BEFORE THE TENNESSEE REGULATORY AUTHORITY
NASHVILLE, TENNESSEE

IN RE:	:	
COMPLAINT OF	:	
CONCORD TELEPHONE EXCHANGE, INC.,	:	
HUMPHREYS COUNTY TELEPHONE	:	
COMPANY, TELLICO TELEPHONE	:	
COMPANY, TENNESSEE TELEPHONE	:	
COMPANY, CROCKETT TELEPHONE	:	DOCKET NO.: 1100108
COMPANY, INC. PEOPLES TELEPHONE	:	
COMPANY, WEST TENNESSEE	:	
TELEPHONE COMPANY, INC., NORTH	:	
CENTRAL TELEPHONE COOP., INC. AND	:	
HIGHLAND TELEPHONE COOPERATIVE,	:	
INC. AGAINST HALO WIRELESS, INC.,	:	
TRANSCOM ENHANCED SERVICES, INC.	:	
AND OTHER AFFILIATES FOR FAILURE	:	
TO PAY TERMINATING INTRASTATE	:	
ACCESS CHARGES FOR TRAFFIC AND	:	
OTHER RELIEF AND AUTHORITY TO	:	
CEASE TERMINATION OF TRAFFIC	:	

PRE-FILED REBUTTAL TESTIMONY OF RUSS WISEMAN ON BEHALF OF HALO WIRELESS, INC.

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PRE-FILED REBUTTAL TESTIMONY OF RUSS WISEMAN ON BEHALF OF HALO WIRELESS, INC.

Q: Please state your name, title and business address.

A: My name is Russ Wiseman. Despite what TDS's witness allege, I am Chief Operating Officer for Halo Wireless, Inc. ("Halo"), not the CEO. My business address is 2351 W. Northwest Highway, Suite 1204, Dallas, TX 75220. I am responsible for all operations at Halo, including sales, marketing, network and system operations, and inter carrier relations.

Q: On whose behalf are you appearing?

A: I am appearing for the Halo Wireless, Inc. ("Halo").

Q: Are you the same Russ Wiseman that presented Direct testimony?

A: Yes.

Q: What is the purpose of this Rebuttal Testimony?

A: I will respond to the Direct Testimony of Thomas McCabe and Linda Robinson. I will also provide additional testimony relevant to the facts in this case that are intended to inform the TRA and assist it in ruling on the matters before it in this complaint.

Q: The complainants characterize themselves as "rural" LECs. Does Halo agree that they are all "rural" LECs?

A: No. I do not know whether they meet the definition in the Act. They have not provided any information by way of testimony or evidence that they meet any of the 4 alternative criteria in § 153(37).[1] Nor have they presented any evidence that any of them is a "2%" ILEC that is entitled to an exemption from § 251(c) duties under § 251(f). While Halo is not specifically contesting their assertion of rural ILEC status, we also do not admit that they are what they claim.

Q: What is your response to the assertion by TDS that Halo's traffic is subject to intrastate access charges?

A: I vigorously disagree. These assertions are founded on several false assertions and assumptions that I will discuss here. The first false premise TDS asserts is that using telephone numbers is a reliable way to determine the geographic starting point for a call, the network the

[1] (37) RURAL TELEPHONE COMPANY.--The term "rural telephone company" means a local exchange carrier operating entity to the extent that such entity--
(A) provides common carrier service to any local exchange carrier study area that does not include either--
(i) any incorporated place of 10,000 inhabitants or more, or any part thereof, based on the most recently available population statistics of the Bureau of the Census; or
(ii) any territory, incorporated or unincorporated, included in an urbanized area, as defined by the Bureau of the Census as of August 10, 1993;
(B) provides telephone exchange service, including exchange access, to fewer than 50,000 access lines;
(C) provides telephone exchange service to any local exchange carrier study area with fewer than 100,000 access lines; or
(D) has less than 15 percent of its access lines in communities of more than 50,000 on the date of enactment of the Telecommunications Act of 1996.

call originated on, or whether a call involves "wireless." This might have been true 30 years ago when there were no IP networks and other advanced communication applications that effectively disassociate telephone numbers from physical telephone lines, switches and even networks. But today, the industry knows full well that advanced communications technologies, both IP and wireless, are rendering it impossible to rely on CPN to determine where a call began or the network owner or type of network that was used to initiate the call. The FCC has supported, and now requires, traffic factors to allocate between different traffic types precisely because of the fact that numbers have been disassociated from networks and location and thus are not reliable.[2] Thus, TDS's claim to be able to be able to reliably determine the "jurisdiction" of Halo's traffic for billing purposes, and whether it is "wireline" or "wireless," "intrastate" or "interstate," "intraMTA" or "interMTA," lacks any basis in actual fact, technical reality and completely ignores how users employ communications today. It is totally based on antiquated industry practices seasoned with healthy doses of self-serving assumption.

