Exhibit No.:
Issues: Multiple jurisdictional, contractual, and policy related issues (See table of contents)
Witness: Robert Johnson
Type of Exhibit: Direct Testimony
Sponsoring Party: Halo Wireless, Inc.
Case Nos.: TC-2012-0331 and TO-2012-0035

**BEFORE THE PUBLIC SERVICE COMMISSION**
**STATE OF MISSOURI**

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|---|---|---|
| Halo Wireless, Inc., | § | |
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| Complainant, | § | Case No. TC-2012-0331 |
| | § | |
| v. | § | |
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| Respondents. | § | |
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| Alma Communications Company d/b/a Alma Telephone Company, et al. | § | |
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| | § | |
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# PRE-FILED DIRECT TESTIMONY OF ROBERT JOHNSON ON BEHALF OF HALO WIRELESS, INC.

**June 4, 2012**

# AFFIDAVIT OF ROBERT JOHNSON

**STATE OF TEXAS** §
§
**COUNTY OF** TARRANT §

I, Robert Johnson, of lawful age, being duly sworn, depose and state:

1. My name is Robert Johnson. I am the President of Ameliowave, Inc., which is a consulting and software development practice that is under contract with Transcom Enhanced Services, Inc. to provide support for managing existing products, developing new products, and architecting the platform and systems that support all products.

2. Attached hereto and made a part hereof for all purposes are my Direct Testimony and true and correct copies of the exhibits thereto.

3. I hereby swear and 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.

**ROBERT JOHNSON**

**SUBSCRIBED and SWORN TO** before me, on this the 4 day of June, 2012.

SHEILA O'FLINN
MY COMMISSION EXPIRES
February 27, 2013

NOTARY PUBLIC IN AND FOR
THE STATE OF TEXAS

Commission Expires: 2-27-2013

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**PRE-FILED DIRECT TESTIMONY OF ROBERT JOHNSON**

## INTRODUCTION

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

A: My name is Robert Johnson. I am the President of Ameliowave, Inc. My business address is 307 W. 7th St., Suite 1600, Ft. Worth, TX 76107. Ameliowave is a consulting and software development practice that is under contract with Transcom Enhanced Services, Inc. ("Transcom") to provide support for managing existing products, developing new products, and architecting the platform and systems that support all products.

**Q: Please state your educational background and experience.**

A: I received a Bachelor's of Science in Electrical Engineering degree with an emphasis on Computer and Network Engineering from the University of Texas in Austin, TX in 1998 and a

Master's of Science in Engineering degree with an emphasis on Telecommunications and Information Systems Engineering from the University of Texas in Austin, TX in 2000. My Master's Report (filed and copyrighted in 2000 at the University of Texas in Austin) was entitled "Implementing Telephony Services on Data Networks."

My prior work experience, from most recent (prior to co-founding MarketEcho in 2005, which was acquired by Ameliowave in 2007): From 2003 to 2005 I was the Director of Regional Product Management for T-Systems North America, the North American subsidiary of T-Systems International, the International arm of Deutsche Telekom. I was responsible for managing the existing telecommunications products and developing the new telecommunications products throughout my region, which included most of the Americas. Between 2002 and 2003 I worked for T-Mobile US, the US subsidiary of T-Mobile International, the mobile telephone division of Deutsche Telekom as an Engineer. As part of those responsibilities, I helped develop their Voice over Asynchronous Transfer Mode (VoATM) and Voice over IP (VoIP) platforms for their 2G and 3G networks. From 2001 to 2002 I was President of Athoia Solutions where I did consulting on product management, new product development, and platform/system architecture. Between 2000 to 2001 I was the Director of Technology for Advent Networks, a start-up developing innovative cable modem technology, for which my team and I were awarded two US and International patents. Prior to that in 2000 I was a Senior Project Manager for Newbridge Networks (prior to and during their acquisition by Alcatel) supporting SBC in the evaluation and ultimate selection of Newbridge's latest ATM switch for use in the core of SBC's Project Pronto. From 1998 to 2000 I was the Senior Product Manager at Broadwing Communications (formerly IXC Communications and now part of Level 3 Communications)

where I was responsible for all Voice over Anything (VoX) product management and development.

**Q: Are you an attorney?**

A: No.

**Q: Do you have personal knowledge of the facts you will relate?**

A: Yes.

**Q: On whose behalf are you appearing?**

A: I am supplying testimony concerning Transcom Enhanced Services, Inc. ("Transcom"), which is a business end user customer that purchases wireless-based telephone exchange service from Halo Wireless, Inc. ("Halo").

**Q: Are you the same Robert Johnson who has testified before other state Public Service Commissions ("PSCs") on behalf of Transcom?**

A: Yes, the same issues in dispute in Case No. TC-2012-0331 (the "Blocking Proceeding") and Case No. IC-2012-0035 (the "ICA Rejection Proceeding" and collectively with the Blocking Proceeding, the "MOPSC Proceedings") are also in dispute before multiple other state PSCs. I have appeared before the PSCs of Georgia, South Carolina, Wisconsin, and Tennessee in their proceedings and I have prepared written testimony that was filed in those same proceedings.

**Q: What is the purpose of this Testimony?**

A: I will respond to the positions taken by the opposing parties (the "Opposing Parties") in their respective pleadings filed in the MOPSC Proceedings. I will also provide additional testimony relevant to the facts in this case that is intended to inform the Commission and assist it in ruling on the matters before it in the MO PSC Proceedings.

**Q: Have you read the Pleadings filed in the MOPSC Proceedings?**

A: Yes.

