

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF PENNSYLVANIA**

PROMPTU SYSTEMS CORPORATION

Plaintiff,

v.

COMCAST CORPORATION and COMCAST  
CABLE COMMUNICATIONS, LLC

Defendants.

CIVIL ACTION

2:16-cv-06516-JS

**PLAINTIFF'S OPENING CLAIM CONSTRUCTION BRIEF**

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1	Declaration of Michael Shamos, Ph. D. In Support of Plaintiff's Opening Claim Construction Brief
2	November 30, 2006 Amendment, '538 Patent Prosecution history
3	March 1, 2007 Notice of Allowability, '538 Patent Prosecution history
4	Microsoft Computer, 5 <sup>th</sup> edition ("voice recognition")
5	Speech Glossary (Microsoft.Speech) ("speech recognition engine")
6	Dictionary of Information Science and Technology, 2 <sup>nd</sup> ed. IGI Global (2013) ("Network Path")
7	U.S. Patent No. 7,260,538
8	U.S. Patent No. 7,047,196
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## I. RELEVANT PRINCIPLES OF CLAIM CONSTRUCTION

Claim construction is a question of law. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 977-79 (Fed. Cir. 1995) (en banc). Claim terms “are generally given their ordinary and customary meaning,” which “is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc) (internal citation omitted). There are only two exceptions to this general rule: 1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution. *Thorner v. Sony Computer Entm’t Am., LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012). Both exceptions require a clear and explicit statement by the patentee. *Id.* at 1367-68. To constitute disclaimer, for example, there must be a clear and unmistakable disclaimer. *Id.* at 1366-67. And to act as its own lexicographer, a patentee must “clearly set forth a definition of the disputed claim term” other than its plain and ordinary meaning. *Id.* at 1365.

A person of ordinary skill in the art “is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Phillips*, 415 F.3d at 1313. Proper claim construction relies on an analysis of the patent’s intrinsic evidence, i.e., the language of the claims, the specification, and the prosecution history. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582-83 (Fed. Cir. 1996).

The proper construction for a claim term must align with what the patent describes as the invention and what the inventors actually invented. *Phillips*, 415 F.3d at 1316. The patent’s specification “is always highly relevant” to the analysis, as it “necessarily informs the proper construction of the claims.” *Id.* at 1315-16. “Usually, [the specification] is dispositive; it is the single best guide to the meaning of a disputed term.” *Vitronics*, 90 F.3d at 1582. The specification also helps resolve ambiguous claim terms if “the ordinary and accustomed meaning of the words

used in the claims lacks sufficient clarity to permit the scope of the claim to be ascertained from the words alone.” *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002).

It is improper to “read unstated limitations into claim language.” *Rambus Inc. v. Infineon Techs. Ag*, 318 F.3d 1081, 1088 (Fed. Cir. 2003); *see also Thorner*, 669 F.3d at 1366-67. “We do not import limitations into claims from examples or embodiments appearing only in a patent’s written description, even when a specification describes very specific embodiments of the invention or even describes only a single embodiment.” *JVW Enters., Inc. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1335 (Fed. Cir. 2005). A court may also consider extrinsic evidence, but such evidence is less reliable and less significant than the intrinsic record. *Phillips*, 415 F.3d at 1317-18. A court should discount extrinsic evidence at odds with the intrinsic record. *Id.* at 1318.

## II. ANALYSIS

### A. head-end unit

Claim Phrase	Promptu’s Proposed Construction	Comcast’s Proposed Construction
<b>head-end unit</b> (in Claims 2, 19 of the ’538 Patent)	component of a cable system that is remote from the television controller or receiver	the central unit in a cable-TV network that processes and delivers cable-TV signals to subscribers

#### 1. The Context in Which Head-End Unit Appears in the Claims Requires That It Be Construed According to What This Component Is Rather than What It Does

The parties dispute whether this phrase should be construed based on what a “head-end unit” is (Promptu’s construction) as opposed to what the head-end unit does (Comcast’s construction). Ex. 1: Shamos Decl., ¶ 34. This phrase occurs eight times in two of the asserted claims in which the claim language specifically explains what the “head-end unit” does (*e.g.*, “deriving a controller-compatible command function,” “transmitting said command function to said controller”). Thus, in this context, it makes no sense to “pile on” by construing “head-end unit” with additional limitations as to what it does, particularly because Comcast’s additional gloss is at odds with the claim language.

