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Hon. Kenneth C. Hill, Chairman
Tennessee Regulatory Authority
460 James Robertson Parkway
Nashville, TN 37238

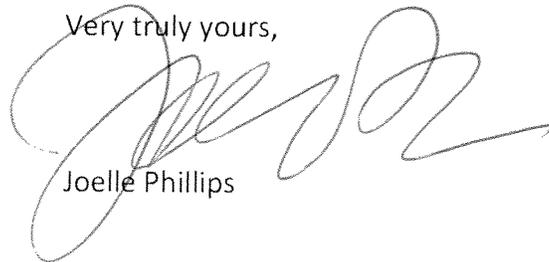
Re: *Complaint of BellSouth Telecommunications, Inc. dba AT&T Tennessee v. Halo
Wireless, Inc.*
Docket No. 11-00119

Dear Chairman Hill:

Enclosed are the original and four copies of the following documents on behalf of
AT&T Tennessee in the referenced matter:

Direct Testimony of Mark Neinast
Direct Testimony of Scott McPhee.

Very truly yours,



Joelle Phillips

768675

CERTIFICATE OF SERVICE

I hereby certify that on December 19, 2011, a copy of the foregoing document was served on the following, via the method indicated:

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1 BEFORE THE TENNESSEE REGULATORY AUTHORITY
2 Nashville, Tennessee

3
4 In re: *BellSouth Telecommunications, LLC dba AT&T Tennessee v. Halo Wireless, Inc.*

5
6 Docket No. 11-00119

7
8 **DIRECT TESTIMONY OF MARK NEINAST**
9 **ON BEHALF OF THE AT&T TENNESSEE**

10
11 **I. INTRODUCTION**

12 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

13 A. My name is Mark Neinast. My business address is 308 S. Akard, Dallas, Texas 75202.

14 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

15 A. I am an Associate Director – Network Regulatory in AT&T’s Network Planning and
16 Engineering Department.

17 **Q. PLEASE DESCRIBE YOUR RESPONSIBILITIES IN THAT POSITION.**

18 A. My primary responsibility is to represent AT&T’s various operating companies in the
19 development of network policies, procedures, and plans from both a technical and
20 regulatory perspective. I assist in developing corporate strategy associated with 9-1-1,
21 interconnection, switching, Signaling System 7 (“SS7”), call-related databases, and
22 emerging technologies such as Internet Protocol (“IP”)-based technologies and services.
23 I am also responsible for representing the company’s network organization in
24 negotiations, arbitrations, and disputes with Competitive Local Exchange Carriers
25 (“CLECs”) and Wireless Carriers.

26 **Q. PLEASE DESCRIBE YOUR PAST WORK EXPERIENCE AND EDUCATIONAL**
27 **BACKGROUND.**

1 A. I have a Bachelor of Science degree in Business Administration from the University of
2 Texas at Dallas, with a double major in Management Information Systems and
3 Behavioral Management. I have also attended numerous network training classes. I have
4 been employed by AT&T for over 36 years, primarily in the network organization. This
5 includes seven years in central offices as a technician. I also spent two years as a training
6 instructor for electronic switching systems and then four years managing technicians in
7 central offices and a Network Operations Center (“NOC”). I worked as a staff manager
8 for the North Texas Network Operations Division for five years. In that role, I supported
9 NOC functions and managed major switching system projects. Subsequently, as an Area
10 Manager in a NOC Translations Center for over seven years, I was responsible for
11 managing the switch translations for over 100 switches. I also successfully managed
12 many other major network projects, including over 60 analog-digital switching dial-to-
13 dial and 16 analog-digital 911 conversions, as well as the implementation of Local
14 Number Portability (“LNP”) in all of these switching systems.

15 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE STATE PUBLIC UTILITY**
16 **COMMISSIONS?**

17 A. Yes, I have testified before several different state public utility commissions on technical
18 or network issues. These proceedings most often involved the arbitration of
19 interconnection agreements (“ICAs”) or disputes regarding an alleged breach of an
20 approved interconnection agreement.

21 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

22 A. The purpose of my testimony is to describe, from a technical and network perspective,
23 the issues raised in AT&T’s Complaint and the facts supporting AT&T’s claims. AT&T

1 has brought this Complaint because Halo is breaching its ICA by engaging in an “access-
2 charge avoidance” scheme. My testimony explains the manner in which Halo provides
3 misleading call detail information in order to make calls that are originated on landline
4 telephones appear to be originated by wireless devices. There is no technical basis for
5 Halo’s actions. Instead, Halo’s entire business is based on what might be called “traffic
6 laundering.” Specifically, Halo tries to avoid paying terminating access charges to
7 AT&T by improperly making landline calls appear to be wireless and non-local calls
8 appear to be local. My testimony explains how Halo is doing this as a technical matter
9 and provides the results of AT&T’s call study of Halo’s traffic.

10 Halo purports to be wireless carrier. Its ICA therefore requires it to send *only*
11 wireless-originated calls to AT&T, but that is not what Halo is doing. As I will discuss,
12 AT&T’s call records prove that 74% of the calls Halo sends to AT&T are actually calls
13 that have been originated by an end user who was placing the call using a landline
14 telephone. These calls have been handed off to Halo from another carrier, as opposed to
15 being placed by retail end users who buy service directly from Halo.¹ That is, the call
16 began when a person served by their own landline carrier picked up a landline phone and
17 originated a call. That is a landline-originated call, not a wireless-originated call. Halo
18 claims that these calls somehow transform into wireless calls when they pass through
19 Halo on the way to AT&T, but the FCC has already analyzed what Halo does and
20 expressly rejected that theory.

