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Witness: W. Craig Conwell
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BEFORE THE PUBLIC SERVICE COMMISSION
STATE OF MISSOURI

In the matter of Petition of Alma Telephone Company for Arbitration of Unresolved Issues Pertaining to a Section 251(b)(5) Agreement With T-Mobile USA, Inc.	))))	Case No. TO-2006-0147, et al Consolidated

REBUTTAL TESTIMONY
OF
W. CRAIG CONWELL
ON BEHALF OF T-MOBILE USA, INC. AND CINGULAR WIRELESS

JANUARY 20, 2006

****Denotes Information Deemed to be Proprietary by Petitioners****

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INTRODUCTION

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND EMPLOYER.

A. My name is W. Craig Conwell. My business address is 405 Hammett Road, Greer, South Carolina. I am self employed as an independent consultant, specializing in telecommunications cost analysis.

Q. ON WHOSE BEHALF ARE YOU PROVIDING REBUTTAL TESTIMONY?

A. I am testifying for T-Mobile USA ("T-Mobile") and Cingular Wireless ("Cingular").

Q. DID YOU PROVIDE DIRECT TESTIMONY IN THIS CASE?

A. Yes, I filed direct testimony on January 6, 2006 as the cost witness for T-Mobile and Cingular.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. My rebuttal testimony responds to the direct testimony of Mr. Robert Schoonmaker, the witness appearing on behalf of the Petitioners.[1] I will be addressing that portion of Mr. Schoonmaker's testimony, from pages 6–35, dealing with the Petitioners' proposed transport and termination rate of $0.035 per minute and the results of their cost studies, which supposedly justify this rate.

Q. HOW HAVE YOU ORGANIZED YOUR TESTIMONY?

A. My testimony will be fairly brief. Mr. Schoonmaker's direct testimony is very similar to his testimony in the Alma arbitration, IO-2005-0468. Large portions

[1] "Direct Testimony of Robert Schoonmaker," Case Nos. TO-2006-0147 and TO-2006-0151, 01/06/06.

actually are the same word-for-word. My direct testimony filed on January 6 anticipated and addressed many of the points Mr. Schoonmaker makes in his direct testimony.

In rebuttal, I will summarize in the next few pages the essential points that I believe the Commission must recognize and consider in deciding reciprocal compensation between the Petitioners and the CMRS Respondents. I then have prepared a more detailed table that lists 21 items in Mr. Schoonmaker's testimony that deserve a specific response. Some items represent aspects of his testimony that are irrelevant to this proceeding. Others are instances in which the testimony is vague or misleading. I encourage the Commission to read through the table, because as much as anything, it shows how the Petitioners have attempted to justify their proposed rate of $0.035 per minute based on information that is sometimes misleading, frequently superficial and most importantly, incorrect.

Following the table, I conclude by addressing three additional topics that I would like to emphasize. These are, first, the inapplicability in this arbitration of reciprocal compensation rates previously agreed to between ILECs and CMRS Providers; secondly, the importance of the Commission carefully analyzing and addressing each of the nine fundamental issues in the Petitioners' cost studies that I identified in my direct testimony; and, third, the qualifications required of a cost witness.[2]

[2] See "Direct Testimony of W. Craig Conwell," pp. 8-9.

Summary of Testimony

Q. PLEASE SUMMARIZE YOUR REBUTTAL TESTIMONY

A. First, I am obviously concerned that the Petitioners stand by a proposed transport and termination rate of $0.035 per minute, when it is clear this rate is much greater than their costs. The costs of 20 Petitioners range from $0.0025 to $0.0147 per minute.[3]

The language of FCC Rule 51.505(e) prohibits a Petitioner's transport and termination rate from exceeding its forward-looking economic costs, which is exactly what the Petitioners are attempting to do. It concerns me that T-Mobile and Cingular are being asked to pay a rate that not only will over-compensate the ILECs, but also will subsidize the Petitioners' other operations. The Commission should not – cannot – permit this to happen.

Second, I am concerned that the Petitioners are making a subtle appeal for latitude in complying with FCC Rules. Their witness implies that the expense to do a proper cost study is not worth the revenues his clients will derive from reciprocal compensation; and, he implies that while the HAI Model, Version 5.0a ("HAI 5.0a") is not without its problems, it is "the most appropriate model available to

[3] See graph on p. 11, Conwell Direct. At the time I filed my direct testimony, information was available from Petitioners to correct, as needed, the costs of 20 companies. The information available for seven others was insufficient to correct their cost studies. As of the filing of rebuttal testimony, the necessary information for these seven companies has not been provided and corrections for them cannot yet be made.

develop forward-looking costs for arbitration proceedings." (See items 2, 4, 5 and 6 in the table beginning on page 8.)

