COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

Investigation by the Department of Telecommunications and Energy upon its own motion pursuant to Section 271 of the Telecommunications Act of 1996 into the Compliance Filing of New England Telephone and Telegraph d/b/a Bell Atlantic – Massachusetts as part of its application to the Federal Communications Commission for entry into the in-region interLATA (long distance) telephone market	)	D.T.E. 99-271

JOINT DECLARATION OF DR. AUGUST H. ANKUM AND VIJETHA HUFFMAN
On Behalf of WorldCom, Inc.

Based on our personal knowledge and on information learned in the course of our duties, we, Dr. August H. Ankum and Vijetha Huffman, declare as follows:

1. My name is Dr. August H. Ankum. I am senior vice president at Quantitative Solutions, Inc., a consulting firm specializing in telecommunications issues. My business address is 1350 North Wells, Suite C501, Chicago, IL 60610. I received a Ph.D. in Economics from the University of Texas at Austin in 1992, an M.A. in Economics from the University of Texas at Austin in 1987, and a B.A. in Economics from Quincy College, Illinois in 1982. As a professional economist, my work experience includes employment and consulting with private industry in the telecommunications field, employment with a state regulatory agency, and an academic appointment. Most recently, as a consultant, I have worked with a variety of companies, including AT&T, AT&T Wireless, WorldCom, Brooks Fiber, Aerial Communications and CCPR (Cellular Carrier of Puerto Rico). I have also represented the interests of residential and small business customers on behalf of consumer advocates before state and federal agencies. Before consulting, I was employed as an economist for MCI

Telecommunications Corporation and, before that, as a Manager in the Regulatory and External Affairs Division of Teleport Communications Group, Inc. for which I testified in proceedings concerning local exchange competition issues, such as Ameritech's Customers First Proceeding in Illinois. From 1986 until early 1994, I was employed by the Public Utility Commission of Texas as an economist and worked on a variety of electric power and telecommunications issues. During my last year at the Texas commission, I held the position of chief economist. From 1984 to 1986, I taught economics courses as an Assistant Instructor at the University of Texas. My Curriculum Vitae is attached hereto as Exhibit A.

2. My name is Vijetha Huffman. I am Senior Manager of Local Business Analysis with WorldCom's residential division. I have been working in Local Business Analysis since July 1997 and have been in my current role since July 1999. My responsibilities include evaluating the financial viability of providing residential local service in markets that WorldCom has not yet entered and determining price changes necessary for WorldCom to enter.

I. INTRODUCTION

3. WorldCom hopes to be able to enter the Massachusetts residential market using the unbundled element "platform" ("UNE-P"), the only viable means today for state-wide residential entry. However, unlike in New York and Texas where conditions allow WorldCom to offer local service to residential markets through UNE-P and, as a result, *hundreds of thousands* of UNE-P orders have been placed by CLECs, the current pricing structure in Massachusetts creates a substantial price squeeze which makes it impossible for WorldCom to enter local residential markets here.

Indeed, the BA-MA's own data tells a convincing story – out of approximately 4.5 million access lines in the state, a meager 1,963 UNE-P orders were placed in Massachusetts in May 2000.[1]

4. The purpose of this Joint Declaration on behalf of WorldCom is to explain why the prices Bell Atlantic-Massachusetts ("BA-MA") currently charges for unbundled network elements ("UNEs") are not cost-based or "just and reasonable" under the Telecommunications Act of 1996 ("Act") and, as a result, create an insurmountable barrier that has precluded the onset of real and robust local competition in Massachusetts. For these reasons, BA-MA's section 271 application is premature and must be denied.

II. WORLDCOM CANNOT COMPETE WITH BA-MA BECAUSE WHOLESALE UNE-P RATES ARE EXCESSIVE AND CASUE A PRICE SQUEEZE IN MASSACHUSETTS OF ABOUT $9

5. BA-MA's wholesale rates for three of the principle network components of UNE-P – unbundled loop, unbundled switch port and unbundled local switching – are so high as to create a price squeeze, driving the cost of leasing these elements well above the rates BA-MA charges retail customers for the services provided using those same elements. At the outset, it is remarkable that the element rates are substantially higher than the rates charged by Bell Atlantic in New York and Pennsylvania for these same elements. Most egregious of these is BA-MA's unbundled local switching