**Q: Did you come to any general conclusions about the positions taken by the Opposing Parties in the MOPSC Proceedings and the relief they request?**

A: Yes. Wading through and casting aside all of the unsubstantiated aspersions, innuendo, hyperbole, and other immaterial allegations they included in their various pleadings, I was surprised to discover that the Opposing Parties, Halo, and Transcom agree on many of the underlying, basic facts in this case. The problem the Opposing Parties faced is that the basic facts in this case do not fit their preordained conclusions, so they simply cast aside these "inconvenient truths" and instead apply inferences and conclusions supported by their "judgment" and alleged "industry practices" to replace the basic facts. Thus, the purpose of my testimony will be to help the Commission see through the baseless allegations and faulty rhetoric set forth by the the Opposing Parties and get back to the actual facts of this case and, further, where the Opposing Parties has cast aside those actual facts and replaced them with their "judgment" and "industry standards."

.**Q: What are the basic facts that you found in the respective pleadings of the Opposing Parties on which you believe they agree with Halo and Transcom?**

A: Although they are deeply buried after a reading, it becomes obvious that they agree to the following basic facts:

1. Transcom's enhanced services change the content of the communications it receives from its customers.

2. The Federal Act makes it clear that providers of Information Services or Enhanced Services ("ESPs") are not Telecommunications Carriers and are, instead, End Users of Telecommunications Services.
3. The FCC's view of the telecommunications world is divided into two camps: the Telecommunications Carriers that provide Telecommunications Services and the End Users who consume them.
4. Under the FCC's view, End Users use Customer Premise Equipment (or CPE) to "originate" Telecommunications to Telecommunications Carriers and Telecommunications Carriers "terminate" Telecommunications to End Users' CPE.
5. Transcom's wireless transmitting and receiving facilities are CPE.

**Q: What about the basic facts that they disregard, the inconvenient truths that don't support their preordained conclusions?**

A: Since the basic facts do not support their preordained conclusions, the Opposing Parties simply ignore the following inconvenient truths that necessarily result from the basic facts:

1. Because Transcom is not a Common Carrier and its enhanced services change the content of the communications it receives from its customers, those communications ***cannot*** be Telecommunications, those enhanced services ***cannot*** be Telecommunications Services, and Transcom ***cannot*** be a Telecommunications Carrier.
2. Further, Transcom was declared an ESP in four separate Federal court rulings, some of which were the result of actions brought by AT&T and AT&T is therefore bound by those decisions.

3. Because Transcom is an ESP and not a Telecommunications Carrier, under the FCC's view, it ***must*** be an End User that consumes Telecommunications Services provided by Halo.

4. Therefore, Transcom ***originates*** its traffic ***wirelessly*** to Halo using its CPE just like any other End User.

5. Therefore, Halo ***cannot*** be in breach of the following clause by sending Transcom's traffic to AT&T under the ICA:

> "Whereas, the Parties have agreed that this Agreement will apply only to (1) traffic that originates on AT&T's network or is transited through AT&T's network and is routed to Carrier's wireless network for wireless termination by Carrier; and (2) traffic that originates through wireless transmitting and receiving facilities before Carrier delivers traffic to AT&T for termination by AT&T or for transit to another network."

**Q: How do the Opposing Parties deal with these inconvenient truths?**

A: They simply discard them, and in their place they provide invented "facts" that support their preordained positions, but otherwise are utterly unsupportable, such as:

1. They insinuate, erroneously, that Transcom's website represents that Transcom is a Telecommunications Carrier providing Telecommunications Services.

2. They argue, without foundation, that because Transcom has no direct relationship to the "calling party," Transcom cannot be providing an Enhanced Service.

3. They claim, incorrectly, that the FCC has declared Transcom's traffic to be "landline" traffic and therefore not wirelessly-originated for any and all purposes, in contrast with just for the purpose of the application of the "intraMTA rule."

4. They argue, illogically, that this Commission should ignore Federal court rulings that Transcom is an ESP in favor of the Tennessee Regulatory Authority ("TRA") ruling that

Transcom is not an ESP simply because the TRA ruling is newer, instead of holding the Federal rulings in the same or higher dignity.

5. They argue, without support, that Transcom's change of content is not ***enough*** of a change of content to convert a Telecommunications Service that Transcom did not offer in the first place into an Enhanced Service.
6. They argue, incorrectly, that Transcom's technologies are ubiquitous in the industry, but offer no reasoning as to why that prevents them from being used by Transcom in the offering of its enhanced services.
7. They suggest, uncompellingly, that if Transcom is not an ESP then it must be a Telecommunications Carrier.

I will address each of these invented "facts" in my testimony that follows.

**TRANSCOM'S ENHANCED SERVICE PLATFORM**

**Q: Before you address these invented "facts," can you first please explain how Transcom's Enhanced Service Platform works?**

A: Yes. First, Transcom's customers enter into an individually-negotiated agreement and then connect to the enhanced service platform. Once connected, the customer must signal over that connection to initiate an enhanced service session. After the enhanced service platform has set up an enhanced service session, the customer can send traffic to that session to be enhanced.

**Q: What kind of customers does Transcom serve?**

A: Transcom serves a host of different kinds of companies. We have cable company customers, wireless provider customers, and other "VoIP" provider customers.

**Q: Does Transcom serve any "ultimate" consumers?**

A: No. Our service is "wholesale" in nature. Our customers, or perhaps even customers of our customers, are the ones that provide retail service to the ultimate consumer.

**Q: It has been contended that the regulatory classification of Transcom's service must be determined based on what the ultimate consumer perceives, receives or does as part of the ultimate consumers use of the telephony client they are using. Do you agree?**

A: Absolutely not. Transcom does not deal with ultimate consumers and does not provide any service to them. Transcom has no relationship with their distant third parties at all. Transcom's product is sold to Transcom's direct customers and used by Transcom's direct customers. Our regulatory classification must be determined based on what it is we sell to our customers.

