

Exhibit No.: _____
Issue: Network Business Relationships
Witness: Robert C. Schoonmaker
Type of Exhibit: Direct Testimony
Sponsoring Party: Small Telephone Company Group
Case No.: TO-99-593
Date: November 30, 2000

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Missouri Public
Service Commission

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the investigation into Signaling)
Protocols, Call Records, Trunking Arrangements,) Case No. TO-99-593
And Traffic Measurement.)

AFFIDAVIT OF ROBERT C. SCHOONMAKER

Robert C. Schoonmaker, of lawful age, being duly sworn, deposes and states as follows:

1. My name is Robert C. Schoonmaker. I am employed by GVNW Consulting, Inc. as a Vice President.

2. Attached hereto and made a part hereof for all purposes is my direct testimony with accompanying schedules.

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

Robert C. Schoonmaker
Robert C. Schoonmaker

Subscribed and sworn to before me this 30th day of November, 2000.

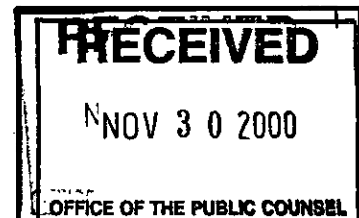
Doris K. Adams Notary Public

Exhibit No. 1

Date 1-24-01 Case No. TO-99-593

Reporter DL

My Commission expires: _____
DORIS K. ADAMS
NOTARY PUBLIC - NOTARY SEAL
STATE OF MISSOURI
COUNTY OF COLE
My Commission Expires May 20, 2002



1 DIRECT TESTIMONY OF ROBERT C. SCHOONMAKER

2
3 Q. Would you please state your name and address.

4 A. My name is Robert C. Schoonmaker. My business address is 2270 La Montana
5 Way, Colorado Springs, Colorado 80918.
6

7 Q. By whom are you employed and in what capacity?

8 A. I am a Vice President of GVNW Consulting, Inc., a consulting firm specializing
9 in working with small telephone companies.
10

11 Q. Would you please outline your educational background and business experience.

12 A. I obtained my Masters of Accountancy degree from Brigham Young University in
13 1973 and joined GTE Corporation in June of that year. After serving in several
14 positions in the revenue and accounting areas of GTE Service Corporation and
15 General Telephone Company of Illinois, I was appointed Director of Revenue and
16 Earnings of General Telephone Company of Illinois in May, 1977 and continued
17 in that position until March, 1981. In September, 1980, I also assumed the same
18 responsibilities for General Telephone Company of Wisconsin. In March, 1981, I
19 was appointed Director of General Telephone Company of Michigan and in
20 August, 1981 was elected Controller of that company and General Telephone
21 Company of Indiana, Inc. In May, 1982, I was elected Vice President-Revenue
22 Requirements of General Telephone Company of the Midwest. In July, 1984, I
23 assumed the position of Regional Manager of GVNW Inc./Management (the
24 predecessor company to GVNW Consulting, Inc.) and was later promoted to my

1 present position of Vice President. I have served in this position since that time
2 except for the period between December 1988 and November, 1989 when I left
3 GVNW to serve as Vice President-Finance of Fidelity and Bourbeuse Telephone
4 Companies.

5
6 Q. What are your responsibilities in your present position?

7 A. In my current position, I consult with independent telephone companies and
8 provide financial analysis and management advice in areas of concern to these
9 companies. Specific activities which I perform for client companies include
10 regulatory analysis, consultation on regulatory policy, financial analysis, business
11 planning, rate design and tariff matters, interconnection agreement analysis, and
12 general management consulting.

13
14 Q. Have you previously testified in regulatory proceedings?

15 A. Yes, I have testified on regulatory policy, local competition, rate design,
16 accounting, compensation, tariff, interconnection agreements, and separations
17 related issues before the Illinois Commerce Commission, the Public Service
18 Commission of Wisconsin, the Michigan Public Service Commission, the Iowa
19 Utilities Board, the Tennessee Public Service Commission, the New Mexico
20 Public Regulation Commission and the Missouri Public Service Commission. In
21 addition, I have filed written comments on behalf of our firm on a number of
22 issues with the Federal Communications Commission and have testified before
23 the Federal-State Joint Board in CC Docket #96-45 on Universal Service issues.

1

2 Q. Who are you representing in this proceeding?

3 A. I am representing the Missouri local exchange companies (LECs) listed on
4 Schedule RCS-1. Collectively I refer to the companies as the Small Telephone
5 Company Group (STCG).

6

7 Q. What is the purpose of your direct testimony?

8 A. My testimony will present the position of the STCG in regard to the network
9 issues to be addressed in this case. Specifically I will present the STCG's
10 recommendation regarding business relationships that should be used between the
11 STCG members and local exchange carriers that terminate traffic to the STCG
12 members access tandem or end office switches. I will address appropriate
13 procedures for recording this terminating traffic and the compensation
14 mechanisms that should be used in regard to that traffic.

15

16 Q. Could you comment briefly on the genesis of this proceeding?

17 A. Yes. This proceeding was implemented by the Commission as an investigation to
18 further review and develop a record regarding a number of difficult issues that
19 had been raised in Case No. TO-99-254 that dealt with the termination of the PTC
20 plan. Issues were raised in that proceeding regarding the use of FGC versus FGD
21 signaling, the business relationships that should be used in regard to traffic
22 terminating over common trunk groups, and the records that should be used to
23 determine compensation for terminating traffic. The Commission made certain

1 decisions in that case to implement procedures for terminating the PTC plan, but
2 recognized that certain of the issues that had been raised should be investigated
3 further to determine whether future changes should be made in these
4 relationships. The Commission felt that a more complete record needed to be
5 developed before addressing these issues.

6
7 OVERALL RECOMMENDATION

8 Q. Do you have a general recommendation that the STCG proposes should be
9 adopted by the Commission in this proceeding?

10 A. Yes, I do. I recommend that the Commission allow LECs to implement revised
11 procedures related to the business relationships for terminating intraLATA traffic,
12 the records used to determine such traffic, and the compensation that should flow
13 for such terminating traffic. Specifically, the LECs should be allowed to change
14 from the current procedures to the business relationships and procedures outlined
15 below:

16 1. LECs should be allowed to utilize records recorded at the terminating LECs
17 office as the basis for determining the total terminating traffic for which the
18 terminating LEC should receive compensation.

