Comcast Cable Communications, LLC, v. Entropic Communications, LLC
Case No.: IPR2024-00430
U.S. Patent No. 8,284,690

Patent Owner Demonstrative Slides

June 4, 2025

10:00am Central

Demonstrative Only - Not Evidence

ENTROPIC EXHIBIT 2009
Comcast v. Entropic
IPR2024-00430

Overview of the ’690 Patent

(12) **United States Patent**
Barr

(10) **Patent No.: US 8,284,690 B2**
(45) **Date of Patent: Oct. 9, 2012**

(54) **RECEIVER DETERMINED PROBE**

(75) Inventor: **David Barr**, San Jose, CA (US)

(73) Assignee: **Entropic Communications, Inc.**, San Diego, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 253 days.

(21) Appl. No.: **12/635,649**

(22) Filed: **Dec. 10, 2009**

(65) **Prior Publication Data**

US 2010/0150016 A1 Jun. 17, 2010

Related U.S. Application Data

(60) Provisional application No. 61/122,687, filed on Dec. 15, 2008, provisional application No. 61/179,454, filed on May 19, 2009.

(51) **Int. Cl.**
G06F 11/00 (2006.01)
G06F 15/173 (2006.01)

(52) **U.S. Cl.** **370/252**; 709/224

(58) **Field of Classification Search** ..... None
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

7,124,199 B2 * 10/2006 Miller et al. 709/238
2007/0183383 A1 * 8/2007 Bitran et al. 370/338
2008/0117833 A1 * 5/2008 Borran et al. 370/252

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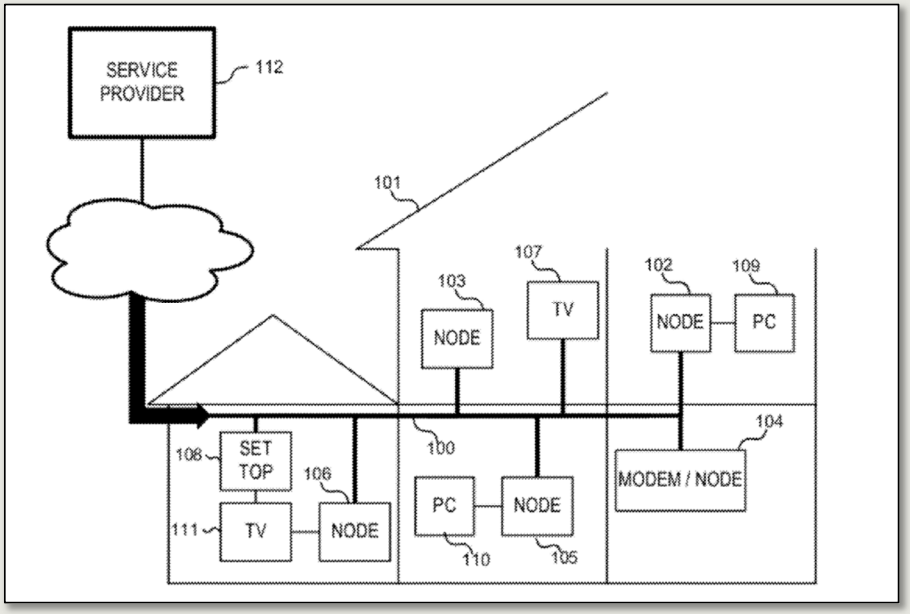
Primary Examiner — Clemence Han
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(57) **ABSTRACT**

According to various embodiments of the disclosed method and apparatus, nodes on a network are programmed to generate a probe transmission in response to a request from the node that will be receiving the probe. The receiving node may generate a probe request that specifies a plurality of parameters, such as a modulation profile for the probe; the payload content of the probe; the number of times to transmit the probe; a number of symbols for the payload of the probe; a preamble type for the probe; a cyclic-prefix length for the payload of the probe; a transmit power for the probe; and a transmit power scaling factor for the payload of the probe.

24 Claims, 6 Drawing Sheets

Ex. 1001, Cover; POR 4-6



Ex. 1001, Fig. 1; POR 4-7

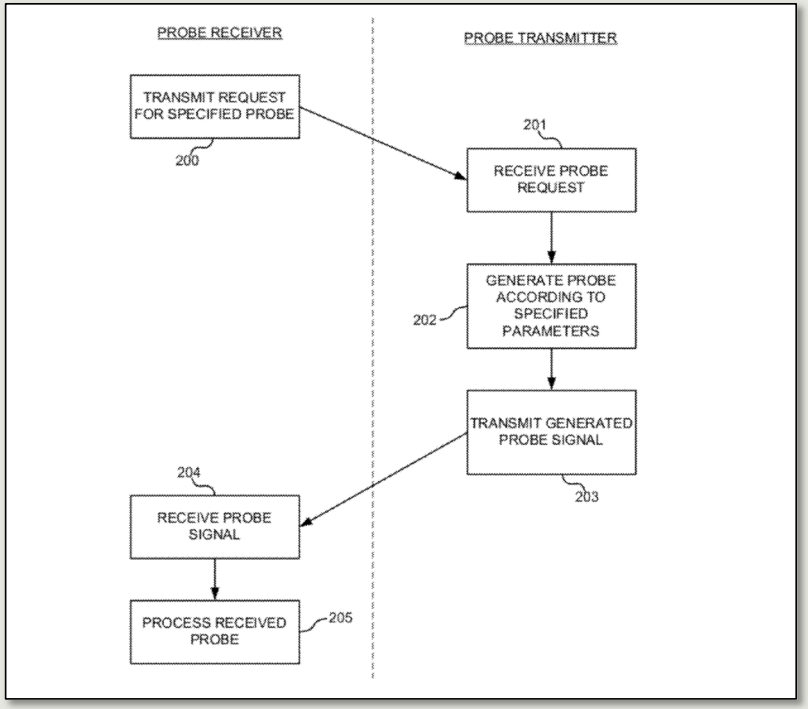
Overview of the ’690 Patent

- The ’690 Patent is directed to improvements in the communication between network nodes, for example in a data-over-cable network. The ’690 Patent improves upon prior art network “probes” by teaching systems and methods for a “receiver determined probe.”

(57) **ABSTRACT**

According to various embodiments of the disclosed method and apparatus, nodes on a network are programmed to generate a probe transmission in response to a request from the node that will be receiving the probe. The receiving node may generate a probe request that specifies a plurality of parameters, such as a modulation profile for the probe; the payload content of the probe; the number of times to transmit the probe; a number of symbols for the payload of the probe; a preamble type for the probe; a cyclic-prefix length for the payload of the probe; a transmit power for the probe; and a transmit power scaling factor for the payload of the probe.

Ex. 1001, Abstract; POR 1



Ex. 1001, Fig. 4; POR 6-7

Overview of the ’690 Patent

1. A method comprising:
a) receiving in a first node, a probe request specifying a first plurality of parameters associated with the generation and transmission of a probe, wherein the first plurality of parameters at least specify content payload of the probe and a second node;
b) determining a second plurality of parameters associated with generation and transmission of the probe;
c) generating the probe in accordance with the first plurality of parameters and the second plurality of parameters, wherein the probe has a form dictated by the first plurality of parameters; and
d) transmitting the probe from the first node to the second node.

Ex. 1001, cl. 1; POR 8

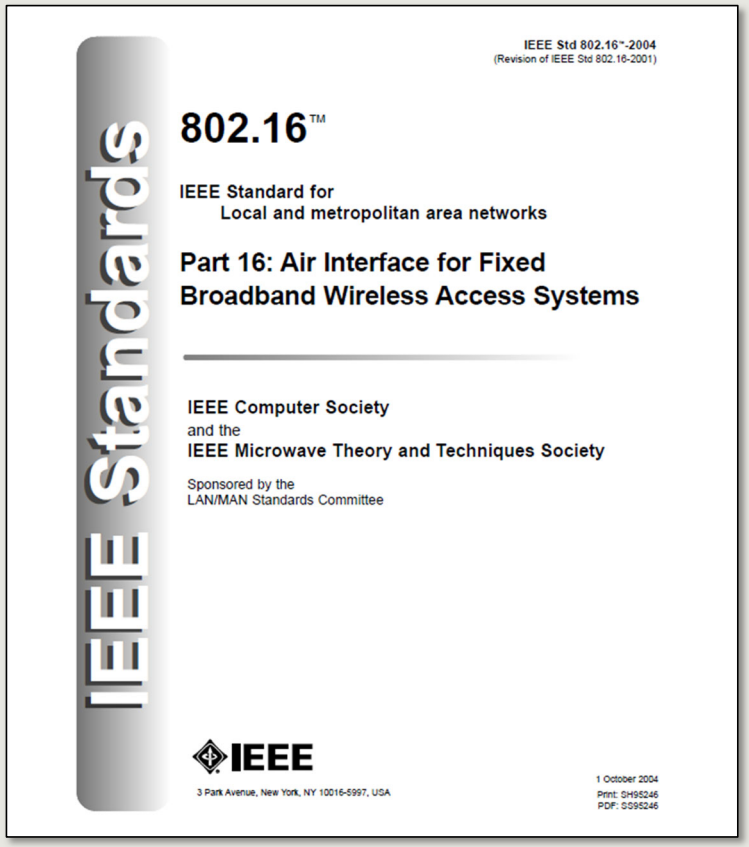
9. A method comprising:
a) a first node transmitting a probe request to a second node, the probe request specifying a first plurality of probe parameters for a physical layer probe, the first plurality of probe parameters comprising a form for the probe including a modulation profile for the probe;
b) the first node receiving the probe from the second node, wherein the probe is generated in accordance with the first plurality of parameters and in accordance with a second plurality of parameters determined by the second node.

Ex. 1001, cl. 9; POR 8

17. A system, comprising:
a) a first node on a communications network, the first node comprising a first processor and a first computer executable program code embodied on a first a computer readable medium, the first computer executable program code configured to transmit a probe request to a second node, on the communications network, the probe request specifying a first plurality of probe parameters for a physical layer probe, wherein the first plurality of probe parameters comprising at least a payload content for the probe and a modulation profile for the probe; and
b) the second node on the communications network, the second node comprising a second processor and a second computer executable program code embodied on a second computer readable medium, the second executable program code configured to:
receive the probe request;
determine a second plurality of parameters associated with generation and transmission of the probe;
generate the probe in accordance with the first plurality of parameters and the second plurality of parameters, wherein the probe has a form dictated by the first plurality of parameters; and
transmit the probe to the first node.

Ex. 1001, cl. 17; POR 8-9

Overview of IEEE-802.16 ("WiMAX") (Grounds A-C)



IEEE Standards

IEEE Std 802.16™-2004
(Revision of IEEE Std 802.16-2001)

802.16™

IEEE Standard for
Local and metropolitan area networks

Part 16: Air Interface for Fixed Broadband Wireless Access Systems

IEEE Computer Society
and the
IEEE Microwave Theory and Techniques Society

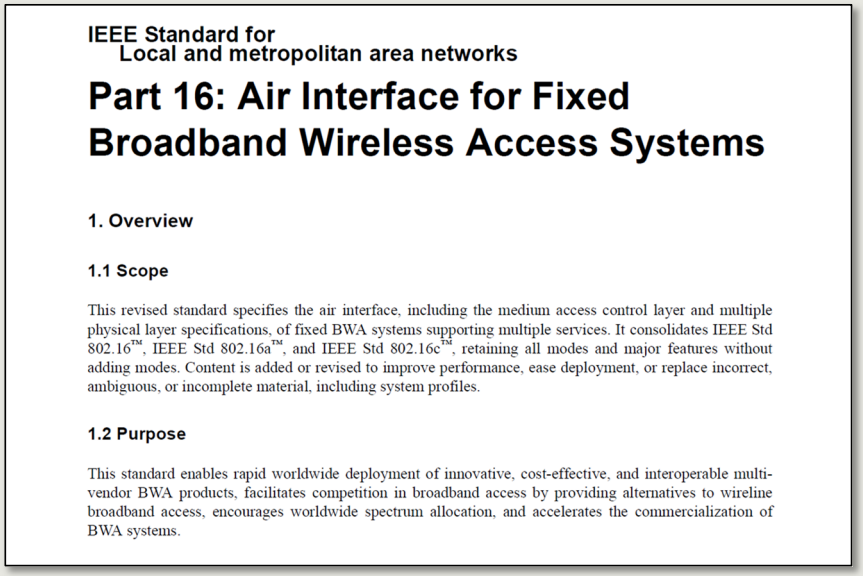
Sponsored by the
LAN/MAN Standards Committee

IEEE

3 Park Avenue, New York, NY 10016-5997, USA

1 October 2004
Print: SH95246
PDF: SS95246

Ex. 1013, Cover; POR 17-18



IEEE Standard for
Local and metropolitan area networks

Part 16: Air Interface for Fixed Broadband Wireless Access Systems

1. Overview

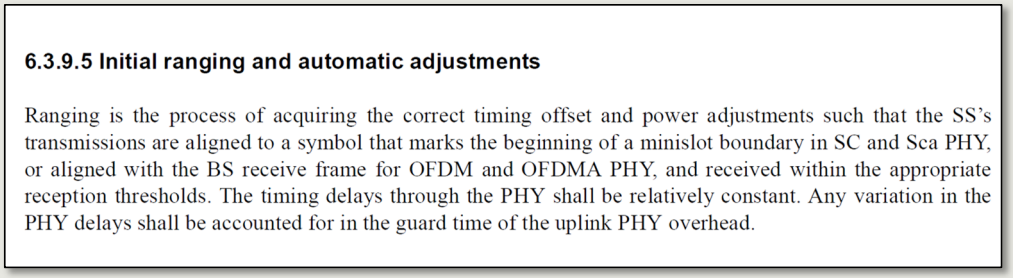
1.1 Scope

This revised standard specifies the air interface, including the medium access control layer and multiple physical layer specifications, of fixed BWA systems supporting multiple services. It consolidates IEEE Std 802.16™, IEEE Std 802.16a™, and IEEE Std 802.16c™, retaining all modes and major features without adding modes. Content is added or revised to improve performance, ease deployment, or replace incorrect, ambiguous, or incomplete material, including system profiles.