**Q: Why is this important?**

A: Assume Transcom made tires, and sold them on a wholesale market to select "middlemen" that then marketed Transcom's tires – and those of other tire makers – to automobile companies. The automobile companies sell finished cars to car dealers throughout the country. The car dealers then sell the cars to ultimate consumers. Assume further that tire makers in Transcom's market are wholly unregulated in terms of the ability to enter the market or in terms of the price to be charged. Finally, assume that car dealers are heavily regulated in that they cannot enter the market without permission by a state agency and the prices they charge to consumers are set by that agency.

Transcom would be a tire maker supplying only one of many inputs ultimately used to create the car that is sold to the car dealer and then to ultimate consumers. But if the test the ILECs try to use were applied, Transcom would be deemed to be a *car dealer* and somehow

required to seek the state agency's permission to sell tires to the car manufacturer and also somehow subject to the state agencies price-setting power.

Transcom is not a car dealer or a carrier. Transcom does not sell cars or phone calls to ultimate consumers. Transcom's product classification is and must be determined based on what Transcom provides to its direct customers, and not based on what is ultimately sold to consumers merely because Transcom's product is one of many different inputs used to create the retail product.

**Q: Are the definitions of "telecommunications," "telecommunications service," "enhanced service," and "information service" consistent with your analogy to tires and cars?**

A: They are. All of the definitions directly speak to what it is that *Transcom* sells to *its customer* and the manufacturing process Transcom uses to create the product sold to *Transcom's customer*. I challenge anyone to read the definition of "enhanced service" at 47 C.F.R. § 64.702(a)[1] or the definition of "information service" in § 153(20)[2] and credibly conclude that Transcom's status is based on anything other than what Transcom's direct subscriber receives, and what the system does with the information Transcom's subscriber provides to Transcom. Similarly, the definition of "telecommunications" in § 153(43)[3] turns on what is done with the information and content supplied by Transcom's user. It defies logic to say that Transcom's

[1] (a) For the purpose of this subpart, the term enhanced service shall refer to services, offered over common carrier transmission facilities used in interstate communications, which employ computer processing applications that act on the format, content, code, protocol or similar aspects of the subscriber's transmitted information; provide the subscriber additional, different, or restructured information; or involve subscriber interaction with stored information. Enhanced services are not regulated under title II of the Act.

[2] The term "information service" means the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications, and includes electronic publishing, but does not include any use of any such capability for the management, control, or operation of a telecommunications system or the management of a telecommunications service.

[3] The term "telecommunications" means the transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received.

status is based on what others may do or receive when Transcom has no relationship with them. The only way one could say this is all driven by what the ultimate consumer does or receives is if you conclude that one can be an ESP only if you are providing a retail service, and an entity that provides wholesale services cannot be an ESP as a matter of law.

**Q: How do Transcom's customers connect to the enhanced service platform?**

A: Customers can connect to the enhanced service platform either directly using an IP or TDM interface or indirectly over a public IP-based network, such as the Internet, which uses an IP interface. Transcom does not support indirect connections over a public TDM-based network, such as the Public Switched Telephone Network (PSTN). Transcom builds these connections once, when the customer is first established with Transcom, and they remain in place for as long as the customer remains with Transcom.

**Q: How do Transcom's customers signal over that connection to access their enhanced service?**

A: Each time a customer wants to send traffic to Transcom to be enhanced, they must first signal either an IP session or a TDM call over their connection to Transcom's enhanced service platform.

**Q: Does a customer's connection determine the nature of their signaling?**

A: Yes. If the customer has an IP connection (either direct or indirect), then the signaling will be for an IP session. If the customer has a TDM connection, then the signaling will be for a TDM call.

**Q: What does Transcom's enhanced service platform do with signaling it receives from a customer?**

A: Transcom's enhanced service platform extracts the explicit signaling parameters from the IP or TDM signaling and sends that to the policy engine where it's combined with the implicit customer parameters, including the traffic-handling policy. The policy engine uses the traffic-handling policy and the explicit and implicit parameters to determine whether or not to initiate an enhanced service session to handle the traffic.

If the policy engine determines that the traffic is authorized, then it establishes an enhanced service session to handle the traffic, adds the customer-initiated IP session or TDM call as a "leg" onto the enhanced service session, and signals back over that leg to the customer that the enhanced service session is in progress.

If the policy engine determines that the traffic is not authorized, then the enhanced service platform discards the parameters and it may or may not signal back to the customer that the effort to initiate an enhanced service session has failed. If the platform does signal back to the customer it will likely indicate why the effort failed.

**Q: In what cases might the traffic not be authorized?**

A: The most obvious case is traffic from a source other than a Transcom customer attempting to use the connection, but there are many other reasons why Transcom would not authorize the traffic. Transcom routinely blocks customer traffic based on the number of attempts if they exceed the contracted amount of simultaneous sessions.[4]

[4] This is not to say that once a call is allowed to enter our platform we will "block" creation of an egress leg to a particular number merely because of the usurious rate the terminating carrier may demand. If we can create a route, we will. Our customer will, however, pay us for the higher cost we incur.

**Q: What is an "enhanced service session" as you used the term?**

A: An enhanced service session is a temporary allocation of computing resources, such as processor, memory, and storage, also known as the "hardware," from the pool of computing resources run by the enhanced service platform that runs a proprietary set of algorithms to enhance the traffic, also known as the "software."