Second, TDS's assertion that the traffic is subject to access assumes that Halo's high volume customer is an interexchange carrier, and not an Enhanced Service Provider. As I will discuss below, Halo's high volume customer has been established by four federal court decisions as being an ESP, and that as such, is an end user with respect to the purchase of

[2] *See, e.g.* FCC Order ¶ 934 ("…In addition, given the recognized concerns with the use of telephone numbers and other call detail information to establish the geographic end-points of a call, we decline to mandate their use in that regard, as proposed by some commenters. …"); ¶ 960 ("…Because telephone numbers and other call detail information do not always reliably establish the geographic end-points of a call, we do not mandate their use. …"); ¶ 962 ("Contrary to some proposals, however, we do not require the use of particular call detail information to dispositively distinguish toll VoIP-PSTN traffic from other VoIP-PSTN traffic, given the recognized limitations of such information.For example, the Commission has recognized that telephone numbers do not always reflect the actual geographic end points of a call. Further, although our phantom traffic rules are designed to ensure the transmission of accurate information that can help enable proper billing of intercarrier compensation, standing alone, those rules do not ensure the transmission of sufficient information to determine the jurisdiction of calls in all instances. Rather, consistent with the tariffing regime for access charges discussed above, carriers today supplement call detail information as appropriate with the use of jurisdictional factors or the like when the jurisdiction of traffic cannot otherwise be determined. We find this approach appropriate here, as well.")

telecommunications services, is not an IXC, and its traffic is "not-access." I have been advised by counsel that our high volume customer's classification as an ESP, and therefore end user, means that that it originates communications from its CPE and communications terminate with the customer's CPE. The cases say that our High Volume customer is entitled to purchase telephone exchange service as an end user.

When Halo's high volume customer sends a call to Halo it is "originating a further communication"[3] to Halo in the MTA where the customer has one or more wireless stations that connect to Halo's base station. Halo in turn processes the call for termination by the appropriate terminating carrier, in the same MTA where our high volume customer originated the call with Halo in the first instance. Halo asserts that when ESP high volume customers originate traffic with Halo using wireless stations proximate to Halo base stations, and when the traffic originates and terminates in the same MTA, then this traffic is not subject to access charges, but rather is "non-access" traffic.

HALO FEDERAL AUTHORIZATION AND REGULATORY CLASSIFICATION

Q: What is your reaction to TDS's assertion that Halo is operating without proper Tennessee Certificate of Authority?

A: My reaction is that we are operating with the appropriate "Certificate of Authority." We filed for and received FCC approval to provide services on December 17, 2009. The authority takes the form of a Radio Station Authorization. I believe this RSA has been provided to the TRA. In addition, Halo is permitted to provide *any* interstate telecommunications service – even "wireline" – because of the FCC's blanket permission set out in 47 C.F.R. § 63.01(a). Halo

[3] The ILECs crafted the term "re-originate" and then attributed the use to Halo. We have never used that term. We have consistently referred to ESPs' "originating a further communication." This usage correctly recognizes that a call terminates to an ESP and if an additional leg must be joined then it is added by "originating a further communication."

therefore has federal authority and cannot be compelled to subject itself to state entry or rate regulation.

Furthermore, I disagree with the assertion that Halo is operating "telephone plant and equipment" or is providing "intrastate interexchange services" that TDS assets would subject Halo to traditional Tennessee certification applicable to local exchange or interexchange carriers. Halo is a CMRS carrier and is not subject to such regulatory certification. Halo has endeavored to file all necessary documents with the State of Tennessee, and to my knowledge, has not been notified by the State of Tennessee that it is not in compliance with its regulatory filing requirements.

Q: What is your reaction to TDS's assertion that Halo operated wireless base state sites in Tennessee without proper authorization during the period from December, 2011 until the FCC approved its ULS applications in April 2011?

A: Halo filed proper ULS applications for its two base station sites using the 3650 MhZ spectrum in a timely manner. However, there was technical point of confusion by the FCC when the applications were filed that caused the FCC to keep the applications in a "pending" status. This issue came to Halo's attention in April, 2011 and Halo immediately resolved the technical problem and the FCC immediately approved Halo's applications without change or further delay. Halo is addressing this matter with the FCC.

Even if Halo could be said to have violated the FCC rules relating to operation of base station equipment while the specific base station applications were pending, I am advised that this is a matter exclusively reserved for the FCC to resolve and the issue is before the FCC at this time. The FCC does not allow states to impose regulation on wireless companies or otherwise

punish them for a violation of an FCC wireless rule.[4] I am also advised that Halo's CMRS status was determined by its declaration that it opted to provide "common carrier" services – which occurred as a part of the initial nationwide RSA process. Thus any technical violation of the FCC's Part 90 rules does not mean Halo is not providing personal wireless service, and it does not expose Halo to state-level investigation or regulation.

Q: What is your response to McCabe's allegations regarding the practical use of 3650 spectrum to support Halo's business?