As the Commission knows, Total Element Long Run Incremental Cost (TELRIC) studies for Regional Bell Operating Companies and large independent telephone companies, particularly for unbundled loops, are complex and require substantial data and human resources. However, a TELRIC study of transport and termination for a small ILEC in Missouri is not complex and does not require substantial resources. Peace Valley Telephone for example, has a cable distance of **_____** and **_____** to transport and terminate mobile-to-land traffic. A TELRIC study for Peace Valley is straightforward. In my direct testimony, I used Cass County Telephone to identify errors in HAI 5.0a and the Company's cost study. I then corrected Cass County's costs and provided these corrections in exhibits to the testimony (WCC-8, WCC-16, WCC-18 and WCC-21). The Petitioners' cost experts are capable of doing the same. Instead, Mr. Schoonmaker paints a misleading picture of the size and complexity of the task. (See items 2, 7, 8 and 9.) I encourage the Commission to challenge the notion that TELRIC studies are burdensome for small ILECs with small networks and not to "bend" FCC Rules in response to the Petitioners' suggestions that anything more than running HAI 5.0a with a few key input changes is not worth the exercise. FCC Rules require appropriate TELRIC studies and the FCC has held that in such studies, "[u]nderlying data must be verifiable, network design assumptions must be reasonable, and model outputs must be plausible." *Virginia*

Arbitration Cost Order, 18 FCC Rcd 17722, 17742-43 ¶ 38 (2003). The Petitioners have not done this, and Mr. Schoonmaker's statement that he developed the Petitioners' costs using "the best available forward-looking costs" (Schoonmaker Direct at 8-9) is simply not accurate.

Third, I am concerned that the Petitioners are apparently unaware of the fundamental flaws in the HAI 5.0a model as they have used it and the resulting overstatement of costs that these flaws cause. Their witness did not address any of the HAI 5.0a-related issues that I have identified in my direct testimony. (See Conwell Direct Testimony at 8-9, Issues 3-7, 9.) The Petitioners' witness did not explain why the model fails to reflect the transport network that the Petitioners actually use and will likely continue to use in the future. Instead, HAI 5.0a effectively assumes that every Petitioner switch has a cable running from it to the nearest Bell Operating Company (BOC) switch.[4] In other words, the Petitioners would have the Commission believe that if they were to replace their existing transport network, they would build a network that uses more miles of cables than are necessary and a network that would require them to use Southwestern Bell to complete their own local calls (and Southwestern presumably would charge the

[4] The Petitioners may argue that there is no guarantee that the BOC in the future will continue to deliver traffic to a meet point near each Petitioner's network. However, it still would not make sense for a small ILEC to build cable facilities from each of its switches to the nearest BOC switch. For example, it would continue to be more efficient for Cass County **

** For the description of the HAI 5.0a modeling error, see Conwell Direct at pp. 59-64.

Petitioners for their new use of its network). This is not a credible assumption, and this assumption is incompatible with FCC Rule 505(b)(1), which specifies that costs are to be measured using "the lowest cost network configuration."

The Petitioners' witness also did not explain why HAI 5.0a does not recognize the fact that small ILECs use their interoffice cables for purposes other than interoffice transport, including providing fiber connections to loop concentrators, leasing fibers and others. He did not explain why HAI 5.0a assumes OC-48 transmission equipment for all Petitioners, even **_____ _____**. Four T-1 circuits consume only 0.3% of an OC-48 system's capacity, leaving 99.7% spare capacity and costs. This is analogous to a telephone company placing a 1,200 pair cable to serve a neighborhood with four houses. It just does not make sense. These are just a few examples of the unrealistic assumptions made by HAI 5.0a as used by the Petitioners. (Also see items 10, 11, 19 and 20.) The Commission must recognize that the fairness and reasonableness of the Petitioners' proposed rate rely entirely on the credibility of HAI 5.0a and that this model is not credible for computing transport and termination costs of the Petitioners here.

Fourth, I am concerned with the lack of substance in the testimony of the Petitioners' witness. In 31 pages of testimony related to costs, there are several instances in which he addresses aspects of the HAI model that are irrelevant to the determination of transport and termination costs. (See items 3, 8, 9 and 18.)

More importantly, he does not address at all eight of the nine issues in his cost studies that I identified in my direct testimony. (See items 10, 11, 15 and 19.) The FCC and other state commissions have rejected ILEC cost studies, or portions of studies, lacking necessary, credible proof. In this case, there can be no credible proof for the results of the Petitioners' cost studies, because the results are simply not correct. I encourage the Commission to reject the Petitioners' cost studies and their results.

Finally, I am concerned with the many subtle implications in Mr. Schoonmaker's testimony that may lead the Commission to believe that the HAI model is widely accepted and can be used to reasonably estimate the costs of small ILECs in Missouri; and, that it would be impractical for the Petitioners to produce accurate cost studies. These claims are not true, as I point out in items 1, 2, 4, 5 and 6 in the following table.

Q. PLEASE DESCRIBE THE TABLE THAT YOU PREPARED.

A. The table is a point-by-point response to specific parts of Mr. Schoonmaker's direct testimony. The table has four columns: (1) an issue number, which I referred to earlier in the summary of my testimony, (2) the page and line citation to Mr. Schoonmaker's direct testimony, (3) quotes from his testimony, and (4) my response to his testimony.