**Q: What is a "leg" as you used the term?**

A: The enhanced service session by itself is just hardware and software, it has nothing to enhance, so it needs pathways to send and receive traffic, which are its "legs." Each leg can be either an IP session or a TDM call. The first leg is the IP session or TDM call signaled by the customer to initiate the enhanced service session, which we call the ingress leg.

If the enhanced service session had only the ingress leg, then the traffic received from the customer could only be sent back to the customer after being enhanced by the enhanced service platform, so in all cases the enhanced service platform signals a second leg to one of Transcom's vendors, which we call an egress leg. There can be more than one egress leg in the enhanced service session. The traffic-handling policy determines how many egress legs are required for the enhanced service session.

**Q: You mentioned that there may be more than one additional egress leg. Is that common?**

A: It is not rare and it is increasing. There are many reasons why there would be more than one egress leg, such as employing "simultaneous ring" to signal multiple edge devices (for example a legacy PSTN telephone, a cell phone, or a Skype or GoogleVoice number).

**Q: How does the enhanced service platform add egress legs?**

A: The policy engine utilizes the traffic-handling policy to determine how many egress legs are required for the enhanced service session, then passes that information to the routing engine to determine which vendors could best serve the egress leg. Once the vendor (or vendors) have been identified, the enhanced service platform originates a further communication by signaling an IP session or TDM call to the vendor for each egress leg. If the signaling fails for any reason, the enhanced service platform may attempt another vendor for each leg that failed, within the parameters determined in the initial step of the process.

**Q: What is a "vendor" as you used the term?**

A: Transcom's vendors provide routes for the enhanced service platform to create egress legs for the enhanced service session.

**Q: How do vendors connect to the enhanced service platform?**

A: Transcom's vendors are connected to the enhanced service platform just like its customers are connected, either directly using an IP or TDM interface or indirectly over a public IP-based network, such as the Internet, which uses an IP interface. Transcom does not support indirect connections over a public TDM-based network, such as the PSTN. Transcom builds these connections once, when the vendor is first established with Transcom, and they remain in place for as long as the vendor remains with Transcom.

**Q: Does a vendor's connection determine the nature of their signaling?**

A: Yes. If the vendor has an IP connection (either direct or indirect), then the signaling will be for an IP session. If the vendor has a TDM connection, then the signaling will be for a TDM call.

**Q: Can an enhanced service session have both IP sessions and TDM calls as legs?**

A: Yes. The type of each leg is determined by the connection to the customer or vendor, but each leg is terminated in the enhanced service session on the enhanced service platform so a combination of IP sessions and TDM calls is not only possible, but just as likely as an enhanced service session consisting exclusively of IP sessions or TDM calls.

**Q: What happens after all the necessary egress leg routes are established?**

A: The enhanced service platform joins them to the enhanced service session. Then the platform signals back to the customer and vendors that the enhanced service session is complete and available to use and traffic can flow on the legs and into the enhanced service session.

**Q: What do you mean by "traffic"?**

A: The traffic is the information received by the enhanced service platform from each leg of the enhanced service session. Each leg can (and typically does) send information into the enhanced service session to be enhanced. For example, if the leg is a TDM call terminating on a voice telephony system, such as a legacy PSTN telephone, that telephone is constantly capturing acoustical audio information, or sounds, while the call is up. Those sounds are the information sent by that voice telephony system on that leg to the enhanced service session.

Those sounds are not just "words" or "voice," but all sounds in the area where the voice telephony system is capturing, such as a door squeaking or a vacuum cleaner running in the background. This is all part of "the content of the information" that is "sent." Indeed, even "silence" supplied by the customer when he or she has chosen to not make any noise can be content and have meaning in many contexts – as many married individuals will attest.

**Q: What does Transcom do with the information flowing in the enhanced service session?**

A: The enhanced service session collects the information from each leg and utilizes a specific set of unique, proprietary algorithms to enhance the information that, in the process, also changes the content of the information. Many of these algorithms belong to broad classes of algorithms that are common in VoIP telephony systems, such as Voice Activity Detection ("VAD"),[5] and Comfort Noise Generation ("CNG").[6] However, while those VoIP telephony systems use these algorithms to squeeze the information down into a smaller "pipe" – repeating the mistakes made by AT&T in 1932. Transcom's proprietary algorithms turn that model on its ear putting new and better information into the same sized "pipe" as the original information would have needed.

The precise handling is determined by the customer-specific traffic-handling policy, but generally speaking the platform uses VAD to identify the "voice" information within the information received on each leg of the enhanced service session. It then isolates the voice information and discards the non-voice information such as background noise and silence that was received. The platform analyzes the voice information in order to make a recreation of the original captured audio before the filtering and other detrimental effects were applied to it. By combing the VAD analysis with CNG during periods when VAD does not identify voice activity, based on parameters VAD determines from the information flowing in the session, the enhanced service platform creates new information with new content to send out on the other legs of the enhanced service session.

[5] For an explanation and analysis of VAD see M.Y. Appiah, M. Sasikath, R. Makrickaite, M. Gusaite, "Robust Voice Activity Detection and Noise Reduction Mechanism" (PDF), Institute of Electronics Systems, Aalborg University (2005), available at http://kom.aau.dk/~myap04/pjts/final_report_8th.pdf.

[6] http://en.wikipedia.org/wiki/Comfort_noise. Wikipedia® Text available under GNU Free Documentation License.

The "voice" information is enhanced in several ways. The audio level is increased in relation to other sounds and made clearer and more understandable than was the case with the original. Thus, Transcom's platform actively removes information that was supplied by the customer, adds information that was not supplied by the customer and changes some of the information that was supplied. All of this new content contains a kind of recreation of the voice information using proprietary algorithms and some new noise to play between the gaps in the voice information.