2. The Specification Confirms the Head-End Unit is a Component that is Remote from the Television Controller or Receiver

Figure 1 depicts that the head-end unit is remote from the television controller (*i.e.*, set-top box) or the receiver.<sup>1</sup> Ex. 7: '538 Patent, 4:7-10. Consistent with Promptu's construction, the specification uses the phrase "head-end unit" in terms of its position relative to the television controller and receiver, and particularly describes that a cable system comprises two components. Shamos Decl. at ¶ 30. First, user premises equipment includes a television controller (*e.g.* set-top box) and other user television equipment (*e.g.* remote control, etc.). *Id.* Second, the cable system includes everything else that is otherwise remote from the user premises equipment. *Id.* As clearly shown in Figures 1 and 2 of the '538 Patent, the specification generally refers to any part of the cable system that is remote from the television controller or receiver as the head-end unit. *Id.*, ¶¶ 30-32.

Indeed, inserting Promptu's proposed construction into where "head-end unit" is found results in logical and understandable claim language. The same exercise with Comcast's proposed definition, in many instances, results in unsupported limitations being improperly added to the claims and creates confusion, instead of resolving an ambiguity (as claim construction is intended) to assist a jury in its determination of whether infringement exists. As shown, in many instances, Comcast's proposed interpretations would further blur the question of what is claimed.

For example, by inserting Promptu's construction, the preamble of claim 2 is further explained as "a method for providing voice recognition at a [] [component of a cable system that is remote from the television controller or receiver]." Similarly, substituting Promptu's construction into the sixth limitation of claim 2 would result in: "the [component of a cable system that is remote from the television controller or receiver] transmitting said command function to said controller via the cable television link." These clarifications are in line with the summary of the invention, which

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<sup>1</sup> A detailed description of the patents is found in ¶¶ 28-29 of Dr. Shamos' Declaration, attached hereto as Exhibit 1. True and correct copies of Exhibits 1-9 listed herein are attached hereto.

states, “A method and apparatus is disclosed for remotely processing voice commands for controlling a television.” ’538 Patent, 2:21-22.

3. Comcast’s Constructions Import Unintended, Unnecessary, and Inconsistent Limitations

Substituting Comcast’s proposed construction for “head-end unit” into the above-quoted sixth limitation of claim 2 proves that this construction should not be adopted. This limitation explains that head-end unit “transmit[s] command function[s] to [a] cable set top box...” Under Comcast’s construction, in addition to this component being a “central unit,” the unsupported limitation that this transmission must also include “process[ing] and deliver[ing] cable TV signals to subscribers,” would be added. Contrary to established claim construction principles, this reads unstated *and inconsistent* steps into the claim language. *JVW Enters., Inc.* 424 F.3d at 1335. Indeed, had the inventors intended for the “head-end unit” to be a “central unit,” or something that “processes and delivers cable TV signals to subscribers,” they easily could have said so. They did not. The inventors did not state and did not intend this unit to be “central” to anything, yet, Comcast’s proposed limitation would do exactly that. There is no reason to import such additional unintended limitations through claim construction.

Regarding Comcast’s proposed unsupported limitation that the head-end unit “... processes and delivers Cable-TV signals ...,” Comcast’s proposed construction is at odds with the specification, which explains that “voice commands are transmitted from the set-top box 130 to a node 140, a head-end receiver 150 and to a head end unit 160 along a cable television uplink, where speech recognition processing 170 is performed.” ’538 Patent, 4:7-10. To be sure, the claims recite the head-end unit “deriving a controller-compatible command function” and “transmitting said command function to said controller,” but the plain meaning of the claim language does not require any further “processing or delivering of cable-TV signals.” The specification and prosecution history are distinctly silent regarding “cable-TV signals,” let alone



such signals being processed and delivered by the claimed “head-end unit.” No portion of the specification requires that the claimed head-end unit processes and delivers cable-TV signals.