19 2. LECs utilizing terminating records as the basis for computing compensation
20 will deduct from that usage the following industry standard billing records based
21 on originating records received by the LEC:

- 22 a. Interstate FGA records as received on monthly billing statements
23 b. Interstate intraLATA records

1 c. IntraMTA wireless traffic "transited" by another LEC to the
2 terminating LEC, in the event the November 1, 2000 Judgment in Cole Co.
3 Circuit Court Case 00CV323379 is not effective or is reversed,.

4 d. Terminating traffic terminated over an indirect interconnection in
5 which all the carriers involved voluntarily agree or are ordered by a court or
6 regulatory body to utilize a specific record exchange/billing process other than
7 measured terminating traffic.

8 e. Where interconnection is not at an access tandem switch, interexchange
9 carrier traffic, including Feature Group B (FGB) traffic.

10 3. For those companies utilizing terminating recording who participate in the
11 Metropolitan Calling Area (MCA) service, an additional adjustment will be made,
12 as appropriate, to remove terminating MCA traffic.

13 4. The LEC responsible for the terminating common trunk(s) from the tandem
14 switch to the terminating LEC will be responsible for all of the residual traffic
15 volumes remaining after subtracting the above traffic types, payable at intrastate
16 intraLATA access rates.

17 5. In the event that the LEC is not paid for terminating wireless traffic as set forth
18 in 2(c) above, upon request from the terminating LEC, the tandem switch provider
19 will be required to either:

20 a. implement network translations to block nonpaying wireless carrier
21 traffic, at no cost to the terminating LEC, or

22 b. be secondarily liable for payment of terminating compensation to the
23 terminating LEC.

1
2 Q. Can you broadly describe the reasons why you are proposing this alternative for
3 recording/business relationships to the current practices required by the
4 Commission?

5 A. Yes. The current system is not providing appropriate incentives for the tandem
6 switch companies¹ to provide correct originating records from all of the sources
7 where the various types of traffic originates. The experience over the past two
8 years clearly shows that the current system is not providing the appropriate
9 records for terminating LECs to bill terminating traffic. Further, since the tandem
10 companies have no financial penalty for not providing accurate and timely
11 records, there is little incentive for them to exercise the necessary diligence to see
12 that the recordings are made correctly, reports are issued on a timely basis, and
13 that problems are corrected.

14 This alternative is also being proposed because it brings the business relationships
15 closer to the relationships established in the competitive interexchange carrier
16 world for Feature Group D service at tandem locations.

17 Frankly, our preference would be to establish a simpler business relationship and
18 billing arrangement than has been proposed, but it is doubtful whether this
19 Commission could change billing arrangements for the interexchange carrier
20 traffic that requires many of the subtractions included in the proposed billing
21 arrangement. We have therefore tried to frame a proposal that will limit
22 jurisdictional questions, while still providing incentives for the tandem companies

¹ Southwestern Bell Telephone, Verizon, and Sprint.

1 to take full responsibility for the traffic they deliver and for the record
2 development for which they are responsible.

3
4 NETWORK TEST

5 Q. You indicated above that the current system doesn't provide adequate incentives
6 to create the appropriate records. What is the basis for this assessment?

7 A. Over the past several years, some of small companies have performed tests to
8 compare their terminating recordings and the records being received from
9 originating records. I presented testimony regarding these findings from two
10 companies in the PTC case, and demonstrated that the originating records being
11 provided did not account for all the terminating traffic being recorded. These
12 companies have continued to perform this analysis. Attached as Schedules RCS-
13 5(HC) and RCS-6(HC) are schedules prepared by Kingdom Telephone Company
14 and Citizens Telephone Company respectively of their recorded traffic over the
15 past two years in comparison to traffic reported from originating records. The
16 level of discrepancy has varied over time, but for both companies there still is a
17 significant unresolved difference in excess of 10% of the traffic recorded.

18
19 A broader and more recent indication of the problems being encountered with the
20 current system comes from the Network Test that was conducted in July, 2000, by
21 the parties to this case.

22
23 Q. Could you briefly describe this test?

1 A. Yes. In the Technical Workshops convened in this case pursuant to Commission
2 order, the LEC parties to the case agreed to conduct a Network Test to compare
3 originating and terminating recordings for a number of companies for a limited
4 time period to identify differences between originating and terminating recordings
5 and to attempt to isolate the reasons for such differences. Parameters of the Test
6 were developed jointly by the parties. Schedule RCS-2 is the Technical Plan for
7 the Test. Test data was captured on July 16 and 17, 2000. Analysis of the data
8 has been underway since that time and a final report is now being prepared.

9
10 Basically, the Test parameters called for capturing data for eleven companies for a
11 48-hour period. These companies were to record data at the termination of the
12 call, and the former PTCs and ALLTEL captured data on these calls at the point
13 where the calls originated or where they entered the LEC network for termination.
14 The detailed call records were then mechanically compared and matched and
15 unmatched records were identified. The Test parameters then called for a one-
16 hour period for each exchange to be studied in detail by the companies originating
17 calls to attempt to identify the reasons for any unmatched records.

18
19 Q. Was the Test conducted in accordance with the agreed upon parameters?

20 A. Basically yes. One company, Stoutland Telephone Company, withdrew from the
21 Test because of resource limitations in their central office. Due to an error, KLM
22 Telephone Company did not commence recording until shortly after 10:00 a.m.
23 on the second day of the Test, so their records did not include a full 48 hours of

1 data. The data for the other nine companies was recorded for the full 48 hour
2 period. A one-hour period for all ten participating companies was selected and
3 analysis has been ongoing regarding that data, although the results are not fully
4 completed at this time.

5
6 Q. Did the initial results of the Test confirm your concerns about the use of
7 originating records as the basis for compensation for terminating traffic?

8 A. Yes, they did. GVNW performed the comparison of originating and terminating
9 records for nine of the ten participating companies. Schedule RCS-3 summarizes
10 the results of the initial analysis for the full 48-hour period for each of the nine
11 companies. As can be seen from the Schedule, for the nine companies in total
12 only 74.6% of the terminating records had matches from the originating records.
13 On an individual company basis, the percentage of matched terminating records
14 ranged from a low of 41.1% to a high of 99.7%. These results definitely
15 confirmed our concerns that the originating records being produced by the former
16 PTCs were not providing an accurate and complete portrayal of the total traffic
17 terminating to the companies.