Item	*Page / Line(s)*	*Testimony by Petitioners' Witness*	*Response or Comment*
1	7 / 13-15	"First, the model has been widely available throughout the industry and has been carefully studied by industry participants, the FCC and many state Commissions. Both its strengths and weaknesses are known and have been evaluated."	The testimony implies HAI 5.0a has been widely accepted. A closer reading of the testimony reveals the model is only "widely available" and has been "evaluated." It is doubtful that anyone making an objective evaluation of HAI 5.0a as used by the Petitioners would find the model acceptable, given its unrealistic assumptions about small ILEC networks and the resulting overstatement in transport and termination costs. (See Issues 4-9, Conwell Direct Testimony, pp. 8-9.) Moreover, given the failure of the Petitioners' witness to address the nine key issues in their studies, he either is not familiar with HAI 5.0a's "weaknesses" or considered them immaterial, which they are not.
2	8 / 6-10	"Because of the required time and resources to fully explore all the proposed default inputs, testing of such items as the cost of cable and digital loop carrier equipment against the forward-looking costs for small companies in Missouri is generally not feasible."	The testimony gives the false impression that there are many items of HAI 5.0a input data or data internal to the model that would require careful review. Most HAI model data are used in computing loop costs, which are not relevant to transport and termination; it would not be necessary to review these cost data. However, the relatively few key cost data affecting transport and termination costs must be substantiated for the Petitioners to meet their burden of proof. These include the current cost to purchase and install new switches, the portion of switch costs that are usage sensitive, interoffice cable lengths, cable sizes and costs, cable sharing, and transport transmission equipment requirements and costs. The Petitioners apparently made no attempt to "explore" these key cost data.
3	8 / 18-22	"Results from the model may likely be less accurate for smaller geographic areas ... This is due to both the technique used to generate customer locations and the data in the model."	Irrelevant. The modeling of customer locations does not affect transport and termination costs, except perhaps indirectly in the possible sharing of trenching and poles between feeder cable and interoffice cable.
4	9 / 11-15	"While individual company results have been developed for each of the Petitioners, I believe it is more appropriate to use an average of the companies as a proxy for each of the individual companies rather than using the individual company rates themselves. This average cost data would tend to be comparable to results for large companies that have many exchanges."	Testimony gives the incorrect impression that averaging Petitioner transport and termination costs will mitigate HAI 5.0a's inability to properly compute individual company costs. HAI 5.0a systematically overstates small ILEC costs, resulting in average costs that also are overstated. When all costs are overstated, as in this case, average costs are no more accurate than individual company results.

5	10 / 10-15	"Thus, care must be taken to produce a reasonable study to meet the FCC requirements, but at a reasonable cost in relationship to the revenues at stake. In developing the costs for the individual companies using the HAI model, I have tried to use methods that would accomplish this goal. More detailed and exacting studies may have been possible, but at a considerably greater cost than was incurred to arrive at the results in these cases."	The language of the FCC Rules for TELRIC studies do not vary depending upon an ILEC's "revenues at stake." An ILEC with more revenues at stake in reciprocal compensation is not expected to produce "more detailed and exacting studies," and vice versa. (A BOC's study may be more detailed, but that it only because its network is larger and more detailed.) The issue is whether the Petitioners have produced studies that reasonably measure their forward-looking economic costs and provided evidence to substantiate these costs. They have not done this. The forward-looking economic costs of 20 of the Petitioners are in the range of $0.0025 to $0.0147 per minute; therefore, Petitioner cost studies producing costs in the range of $0.0255 to $0.4596 per minute cannot be reasonable.
6	11 / 1-9	"As the model faced scrutiny in various state and federal proceedings, it underwent continued development and modification through a series of versions over a several year period of time. ... Version 5.0a of the model, which has been used to develop the costs presented by the Petitioners in this proceeding, was the latest version presented in formal comments to the FCC in CC Docket #96-45, the federal Universal Service Fund (USF) proceeding."	The testimony may give the false impression that HAI 5.0a is the "latest" version of the model and reflects improvements up to the present time. In fact, HAI 5.0a was released in early 1998, or eight years ago; it contains cost data from the mid-1990s; and it has not been modified since 1998. Rather, HAI 5.0a has been superceded by versions 5.2 and 5.3. In these newer model versions, the developers at HAI Consulting have abandoned treating 70% of end office switching as usage-sensitive; they now treat zero percent (0%) of switching as usage-sensitive. Yet, the Petitioners have continued to use the outdated 70% assumption in HAI 5.0a without submitting any proof in support of this assumption.
7	12 / 2-5	"To assist users in being able to use the models quickly, the developers have populated the model with default values that, based on their research, judgment and evaluation, represent appropriate values for each input element."	By speaking of the model development in the present tense, the testimony implies its cost data are today "appropriate." This is not a given, because HAI 5.0a default values were developed over eight years ago (given the model's release in early 1998). In addition, six years ago the FCC chose to not rely on HAI 5.0a's default values for switching costs "because these values are largely based on non-public information or opinions of their experts, without data that enable us adequately to substantiate those opinions." (Tenth USF Report and Order," CC Docket Nos. 96-45 and 97-160, 14 FCC Rcd 20156, 20281 ¶ 297 (1999).)
8	12 / 14 to 13 /	Testimony briefly describes HAI 5.0a input data. Sum of various input items total to 1,317.	Mr. Schoonmaker does not point out that the majority of the 1,317 input data items are not used in the Petitioners' cost studies and therefore required no