21 Halo also is breaching its ICA by improperly inserting call detail data on the calls
22 it sends to AT&T. Specifically, Halo inserts its own “Charge Number” into the call
23 record – even though there is no such number associated with the person who actually

¹ In fact, to AT&T’s knowledge Halo has no actual retail end-users.

1 made the call, and that person, who has no relationship with Halo, never asked Halo to
2 insert a Charge Number. Halo does this in order to make calls appear to be wireless-
3 originated even though they are actually landline-originated, and to appear local even
4 though they are actually non-local. There is no network or technical reason for doing
5 this, and it is contrary to established industry practice for call records. The only possible
6 reason for doing this is to trick AT&T into charging Halo a reciprocal compensation rate
7 rather than the terminating access rate (which is higher) for that traffic.

8 Finally, Halo is also breaching its ICA by refusing to pay for its interconnection
9 facilities to AT&T.

10 **II. BACKGROUND**

11 **Q. DOES AT&T HAVE AN INTERCONNECTION AGREEMENT WITH HALO?**

12 A. Yes. Halo holds itself out as wireless carrier. It therefore opted into a wireless ICA (the
13 ICA used by T-Mobile) on April 5, 2010. That ICA was later approved by the Tennessee
14 Regulatory Authority (“TRA”) on May 24, 2010.

15 **Q. DID HALO ENTER INTO A “WIRELESS” ICA OR A “LANDLINE” ICA?**

16 A. As Mr. McPhee explains in his direct testimony, there are different types of ICAs for
17 wireless carriers and landline carriers. Halo purported to be a wireless carrier, and
18 therefore adopted a wireless ICA.

19 **Q. DOES AT&T SEND ANY TRAFFIC FROM ITS END-USERS TO HALO?**

20 A. No. All of the traffic is one-way from Halo to AT&T and destined to AT&T end-users or
21 the end-users of other companies.

22 **Q. PLEASE EXPLAIN WHAT TRAFFIC HALO SENDS TO AT&T.**

1 A. Rather than Halo sending traffic to AT&T that comes from any Halo end-users, as would
2 occur under a normal wireless ICA, it appears that some carriers have made arrangements
3 to deliver traffic to a service provider, presumably Halo's customer Transcom,² which in
4 turn delivers the call to Halo. Halo then delivers that call to AT&T, which then delivers
5 the call to either an AT&T end-user or to another carrier for termination to its end-user.
6 This arrangement is reflected in the diagram in Attachment MN-1.

7 **Q. WHAT DOES THE ICA SAY ABOUT THE TRAFFIC HALO CAN SEND TO**
8 **AT&T?**

9 A. The ICA says the following:

10 Whereas, the Parties have agreed that this Agreement will apply only to
11 (1) traffic that originates on AT&T's network or is transited through
12 AT&T's network and is routed to Carrier's wireless network for wireless
13 termination by Carrier; and (2) *traffic that originates through wireless*
14 *transmitting and receiving facilities before [Halo] delivers traffic to*
15 *AT&T* for termination by AT&T or for transit to another network.
16 (Emphasis added).

17
18 The ICA amendment that includes this language is contained in an attachment to
19 Mr. McPhee's direct testimony. The amendment was signed at the same time Halo opted
20 into its ICA. The amendment's requirement that all traffic Halo sends to AT&T be
21 wireless-originated is consistent with Halo opting in to a wireless ICA and Halo's claim
22 to be a wireless carrier.

23 **Q. WHY IS IT IMPORTANT TO HAVE THE ICA SPECIFY THAT HALO, AS A**
24 **PURPORTED WIRELESS CARRIER, IS ONLY TO SEND AT&T WIRELESS-**
25 **ORIGINATED TRAFFIC?**

26 A. It is important because wireless-originated and landline-originated traffic are supposed to
27 be delivered to AT&T on entirely separate trunks. This is necessary to enable AT&T to

² Transcom Enhanced Services, Inc.

1 correctly bill other carriers for terminating these different types of traffic on AT&T's
2 network. AT&T's billing system cannot automatically tell whether a call delivered to
3 AT&T originated as a landline call or a wireless call.³ As a result, when carriers send
4 traffic to AT&T, different trunks are used to deliver landline traffic and wireless traffic,
5 respectively. This is necessary because, as Mr. McPhee explains, the rates that other
6 carriers must pay AT&T to terminate their calls on AT&T's network (known as
7 "intercarrier compensation") are based on the geographic areas where the calls originate
8 and terminate, and the boundaries of these geographic areas are different for landline
9 calls and wireless calls. Specifically, for landline traffic the applicable rate for
10 intercarrier compensation is based on rate center boundaries and LATA boundaries,
11 whereas for wireless traffic the applicable rate for intercarrier compensation is
12 determined by using Major Trading Area ("MTA") boundaries. Thus, by requiring
13 landline and wireless traffic to be delivered to AT&T on separate trunk groups, AT&T's
14 billing systems know that calls delivered over trunks for landline traffic should be billed
15 for by using rate center and LATA boundaries, whereas calls delivered over trunks
16 reserved for wireless traffic should be billed by using MTA boundaries. By having the
17 ICA specify that Halo will only send AT&T wireless-originated traffic, AT&T knows
18 that Halo should only be using trunks groups allocated for wireless traffic, so that the
19 appropriate billing will apply.

