1, SWBT will provide mechanized access to a loop length indicator via Verigate and Datagate for use with xDSL-based or other advanced services The loop length indicator is an indication of the approximate loop length, based on a 26-gauge equivalent and is calculated on the basis of Distribution Area distance from the central office. This is an optional service to the CLEC.

5.3 Loop Qualification: Subject to 5.1 above, SWBT will develop and deploy enhancements to its existing Datagate and EDI interfaces that will allow CLECs, as well as SWBT's retail operations or its advanced service subsidiary, to have real-time electronic access as a preordering function to the loop makeup information, subject to the following:

5.3.1 For loops ordered under 12,000 feet in length, SWBT will provide a One-Step Process so that no loop qualification shall be required;

5.3.2 In addition, no loop qualification shall be required for the 2-Wire Digital Loop (e.g., ISDN/IDSL) referenced in Section 4.1.2 above; and

5.3.3 If a CLEC elects to have SWBT provide loop makeup information through a manual process for xDSL loops not addressed in Sections 5.4.1 and 5.4.2 above, then the interval will be 3-5 business days, or the interval provided to SWBT's affiliate, whichever is less.

5.4 Loop makeup data should include the following: (a) the actual loop length; (b) the length by gauge; and (c) the presence of repeaters, load coils, or bridged taps; and shall include, if noted on the individual loop record, (d) the total length of bridged taps, load coils, and repeaters; (e) the presence of pair-gain devices, DLC, and/or DAML, and (f) the presence of disturbers in the same and/or adjacent binder groups.

5.4.1 In accordance with the UNE Remand Order, where SWBT has not compiled loop qualification information for itself, SWBT is not required to conduct a plant inventory and construct a database on behalf of requesting carriers. If SWBT has manual access to this sort of information for itself, or any affiliate, SWBT will provide access to it to CLEC on a non-discriminatory basis. To the extent SWBT has access to this information in an electronic format, that same format should be made available to CLEC via an electronic interface. The Parties will meet and agree to the appropriate rate for such information if not included in this Agreement. If an agreement cannot be reached, SWBT will provide such information and the Parties will resolve the matter through the dispute resolution procedures set forth in this Agreement.

6.0 **Provisioning**

6.1 CLEC shall designate, at the Covad's sole option, what loop conditioning SWBT is to perform in provisioning the xDSL loop or subloop on the loop order. Conditioning may be ordered on loop(s) or subloop(s) of any length at the Loop conditioning rates set forth in Section 11.4. The loop or subloop will be provisioned to meet basic metallic and electrical characteristics such as electrical conductivity and capacitive and resistance balance.

6.2 The provisioning and installation interval for a xDSL-capable loop, where no conditioning is requested (including outside plant rearrangements that involve moving a workings service to an alternate pair as the only possible solution to provide a DSL-capable loop), on orders for 1-20 loops per order or per end-user location, will be 5 business days, or the provisioning and installation interval applicable to SWBT's tariffed xDSL-based services, or its affiliate's, whichever is less. The provisioning and installation intervals for xDSL-capable loops where conditioning is requested or outside plant rearrangements are necessary, as defined above), on orders for 1-20 loops per order or per end-user customer location, will be 10 business days, or the provisioning and installation interval applicable to SWBT's tariffed xDSL-based services or its affiliate's xDSL-based services where conditioning is required, whichever is less. Orders for more than 20 loops per order or per end-user location, where no conditioning is requested, will have a provisioning and installation interval of 15 business days, or as agreed upon by the Parties. Orders for more than 20 loops per order which require conditioning will have a provisioning and installation interval agreed by the parties in each instance. These provisioning intervals are applicable to every

xDSL loop regardless of the loop length. The Parties will meet to negotiate and agree upon subloop provisioning intervals.

6.3 Subsequent to the initial order for a xDSL capable loop or subloop, additional conditioning may be requested on such loop at the rates set forth below and the applicable service order charges will apply; provided, however, when requests to add or modify conditioning are received within twenty-four (24) hours of the initial order for a xDSL-capable loop, no service order charges shall be assessed, but the due date may be adjusted as necessary as agreed to by the parties. The provisioning interval for additional requests for conditioning pursuant to this subsection will be the same as set forth above.