18
19 Q. Can you describe the parameters used to match the originating and terminating
20 records?

21 A. I can. Three parameters were used to determine a matched call. The first
22 parameter was the terminating number, which needed to be an exact match. If a
23 match was reached on a terminating number, the connect time of the call was then

1 compared. If the connect time was within two minutes and thirty seconds, the
2 connect time was considered to be a match for that parameter. Finally, the
3 duration of the call was compared. If the duration of the call was within five
4 seconds, the call was considered a match for the duration parameter. If all three
5 elements fell within the parameters, the call was considered a match.

6
7 Q. Were the results for the one-hour period that was chosen consistent with those for
8 the overall Test?

9 A. They were generally consistent with the overall Test results. Schedule RCS-4
10 shows a comparison of the results by company for the one-hour test period, 1:00
11 p.m. to 2:00 p.m. on July 17.

12
13 Q. Has there been any developments in the reconciliation process which would
14 explain these results?

15 A. Yes. There have been developments that explain some of the discrepancies. One
16 of the problems that was identified was a problem with the Test itself.
17 Southwestern Bell Telephone Company (SWBT) has indicated that in regard to
18 Northeast Missouri Telephone Company (NEMO) that the program that was set
19 up by SWBT to extract records for the Test was in error and did not extract a
20 substantial number of records that should have been captured. SWBT indicates
21 that efforts are underway currently to correctly extract these records. It would
22 appear that this problem may explain a major part of the record discrepancy for
23 NEMO.

1 Of more significance was a problem identified by SWBT in the recording of
2 Local Plus traffic. As a result of the Test, SWBT identified that it was not
3 recording Local Plus traffic in a number of its switches and exchanges around the
4 state. This problem originated in December, 1998 when Local Plus was first
5 implemented and continued until the discovery of the problem and its resolution
6 after the Network Test was conducted. The total amount of unrecorded traffic
7 will equate to several hundred thousand dollars of lost access revenue to various
8 LECs throughout the state. I believe SWBT has yet to identify the total amount of
9 lost traffic.

10 Some additional reconciling items of a lesser magnitude have also been identified.
11

12 Q. Am I correct that the reconciliation and verification process is not complete at this
13 time?

14 A. Yes. That is correct.
15

16 Q. Do you have any opinion regarding what the level of discrepancy will be after
17 these reconciling items are considered?

18 A. I believe that if the problems that have been identified are accounted for and
19 reconciled that the difference between the unmatched records will be considerably
20 less. However, based on the information that I currently have, I believe that there
21 will still be a significant unreconciled difference between the originating and
22 terminating recordings.
23

1 ANALYSIS OF IDENTIFIED PROBLEMS

2 Q. As you have described the results of the Network Test at this point in time you
3 have identified two major problems that have surfaced in the analysis. What is
4 your analysis of the relevance of these problems to the current and your proposed
5 recording and business arrangements?

6 A. Both of the problems are indicative of the problems that have and can develop in
7 the current system which relies on originating records being recorded and
8 processed by a wide variety of systems and switches. Errors occurred and can be
9 expected in the future. Business arrangements and systems should be designed to
10 minimize these errors and to place the responsibility for them upon the party most
11 likely to be responsible for the errors and able to correct them. This will best
12 occur if that party has the financial responsibility related to these errors.

13

14 Q. Was the error related to the NEMO missing records a Test error and not a billing
15 error?

16 A. That is how it has been described to me, but it illustrates the kind of errors that
17 could be made in the billing system. One needs to recognize that SWBT and the
18 other originating records providers have multiple systems and record sources that
19 record, organize, manage, and process these records. There are systems for
20 wireless traffic, interexchange carrier traffic, intraLATA traffic, interstate
21 intraLATA traffic, Local Plus traffic, and Feature Group A traffic among others.
22 Each of these systems requires certain instructions to be properly placed in
23 multiple switches and switch types around the state. In addition, each of the

1 systems has internal instructions or tables dealing with hundreds of NPA-NXX
2 codes around the state in order to properly summarize and direct records to the
3 appropriate company. The NEMO error is an illustration of the kind of mistake
4 that could be made in one of these systems that would cause records to be
5 missing. In the NEMO case it was test records rather than billing records, but the
6 same type of mistake is clearly possible in the billing environment as well.

7
8 Q. Now let's turn to the Local Plus recording problem. From your understanding,
9 what happened in regard to the recording of Local Plus by SWBT?

10 A. As I understand it based on correspondence from and discussions with SWBT, an
11 error was made somewhere in the SWBT organization in the instructions that
12 were entered into some of the SWBT switches (those manufactured by Ericsson)
13 and the switches were not programmed to record the correct call types for Local
14 Plus calls. Consequently, no records from these calls flowed into the SWBT
15 systems that produced terminating access records for terminating access billing
16 purposes. I am aware from correspondence from SWBT that this occurred in a
17 complex of switches in the Knob Knoster and Mexico areas. In addition, I have
18 been told that this also occurred in a complex of switches in the southeast portion
19 of the state centered on Kennett. Local Plus was implemented in some of the
20 exchanges near Knob Knoster in December, 1998 and in the remainder of the
21 exchanges in June, 1999. The recording problem was not identified until August
22 and September, 2000.

1 Q. Was the issue of SWBT's capability to record Local Plus correctly raised in the
2 hearings regarding the adoption of this service?

3 A. Yes. Both the STCG and the Mid-Missouri Group raised this issue in the context
4 of those hearings since Local Plus was to be implemented using a dialing pattern
5 other than a 1+ pattern which normally triggers the recording process for access
6 purposes in central office switches. SWBT witnesses assured the parties to the
7 case and the Commission that they could make the correct switch translations so
8 Local Plus could be recorded properly and proper compensation rendered.
9 Because of the close attention given to this issue in this case, I would have
10 expected SWBT to be particularly careful in implementing the service to make
11 sure that no problems occurred.

12
13 Q. What other occurrences took place which could have alerted SWBT of their
14 recording problem?