³ In the past, one generally knew that a given NPA-NXX combination was either a wireless NPA-NXX or a landline NPA-NXX because the Local Exchange Routing Guide ("LERG") defined it as one or the other. (An NPA-NXX is the first six digits of a ten-digit telephone number, beginning with the area code). With the implementation of wireless number portability, however, one no longer knows whether a given call originated in a wireless or landline network unless the calling party is one's own customer. By the time a call arrives at the tandem for termination, the terminating carrier has no idea which network (wireless or landline) originated the call. Hence, the only way that AT&T, as the terminating carrier, can know whether the call was wireless-originated or landline-originated, and thus bill other carriers appropriately, is by segregating the traffic on separate trunk groups.

1 **Q. ARE THE TRUNKS THAT HALO IS USING TO SEND TRAFFIC TO AT&T**
2 **RESERVED FOR WIRELESS TRAFFIC ONLY?**

3 A. Yes. The trunks that Halo has established under the ICA to deliver traffic to AT&T are
4 trunks reserved for wireless traffic only.

5 **Q. IS THE RATE FOR INTERCARRIER COMPENSATION ON CALLS**
6 **DELIVERED TO AT&T DETERMINED SOLELY BY THE TYPE OF TRUNK**
7 **THE CALL IS DELIVERED ON?**

8 A. Not entirely. The type of trunk the traffic is delivered on tells AT&T which type of
9 boundaries to use to separate local calls from non-local calls (rate center or LATA
10 boundaries for landline calls and MTA boundaries for wireless calls).⁴ The originating
11 and terminating NPA-NXXs of the call are then used to determine, based on an end-to-
12 end analysis, whether the call is local or non-local based on the type of geographic
13 boundaries that apply to that type of traffic. In other words, AT&T first has to establish
14 that all the traffic it receives over a specific trunk group is either wireless or landline.
15 Only then can AT&T determine the appropriate intercarrier compensation rate (local or
16 non-local) to apply based on the originating NPA-NXX and terminating NPA-NXX.

17 **Q. FOR THE TRAFFIC THAT COMES IN OVER THE WIRELESS TRUNKS,**
18 **DOES AT&T THEN EVALUATE EACH AND EVERY CALL TO BILL**
19 **WIRELESS PROVIDERS THE PROPER INTERCARRIER COMPENSATION**
20 **RATE FOR EACH CALL?**

⁴ Originally, compensation was for landline traffic, since it predates wireless, and the original systems were built to accommodate the jurisdictions of landline traffic, *i.e.*, rate centers, exchanges, and LATAs to determine whether a call is local or intra- or interstate toll. Wireless traffic uses all that was originally built for landline, but modified to use with MTAs, which are much larger than rate centers, and attempt to account for customers that roam outside of the MTA with additional elements such as JIP (Jurisdictional Identification Parameter) and/or cell site data for originating traffic to determine the jurisdiction of traffic. Wireless traffic is normally handled in AT&T's ICAs by establishing an inter-MTA factor based on traffic study data.

1 A. No. AT&T's billing systems actually use a percentage to render its monthly bills.
2 Generally, a traffic study is completed on the trunk group and the calls made during the
3 study period are each evaluated to determine if they are local or non-local. It is assumed
4 that all calls coming over that trunk group are wireless calls. Then, as I explained above,
5 the NPA-NXX for both the calling number (originating NPA-NXX) and the called
6 number (terminating NPA-NXX) are used to determine whether the call is local (was
7 within the MTA) or non-local (involved multiple MTAs). Finally, a calculation is made
8 to determine the percentage of the minutes of use ("MOUs") that are intraMTA (local)
9 versus interMTA (non-local). To use an example, assume that the trunk group
10 experienced 100 minutes of traffic and, of course, all of those minutes are wireless traffic.
11 If the factor has been set to be 95% intraMTA and 5% interMTA, then the carrier's bill
12 will be 95 times the reciprocal compensation MOU rate plus 5 times the interMTA
13 (access) rate.

14 **III. HALO'S SENDING OF LANDLINE-ORIGINATED TRAFFIC**

15 **Q. SINCE THE ICA TOOK EFFECT, HAS AT&T HAD A CHANCE TO ANALYZE**
16 **THE TRAFFIC HALO IS SENDING TO IT?**

17 A. Yes. AT&T first looked into the type of traffic Halo was sending it in response to a
18 request from Halo to treat virtually all of its traffic as intraMTA, and thus not subject to
19 access charges. AT&T's billing records showed that (i) Halo's traffic volume was
20 growing very rapidly, far faster than what AT&T would have expected from what was
21 supposed to be a start-up, rural wireless carrier; (ii) all of the traffic coming from Halo
22 was one-way (from Halo to AT&T), with no traffic from AT&T end-users to Halo, which
23 was unusual; and (iii) 100% of the traffic appeared to be intraMTA, which again seemed

1 unusual, since end-users typically make a mix of interMTA and intraMTA calls. Each of
2 these things aroused AT&T's suspicion about what Halo was actually doing and whether
3 it might be trying to avoid switched access charges. AT&T therefore began to review the
4 data more closely to understand these anomalies. In doing so, AT&T discovered that a
5 large percentage of the calls Halo was sending it were not wireless, but rather were
6 landline-originated, contrary to the ICA and Halo's claims to be a wireless carrier.

7 **Q. WHAT STEPS DID THE AT&T COMPANIES TAKE TO FURTHER ANALYZE**
8 **THE TRAFFIC RECEIVED FROM HALO?**

9 A. AT&T has analyzed Halo's traffic at various times since February 2011. For purposes of
10 this case, AT&T conducted a call study of Halo's traffic for the time frame of 9/26/2011
11 through 10/2/2011 by analyzing the SS7 information⁵ on the traffic sent by Halo.