1.2 Purpose

This standard enables rapid worldwide deployment of innovative, cost-effective, and interoperable multi-vendor BWA products, facilitates competition in broadband access by providing alternatives to wireline broadband access, encourages worldwide spectrum allocation, and accelerates the commercialization of BWA systems.

Ex. 1013, 1; POR 17-18



6.3.9.5 Initial ranging and automatic adjustments

Ranging is the process of acquiring the correct timing offset and power adjustments such that the SS's transmissions are aligned to a symbol that marks the beginning of a minislot boundary in SC and Sca PHY, or aligned with the BS receive frame for OFDM and OFDMA PHY, and received within the appropriate reception thresholds. The timing delays through the PHY shall be relatively constant. Any variation in the PHY delays shall be accounted for in the guard time of the uplink PHY overhead.

Ex. 1013, 174; POR 17-18

Overview of *Waxman* (Grounds D-I)

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2007/0223402 A1**

Waxman (43) **Pub. Date: Sep. 27, 2007**

(54) **DEVICE, SYSTEM AND METHOD OF EXTENDED-RANGE WIRELESS COMMUNICATION**

(76) Inventor: **Shai Waxman**, Haifa (IL)

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NEW YORK, NY 10036 (US)

(21) Appl. No.: **11/384,362**

(22) Filed: **Mar. 21, 2006**

Publication Classification

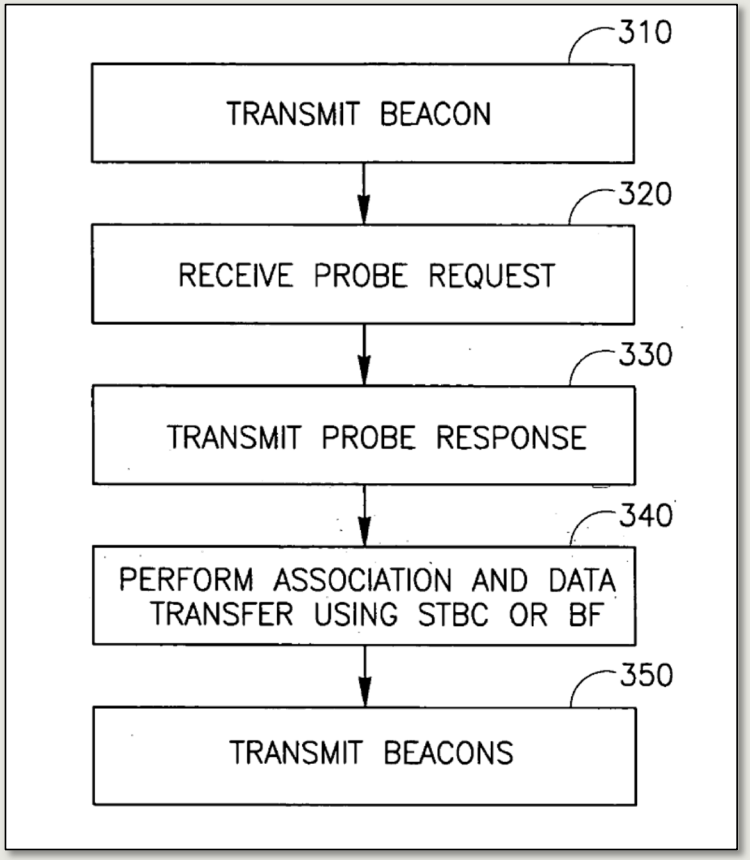
(51) **Int. Cl.**
H04B 7/00 (2006.01)

(52) **U.S. Cl.** **370/277**

(57) **ABSTRACT**

Some embodiments of the invention provide devices, systems and methods of extended-range wireless communication. For example, a method in accordance with an embodiment of the invention includes receiving a probe request including an indication of a requested transmission scheme, and transmitting a data packet using the requested transmission scheme.

Ex. 1007, Cover; POR 32-33



Ex. 1007, Fig. 3; POR 32-33

Overview of DOCSIS-2.0 Ranging, (Grounds J-M)

1 Radio Frequency Interface Specification

1.1 Scope and Purpose

1.1.1 Scope

This document defines the second generation of radio-frequency interface specifications for high-speed data-over-cable systems. They were developed by Cable Television Laboratories (CableLabs) for the benefit of the cable industry, including contributions by operators and vendors from North America, Europe, and other regions.

There are differences in the cable spectrum planning practices adopted for different networks in the world. Therefore two options for physical layer technology are included, which have equal priority and are not required to be inter-operable. One technology option is based on the downstream multi-programme television distribution that is deployed in North America using 6 MHz channelling, and supports upstream transmission in the 5-42 MHz region. The other technology option is based on the corresponding European multi-programme television distribution and supports upstream in the 5-65 MHz region. Both options have the same status, notwithstanding that the document structure does not reflect this equal priority. The first of these options is defined in Sections 4, 6, 7, and Annex G and Annex C.1.1.1, whereas the second is defined by replacing the content of those sections with the content of Annex F. Correspondingly, [ITU-T J.83-B], [NCTA], and [SMS] apply only to the first option, and [EN 300 429] only to the second. Compliance with this document requires compliance with one or other of these implementations, not with both. It is not required that equipment built to one option shall inter-operate with equipment built to the other.

These optional physical-layer technologies allow operators some flexibility within any frequency planning, EMC and safety requirements that are mandated for their area of operation. For example, the 6 MHz downstream-based option defined by Sections 4, 6, and 7 might be deployable within an 8 MHz channel plan. Compliance with frequency planning and EMC requirements is not covered by this specification and remains the operators' responsibility. In this respect, [FCC15], [FCC76], and [EIA-S542] are relevant to North America and [EN 50081-1], [EN 50082-1], [EN 50083-2], [EN 50083-7], and [EN 50083-10] are relevant to the European Community.

The option of Sections 4, 6 and 7 together with Annex G and Annex C.1.1.1 is required to be backwards compatible with an earlier version of that technology [DOCSIS9], whereas the option of Annex F was not included in [DOCSIS9] and therefore is not required to be backwards compatible with [DOCSIS9].

Any reference in this document to the transmission of television in the forward channel that is not consistent with [EN 300 429] is outside the normative scope as only [EN 300 429] is used for digital multi-program TV distribution by cable in European applications.

Requirements for safety are outside the scope of the present document. Safety standards for European applications are published by CENELEC.

Note 1: Examples of such CENELEC product safety standards are [EN 60950] and [EN 50083-1].

Note 2: For CENELEC safety categories of interfaces, see [EG 201 212].

Ex. 1010, 1; POR 43-45

9.3.3 Ranging

Ranging is the process of acquiring the correct timing offset such that the cable modem's transmissions are aligned to the correct mini-slot boundary. The timing delays through the PHY layer MUST be relatively constant with the exception of the timing offsets specified in Section 6.2.19.4 related to modulation rate changes to accommodate a legacy DOCSIS upstream receiver implementation. For TDMA, any variation in the PHY delays MUST be accounted for in the guard time of the upstream PMD overhead.[1]

9.3.3.1 Broadcast Initial Ranging

First, a cable modem MUST synchronize to the downstream and learn the upstream channel characteristics through the Upstream Channel Descriptor MAC management message. At this point, the cable modem MUST scan the Bandwidth Allocation MAP message to find a Broadcast Initial Maintenance Region. Refer to Section 9.1.2.4. The CMTS MUST make a Broadcast Initial Maintenance region large enough to account for the variation in delays between any two CMs. On S-CDMA channels, the CMTS MUST schedule Broadcast Initial Maintenance transmit opportunities such that they align with S-CDMA frames and span an integral number of S-CDMA frames. Refer to Section 6.2.11.5, "Spreader-off Bursts for Maintenance on S-CDMA channel," on page 59.

The cable modem MUST put together either an Initial Ranging Request message or a Ranging Request message to be sent in a Broadcast Initial Maintenance region. An INIT-RNG-REQ MUST be transmitted if the upstream is a DOCSIS 2.0 Only Upstream, which can be determined from the UCD. Otherwise a RNG-REQ MUST be transmitted. The SID field MUST be set to the non-initialized CM value (zero), unless this initial ranging is a result of a UCD ranging required TLV or a DCC or UCC request in which the CM has been instructed to retain its existing SIDs.

The CM MUST set its initial timing offset to the amount of internal fixed delay equivalent to putting this CM next to the CMTS. This amount includes delays introduced through a particular implementation, and MUST include the downstream PHY interleaving latency.When the Broadcast Initial Maintenance transmit opportunity occurs, the cable modem MUST send the INIT-RNG-REQ or RNG-REQ message. Thus, the cable modem sends the message as if it was physically right at the CMTS.

Once the CMTS has successfully received the RNG-REQ OR INIT-RNG-REQ message, it MUST return a Ranging Response message addressed to the individual cable modem. Within the Ranging Response message MUST be a temporary SID assigned to this cable modem (unless the CM has retained a previous Primary SID during a UCC, DCC, or UCD change) until it has completed the registration process. The message MUST also contain information on RF power level adjustment and offset frequency adjustment as well as any timing offset corrections. Ranging adjusts each CM's timing offset such that it appears to be located right next to the CMTS.

Ex. 1010, 197; POR 43-45

Overview of DOCSIS-2.0 Testing, (Grounds J-M)

1 Radio Frequency Interface Specification

1.1 Scope and Purpose

1.1.1 Scope

This document defines the second generation of radio-frequency interface specifications for high-speed data-over-cable systems. They were developed by Cable Television Laboratories (CableLabs) for the benefit of the cable industry, including contributions by operators and vendors from North America, Europe, and other regions.

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Note 1: Examples of such CENELEC product safety standards are [EN 60950] and [EN 50083-1].

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Ex. 1010, 1; POR 43-45

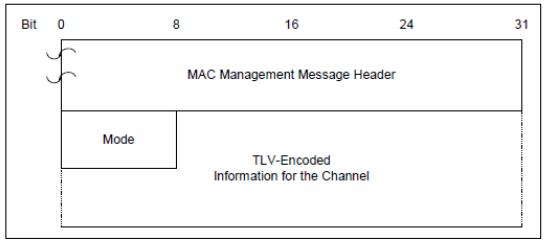


Figure 8-45 Test Request

Parameters MUST be as follows:

Mode 0 = Disable all test modes and reboot

1 = Transmit a continuous (non-bursted) upstream signal at the commanded modulation rate, carrier frequency, and power level. The chip sequence at the spreader output is replaced with an alternating binary sequence (1, -1, 1, -1, 1, -1,...) at nominal amplitude, equal on I and Q. The CM tracks the downstream symbol clock and uses it to generate the upstream symbol clock as in normal synchronous operation.