6.4 The CLEC, at its sole option, may request shielded cross-connects for central office wiring at rates set forth herein.

6.5 SWBT shall keep CLEC deployment information confidential from SWBT's retail operations, any SWBT affiliate, or any other CLEC.

7.0 Acceptance Testing

7.1 SWBT and Covad agree to implement Cooperative Acceptance Testing for xDSL loop delivery.

7.2 Should Covad desire Cooperative Acceptance Testing, Covad shall request such testing on a per xDSL loop basis upon issuance of the Local Service Request (LSR). Cooperative Acceptance Testing will be conducted at the time of installation of the service request.

7.3 Acceptance Testing Procedure:

7.3.1 Upon delivery of a loop to/for Covad, SWBT's field technician will call the Local Operations Center (LOC) and the LOC technician will call a toll free Covad number to initiate performance of a series of cooperative tests.

7.3.1.1 Except for ISDN loops that are provisioned through repeaters or digital loop carriers, the test requires the SWBT field technician to provide a solid short across the tip and ring of the circuit and then open circuit the loop.

7.3.1.2 For ISDN (very low band symmetric) loops that are provisioned through repeaters or digital loop carriers, the SWBT field technician will not perform a short or open circuit.

7.3.2 If the loop passes Cooperative Acceptance Test for loop continuity test parameters defined by this Agreement for xDSL loops, Covad will provide SWBT with a confirmation number and SWBT will complete the order. Covad will be

billed for the Cooperative Acceptance Test as specified below under Acceptance Testing Billing.

7.3.3 If the Cooperative Acceptance Test fails loop continuity test parameters defined by this Agreement for xDSL loops, the LOC technician will take reasonable steps to immediately resolve the problem with Covad on the line including, but not limited to, calling the central office to perform work at such office. If the problem cannot be quickly resolved, SWBT will release the Covad technician, and perform the work necessary to correct the situation. Once the loop is correctly provisioned, SWBT will contact Covad to repeat the Cooperative Acceptance Test. When the aforementioned test parameters are met, Covad will provide SWBT with a confirmation number and SWBT will complete the order. SWBT will not complete an order that fails Acceptance Testing.

7.3.4 Since Covad's test equipment cannot send signals through repeaters or digital loop carriers, Covad will accept ISDN loops without testing the complete circuit. Consequently, SWBT agrees that should Covad open a trouble ticket on such a loop within ten (10) business days (that is the fault of SWBT), SWBT will adjust Covad's bill and refund the recurring charge of such a loop until SWBT has resolved the problem and closed the trouble ticket.

7.3.5 SWBT will be relieved of the obligation to perform Acceptance Testing on a particular loop and will, assume acceptance of the loop by Covad when Covad places the LOC on hold for over ten (10) minutes. In that case, SWBT may close the order utilizing existing procedures. If no trouble ticket is opened on that loop within 24 hours, SWBT may bill Covad as if the Acceptance Test had been completed and the loop accepted, subject to Section B below. If, however, a trouble ticket is opened on the loop within 24 hours and the trouble resulted from SWBT error, Covad will be credited for the cost of the acceptance test. Additionally, Covad may subsequently request and SWBT will perform testing of such a loop under the terms and conditions of a repair request. If such loop is found by SWBT to not meet loop continuity test parameters defined herein, SWBT will not charge for acceptance testing done on the repair call.

7.3.6 If a trouble ticket is opened within 24 hours of a loop order completion, and the trouble is determined to be SWBT's error, then the loop will not be counted as a successful completion for the purposes of the calculations discussed in Section B.1 below.

7.3.7 Both Parties will work together to implement Cooperative Acceptance Testing procedures that are efficient and effective. If the Parties mutually agree to additional testing, procedures and/or standards not covered by this Agreement or any commission-ordered tariff, the Parties will negotiate terms and conditions to implement such additional testing, procedures and/or standards. Additional charges may apply if any agreed-to changes require SWBT to expend additional time and expense.