Comcast’s position that the head-end unit “... delivers Cable-TV signals...” also ignores the specification stating that a single head-end unit may execute certain functions while other components are performing different functions, and likewise, separate components may perform different functions of the head-end unit, as shown in Figure 4. Shamos Decl., ¶ 32. In particular, the specification describes the head-end unit as including speech processing components and video delivery components, as well as possibly other components. *Id.*, at ¶ 33; ’538 Patent, 2:59-61, 4:2-10, 4:24-26, 5:12-13, 5:19-21; 5:46-47. Not only does Comcast’s language import unsupported limitations into this claim, it also improperly restricts a head-end unit from delivering video. *Vitronics*, 90 F.3d at 1584; Shamos Decl., ¶ 33.

Furthermore, Comcast’s proposed construction unduly limits “head-end unit” to a unit that “processes and delivers cable-TV signals to subscribers,” while the plain meaning of the claims and the specification do not require such a narrow construction.

#### 4. Comcast Misconstrues the Intrinsic and Extrinsic Evidence

Comcast cites to intrinsic evidence on only two occasions, but both cited references to the prosecution history actually support Promptu’s construction. Shamos Decl., ¶ 35. The “Burchard” reference concerned voice recognition occurring “on-site at the remote control unit,” bears no relationship to the construction of any term at issue. *Id.*; November 30, 2006 Amendment (Ex. 2) at 19. Comcast also cites to the Examiner statement that “the prior arts of record do not teach where the voice command is transmitted from the set-top-box to a remote head end unit for processing as recited in the claims.” March 1, 2007 Notice of Allowability (Ex. 3) at 2. Both references refer to the head-end unit being remote from the television controller and receiver, with no mention of either a “central unit” or a unit that “processes and delivers cable-TV signals to subscribers.”

Comcast's multiple extrinsic evidence references to "head end" or "headend," are unhelpful in claim construction. Initially, most of Comcast's dictionaries define "head end" in terms of a physical location. These dictionaries are directly at odds with the '538 Patent specification, which never describes the "head-end unit" in terms of a physical location but instead in terms of its relationship to the television controller and receiver. Further, these references ignore the fact that the explicit term used in the '538 Patent is "head-end unit." Shamos Decl., ¶ 36. A unit of a head end may not necessarily perform all of the functions, or certain functions, of a head end. For at least this reason, looking to extrinsic evidence of "head end" or "headend" to constrain the plain meaning of the term "head-end unit" is improper and takes the term out of the context of the '538 Patent. *See Phillips*, 415 F.3d at 1321. Moreover, only the McGraw-Hill Illustrated Telecom reference mentions processing of cable TV signals, but not in the context of a head-end unit. Shamos Decl., ¶ 36.

Comcast's other dictionaries recite a "point of origination of the cable TV signals," "location that has access to signals," "originating point in a communications system," or an "originating point of a signal in cable TV systems." *Id.* Moreover, the only definition that uses the word "central" as used in Comcast's proposed construction is a 1997 IEEE definition, which relates to broadband local networks, and not cable networks, and defines the term "head end" explicitly as a location. Shamos Decl., ¶ 37. However, those skilled in the art after reading the '538 Patent would have no reason to define "head-end unit" as a "central unit in a cable-TV network." *Id.*; *Phillips*, 415 F.3d at 1321. Comcast's cited dictionaries are extraneous and irrelevant to the use of the term "head-end unit."