2 = Transmit a continuous (non-bursted), unmodulated (CW) upstream signal at the commanded carrier frequency, modulation rate and power level. This is equivalent to replacing the chip sequence at the spreader output with the constant sequence (1, 1, 1, 1, 1, 1,...) at nominal amplitude, equal on both I and Q. The CM tracks the downstream symbol clock and uses it to generate the upstream symbol clock as in normal synchronous operation.

In normal operation, the CM MUST ignore any TST-REQ message it receives subsequent to receiving the first SYNC message. Note that this makes it less convenient to use this test mode with a CMTS, since the CMTS may send a SYNC message before the CM sees a TST-REQ message.

After acquiring a downstream signal, and prior to receiving a SYNC message, if the CM receives a TST-REQ message (either unicast to the CM itself, or broadcast) with Mode != 0, the CM MUST begin the test mode indicated in the Mode parameter, using the channel parameters included in the TST-REQ message.

In test mode, if the CM receives a TST-REQ message (either unicast to the CM itself, or broadcast) with Mode = 0, the CM MUST reboot. The CM MUST reboot after the expiration of the T16 timer, a 30 minute test mode timer.

The TST-REQ message MUST be generated in the format shown in Figure 8-45, including all of the parameters coded as TLV multiples defined in Table 8-22.

Ex. 1010, 185; POR 43-45

Petitioner Misconstrues the Term "Probe"

Both Experts Agreed that a Probe is "A Signal Used to Assess the Communications Path"

Holobinko Declaration

47. As I described above, the '690 Patent relates to the use of probe transmissions in a communication network. In my opinion, a POSITA would understand the plain meaning of a "probe," in the context of the '690 Patent, as referring to *a particular kind of signal or message having a form used to characterize the communication channel between the two nodes.*

48. Certain parts of Mr. Bertonis' report appear to suggest that the claimed probes are simply messages. *See* Ex. 1002, ¶ 132 (stating that "the claims simply refer to two messages (a probe request and a probe)"). In his deposition, however, Mr. Bertonis agreed that probes are "used to assess the communications path." Ex. 2002, 10:5–10. He also generally agreed that the probes in the '690 Patent are used to determine characteristics of the channel on which the signal was transmitted. *Id.* at 25:18–26:10. Thus, although Mr. Bertonis uses the slightly different wording of "assess[ing] the communications path," I understand him to be in agreement that probes have a form used to characterize the channel. He and I also agree a POSITA would recognize that, while a probe can take the form of a message, not all messages are probes. *See also* Ex. 2002, 17:24–25 (Mr. Bertonis agreeing that not all messages are probes). Likewise, while a probe can take the form of a signal, not all signals are probes.

Ex. 2007, ¶¶ 47-48; POR 11

Bertonis Deposition, Nov. 13, 2024

Q. In your opinions in this case, you have analyzed the claims of the '690 patent against various prior art references.
Do you agree with that?
A. Yes.
Q. And you agree that the '690 patent claims recite a probe? Do you agree with that?
A. Yes, they -- they involve a probe, correct.
Q. What was your understanding of the word "probe" that you used in your analysis in this case?
A. Well, it would be the same understanding that I had of probe in general, which is used -- a signal used to assess the communications path.

Ex. 2002, 9:21-10:10; POSR 7-8; POR 11

Q. Are all messages probes?
A. Of cour- -- no.

Ex. 2002, 17:24-25; POR 11

Mr. Bertonis Agreed that Simply "Communicating Information" is Not a Probe

Bertonis Reply Deposition, Mar. 28, 2025

Q. Can you name a signal that is not a probe?
A. Yeah, the signal we're talking on right now.
Q. What do you mean?
A. We're communicating right now on a signal, my voice, your voice. That signal is not a probe. I mean, you asked for an example.
Q. How do you know it's not a probe?
A. Because it's not -- we're communicating information, we're not probe -- we're not -- I hate to use the word, but we're not probing for, you know -- we're not querying, we're communicating.
Q. In your opinion, does communicating information make something not a probe?
A. It doesn't -- it doesn't necessarily make it not a probe, but because probes are still communicating, but I would say most messages are not probes.
I don't know if that's being responsive to your question.
Q. No, I think it is, and I think we're hitting on something here.
So it's your testimony that the signal between us over this Zoom call is not a probe because the packets that are being sent on the internet between us are only conveying information. Is that accurate?
A. They're conveying information. There may -- for all I know, Zoom may use probing to maintain signal quality. There could still be probing going on. That might have been the message that I got across my screen about my communications link. There might have been probing going on. But us talking -- yes, I would agree that us talking back and forth is a message, that is not a probe.
Q. Is that true even if the packets carrying the information of us talking back and forth identify a connection identifier?
MR. KRONENTHAL: Objection. Form.
THE WITNESS: Yeah, I don't think the connection identifier would matter one way or the other in and of itself.

Ex. 2008, 218:2-219:18; POSR 10-11

Demonstrative Only - Not Evidence PO-11

Simply "Communicating Information" is Not a Probe – Even if the Messages Contain *Identical* Information

Bertonis Reply Deposition, Mar. 28, 2025

Q. Is your testimony about the packets between us on the internet the same even if the packet that my computer sends to yours and the packet that your computer sends to mine have identical information?

THE WITNESS: That's a funny -- can you -- I'm sorry. Can you repeat that question about the identical information?

BY MR. GALLUZZO:

Q. Is it your testimony that the packets being sent over the internet between your computer and mine are still not a probe even if those packets contain at least some identical parameters?

MR. KRONENTHAL: Objection. Form.

THE WITNESS: I would say that's correct because it's not in and of itself doing probing.

BY MR. GALLUZZO:

Q. What do you mean by "it's not doing probing"? What would "doing probing" mean?

A. For instance, if something in Zoom was saying Vince, are you there? Are you there? Or it was saying what's the error rate? You know, assessing the channel or looking at other -- I mean, there's -- it would -- you know, it would be querying. And in the case of the Zoom call, it's just sending data bits for the message back and forth, our digitized voice and images.

Ex. 2008, 219:20-220:22; POSR 10-11

Petitioner's Reply Attempts to Rewrite History and Obfuscate the Meaning of "Probe"

> The scope of the '690 patent's claimed "probe request" and "probe" includes WiMAX's Ranging Request and Response. As discussed (§II.A.1), the '690 patent uses "probe" to encompass many (although not all) signals for "various" uses, including (but not limited to) channel assessment, network diagnosis, network maintenance, and assistance with network admission. Ex. 1001, 2:20-27, 4:25-38.

Reply 6; see also POSR 9-10

***Petitioner's** confusing definition for "probe"*

The Difference of the Words "Having a Form" is Inconsequential to Mr. Holobinko's Opinions

Holobinko Declaration

47. As I described above, the '690 Patent relates to the use of probe transmissions in a communication network. In my opinion, a POSITA would understand the plain meaning of a "probe," in the context of the '690 Patent, as referring to *a particular kind of signal or message having a form used to characterize the communication channel between the two nodes.*

Ex. 2007, ¶ 47; POSR 6-7

Bertonis Deposition, Nov. 13, 2024

Q. What was your understanding of the word "probe" that you used in your analysis in this case?

A. Well, it would be the same understanding that I had of probe in general, which is used -- a signal used to assess the communications path.

Ex. 2002, 10:5-10:10; POSR 6

64. WiMAX's ranging procedure does not *characterize the channel* but rather *negotiates parameters for messages* to be communicated over the channel.

Ex. 2007, ¶ 64; POSR 6-7

for the messages exchanged between them. *See also* Ex. 1010, 183, 197. Ranging does not involve characterization of the channel, and this is especially true of the Ranging *Request* that the cable modem sends to the CMTS. The Ranging Request

Ex. 2007, ¶ 102; POSR 6-7

and -1s in the amplitude and phase. A POSITA would further understand that the ordered (as opposed to randomized) set of 1s and -1s is not useable for channel diagnostics or for characterizing the channel, and so they would not expect the test process to be used in that way.

Ex. 2007, ¶ 107; POSR 6-7

Mr. Holobinko opined that the prior art messages are not probes "because they are not used to characterize the channel at all"

POSR 6-7

Demonstrative Only - Not Evidence PO-14

Petitioner and Mr. Bertonis Fail to Assign Any Distinct Meaning to "Physical Layer Probe"

Q. In -- in the analysis you applied in this case, did you take "physical layer probe" to have the same meaning as the word "probe" by itself?
A. I think generally, yes.

Ex. 2002, 41:10-13; POSR 13

Q. Are you saying that probe as it's used in the patent always means physical layer probe?
A. I would say yes.

Ex. 2008, 204:6-8; POSR 13

Q. So then what meaning do the words "physical layer" have to you as used in that term?
A. The probe -- the probe travels on the physical layer.
Q. Would that be true of all probes?
MR. KRONENTHAL: Objection. Form.
THE WITNESS: I'd have to think if it's -- if -- if there's any probe that didn't use the physical layer, but I would say, generally, probes are physical layer probes.

Ex. 2002, 40:3-13; POR 14

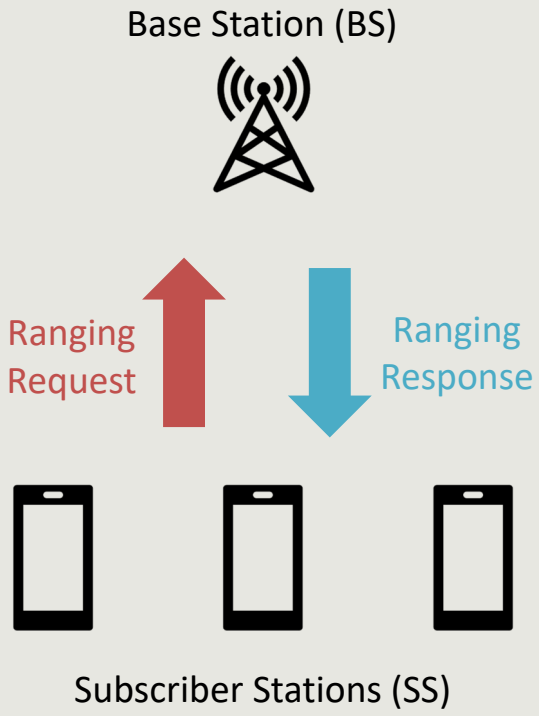
Q. It says, "All of the signals/messages I rely on are probes that relate to the physical layer."
Do you see that?
A. Yes.
Q. What do you mean by "relate to the physical layer"?
A. They travel on the physical layer.

Ex. 2008, 204:12-19; POSR 13

Grounds A-C: WiMAX's Ranging Response is not a Probe

WiMAX's Ranging Response Message Does Not Characterize the Channel

- *Ranging* is a process for an SS to "acquire the correct timing offset and power adjustments such that the SS's transmissions" are aligned with the time slots/frames and thresholds expected by the BS.



See POR 17-18

61. WiMAX is a wireless communication standard that relates to the communication interface between a Base Station (BS) and Subscriber Stations (SS). Ex. 1013, 1–2, 7, 11. WiMAX includes a "ranging" procedure, whereby an SS can "acquir[e] the correct timing offset and power adjustment such that the SS's transmissions" are aligned with the time slots/frames and thresholds expected by the BS. *Id.* at 174. This is important because WiMAX involves multiple SSs in communication with a single BS, where the various SSs may be located at different distances from the BS, but their respective transmissions still need to be aligned in time.

Ex. 2007, ¶ 61; POR 18-20

6.3.9.5 Initial ranging and automatic adjustments

Ranging is the process of acquiring the correct timing offset and power adjustments such that the SS's transmissions are aligned to a symbol that marks the beginning of a minislot boundary in SC and Sca PHY, or aligned with the BS receive frame for OFDM and OFDMA PHY, and received within the appropriate reception thresholds. The timing delays through the PHY shall be relatively constant. Any variation in the PHY delays shall be accounted for in the guard time of the uplink PHY overhead.