A: With regard to McCabe's testimony on pages 10 and 23, I would note that Mr. McCabe has not indicated that he is an engineer and has not shown any expertise in wireless operations generally or 3650 Wi-MAX in particular. McCabe simply does not know what he is talking about. The equipment is there, calls are set up through wireless equipment and there is adequate capacity within the 3650 spectrum. The ILECs excel at using unsupported assumptions to justify wild assertions and seem to feel there is no need to have any real knowledge or facts. Since Mr. McCabe did not offer any technical or engineering calculations or data to support his allegations, I can only conclude he has not done any technical calculations and does not possess the required expertise to do so. Thus his testimony on this topic is nothing more than baseless speculation. His allegations are, what I have seen repeatedly in the two Tennessee matters and elsewhere, colorfully and strongly stated assertions that are mere speculation relying on incorrect assumptions. They are conclusory and unfounded raw opinion wholly without any basis.

[4] *See, e.g.,* Memorandum Opinion and Order, *In the Matter of Paul Kelley d/b/a AMERICAN TELTRONIX, Licensee of Station WNHM552*, FCC 88-282, ¶ 8 and note 23, 3 FCC Rcd 5347, 5348 (rel. Sept., 1988):

> n23 While states are free to bring to our attention information concerning possible rule violations by Commission licensees, they cannot, in compiling such information, subject private land mobile licensees to the compulsory process of any state or local regulatory bodies. As the state PUC apparently recognized, any final determination that unauthorized operation has occurred may properly be made only by this Commission.

McCabe's claim that 3650 spectrum has "too many licensees operating locally, causing degraded transmission quality, resulting in levels of service that could be questionable for a high volume user" (page 10, lines 10-14) is an insult to the FCC, whic took great pains to ensure that multiple spectrum users could cooperatively share the band. It is also an insult to physics, which does not comport with the ILECs' mistruth. Fifty MHZ of available spectrum can support extremely high data throughputs and concurrent calls over the airlink. McCabe assumes that there are "too many licensees" in every geographic location throughout the United States. This is certainly not the case by a large measure, and is certainly not the case in the rural markets Halo serves. McCabe assumes that operators lack the technical ability and common sense to cooperate to avoid harmful interference. Suffice to say we have a slightly better understanding of 3650, physics, and the situation in the markets in which we have deployed our systems than Mr. McCabe has demonstrated. The fact of the matter is Halo is using 3650 spectrum for the purposes which we have consistently stated. There is adequate capacity and reliability on the airlink using 3650 to support Halo's services. These are not part of a "ruse" or "red herring" despite McCabe's wild accusations on page 14. Mr. McCabe's assertions are themselves red herrings and are merely part of a systematic campaign by TDS to cast Halo in the eyes of the TRA as a perpetrator of lies and misdeeds, and TDS as hapless, helpless victims of alleged fraud and deceit. The problem for them is that the facts just don't support their rhetoric and allegations. The lies and misdeeds are, in fact, coming from the ILECs.

Q: Can you give an example of another TDS witness assertion that is flatly untrue?

A: Yes. McCable says on page 22, lines 5-6 that "on several occasions Halo has described the connection with Transcom as wireless-in-the-middle." The question on page 23 lines 18-19 then goes on to characterize Halo's "theory." We have never described our service that way, and

the only time we used those words was when we were showing the characterization is incorrect. I challenge Mr. McCabe to locate a single instance where Halo "described the connection with Transcom as wireless-in-the-middle." TDS is entitled to its own opinion, but it is not entitled to its own facts.

Q: Mr. McCabe relies on ¶ 1006 of the FCC order to support the argument that access charges are due. Do you have a response?

A: Yes. The FCC assumed, without determining or finding, that *the ILECs' allegations that Halo's customer is a carrier were true*. Halo never claimed its customer was a carrier, and the FCC expressly did not decide the question. The FCC then found that if Halo's customer is a carrier then the traffic is not intraMTA. This was no surprise to Halo, since we had acknowledged this point all along. Our position was then, and is now, that since Transcom is not a carrier then Transcom is an end user and an end-point, and as such a call originator – just like all other ESPs that "originate further communications."

I must point out, however, the FCC then went on to characterize Halo's traffic as "transit." It then defined transit as "non-access." *See* 1311 of the recent FCC order.[5] Thus, if one wrongly accepts the proposition that Transcom is a carrier then TDS still cannot claim an access entitlement for Transcom's traffic.

ALLEGATIONS OF HARM

Q: Let's turn to the economic harm TDS has claimed it is suffering at the hands of Halo. TDS is essentially claiming that Halo is "exploiting" it by sending traffic for free, and

[5] 1311. Transit. Currently, transiting occurs when two carriers that are not directly interconnected exchange **non-access** traffic by routing the traffic through an intermediary carrier's network. Thus, although transit is the functional equivalent of tandem switching and transport, **today transit refers to non-access traffic**, whereas tandem switching and transport apply to access traffic. … (emphasis added)

is "benefiting handsomely" by its refusal to pay access charges. How do you respond to this claim?