12 **Q. PLEASE EXPLAIN.**

13 A. The intercarrier compensation rate that applies to a call is determined by its originating
14 and terminating end-points, which, as explained above, normally can be discovered by
15 comparing the originating NPA-NXX and terminating NPA-NXX. Under current
16 industry practices, the originating NPA-NXX is taken from the telephone number of the
17 originating caller, which is referred to as the Calling Party Number, or "CPN."⁶ The

⁵ At a very general level, SS7 Signaling is used when a call is initiated to signal between switches in the network that a call has been initiated and that network resources need to be prepared to receive that call. This is done by signals sent over Access Links (or "A-Links"). The SS7 network enables the originating switch and the terminating switch on a call to select the correct trunk group for the call and to each reserve the same trunk on that trunk group. SS7 signaling will also query any necessary database to obtain any information needed for routing a call, as well as signal when a call is released from the network upon hanging up the phone. SS7 information provides detail about where a call originated and terminated and the carriers on each end.

⁶ As I noted, when a call is initiated, SS7 signaling sends information about that call to the terminating switch. Some of this information shows up in "fields" that are reflected on the Initial Address Message ("IAM"), which is sent each time a call is set up between switches. One of the fields is "Calling Party Number," or "CPN." CPN is normally associated with Caller ID service, but it also has other uses. For example, telecommunication carriers also use the CPN field in their billing systems for intercarrier compensation to determine whether a call is interMTA or intraMTA (or interexchange or intraexchange for landline calls).

1 terminating NPA-NXX is taken from the telephone number of the called party. These
2 two fields determine the rating of the call for purposes of intercarrier compensation.

3 **Q. HOW DID AT&T ANALYZE THE CALLS SENT BY HALO TO DETERMINE**
4 **WHETHER THEY WERE LANDLINE-ORIGINATED OR WIRELESS-**
5 **ORIGINATED?**

6 A. There are a few steps involved in determining the origins of a call:

- 7 1. AT&T first used the Calling Party Number (“CPN”) of the call originator (which
8 is one of the SS7 data fields on each call).
- 9 2. Using that CPN, AT&T then looked in the Local Exchange Routing Guide
10 (“LERG”)⁷ to find the carrier that holds that originating NPA-NXX code.
- 11 3. Because telephone numbers can be ported, AT&T then looked at the Local
12 Number Portability (“LNP”) database to see whether the originating number had
13 been ported to some carrier other than the one that owned the NPA-NXX.
- 14 4. At that point, AT&T knew who the originating carrier was. Based on the type of
15 originating carrier (wireless or landline), AT&T then also knew whether the call
16 was a landline-originated call or a wireless-originated call.
- 17 5. AT&T could then determine, based on the end-points of the call and type of call,
18 which intercarrier compensation rate should have applied (*i.e.*, reciprocal
19 compensation or access charges).

20 **Q. CAN YOU GIVE AN EXAMPLE OF HOW THE ANALYSIS WORKED?**

21 A. Certainly. AT&T uses a protocol analyzer tool within its SS7 signaling network for
22 Tennessee that can pull reports on the signaling data based on live traffic, which it did for

⁷ The LERG is a national routing database that stores information necessary to properly route traffic throughout the United States. It includes the NPA-NXX, carrier that the NXX is assigned to, tandem switch for routing interexchange and local traffic, and other pertinent information.

1 all the traffic that Halo sent to AT&T Tennessee beginning in January, 2011 and on a
2 continuing basis. Because all of the calls in question terminate through an AT&T
3 Tennessee tandem switch, the only thing to determine was where each call originated and
4 the type of carrier that served the originating end-user. Using the process described
5 above, calls were sorted out and AT&T determined the originating carrier for each call
6 and whether that was a wireless or landline carrier.

7 **Q. IS THERE A TECHNICAL REASON A CARRIER WOULD WANT TO**
8 **DELIVER CALLS TO HALO BEFORE THEY WERE TERMINATED TO AN**
9 **AT&T END USER?**

10 A. No. Adding a “middle man” carrier to a call normally drives the cost up, not down. In
11 this case, other carriers appear to be passing calls through Halo (and Transcom) to try to
12 avoid paying the applicable intercarrier compensation charges by claiming that every call
13 “re-originated” with Halo or Transcom and therefore every call was “local.” Carriers in
14 the past have engaged in call fraud activities, such as changing or altering the CPN to
15 make calls appear to be “local” in nature even when they are not. The FCC and many
16 state commissions have rules against altering CPN in an effort to eliminate this type of
17 arbitrage. Halo and Transcom are just engaging in a new variation on this type of scheme
18 (I discuss the CPN issue in more detail below in part IV).

19 **Q. WHAT DID AT&T’S CALL STUDY SHOW ABOUT WHETHER HALO HAS**
20 **BEEN SENDING AT&T LANDLINE-ORIGINATED CALLS?**

21 A. AT&T’s call study revealed that the large majority – 74% – of the calls that Halo sent to
22 AT&T for termination in Tennessee were landline-originated, not wireless-originated.
23 The results of AT&T’s call study are included in Attachment MN-2.

1 **Q. HOW ARE THE RESULTS OF AT&T'S CALL STUDY REFLECTED IN**
2 **ATTACHMENT MN-2?**

3 **A.** Attachment MN-2 provides the results of the one-week study of the minutes of use that
4 Halo sent to AT&T within Tennessee. The data is broken down into the categories that
5 are used for intercarrier compensation, namely intrastate versus interstate and intraMTA
6 versus interMTA. This SS7-based study used the originating CPN to determine the
7 nature of each call (wireless or landline, local or toll) as described earlier in my
8 testimony.