7.4 Acceptance Testing Billing

7.4.1 Covad will be billed for Acceptance Testing upon the effective date of this Agreement for loops that are installed correctly by the committed interval without the benefit of corrective action due to acceptance testing. In any calendar month after the first sixty (60) days of the agreement, Covad may indicate that it believes that SWBT is failing to install loops with loop continuity and ordered conditioning eighty percent (80%) of the time within the committed intervals.

7.4.1.1 If sampling establishes that SWBT is correctly provisioning loops with continuity and ordered conditioning eighty percent (80%) of the time, SWBT may continue charging for Acceptance Testing for all loops that are properly installed the first time. If SWBT is not correctly provisioning loops eighty percent (80%) of the time, or greater, then Covad will not be billed for Acceptance Testing for the next 90 days. Immediately after the effective date of this agreement, the Parties will negotiate in good faith to agree to a method for sampling 100 random install orders; provided, however, the Parties agree that none of the orders included in such sampling shall be orders placed within the first thirty (30) days of Covad's entry into any Metropolitan Statistical Area ("MSA").

7.4.1.1.1 ISDN Loops that have trouble tickets (that are SWBT's fault) opened within 10 business days will be considered failures.

7.4.1.1.2 Loops that are successfully installed as a result of corrective action taken after acceptance testing will be considered failures.

7.4.1.2 In any calendar month after the 90 day no charge period, SWBT may request that another random sample of 100 install orders be reviewed. If the sample determines SWBT is provisioning loops correctly eighty percent (80%) of the time or greater, billing will resume.

7.4.1.3 Even if SWBT is in period which it may bill for Acceptance Testing, SWBT will not bill for the Acceptance Testing for loop installs that did not pass, the first time, the test parameters defined by this Agreement for xDSL loops. SWBT will not bill for loop repairs when the repair was SWBT problem.

7.4.1.4 Beginning November 1, 2000, SWBT delivery commitment changes to 90%.

7.4.2 The charges for Acceptance Testing shall be $33.51 as specifically listed in Section 13.4.8(A) of the commission-ordered FCC Tariff No. 73. Covad will use the USOC(s) UBCX+ for basic time. If requested by Covad, Overtime or Premium time charges will apply for Acceptance Testing requests in off-hours at overtime time charges calculated at one and one half times the standard price and premium time being calculated at two times the standard priceIf the tariff rate

changes, the parties will negotiate in good faith to determine if the tariff rate changes should apply to acceptance testing.

7.4.3 Repairs

7.4.3.1 The parties will negotiate in good faith to arrive at terms and conditions for acceptance testing on repairs

8.0 Service Quality and Maintenance

8.1 SWBT will not guarantee that the local loop(s) ordered will perform as desired by CLEC for xDSL-based or other advanced services, but will guarantee basic metallic loop parameters, including continuity and pair balance. CLEC-requested testing by SWBT beyond these parameters will be billed on a time and materials basis at Access Tariff 73 rates.[1]

8.2 Maintenance, other than assuring loop continuity, line balance, and verifying suitability for POTS, on unconditioned or partially conditioned loops in excess of 12,000 feet, will only be provided on a time and material basis as set out elsewhere in this Agreement. On loops where CLEC has requested that no conditioning be performed, SWBT's maintenance will be limited to verifying loop suitability based on POTS design. For loops having had partial or extensive conditioning performed at Covad's request, SWBT will verify continuity, the completion of all requested conditioning, and will repair at no charge to CLEC any gross defects which would be unacceptable based on current POTS design criteria and which do not result from the loop's modified design.

8.3 Each xDSL-Capable Loop offering provided by SWBT to CLEC will be at least equal in quality and performance as that which SWBT provides to itself or to an affiliate.

