COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

D.T.E. NO. 01-20

REQUEST: Verizon Massachusetts Information Requests to AT&T Communications of New England, Inc. and WorldCom, Inc.

DATE: July 27, 2001

VZ-ATT/WC 2-1: Referring to page 4 of the Baranowski testimony, stating that after a number of adjustments "the Verizon model produces UNE loop rates in many instances that are near those produced by the HAI 5.2a-MA model filed in this proceeding by AT&T." With respect to this statement:

a. provide a comparison of the loop costs estimated by HAI 5.2a and the Verizon model for each wire center in MA;
b. provide a detailed list of each and every adjustment made to both the HAI 5.2a and the Verizon model; and,
c. explain in detail the basis of each adjustment.

Respondent: M. Baranowski

RESPONSE:

a. AT&T has produced the loop costs estimated by HAI 5.2a-MA. Verizon should already know the loop costs estimated by its own model. A review of the two will provide Verizon with the requested comparison.

b. Details of every adjustment to the Verizon cost studies are included in Mr. Baranowski's testimony and supporting electronic workpapers. AT&T and WorldCom do not understand what Verizon means by "each and every adjustment made to … the HAI 5.2a," and thus can neither respond nor determine whether the request is objectionable.

c. See response to part b above.

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VZ-ATT/WC 2-2: Referring to page 4 of the Baranowski testimony, stating that further analysis of the Verizon model "could result in the need for additional corrections that would further lower loop rates." With respect to this statement:

a. identify and describe in detail each and every potential "correction" that lowered loop rates; and,
b. identify and describe in detail each and every potential "correction" that increased loop rates.

Respondent: M. Baranowski

RESPONSE:

a. AT&T and WorldCom object to this request on the ground that it is predicated on a mischaracterization of Mr. Baranowski's testimony. On page 4 of his testimony, Mr. Baranowski did not state that he had conducted further analysis. He stated that further analysis could result in the need for additional corrections that would further lower loop rates.

b. AT&T and WorldCom object to this request on the ground that it is predicated on a mischaracterization of Mr. Baranowski's testimony. Page 4 of Mr. Baranowski's testimony makes no reference to corrections that could increase loop rates.

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VZ-ATT/WC 2-3: Referring to page 12 of the Baranowski testimony, stating that "engineers typically construct underground conduit systems along no-cost public rights of way adjacent to, or within roadway right of way." Identify how and where the HAI 5.2a:

a. accounts for right-of-way costs;
b. accounts for the trade off between right-of-way costs and longer loops;
c. provide examples of underground conduit systems that have been placed along "no-cost public rights of way adjacent to, or within roadway right of way" in Massachusetts; and,
d. state how the HAI 5.2a constructs outside plant facilities along roadways.

Respondent: M. Baranowski / J. Donovan

RESPONSE:

a. HAI 5.2a-MA accounts for right-of-way costs in the same manner as Verizon' cost study. Those costs are included as part of the installed costs of the structure (e.g., poles, conduit, and buried cable). It is the understanding of AT&T and WorldCom that Verizon's right-of-way costs are incurred by their outside plant engineering department, and those costs are booked to the installed cost of outside plant.

b. AT&T and WorldCom understand Verizon's question to relate to the fact that occasionally structure and cable lengths may be extended longer than necessary to avoid a difficult right-of-way issue. HAI 5.2a-MA does not break out a separate trade-off algorithm (neither does Verizon's cost study). However, by using rectilinear routing in its

distance algorithms, the HAI 5.2a-MA allows much more extra length than would occur with straight line routing. Such a conservative assumption provides for those cases where extra length may be used to achieve low cost or no cost public rights-of-way.

c. Examples of underground conduit systems that have been placed along "no-cost public rights of way adjacent to, or within the roadway right of way" are rampant throughout the Commonwealth of Massachusetts. For example, most pole lines that are inside the curb line and outside the private property line anywhere in Massachusetts are on such public rights-of-way. In addition, it is standard procedure in housing developments for property owners' deeds to routinely grant a no-cost utility easement five feet on each side of the property line. Underground manholes and conduit are very frequently placed in the roadbed in the public right-of-way.

d. HAI 5.2a-MA models the cost of outside plant facilities in a manner that properly accounts for right-of-way and structure costs. It may be noted that structure costs have been proposed for excavation and restoral that are higher and higher as density zones become more and more dense.