Ex. 1013, 174; POR 20

Demonstrative Only - Not Evidence PO-17

WiMAX's Ranging Response Message Does Not Characterize the Channel

- The ranging response (RNG-RSP) is simply a message from the BS "indicating the required changes" the SS must make to its "ranging parameters," specifically relating to timing offset and power

8.3.7.2.1 Initial Ranging in AAS systems

A BS supporting the AAS option may allocate in the uplink subframe an AAS alert slot for AAS SSs that have to initially alert the BS of their presence. This period shall be marked as Initial-Ranging (UIUC=1), but shall be marked by an AAS initial ranging CID such that no non-AAS subscriber (or AAS subscriber that can decode the UL-MAP message) uses this interval for Initial Ranging. Additionally, this period shall be marked using AAS map (see Table 251). The SS shall transmit the long preamble as defined in 8.3.3.6. This shall be followed by a burst carrying the AAS_NW_ENTRY_REQ message (see Table 259). This burst shall use the most robust mandatory rate.

The BS may respond to the network entry request by transmitting a RNG-RSP message indicating the required changes to the ranging parameters. The SS is identified by specifying the transmit opportunity and the entry code of the AAS_NW_ENTRY_REQ message. When transmitting the response, the BS may use the feedback information embedded in the AAS_NW_ENTRY_REQ to direct the beam to the SS.

The BS may additionally assign subchannelized AAS alert slot for SSs supporting subchannelization. AAS SSs that have attempted initial ranging with the maximum power level using AAS_NW_ENTRY_REQ may attempt initial ranging in the subchannelized AAS alert slot. The SS shall transmit the long preamble as defined in 8.3.3.6. This shall be followed by subchannelized burst carrying the AAS_SBCH_NW_ENTRY_REQ message (see Table 260). This message shall be sent on the subchannel indicated by the UL-MAP information element used to allocate the ranging period.

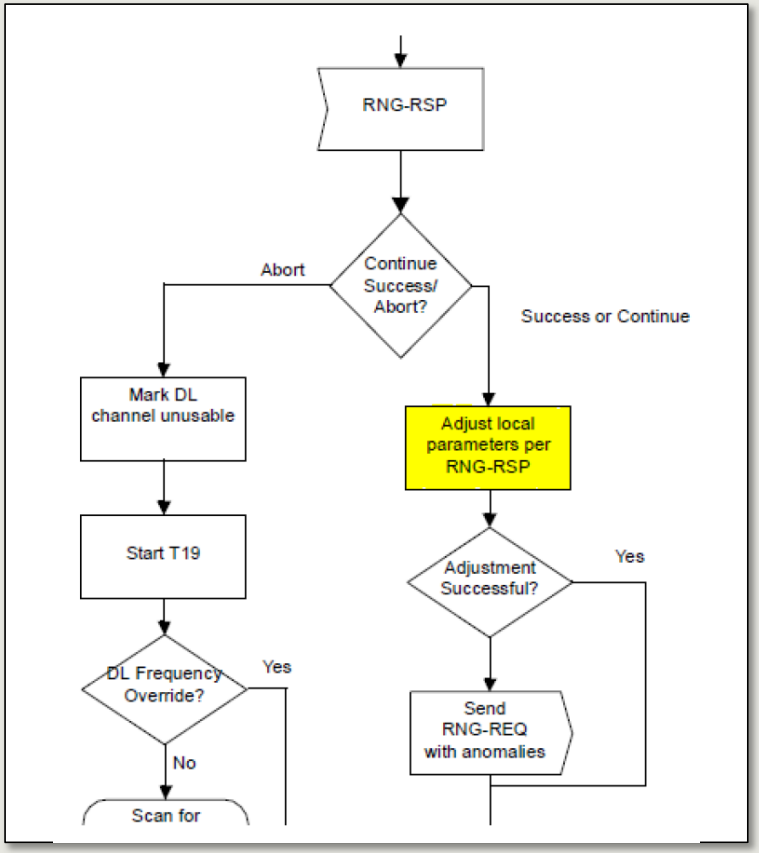
Ex. 1013, 478; POR 18

62. The ranging process involves an SS sending a "Ranging Request" to the BS. The BS then responds with a "Ranging Response" message that controls the SS timing by "indicating the required changes" the SS should make to its "ranging parameters." Ex. 1013, 478. I understand Mr. Bertonis has opined that the "Ranging Response" is the claimed "probe" and that the "Ranging Request" is the claimed "probe request." Ex. 1002, ¶ 137, 155.

Ex. 2007, ¶ 62; POR 18

WiMAX's Ranging Response Message Does Not Characterize the Channel

- The SS responds by adjusting its local parameters as instructed



62. The ranging process involves an SS sending a "Ranging Request" to the BS. The BS then responds with a "Ranging Response" message that controls the SS timing by "indicating the required changes" the SS should make to its "ranging parameters." Ex. 1013, 478. I understand Mr. Bertonis has opined that the "Ranging Response" is the claimed "probe" and that the "Ranging Request" is the claimed "probe request." Ex. 1002, ¶ 137, 155.

Ex. 2007, ¶ 62; POR 18

Ex. 1013, 179 (highlight added); POR 19

WiMAX's Ranging Response Message Does Not Characterize the Channel

- Timing and power are not characteristics of the channel; they are communication parameters that are ***set*** by the ranging response

68. I further note that independent claim 9 recites a *physical layer* probe, which as I have explained above is a probe that characterizes attributes of the physical communication layer. Mr. Bertonis opines that the Ranging Response is a physical layer probe because it is configured to "ensure the correct timing and preferred power for transmissions over the PHY layer." Ex. 1002, ¶ 191. But as I have explained in this section, ensuring the correct timing and preferred power for transmissions is *setting* of communication parameters for messages, not *characterizing the channel* over which those messages are sent. The Ranging Response does not have a form used to characterize the physical layer. It instructs the SS to make certain timing and power adjustments, and only after the SS has already characterized the channel through other means. Therefore, it is also my opinion that WiMAX's Ranging Response is not a physical layer probe.

Ex. 2007, ¶ 68; POSR 15-16

WiMAX's Ranging Response Message Does Not Characterize the Channel

- There is a separate mechanism—the UCD message—that the BS uses to communicate channel characteristics to the SS

6.3.9.5 Initial ranging and automatic adjustments

Ranging is the process of acquiring the correct timing offset and power adjustments such that the SS's transmissions are aligned to a symbol that marks the beginning of a minislot boundary in SC and Sca PHY, or aligned with the BS receive frame for OFDM and OFDMA PHY, and received within the appropriate reception thresholds. The timing delays through the PHY shall be relatively constant. Any variation in the PHY delays shall be accounted for in the guard time of the uplink PHY overhead.

6.3.9.5.1 Contention based Initial ranging and automatic adjustments

First, an SS shall synchronize to the downlink and learn the uplink channel characteristics through the UCD MAC management message. At this point, the SS shall scan the UL-MAP message to find an Initial Ranging Interval. The BS shall allocate an Initial Ranging Interval consisting of one or more transmission opportunities. For SC, SCa, and OFDM PHY, the size of each transmission opportunity shall be as specified by the UCD TLV, Ranging request opportunity size.

Ex. 1013, 174; POR 20

65. In fact, WiMAX has other means of characterizing the channel, separate from the ranging process. The BS communicates information about uplink channel characteristics through a UCD message to the SS. Ex. 1013, 174 ("an SS shall synchronize to the downlink and learn the uplink channel characteristics through the UCD MAC management message"). This happens *before* the ranging process takes place. *See id.* at 174–175 ("First, an SS shall synchronize to the downlink and learn the uplink channel characteristics through the UCD . . ." *then* "the SS shall put together a RNG-REQ message").

66. In addition, WiMAX discloses that the SS monitors the carrier to interference-plus-noise ratio (CINR) of the channel—again, a separate process that occurs *before* ranging. *Id.* at 199. The SS monitors CINR and compares the average value against the allowed range of operation, and, if the received CINR is outside the allowed operating region, then the SS requests a new burst profile by sending a Ranging Request. *Id.*; *see also id.* ("The SS applies an algorithm [before the ranging process] to determine its optimal burst profile in accordance with the threshold parameters established in the DCD message in accordance with Figure 81").

Ex. 2007, ¶¶ 65-66; POR 20-21

"Ranging Status" is Not a Characterization of the Channel

Table 367—RNG-RSP message encodings

Name	Type (1 byte)	Length	Value (variable-length)	PHY Scope
Timing Adjust	1	4	Tx timing offset adjustment (signed 32-bit). The time required to advance SS transmission so frames arrive at the expected time instance at the BS. Units are PHY specific (see 10.3).	All
Power Level Adjust	2	1	Tx Power offset adjustment (signed 8-bit, 0.25 dB units) Specifies the relative change in transmission power level that the SS is to make in order that transmissions arrive at the BS at the desired power. When subchannelization is employed, the subscriber shall interpret the power offset adjustment as a required change to the transmitted power density.	All
Offset Frequency Adjust	3	4	Tx frequency offset adjustment (signed 32-bit, Hz units) Specifies the relative change in transmission frequency that the SS is to make in order to better match the BS. (This is fine-frequency adjustment within a channel, not reassignment to a different channel.)	All
Ranging Status	4	1	Used to indicate whether uplink messages are received within acceptable limits by BS. 1 = continue, 2 = abort, 3 = success, 4 = rerange	All
Downlink frequency override	5	4	Center frequency, in kHz, of new downlink channel where the SS should redo initial ranging. If this TLV is used, the Ranging Status value shall be set to 2. Shall be used for licensed bands only.	SCa OFDM OFDMA
Uplink channel ID override	6	1	Licensed bands: The identifier of the uplink channel with which the SS is to redo initial ranging (not used with PHYs without channelized uplinks). License-exempt bands: The Channel Nr (see 8.5.1) where the SS should redo initial ranging.	All

Ex. 1013, 665; POSR 15

- Contrary to what Petitioner asserts, "Ranging Status" does not characterize the uplink messages
- "Ranging Status" is a flag that indicates the status ***of the ranging procedure***—whether ranging has been successful

Grounds A-C: WiMAX Does Not Teach Specifying a Content Payload for the Response

WiMAX Does Not Teach Specifying a Content Payload for the Response

1. A method comprising:
a) receiving in a first node, a probe request specifying a first plurality of parameters associated with the generation and transmission of a probe, wherein the first plurality of parameters at least specify content payload of the probe and a second node;
b) determining a second plurality of parameters associated with generation and transmission of the probe;
c) generating the probe in accordance with the first plurality of parameters and the second plurality of parameters, wherein the probe has a form dictated by the first plurality of parameters; and
d) transmitting the probe from the first node to the second node.

Ex. 1001, cl. 1; POR 8

Petitioner alleges that the Ranging Request specifies a "Connection Identifier" (CID) for the Response

WiMAX Does Not Teach Specifying a Content Payload for the Response

- Connection Identifier (CID) is part of the ***header*** of a MAC message

Table 5—Generic MAC header fields

Name	Length (bits)	Description
CI	1	CRC Indicator 1 = CRC is included in the PDU by appending it to the PDU Payload after encryption, if any 0 = No CRC is included
CID	16	Connection identifier
EC	1	Encryption Control 0 = Payload is not encrypted 1 = Payload is encrypted
EKS	2	Encryption Key Sequence The index of the Traffic Encryption Key (TEK) and Initialization Vector used to encrypt the payload. This field is only meaningful if the EC field is set to 1.
HCS	8	Header Check Sequence An 8-bit field used to detect errors in the header. The transmitter shall calculate the HCS value for the first five bytes of the cell header, and insert the result into the HCS field (the last byte of the MAC header). It shall be the remainder of the division (Modulo 2) by the generator polynomial $g(D = D^8 + D^2 + D + 1$ of the polynomial D^8 multiplied by the content of the header excluding the HCS field. (Example: [HT EC Type]=0x80, BR=0xAAAA, CID=0x0F0F; HCS should then be set to 0xD5).
HT	1	Header Type. Shall be set to zero.
LEN	11	Length. The length in bytes of the MAC PDU including the MAC header and the CRC if present.
Type	6	This field indicates the subheaders and special payload types present in the message payload.