9 **Q. HOW DO YOU KNOW AT&T'S RESULTS ARE ACCURATE?**

10 **A.** The AT&T studies are based on SS7 signaling data, which is the same data system used
11 for call delivery. In other words, it is the system that the entire industry uses. It is a very
12 mature system that is highly accurate and relied upon within the industry throughout the
13 United States and other countries where SS7 is deployed.

14 **Q. DOES THE ICA ALLOW HALO TO SEND AT&T SUCH LANDLINE-**
15 **ORIGINATED CALLS?**

16 **A.** In my non-legal opinion, no. The language I quoted above from the ICA requires Halo to
17 send only wireless-originated calls to AT&T.

18 **Q. HAS HALO DENIED THAT IT IS SENDING AT&T CALLS THAT ARE**
19 **LANDLINE-ORIGINATED?**

20 **A.** Not that I am aware of. Rather, Halo's theory appears to be that the calls it sends to
21 AT&T have been originated twice – once by the caller that actually placed the call, and
22 then again by Halo's customer, Transcom, when the call passed through Transcom before
23 being handed to Halo. Halo seems to assert that this alleged "re-origination" of the call

1 by Transcom somehow transforms a landline-originated call into a wireless-originated
2 call. I have depicted this in my Attachment MN-1.

3 **Q. IS THAT CONSISTENT WITH YOUR EXPERIENCE OF HOW CALLS ARE**
4 **ORIGINATED?**

5 A. No. In my experience calls are deemed to be originated once, by the person that actually
6 starts the call. Calls are then analyzed on an end-to-end basis based on the originating
7 caller's NPA-NXX and the called party's NPA-NXX. By trying to disguise the true
8 nature and origination point of the traffic it delivers to AT&T, Halo appears to be
9 engaged in what might be called "traffic laundering."

10 **Q. HAS THE FCC WEIGHED IN ON TRANSCOM AND HALO'S THEORY THAT**
11 **A LANDLINE-ORIGINATED CALL CAN BE "RE-ORIGINATED"**
12 **SOMEWHERE "IN THE MIDDLE" AND THUS TRANSFORMED INTO A**
13 **WIRELESS-ORIGINATED CALL?**

14 A. I am not an attorney and will leave the discussion of the FCC's decision to the attorneys
15 and legal briefs. In my layman's opinion, however, I believe the FCC rejected Halo's
16 "re-origination" theory in its *Connect America Fund* decision on intercarrier
17 compensation. The FCC referenced Halo by name and stated as follows:

18 1005. We first address a dispute regarding the interpretation of the
19 intraMTA rule. Halo Wireless (Halo) asserts that it offers "Common
20 Carrier wireless exchange services to ESP and enterprise customers" in
21 which the customer "connects wirelessly to Halo base stations in each
22 MTA." It further asserts that its "high volume" service is CMRS because
23 "the customer connects to Halo's base station using wireless equipment
24 which is capable of operation while in motion." Halo argues that, for
25 purposes of applying the intraMTA rule, "[t]he origination point for Halo
26 traffic is the base station to which Halo's customers connect wirelessly."
27 On the other hand, ERTA claims that Halo's traffic is not from its own
28 retail customers but is instead from a number of other LECs, CLECs, and
29 CMRS providers. NTCA further submitted an analysis of call records for

1 calls received by some of its member rural LECs from Halo indicating that
2 most of the calls either did not originate on a CMRS line or were not
3 intraMTA, and that even if CMRS might be used “in the middle,” this
4 does not affect the categorization of the call for intercarrier compensation
5 purposes. These parties thus assert that by characterizing access traffic as
6 intraMTA reciprocal compensation traffic, Halo is failing to pay the
7 requisite compensation to terminating rural LECs for a very large amount
8 of traffic. Responding to this dispute, CTIA asserts that “it is unclear
9 whether the intraMTA rules would even apply in that case.”

10
11 1006. We clarify that a call is considered to be originated by a CMRS
12 provider for purposes of the intraMTA rule only if the calling party
13 initiating the call has done so through a CMRS provider. Where a
14 provider is merely providing a transiting service, it is well established that
15 a transiting carrier is not considered the originating carrier for purposes of
16 the reciprocal compensation rules. Thus, we agree with NECA that *the*
17 *“re-origination” of a call over a wireless link in the middle of the call*
18 *path does not convert a wireline-originated call into a CMRS-originated*
19 *call for purposes of reciprocal compensation and we disagree with*
20 *Halo’s contrary position.* (Emphasis added, footnotes omitted).⁸

21
22 **Q. HAS HALO BEEN PAYING THE AT&T COMPANIES THE SWITCHED**
23 **ACCESS RATES FOR THE LANDLINE-ORIGINATED TRAFFIC IT HAS BEEN**
24 **SENDING THEM?**

25 A. No. Halo has only been paying the reciprocal compensation rate on all traffic it delivers
26 to AT&T, which is much lower than the switched access rate. Because there is no
27 technical reason for Halo to handle the traffic the way it is doing, it appears that avoiding
28 paying access rates is the sole reason for sending this traffic in this manner.

29 **IV. HALO’S MANIPULATION OF CHARGE NUMBERS TO**
30 **DISGUISE THE NATURE OF TRAFFIC SENT TO AT&T**

31
32 **Q. HOW HAS HALO BEEN DISGUIISING THE TRUE NATURE OF THE TRAFFIC**
33 **IT IS SENDING TO AT&T?**

⁸ *Connect America Fund*, FCC 11-161, 2011 WL 5844975 (rel. Nov. 18, 2011). Note that the term “wireline” is synonymous with landline.