9.0 Spectrum Management

9.1 CLEC will advise SWBT of the Power Spectral Density ("PSD") mask approved or proposed by T1.E1 that reflects the service performance parameters of the technology to be used. The CLEC, at its option and without further disclosure to SWBT, may provide any service compliant with that PSD mask so long as it stays within the allowed service performance parameters. At the time of ordering a xDSL-capable loop, CLEC will notify SWBT as to the type of PSD mask CLEC intends to use on the ordering form, and if and when a change in PSD mask is made, CLEC will notify SWBT as set forth in Section 4.3 above. CLEC will abide by standards pertinent for the designated PSD mask type.

9.2 SWBT agrees that as a part of spectrum management, it will maintain an inventory of the existing services provisioned on the cable. SWBT will not use

[1] See also Award page 105-106 on this topic.

Selective Feeder Separation (SFS) and will remove any restrictions imposed by SWBT on use of pairs for non-ADSL xDSL services. SWBT will not deny any loops on the basis of binder group management designations or business rules created in SWBT LFACS and LEAD databases or limit the deployment of xDSL services to certain pair ranges, with the exception of binder groups containing AMI T1 services. SWBT may not segregate xDSL technologies into designated binder groups without Commission review and approval. Where SWBT has already implemented BGM or reserved loop complements, SWBT must open those binder groups to all xDSL services and all xDSL providers. SWBT shall not deny Covad a loop based upon spectrum management issues, subject to 9.3 below. In all cases, SWBT will manage the spectrum in a competitively neutral manner consistent with all relevant industry standards regardless of whether the service is provided by a CLEC or by SWBT, as well as competitively neutral as between different xDSL services. Where disputes arise, SWBT and CLEC will put forth a good faith effort to resolve such disputes in a timely manner. As a part of the dispute resolution process, SWBT will, upon request from a CLEC, disclose within 3-5 business days information with respect to the number of loops using advanced services technology within the binder group and the type of technology deployed on those loops so that the involved parties may examine the deployment of services within the affected loop plant.

9.3 In the event that the FCC or the industry establishes long-term standards and practices and policies relating to spectrum compatibility and spectrum management that differ from those established in this Agreement, SWBT and CLEC agree to comply with the FCC and/or industry standards, practices and policies and will establish a mutually agreeable transition plan and timeframe for achieving and implementing such industry standards, practices and policies. If there is any dispute between the Parties with respect to this Section, SWBT will not deny the loop (subject to Section 3.4 above), but will continue to provision loops until the dispute is resolved in accordance with the Dispute Resolution procedures set forth in this Agreement.

9.4 Within thirty (30) days after general availability of equipment conforming to applicable industry standards or the mutually agreed upon standards developed by the industry in conjunction with the Commission or FCC, if SWBT and/or CLEC is providing xDSL technologies deployed under Section 4.0 above, or other advanced services for which there is no standard, then SWBT and/or CLEC must being the process of bringing its deployed xDSL technologies and equipment into compliance with such standards at its own expense.

10.0 Reservation of Rights

The Parties acknowledge and agree that the provision of these DSL-Capable Loops and the associated rates, terms and conditions set forth above are subject to any legal or equitable rights of review and remedies (including agency reconsideration and court review). If any reconsideration, agency order, appeal, court order or opinion, stay,

injunction or other action by any state or federal regulatory body or court of competent jurisdiction stays, modifies, or otherwise affects any of the rates, terms and conditions herein, specifically including those arising with respect to Federal Communications Commission orders (whether from the Memorandum Opinion and Order, and Notice of Proposed Rulemaking, FCC 98-188 (rel. August 7, 1998), in CC Docket No. 98-147, or the FCC's First Report and Order and Further Notice of Proposed Rulemaking, FCC 99-48 (rel. March 31, 1999), in CC Docket 98-147 or the FCC's Third Report and Order and Fourth Further Notice of Proposed Rulemaking in CC Docket No. 96-96 (FCC 99-238), or any other proceeding, the Parties shall expend diligent efforts to arrive at an agreement on conforming modifications to this Agreement. If negotiations fail, disputes between the Parties concerning the interpretation of the actions required or the provisions affected shall be handled under the Dispute Resolution procedures set forth in this Agreement.