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[1] *See* DTE-WorldCom 4-3. This is in stark contrast to the over 240,000 UNE-P loops that reportedly had been provisioned by CLECs in Texas and the over 150,000 UNE-P loops that reportedly had been provisioned by CLECs in New York just before the FCC's granting of those 271 applications. *See In the Matter of Application by SBC Communications Inc., Southwestern Bell Telephone Company, And Southwestern Bell Communications Services, Inc. d/b/a Southwestern Bell Long Distance Pursuant to Section 271 of the Telecommunications Act of 1996 to Provide In-Region, InterLATA Services in Texas, Memorandum Opinion and Order*, CC Docket No. 00-65 (rel. June 30, 2000), at ¶ 5; *In the Matter of Application of Bell Atlantic New York for Authorization Under Section 271 of the Communications Act To Provide In-Region InterLATA Service in the State of New York*, Memorandum Opinion and Order, CC Docket No. 99-295 (rel. Dec. 22, 1999), at ¶ 14.

rate ($0.007052 for originating and terminating) which, based on our analysis, is *more than two times higher* than the local switching rate charged in New York ($0.002986 for originating and terminating) and *approximately four times higher* than the local switching rate charged in Pennsylvania ($0.001802 for originating and $0.001615 for terminating).[2] Indeed, using a conservative estimate of the minutes of use per line per month, and adding together the local switching charge on local, long distance and LATA minutes, plus the transport charge on these minutes, the switching/transport charge per line per month of about $16.00 is over eight and a half dollars higher than Bell Atlantic's per line per month blended switching/transport rate in New York (approximately $7.19) and over twelve and a half dollars higher than its per line per month blended switching/transport rate in Pennsylvania (approximately $3.49). *See* Exhibit B, attached hereto.

6. Meanwhile, BA-MA's statewide weighted-average unbundled loop rate in Massachusetts of $15.66 is higher than the statewide weighted-average unbundled loop rate in New York ($14.81) and Pennsylvania ($14.50). Finally, BA-MA's statewide weighted-average unbundled switch port rate ($4.49) is over two dollars higher than the unbundled switch port rates in New York ($2.50) and Pennsylvania ($1.90).[3] *See id.*

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[2]WorldCom was notified by the Department last Friday that BA-MA was expected at any moment to file with the Department a new interconnection agreement between itself and an unnamed CLEC in which BA-MA would agree to a reduced local switching rate. As of the time of filing this declaration, WorldCom has not received word that BA-MA in fact filed this new interconnection agreement. In any event, even if BA-MA does reduce its local switching rate by 50 percent, this eleventh hour attempt to divert attention from its anti-competitive pricing would not relieve the price squeeze that presently exists in Massachusetts. If and when BA-MA does file a new interconnection agreement with a new local switching rate, WorldCom reserves the right to comment further on this new rate and its impact on BA-MA's section 271 application.

[3]Unlike in Massachusetts, the unbundled switch port charges in New York and Pennsylvania were not geographically deaveraged.

7. Each of these excessive wholesale UNE rates contributes to the current untenable situation in Massachusetts – wholesale UNE-P rates *exceed* the revenues WorldCom and other CLECs can expect when they offer local service through UNE-P. This creates a price squeeze of approximately $9 even before WorldCom's own operating expenses (i.e., acquisition costs, customer service, billing, division overhead, depreciation, bad debt) are taken into account. *See* Exhibit C, attached hereto.

8. There is no justification for BA-MA's wholesale prices to be so much higher than its retail prices. BA-MA has acknowledged that there is no subsidy for residential services from other services in Massachusetts – i.e., BA-MA's residential retail rates are not priced below cost.[4] This admission conclusively establishes that BA-MA's UNE rates are *not* based on the cost of providing the elements. In other words, given BA-MA's assertion that retail rates are not subsidized, it is impossible for cost-based UNE rates to be so much higher than retail rates.

9. Thus, the current pricing structure in Massachusetts leave WorldCom with two choices, neither of which allows WorldCom to succeed: (1) to match BA-MA's retail rates and lose a great deal of money for each customer acquired; or (2) to charge retail rates that will cover its costs and obtain no customers. Neither "choice" is economically sustainable and, as a result, entry into local markets in Massachusetts by WorldCom and other wireline CLECs is not viable and will remain this way until the Department reexamines all UNE rates and reduces them to cost. In other words, in Massachusetts UNE pricing is an unsurmountable barrier to entry.

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[4]In Docket No. 94-50, BA-MA (then NYNEX) made a demonstration that its residential dial tone lines were not being subsidized. Specifically, BA-MA asserted that the incremental revenues of residential dial tone lines covered incremental costs. BA-MA's residential rates were frozen in Docket No. 94-50 until 2001.