**Q: What does Transcom do with non-voice information contained in the content it receives on a leg of the enhanced service session?**

A: During the content processing, in addition to looking for voice information, the enhanced service platform is also looking for certain non-voice information that might be contained in the content. The primary forms of non-voice information the enhanced service platform is set to identify for special treatment are: FAX signals, modem signals, and Dual-Tone Multi-Frequency ("DTMF") tones.

When the enhanced service platform identifies FAX and modem signals, the platform applies another policy and uses modified algorithms for the extraction of the non-voice information and the generation of new content containing the extracted non-voice information. Transcom's platform, unlike some of its competitors' systems, does support FAX.

When the enhanced service platform identifies DTMF tones in the content, it applies algorithms similar to those it applies to fax and modem signals with the additional benefit that the platform can use DTMF tones as triggers to other actions.

**Q: How do enhanced service sessions end?**

A: The enhanced service platform uses the explicit and implicit parameters mentioned previously to determine when to end the enhanced service session. Typically the platform will receive new explicit signaling parameters on one or more of the legs of the enhanced service session indicating that that leg is being torn down, which will trigger the traffic-handling policy to determine if the enhanced service session should also be torn down. If so, it will tear down each of the legs, write an enhanced service session detail record, and end the enhanced service session.

**Q: Your answers rely on a very technical understanding of Transcom's service. Is there another way of describing this, by way of analogy, that would be more accessible to folks less technical than yourself?**

A: Yes. Let's use shipping produce as an analogy for the "end-to-end" model favored by the ILECs. When produce is shipped from the farm to the store, it is boxed up at the farm and shipped to an intermediate facility, where it is likely loaded with other produce from other farms and shipped to another intermediate facility, and so on. The only action taken at the intermediate facility is to open and inspect and repackage the produce. This process is an inherently lossy one, where produce gets bumped and bruised, ripens and sometimes rots, and is occasionally destroyed by bugs or other pestilence (including hungry produce handlers). The goal is to get the produce from farm to store with as little loss as possible.

Now we add Transcom into the process as a new kind of intermediate facility, one that does more than just open the box of produce and inspect it. Using a box of bananas as an example, Transcom would analyze the bananas, looking through the damage done to them already, to determine what bananas the farm *intended* to ship. Since the bananas are already

damaged and the analysis damages them further, Transcom throws the original box of bananas away and uses the information from the analysis to create an entirely new box of bananas that better represents the intention of the farmer than the damaged original box. It would have the same number of bananas in it, each the same size as before, but they would be entirely new bananas without the defects introduced by the shipping process thus far.

Of course it's tough to imagine Transcom creating entirely new bananas because that's not a tool that science has given us, but science has given us the tools to analyze old digital content and create new digital content based on that analysis, which is exactly what Transcom does to the content it receives on the legs of an enhanced session. Transcom opens and inspects each "box of bananas" it receives on the ingress leg of an enhanced session. Transcom then creates an entirely new box with new produce – indeed improved produce that does not have any defects that existed on ingress – on the egress leg(s) for delivery to the vendor or vendors.

**Q: Can the enhanced service session participants tell the difference?**

A: Any contention that the enhanced service session participants that are on the PSTN cannot observe the difference would be incorrect. I would analogize the effect to what happens when an HD capable video receiver upconverts NTSC (analog) TV signals to High Definition TV (HDTV) for display on a new TV. The result is an improvement from the original and the participants would clearly notice the difference *if they could compare it to the original*.

**Q: The Opposing Parties contend that Transcom's change of content is not sufficient to turn a telecommunications service into an enhanced service, and so your product is "still" a telecommunications service. What is your response?**

A: They have it exactly backwards. We are not trying to turn a telecommunications service into an enhanced service. There was never a Transcom supplied "telecommunications service" to

begin with. Transcom never supplied "telecommunications" at all, because there is a change of content. Transcom is not a carrier so it cannot be a telecommunications service anyway. The ILECs are trying to turn Transcom's enhanced/information service into a telecommunications service by simply denying reality. They are deeming, not finding facts.

**NATURE OF TRANSCOM'S TRAFFIC**

**Q: Does customer's connection determine the nature of the traffic?**

A: No. Unlike signaling, the nature of which is determined by the connection the customer is using, the nature of the customer's traffic is not determined by the connection they are using. While it is more likely that traffic that was captured by a VoIP telephony system and transmitted over an IP-based information service, or "IP-originated" traffic, will be delivered to Transcom over an IP connection, mere use of an IP connection does not guarantee that the traffic was IP-originated traffic. Conversely, use of a TDM connection does not preclude that the delivered over it is not IP-originated traffic.

**Q: How does Transcom know what traffic is IP-originated traffic?**

A: Transcom only knows if traffic is IP-originated traffic if the customer certifies that the traffic is IP-originated traffic. If all of a customer's traffic is IP-originated traffic, then the customer can certify that in writing to Transcom and Transcom will treat all of the traffic delivered to the platform by the customer over that connection as IP-originated traffic, regardless of the type of connection the customer uses. If the customer has some IP-originated traffic and some traffic that is not IP-originated traffic, they can separate their traffic and deliver it over separate connections, only one of which they would certify as carrying IP-originated traffic. In many cases, however, the customer does not certify their IP-originated traffic or separate it from

their traffic that is not IP-originated traffic, leaving IP-originated traffic to be treated as if it were not IP-originated traffic.

**Q: Is Transcom's service "telephone toll service"?**

A: That is largely a legal question, but based on the fact that Transcom's enhanced voice service is an enhanced service, I am advised by counsel that is not "telephone toll service" because one must be providing telecommunications as a carrier in order to be supplying that product.