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VZ-ATT/WC 2-4: Referring to page 18 of the Baranowski testimony, stating that "there are numerous other flaws in Verizon's study, all of which overstate its model's output results creating inflated claimed loop costs." With respect to that statement:

a. describe in detail each of these "other flaws;" and,
b. explain how the flaws create "inflated claimed loop costs" and provide all documents concerning, referring or relating thereto.

Respondent: M. Baranowski

RESPONSE: The other flaws referenced are those identified in Mr. Baranowski's testimony. Also see response to VZ-ATT/WC 2-2.

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VZ-ATT/WC 2-5: Referring to page 19 of the Baranowski testimony, stating "Verizon made a number of self-serving assumptions that fly in the face of TELRIC costing principles." With respect to this statement:

a. identify each and every self-serving assumption made by Verizon;
b. explain in detail how each of these assumptions are self-serving; and,
c. explain in detail how each of these assumptions "fly in the face of TELRIC costing principles."

Respondent: M. Baranowski

RESPONSE: The referenced assumptions are explained in Mr. Baranowski's testimony.

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VZ-ATT/WC 2-6: Referring to page 21 of the Baranowski testimony, stating that "[u]nder TELRIC, Verizon must tailor distribution levels to the specific service and growth characteristics of each of the distribution areas." With respect to this statement:

a. state whether Mr. Baranowski advocates the use of distribution-specific fill factors; and,
b. if so, identify where the distribution-specific fill factors are contained in the HAI 5.2a.

Respondent: M. Baranowski / J. Donovan / R. Mercer

RESPONSE:

a. It is not clear what Verizon means by the term "distribution-specific fill factors." As stated in his testimony, Mr. Baranowski explains that because Verizon insists on using its embedded base distribution areas, it should at the very least tailor the growth characteristics of each embedded distribution area to care for the fact that some distribution areas have already achieved their maximum number of living units, while other embedded distribution areas are not yet mature and will experience growth. Only Verizon is in possession of distribution area specific service and growth information.

b. Mr. Baranowski is not one of the primary HAI model witnesses. The HAI 5.2A-MA Model does not use fill factors. It models a forward looking network using *Cable Sizing Factors*, with an ability to use the same or a different *Cable Sizing Factor* for each cluster (akin to a Distribution Area). After running the HAI 5.2a, the

achieved fill by cluster may be observed within the workfile. Because the HAI Model is modeling a forward-looking network, not the embedded base network, there is not a direct correlation between the Verizon cost study and the HAI 5.2a-MA Model in this area.

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VZ-ATT/WC 2-7: Referring to page 26 of the Baranowski testimony, identifying an assumption of 1.6 lines per living unit. With respect to that assumption:

a. explain in detail how this number was derived;
b. provide all documents concerning, referring or relating thereto.
c. state how the HAI 5.2a provides 1.6 lines per living unit and produce all documents concerning, referring or relating thereto.

Respondent: M. Baranowski/R. Mercer

RESPONSE:

a. See response to VZ-ATT/WC 1-10 and pages 25-28 of the Baranowski testimony.

b. See response to VZ-ATT/WC 1-10.

c. Ignoring the effect of cable "breakage," which significantly reduces the effective HAI fill, the assumption of 1.6 lines per living unit results from: (1) the 75% distribution fill in HAI; and (2) the fact that there are 1.14 equipped residential lines per household due to the presence of multi-line residences (the ratio 1.14 can be seen by adding the total residential lines in Col. D of Exhibit RAM-6d and households in Col. H. The ratio of D to H is 1.14). The number of lines per household provided by the Model is 1.14*1/75% = 1.52 pairs per household. Taking modularity into account, the achieved fill is only 48.9%, meaning in effect the pairs per household actually installed by the Model is 1.14 * 1/.489 = 2.33.

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VZ-ATT/WC 2-8: Referring to page 35 of the Baranowski testimony, provide all documents concerning, referencing, relating to or substantiating the statement that "Verizon's forward-looking to current factor is a thinly veiled attempt to recoup its embedded, inefficient operating costs."

Respondent: M. Baranowski

RESPONSE: The basis for the statement is explained in Mr. Baranowski's testimony.