Ex. 1013, 37 (red annotation added); POR 25

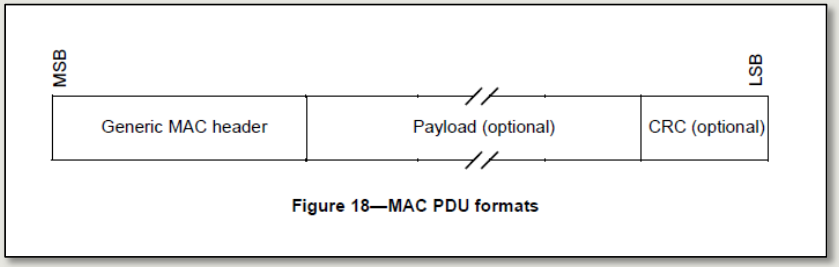


Figure 18—MAC PDU formats

Ex. 1013, 35; POR 25

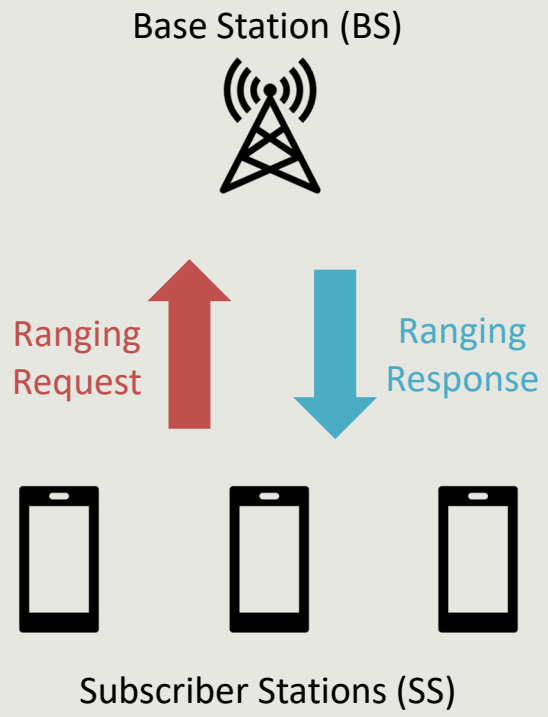
WiMAX Does Not Teach Specifying a Content Payload for the Response

- "Basic CID" in the Ranging Response is not ***specified*** by the Ranging Request

Table 367—RNG-RSP message encodings *(continued)*

Name	Type (1 byte)	Length	Value (variable-length)	PHY Scope
Downlink Operational Burst Profile	7	2	This parameter is sent in response to the RNG-REQ Requested Downlink Burst Profile parameter. Byte 0: Specifies the least robust DIUC that may be used by the BS for transmissions to the SS. Byte 1: Configuration Change Count value of DCD defining the burst profile associated with DIUC.	All
SS MAC Address	8	6	SS MAC Address in MAC-48 format	All
Basic CID	9	2	Basic CID assigned by BS at initial access.	All
Primary Management CID	10	2	Primary Management CID assigned by BS at initial access.	All
AAS broadcast permission	11	1	0 = SS may issue contention-based Bandwidth Requests permission 1 = SS shall not issue contention-based Bandwidth Request	SCa OFDM OFDMA
Frame number	12	3	Frame number where the associated RNG_REQ message was detected by the BS. Usage is mutually exclusive with SS MAC Address (Type 8). The opportunity within the frame is assumed to be 1 (the first) if the Initial Ranging Opportunity field is not supplied.	SCa OFDM
Initial ranging opportunity number	13	1	Initial Ranging opportunity (1–255) in which the associated RNG_REQ message was detected by the BS. Usage is mutually exclusive with SS MAC Address (Type 8).	SCa OFDM

Ex. 1013, 66, Table 367; POSR 17-18



See POR 17-18

Demonstrative Only - Not Evidence PO-26

WiMAX Does Not Teach Specifying a Content Payload for the Response

- Mr. Bertonis admits that the Ranging Response does not even have to use the same Basic CID value that was included in the Ranging Request

33. The Basic CID in the Ranging Response would have had the same 16 bit value as the CID in the Ranging Request in many situations, although it can be different in some Ranging Responses if the BS decides to change the basic connection. This is supported by WiMAX's explanation about the value of the CID in the Ranging Request (see highlights below). Ex. 1013, 49.

Ex. 1036, ¶ 33; POSR 17

Q. Is there anything about the ranging request that specifies anything about what that value could be?
MR. KRONENTHAL: Objection. Form.
THE WITNESS: Well, only that it's a value.

Ex. 2008, 229:2-7; POSR 18

Q. Mr. Bertonis, before we went on break, we were talking about paragraph 38, and there's a specific sentence I'd like for you to focus on. It's the one halfway down page 32 starting, "Under this interpretation."
Do you see that?
A. Yes.
Q. At the end of the sentence, it refers to, "The basic CID equal to some 16 bit value."
Do you see that?
A. Yes.
Q. That could be literally any 16 bit value, correct?
A. I suppose so. It's the 16 bit value of the CID.

Ex. 2008, 226:6-20; POSR 18

Grounds A-C: The Combination of WiMAX and OFDMA does not teach "transmitting two probe responses simultaneously using OFDMA."

WiMAX Discloses One BS Sending a Ranging Response to One SS

6.3.2.3.6 Ranging response (RNG-RSP) message

An RNG-RSP shall be transmitted by the BS in response to a received RNG-REQ. In addition, it may also be transmitted asynchronously to send corrections based on measurements that have been made on other received data or MAC messages. As a result, the SS shall be prepared to receive an RNG-RSP at any time, not just following an RNG-REQ transmission.

To provide for flexibility, the message parameters following the Uplink Channel ID shall be encoded in a TLV form.

Ex. 1013, 50; POR 28-29

WiMAX Discloses One BS Sending a Ranging Response to One SS

Q. Is the concept having multiple base stations?
MR. KRONENTHAL: Objection. Form.
THE WITNESS: I don't see why not.
BY MR. GALLUZZO:
Q. I understand you don't see why not, but is that what the concept is used for?
MR. KRONENTHAL: Objection. Form.
THE WITNESS: Well, it could be.
BY MR. GALLUZZO:
Q. What do you mean, "it could be"?
A. You could have multiple base stations transmitting in the same -- in the same slot.
Q. To a single -- single subscriber?
A. It's possible.
Q. And that's your testimony, that that's what OFDMA encompasses?
A. No, I'm saying it's -- OFDMA is multiple access, so it could be either side multiple access.
Q. What do you mean, "either side multiple access"?
A. Well, it could be -- it could potentially be base stations or it could be subscribers in that terminology.

Q. Could it mean both at the same time?
A. You mean OFDMA being used by both -- in other words, OFDMA being used in both directions at the same time?
Q. Both upstream and downstream, yes.
A. Yeah, it's possible. There's nothing technically that would make it not possible.
Q. Is there anything more you can say other than it being possible?
A. No.

Ex. 2008; 154:22-156:5; POSR 28-29

- *Mr. Bertonis could not point to any express disclosure of multiple Base Stations transmitting to a single Subscriber Station—only opining that it was "possible"*

Petitioner's Argument for "Simultaneous" is Based on Pure Chance

on. What you're saying instead is that they are both transmitting and therefore, at some times at least, they might both transmit at the same time. Is that correct?

A. I think that's generally correct.

Ex. 2002, 84:12-16; POR 28-29

Q. Is there anything in these pages that says anything about multiple base stations being associated with a single subscriber station?

A. Well, I can look through. It may not, but that doesn't change my -- my statement that the ranging response could still be transmitted simultaneously at least once.

Q. Are you able to answer my question?

A. Well, I can look through here, but basically it's details on ranging, and the point is that if you have two base stations that are receiving the ranging request, they could transmit two ranging responses. That's just -- I'm just saying that's kind of -- one follows the other on how the ranging process works.

Q. Mr. Bertonis, I'll ask one more time. Are you able to answer my question?

A. I'm not sure how I can better answer it than to say it's possible.

Ex. 2008, 165:25-166:18; POSR 19

Grounds D-I: *Waxman's* "Probe Response" Is Unlike The Claimed "Probes" And "Physical Layer Probes."

Waxman's "Probe Request" is a Request for the AP to Transmit Messages Using a Particular Transmission Scheme

- Waxman relates to an Access Point (AP) in communication with multiple Stations

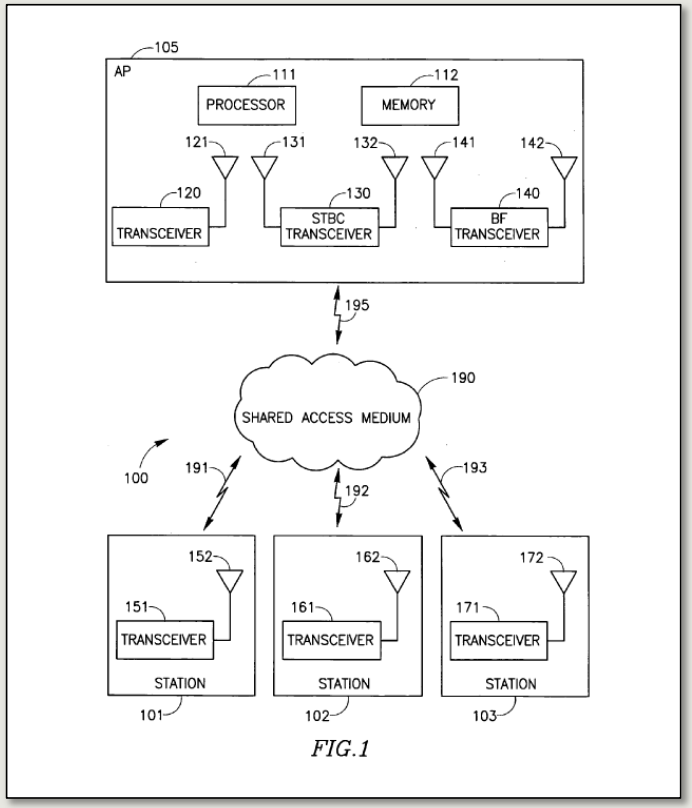


FIG.1

Ex. 1007, Fig. 1; POR 32

Waxman's "Probe Request" is a Request for the AP to Transmit Messages Using a Particular Transmission Scheme

- Waxman's "probing" involves a Station requesting the AP to transmit messages using a particular transmission scheme

80. Waxman relates to a wireless access point (AP) that is in communication with one or more "stations." Ex. 1007, ¶ [0012]. Waxman discloses an active scanning process, whereby a station sends a "probe request" to the AP. *Id.* at ¶ [0030]. However, Waxman's "probe request" is unlike the kind claimed in the '690 Patent because it does not ask the AP to characterize the downstream channel. Waxman's "probe request" is actually a request for the AP to communicate with the station using a "requested transmission scheme" (such as an extended-range scheme), a "requested number of transmission antennas," and "other attributes of a requested transmission scheme." *Id.* at ¶¶ [0030]–[0035], [0042]–[0048], [0052]–[0056], Figs. 2–3. The AP may then send a simple acknowledgement message, which Waxman calls a "probe response." *Id.* at ¶ [0037] ("an indication acknowledging or approving the request embedded in the probe request").

Ex. 2007, ¶ 80; POR 32

83. In short, the parameters identified by Mr. Bertonis relate to *how* the AP should transmit messages to the station, rather than the *content* (or *recipient*) of those messages. *See also* Ex. 1007, ¶ [0037] (characterizing the probe response as a simple acknowledgement that is transmitted using the requested scheme); Ex. 2002, 87:16–88:18 (Mr. Bertonis generally agreeing that the probe request is for requesting different communication parameters and that the probe response is an acknowledgement message that uses the requested transmissions scheme).

Ex. 2007, ¶ 83; POR 32

Waxman's "Probe Request" is a Request for the AP to Transmit Messages Using a Particular Transmission Scheme

- Waxman's "probe response" is a simple acknowledgement message, sent using the requested transmission scheme

89. Nor does Mr. Bertonis provide any explanation of how Waxman's probe response characterizes attributes of the physical communication layer. As I described above, Waxman's "probe response" is simply an acknowledgement message that may be transmitted using the requested transmission scheme. Waxman does not describe the "probe response" as conveying any information about the physical characteristics of the channel, nor does it describe the station as using the "probe response" to extrapolate any such information. In his deposition, Mr. Bertonis attempted to explain that the probe response could be used for assessing the communications path, but ultimately he only opined that this was something that *could have been done* in Waxman, not that it is something Waxman (or the prior art) affirmatively teaches. *See* Ex. 2002, 104:25–106:13.