Comcast further cites to "Broadband Cable TV Access Networks," which does not define a "headend" or "head-end unit," but merely shows one configuration of a headend in a traditional cable TV network. Shlomo Ovadia, Broadband Cable TV Access Networks, 5-6. Likewise, the "Cable Modem Telephony Return Interface Specification" and "Radio Frequency Interface Specification" references refer only to a "Distribution Hub or Headend," which again focus on the arbitrary meaning

of words rather than the term's usage in the '538 Patent. *Phillips*, 415 F.3d at 1321. In addition, Comcast cites to several passages of the '196 Patent which do not refer to the claimed term "head-end unit," but generally describe embodiments of headends. Comcast also relies on certain Promptu production documents which are unrelated to the construction of "head-end unit" and fail to support Comcast's proposed construction. Shamos Decl., ¶ 38. Moreover, Comcast fails to cite to intrinsic evidence for limiting "head-end unit" to a cable-TV network, which is unresponsive as it may refer to a cable-TV network such as AMC or MTV, as opposed to a cable system.

**B. central/centralized processing station**

Claim Phrase	Promptu's Proposed Construction	Comcast's Proposed Construction
<b>central/centralized processing station</b> (in Claims 34, 40 of the '538 Patent)	portion of a cable television system at which voice commands are received and command functions are transmitted	device at a cable-TV network head-end unit that receives and performs voice recognition on voice commands, and generates and returns instructions to set-top boxes to carry out the commands

Promptu's construction should be adopted because it is taken from that part of the specification that explains what the central processing station is.

The central processing station is designed to handle a multitude of voice command inputs from a multitude of cable television users. After the voice command is processed, the central processing station 160 sends a corresponding command function to the cable set-top box 130 or other system component where the command is then performed. '538 Patent, 4:17-23.

By contrast, Comcast's proposed construction ignores the specification, and in fact, improperly adopts limitations contrary to, and without any support from the specification. Moreover, Comcast's proposed construction improperly includes limitations based on language in a preferred embodiment. *JVW Enters., Inc.* 424 F.3d at 1335.

The specification makes clear that the centralized processing station need only be the portion of a cable television system that processes commands by receiving voice commands and transmitting command functions, in particular to handle a multitude of voice command inputs from a multitude of

cable television users. '538 Patent, 1:59-63, 4:17-23; Shamos Decl., ¶ 41. The specification provides that some other device, for example a computer, can perform voice recognition, with the centralized processing station then transmitting command functions to the set-top box. '538 Patent, 2:29-37; Shamos Decl., ¶ 41. Yet, Comcast's proposed construction would require that the *central processing station* "receive[] and perform[] voice recognition on voice commands."

The specification does not require the centralized processing station to perform voice recognition. '538 Patent, 2:29-35, 4:17-23; Shamos Decl., ¶ 40. As Dr. Shamos states at paragraph 42, "[t]he Comcast construction comes from nowhere, not from the specification or any other intrinsic evidence, and not from any extrinsic evidence. There is no basis for requiring the centralized processing station to 'perform voice recognition.'"

Indeed, none of the references to the '196 Patent, the Promptu production documents, or the various dictionaries relied upon by Comcast define or even mention a "central processing station" or "centralized processing station." Instead, Comcast focuses on the abstract meaning of words (e.g. "station" or "workstation" in its dictionary citations) rather than the meaning of the claimed term within the context of the '538 Patent. Intrinsic evidence controls over abstract dictionary definitions, particularly those at odds with the intrinsic evidence. *Phillips*, 415 F.3d at 1317-18.

Notwithstanding Comcast's *unsupported* attempt to somehow tie the central processing station to performing voice recognition, Comcast's proposed construction makes no sense. Under Comcast's construction this "station" is accorded the functions of "receiving voice recognition on voice commands," *and* "performing voice recognition on voice commands." Comcast does not and cannot explain how anything can "receive voice recognition on voice commands." Comcast's proposed construction must be rejected.