10. The subsections that follow identify the numerous reasons why BA-MA's current UNE-P rates are unjust and unreasonable and fail to comport with a forward-looking pricing methodology.

III. BA-MA'S UNE RATES ARE GROSSLY INFLATED BECAUSE THEY INCLUDE INPUTS AND ASSUMPTIONS THAT ARE INCONSISTENT WITH FORWARD-LOOKING PRICING

A. BA-MA'S LOCAL SWITHCING AND SWITCH PORT RATES IGNORE THE SUBSTANTIAL DISCOUNTS BA-MA RECEIVES FOR NEW SWITCH INSTALLATIONS AND, THEREFORE, ARE NOT FORWARD-LOOKING

11. One significant reason the local switching and switch port rates BA-MA charges in Massachusetts are inflated is because they fail to reflect the substantial discounts that BA-MA – as well as other incumbents – receive from vendors when they purchase new switches.[5] Instead, BA-MA's local switching and switch port rates reflect only the lower "growth" discounts that BA-MA receives when it adds to the capacity of an existing switch. As a result, BA-MA's local switching and switch port rates are not "based on the cost" of providing these switch-related network elements under any conceivable meaning of that term, and most certainly are inconsistent with forward-looking pricing. In fact, correcting this one input would dramatically reduce local switching and switch port costs by at least 30 percent.

12. In the cost proceedings in Massachusetts, BA-MA admitted that it used the switching discounts that it obtains from suppliers for purchases of *incremental additions* to its current switching equipments, rather than the larger discounts it received from vendors during its analog-to-

[5]These discounts are proprietary and, therefore, cannot be disclosed in this affidavit.

digital switch replacement program of the early 1990s.[6] Bell Atlantic relied on the similar low discount in the cost proceeding in New York.[7] Both the Department and the New York Public Service Commission ("NYPSC") originally accepted Bell Atlantic's methodology and, on that basis, excluded these larger discounts in calculating switching rates.[8]

13. The NYPSC has since reversed its position. Based on newly presented evidence, the NYPSC has concluded that the substantial discounts were not uniquely associated with the analog-to-digital switch replacements, but are also available for all new switch purchases.[9] Bell Atlantic has not disputed the accuracy of this new evidence in the New York proceeding and, in fact, has admitted that it "mis-spoke" when it previously stated that the higher discount level was limited to analog-to-digital replacements. Bell Atlantic now admits that this claim was wholly erroneous.[10]

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[6]*See* Phase 4 Order, D.P.U. 96-73/74, 96-75, 96-80/81, 96-83, 96-94 (Dec. 4, 1996) ("Phase 4 Order"), at 36-37.

[7]*See* Hearing Transcript, NYPSC, Case 95-C-0657 *et al.* at 3004-05 (Testimony of C. R. Curbelo On Behalf of Bell Atlantic) (attached hereto as Exh. D). Bell Atlantic speculated in the New York proceedings that these substantial discounts resulted solely from Bell Atlantic's one-time, large-scale conversion from analog to digital switches, and that a carrier replacing existing digital switches with new ones, rather than converting from analog to digital, would be unable to receive the same discounts. *Id.* at 3007.

[8]*See* Phase 4 Order at 37; Opinion and Order Setting Rates for First Group of Network Elements, NYPSC, Case 95-C-0657 (April 1, 1997) at 85 n.1 (attached hereto as Exh. E).

[9]This new evidence consisted of: (i) Bell Atlantic's contracts with its two major switch vendors (Lucent and Nortel), made available in response to AT&T's Phase 3 discovery requests; (ii) the Phase 3 responsive testimony of AT&T witness Catherine Petzinger pre-filed on May 13, 1998 and admitted at the Phase 3 hearing in June 1998; and (iii) portions of proprietary Exhibit 310-P received in evidence at the Phase 3 hearings. *See* Order Denying Motion to Reopen Phase 1 and Instituting New Proceeding, NYPSC, Case 95-C-0657 *et al* (Sept. 30, 1998) ("Order Instituting New Proceeding") at 5 & n.3 (attached hereto as Exhibit F). All of this evidence established that the substantial discounts offered by the switch vendors apply to all new purchases, not just to analog switch replacements.

[10] *See* Order Instituting New Proceeding at 7, 9.

Because of these developments, the NYPSC has ordered a new cost proceeding to reexamine not just switching rates, but all UNE rates.[11] The same reexamination of UNE rates is necessary in Massachusetts.