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VZ-ATT/WC 2-9: Referring to page 35 of the Baranowski testimony, identify and explain in detail the "embedded Verizon inefficiencies" and provide all documents concerning, referencing, relating to or substantiating the purported inefficiencies.

Respondent: M. Baranowski

RESPONSE: The embedded Verizon inefficiencies are those costs Verizon incurs in operating and maintaining its embedded network compared with the lower operating and maintenance costs attributable to an efficient forward-looking network.

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VZ-ATT/WC 2-10: Referring to page 41 of the Baranowski testimony, stating that "Verizon failed to include a specific adjustment to reflect the anticipated future savings associated with either the BA/NYNEX or Verizon/GTE mergers." With respect to that statement:

a. state whether a proper TELRIC study attempts to determine the costs of the forward-looking network of the incumbent carrier or any hypothetical carrier;
b. if your answer to (a) is the cost of a hypothetical carrier, then explain in detail how the merger costs of a specific carrier impact the costs of a hypothetical carrier; and,
c. if your answer to (b) is the cost of the incumbent carrier, then explain in detail how the HAI 5.2a attempted to model Verizon's UNE costs.

Respondent: M. Baranowski

RESPONSE:

a. TELRIC develops the forward-looking, long-run incremental cost of an efficient carrier, assuming that the wire center locations used by the incumbent carrier remain unchanged.

b. It is proper to include merger related savings in developing the costs of an efficient carrier in this case because the operating expenses of the new entrant are based directly on Verizon's current operating expenses. To the extent certain of those current operating costs have been identified as unnecessary post merger, it is reasonable to assume that the forward-looking carrier would not incur these unnecessary costs.

c. AT&T and WorldCom have provided a response to part b and therefore need not respond to part c.

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VZ-ATT/WC 2-11: Referring to page 8 of the Pitts testimony, stating that "VZ-MA's methodology violates all forms of cost methodology." Identify the "forms of cost methodologies" that Ms. Pitts is referring to and explain in detail how Verizon's cost study violates each of these forms.

Respondent: C. Pitts

RESPONSE: The statement refers to the inconsistency inherent in Verizon's methodology, as described at pages 8-14 of the Pitts testimony. Application of a particular cost methodology (whether it be long-run, short-run, embedded, forward-looking or other) requires the use of assumptions that are consistent with the particular methodology chosen. Verizon has violated this requirement.

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VZ-ATT/WC 2-12: Referring to page 9 of the Pitts testimony, explain in detail why it is "mathematically incorrect" to use a growth discount as an input to SCIS.

Respondent: C. Pitts

RESPONSE: The growth only discount that Verizon incorrectly used as an input to SCIS is multiplied against all equipment components, even those purchased at the time of initial installation of a new switch. Because SCIS applies the same growth discount to the new switch equipment, this produces an inaccurate net price for new switch equipment. Thus, the use of the growth discount is mathematically, and conceptually, incorrect.

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VZ-ATT/WC 2-13: Referring to page 21 of the Pitts testimony:

a. state whether the HAI 5.2a "dynamically model[s] a switch that grows over time." If your answer is "yes" in any respect, describe in detail how the HAI 5.2a "dynamically model[s] a switch that grows over time."

b. state whether the HAI 5.2a models a network that grows over time. If your answer is "yes" in any respect, identify each and every variable in the HAI 5.2a that allows for a network that grows over time.

Respondent: R. Mercer

RESPONSE:

a. HAI 5.2a-MA does not model a specific growth rate in switches, because the Model comports with the FCC's TELRIC principles, in which the "T" refers to total demand, not some increments of demand. However, in sizing switches for total current demand, the Model does provide a reasonable amount of excess capacity in that the administrative fill factor is conservatively low and thus includes some excess capacity.

b. In keeping with the notion of total service demand, the Model does not specifically model growth. However, in all relevant parts of the network, including distribution cable, feeder cable, and all loop and interoffice electronics, the Model provides for additional capacity through a fill factor that is less than unity, allowing for some amount of growth.

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VZ-ATT/WC 2-14: Referring to page 4 of the Donovan testimony, stating "[a]lthough not perfect TELRIC methodology, I believe uniform use of 100% fill factors on fiber plant will allow the Department to more closely approximate a fair and appropriate recurring cost for dark fiber." With respect to this statement:

a. explain in detail what is meant by the phrase "although not perfect TELRIC methodology;"
b. provide all documents concerning, referring or relating to the uniform use of 100% fill factors on fiber plant; and,
c. identify the fill factors for fiber plant that AT&T and WorldCom experience in Massachusetts.