**TRANSCOM'S ESP STATUS**

**Q: Is Transcom a telecommunications carrier?**

A: That is largely a legal question. But I am informed by counsel that the law requires consideration of certain facts, which I will supply. Counsel advises that the Telecommunications Act has a definition of "telecommunications carrier."[7] Counsel states that the statutory definition requires two things. The provider must (1) be a "common carrier"[8] and (2) offer telecommunications"[9] to the public for a fee. Counsel explains that it is the attribute of an entity being a common carrier that turns "telecommunications" into a "telecommunications service."[10] I

[7]*See* 47 U.S.C. § 153 (44) TELECOMMUNICATIONS CARRIER.--The term "telecommunications carrier" means any provider of telecommunications services, except that such term does not include aggregators of telecommunications services (as defined in section 226). A telecommunications carrier shall be treated as a common carrier under this Act only to the extent that it is engaged in providing telecommunications services, except that the Commission shall determine whether the provision of fixed and mobile satellite service shall be treated as common carriage.

[8]*See* 47 U.S.C. § 153 (10) COMMON CARRIER.--The term "common carrier" or "carrier" means any person engaged as a common carrier for hire, in interstate or foreign communication by wire or radio or in interstate or foreign radio transmission of energy, except where reference is made to common carriers not subject to this Act; but a person engaged in radio broadcasting shall not, insofar as such person is so engaged, be deemed a common carrier.

[9]*See* 47 U.S.C. § 153(43) TELECOMMUNICATIONS.--The term "telecommunications" means the transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received.

[10]*See* 47 U.S.C. § 153(46) TELECOMMUNICATIONS SERVICE.--The term "telecommunications service" means the offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available directly to the public, regardless of the facilities used.

am also informed that some ILECs have asserted that Transcom is a specific species of carrier, *i.e.*, an "interexchange carrier" ("IXC")[11] that provides "telephone toll service."[12] I further understand that one issue in this case is whether "exchange access"[13] charges are due for Transcom's traffic. I am told that this must be the claim because only IXCs are subject to "exchange access service" charges, and access applies only with regard to their "telephone toll service," under 47 C.F.R. § 69.5(b), whereas end user traffic associated with a telephone exchange service is not subject to switched exchange access charges.

Counsel advises that the courts have fashioned the following two-part test for common carriage:

> The primary *sine qua non* of common carrier status is a quasi-public character, which arises out of the undertaking to carry for all people indifferently. This does not mean that the particular services offered must practically be available to the entire public; a specialized carrier whose service is of possible use to only a fraction of the population may nonetheless be a common carrier if he *holds himself out to serve indifferently all potential users.*
> * * *
> A second prerequisite to common carrier status [is] ... that the system be such that customers transmit intelligence of their own design and choosing.[14]

Counsel states that these are *conjunctive* requirements; both must be met before common carrier status is established. I am not a lawyer, but I am aware of the facts that will be used to perform the legal analysis stated above.

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[11] "Interexchange carrier" is not defined in the statute. Section 254(g) speaks to "providers of interexchange telecommunications services" and § 153 has a definition of "telephone toll service." The FCC has equated "IXC" with "provider of interexchange telecommunications service." *See* Report and Order, *Policy and Rules Concerning the Interstate, Interexchange Marketplace Implementation of Section 254(g) of the Communications Act of 1934, as amended*, CC Docket No. 96-61, FCC 96-331, 11 FCC Rcd 9564 (rel. Aug. 1996).

[12] *See* 47 U.S.C. § 153 (48) TELEPHONE TOLL SERVICE.--The term "telephone toll service" means telephone service between stations in different exchange areas for which there is made a separate charge not included in contracts with subscribers for exchange service.

[13] (16) EXCHANGE ACCESS.--The term "exchange access" means the offering of access to telephone exchange services or facilities for the purpose of the origination or termination of telephone toll services.

[14] *National Ass'n of Regulatory Util. Comm'rs v. FCC*, 174 U.S. App. D.C. 374, 533 F.2d 601, 608-09 (D.C. Cir. 1976) ("*NARUC II*")(internal quotes and footnotes omitted) (emphasis added).

**Q: What are the facts that plug into the above-stated legal analysis?**

1. Transcom provides wholesale services to other entities that provide service to others such that Transcom has no sales "at retail."

2. Transcom purchases services from third parties for the transport of information, and then networks its enhanced service platform components on top of the transport that it obtains from others to provide its services.

3. Transcom is not registered as a carrier or interexchange carrier with the FCC and does not access the PSTN via exchange access services as I understand is required for carriers or interexchange carriers. Instead, Transcom purchases end user services (telephone exchange services) from its common carrier vendors.

4. Transcom does not have any "carrier codes" such as a CIC or OCN.

5. Transcom does not hold itself out as a carrier or interexchange carrier, and has not represented that is it a carrier. To the contrary, Transcom has consistently denied carrier status and aggressively asserts end user status.

6. Transcom does not undertake to provide service to all potential customers indifferently. On the contrary, Transcom negotiates private contracts on a case-by-case basis, with rates and other terms varying considerably among its customers.

7. Transcom's rates are not nationwide averaged and differ between localities and within and between states.

8. Transcom's system *intentionally* and *pervasively* changes the content of the information supplied by Transcom's customer and any other persons engaged in any call session. Transcom often also performs a net change of form. Transcom therefore does not offer or provide services for the 'transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received.' I will further address this below.

9. Transcom has obtained multiple rulings from a court of competent jurisdiction finding that (a) Transcom is an enhanced service provider ("ESP"), (b) Transcom is not obligated to pay exchange access charges to anyone, but rather is an end user that pays end user charges, and (c) the service provided by Transcom is different from the service addressed by the FCC in the AT&T Order,[15] and therefore the AT&T Order is not applicable to Transcom.