14. Forward-looking pricing requires that the larger switch discounts be reflected in the switching rates. The FCC reached this conclusion in a November 1999 decision where it determined that when estimating the forward-looking economic cost of switching, one must look to the cost of installing *new* switches to serve anticipated demand, and must not factor in the much higher cost of providing the same switching services by purchasing and installing switching equipment upgrades.[12] The FCC's determination reflects the reality of switching purchases. Switch vendors typically apply a bi-furcated discount structure, awarding telephone companies larger discounts for delivery and installation of a new switch – regardless of whether the switch purchased is part of an analog-to-digital switch replacement program – and lower discounts for subsequent expansions (or additions) of that switch.[13]

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[11]The NYPSC stated that the substantial discounts Bell Atlantic receives when it purchases new switches have a significant effect on switching rates and other rates, and that the premise regarding switch discounts affects not only switch rates, but all recurring rates "in a variety of ways." *See* Order Instituting New Proceeding at 10.

[12]*In the Matter of Federal Joint Board on Universal Service* (CC Docket 96-45) and *Forward-Looking Mechanism for High Cost Support For Non-Rural LECs* (CC Docket 97-160), Tenth Report and Order (rel. Nov. 2, 1999), ¶¶ 315-17.

[13]The two-level discount structure offered by switch vendors is not unlike the sales strategies of book clubs that offer a new member the ability to purchase a number of books at a steep discount in return for the commitment to purchase a minimum number of books per year at lower discounts. Once a phone company purchases a new switch, it will continue to purchase lines from this vendor as the number of lines served by the switch grows. Competition among switch vendors, therefore, induces vendors to heavily discount the lines installed at "cut-over" and to recoup any forgone profits from future installations of growth lines.

15. Thus, local switching and switch port rates in Massachusetts will not be cost-based or consistent with forward-looking pricing unless they reflect the substantial discounts that BA-MA and other CLECs receive from vendors when they purchase new switches. In the meantime, local switching and switch port rates remain substantially above cost. Of course, this is just one significant input that needs to be changed if the local switching and switch port rates are to be truly cost-based and forward-looking.

B. BA-MA's Local Switching And/Or Switch Port Rates Are Also Excessive Because They Include Other Improper Inputs and Assumptions.

16. **Grossly Inflated Installation Factor.** BA-MA based its switch cost estimates on an installation factor of 65.41 percent, which is grossly inflated. In fact, the installation factor used in New York is more than 30 percent lower than the factor used in Massachusetts, and also significantly lower than the installation factors used in other regions. Even in New York, the installation factor is high in comparison to other regions of the country.

17. **Failure to Account for Cheaper Switches.** In its cost studies BA-MA apparently used a mix of switching technologies that does not appear to be based on an evaluation of which switch type is the least-cost technology. While clearly a company would want to diversify its switch vendors to induce price competition, the technology mix should at least favor the least-cost switch type. Generally, Nortel switches are cheaper than Lucent's, but there is no reflection of that in BA-MA's cost studies. An adjustment in the switch mix in favor of the more economically efficient Nortel switches could result in at least a 5 percent reduction in local switching and switch port costs.

18. **Too Few Average Business Days.** BA-MA local switching rates are also inflated because they include the assumption of only 252 average business days per year to calculate

the number of minutes of use ("MOU") over which switch and switch-related investments will be recovered. This figure wholly ignores any calling that is done during the weekends and holidays. Although the volume of calling is certainly less during weekends and holidays than during the business week, there is still significant calling during these times and should be accounted for when calculating switch investment recovery. Thus, even if the weekend and holiday days were considered to count for half a business day -- which is a conservative estimate given that calling volumes on weekend and holidays are typically more than half of what they are during the business week -- the impact of this change would increase the MOU by at least 20 percent, which would reduce local switching costs by at least 10 percent.

19. **Peak/Off-Peak Factor Inflates Day-Time Usage Rates.** BA-MA applied a peak/off-peak factor to its local switching costs which significantly increased the day-time usage rate for local switching. BA-MA applied these factors presumably to reflect that switching costs are driven and determined in large part by peak demand. While in a sense this is true, BA-MA's switching model ("SCIS") is explicitly designed to determine switch investments associated with peak hours. Therefore, application of the peak/off-peak factor was unnecessary and had the effect of inflating day-time usage rates for local switching by at least 7 percent.