A: This claim is ludicrous, for several reasons. First, TDS is "harmed" only in the sense that anyone who wants money they do not deserve is harmed by not obtaining the ill-gotten funds. This is non-access traffic, so TDS is not harmed when it does not receive access for it. Second, Halo was more than willing to pay interim rates for termination under the previous 20.11(e) interim compensation regime applicable to LEC-CMRS carriers. All TDS needed to do was send a simple letter conforming to the FCC's 20.11(e) guidelines, as many LECs have done. They refused to take this step, for reasons that still escape me. So to claim that Halo intended to get something for free, and had the power, in fact, to get something for free, is simply ridiculous. The only thing I can conclude from their lack of action to get paid the interim compensation they could have secured is that their illicit hunger for access revenues is so rapacious that they were willing to forgo reasonable, cost-based and substantial reciprocal compensation. They chose to risk it all.

Regarding Halo benefiting from the avoidance of access charges, this claim is also devoid of factual reality. Halo does not make a margin on telecommunications usage services offered to its High Volume customer. Any termination costs are passed straight through. Halo's margin is derived from the sale of wireless bandwidth services. As we have testified in the Halo's bankruptcy matter, Halo's passes through, at cost, the legitimate termination charges it is billed by terminating carriers.

I can not speak in a representative capacity for our High Volume customer, but based on my understanding of their business model, they do not price their services based on access rates, and they do not receive access-covering prices for their services from their customers. Their

prices are lower than the ILECs' intrastate access rates on a per-minute basis. TDS seems to be asserting that Halo or Halo's High Volume customer is receiving access charge based compensation, from someone, and "profiting handsomely" because neither Halo nor the High Volume customer pays any access. Such a claim demonstrates either a basic lack of understanding of the communications and enhanced services marketplace, or is an inappropriate attempt to mislead the TRA about the financial benefits Halo and/or Transcom are deriving from the current arrangements. By Mr. McCabe logic, we as individuals should all be getting rich by the money we are making NOT buying Ferrari's and Rolls Royce's. Unfortunately, no one has figured out how to "generate" cash by "avoiding" an expense.

As I said above, Halo does not make a margin on usage services, and while I am not familiar with Transcom's margins, I anticipate they are razor thin given the highly competitive nature of their business. The situation is much the same as it was with dial-up Internet. Dial-up Internet Service Providers (another form of ESP) did not pay access because of the ESP Exemption. For this reason they could – and did – use flat rate "all you can eat" pricing to their users. This brought the overall cost of Internet down to consumers. TDS did not like the ESP Exemption when calls were flowing from its users to ESPs and it still does not like the ESP Exemption now that calls are coming from an ESP to TDS users. This whole debate is merely the mirror image of the ISP/reciprocal compensation disputes that raged before state and federal regulators for many years. Back then it was AOL. Now it is Skype and GoogleVoice. The result is the same here as it was there: this is not access traffic, and as a consequence users pay less for their Internet-based communications. TDS is just unhappy it cannot tax every communication it does not completely control.

Neither Halo nor Transcom receive usage income remotely close to intrastate access rates. Both companies compete aggressively on price, and the end result is that communications consumers get services at a lower cost, and receive the benefits of the lower cost. This is the end result that local exchange carriers like TDS want to avoid, and killing Halo is the tactic they've chosen to avoid it, rather than innovating and competing in the marketplace.

McCabe's testimony very clearly demonstrates the extent to which the incumbents are addicted to access charges revenues – which are merely an above-cost tax on competition. The incumbents say they want to use this access revenue to build broadband. The effect of their constant levies of access charges on their competitors is that it guarantees they will always get a subsidy and a market advantage that prevents broadband market entry. TDS's real fear is that Halo will deploy broadband more widely and deeper into TDS's monopoly areas and more directly compete with TDS for "voice" as well as "broadband." TDS has a terminating monopoly insofar as its users are involved. Termination is thus not competitive. TDS is trying to have the TRA mandate that Halo subsidize TDS's broadband service, which is at least potentially subject to competition. Counsel requests that I suggest that the TRA read § 254(k) of the Act, because it directly prohibits use of monopoly revenues to support competitive services.

TDS's declining access charge revenues are primarily due to the fact that users have discovered that it is possible to use applications and services like GoogleVoice and Skype that are priced much lower than telephone toll. Indeed, some are free. This is possible, of course, because they do not pay access charges and can pass on the lower costs to their users. TDS is getting less access revenue because it has fewer access minutes. Users are no longer willing to pay bloated prices that contain access pricing. Access per minute rate reductions do contribute of course, but not nearly as much as the simple fact that users are tired of being gouged by the

incumbents and have voted with their feet. Their minutes are going to new technology access-exempt options because of better quality and significantly lower prices.

Halo and Transcom are the reason Skype and GoogleVoice – and other similar options – are priced lower than telephone toll services. Tennessee consumers and small businesses use these services and benefit from them. TDS is simply trying to eliminate these disruptive new technology, lower cost options that residential and small business customers in Tennessee and elsewhere are using in great numbers.