15 A. The Knob Knoster cluster of switches includes several exchanges that are
16 adjacent to the operating area of Mid-Missouri Telephone Company (Mid-
17 Missouri). Customers in these exchanges have a strong community of interest
18 with the Mid-Missouri exchange customers and there is a large amount of traffic
19 to the Mid-Missouri exchanges. In the Technical Workshops in this docket Mr.
20 Jones of Mid-Missouri informed the parties that based on his terminating
21 measurements only about 50% of his terminating traffic was being reflected in the
22 originating records being received. Mid-Missouri had individual discussions with
23 SWBT regarding these problems. Eventually Mid-Missouri informed SWBT that

1 it would terminate service on its trunks in July if the problem was not resolved.
2 In response, SWBT filed a complaint against Mid-Missouri to prevent it from
3 shutting off the trunks and an emergency hearing was held before the
4 Commission. In that hearing SWBT indicated its belief that the problem was
5 being caused by traffic from carriers other than SWBT. Only after the Network
6 Test was conducted the following week and SWBT began to review internally the
7 results of that test did it finally discover the real source of the problem, the Local
8 Plus recording problem.

9
10 Q. What conclusions and lessons do you believe can be learned from the Network
11 Test and the problems that have been identified?

12 A. There are several. First, the terminating companies have demonstrated that they
13 have the capability from several different types of switches to record terminating
14 records in the same detail that calls are recorded at the originating end, with the
15 originating and terminating numbers, connect time, and conversation time. Thus,
16 questions that were raised in previous hearings regarding those capabilities should
17 be laid to rest.

18 Second, both the ongoing monthly comparisons of records and the results of the
19 network test demonstrate that there are significant and ongoing differences
20 between the originating records that are the current basis of compensation and the
21 terminating records which are and/or can be recorded at the terminating location.
22 There continues to be a significant amount of traffic for which the terminating
23 companies are not receiving compensation.

1 Third, that significant errors have and can be made in various elements of the
2 originating recording process.

3 Fourth, the Local Plus recording problem highlights the lack of capabilities and/or
4 the willingness of the originating recording company to detect and resolve
5 recording problems, even those of a significant size, when they occur.
6

7 Q. Are there actions currently being taken by SWBT that heighten these concerns?

8 A. Yes, there are. It is common knowledge within the industry that SWBT has
9 recently offered an early retirement package to its management force. One intent
10 of that offering is to reduce the number of management people in total. From the
11 informal discussions I have had with various SWBT employees, that objective is
12 being accomplished. In doing this, many of the subject matter experts that have
13 been working directly on these issues have left, or will soon leave the SWBT
14 organization. We have concerns that both the reduction in experience level and in
15 the number of employees available to address such problems will make it even
16 more difficult for these issues to be dealt with expeditiously and correctly in the
17 future.
18

19 RECOMMENDATION - DETAILS 20

21 Q. In developing the recommendation you presented earlier in your testimony, what
22 was the business model that you used as a pattern for the recommendation?

1 A. We used the business model developed in the competitive interexchange carrier
2 environment as a model for our recommendation. This model, as implemented
3 particularly at the access tandem switch level, makes the carrier who orders the
4 facility for terminating traffic to a tandem switch responsible for the terminating
5 cost for all the traffic that terminates over the facility. Under this model the
6 terminating LEC measures the total traffic terminating over the facility and bills it
7 to terminating carrier. In this environment, those carriers who chose to order
8 terminating facilities act to terminate calls from their own network and provide
9 wholesale arrangements to terminate traffic for other interexchange carriers who
10 do not want to order their own terminating facilities to certain locations. We
11 believe that this is a good business model for traffic terminating both to tandem
12 switch locations and end office locations.

13
14 Q. Does your recommendation fully implement such a model?

15 A. No, there are a number of real world jurisdictional issues that prevent that model
16 from being implemented fully. However, the recommendation does incorporate
17 some of the principles included in this business model.

18
19 Q. Are you proposing that this recommendation be mandatory for all terminating
20 LECs?

21 A. No. Since the recommendation will require additional recording capabilities and
22 some changes to billing systems, we are recommending that the proposal be an

1 alternative which companies can choose as they have the capability to implement
2 the proposed procedures.

3
4 Q. Is the recommendation based on the terminating company recording all the traffic
5 terminated to its location on the common trunk group from the tandem switch?

6 A. Yes, that terminating recording would be the measure of the total traffic that the
7 terminating carrier would bill to some carrier?

8
9 Q. In your recommendation you propose that a number of different types of traffic be
10 subtracted from the total measured traffic and billed to other entities. Could you
11 explain why?

12 A. Yes. This is a departure from the business model that we used, but felt that it was
13 necessary because of business and contractual relationships that have been
14 established in the interstate jurisdiction and under the direction of the
15 Commission, in some cases, related to specific types of traffic.

16
17 Q. Which of the items that you propose subtracting from the total are related to
18 interstate jurisdictional decisions?

19 A. Contractual relationships related to Feature Group A (FGA) were initially
20 established by the FCC so we are not proposing to change those relationships.
21 For end office companies, there are federally established procedures and practices
22 for meet point billing for traffic terminating from interexchange carriers. We are
23 proposing to continue following those procedures and to subtract from the total

1 traffic, the interexchange carrier traffic that is reported and to continue to bill that
2 under current procedures. We recognize that interstate intraLATA traffic is
3 subject to federal jurisdiction and to the extent that records are received for such
4 traffic it would be subtracted from the total and billed at interstate rates.

5
6 Q. What are your proposals in regard to wireless traffic?

7 A. Items 2c and 2d in my initial proposal relate to the treatment of wireless traffic.
8 To the extent that the terminating company voluntarily agrees through an
9 interconnection contract or tariff or is ordered by the Commission to treat this
10 traffic separately and to bill it separately to the indirect carrier, the proposal would
11 recognize these agreements or requirements and the appropriate traffic would be
12 subtracted from the total measured on the trunk(s) and billed to the appropriate
13 wireless party. Item 2c recognizes that there is a circuit court judgment that has
14 been entered in Missouri that might change some of the business relationships and
15 make it appropriate not to subtract this traffic. To the extent that judgment is
16 upheld and implemented, appropriate recognition would be given to that decision.

17
18 Q. What is the final subtraction that is included in your proposal?

19 A. To the extent necessary, it is an adjustment applicable to those companies who
20 participate in the MCA plan to recognize that terminating MCA traffic is treated
21 on a "bill and keep" basis pursuant to Commission order and that no terminating
22 compensation would be due for that traffic.

1 Q. How would this adjustment be developed?

2 A. There are at least three alternatives that I think may be feasible to deal with MCA
3 traffic.

4 First, the terminating MCA traffic could be separated onto a distinct trunk group
5 so that it would not be included in the common trunk group measured traffic. In
6 this case, there would be no need for a subtraction. I believe that this is being
7 done for MCA traffic in some situations at the present time.