20. **Too Low Utilization Rate.** BA-MA's assumption of an 85 percent rate of utilization in its switch studies is considerably lower than what is achievable on such facilities. It is generally recognized that digital switches can easily run at a 95 percent rate of utilization. The 85 percent assumption increases BA-MA's local switching costs, and thereby increasing BA-MA's local switching rates. Increasing the rate of utilization to 95 percent in BA-MA's switching studies would reduce local switching costs by at least 5 percent.

C. *ALL* OF BA-MA'S RECURRING UNE RATES ARE INFLATED BECAUSE THE COST OF CAPITAL USED IN MASSACHUSETTS IS NOT JUST OR REASONABLE

21. The 12.16% cost of capital used in Massachusetts to set UNE rates is significantly above the cost of capital adopted in a number of other Bell Atlantic states and inflates the recurring UNE loop, switch port and local switching rates BA-MA charges competitors. For example, the state commissions in nine other Bell-Atlantic states adopted cost of capitals that average 10.31%. The state-by-state breakdown is as follows: Delaware (10.28%), Maryland (10.13%), New Hampshire (10.61%), New Jersey (10.40%), New York (10.18%), Pennsylvania (9.83%), Vermont (9.99%), Virginia (10.12%) and West Virginia (11.24%).

22. There is no justification why the cost of capital should be so much higher in Massachusetts than in these other Bell Atlantic states. Indeed, Bell Atlantic's cost of capital should be the same in every state because Bell Atlantic's rate of return on its capital assets is the same company-wide and cannot be broken down at a state-by-state level.

D. BA-MA'S LOOP RATES ARE FURTHER INFLATED BECAUSE THEY INAPPROPRIATELY ASSUME THAT FIBER-FED LOOPS WILL BE SERVED BY DLC FEEDER SYSTEMS CONTAINING OUTDATED AND MORE EXPENSIVE TECHNOLOGIES

23. A significant reason BA-MA's loop rates are inflated is because they reflect BA-MA's erroneous assumption that fiber-fed loops served by integrated digital loop carrier ("IDLC") systems cannot be unbundled and, therefore, universal digital loop carrier ("UDLC") technology must be assumed for purposes of calculating loop costs. As will be shown below, this assumption is technically incorrect and, moreover, has the anti-competitive effect of substantially raising the overall cost of the loop.

24. Digital loop carriers are loop feeder systems that concentrate traffic. Therefore, digital loop carriers offer a much more efficient network design than the alternative of routing individual copper pairs directly from the central office to each customer's premise for each line required.

25. UDLCs are the original digital loop carriers, developed in the 1970s when most switches were analog. UDLCs consist of a remote digital terminal and a central office terminal, usually linked by a fiber optic transmission facility. Because UDLCs were designed to interface with analog switches, the signal from the remote digital terminal is converted from digital to analog by the Central Office Terminal ("COT") equipment located in the central office. The individual voice grade analog circuits are then wired and terminated on the Main Distribution Frame ("MDF") just like analog circuits for a copper feeder cable, and a connection for each analog signal is then made between the MDF and analog switch. If a digital switch is used, the analog signal is converted back to digital by an Analog Interface Unit and then connected to the switch line port of the digital switch.

26. With the advent of digital switches, it became redundant to convert digital signals to analog at the central office. Thus, "integrated" digital loop carriers were developed, which interface with digital switches on a digital basis. IDLCs generally consist of a remote digital terminal, a digital fiber optic transmission facility connecting the remote digital terminal to the switching center, a DS1 patch panel, and an integrated digital terminal, which provides the digital interface between the local digital switch and the remote digital terminal. With IDLCs, digital signals are carried unimpeded (and unconverted to analog) between the remote digital terminal and the switch.

27. Moreover, loops served by IDLC have distinct and significant technical advantages over loops served by UDLC. In particular, the multiple digital/analog conversions that must take place to provision a loop via UDLC, but which are eliminated when the UDLC system is replaced

with IDLC, causes slower data speed on a typical dial-up modem connection. Indeed, with UDLC, it is difficult to connect a dial-up modem at a speed exceeding 21 Kbs, whereas a typical dial-up model on a loop served by an IDLC system may well attain the 56 Kbs connection it is designed to accommodate.