McCabe says that despite the FCC's policy of eliminating access charges, access revenues are "increasingly" important to the company. This sounds to me like a company who is refusing to adapt, trying to roll back the technological waves and frantically trying to keep a monopoly position for as long as possible. It also sounds like a company that has no plan for dealing with the reality that the subsidies from access charges are going away and smaller ILECs may very will also experience lower USF subsidies. It sounds like a company that cannot fathom how to survive in a capitalist market system and therefore wants regulatory protection from efficient entrants that need no subsidy in the form of wealth transfers and barriers to entry.

What does this suggest for Tennessee consumers reliant on companies like TDS for service? It suggests to me that these companies are ill-equipped to invest and provide advanced communication services. While they talk of the need for access charges to support investment in advanced technologies in rural markets, they have not truly deployed enough broadband to satisfy users' hunger and need for it. If they did, the FCC would not feel the need to totally revamp inter-carrier compensation and USF in order to promote these investments. The rural LECs know that their funding sources, primarily USF and access, are drying up. These sources of funds are going away, or shifting to other providers. The LECs are worried, and well they

should be. I would hope the TRA would see these dynamics and support the entry of new players like Halo who have 21st Century technology platforms and aggressive commitments to offer advanced communication services at lower rates to the people of Tennessee.

Q: So if access charge avoidance, as TDS has claimed, isn't Halo's business model, what is?

A: Halo was founded with the intent of providing broadband services to un-served and under-served markets around the United States. This plan has been documented going back 6+ years. Well before my arrival here, well before the first interconnection agreement with AT&T was signed, and well before the first minute of traffic was passed over the Halo network.

The primary impediment in making this happen was money. It is expensive to build wireless broadband networks. And getting a return on investment, especially in relatively low density markets, is very hard. Funding has always been the biggest obstacle to competitive wireless broadband deployment. While federal stimulus programs have attempted to over come this impediment, it remains the primary barrier to wide-scale, sustainable entry by non-incumbents. Halo's owners and management spent several years trying to raise the money necessary for deployment. In fact, at one time, they tried to work with rural LECs as business partners to leverage both sides' respective skill sets. The LECs were not interested in dealing with outsiders.

Another problem Halo faced was access to affordable spectrum in sufficient amounts and at the right frequency levels to support wireless broadband services. The FCC's opening up of the 3650 Mhz band in 2005, with no cost and flexible service rules was a major development in support of Halo's model.

Around 2008, Halo's management realized that the rules related to CMRS services created an opportunity to offer wireless-based telephone exchange services to Enhanced Service Providers, that the same wireless equipment and core network technology required for consumer broadband could be used for these ESP services. Halo now had the revenue source that could fund consumer broadband. In 2008-2009 the company set about securing interconnection agreements and identifying a wireless broadband platform to support its dual mission strategy.

Q: So what did Halo do?

A: I was not involved with Halo until the summer of 2009, but when I arrived, the company's resources were focused on getting interconnection with ILECs, principally AT&T, Verizon and Qwest. These efforts proved difficult, and the company was not able to secure agreements with Verizon or Qwest. However, in early 2009 the company was able to secure interconnection with the AT&T operating companies through the adoption method as a result of a settlement of a case filed at the FCC.

While interconnection with AT&T was being secured, the primary focus turned to identifying the specific wireless broadband platform that would efficiently support the services Halo wanted to provide to both High Volume and Low Volume end users. Many platforms were examined, and many were rejected for one reason and one reason alone: the lack of FCC-certified consumer CPE in the 3650 band. Halo had initially selected the platform supplied by Alvarion, Inc. However, when it became clear to Halo that Alvarion did not have an FCC certified consumer CPE device, Halo was forced to abandon this choice and seek another solution. Let me add that this switch involved moving from a large, financially and technologically strong equipment supplier, to one that needed to be saved by a late private equity cash infusion, was 1/10 the size, had limited financial resources, and whose core WiMAX

platform was inferior, in our judgment, to Alvarion's. Again, we made this switch because Alvarion lacked a consumer 3650 CPE device. I submit this decision would be impossible to justify to Halo's investors making a risk-based investment were the consumer market not important to the company.

Halo's then selected the platform from Airpsan Networks. This decision was based on two factors. The first was that Airpsan claimed to have a commercially ready USB consumer CPE form factor. This form factor has obvious benefits for a company desiring to provide mobile broadband services to consumer customers. The second advantage Airspan brought to the table was a commercially ready 802.16(e) mobile solution. Without getting into too much technical detail, the Wi-MAX standards for wireless broadband at the time were delineated at 802.16(d) for fixed wireless networks, and 802.16(e) for mobile networks. In 2009, there were many commercially available 802.16(d) solutions in the market place. But 802.16(e) solutions were just beginning to come to market. So Airspan's fully mobile solution was ideal for Halo's consumer-oriented business model. A contract was signed with an Airpsan reseller in early 2009.