Comcast also attempts to limit the claims by importing an exemplary embodiment. Specifically Comcast's construction includes the requirement that this station be located "at a cable

TV network head-end unit.” As such, this construction violates the Federal Circuit’s well-stated prohibition of importing embodiments into the claims. *See Phillips*, 415 F.3d at 1323; *Oatey Co. v. IPS Corp.*, 514 F.3d 1271, 1276 (Fed. Cir. 2008). Moreover, while Comcast cites to the ’538 Patent Prosecution history, its citations do not even mention the term “centralized processing station.” Similarly, Comcast’s extrinsic evidence fails to mention “head-end unit,” let alone require a central processing station located at a cable-TV network head-end unit. Shamos Decl., ¶ 43.

### C. voice recognition

Claim Phrase	Promptu’s Proposed Construction	Comcast’s Proposed Construction
<b>voice recognition</b> (in Claims 2, 19, 34 and 40 of the ’538 Patent)	understanding by a computer of spoken words for the purpose of receiving commands and data input from the speaker	the conversion of spoken words into computer text

The concept of “voice recognition” is well understood to those of ordinary skill in the art as “understanding by a computer of spoken words for the purpose of receiving commands and data input from the speaker.” Shamos Decl., ¶ 45. The plain meaning of the term is clear when substituting Plaintiff’s proposed construction in, for example, claim 34: “a centralized processing station configured to receive and process second output from a multitude of television set top boxes by applying [understanding by a computer of spoken words for the purpose of receiving commands and data input from the speaker] to the second output to identify user-intended voice commands.” The specification further supports this construction:

“It is also known to use voice recognition systems to control system variables of various active systems. Speech recognition control system and method, U.S. Pat. No. 4,605,080, Lemelson, Aug. 12, 1986, discloses a weighing scale involving calculating functions that include an automatic control system that can accept spoken words as input. A speech recognition system is used for processing and analyzing speech signals output by a microphone. The microphone is connected to a speech recognition computer that outputs and applies select command control signals to effect desired control functions.” ’538 Patent, 1:29-39.

Comcast's proposed construction improperly incorporates the requirement that spoken words must be converted into "computer text," although the specification explicitly describes voice recognition processes that do not require such a conversion. Shamos Decl., ¶ 46. For example, the specification describes that:

"A transmission is cepstral analyzed for the purposes of facilitating the computer analysis of speech for voice recognition. Cepstral analysis is a method of feature extraction that is known in the art. Cepstral analysis, or feature extraction, is performed on a digitized speech signal and *results in a representation of the signal that characterizes the relevant features of the speech.*" '538 Patent, 5:57-63 (emphasis added).

In at least one embodiment, the disclosed cepstral analysis extracts features and characterizes the relevant features of the speech. This process is independent of any conversion of a spoken word into computer text. Thus, Comcast's proposed construction improperly excludes disclosed embodiments where there is no clear disclaimer of claim scope. *See Oatey Co.*, 514 F.3d at 1276. While computer text may be used in certain methods of voice recognition, it is certainly not necessary. Shamos Decl., ¶ 48. In particular, the phrase "computer text," or even "text," does not appear in the claims, specification, or the prosecution history. *Id.*, ¶ 46.

Comcast misinterprets a single embodiment describing that "speech recognition processing includes user voice identification and word recognition." '538 Patent, 4:10-16. "Word recognition" does not necessarily include conversion into computer text, as words may generally be in both spoken and written form.

Comcast imports its proposed construction from McGraw Hill, Computer Desktop, 9<sup>th</sup> edition 2001. The McGraw Hill reference is an encyclopedia, not a dictionary, and does not purport to define "voice recognition," but instead describes one method for "voice recognition" which includes "[t]he conversion of spoken words into computer text." Shamos Decl., ¶ 47. While the McGraw Hill reference explains one common usage of "voice recognition," that is to convert voice into text so it can be read by a human, such a usage is at odds with the '538 Patent,

in which recognized voice commands are never read by a human. *Id.* The specification makes clear that there are other methods of voice recognition, in particular methods that do not require conversion into text. *Id.*, ¶ 48. A person of ordinary skill in the art would understand that no such conversion is necessary for the invention of the '538 Patent to operate. *Id.*, ¶ 49. As the McGraw Hill reference is directly at odds with the intrinsic record, it should be given minimal weight or excluded from consideration. *See Phillips*, 415 F.3d at 1321.