	17		effort to prepare. Distribution and feeder input (427 items), Underground and Buried Excavation/Restoration input (298 items) and the Surface Texture Table (257 items) are not used in the Petitioner cost studies. A significant portion of the Switching and Interoffice input (195 items) required no effort to "fully explore" them since they are not required and not relevant. (See Item 2 above.)
9	14 / 6-15	Testimony describes the HAI 5.0a Surface Texture Table.	Irrelevant. The Surface Texture Table data are not used in computing transport and termination costs.
10	16 / 18 to 18 / 8	Testimony gives basis for using buried fiber cable for 95% of interoffice cable and aerial fiber cable for 5% of interoffice cable.	More important than the mix of cable types are (1) interoffice cable distances and (2) cable sizes (fibers per cable). HAI 5.0a determines cable distances as the distance from each Petitioner switch to the nearest BOC switch, rather than determining actual interoffice distances among switches. The model also assumes 24 fiber cable is used for all interoffice cable, regardless of the number of fibers actually required. These two flaws in HAI 5.0a as used by the Petitioners substantially overstate transport cable costs. In over a page of testimony on the mix of cable types, Mr. Schoonmaker did not mention interoffice cable distances and cable sizes in HAI 5.0a, even though these factors play a much larger role in determining costs. (See Issues 4 and 5, Conwell Direct, p. 8-9.)
11	18 / 11 to 20 / 2	Mr. Schoonmaker gives four pages of testimony on the rationale for assuming little, if any, sharing of structures (trenches, poles, etc.) with other utilities. He explains, "The structure sharing assumptions are built into the model to reflect circumstances where these structures may be able to be used by a utility other than the telephone company; and the costs of the structures may be borne by these other companies, thus reducing the effective cost to the telephone company." [emphasis added]	The testimony fails to address at all the key "sharing" issue in developing transport cable costs – that is the sharing of fibers in interoffice cables among several telephone company users, "thus reducing the effective cost" of each user. The users, in this case, are interoffice trunks, special access circuits, subscriber loops over fiber (via loop concentrators), other carriers leasing fiber and others. (See Issue 6, Conwell Direct, p. 8-9.) The testimony largely relates to sharing structures for distribution and feeder cabling utilized for subscriber loops ("(i)n some new subdivision construction," "assuming all households had equal lot sizes"). Over ten percent of cost-related testimony is devoted to the sharing of structures with utilities, when the important issue for this arbitration is, "How much fiber in the Petitioners' interoffice networks is shared?" HAI 5.0a assumes none. ** _____ _____** (See Conwell Direct, p. 71 and Issue 6, p. 9.)

			Mr. Schoonmaker's testimony also fails to mention anything about transport transmission equipment and in particular why OC-48 transport systems are assumed for all Petitioner networks, regardless of their interoffice transport requirements. (See Issue 7, Conwell Direct, p. 9.)
12	22 / 6-12	In describing the rationale for changing end office investment input, the witness states, "The default switching input value that is used by the HAI modelers is based on an analysis of switch costs for larger companies ... it is clear that the input does not correctly estimate the cost of switching for small offices."	The testimony is misleading. It implies HAI 5.0a switch investment input values are for large companies, not small companies. HAI 5.0a has separate input values for BOCs and large independent companies ($242.73 / line) and for small independent companies ($416.11 / line). The Petitioners chose the option of using the value for small companies, which is 71% higher than the large company input value.
13	22 / 14-19	"I also did an analysis comparing the default model results with the actual investments incurred by companies for COE switching in Missouri. With the default inputs, the COE switching investments produced by the HAI Model were about 45% less than the actual COE switching investments for small Missouri companies. I believe that is a strong indicator that the default input is generating inappropriate results for these companies."	Mr. Schoonmaker's analysis is incorrect. (See Conwell Direct, pp. 39-40.) Had the analysis been correctly performed, the switching investment produced by the HAI model using default inputs would be 8% less than the embedded investment, not 45% less as claimed.
14	23 / 8 to 24 / 7	Mr. Schoonmaker explains why he thinks it is valid to compare switch investments estimated by HAI 5.0a with embedded investments of the Petitioners. In particular, he points out "recently required capabilities" or upgrades to the Petitioners' existing switches.	The costs of switch upgrades cause embedded switch investments to appear high compare to the current cost to purchase and install switches. In selecting switch costs in the USF case, the FCC found, "Upgrade costs will be a larger fraction of reported book-value costs in instances where the book-value costs of purchasing and installing switching equipment are reported well after the initial date of the switch. We affirm our tentative conclusion that, in order to estimate the costs associated with the purchase and installation of new switches, and to exclude the costs associated with upgrading switches, we should remove from the data set those switches installed more than three years prior to the reporting of their associated book-value costs." Tenth USF Report and Order," CC Docket Nos. 96-45 and 97-160, 14 FCC Rcd 20156, 20289 ¶ 315 (1999). Based on responses to T-Mobile's data request No. 17, **_____**
15	24 / 11-15	The witness gives his rationale for the Petitioners' HAI model input for switching investment. "The default input for this value is $416.11 per line. Based on my review of	This is the sum total of the Petitioners' basis the current cost of switching plant to terminate mobile-to-land traffic. It is woefully inadequate and does not begin to meet FCC requirements.

		this factor in the past and the resulting investment to actual investments, I am recommending that the value be increased to $520.14 per line. Even at this level, the HAI results for small Missouri companies are about 28% less than current actual investments."	Furthermore, had the analysis comparing HAI model results to embedded investment been correctly done, the model results using the Petitioners' proposed $520.14 investment per line would actually be greater than their embedded investment, which defies all evidence in this case and even Mr. Schoonmaker's admission in his deposition that switching costs have declined 10 – 20% over the past 10 to 15 years. Schoonmaker Dep. at 12-13. Mr. Schoonmaker provided no new information to support the Petitioners' position that 70% of end office switching costs are usage-sensitive, and he does not mention the rationale for adopting the HAI model default values for switch floor space, when the Petitioners generally require significantly less space. (See Issues 2 and 3, Conwell Direct, p. 8.)
16	25 / 19-22	"I believe the cost of capital used by the FCC at the interstate level of 11.25% is more reflective of a forward-looking cost of capital."	The testimony provides no factual basis for the conclusion that 11.25% is "more reflective of a forward-looking cost of capital" for the rural ILEC Petitioners. The 11.25% is based on a 44.2% / 55.8% debt-to-equity ratio, an 8.8% cost of debt and a 13.19% cost of equity. It is highly doubtful that small rural ILECs in Missouri expect 8.8% interest rates on long-term debt from such lenders as the Rural Utility Service.
17	26 / 1 to 27 / 20	Mr. Schoonmaker gives the rationale for assuming there will be no productivity improvements in Network Operations expenses.	The testimony provides no factual basis for assuming small ILECs in Missouri will not realize any improvement in productivity from new technology, especially related to power consumption (account 6531), remote testing of network elements (account 6533) and others.
18	27 / 21 to 29 / 2	Testimony describes the reasons for increasing billing and bill inquiry expenses.	Irrelevant. Billing and bill inquiry expenses are attributable to retail services. The Petitioners' cost studies actually do not even use this input value to the HAI model.
19	31 / 20 to 32 / 10	Testimony concludes the description of HAI model input changes.	In addition to not addressing Issues 2 – 8 identified on pp. 8-9 of witness Conwell's direct testimony, no mention is made of ISUP Signaling costs. HAI 5.0a makes several unrealistic assumptions and overstates these costs as described on pp. 86-89 of Conwell Direct.
20	33 / 1-16	Mr. Schoonmaker describes the reason Petitioners include both common transport and dedicated transport costs. He	There are three problems with Mr. Schoonmaker's analysis. First, while it is a somewhat different issue, HAI 5.0a grossly overstates the "total cost of the