From there, the company started deployment planning. Starting with the list of MTAs covered by the AT&T interconnection agreements, the company set about finding small to mid size rural areas inside these MTAs that would make good candidates for wireless deployment. The primary attributes we looked for were the extent of existing broadband services competition, the population size, the population density, the local market topography (for RF propagation), and the availability of back haul capacity to serve the tower sites.

After considering these variables, and examining scores or market candidates, the 28 initial cities were selected, and the process started to secure tower sites in these cities. I would point out that securing tower sites in rural markets, and operating and maintaining tower sites in

rural locations, drives operating cost and complexity that could have easily been avoided by locating towers in larger cities. The cost of backhaul in rural markets is generally higher. The choice of tower location is generally limited. The time and expense to travel to these sites is greater, among other things. So, like the WiMAX platform decision mentioned above, for Halo to incur these costs and operating "penalties" if it had no intent to actually serve consumers in these markets implies a degree of sadistic insanity and waste of resources that would be hard to explain if Halo's intent was to either NOT use wireless systems to support its High Volume customers, or if High Volume customers were the only market Halo intended to serve.

I want to emphasize this point, for our consumer-level goals and intent to provide mobile broadband to consumers has been lost in all the noise about Transcom. We built a network around a vendor choice that worked for a consumer offering in rural areas. If we had intended to serve only Transcom we would have used different equipment and we would have located our base stations in lower-cost areas. TDS can allege all they want that Halo is not using wireless systems for its High Volume users, or that it never intends to serve consumers in these tower locations. The facts and history completely belie those claims.

Q: Is Halo's consumer product centered on "voice" service?

A: Not really. It was designed to be a wireless broadband product that also has interconnected voice capability.

Q: Tell me more about your consumer marketing efforts. Why does Halo have so few consumer customers today, and what is the plan to grow this base?

A: When we launched services in the summer of 2009, Airpsan surprised us by giving us two bits of bad news. The first was that its USB device, while physically ready, was not, in fact, certified by the FCC. This meant that we could not offer it for sale to consumers. The second bit

of bad news was that the OEM supplier for its indoor wireless terminal had ceased supplying the device. Thus, we had no consumer device to offer customers. Airspan ultimately found an alternate supplier of an indoor unit, and that is the device we offer consumers today. It is not ideal, but it is minimally suitable for our needs. We began consumer marketing efforts during 4Q10 using this device, and experimented with several marketing strategies, including print, direct mail and online advertising. The goal in early 2010 was to find the most efficient way to acquire customers, while we waited for the primary device, the USB dongle, to be FCC certified. During this time, hundreds of thousands of dollars was spent on marketing efforts. While our programs did not yield large numbers of absolute customers, you need to keep in mind several important factors.

The first was that Halo had just launched its High Volume services and was ramping up its revenue and cash flows. We intended to fund the consumer product with the cash flows resulting from the High Volume product, so funds to support consumer marketing efforts were limited in the early months. Second, Halo was a new brand with no established equity with consumers. It takes time and money to build the awareness and trust necessary to convince consumers to buy services from a newly established brand. Third, Halo operated 28 tower sites in 28 different MTAs, creating a high demand for marketing investment. We needed to strike a balance between actively marketing services everywhere we were, while at the same time not diluting our investment to such a degree that we failed to get the return on these investments we required. I will not say that we got this balance right. But that is the mode we were in at the time the attacks started by the ILECs.

Lastly, and back to the USB, we were consciously limiting our consumer marketing efforts in the late 2010/early 2011 timeframe waiting for Airspan to inform us that the FCC had

certified the much more desirable USB dongle. Throughout 2010 and 2011, we were promised that FCC certification was "just around the corner". We modulated and controlled our consumer marketing efforts based on these promises. The FCC has, within the past two months, finally certified Airspan's USB dongle. Sadly, the money and management time that could now be going to marketing and sales of this compelling device now that it is available is being consumed by this fight with the ILECs.

NUMBERS-BASED RATING

Q: Let's turn our attention to Mr. Robinson's testimony. In it she asserts that telephone numbers, and specifically Calling Party Numbers (CPNs) are appropriate and reliable determinents for call rating and billing purposes. Do you agree?

A: No, I do not agree. We operate according to the rules of CMRS carriers, where traffic is originated by end users, using wireless stations capable of movement, at towers located in MTAs. Ms. Robinson's assertion that "billing for the entire industry is determined on the basis of the originating and terminating end points of the called and calling parties" is not true for the CMRS industry, and it is quickly dissolving in the entire telecom spacey in the face of converged wireless-wireline and IP-based services. The "practice" is for carriers to traffic factors instead of call-by-call rating, since numbers-based rating is no longer feasible in today's advanced network and service environment where the starting and ending "locations" of calls is hard to consistently, accurately and efficiently determine and the "number" consistently yields an incorrect answer.