Comcast cites to two dictionaries (Microsoft Press Computer, 4<sup>th</sup> edition and Microsoft Computer, 5<sup>th</sup> edition (Ex. 4)) which both recite “the capability of a computer to understand the spoken word for the purpose of receiving commands and data input from the speaker.” This is in line with the claims, specification, and Promptu’s construction.

#### **D. back channel**

<b>Claim Phrase</b>	<b>Promptu’s Proposed Construction</b>	<b>Comcast’s Proposed Construction</b>
<b>back channel</b> (in Claims 1, 2, 14, 27, 28 and 53 of the '196 Patent) (Ex. 8)	stream of communications from user sites to a speech processing system or engine	a band of frequencies or designated time slot(s) for transmitting signals upstream from set-top boxes

Promptu’s proposed construction is consistent with the usage of “back channel” in the claims. Claim 1 recites, “receiving said back channel to create a received back channel.” Substituting in Promptu’s proposed construction, claim 1 would recite: “receiving said [stream of communications from user sites to a speech processing system or engine] to create a received [stream of communications from user sites to a speech processing system or engine].” While receiving a stream of communications makes sense in context of the claim language, receiving a band of frequencies or designated time slot(s) does not. Shamos Decl., ¶¶ 52-53. The specification also consistently uses the term “back channel” to refer to a stream of communications. *See* '196 Patent, 22:12-14, 30:29-30; Shamos Decl., ¶ 54. For example, the specification describes that “[r]eceiver 1322 provides a back channel to speech engine 1330

through interactions 1328 with switch 1390 delivering 1392 the back channel to speech engine 1330.” ’196 Patent, 32:1-3; Shamos Decl., ¶ 54. The ’196 Patent thus describes “back channel” as the *stream* of communications that are transferred between the wireline node and the speech processing system or engine, and not the *medium* through which those communications are transferred. Proper construction of a claim term is informed by “consistent use of [the] term in a particular way in the specification.” *Wi-Lan USA, Inc., v. Apple Inc.*, 830 F.3d 1374, 1382 (Fed. Cir. 2016 (citing *Virnetx, Inc. v. Cisco Sys., Inc.*, 767 F.3d 1308, 1318 (Fed. Cir. 2014))).

In contrast, Comcast’s proposed construction is removed from the claims, specification, and prosecution history, and attempts to construe the term “back channel” in a way that is at odds with the intrinsic evidence. Shamos Decl., ¶¶ 51-58. “Back channel” cannot be construed as a “band of frequencies or designated time slots(s),” and certainly not something that is “for transmitting signals” because the ’196 Patent refers to “back channels” as being transmitted. The specification distinguishes between the terms “channel” and “band of frequencies”: “In cable systems, several downstream *data channels* that send channel and synchronization information *are often transmitted in a previously reserved band of frequencies.*” ’196 Patent, 2:40-42 (emphasis added); Shamos Decl., ¶ 51. Thus, the claimed channel is not a “band of frequencies or designated time slot(s) for transmitting signals” as proposed by Comcast, but instead is the stream of communications that is transmitted. To be sure, the term “back channel” is never described as being used for transmitting signals. In stark contrast, the specification consistently refers to the “back channel” as being transmitted and, for example, being part of “uplink communications.” ’196 Patent, 30:4-8.

None of the specification references relied upon by Comcast refer to a back channel as either a “band of frequencies” or as a “designated time slot.” Shamos Decl., ¶ 56. Instead, the



specification consistently uses the phrase “return path” for what Comcast seeks as the construction of “back channel.” ’196 Patent, 6:22-26, 11:12-22, 12:57-65; Shamos Decl., ¶ 56.