		states, "First, the total cost of the facility is developed based on the mileages between offices and the cost of fiber and terminals for the facility. This total cost is then allocated to various types of transport facilities, such as special access, local interoffice, operator services, common trunks, and dedicated trunks, based on the number of trunks for each service. In the studies for the Petitioners, the default assumptions are changed to assume that all traffic will be transported via common trunks so one would expect there would be no dedicated trunks. However, the model logic assumes that there will be one dedicated trunk for each common trunk and thus allocates a substantial part of the cost of the facility to dedicated trunks which should be treated as the cost of common trunks. I have corrected for this allocation of costs to dedicated transport by adding the dedicated cost element to the cost of transport."	facility" or interoffice cable. This is done by overstating the cable length, overstating cable sizes and not recognizing the sharing of cable fiber. (See Issues 4, 5 and 6, Conwell Direct, p. 8.) Secondly, Mr. Schoonmaker's understanding of the HAI model methodology is wrong. Dedicated transport trunks also include special access circuits. The costs of these circuits should not be attributed to common transport. For example, the HAI model computed for Cass County suggest a total of 871 interoffice trunks or DS0 equivalent circuits. Of the total, 330 were common transport, and 432 were dedicated transport. Of the 432, 202 are special access circuits having nothing to do with voice traffic, whether the "model logic" calls trunks "common" or "dedicated". Adding the cost of special access circuits included in dedicated transport overstates the cost of transport. Third, the real issue is whether the 871 DS0 equivalents for Cass County is a reasonably accurate measure of the total demand or divisor in computing the interoffice cable cost per trunk. The model divides the cost of interoffice cable by the total number of interoffice trunks to arrive at a cost per trunk. It then divides the cost per trunk by the minutes per trunk to arrive at the cost per minute of use. It really does not matter whether the HAI "model logic" calls a trunk "common" or "dedicated." The result is the same as long as the total trunk quantity is accurate. In response to data requests, Cass County indicated **_____ _____ _____ _____** It is not necessary to add dedicated transport costs to the cost of transport. Doing so is duplicative and overstates costs.
21	34 / 4-11	"In this case, the cost results, since they are higher than the proposed rate, had relatively little impact on the decision [to propose rates agreed to with other petitioners] ... Since the model results were higher than the rates agreed to with other wireless providers, it was believed that they would be less acceptable to the Respondents that would the proposed $0.035 rate."	Had the Petitioners correctly computed their forward-looking economic costs, they would have found their proposed rate to exceed these costs. They would have to set individual ILEC rates at levels well below $0.035 per minute. These rate levels based on corrected Petitioner costs are shown in Exhibit WCC-1 of Conwell Direct. Also, it is unreasonable to assume that Petitioners are willing to accept a transport and termination rate lower than their costs. That most of the

			Petitioners claim to be willing to accept a rate lower than their costs (as computed by HAI 5.0a) further demonstrates that the model does not properly compute forward-looking economic costs.

Additional Key Points

Q. WHAT ADDITIONAL KEY POINTS DO YOU WANT TO ADDRESS?

A. I want to discuss three additional points. First, the approach used by the Petitioners to develop their proposed rate of $0.035 per minute is based in large part on rates agreed to between ILECs and CMRS Providers in previous interconnection negotiations and apparently on a rate in a wireless termination tariff. I want to point out why these previous rates are inapplicable to establishing the transport and termination rates in this arbitration.

Second, I would like to encourage the Commission to carefully analyze and address the nine fundamental issues that I identified in the Petitioners' cost studies. I believe the Commission then will find that the studies dramatically overstate their costs and that the proposed rate of $0.035 per minute is too high. It is important that the Commission not be swayed or diverted by arguments intended to shift its attention from the Petitioners' burden of proof and the incorrect results of their cost studies.

Third, Mr. Schoonmaker's direct testimony emphasizes his accounting education and work background in accounting-related positions. I do not believe that producing TELRIC studies and analyzing these studies requires specialized education and expertise in accounting. Rather, they require a good, working knowledge of the FCC's Uniform System of Accounts and other aspects of telephone company accounting, as well as knowledge of other disciplines. I would like to address this at the end of my testimony.