8 Second, the terminating company may be able to identify the MCA traffic by the
9 originating number received with the individual calls, summarize the MCA
10 traffic, and delete it from the total.

11 Third, it may be possible to identify the percentage of MCA traffic of the total
12 using periodic studies of a short duration to develop a factor that would be applied
13 to the monthly totals.

14 Perhaps there are other alternatives that could be used as well.

15

16 Q. Do I understand correctly that after these subtractions are made from the total
17 terminating recording that the remaining traffic would be billed to the tandem
18 company which is terminating traffic over the common trunk?

19 A. Yes, that is correct. The remaining amount would reflect the terminating Feature
20 Group C traffic that the tandem company is sending over the trunk group, plus
21 any of the other types of traffic for which appropriate records have not been
22 supplied to make a subtraction.

23

1 Q. The final part of your proposal relates to the responsibility for payment from
2 wireless carriers if those carriers do not meet their payment obligations. Can you
3 explain your proposal?

4 A. Yes. While hopefully the need for such provisions will be rare once appropriate
5 compensation mechanisms are established for terminating wireless traffic, the
6 terminating companies need some reasonable means for terminating service for
7 non-payment. SWBT has such provisions in its tariffs and contracts and can
8 terminate service after appropriate notice is given without getting a Commission
9 order to allow them to do so. The terminating companies should have the same
10 obligations and opportunities, but not more so. Termination should take place,
11 after appropriate notification, without the need for a Commission proceeding and
12 order.

13 If the wireless companies had direct connections to the terminating companies,
14 such termination could be completed by simply turning down the trunk circuit, a
15 simple and virtually costless procedure. With all the other disadvantages of
16 indirect connections, the terminating company should not additionally be held
17 responsible to pay for more costly termination procedures because of the tandem
18 company's offering of transiting service to such carriers.

19
20 FGC/FGD ISSUES

21
22 Q. In Case No. TO-99-254 there was considerable discussion of FGC vs. FGD
23 signaling and the need to change to FGD signaling. The Commission specifically

1 included that issue as one that should be dealt with in this case. Why haven't you
2 specifically addressed this issue?

3 A. We have recognized that the signaling messages for FGC and FGD terminating
4 traffic are identical and that changing to FGD signaling for terminating traffic
5 would not address the billing/compensation issues that we are most concerned
6 with. Our proposal has, therefore, focused on the business relationships and
7 billing and recording issues rather than on the signaling protocol.

8
9 Q. Do you still believe that FGC signaling should be ended at some point in time?

10 A. Yes, we do. The access tariffs of virtually all the companies in the state
11 specifically indicate that FGC will no longer be available when FGD is
12 implemented. Since intraLATA presubscription and FGC have been implemented
13 statewide, it would appear that FGC should be eliminated at some point in time.
14 However, we are not asking the Commission to take any specific action related to
15 this issue at this time.

16
17 Q. Does this conclude your testimony?

18 A. Yes, it does.

Small Telephone Company Group

1. ALLTEL Missouri, Inc.
2. BPS Telephone Company
3. Cass County Telephone Company
4. Citizens Telephone Co. of Higginsville, Missouri
5. Craw-Kan Telephone Cooperative, Inc.
6. Ellington Telephone Company
7. Farber Telephone Company
8. Goodman Telephone Company, Inc.
9. Granby Telephone Company
10. Grand River Mutual Telephone Corporation
11. Green Hills Telephone Corporation
12. Holway Telephone Company
13. IAMO Telephone Company
14. Kingdom Telephone Company
15. KLM Telephone Company
16. Lathrop Telephone Company
17. Le-Ru Telephone Company
18. Mark Twain Rural Telephone Company
19. McDonald County Telephone Company
20. Miller Telephone Company
21. New Florence Telephone Company, Inc.
22. New London Telephone Company
23. Orchard Farm Telephone Company
24. Oregon Farmers Mutual Telephone Company
25. Ozark Telephone Company
26. Peace Valley Telephone Company
27. Rock Port Telephone Company
28. Seneca Telephone Company
29. Steelville Telephone Exchange, Inc.
30. Stoutland Telephone Company

Technical Plan
Missouri Record Exchange Test
May 24, 2000

1. PURPOSE OF TEST

This test is intended to determine if service providers and carriers are conforming to proper record exchange procedures to compensate LECs for traffic terminating over LEC-to-LEC facilities and to test those procedures. Depending on whether the service provider is (1) an Inter-Exchange Carrier (IXC), (2) a Wireless Service Provider (WSP), or (3) a Local Exchange Carrier (LEC), existing recordings that result from various sources where the traffic enters the LEC-to-LEC FGC network will be compared to the recording of messages terminating on this network at the terminating end of the call. It is expected that at the end of the test, the LEC industry will be able to identify the extent of any discrepancies between the recording and reporting of the messages at the two locations and hopefully identify and correct systems used to record and bill such messages. If discrepancies between recordings cannot be reconciled, the information provided from the test will provide the basis for further discussions regarding recording methods and systems and/or business arrangements to provide appropriate resolution of identified issues.

2. TEST METHODOLOGY - GENERAL

The test will involve recording of calls for a defined period of time at both the point of entry into the LEC network and at the terminating location of the call. Individual call records that result from recording at both locations will then be compared to validate the recording at both ends of the calls. Initial analysis will be performed at a minimum on individual one-hour periods for each participating company. If mechanized comparison methods are successful, the analysis may be on broader periods up to the full 48 hours of the test.

3. TEST METHODOLOGY - SPECIFIC TEST PARAMETERS

- a. An initial pre-test will be conducted, for a short period, if requested by the tandem operator directly connected to the terminating LEC in the study in order to make a general verification of call volumes and to validate that collection methods have been correctly set i.e. same trunks, correct point codes, etc. This test will be conducted on an individually arranged basis between the terminating tandem company and the end office company. The terminating company will record an agreed upon small number of calls and transmit those calls to the tandem company either in paper form or in a small file as agreed upon. The test may take place at anytime prior to the full-scale test, as agreed upon by the parties.