Ex. 2007, ¶ 89; POR 40

[0037] Additionally or alternatively, in response to the probe request, AP **105** may transmit a probe response if AP **105** is able to transmit using the requested transmission scheme. The probe response may, for example, include an indication acknowledging or approving the request embedded in the probe request. The probe response may be transmitted by AP **105** using the transmission scheme requested in the probe request. For example, in response to the probe request transmitted by station **102**, STBC transceiver **130** of AP **105** may transmit a probe response using STBC; and in response to the probe request transmitted by station **103**, BF transceiver **140** of AP **105** may transmit a probe response using BF. The probe response may be transmitted using substantially the lowest transmission rate ("basic rate") of the wireless communication standard in use, e.g., a basic rate of approximately 6 or 6.25 or 6.5 Megabit per second when the IEEE 802.11n standard is used.

Ex. 1007, ¶ 37; POR 40

Waxman's "Probe Request" is a Request for the AP to Transmit Messages Using a Particular Transmission Scheme

- Mr. Bertonis could not say whether this meets the claim language

Q. Let me maybe give you a little more detail.

So same hypothetical. We've got a message going from one node to another that says change to Transmission Scheme Number 2.

Now the second node, the one that received that message, sends a message back to the first node in response, and the message says okay.

Would that hypothetical meet Step 1A of Claim 1?

MR. KRONENTHAL: Objection. Form.

THE WITNESS: I would say it could or it could not.

BY MR. GALLUZZO:

Q. Depending on what?

A. Depending on how you read the claim.

Q. How about how you read the claim; would it meet it or not?

A. I would say it could go either way.

Q. So you're not sure based even on how you read the claim?

A. Yes.

Ex. 2008, 208:1-22; POSR, 20

Grounds D-I: *Waxman's* "probe request" does not specify content payload for the "probe response."

Waxman's "Probe Response" is a Simple Acknowledgement With No "Content Payload" to be Specified in the Request

- Bertonis admitted that his opinions relating to "content payload" are based on what he believed would be a POSITA's understanding of *Waxman*, and not anything expressly stated in *Waxman*

> Q. And the including of the content in the probe request in the payload of the probe response is based on your understanding of what a POSITA would understand, not something that's actually stated in Waxman; correct?
>
> A. Yes.

Ex. 2002, 100:9-14; POR 36

Waxman's "Probe Response" is a Simple Acknowledgement With No "Content Payload" to be Specified in the Request

- The parameters relating to Waxman's "requested transmission scheme" relate to ***how*** messages are transmitted, rather than the ***content of those messages***

> 82. Mr. Bertonis opines that Waxman's "probe request" "indicates (e.g., using a value of a parameter in a field of the probe request) a requested transmission scheme, a requested number of transmission antennas to be used, and/or other attributes of a requested transmission scheme." Ex. 1002, ¶ 342 (quoting Ex. 1007, ¶ [0035]). However, none of these parameters relate to the content payload of the probe response, nor do any of them identify a recipient node for the probe response. The "requested transmission scheme" is simply a request for the AP to transmit to the station using a particular transmission scheme, such as an extended-range transmission scheme (*e.g.*, TADS, STBC, BF). *See* Ex. 1007, ¶ [0054]. And the "requested number of transmission antennas" is a request for the AP to transmit using a certain number of physical antennas. *Id.* at ¶¶ [0020], [0032]–[0035].

Ex. 2007, ¶ 82; POR 33-34

"SSID" is Not "Content Payload" of the Response and is Not "Specified" by the Request

1. A method comprising:
a) receiving in a first node, a probe request specifying a first plurality of parameters associated with the generation and transmission of a probe, wherein the first plurality of parameters at least specify content payload of the probe and a second node;
b) determining a second plurality of parameters associated with generation and transmission of the probe;
c) generating the probe in accordance with the first plurality of parameters and the second plurality of parameters, wherein the probe has a form dictated by the first plurality of parameters; and
d) transmitting the probe from the first node to the second node.

Ex. 1001, cl. 1; POR 8

The SSID of the requesting Station relates to a different claim limitation from "content payload of the probe"

Ex. 1051, 125-130)). In at least the example in which the probe request complies with 802.11 as Waxman discloses, the probe request includes an SSID parameter and requested information elements that are also identically included in the probe response payload as shown in the tables reproduced below (Table 7-14 for the Probe Request and Table 7-15 for the Probe Response). Ex. 1007, ¶¶ [0009], [0013]-[0020]; Ex. 1012, 84-85; Ex. 1002, ¶¶ 343-346.

Ex. 1036, ¶ 56; POSR 21

Mr. Bertonis only opines that the SSID would be identical in the Request and Response, but he does not explain how the Request specifies the value for the Response

Grounds D-I: Petitioner is Unable to Explain How *Waxman's* "Probe" Is A "Physical Layer Probe."

Petitioner and Mr. Bertonis Do Not Explain How/Why *Waxman's* Probe is a Physical Layer Probe

- Virtually all data packets have preambles and payloads
- All data packets travel over the physical layer

Q. In 802.11, do all packets have a preamble portion and a data portion?
A. I would say generally, yes.
Q. And that's true of all communications standards; right? I mean, a packet must have a preamble and a data portion; correct?
A. Well, I would say generally, but I don't want to limit myself to various test modes or things that you could have the product do that isn't necessarily having that framing.
Again, you could have a test mode with a very simple transmission format.
Q. Would you consider that test mode to also include packets or transmit packets?
A. Could or it could not.
Q. Even if it's in a very simple transmission format, it could still consis- -- include a packet?
A. It doesn't have to.
Q. If it does include a packet, it's still going to have a preamble portion and a data portion; correct?
A. Well, generally, yes.
Q. And that's because all packets do?
A. I don't want to be limiting. Generally.
Q. Generally, yes?
A. Generally, yes.

Ex. 2002, 95:4–96:4; POR 39

Q. In the field in which you are an expert, though, you'd agree that all probes go over the physical layer?
A. Yeah, the physical layer is involved in the probe trans versus the physical layer.

Ex. 2002, 107:20–24; POR 39

Grounds J-M: DOCSIS-2.0's "Ranging" Procedure Does Not Disclose a "Probe" or a "Probe Request"

DOCSIS 2.0 Ranging Does Not Disclose a "Probe" or a "Probe Request"

- Petitioner's Theory for DOCSIS 2.0 Ranging is the Inverse of Petitioner's Theory for WiMAX Ranging

Message Type	Petitioner's WiMAX Theory	Petitioner's DOCSIS 2.0 Theory
UCD	*N/A*	Alleged Probe Request
Ranging Request	Alleged Probe Request	Alleged Probe
Ranging Response	Alleged Probe	*N/A*

See POR 46-47

DOCSIS 2.0's Ranging Request is Not Used to Characterize the Channel

9.3.3 Ranging

Ranging is the process of acquiring the correct timing offset such that the cable modem's transmissions are aligned to the correct mini-slot boundary. The timing delays through the PHY layer MUST be relatively constant with the exception of the timing offsets specified in Section 6.2.19.4 related to modulation rate changes to accommodate a legacy DOCSIS upstream receiver implementation. For TDMA, any variation in the PHY delays MUST be accounted for in the guard time of the upstream PMD overhead.[1]

Ex. 1010, 197; POR 46-49

102. As I explained above with respect to WiMAX, ranging is a process where the CMTS and cable modem negotiate power thresholds and timing offsets for the messages exchanged between them. *See also* Ex. 1010, 183, 197. Ranging does not involve characterization of the channel, and this is especially true of the Ranging *Request* that the cable modem sends to the CMTS. The Ranging Request does not have a form used to characterize the channel to the CMTS. Rather, the CMTS has already determined those characteristics and reported them to the cable modem via the UCD messages, which it sends at periodic intervals. *See* Ex. 1010, 246–250. Therefore, a POSITA would not consider DOCSIS 2.0's Ranging Request to be a probe. By extension, a POSITA would not consider the Ranging Request to be a *physical layer* probe—it is not a probe at all, and it is not used to characterize attributes of the physical communication layer.

Ex. 2007, ¶ 102; POR 46-49

Petitioner and Mr. Bertonis Conflate Initial Ranging and Periodic Ranging

Q. Do you agree that the UCD message only triggers a ranging request message upon initial ranging?

A. While looking at the table, it's when parameters 1 or 2, and that's unicast initial ranging and broadcast initial ranging.

Q. And both are initial ranging, correct?

A. Yes, that's correct.

Q. There's no possibility of the UCD specifying the ranging required during periodic ranging?

A. Well, I don't see it there.

Ex. 2008, 230:14-25; POSR 21-22

Mr. Bertonis admitted that the UCD message can only trigger a Ranging Request during Initial Ranging

Petitioner and Mr. Bertonis Conflate Initial Ranging and Periodic Ranging

- However, Mr. Bertonis relies on portions of DOCSIS 2.0 relating to Periodic Ranging when attempting to show how Ranging "characterizes the channel"

Q. Okay. Go to Exhibit 1010. This is DOCSIS 2.0.
A. Okay.
Q. In particular, I'd like you go to page 261, per the numbers written on the bottom of the document.
A. Okay.
Q. You'd agree with me that this section relates to periodic ranging?
A. Well, 11.3 discusses periodic ranging opportunity, so -- so it does involve periodic ranging.
Q. And 11.3.1 is specific to periodic ranging?
A. Yes.
Q. Periodic ranging is different than initial ranging, right?
A. Yes.
Q. And it's different because periodic ranging happens based on a time interval not in response to when a UCD is received. Is that right?
MR. KRONENTHAL: Objection. Form.
THE WITNESS: Well, periodic ranging is occurring at -- at intervals if -- so I think that's what you're asking, is it different than initial ranging? And the answer is it's different.

Ex. 2008, 170:22-171:22; POSR 22

68. Finally, the Ranging Request message of DOCSIS 2.0 also meets the Patent Owner's narrow definition of "probe" and "physical layer probe." DOCSIS 2.0 explains that the Ranging Request message is measured to determine the ranging status, which means the Ranging Request characterizes the channel. Ex. 1010, 261 (Section 11.3) ("The CMTS SHOULD NOT send a ranging status of CONTINUE in a RNG-RSP to any CMs in 2.0 mode unless the ***ranging parameters measured on the corresponding RNG-REQ*** are insufficient for the CMTS to guarantee proper reception of all burst types available to that CM."

Ex. 1036, ¶ 68; POSR 22

"Downstream Channel ID" Does Not Characterize the Channel

Q. Toward the bottom of the same page, toward the bottom of your declaration, page 59, there's a reference to "a downstream channel ID."
Do you see that?
A. Yes.
Q. ID stands for identification or identifier?
A. Yes.
Q. So downstream channel ID is a channel number?
A. Yes.
Q. It's a channel number that was chosen by the CMTS at start-up?
A. Yes.

Ex. 2008, 236:10-23; POSR 22

- Downstream Channel ID is similar to CID in WiMAX – it's just an identifier that identifies the channel

"Pending Till Complete" Does Not Characterize the Channel

- Pending Till Complete indicates that *previously sent* parameters have been successfully applied

"Pending till complete." It says, "If 0, then all previous ranging response attributes have been applied prior to transmitting this request."

Do you agree with that?

A. Yes.

Q. And that means that there are no attributes that still need to be applied at the time of sending the request, correct?

A. Yes.

Q. Then it goes on. "If nonzero, then this is the time estimated to be needed to complete assimilation of ranging parameters."

Is that right?

A. Yes.

Q. So meaning, if the request is sent with something in pending till complete, let's say 20, that means that the sender of the message still has not yet assimilated all of the ranging parameters, correct?

A. Well, it's implying there's other parameters because it's saying only equalization can be deferred.

Q. That's not my question. I'd like you to try to answer my questions and not try to argue with me about what you think the theory of the case is.

My question is, the statement starting "if nonzero," that means that if the request is sent with a nonzero value, that means that the sender of the request has not yet completed assimilation of ranging parameters. Is that correct?

A. Well, it's saying there's more time required.

Q. More time required to complete assimilation, correct?

A. Yes.

Q. And then it says, "Note that only equalization can be deferred."

Do you see that?

A. Yes.

Q. So that means that the only time when pending till complete can be more than zero is if there was more time needed to assimilate equalization parameters, correct?

A. Well, it doesn't say that.

Q. How do you read, "Note that only equalization can be deferred" then?

A. Yeah, I suppose it's a bit ambiguous.

Q. Ambiguous or not, how do you read it?

A. Yeah, I guess I'm not sure. It could be -- it's -- it's a little unclear.

Q. If it's unclear to you, then do you have any basis to dispute my reading of it that -- excuse me -- that this means that only equalization can be still in process at the time a ranging request message is sent? All other parameters need to have already have been implemented?