28. The forward-looking, least-cost and efficient IDLC configuration available today is the GR-303 digital switch interface. GR-303 greatly improves on the older TR-008 version of IDLC and, to an even greater extent, on UDLC. Among other things, GR-303 offers the unique capability of optimizing utilization of switching and digital loop carrier channel capacity based on traffic volumes, and also permits remote electronic provisioning and testing. Finally, of critical importance to the discussion here, GR-303 allows four technically feasible unbundling methods that can provide CLECs with non-discriminatory access to the customers served by IDLC: (1) Multiple Switch Hosting; (2) Integrated Network Architecture (INA); (3) Digital Cross-Connect System (DCS) Grooming; and (4) Side-Door Grooming. *See* MCI WorldCom White Paper, "Unbundling Digital Loop Carriers" (March 1999) (attached hereto as Exhibit G). Even Bell Atlantic concedes that GR-303 (sometimes referred to as Next Generation Digital Loop Carrier) is the type of feeder technology that it will be deploying on a forward-looking basis.[14]

29. Because of its efficiencies, GR-303 offers significant cost-saving over UDLC and, therefore, must be assumed for forward-looking costing purposes. In particular, GR-303 eliminates expensive investments associated with analog-digital conversions at the central office, the

[14]*See* Report of Bell Atlantic-New York on the Feasibility of Alternative Means for Implementing Central Office Cross-Connections, NYPSC, Case 95-C-0657 *et al.* (Nov. 23, 1998) at 4 (attached as Att. 5 to Joint Declaration of Annette Guariglia, Karen Kinard, Sherry Lichtenberg and Arlene Ryan on Behalf of MCI WorldCom, Inc.).

Analog Interface Until line card at the switch and manual MDF wiring. The digital electronics associated with GR-303 is also much less expensive than the digital electronics associated with UDLC. As a result, loop investment costs associated with use of GR-303 are substantially lower than the loop investment costs associated with UDLC.

30. The NYPSC clearly recognized all of the cost savings of GR-303 when it instructed all parties to assume GR-303 wherever pertinent in the new UNE cost proceeding.[15] For the same reasons, GR-303 should also be assumed in Massachusetts. Only in this way will loop costs be forward-looking.

E. BA-MA'S LOOP RATES ARE FURTHER INFLATED BECAUSE THEY INCLUDE OTHER IMPROPER INPUTS AND ASSUMPTIONS

31. **Failure to Capitalize on the Efficiencies of Fiber.** BA-MA's loop rates fail to reflect a forward-looking, least-cost fiber-based loop architecture that maximizes the use of fiber and minimizes the use of copper. Instead, BA-MA's loop rates reflect BA-MA's existing, historic, embedded loop architecture, which contains an excessive amount of copper in the sub-feeder instead of extending the fiber feeder facilities further into the field closer to the end users. This erroneous assumption increases loop costs by at least 5 percent.

32. **Assumes a Low Concentration Ratio.** The great advantage of a fiber-based digital loop carrier system is that it allows traffic to be concentrated onto more efficient facilities. This solves many of the inefficiencies of all copper networks, where for each end user there is a dedicated path from the customer's location to the central office. Since all end users do not use their phones or modems at the same time, this leaves many lines unused.

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[15] *See* Ruling on Scope and Schedule, NYPSC, Case 98-C-1357 (June 10, 1999) at 13 (attached hereto as Exhibit H).

33. Digital loop carrier systems rectify this problem by assigning a path, or time slot, to end users only when they are actually using their lines, rather than creating a dedicated path for each end user. Thus, the concentration ratio assumed in the cost studies – the percentage of end users who will use their line simultaneously – becomes critical and has a significant effect on overall loop costs.

34. In its loop studies, BA-MA assumes a concentration ratio of 4:1. This is significantly lower than the 6:1 concentration ratio, which is generally accepted in the industry and was referenced by Bell Atlantic's own engineers in a proprietary document in New York. Including this higher concentration ration in BA-MA's loops studies would decrease loop costs by at least 10 percent.

35. **Utilization Rate for Remote Terminal Equipment is Too Low.** BA-MA's rate of network utilization for both the Common Equipment and Channel Units in the Remote Terminal ("RT")[16] is generally too low. BA-MA assumed in its loop studies a utilization rate of 60 percent for Common Equipment and 80 percent for Channel Units. But a minimum rate of 84 percent for Common Equipment and 90 percent for Channel Units is more consistent with a forward-looking, cost-based approach and could reduce loop costs by at least 5 percent.

36. This concludes our Joint Declaration.

[16]Common RT Equipment refers to the common pieces of equipment (i.e., racks), other than the channel units (plug-in cards) on which the copper sub-feeder cables terminate. The RT Channel Units are the plug-in cards on which the copper sub-feeder or distribution cables terminates. The Channel Units are inserted in the common equipment of the RT, and can be inserted as demand emerge, thus providing a very high rate of utilization.