Schedule RCS-2

b. The full-scale test will involve gathering data at all locations for a total 48-hour period including one weekend day and one weekday. The full-scale test will be conducted Sunday-Monday, July 16-17, 2000.

c. It is recommended (but not required) that companies review procedures for setting switch timing to verify that switch clocks are set in accordance with national standard timing to minimize timing differences between companies. (National Naval observatory time can be obtained from tycho.usno.navy.mil)

d. Companies who have volunteered to and will participate in recording at the terminating locations are the following:

1. Kansas City LATA

- a. Citizens Telephone Company (SWBT Connecting Tandem)
- b. Mid-Missouri Telephone Company (SWBT Connecting Tandem)
- c. Rock Port Telephone Company (Sprint Tandem)
- d. Northeast Missouri/Modern Telecommunications (SWBT Connecting Tandem)

2. St. Louis LATA

- a. Kingdom Telephone Company (SWBT Connecting Tandem)
- b. Farber Telephone Company (SWBT Tandem)
- c. BPS Telephone Company (SWBT Tandem)

3. Springfield LATA

- a. KLM Telephone Company (SWBT Tandem)
- b. Peace Valley Telephone Company (GTE Tandem)
- c. Stoutland Telephone Company (SWBT Tandem)

4. Westphalia LATA

- a. Kingdom Telephone Company (Sprint Tandem)

e. The initial exchange of information to set up the test is defined below and the actual information is shown on the attached contact information spreadsheet:

- 1. Company contact name or names
- 2. NPA-NXX for each company exchange.
- 3. SS7 Point Codes assigned to each exchange and the NPA-NXX associated with each.
- 4. Tandem switch CLLI code associated with each NPA-NXX
- 5. Party to whom records are to be sent for analysis for each NPA-NXX

The above Information above will be provided to the following company representatives who's contact information is also provided on the attached contact information spreadsheet:

- a. SWBT –Joyce Dunlap
- b. Sprint –Don Edwards
- c. GTE –Ruth Nelson
- d. Fidelity –Dave Beier
- e. ALLTEL –Shane Sumler
- f. [CLEC 1]
- g. [CLEC 2], etc.

f. Data to be recorded at the terminating location on an individual call basis:
(data for each completed call will be provided in a comma delimited file in the following order:)

1. Calling Number/Originating Number (if available) – NPANXXXXXXX – 10 digit numeric (zero if not available)
2. Called Number/Terminating Number - NPANXXXXXXX – 10 digit numeric
3. Call Date – YYMMDD – six digit numeric
4. Call Time (Time call originated) – HHMMSS – six digit numeric (hour, minute, second)
5. Carrier connect time (Total call connect time at the switch) – SSSSSST (Numeric in seconds (S) and tenths of seconds (T))
6. Conversation time (Total time call is connected at both ends) – SSSSSST (Numeric in seconds (S) and tenths of seconds (T))

g. Data to be recorded at originating locations (location where the call enters the LEC network from end users or from other carriers) on an individual call basis.
(GTE, Sprint, Fidelity, Alltel and SWB agree to provide data for each completed call a comma delimited file in the following order:)

1. Source of Information Code –
 - 1=Category 92 Record (LEC)
 - 2= Category 11 Record (IXC)
 - 3=Local Plus Call from Cat 92 Record
 - 4=Wireless Type 1
 - 5=Wireless Type 2
 - 6=Feature Group A (FGA)
2. Calling Number/Originating Number (if available) – NPANXXXXXXX – 10 digit numeric (zero if not available)
3. Called Number/Terminating Number – NPANXXXXXXX – 10 digit numeric
4. Call Date – YYMMDD – six digit numeric

5. Call Recording Time (Time completed call recording originated) – HHMMSS – six digit numeric (hour, minute, second, tenths of second)
6. Elapsed/Conversation Time – MMMMSST – seven digit numeric (minute, second, tenths of second) UNROUNDED MINUTES WILL BE SENT.
7. CIC (Carrier Identification Code) – (if available) – four digit numeric (need to discuss what value will be in this field in all cases)
8. OCN Number – 4 digit numeric – OCN number of the company making the originating recording

Attached is a spreadsheet showing which record and which field of that record will be pulled for each of the above items (Section 3G spreadsheet). Also attached is an example of the Comma Delimited File Format the originating companies propose to use. (Comma Delimited spreadsheet)

h. Upon completion of the recording period the originating recording party will sort records into separate files for the party analyzing data and will transmit records for the full 48-hour test period to the party analyzing the data. Data for Mid-Missouri Telephone Company will be transmitted to Mid-Missouri. Data for all other companies will be transmitted to GVNW as outlined on the attached contact information spreadsheet. Data transmission methods will be coordinated between individual companies. GVNW prefers receiving the data via CDROM but will discuss other options if needed. (GVNW does not have FTP capability.)

4. ANALYSIS OF TEST RESULTS

a. Analysis of data will be done for at least one hour during the test period for each exchange. (An attempt will be made by the terminating companies to limit the number of different hours that are studied.) Hours tested will vary between days of the week and time of day for the individual exchanges to provide samples from various time periods. The terminating company will select the time period to be tested and inform originating parties of the test period(s). If mechanical comparison methods are successful, the analysis of data may be expanded beyond the one-hour period up to a maximum of the full 48-hours. Any reconciliation of data by the originating parties will be limited to a one-hour period.

b. Analysis of calls to determine match should be determined on the following criteria:

1. Terminating number must match
2. Call Connect time should be close (0-3 minutes) but should vary consistently with the difference in calibration of the clocks of the switch pairs making the recording.

3. Conversation time should be close (within 5 seconds)
4. Match of originating number (if available) would confirm match, but is not necessary.

c. When analysis and matching of calls is completed by the individual parties, results will be summarized by types of calls, with specific emphasis given to analyzing and describing unmatched calls. Summary reports of results will be shared with all parties. Complete individual call data matches and/or mismatches for a limited one-hour period from each exchange will be provided to other participating parties for their own review and analysis.

d. Detailed call records on each record for which there is not an originating/terminating record match will be analyzed to the extent possible. If an originating number is recorded at the terminating end, the originating NPA/NXX "responsible party" will be identified. Records of all unmatched calls with CPN will be forwarded by the analyzing party to the "responsible party", to determine why originating records did not exist for the call. Any reconciliation of data by the originating parties will be limited to a one-hour period.

e. To the extent that parties have records available earlier in the originating recording process than the point at which they were extracted for the test, these records will be searched for the hour being analyzed to attempt to identify unmatched calls earlier in the recording process.

f. The originating parties agree that to the best of their effort that the switch records for the test period will be obtained. The normal retention period for these records is:

Alltel -	45 days
GTE -	90 days
SWBT -	45 days will extend normal retention period to accommodate test.
Sprint -	75 days

All parties agree that they will monitor the progress of the reconciliation of test period records to determine, before expiration of the normal retention period, what if any additional steps are needed for retention of the switch records.

g. If after review of the records the parties feel study of an additional hour would be useful the parties will mutually agree to if and what hour would be studied.