MR. KRONENTHAL: Objection. Form.

THE WITNESS: That's one interpretation, but, as I said, it's a little unclear.

BY MR. GALLUZZO:

Q. I understand that that -- you might not believe that's the only interpretation, but do you believe that is an accurate interpretation of that sentence?

A. Well, I can see that you can read it that way, you can read it that way. Again, I'd say it's a little bit unclear.

Q. Is there anything you can point me to that would make that reading an incorrect reading?

A. Not at this time.

Ex. 2008, 233:15-236:9; POSR 23

Grounds J-M: The Petition's "Testing" Arguments Do Not Anticipate or Render Obvious the Challenged Claims

DOCSIS 2.0's Test Response Is An LLC Layer-to-LLC Layer Message, Not A "Physical Layer Probe"

109. Mr. Bertonis further relies on ISO8802-2's description of testing. *See* Ex. 1002, ¶ 585–586, 596. However, ISO8802-2 explains that the "TEST command" is used to test the logical link control transmission path. Ex. 1011, 51; *id.* at 63 ("The TEST function provides a facility to conduct loopback tests of the LLC to LLC transmission path"). The test does not aim to characterize the channel. Instead, it is a test of the network that involves sending a TEST command with a particular information field and looking to receive the identical information field in the response. *Id.* at 63. Moreover, the logical link control transmission path is distinct from the physical channel and instead relates to the network layer. *See* Ex. 1002, ¶ 49.

Ex. 2007, ¶ 109; POR 51; POSR 23

5.4.1.1.3 Test (TEST) command

The TEST command PDU shall be used to cause the destination LLC to respond with the TEST response PDU (see 5.4.1.2.2) at the earliest opportunity, thus performing a basic test of the LLC to LLC transmission path. An information field is optional with the TEST command PDU. If present, however, the received information field shall be returned, if possible, by the addressed LLC in the TEST response PDU. The TEST command PDU shall have no effect on any mode or sequence numbers maintained by the remote LLC and may be used with an individual, group, global, or null DSAP address with an individual or null SSAP address, and with an individual group, or global DA address.

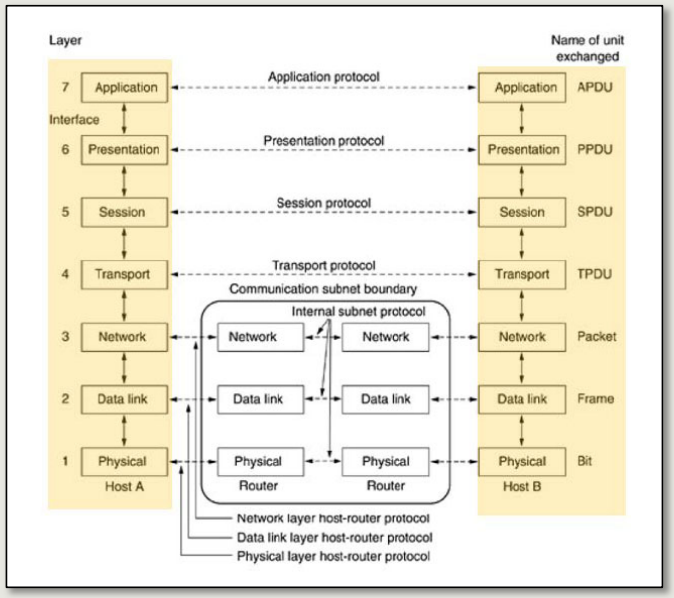
Ex. 1011, ¶ 51; POR 51; POSR 23

DOCSIS 2.0's Test Response Is An LLC Layer-to-LLC Layer Message, Not A "Physical Layer Probe"

- Mr. Bertonis admitted that no POSITA would confuse the LLC layer for the Physical Layer

Q. What is the physical layer?
A. The physical layer is the layer that the data travels on, so I can give you examples. It would be the radio waves, the coaxial cable, the circuitry that connects those signals, the actual signals that are traveling. That's the physical layer. It's physically the signals.
Q. What is the LLC layer?
A. Again, I would like to refer to the OSI model, but I believe that's link layer. But without having that in front of me, I -- I don't want to start guessing layer names without seeing the OSI model.
Q. Are you familiar with the LLC layer?
A. Not as much as the physical layer.
Q. You understand enough to know that it's a different layer than the physical layer, though, right?
A. Yes.

Ex. 2008, 174:14-175:7; POSR 23



Ex. 1002, ¶ 49

Q. And so are you able to answer my question whether a person of skill in the art would be confused between the logical link control layer, the LLC layer, and the physical layer?
A. If they're an expert in those two layers, then by definition, they wouldn't be confusing them.

Ex. 2008, 175:20-25; POSR 23

Demonstrative Only - Not Evidence PO-52

Petitioner and Mr. Bertonis Do Not Explain How the Test Signal "Characterizes the Channel"

- The test process must be used—if at all—before the CM begins normal operation, *i.e.* before receiving the first SYNC message

108. Moreover, the test must be manually initiated by the operator, and it must occur—if at all—before the cable modem begins normal operation. *See* Ex. 1010 at 185 ("In normal operation, the CM MUST ignore any TST-REQ message it receives subsequent to receiving the first SYNC message."). This is because the test involves *continuously* transmitting the test signal, effectively tying up the communication channel from normal use. This is another reason a POSITA would not be motivated to use this test process as a means of characterizing the channel.

Ex. 2007, ¶ 108; POR 52

Parameters MUST be as follows:

Mode 0 = Disable all test modes and reboot

1 = Transmit a continuous (non-bursted) upstream signal at the commanded modulation rate, carrier frequency, and power level. The chip sequence at the spreader output is replaced with an alternating binary sequence (1, -1, 1, -1, 1, -1,...) at nominal amplitude, equal on I and Q. The CM tracks the downstream symbol clock and uses it to generate the upstream symbol clock as in normal synchronous operation.

2 = Transmit a continuous (non-bursted), unmodulated (CW) upstream signal at the commanded carrier frequency, modulation rate and power level. This is equivalent to replacing the chip sequence at the spreader output with the constant sequence (1, 1, 1, 1, 1, 1,...) at nominal amplitude, equal on both I and Q. The CM tracks the downstream symbol clock and uses it to generate the upstream symbol clock as in normal synchronous operation.

In normal operation, the CM MUST ignore any TST-REQ message it receives subsequent to receiving the first SYNC message. Note that this makes it less convenient to use this test mode with a CMTS, since the CMTS may send a SYNC message before the CM sees a TST-REQ message.

After acquiring a downstream signal, and prior to receiving a SYNC message, if the CM receives a TST-REQ message (either unicast to the CM itself, or broadcast) with Mode != 0, the CM MUST begin the test mode indicated in the Mode parameter, using the channel parameters included in the TST-REQ message.

In test mode, if the CM receives a TST-REQ message (either unicast to the CM itself, or broadcast) with Mode = 0, the CM MUST reboot. The CM MUST reboot after the expiration of the T16 timer, a 30 minute test mode timer.

The TST-REQ message MUST be generated in the format shown in Figure 8-45, including all of the parameters coded as TLV multiples defined in Table 8-22.

Ex. 1010, 185; POSR 23-24

Petitioner and Mr. Bertonis Do Not Explain How the Test Signal "Characterizes the Channel"

- Mr. Bertonis could not refute this point because he was unfamiliar with the SYNC message

At what time after a CM turns on and attempts to connect to the CMTS does the CM receive a sync message during normal DOCSIS 2.0 operation?

A. Well, it's -- it's not specified here what that time is.

Q. It's not specified on page 185, but do you know?

A. I don't know what that time is.

Q. So how do you disagree then with Mr. Holobinko, who does know what that message is, who says that a test request and the test procedure cannot happen during normal operation and must happen before?

A. I guess that's his reading of -- interpretation of the sync message.

Q. But you didn't review that in coming to your opinions in this case?

A. Well, remember, it says that it's -- I mean, it -- it's -- yeah, I'd only be speculating as to what that time is. The point is, you can still send the test message.

Ex. 2008, 242:11-243:6; POSR 23-24

Parameters MUST be as follows:

Mode 0 = Disable all test modes and reboot

1 = Transmit a continuous (non-bursted) upstream signal at the commanded modulation rate, carrier frequency, and power level. The chip sequence at the spreader output is replaced with an alternating binary sequence (1, -1, 1, -1, 1, -1,...) at nominal amplitude, equal on I and Q. The CM tracks the downstream symbol clock and uses it to generate the upstream symbol clock as in normal synchronous operation.

2 = Transmit a continuous (non-bursted), unmodulated (CW) upstream signal at the commanded carrier frequency, modulation rate and power level. This is equivalent to replacing the chip sequence at the spreader output with the constant sequence (1, 1, 1, 1, 1, 1,...) at nominal amplitude, equal on both I and Q. The CM tracks the downstream symbol clock and uses it to generate the upstream symbol clock as in normal synchronous operation.

In normal operation, the CM MUST ignore any TST-REQ message it receives subsequent to receiving the first SYNC message. Note that this makes it less convenient to use this test mode with a CMTS, since the CMTS may send a SYNC message before the CM sees a TST-REQ message.

After acquiring a downstream signal, and prior to receiving a SYNC message, if the CM receives a TST-REQ message (either unicast to the CM itself, or broadcast) with Mode != 0, the CM MUST begin the test mode indicated in the Mode parameter, using the channel parameters included in the TST-REQ message.

In test mode, if the CM receives a TST-REQ message (either unicast to the CM itself, or broadcast) with Mode = 0, the CM MUST reboot. The CM MUST reboot after the expiration of the T16 timer, a 30 minute test mode timer.

The TST-REQ message MUST be generated in the format shown in Figure 8-45, including all of the parameters coded as TLV multiples defined in Table 8-22.

Ex. 1010, 185; POSR 23-24

Petitioner and Mr. Bertonis Do Not Explain How the Test Signal "Characterizes the Channel"

- Mr. Bertonis opined that the Test Signal could be used for "diagnosing problems with the cable modems," but he could not point to any evidence supporting his opinion

> A. Well, presumably, the cable modem is analyzing that test signal, that's the purpose of sending 1, negative 1; 1, negative 1, and presuming that the -- the CMTS is analyzing that information.

Ex. 2002, 119:14-17; POR 53

> THE WITNESS: Well, it's -- it's used by that test message presumably.

Ex. 2002, 120:16-17; POR 53

> talks about changing modulation parameters. And presumably -- and I'm presuming that the CMTS is -- is analyzing that information and, you know,

Ex. 2002, 119:24-120:1; POR 53

> presumably, you're making tests and doing something with it.

Ex. 2002, 122:1-2; POR 53

Petitioner Improperly Raises New Invalidity Theories in its Reply

Petitioner's Reply Introduces New "Obviousness" Theories for WiMAX

- The Reply introduces a new theory that Claim 1 is obvious in view of IEEE-802.16 (WiMAX)

Ground	References	Basis	Claims Challenged
A	IEEE-802.16	§102	1-7, 9-10, 14-15
B	IEEE-802.16	§103	3-5, 8, 11-13, 16-24
C	IEEE-802.16 and Won	§103	8, 16, 24
D	Waxman	§102	1-11, 14-19, 22-24
E	Waxman	§103	1-11, 14-19, 22-24
F	Waxman and Giesberts	§103	3-5, 12-13, 20-21
G	Waxman and Zuckerman	§103	5, 10-11, 18-19
H	Waxman, Giesberts, and Zuckerman	§103	5
I	Waxman and Won	§103	7-8, 15-16, 23-24
J	DOCSIS-2.0	§102	1-2, 6-7, 9, 14-15
K	DOCSIS-2.0 and ISO8802-2	§103	1-2, 6-7, 9, 14-15
L	DOCSIS-2.0 and Zuckerman	§103	8, 10-11, 16-19, 22-24
M	DOCSIS-2.0, ISO8802-2, and Zuckerman	§103	8, 10-11, 16-19, 22-24

Petition 4; see also POSR 2

> Ex. 1036, ¶¶34-35. To the extent Entropic argues otherwise, this would have at least been one of the finite number of predictable implementations (the Basic CID is included or not) that WiMAX alone identifies and that a POSITA would have had an expectation of success in implementing and would have implemented so that the Basic CID is available when parsing the payload and generating a subsequent Ranging Request. Ex. 1036, ¶37.