Respondent: J. Donovan

RESPONSE:

a. Mr. Donovan explains his understanding of TELRIC methodology starting on page 45 of his Rebuttal Testimony.

"TELRIC principles involve the development of investment costs, using forward-looking technologies built in a competitively efficient manner, divided by the total demand for a network element. The most significant errors in Verizon's Dark Fiber study are created because Verizon counts the fiber cable and the structures supporting the cable twice."

Mr. Donovan goes on to explain that either the Dark Fiber could be given to CLECs at no cost, because all of the spare Dark Fiber costs have already been funded in UNE recurring rates if a fill factor of less than 100% is used, or that the "total demand for a network element" include both

the UNE impact on fiber demand plus the Dark Fiber demand. Since both methods have a degree of difficulty associated with them, Mr. Donovan proposes the alternative of simply using a 100% fill factor (consisting of 50% service fibers plus 50% extra redundancy fibers) in each separate calculation – once for UNEs and once again for Dark Fiber. This is not perfect, because the sheath of the cable containing Dark Fiber would be double counted – hence this could never be considered perfect TELRIC. It is a conservative approach that will yield costs somewhat higher than would be produced using TELRIC..

b. See response to VZ-ATT/WC 1-24.

c. AT&T and WorldCom object to this information request on the grounds that it is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence. This case involves Verizon-MA's forward-looking economic costs to provide UNEs. AT&T and WorldCom's own operational experience to date is not relevant to that issue. AT&T and WorldCom also object to this information request on the grounds that it is overbroad and unduly burdensome.

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VZ-ATT/WC 2-15: Referring to page 59 of the Walsh testimony, stating that "[t]he Cost Model must also identify manual work times that reflect appropriate intervals based on the use of forward looking network technologies. It should incorporate the efficiencies of automated Intelligent Network Elements found in recurring costs studies (SONET, TR303/IDLC, DCS/EDSX, LDS, etc.) which provide for maximum electronic flow through for provisioning of orders." With respect to that statement:

a. identify each and every automated Intelligent Network Element included in the HAI 5.2a;
b. identify where the investments for each and every automated Intelligent Network Element is included in the HAI 5.2a; and
c. identify the specific investment dollars associated with each and every automated Intelligent Network Element that are included in the HAI 5.2a.

Respondent: R. Mercer

RESPONSE:

a. In the sense the Walsh testimony uses the term, that is, automated Network Elements which provide for maximum electronic flow through for provisioning of orders and other operations processes, the following elements included in HAI 5.2a-MA would be considered Intelligent Network Elements:

i) the Integrated Digital Loop Carrier system;
ii) local switching systems;
iii) SONET-based interoffice transmission terminals, including the Add-Drop Multiplexers, terminal multiplexers, and Digital Cross Connect Systems; and

iv) elements of the Signaling System No. 7 network.

b. Default values for the investment in these elements, and all other inputs to the Model, are contained in the input database that is provided with the Model. The inputs can be changed through the user interface. In particular, inputs for the intelligent network elements identified above appear in the following screens of the Model's user interface GUI:

i) Integrated Digital Loop Carrier System: Feeder inputs, DLC Equipment screen, multiple parameters including DLC common equipment (*see* Sections B63 through B76 of Exhibit RAM-2, Appendix B of Mr. Mercer's Direct Testimony);
ii) Local switching systems: Switching and Interoffice Transmission inputs, End Office Switching screen, parameters for End Office Amalgamated Switching Fixed Investment – BOC and Large ICO, and End Office Amalgamated Switching Per Line Investment (*see id*. at Sections B89 and B90);
iii) SONET-based interoffice transmission terminals: Switching and Interoffice Transmission inputs, Interoffice Investment, various parameters (*see id*. at Sections B114, B124); and
iv) Signaling System No. 7 network: Switching and Interoffice Investment inputs, Signaling screen, various parameters including STP investment (*see id.* at B160 and B161).

c. The numerous input values associated with these elements can be observed in the sections of Exhibit RAM-2, Appendix B, referenced in the answer to part b above.