Ms. Robinson's testimony makes it clear that the LECs are using the calling party number to identify the "originating network" as well. *See* Robinson Direct p. 8, lines 10-16. She apparently will not accept that the presence of a number in the signaling does not mean the call

originated on the network of the carrier that has been assigned that number. The inter-carrier compensation regime is not and cannot be founded on the assumption that you can definitively determine the starting point of a call, the type of call, or the initial network based on "the number." I would further observe that reliance on the number as the exclusive rating determinant is subject to the very outcomes the LECs want to avoid: gaming and arbitrage. It was not that long ago that this agency had to resolve the intercarrier compensation issues related to "arbitrage" using Virtual NXXs. The TRA adopted the ILEC position in those cases ruled that the telephone numbers did not control rating. The ILECs insist on using numbers when it means they can claim access, but they have refused to use numbers when it meant they do not get access. The TRA cannot be so arbitrary.

The simple fact is that networks and services are converging, rapidly, and in ways that blur the traditional, once clear distinctions of wireless and wireline. I gave a few examples in my Direct, but they bear repeating, since the ILECs seem to want to convince the TRA that none of this is happening.

Carriers like T-Mobile offer services today that allow their wireless users to originate calls using wireless base stations connected to wired broadband networks. They can make calls with smart phones that use any available Wi-Fi hot spot. Are calls using these devices "wireless" or "wireline" orginated? Is this traffic subject to reciprocal compensation, or subject to access? Is it intraMTA or interMTA? The "number" does not disclose actual location, the network owner or call type.

Verizon Wireless offers Home Phone Connect, a service that allows customers to port their home numbers to Verizon Wireless and use traditional landline phones to make calls over their wireless network. Is this a mobile wireless service? Fixed wireless? Wireline? Is this traffic

subject to reciprocal compensation, or subject to access? Would calls from a ported landline number be viewed by a terminating LEC as a wireless call or a wireline call? But these calls would all traverse the Verizon Wireless wireless network and its "wireless" interconnection arrangements.

A large number of wireless smart phones today can use Skype or GoogleVoice service as an application. T-Mobile allows users to interwork GoogleVoice and select whether the outbound call will signal a GoogleVoice number (usually secured from a "wireline" LEC like Level 3 or Bandwidth.com) or the T-Mobile number. Skype and GoogleVoice quite often obtain numbers from CLEC "numbering partners" such as Level 3 or Bandwidth.com. Let's assume the numbering partner is Bandwidth.com. A T-Mobile customer can originate a call while traveling in California using Skype. In this example Skype has sub-assigned a number 865-219-3111[6] to the T-Mobile user. The Skype outbound call, let's say to a PSTN user served by a local exchange carrier such as Tellico (a TDS company serving Ball Play, Tennessee), will not go out over Bandwidth.com's network, even though Bandwidth.com's number will be signaled. It will be originated over T-Mobile's wireless network to Skype's network and then be routed to a Skype vendor to start the termination chain. The call, however, will appear to the terminating LEC as a "wireline" originated call, since the Calling Party Number is a "wireline" number. The ILECs would claim this call started "on the PSTN" in Knoxville and Bandwidth.com was the "originating LEC." However, those inferences would be incorrect. Since a smart phone was used, it would be "wireless." It started in California, not Tennessee. Bandwidth.com probably never touched the call at all in any way. Finally it would be an IP-originated call and did not "originate on the PSTN."

[6] This number is within the 865-219-3 "thousands block." Bandwidth.com has that block. It is associated with the Knoxville, Tennessee rate center in LATA 474.

If the smart phone toting Skype user in California was calling someone in Tennessee within MTA 44 and LATA 474, our ESP end user Transcom could very well receive it from one of its customers that have contracted with Skype. If so, Transcom would process the call and hand it to Halo via Transcom's wireless CPE that is communicating with our Amherst, Tennessee base station. Halo would hand the call off to AT&T at its KNVLTNMA84T tandem. AT&T would then transit the call to Tellico.

The ILECs would probably "rate" this as an intraMTA, intraLATA call, because they would see it as a Knoxville number calling a user within the same MTA, but they would probably claim it is "wireline" PSTN originated and therefore Halo is not "authorized" to handle it, as the number is a "wireline number." We would agree it is intraMTA because we received it from our end user customer at our base station in MTA 44 and it terminated in MTA 44. We would strongly disagree that it was "wireline" PSTN originated.

For a converged IP service provider such as Halo, the starting network or the type of number used simply does not matter. And even if it did, there is no way for us to definitively determine where a call started, for the same reasons as mentioned above. Trying to maintain this distinction is fighting a losing battle, and swimming against the strong tide of market, technical and regulatory evolution occurring in the telecommunications industry.

Halo has an end user with a wireless station in each MTA. The end user customer's wireless station ***originates*** a communication in that MTA, and all of the communications in issue terminate in the same MTA. The "origination" by Transcom in the MTA could well be the "**origination** of a *further* communication" rather than the actual starting end-point but from an intercarrier compensation perspective the calls originate on our network.