[15] Order, *In The Matter Of Petition For Declaratory Ruling That AT&T's Phone-to-Phone IP Telephony Services Are Exempt From Access Charges*, FCC 04-97, 19 FCC Rcd 7457 (rel. April 21, 2004) (the "*AT&T Order*").

**Q: You say that Transcom does not provide telecommunications or telecommunications service. Given that Transcom is a communications intensive business, how does it obtain the telecommunications service that it needs to perform its enhanced/information service functions?**

A: Transcom buys telecommunications service from carriers, usually from exchange carriers like a CLEC or – as in this case – from a CMRS provider. Specifically, Transcom purchases telephone exchange service as an end user.

**Q: Does Transcom hold itself out as an Enhanced Service Provider or ESP?**

A: Yes, Transcom holds itself out as an ESP.

**Q: What is Transcom's basis for this?**

A: Transcom has purposefully arranged its operations to meet the test for ESP status and to not meet the test of being a common carrier or provider of telecommunications service. Transcom has defended that status at all times, including in litigation. Indeed, there are four court rulings, which I discuss below, saying that Transcom is an ESP and is not a carrier. Based on advice of counsel, my understanding of these decisions is that they establish Transcom as an ESP, and that, as such, Transcom is an "end user" purchaser of Halo's common carrier telecommunication services. Furthermore, my understanding from these decisions and counsel is that when ESPs purchase services from a common carrier like Halo, access charges are not due on their traffic. Instead, the ESP purchases "telephone exchange service."

**FEDERAL COURT RULINGS**

**Q: You mentioned that there are four Federal court rulings finding that Transcom is an ESP. Can you identify and explain your understanding of those rulings?**

A: In *In re Transcom Enhanced Services, LLC* (the "Hale Opinion"), (Exhibit 1), the court held that Transcom does not provide telecommunications, and is an ESP. The Hale Opinion concluded that "a service that routinely changes either the form or the content of the transmission would fall outside of the definition of 'telecommunications' and therefore would not constitute a 'telecommunications service.'" See Exhibit 1, pg. 6. On the basis that Transcom's operations necessarily result in a change in content and often a net change in form, the Hale Opinion concluded that Transcom is an ESP. The Hale Opinion further posited that Transcom has never held itself out as a common carrier and there is no legal compulsion that Transcom operate or hold out as a common carrier.

Transcom's understanding of the Hale Opinion is that AT&T and SBC contended that Transcom's service was similar to the service addressed by the FCC in the "IP-in-the-Middle" decision. However, Transcom's understanding of the Hale Opinion is that it rejected that argument and held that the service provided by Transcom is "distinguishable from AT&T's specific service in a number of material ways," and it goes on to list some of the distinctions.

Transcom's understanding is that the Hale Opinion went on to hold that Transcom's service "fits squarely within the definitions of 'enhanced service' and 'information service' . . . and falls outside of the definition of 'telecommunications service' because [Transcom's] system routinely makes non-trivial changes to user-supplied information (content) during the entirety of every communication." Transcom's understanding of the Hale Opinion is that it further held that

Transcom's service "is not a 'telecommunications service' subject to access charges, but rather is an information service and an enhanced service and that Transcom must pay end user charges."

It is my understanding, based on advice of counsel, that the Hale Opinion was later vacated on grounds of mootness, but Judge Hale entered similar findings and rulings in the final Confirmation Order of Transcom's bankruptcy proceedings (Exhibit 2). See paragraph 4. Also, I understand that Judge Hale entered summary judgment in Transcom's favor in an adversary proceeding, and that summary judgment reiterated all of the findings made in the Hale Opinion (Exhibit 3). In addition, I understand that Transcom started its operations by purchasing the assets of a company called DataVon out of DataVon's bankruptcy, and the bankruptcy judge in that matter, Judge Felsenthal, made similar findings about the service provided by DataVon that Transcom was purchasing (Exhibit 4). It is my understanding, based on advice of counsel, that that these rulings are binding on AT&T.

**TRANSCOM AS A CUSTOMER OF HALO**

**Q: Does Transcom buy telecommunications service from Halo?**

A: Yes. Transcom purchases end user telephone exchange service from Halo in numerous locations throughout the country.

**Q: How does Transcom connect to Halo?**

A: Transcom leases wireless equipment that can authenticate on and communicate with Halo's base station in an MTA when proximate thereto.

**Q: Do TDM calls that Transcom originates from its enhanced service platform get set up through the wireless equipment in an MTA?**

A: Yes. When the routing engine in the enhanced service platform determines that Halo is the best vendor to establish an egress leg for the enhanced service session, the platform originates a TDM call using Transcom's wireless Customer Premises Equipment ("CPE") in the Metropolitan Trading Area ("MTA") that contains the rate center with which the desired terminating number is associated.

**Q: So in every case where AT&T receives a call from Halo that was originated by Transcom it will have originated from wireless CPE in the same MTA?**

A: Yes.

**Q: Does Transcom receive Halo-assigned numbers?**

A: Yes. Halo has assigned Transcom at least one number per LATA. It serves as the billing telephone number.

**Q: Do calls addressed to a Transcom number go to Transcom?**

A: Yes, these are active numbers. If a user on the PSTN makes a call to that number it comes to Transcom and is answered.

**Q: What happens today with such calls?**

A: Transcom has an outgoing message indicating that the number is presently an administrative number and is not monitored.

**Q: Does Transcom plan to more actively use this incoming capability in the future?**

A: Yes. Transcom is actively developing new products that will rely on local dial-in capability. The uncertainty and distraction caused by all of the litigation has delayed its roll-out. When Transcom does deploy these services it will require more than one number per LATA.