1 A. Halo improperly inserts an unauthorized Charge Number (“CN”) in the call data that it
2 sends to AT&T on each call. This makes landline-originated calls appear to be wireless-
3 originated calls and non-local calls appear to be local calls, which significantly impedes
4 AT&T’s ability to bill the correct intercarrier compensation rate on Halo’s traffic. The
5 end user that originated the call has no idea Halo is doing this and has not asked Halo to
6 insert any such number.

7 **Q. PLEASE DISCUSS CN AND HOW IT WORKS TOGETHER WITH CPN.**

8 A. In the vast majority of calls there is no CN, and the CPN (Calling Party Number) is used
9 to determine the rating for the call, as I described above. On some small number of calls,
10 however, there is also a Charge Number in the call data, which is used to identify the
11 customer that is responsible for paying for the call (the financially responsible party). In
12 the vast majority of calls where there is a CN, the CN is identical to the CPN. When the
13 CN and CPN are the same AT&T will use the CPN to determine the proper intercarrier
14 compensation rate for the call.

15 In some cases, however, the CN will be different from the CPN. For example, a
16 company using a PBX⁹ to serve a large number of individual business lines will want to
17 use a single master billing telephone number for all long distance calls. In those cases a
18 CN for that company (say, its general line) will be used as the master billing number for
19 all the lines served by the PBX. The company may then use the individual CPN to hold
20 each department within the company financially responsible for all calls made by those
21 lines. For example, 615-244-1000 might be the CN for all numbers in the range 615-244-
22 1000 to 615-244-1999. In this example, any time one of the PBX stations, 615-244-1000

⁹ A PBX (Private Branch Exchange) is similar to a small switch that a large business end-user may have on its premises to handle the company’s calls.

1 to 615-244-1999, makes a long distance call, telephone number 615-244-1000 is
2 populated in the CN field so that interexchange carriers (“IXCs”) would bill the master
3 number instead of the actual CPN. This is an accepted practice across the industry and
4 service providers have agreed upon billing system rules to accommodate this. Thus,
5 when CN is used and is different from the CPN, AT&T’s billing systems use the number
6 in the CN field to determine what number will be charged for the call, and ignore the
7 number in the CPN field. This too is the accepted industry practice.

8 **Q. IS HALO FOLLOWING THE INDUSTRY PRACTICE?**

9 A. No. Halo is gaming the system by inserting a CN into the call record to disguise the
10 nature of the call. Specifically, (i) on the vast majority of calls, where there is no CN,
11 Halo is inserting a CN on its own, and (ii) on that small number of calls where there is a
12 CN, Halo is changing the CN from what it originally was. In both situations, Halo is
13 inserting a CN that is actually a Halo-owned test line, and not a line belonging to any
14 end-user. Indeed, Halo is inserting the same CN on every call it sends to AT&T in a
15 given MTA. By doing this, Halo is doubly disguising the nature of calls: first, Halo is
16 making all calls appear wireless even though most (74%) were originated by a landline
17 caller; second, Halo is making all calls appear to be local even though many are non-local
18 (either interMTA if wireless or interexchange if landline). Disguising calls in this way is
19 contrary to industry practices and makes it very difficult for AT&T to properly bill for
20 terminating calls sent by Halo. Attachment MN-3 provides a sample of SS7 data
21 depicting Halo-terminated calls where Halo has inserted its own CN into the call data
22 even though the call originated with no CN; this is in the top table on Attachment MN-3.
23 For comparison, I also show what AT&T typically sees from a typical CMRS carrier in

1 that carrier's SS7 records; this is in the bottom table on Attachment MN-3. This
2 comparison clearly demonstrates how Halo's behavior is drastically different from the
3 norm.

4 **Q. HOW WAS AT&T ABLE TO DISCOVER THAT HALO HAS BEEN INSERTING**
5 **CN DATA AND CHANGING CN DATA?**

6 A. It was very obvious when reviewing the SS7 call study reports, because they showed that
7 the same CN was being used for all calls that Halo sent to AT&T in any given MTA. CN
8 is not a field that is commonly used, and when it is used is usually the lead number for a
9 specific range of numbers. Finding the same CN on every call sent from Halo was
10 unprecedented and thus very suspicious.

11 **Q. DOES THE ICA REQUIRE HALO TO PROVIDE ACCURATE CALL-DETAIL**
12 **INFORMATION TO ALLOW ACCURATE BILLING?**

13 A. Yes. Specifically, Section XIV.G of the ICA (provided in an Attachment to Mr.
14 McPhee's testimony) states as follows:

15 The parties will provide each other with the proper call information,
16 including all proper translations for routing between networks and any
17 information necessary for billing where BellSouth provides recording
18 capabilities. This exchange of information is required to enable each party
19 to bill properly.

20
21 AT&T believes that Halo's practices regarding CN materially breach this provision of the
22 ICA.

23 **V. HALO'S REFUSAL TO PAY FOR FACILITIES**

24 **Q. AT&T'S COMPLAINT ALSO INCLUDES A CLAIM REGARDING HALO'S**
25 **FAILURE TO PAY FOR INTERCONNECTION FACILITIES OBTAINED**
26 **FROM AT&T. PLEASE DISCUSS THIS CLAIM.**

1 A. Halo has ordered, obtained, and used interconnection facilities from AT&T and has not
2 paid for them. Halo is attempting to characterize the cost of these facilities as if it were a
3 Competitive Local Exchange Carrier (CLEC), rather than a CMRS provider. The
4 significance of this is that CLECs establish a POI (Point of Interconnection) on the
5 Incumbent Local Exchange Carrier's (ILEC's) network and each party is responsible for
6 the facilities on its side of the POI.