Halo does recognize that the actual starting point is relevant to an "end to end" test for jurisdiction. However, based on the advice of counsel, we believe this does not matter from a Halo perspective since the call is still "non access." Counsel advises that the federal courts have on several occasions directly held that the "end-to-end" theory is relevant to jurisdiction, but it "is not dispositive" of the intercarrier compensation that applies. Our contention, based on a careful consideration of the relevant regulations, is that the "jurisdiction" of a call is a separate question from the intercarrier compensation that applies to that call.[7] We believe all that matters is whether our traffic comes to us from an end user employing a CMRS-based wireless facility in the same MTA.

Q: Ms. Robinson claims that the NECA access tariff requires use of numbers for rating. Do you agree?

A: I disagree that the tariff applies. But even if it does, Ms. Robinson appears to be trying to purposefully mislead the TRA. She claims to be providing a partial quote from "NECA Tariff No. 5, Rule 2.3.22(c)" beginning on page 8, line 19 and continuing over to page 9, line 2. Her quotation says:

> **P**ursuant to Federal Communications Commission Order FCC 85-145 released April 16, 1985, interstate usage is to be developed as though every call that enters a customer network at a point within the same state as that in which the called station (as designated by the called station telephone number) is situated is an intrastate communication and every call for which the point of entry is a state

[7] On the advice of counsel, Halo relies on: *Bell Atlantic*, 206 F.3d at 5-6, 8, and Order on Remand and R&O and Order and FNPRM, *High Cost Universal Service Reform, Federal-State Joint Board on Universal Service, Lifeline and Link Up, Universal Service Contribution Methodology, Numbering. Resource Optimization, Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, Developing a Unified Intercarrier Compensation Regime, Intercarrier Compensation for ISP-Bound Traffic, IP-Enabled Services*, ¶ 22, 24 FCC Rcd 6475, 6485-86 (2008) (emphasis added):

> "22. Our result today is consistent with the D.C. Circuit's opinion in *Bell Atlantic*, which concluded that the jurisdictional nature of traffic is not dispositive of whether reciprocal compensation is owed under section 251(b)(5). It is also consistent with the D.C. Circuit's *WorldCom* decision, in which the court rejected the Commission's view *that section 251(g)* excluded ISP-bound traffic from the scope of *section 251(b)(5)*, but made no other findings.

other than that where the called station (as designated by the called station telephone number) is situated, is an interstate communication.

I have bolded and underlined the capitalized "P" for reasons that will become apparent in a moment. We were curious about this quotation, so we found NECA 5 in an attempt to locate it. It turns out there is no "Rule 2.3.22(c)" in the tariff. Section 2.3 ends with subsection 2.3.11. The words she sets out do appear in section 2.3.11(c)(1)(a), but there is a material difference. Ms. Robinson carefully left off part of the sentence in the paragraph and there is no capital "P" in "pursuant," since that word appears in mid-sentence. Here is the complete section:

> **For purposes of developing the projected projected interstate percentage for Feature Group A or Feature Group B, p**ursuant to Federal Communications Commission Order FCC 85-145 released April 16, 1985, interstate usage is to be developed as though every call that enters a customer network at a point within the same state as that in which the called station (as designated by the called station telephone number) is situated is an intrastate communication and every call for which the point of entry is a state other than that where the called station (as designated by the called station telephone number) is situated, is an interstate communication.

Once the tariff is accurately quoted, Ms. Robinson's assertion that the access tariff performs call-by-call rating using telephone numbers is flatly wrong. The provision deals with formulation of the percent interstate use (PIU) factor and therefore deals with allocation of calls already known to be subject to access as between state and interstate. This provision has nothing to do with the question of whether *access applies to begin with*. Nowhere in the NECA tariff does it say that a call is rated as access rather than reciprocal compensation if the two numbers are not "local" to each other.

More important, the first part of the sentence makes clear that the provision deals with the PIU for **Feature Groups A and B**. I have always understood that the ILECs claim that they are providing Feature Group D to Halo. The PIU formulation terms for Feature Group D appear in a

different paragraph that is immediately above the one she purposefully misquotes. And it says *nothing* about using numbers, even for jurisdictional allocation through a PIU:

> For purposes of developing the projected interstate percentage for Feature Group C or Feature Group D, the customer shall consider every call that originates from a calling party in one state and terminates to a called party in a different state to be interstate communications. The customer shall consider every call that terminates to a called party within the same state as the state where the calling party is located to be intrastate communications. The manner in which a call is routed through the telecommunications network does not affect the jurisdiction of a call, i.e., a call between two points within the same state is an intrastate call even if it is routed through another state.

I believe the foregoing clearly demonstrates that Ms. Robinson's testimony is both inaccurate and misleading and that Ms. Robinson's testimony should, therefore, be disregarded.

Q: Does this conclude your Rebuttal testimony?

A: Yes. Thank you.