**Q: You have said several times that Transcom "originates" the call using Halo's service. How does Transcom's service originate further communications as opposed to "re-originating" them?**

A: Transcom is an end user. End users use customer premises equipment ("CPE"). End users originate calls using CPE. Calls terminate to end user premises using CPE. End user CPE can also perform routing functions associated with origination or termination. *See* § 153(14)[16] End user CPE is an end-point. The equipment that Transcom leases to connect to Halo are registered Part 90 stations designed for end user operation while connected to a Halo-operated base station. This is CPE, in contrast to "telecommunications equipment"[17] which is what carriers use.

When AT&T and TDS say that there can be only one "origination" and it is determined on using the "end-to-end" concept, they seem to be implying that if an entity is "in-the-middle" it must be a carrier and cannot be an end user. I will let the lawyers debate this from a legal perspective, but in my experience that is simply not the case from an operational and functional viewpoint. ESPs have always been "in-the-middle" if a communication is viewed "end-to-end" and there are multiple legs. Yet ESPs have always been treated as end users, and have always been allowed to purchase telephone exchange service instead of exchange access service. ESPs have always been considered an end-point, for both origination and termination.

[16] (14) CUSTOMER PREMISES EQUIPMENT.--The term "customer premises equipment" means equipment employed on the premises of a person (other than a carrier) to originate, route, or terminate telecommunications.

[17] (45) TELECOMMUNICATIONS EQUIPMENT.--The term "telecommunications equipment" means equipment, other than customer premises equipment, used by a carrier to provide telecommunications services, and includes software integral to such equipment (including upgrades).

**FCC ORDER**

**Q: In their Pleadings, the Opposing Parties claim that, in their USF and ICC Reform Order, that the FCC "rejected" Halo's argument that Transcom's traffic is "originated" to Halo. Do you agree with their reading of the FCC's Order?**

A: No. The Opposing Parties appear to misunderstand or misinterpret ¶1005, which is merely an explanatory paragraph and not part of the FCC's ruling, which is contained, in its entirety, in ¶1006:

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

The Opposing Parties misinterpret the FCC's ruling to mean that Transcom does not originate further communications to Halo, so the traffic Transcom is sending to Halo must be originated somewhere else. However, the FCC's ruling applies only "for purposes of the intraMTA rule" and "for purposes of reciprocal compensation," which are two ways of saying the same thing. This understanding was so important to the FCC's ruling, it's stated ***twice!*** Transcom's position that, as an ESP, it originates a further communication to Halo using its wireless CPE and, thus, that traffic was before the ruling and still is "wireless-originated" for purposes of the contract provision is both consistent with, and supported by the FCC's ruling.

**USE OF CPE**

**Q: Does Transcom use CPE?**

A: Yes. As noted above I have consistently observed that Transcom uses CPE and that end users employ CPE while carriers employ telecommunications equipment. The FCC uses this very distinction in part 7 of its rules. FCC rule 7.3(c) defines CPE: "(c) The term customer premises equipment shall mean equipment employed on the premises of a person (other than a carrier) to originate, route, or terminate telecommunications." As you can see, CPE is used by "persons" "other than a carrier." On the other hand, rule 7.3(j) says that "The term telecommunications equipment shall mean equipment, other than customer premises equipment, used by a carrier to provide telecommunications services, and includes software integral to such equipment (including upgrades)." Rule 7.3(k) defines "telecommunications service" consistent with the Act definition, and clearly can be provided only by a common carrier. I would also direct the Commission's attention to FCC rule 73.900(e) and (r). My understanding is that loops provided by ILECs to ESPs are counted as "end user" business lines for purposes of FCC rule 51.5, and then applied for UNE purposes. So this concept is not limited to "application of the access charge rules."

I continue to believe Transcom is an ESP. But even if Transcom is not an ESP it is still an end user employing CPE to originate communications in the MTA.

**TRANSCOM IS AN END USER AND NOT A CARRIER**

**Q: Please set aside the question of whether Transcom is an ESP. In other words, please assume for a moment that Transcom has not claimed ESP status. Would elimination of the "ESP issue" from the case necessarily mean that AT&T's arguments win the day?**

A: While Transcom continues to insist it is an ESP, resolution of that issue against Transcom would not end the inquiry. Since Transcom is not a Common Carrier it must be an End User. Transcom is merely a communications-intensive business End User. End Users originate communications. End Users are end points, represented by the CPE. End User CPE originates outbound calls and calls going to End Users terminate with the End User's CPE.

**Q: If Transcom could be an End User consumer of telecommunications services, why did Transcom develop an enhanced services platform and why does it offer these enhanced services?**

A: Exclusively for the benefit of its customers.

**Q: What public stance has AT&T taken most recently on this topic?**

A: Interestingly, in Reply Comments to the FCC on the Further Notice of Proposed Rulemaking ("FNRPM") that was part of the Order, AT&T (in response to comments from Google) had this to say:

> An entity is a "telecommunications carrier" only insofar as it is providing "telecommunications services," and the Act affirmatively prohibits the Commission from subjecting any network to common carrier regulation when it is *not* providing those services. 47 U.S.C. § 153(51).

AT&T's argument tracks very well with my testimony that Transcom can only be a "telecommunications carrier" if it provides "telecommunications services," which it does not. Further, if Transcom is not a "common carrier," (which it is not) then "the Act affirmatively

prohibits the Commission from subjecting [it] to common carrier it is not providing those services." It seems Transcom and AT&T are in 100% agreement on this statement.

**Q: Does this conclude your testimony?**

A: Yes.[18]

[18] I reserve the right to make corrections of any errors I may discover by submitting an *erratum*.