5. VALIDATION TO ACTUAL BILLING RECORDS

a. Additional validation of records during the test period to actual records received for billing can be conducted by the terminating company for IXC calls

and PTC originated calls. This can be accomplished by extracting individual IXC 11-01 records and the PTC 92-01 or reformatted 11-01 records for the time period from the normal billing records received and making a comparison between these records and the test period records. This analysis will be the responsibility of the terminating company.

b. Comparisons of test period records to individual call record lists of all calls billed in monthly summary format such as CTUSR calls and FGA calls will not be part of the test. Such summary reports will not be evaluated as part of this test process.

6. Time Line

A time line for completion of the Missouri Record Exchange Test is attached.

COMPANY & OCN	EXCHANGE	EXCHANGE CLLI	NPA	NXX	POINT CODE	ACCESS TANDEM	TRUNK GROUP NUMBER	LATA	CONTACT INFORMATION	RECORDS SENT TO
BPS 463	BERNIE	BERNMOXA	573	293	005-042-060	SKSTMOGR04T	BPS TR=39	520	Mitchell Green	##
	PARMA	PARMMOXA	573	357	005-042-060	SKSTMOGR04T	BPS TR=39	520	Phone 573-293-1105	
	STEELE	STELMOXA	573	695	005-042-061	SKSTMOGR04T	BPS TR=39	520	FAX 573-293-2299	
									Mgreen@BPSTelephone	
CITIZENS 1865	CORDER	CRDRMOXA	660	394	238-129-003	HGVLMOXA10T		524	Kathie Munson	##
	HIGGINSVILLE	HGVLMOXA	660	584	238-129-003	HGVLMOXA10T		524	Phone 660-584-6527	
	MAYVIEW	MYVWMOXA	660	237	238-129-003	HGVLMOXA10T		524	FAX 660-584-2345	
									kmunson@ctcis.net	
FARBER 1876	FARBER	FRBRMOXA	573	249	005-013-132	STLSMO0501T		520	Charlie Crow	##
									Phone 573-249-9800	
									FAX 573-249-2212	
									ccrow@fco.net	
KINGDOM 1900	AUXVASSE	AXVSMOXA	573	386	005-004-204	AXVSMOXA01T		520	Randy Boyd	##
	BIG SPRINGS	BGSPMOXA	573	252	005-004-206	AXVSMOXA01T		520	Phone 573-386-2241	
	HATTON	HTTNMOXX	573	387	005-004-205	AXVSMOXA01T		520	FAX 573-386-5520	
	MOKANE	MOKNMOXA	573	676	005-004-208	AXVSMOXA01T		521	rhboyd@ktis.net	
	RHINELAND	RHLDMOXA	573	236	005-004-207	AXVSMOXA01T		520		
	TEBBETTS	TBTSMOXA	573	295	005-004-209	AXVSMOXA01T		521		
	WILLIAMSBURG	WLBGMOXA	573	254	005-004-204	AXVSMOXA01T		520		
KLM 1901	DEERFIELD	DRFDMOXARS1	417	966	005-042-084	SPFDMOTL02T		522	Bruce Copsey	##
	METZ	METZMOXARS1	417	484	005-042-084	SPFDMOTL02T		522	Phone 660-935-2211	
	RICH HILL	RHHLMOXADS1	417	395	005-042-084	SPFDMOTL02T		522	Fax 660-935-2213	
	RICHARDS	RCHRMOXARS1	417	927	005-042-084	SPFDMOTL02T		522	bcopsey@maitland.heartland.net	
MID-MISSOURI 1917	ARROW ROCK	ARRKMOXADS0	660	837	005-003-204	PLGVMOXA10T		524	David Jones	David Jones
	BLACKWATER	BLWRMOXADS0	660	846	005-003-204	PLGVMOXA10T		524	Phone 660-834-3311	P.O. Box 38
	BUNCETON	BCTNMOXADS0	660	427	005-003-204	PLGVMOXA10T		524	Fax 660-834-6632	215 Roe
	FORTUNA	FTUNMOXADS0	660	337	005-003-204	PLGVMOXA10T		524	david@mid-mo.net	Pilot Grove
	GILLIAM	GLLMMOXADS0	660	784	005-003-204	PLGVMOXA10T		524		MO 65276
	HIGH POINT	HGPNMOXADS0	660	489	005-003-204	PLGVMOXA10T		524		
	LATHAM	LTHMMOXADS0	660	458	005-003-204	PLGVMOXA10T		524		
	MARSHALL JUNCTIO	MRJTMOXADS0	660	879	005-003-204	PLGVMOXA10T		524		
	MIAMI	MIAMMOXADS0	660	852	005-003-204	PLGVMOXA10T		524		
	NELSON	NLSNMOXADS0	660	859	005-003-204	PLGVMOXA10T		524		
	PILOT GROVE	PLGVMOXA10T	660	834	005-003-204	PLGVMOXA10T		524		
	SPEED	SPEDMOXADS0	660	838	005-003-204	PLGVMOXA10T		524		

[illegible]

[illegible]

Missouri Record Exchange Test
Section 3G

Section	Description	Category 92 Record		Category 11 Record	
3.g.2	Calling Number/Originating Number	15-24	From Number	15-24	From Number
3.g.3	Called Number/Terminating Number	30-39	To Number	30-39	To Number
3.g.4	Call Date	7-12	Date of Record	7-12	Date of Record
3.g.5	Call Recording Time	55-60	Connect Time	55-60	Connect Time
3.g.6	Elapsed/Conversation Time	61-67	Billable Time	150-156	Conversation Time
3.g.7	CIC	150-153	CIC	46-49	CIC
## 3.g.7	Call Time		Requested information is on a switch record and not contained in a billing record.		
## 3.g.8	Switch Connect Time		Requested information is on a switch record and not contained in a billing record.		
## 3.g.9	Call Type		Requested information is on a switch record and not contained in a billing record.		
## 3.g.10	SENID		Requested information is on a switch record and not contained in a billing record.		
3.g.8	OCN			167-170	Originating OCN

Has been deleted from Technical Plan. Information requested is on a switch record and not contained in a billing record.