Reply 12-13; see also POSR 2

Petitioner's Reply Introduces New Arguments Regarding *Waxman*

> Still, Waxman does not limit its probe response to only an acknowledgement. Ex. 1007, [0037]; Ex. 1036, ¶¶49-50. Waxman describes generating probe responses having preamble and data portions based on the probe request's parameters, thereby disclosing multiple parameters in the probe response. Pet. 49; Ex. 1002, ¶¶342-356; Ex. 1007, [0042]-[0043]. Waxman's probe responses are used to determine reception reliability and provide feedback, meaning the probe responses would have included parameters for those purposes too. Ex. 1007, [0024],

Reply 17-18; POSR 2-3

New argument regarding "content payload"

> Regarding the recipient of the probe response, Waxman's AP transmits the probe response to the station from which the probe request originated. Ex. 1007, [0037], [0040]-[0041], [0048]-[0049]; Pet. 49. Waxman's stations send probe responses to the AP concurrently, and the AP transmits corresponding probe responses to each respective station. Ex. 1007, [0030]-[0037], [0040]-[0045]. For Waxman's system to operate as described, e.g., for AP 105 to send a probe response to station 102 (and not other stations), the probe request would have included a parameter specifying the recipient station of the probe response. Ex. 1036, ¶54. On

Reply 18; POSR 2-3

Petitioner neglected to address "at least specify… a second node" in the original Petition

Petitioner's Reply Introduces New "Obviousness" Theory for DOCSIS 2.0 Ranging

- The Reply introduces a new theory that Claim 1 is obvious in view of DOCSIS 2.0 Ranging

Ground	References	Basis	Claims Challenged
A	IEEE-802.16	§102	1-7, 9-10, 14-15
B	IEEE-802.16	§103	3-5, 8, 11-13, 16-24
C	IEEE-802.16 and Won	§103	8, 16, 24
D	Waxman	§102	1-11, 14-19, 22-24
E	Waxman	§103	1-11, 14-19, 22-24
F	Waxman and Giesberts	§103	3-5, 12-13, 20-21
G	Waxman and Zuckerman	§103	5, 10-11, 18-19
H	Waxman, Giesberts, and Zuckerman	§103	5
I	Waxman and Won	§103	7-8, 15-16, 23-24
J	DOCSIS-2.0	§102	1-2, 6-7, 9, 14-15
K	DOCSIS-2.0 and ISO8802-2	§103	1-2, 6-7, 9, 14-15
L	DOCSIS-2.0 and Zuckerman	§103	8, 10-11, 16-19, 22-24
M	DOCSIS-2.0, ISO8802-2, and Zuckerman	§103	8, 10-11, 16-19, 22-24

Petition 4; POSR 3

(even the allegedly infringing probes are used for ranging). A POSITA would have understood that the Ranging Request probes the CMTS to diagnose the uplink channel and send timing and power adjustments, and therefore is the "probe" and "physical layer probe." Ex. 1036, ¶¶65-67.

Reply 23; POSR 3

Mr. Bertonis' Reply Declaration Introduces New Opinions Regarding DOCSIS 2.0 Testing

- Mr. Bertonis introduces new opinions and cites to new evidence at Ex. 1010, 97-98 and 508

609. **Test Procedure:** As I explained above with respect to claim 1, the Test Request message (the claimed "probe request") includes a Mode parameter that causes a CM to send the upstream signal (the claimed "probe"). Ex. 1010, 185. Further, the upstream signal sent in response to the Test Request message assists in diagnosing a problem with the CM. Ex. 1010, 184-185. More specifically, a POSITA would have understood that the upstream signal in response to the Test Request assists in diagnosing a problem with upstream signal timing or upstream required power level. Ex. 1010, 241-242 (describing need to scan to acquire a valid downstream signal and need to re-acquire upstream timing after interruption and after other attempts at recovering such as unsuccessful ranging), 489 (describing testing of SNR), 492-493 (testing adjacent channel interference), 625, 628.

Ex. 1002, ¶ 609; POSR 3-4

70. Because these upstream signals (which form the Test Response) are sent in response to the Test Request message (which is a MAC Management message) and using parameters set by the Test Request, a POSITA would have understood that they are used to test the communications channel (particularly the upstream channel) between the CMTS and CM. Ex. 1010, 132-134 (showing MAC management messages), 185-186 (Table 8-22 showing that the Test Request message is setting the modulation rate, frequency, and power for the Test Response so the CMTS is testing these aspects of the channel; otherwise the Test Request message would not be commanding the Test Response to use them). In addition, a POSITA would have understood that timing is being assessed and diagnosed using the Test Response because DOCSIS 2.0 describes that, for sending the Test Response, "[t]he CM tracks the downstream symbol clock and uses it to generate the upstream symbol clock as in normal synchronous operation." Ex. 1010, 185. A POSITA would have also understood that the test procedure is being used for assessing timing because the test mode is also described as a test mode for testing timing jitter. Ex. 1010, 97-98 (Section 6.2.21.8), 508 ("CM test mode for testing phase noise and jitter of CM carrier and symbol timing"). Similarly, a POSITA would have understood that the test procedure is being used for assessing power because the test mode is also described as a test mode for testing carrier phase noise. Ex. 1010, 96 (Section 6.2.21.5), 508 ("CM test mode for testing phase noise and jitter of CM carrier and symbol timing"). Further, as I previously explained in my first declaration (see Ex. 1002, ¶ 609), a POSITA would have understood that the upstream signal in response to the Test Request assists in diagnosing a problem

Ex. 1036, ¶ 70; POSR 3-4

Petitioner's Expert Testimony Should be Given Little Weight

Mr. Bertonis' Opinions Should Be Given Little Weight

- Mr. Bertonis could do little more than regurgitate his declaration

Q. You agree with me that for one to read and understand and even implement Zuckerman, they wouldn't have to use OFDMA, they could use OFDM instead?
A. Can you show me where I discuss that in my declaration?
Q. I don't think this is in your declaration.
A. Then probably I would need more time to study it because I'm prepared here to talk about my declaration.
Q. Well, in preparing your declaration, you have come to the opinion that Zuckerman, in part, renders obvious the '690 patent claims, correct?
A. Yes.
Q. So I assume that means you took great care in your review of the prior art references, including Zuckerman?
A. Well, I'm not sure how to interpret "great care," but I did review Zuckerman. And, again, if you can show me where in my declaration this comes up, I'd be glad to comment further.
Q. Did you review the entirety of Zuckerman in coming to your opinions?
A. Well, I scanned through it. It's very -- there's -- it's a very lengthy patent, but obviously, I did study it.
Q. But you're not able to answer my question?
A. Well, again, to help me answer your question better, I'd ask you to refer me to where in the declaration this comes up.
Q. That's kind of the problem. I think you should have addressed it, but you didn't, so I'm asking you now.
Are you able to answer my question?
A. Okay. I'm not here to discuss what's outside of my declaration.

Ex. 2008, 168:24-170:9; POSR 4

Q. Okay. Go to Exhibit 1010. This is DOCSIS 2.0.
A. Okay.
Q. In particular, I'd like you go to page 261, per the numbers written on the bottom of the document.
A. Okay.
Q. You'd agree with me that this section relates to periodic ranging?
A. Well, 11.3 discusses periodic ranging opportunity, so -- so it does involve periodic ranging.
Q. And 11.3.1 is specific to periodic ranging?
A. Yes.
Q. Periodic ranging is different than initial ranging, right?
A. Yes.
Q. And it's different because periodic ranging happens based on a time interval not in response to when a UCD is received. Is that right?
MR. KRONENTHAL: Objection. Form.
THE WITNESS: Well, periodic ranging is occurring at -- at intervals if -- so I think that's what you're asking, is it different than initial ranging? And the answer is it's different.
BY MR. GALLUZZO:
Q. And in periodic ranging, it occurs at intervals regardless of what messages might be received before or during that interval, correct?
A. Can I refer to where that is in my declaration so I can get more context?
Q. I don't know if it's in your declaration, or at least in my notes, I don't have that.
A. Well, again, if it's not in my declaration, I need more time to study it.
Q. So you're not able to answer for me what periodic ranging is any more than what you've already said?
A. Not to the extent beyond what's in my declaration.

Ex. 2008, 170:22-172:12; POSR 4

Demonstrative Only - Not Evidence PO-62

Mr. Bertonis' Opinions Should Be Given Little Weight

- Mr. Bertonis refused to state whether he had opinions about the meanings of claim terms

Q. I'm going to state this as clearly as I can, and if your answer is that you don't have such an opinion, I'd appreciate you giving it to me straight like that, and if you do have an opinion, I'd appreciate you pointing it out to me where it is in your declaration.

So here's my question: Did you provide an analysis of what a person of skill in the art would understand the term "specify" or "specifying" to mean in the claims of the '690 patent?

A. Again, I tried to show prior art on either a strict interpretation or a more general interpretation, so --

Q. Mr. Bertonis, I'm sorry, but at some point, you're going to have to answer my questions. So I'll give you one more chance.

Did you or did you not provide an opinion about how a person of skill in the art would understand the word "specify" or "specifying" in the context of the '690 patent claims?

A. Well, again, I tried to show prior art to meet the different interpretations of specifying the content payload of the probe.

Ex. 2008, 186:10-187:7; POSR 4

Q. Let's say Mr. Kronenthal called both of us yesterday and said hey, guys, it's blue shirt day. Let's wear blue shirts to the deposition. And we both do. You'd agree with me that Mr. Kronenthal specified to you to wear your blue shirt, correct?

A. You're asking me questions that are beyond the scope of my declaration, so I'm not sure -- you know, I'm not here to speculate or --

Q. Are you unable to answer my question?

A. Well, I'm here to ask -- to answer questions that you ask regarding the declaration I submitted, not to talk about shirts or colors.

Q. Is it your testimony that the interpretation of the word "specify" is outside the scope of your declaration?

A. No. I'm basically saying that I know it's been a point of dispute, and my work has been to show prior art that can basically cover the different interpretations.

Q. That's just not my question at all.

So are you able to answer my hypothetical?

A. Can you repeat the question again?

Q. Yeah. This is a hypothetical.

Yesterday before this deposition Mr. Kronenthal called up the two of us separately. He said Vince, you wear a blue shirt, and separately to you, he said Mr. Bertonis, you wear a blue shirt. Today we showed up wearing blue shirts. Would you agree with me that Mr. Kronenthal specified to you and to me that we should wear blue shirts?

A. I guess, how does this relate to my declaration and to discussing the content payload of the probe? I guess I don't see -- I'm not here to answer hypothetical questions.

Q. Respectfully, I don't care whether you think it's relevant or not. That's for the Board and for me to decide.

Are you able to answer my question?

A. No.

Q. Why aren't you able to answer my question?

A. Because it's not -- it's not specifically related to my declaration.

Q. So you're refusing to answer?

A. Basically, yes.

Ex. 2008, 188:8-190:1; POSR 4

Mr. Bertonis' Opinions Should Be Given Little Weight

- Mr. Bertonis could not answer basic questions about his opinions

Q. Mr. Bertonis, before we went on break, we were going to look at paragraph 83 of your declaration. I'm going to give you a chance to read it, but before I do, I'd like to ask you the question that I'm going to get to so that you can focus on answering that. Does that sound okay?

A. Yes, sure.

Q. Basically what I'm going to want to understand after you've read this paragraph is what your proposed obviousness combination is. So what are you starting with? What are you doing to it? What are you adding? What are you combining? I will ask specific questions, but I want you to keep that in mind as you're reading paragraph 83. So please do that, and read that to yourself, and let me know when you're finished.

A. Okay. I think I've got it read.

Q. Okay. So I understand that your invalidity theory here is that you start with DOCSIS 2.0.

Do I have it right so far?

A. Yes.

Q. Okay. Is the first change that you're proposing be made to change the frequency range or to add OFDMA or to do something else?

A. You're asking me about combining DOCSIS 2.0 with OFDMA? Is that your question?

Q. Is that what you're proposing?

A. Well, I'm not sure if I'm -- I'm not sure I'm proposing. I'm writing a declaration. I guess I'm confused with your question.

Ex. 2008, 243:19-244:24; POSR 4

Q. Who created the initial draft of your reply declaration?

A. I would say the lawyers prepared the initial draft. I -- well, let me say that there were pieces that, you know, I wrote and submitted different pieces, but, in general, it was created by the lawyers at Banner Witcoff.

Ex. 2008, 151:4-10; POSR 5