Q. PLEASE DESCRIBE THE APPROACH USED BY THE PETITIONERS TO DEVELOP THE PROPOSED RATE.

A. According to their witness' direct testimony on page six, the Petitioners took into consideration four factors in choosing their proposed rate. First, they recognized that the $0.035 rate had been arrived at and agreed to via negotiations between small ILECs in Missouri and several different wireless carriers. Presumably, they either believed that T-Mobile and Cingular would be willing to pay a rate at this level, or believed the Commission would conclude that if other wireless carriers are willing pay such a rate, then T-Mobile and Cingular should as well. Secondly, the Petitioners also recognized that the proposed rate is lower than another (unidentified) rate approved by the Commission in a wireless termination tariff (which is also unspecified). Again, they apparently felt the proposed rate would therefore be reasonable to the CMRS Providers and the Commission. The third factor in setting the proposed rate was that they believed the rate was below the average, forward-looking cost for small companies in Missouri. Similarly, the fourth factor was they believed the rate was below the average of their own costs.

Q. DO THE FIRST AND SECOND CONSIDERATIONS HAVE ANY APPLICATION TO THE COMMISSION IN ESTABLISHING TRANSPORT AND TERMINATION RATES BETWEEN THE PETITIONERS AND THE CMRS PROVIERS IN THIS ARBITRATION?

A. No, they do not. FCC Rule 51.705(a) states three options for the Commission in establishing ILEC transport and termination rates – forward-looking economic

costs, default proxies or a bill-and-keep arrangement. Those are the only options stated in the Rule. An ILEC's proposed rate, therefore, is not justified by the fact that other carriers have agreed to the rate voluntarily as part of an overall interconnection agreement, or that the rate is lower than a rate in a Commission-approved tariff applying State rather than federal law.

Of the three possible options, the Petitioners have chosen to establish their rate based on forward-looking economic costs. FCC Rule 51.505(e) states that "[a]n incumbent LEC must prove to the state commission that the rates for each element [transport and termination] it offers do not exceed the forward-looking economic cost per unit of providing the element ..." (emphasis added). The Commission is required to determine individually for each Petitioner whether $0.035 per minute exceeds its forward-looking economic costs. If the rate exceeds costs, the rate is not permitted.

Q. IF THE PROPOSED RATE WAS LOWER THAN THE AVERAGE COSTS OF SMALL ILECS IN MISSOURI OR THE PETITIONERS, WOULD THIS JUSTIFY THE RATE?

A. No. FCC Rule 51.505(e) applies to an individual ILEC and the recovery of its forward-looking economic costs. The transport and termination costs of each ILEC Petitioner are quite different, as I showed in the graph on page 11 of my direct testimony. For example, according to the FCC Rule, Cass County cannot charge a rate of more than $0.0073 per minute, whereas Peace Valley may charge a rate of up to $0.0146 per minute.

A rate based on the average cost of a group of ILECs contradicts the language of the FCC Rule. It also contradicts common sense. A rate should not be set such that a company is compensated for more than its costs; and conversely, a rate should not be set such that a company is not adequately compensated for its costs. FCC Rule 51.505(e) is very clear on this matter.

Q. SO HOW SHOULD THE COMMISSION ESTABLISH TRANSPORT AND TERMINATION RATES?

A. Each Petitioner should properly estimate its forward-looking economic cost to transport and terminate mobile-to-land traffic and then its rate should be set no higher than this cost. I presume each Petitioner would have its rate set equal to its cost.

Q. DID THE PETITIONERS CONSIDER SETTING THE PROPOSED TRANSPORT AND TERMINATION RATE AT THEIR FORWARD-LOOKING ECONOMIC COSTS?

A. According to Mr. Schoonmaker, they did, but decided not to set the proposed rate at costs. He states on page seven of his testimony, "However, since the Petitioners had offered a rate of $0.035 in negotiations with the Respondents to try to reach a settlement, Petitioners decided to continue to offer that rate in the context of this arbitration."

Q. DOES THIS STATEMENT CONCERN YOU?

A. Yes, it does. The Petitioners say their average cost is $0.0871 per minute for T-Mobile and $0.0843 for Cingular. It would trouble me greatly if the Commission

believed that the Petitioners were being generous by continuing to offer a rate that recovers only 40 – 42% of their costs. The fact of the matter is that the Petitioners' costs are well below their proposed rate of $0.035 per minute. If T-Mobile and Cingular are required to pay $0.035 per minute to have their traffic terminated, they not only will be fully compensating the Petitioners, but also subsidizing other parts of the Petitioners' businesses.

Q. PLEASE ADDRESS YOUR SECOND ADDITIONAL POINT?

A. In deciding the transport and termination rate, the Commission is being given two very different presentations – one by Mr. Schoonmaker for small ILECs in Missouri and mine for the CMRS Providers. Mr. Schoonmaker contends that the proposed rate is reasonable in light of previous interconnection agreements and that it is supported by a "widely available," if not widely accepted, cost model – HAI 5.0a. He has admitted that the model has its flaws, but contends that the results can be made reasonable using broad average costs for the Petitioners.

My presentation is very detailed, which is both an advantage in that it is fact-based and a disadvantage in that requires a good deal of effort to digest. It discusses arcane topics, such as the usage-sensitive portion of switching, interoffice cable distances and cable sharing. I rely on detailed cost data from public sources, such as the FCC and the Rural Utility Service. I cite cases, for example, in which the FCC and other state commissions have recognized that today end office switching is largely non-traffic sensitive; and, I could cite more.