Missouri Record Exchange Test
Comma Delimited File Format
Section 3G

File Position	Section	Description	Value	Field Description
1		Indicates Source of information	1 Cat. 92 record (LEC) 2 Cat. 11 Record (IXC) 3 Local Plus Calls from Cat 92 Records 4 Wireless Type 1 5 Wireless Type 2 6 FGA	
2		Comma		
3-12	3.g.1	Calling Number/Originating Number		10 digit Line Number
13		Comma		
14-23	3.g.2	Called Number/Terminating Number		10 digit Line Number
24		Comma		
25--30	3.g.3	Call Date		6 digit YYMMDD
31		Comma		
32-37	3.g.4	Call Recording Time		2 digit Hour 2 digit Minutes 2 digit Seconds
38		Comma		
39-45	3.g.5	Elapsed/Conversation Time		4 digit Minutes 2 digit Seconds 1 digit 1/10th seconds
46		Comma		
47-50	3.g.6	Carrier Code		4 digit Carrier Code
51		Comma		
52-55	3.g.11	OCN		4 digit State Specific Originating Company Code

Terminating Testing Process Time Line	Business		
	Days	Target	Actual
Description	Required	Date	Date
Originating LECs (SWB, GTE, Sprint, Fidelity and Alltel) provide preferred format for all call types to other participants		5/12/2000	
Agreement on format		5/19/2000	
Determine Time-line for process		5/19/2000	
Establish dates for pre-test and actual testing		5/19/2000	
Letters to CLECs notifying them of test		5/26/2000	
Response from CLECs		6/12/2000	
Complete optional pre-test	Date to be agreed to by the parties.		
Complete actual test		7-16/17-00	
Originating data to GVNW and Mid-Missouri	10	7/31/2000	
Terminating data to GVNW and Mid-Missouri	10	7/31/2000	
Process Time to match files	15	8/21/2000	
Analyze non-matched data for originating entity	10	9/1/2000	
Provide remaining non-matched data to originating LEC		9/1/2000	
Non-matched data and support provided to terminating LEC		9/29/2000	
Preparation of Draft Report	10	10/13/2000	
Distribution of Report	5	10/20/2000	
Establish Procedural Schedule			9/22/2000

Terminating Testing Process Time Line			Target	Actual
Participating Companies		Tandem	Date *	Date
Citizens Telephone Company		SWBT		
	Pre-test		*	
	Actual Test		7-16/17-00	
Mid-Missouri Telephone Company		SWBT		
	Pre-test		*	
	Actual Test		7-16/17-00	
Rock Port Telephone Company		Sprint		
	Pre-test		*	
	Actual Test		7-16/17-00	
Northeast Missouri/Modern Telephone Companies		SWBT		
	Pre-test		*	
	Actual Test		7-16/17-00	
Kingdom Telephone Company (St Louis LATA)		SWBT		
	Pre-test		*	
	Actual Test		7-16/17-00	
Kingdom Telephone Company (Westphalia LATA)		Sprint		
	Pre-test		*	
	Actual Test		7-16/17-00	
Farber Telephone Company		SWBT		
	Pre-test		*	
	Actual Test		7-16/17-00	
BPS Telephone Company		SWBT		
	Pre-test		*	
	Actual Test		7-16/17-00	
KLM Telephone Company		SWBT		
	Pre-test		*	
	Actual Test		7-16/17-00	
Peace Valley Telephone Company		GTE		
	Pre-test		*	
	Actual Test		7-16/17-00	
Stoutland Telephone Company		SWBT		
	Pre-test		*	
	Actual Test		7-16/17-00	
Note - * Date to be determined by the parties				

**Missouri Terminating Recording Test
Summary of data matches by Participating Company
(July 16-17, 2000 Test Period)**

Company	Total Terminating Calls Recorded	Total Originating Records Received	Total Matched Calls	% of Terminating Calls Matched	# of Originating Records Matched	% of Matched Calls where Orig Number Matched
BPS	18,151	15,066	14,997	82.6%	99.5%	60.1%
Citizens	6,167	5,774	5,659	91.8%	98.0%	49.4%
Farber	1,291	1,189	1,135	87.9%	95.5%	0.0%
Kingdom	7,247	6,644	5,507	76.0%	82.9%	77.4%
KLM*	3,923	3,923	3,910	99.7%	99.7%	0.0%
Modern	4,062	3,997	3,917	96.4%	98.0%	76.8%
Northeast Missouri	4,757	2,154	1,955	41.1%	90.8%	59.7%
Peace Valley	2,512	1,830	1,824	72.6%	99.7%	19.3%
RockPort	16,082	9,098	9,066	56.4%	99.6%	43.2%
Total	64,192	49,675	47,970	74.7%	96.6%	

Match Criteria

1. Terminating Number Match
2. Connect time within 2.5 minutes
3. Conversation time within 5 seconds

Note:

*Records indicated are records from the hours in which both originating and terminating records were being recorded.

Missouri Terminating Recording Test
Summary of data matches by Participating Company
(One Hour Test Period - July 17, 2000 - 1:00 p.m. - 2:00 p.m.)

Company	Total Terminating Calls Recorded	Total Originating Records Received	Total Matched Calls	% of Terminating Calls Matched	# of Originating Records Matched	% of Matched Calls where Orig Number Matched
BPS	950	842	840	88.4%	99.8%	56.1%
Citizens	259	242	240	92.7%	99.2%	49.2%
Farber	68	61	61	89.7%	100.0%	0.0%
Kingdom	238	202	176	73.9%	87.1%	73.3%
KLM	296	295	294	99.3%	99.7%	0.0%
Modern	191	186	184	96.3%	98.9%	83.2%
Northeast Missouri	151	62	58	38.4%	93.5%	60.3%
Peace Valley	113	79	78	69.0%	98.7%	12.8%
RockPort	750	486	483	64.4%	99.4%	42.7%
Total	3,016	2,455	2,414	80.0%	98.3%	

Match Criteria

1. Terminating Number Match
2. Connect time within 2.5 minutes
3. Conversation time within 5 seconds

Schedule RCS-5(HC)

HIGHLY CONFIDENTIAL

Schedule RCS-6(HC)

HIGHLY CONFIDENTIAL