7 **Q. CAN YOU EXPLAIN THE ISSUE IN MORE DETAIL?**

8 A. Yes. As I have noted, Halo claims to be a wireless (also known as "CMRS" for
9 Commercial Mobile Radio Service) provider, and therefore has an ICA with terms and
10 conditions used to govern wireless traffic and interconnection. In CMRS
11 interconnections, the wireless carrier establishes a point of interconnection ("POI") with
12 the ILEC, and there is a "shared facility factor" applied that encompasses the entire
13 facility from the CMRS carrier's Point of Presence ("POP") (if their switch is outside of
14 the LATA) or their switch (if it is within the LATA) beyond the POI to the AT&T
15 switch. The factor is based on which carrier is terminating traffic onto the other carrier's
16 network. For example, if Halo terminates traffic onto AT&T's network, which is 100%
17 of the time, then Halo is responsible for 100% of the facility costs, regardless of where
18 the POI is. Halo has not paid any of the charges that have been billed to it for the
19 facilities it uses to interconnect with AT&T, and each month Halo is not only ignoring
20 these bills, but also continuing to order more facilities that it does not intend to pay for.

21 **Q. DOES THE ICA REQUIRE HALO TO PAY FOR THESE AT&T FACILITIES?**

1 A. Yes. The ICA states that Halo is responsible for the facilities for the proportion of traffic
2 that is not originated by AT&T (referred to as BellSouth in the ICA) at Section V.B. page
3 10:

4 BellSouth will bear the cost of the two-way trunk group for the proportion
5 of the facility utilized for the delivery of BellSouth originated Local traffic
6 to Carrier's POI within BellSouth's service territory and within the LATA
7 (calculated based on the number of minutes of traffic identified as
8 BellSouth's divided by the total minutes of use on the facility), and Carrier
9 will provide or bear the cost of the two-way trunk group for all other
10 traffic, including Intermediary traffic.

11
12 Intermediary traffic is defined in the ICA at Section I.C. page 5 as:

13 ... the delivery, pursuant to this agreement or Commission directive, of
14 local or toll (using traditional landline definitions) traffic to or from (i) a
15 local exchange carrier other than BellSouth; (ii) a competitive or
16 alternative local exchange carrier ("CLEC"); or (iii) another
17 telecommunications carrier such as a CMRS provider other than Carrier
18 through the respective networks of BellSouth or Carrier, and delivered
19 from or to an end user of BellSouth or Carrier. All local or toll traffic
20 from a local exchange carrier delivered to Carrier not originated on the
21 BellSouth network by BellSouth is considered Intermediary Traffic."

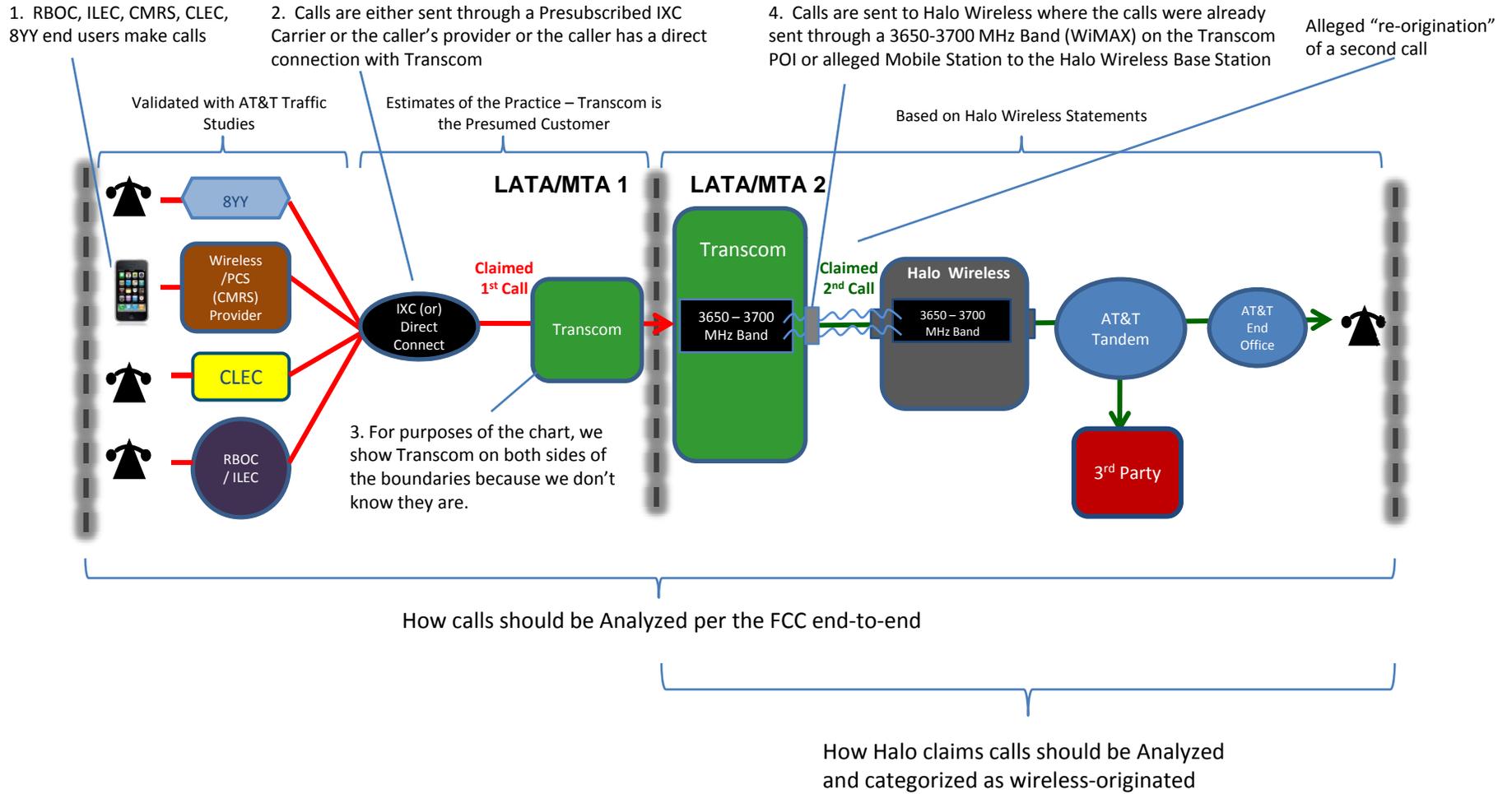
22
23 **Q. HOW MUCH MONEY DOES HALO OWE AT&T TO DATE FOR THESE**
24 **FACILITIES IN TENNESSEE?**