There is no question that my presentation of facts to dispute the Petitioners cost studies took time to prepare – perhaps more time than the cost studies themselves. However, this was necessary largely because the Petitioners did not produce company-specific studies or support these studies with bona fide cost data, such as vendor quotes or other current cost data, or descriptions of the Petitioners' forward-looking networks. I do not believe, though, the effort required of the Petitioners to produce cost studies is excessive or unreasonable. Simple tools, such as Excel, are available for their use, without having to rely on an unwieldy, outdated and unrealistic model as HAI 5.0a.

I encourage the Commission to take the time to "wade through" the more detailed presentation of the CMRS Providers and not lose sight of these facts:

1. The Petitioners have presented little substantive evidence to support their cost studies, and thus failed to meet the burden of proof.
2. Their cost studies have nine fundamental errors that cause their costs which average over eight cents per minute to be overstated. The forward-looking economic costs after corrections for 20 Petitioners range from $0.0025 to $0.0147 per minute.
3. Each Petitioner's rate should be set with respect to its costs, and none of the Petitioners can justify, as reasonable, a rate of $0.035 per minute.

Q. BEFORE CONCLUDING YOUR TESTIMONY, WOULD YOU DESCRIBE WHY FORMAL ACCOUNTING TRAINING IS NOT

NECESSARY TO PRODUCE TELRIC STUDIES AND FOR YOUR ANALYSIS OF THESE STUDIES?

A. This case does not require professional accounting opinions on rulings by the Financial Accounting Standards Board (FASB) or interpretation of complex federal or state income tax codes. Instead, TELRIC studies and the analysis of these studies require a good working knowledge of the FCC Uniform System of Accounts and telecommunications cost structure, which I have. In addition, knowledge of telecommunications engineering and operations is necessary, as well as service cost study methods, procedures and tools. I have gained a good deal of knowledge, though, about telecommunications accounting after thirty years of experience in the industry.

Q. IN THE COURSE OF YOUR WORK, WHAT HAS BEEN YOUR EXPERIENCE WITH TELECOMMUNICATIONS ACCOUNTING?

In doing various types of service cost studies and related projects, I have had to gain an understanding of the FCC Uniform System of Accounts (USOA), in terms of the treatment of telephone plant, depreciation accounting, the accounting for operating expenses and other aspects of the accounts. I have participated in the development of cost accounting systems that measure service costs, and these projects required understanding not only the USOA, but also systems up-stream from the financial accounts used to measure costs by responsibility coding, expenditure-type coding and others. Over the years, I have had to analyze the results of Separations and similar regulatory accounting studies. Early in my career in South Central Bell, I worked in the depreciation studies group and

learned about service life studies, vintage group depreciation accounting and similar topics. In my consulting work today, I annually perform "replacement cost new" studies for telephone plant used in valuations for property tax purposes. These are a few representative examples of my experience with and exposure to telecommunications accounting.

Q. HAVE YOU HAD TRAINING IN SERVICE COST ANALYSIS OR RELATED TRAINING?

A. Yes. In the undergraduate work for my degree in Industrial Engineering, I had courses in *engineering economics*, which covered costs of capital, incremental cost analysis and the use of discounted cash flow analysis, and *time and motion study*, which covered the analysis of business processes, activities and activity costs. I also had an introductory course in *financial accounting*. My senior project involved the analysis of material handling in a manufacturing plant, which focused on the efficient flow of materials and the identification of lower cost alternatives.

In graduate school, I studied Operations Research, which deals with the use of mathematical techniques for analyzing and improving systems. My course-work included courses in advanced statistical analysis, mathematical techniques for optimizing systems (e.g., linear programming and dynamic programming) and the use of computer simulations. In preparing the thesis for my Master of Science degree I developed a dynamic programming model for maximizing returns on investments subject to uncertainty. This required research on modern portfolio

theory and the concepts of investment risk and costs of equity. A good deal of my graduate work provided training in the quantitative analysis of systems – whether manufacturing systems or a portfolio of stocks. This experience has served me well over the years and is useful in the analysis of the Petitioners' cost studies.

During my career in the Bell System, I attended the "Costs for Pricing" course at the Bell System Center for Technical Education (BSCTE). I also was selected for and attended "Elements of Communications Technology," an intensive thirteen week program at BSCTE that covered five areas – switching, transmission technologies, voice-grade engineering, quantitative analysis and service costs.

During my employment with Arthur Anderson, I developed and taught for six years a service cost course for the United States Telephone Association, one of the Petitioners' trade organization. This required that I be knowledgeable of various service cost techniques and telecommunications cost accounting.

Q. YOU INDICATED THAT YOUR EDUCATIONAL BACKGROUND IS IN INDUSTRIAL ENGINEERING. IS THAT CORRECT?

A. Yes, I have both undergraduate and graduate degrees in Industrial Engineering. While in graduate school, I became a member of the Industrial Engineering honor society, and I taught undergraduate courses in statistics and management.

Q. DOES THE EDUCATIONAL BACKGROUND AND TRAINING OF AN INDUSTRIAL ENGINEER LEND ITSELF TO SERVICE COSTING AND THE ANALYSIS OF TELECOMMUNICATIONS NETWORKS?

A. Yes, I described some of my course-work. In addition, I believe of the engineering professions, Industrial Engineering probably is most applicable to telecommunications cost analysis. Following is a definition of the profession:

> "industrial engineering – the branch of engineering that is concerned with the efficient production of industrial goods as affected by elements such as plant and procedural design, the management of materials and energy, and the integration of workers within the overall system."[5]

The Institute of Industrial Engineers gives a more complete description in the following:

> Industrial engineering (IE) is about choices. Other engineering disciplines apply skills to very specific areas. IE gives you the opportunity to work in a variety of businesses. The most distinctive aspect of industrial engineering is the flexibility that it offers. Whether it's shortening a rollercoaster line, streamlining an operating room, distributing products worldwide, or manufacturing superior automobiles, all share the common goal of saving companies money and increasing efficiencies.
>
> As companies adopt management philosophies of continuous productivity and quality improvement to survive in the increasingly competitive world market, the need for industrial engineers is growing. Why? Industrial engineers are the only engineering professionals trained as productivity and quality improvement specialists.

[5] The American Heritage Dictionary of the English Language, Fourth Edition, Houghton Mifflin Company, copyright 2000.

> Industrial engineers figure out how to do things better. They engineer processes and systems that improve quality and productivity. They work to eliminate waste of time, money, materials, energy, and other commodities. Most important of all, IEs save companies money. ... (emphasis added)

Q. WOULD YOU SAY THAT AN INDUSTRIAL ENGINEERING EDUCATION IS EQUALLY APPROPRIATE AS AN ACCOUNTING EDUCATION IN TERMS OF THE EXPERTISE REQUIRED FOR THE COST ANALYSES IN THIS ARBITRATION?

A. Yes. A large portion of Industrial Engineering education and training focuses on the study of business processes (including plant, labor and other resources), understanding the drivers of costs, and developing improvements in quality, productivity and costs. Conducting TELRIC studies employs these same skills – a forward-looking view, the determination of efficient network configurations and operations, and the proper attribution of costs. I have a high degree of respect for the accounting profession; however, to a great extent financial accounting focuses on recording recent (past) plant expenditures and operating expenses – embedded costs. I believe my education and work experience are well suited to the expertise required for the forward-looking cost analyses in this case.

Conclusion

Q. IN YOUR DIRECT TESTIMONY YOU INDICATED YOU WOULD ATTEMPT TO CORRECT, AS NEEDED, THE FORWARD-LOOKING COSTS OF THE REMAINING PETITIONERS. HAVE YOU DONE THIS?

A. No, I did not receive at the time I prepared this rebuttal testimony the necessary information regarding the transport networks of the seven Petitioners' whose costs I had not corrected in my direct testimony. Therefore, I have not made corrections to their costs.[6]

Q. WHAT IS YOUR RECOMMENDATION TO THE COMMISSION REGARDING TRANSPORT AND TERMINATION RATES FOR MOBILE-TO-LAND TRAFFIC?

A. I recommend that individual rates for 20 of the Petitioners be set at the corrected forward-looking economic costs shown in Exhibit WCC-1 of my direct testimony. These costs are based on my corrections to the Petitioner cost studies for the nine fundamental issues that I identified in direct testimony. For the seven remaining Petitioners, I recommend a bill-and-keep arrangement be used, until Petitioners produce forward-looking economic costs consistent with FCC Rules. In the alternative, interim rates might be set for these companies no higher than $0.0147 per minute, which is the highest cost of the 20 Petitioners that provided data, until these companies have produced appropriate cost studies.

[6] The seven companies include: Craw-Kan Telephone Cooperative, Holway Telephone Company, Iamo Telephone Company, Rock Port Telephone Company, Goodman Telephone Company, Ozark Telephone Company and Seneca Telephone Company.

Q. WHAT TOOLS MIGHT THE PETITIONERS USE TO PRODUCE COST STUDIES IN COMPLIANCE WITH FCC RULES TO DEVELOP A TRANSPORT AND TERMINATION RATE?

A. I have provided in my direct testimony examples of the transport and termination cost calculations for Cass County Telephone, which the Petitioners or their cost experts might use or adapt to their individual businesses.

Q. PLEASE SUMMARIZE YOUR TESTIMONY?

A. FCC Rules require each Petitioner to demonstrate that its proposed rate for reciprocal compensation (transport and termination) do "not exceed the forward-looking economic cost per unit of providing the element" using "the most efficient telecommunications technology currently available and the lowest cost network configuration." 47 C.F.R. §§ 51.505(b)(1), (e). The FCC has further held that in a cost study, "[u]nderlying data must be verifiable, network design assumptions must be reasonable, and model outputs must be plausible." *Virginia Arbitration Cost Order,* 18 FCC Rcd 17722, 17742-43 ¶ 38 (2003). *See also id.* at 17747 ¶¶ 48-49, 17945 ¶ 570. The Petitioners have not begun to meet their burden of proof under these governing federal standards.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Petition for Arbitration of Unresolved Issues in a Section 251(b)(5) Agreement with T-Mobile USA, Inc.	)))))	Case No. TO-2006-0147, et al Consolidated

AFFIDAVIT OF W. CRAIG CONWELL

STATE OF SOUTH CAROLINA

COUNTY OF GREENVILLE

W. Craig Conwell, appearing before me, affirms and states:

1. My name is W. Craig Conwell. I am an independent telecommunications consultant.

2. Attached hereto and made a part hereof for all purposes is my Rebuttal Testimony on behalf of T-Mobile USA, Inc. and Cingular Wireless, having been prepared in written form for introduction into evidence in the above-captioned docket.

3. I have knowledge of the matters set forth therein. I hereby affirm that my answers contained in the attached testimony to the questions propounded, including any attachment thereto, are true and accurate to the best of my knowledge, information and belief.

W. Craig Conwell

Subscribed and sworn to before me in the 17 day of Jan, 20 06

Notary Public

My Commission Expires:

My Commission Expires February 4, 2013