25 A. As of the October 2, 2011, AT&T has billed Halo \$249,311.68 for the use of these
26 facilities and Halo has not paid any of that amount.

27 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

28 A. Yes.

Diagram of How Halo Sends Traffic To AT&T



Results of Call Study of Traffic Halo Delivers to AT&T Tennessee

Note: Traffic Study Date 9-26-2011 through 10-02-2011

Terminated to AT&T TN End Users				
Terminating State	Traffic Type	Jurisdiction	Terminating Traffic Percent	Landline vs. Wireless Orig%
TN	Wireless Originated	InterMTA Interstate	12.5%	26.1%
		InterMTA Intrastate	3.6%	
		IntraMTA	10.0%	
	Landline Originated	Interstate	42.7%	73.9%
		Intrastate	31.2%	
Terminated to AT&T Tennessee End Users or End Users of Other Carriers				
Terminating State	Traffic Type	Jurisdiction	Terminating Traffic Percent	Landline vs. Wireless Orig%
TN	Wireless Originated	InterMTA Interstate	13.4%	25.1%
		InterMTA Intrastate	2.9%	
		IntraMTA	8.8%	
	Landline Originated	Interstate	40.7%	74.9%
		Intrastate	34.2%	

Sample Call Records Showing Halo's Improper Sending of Landline-Originated Traffic and Improper Insertion of a Halo Charge Number to Make Toll Calls Appear Local

Sample of a Halo Wireless Call Record in a Single MTA (Based on SS7 Data)

CARRIER CODE	DIRECTION	DATE	CALLING PARTY NUMBER (CPN)	CALLING STATE	CHARGE NUMBER (CN)	CHARGE NUMBER STATE	CALLED NUMBER	CALLED STATE
429F	T	9/25/2011 0:42	530-315-XXXX	CA	865-321-1901	TN	865-453-XXXX	TN
429F	T	9/25/2011 0:37	719-924-XXXX	CO	865-321-1901	TN	865-458-XXXX	TN
429F	T	9/25/2011 0:40	918-542-XXXX	OK	865-321-1901	TN	865-458-XXXX	TN
429F	T	9/25/2011 8:01	713-574-XXXX	TX	865-321-1901	TN	865-471-XXXX	TN
429F	T	9/25/2011 8:16	856-467-XXXX	NJ	865-321-1901	TN	865-453-XXXX	TN

Halo-Populated Charge Number which is always local to the Called Number. If you look up the Halo-Populated Charge Number in the LERG, it belongs to Halo. Note that the Charge Number is always the same, even though calls originated in different states and from different NPA-NXXs.

True originating Landline Customer Number. All calls in this sample originated from landline carriers as verified in the LERG and LNP database.

Sample of a Typical Wireless-Originated Non-Halo Call Record in the Same MTA as the Halo Records (Based on SS7 data)

CARRIER CODE	DIRECTION	DATE	CALLING PARTY NUMBER (CPN)	CALLING STATE	CHARGE NUMBER (CN)	CHARGE NUMBER STATE	CALLED NUMBER	CALLED STATE
XXXX	T	9/25/2011 0:00	865-332-XXXX	TN	--	--	865-237-XXXX	TN
XXXX	T	9/25/2011 0:01	865-323-XXXX	TN	--	--	865-388-XXXX	TN
XXXX	T	9/25/2011 0:01	865-308-XXXX	TN	--	--	865-363-XXXX	TN
XXXX	T	9/25/2011 0:03	865-322-XXXX	TN	--	--	865-236-XXXX	TN
XXXX	T	9/25/2011 0:04	865-308-XXXX	TN	--	--	865-255-XXXX	TN

For a Typical Wireless Originated IntraMTA call, the Calling Party Number (CPN) is local to the Called Number

Typical Wireless Call does not contain a Charge Number, but if a Charge Number exists, it is located in the same jurisdiction of the Calling Party Number.

LEGEND

- Carrier Code is the OCN of the carrier sending the traffic and is determined based on the NPA-NXX assignment in the LERG.
- Calling Party Number is the CPN of the originator of the call.
- Charge Number is the CN and indicates which number should be billed for the call.

Note: The last four digits of the Calling Party Number (CPN) and Called Number are withheld for CPNI considerations. The originating party is unaware that its call is being routed through the Transcom/Halo routing scheme. The NPA-NXX digits are sufficient to determine whether a call is landline-originated and the jurisdiction of the call (the CPN was verified against the LNP database to insure the number was not ported to another provider).