The plain meaning of the claims further emphasizes the contradiction of using “a band of frequencies or designated time slot(s)” as the construction of the term “back channel.” The preamble of claim 1 recites, “A method of using a back channel containing a multiplicity of identified speech channels from a multiplicity of user sites.” A band of frequencies does not contain a multiplicity of other bands of frequencies, and neither does a designated time slot contain a multiplicity of identified designated time slots. Shamos Decl., ¶ 52. Furthermore, a band of frequencies or designated time slot(s) cannot be “received,” “partitioned,” “provided,” or “transmitted,” as the claims and specification describe the term “back channel.” *See* ’196 Patent, Claims 1, 2, 14, 27, 28, 49, 53, Specification at 22:12-14, 30:29-30, 32:1-3; Shamos Decl., ¶¶ 52-55. In particular, claims 27 and 49 further recite a “back channel receiver,” which makes no sense when substituting in Comcast’s proposed construction (i.e. a “band of frequencies or designated time slot(s)” receiver). Shamos Decl., ¶ 53.

Comcast cites to four dictionary definitions that do not describe the term “back channel” (instead describing “channel” or “backward channel”), and that do not describe even those terms as being “a band of frequencies or designated time slot(s).” Only one definition cited by Comcast, from the IEEE Standard Dictionary of Electrical and Electronics Terms definition of “channel,” describes a “band of frequencies,” which as previously demonstrated does not make sense in context of the ’196 Patent. Shamos Decl., ¶ 57. Comcast’s extrinsic evidence, therefore, contradicts the intrinsic evidence and should be severely discounted. *Id.*, ¶ 58.

Comcast’s usage of the term “upstream” is inappropriate. The specification never describes the term “back channel” in terms of signals transmitted “upstream,” but the specification separately uses the terms “upstream signals” and “upstream channel” apart from

“back channel.” ’196 Patent, 3:21-24, 6:22-26. Comcast’s proposed construction unduly limits “back channel” as being “from set-top boxes,” which is far narrower than the inventors’ intended scope of the claim element. For example, the preamble of claim 1 recites “using a back channel containing a multiplicity of identified speech channels from a multiplicity of *user sites*.” In particular, the term “set-top boxes” does not appear in the claims at all. Promptu’s proposed construction, which recites “streams of communications from user sites,” is the correct one.

**E. wireline node**

Claim Phrase	Promptu’s Proposed Construction	Comcast’s Proposed Construction
<b>wireline node</b> (in Claims 1, 14, 27 and 53 of the ’196 Patent)	node connected by a wire, as opposed to a wireless connection	a network node providing video or cable television delivery to multiple users using a wireline physical transport between those users at the node

A person having ordinary skill in the art would understand that the term “wireline node” connotes nothing more than what is provided in Promptu’s construction. Shamos Decl., ¶ 59. The plain meaning of the claims similarly do not impose any further limitation on this term. For example, the preamble of claim 1 recites, “a speech processing system at a wireline node in a network supporting at least one of cable television delivery and video delivery,” and the preamble of claim 14 recites, “a speech recognition system coupled to a wireline node in a network.” While the network may support cable television delivery or video delivery, Comcast’s added limitation of “providing video or cable television delivery” in the construction of “wireline node” would render language in at least claim 1 superfluous. Such a construction should be avoided. *See Merck & Co. v. Teva Pharms. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir. 2005).

Comcast’s proposed construction relies on the specification’s description of a “centralized wireline node,” which is clearly distinct from, and narrower than, the claimed term “wireline node.” *See* ’196 Patent, 1:66-2:2; Shamos Decl., ¶ 60. While Comcast may argue that the inventor acted as its own lexicographer, this is not applicable here as the term proffered in the specification is not the

claimed term. *See Merck & Co.*, 395 F.3d at 1370; Shamos Decl., ¶ 61. This is clear from the fact that Comcast provides a circular definition of “wireline node,” which uses both “wireline” and “node” and thus does not provide any clarification for the term “wireline node.” Shamos Decl., ¶ 61.

There is also no basis for the limitation “a wireline physical transport between those users” in Comcast’s proposed construction. Shamos Decl., ¶ 62. Comcast points to no disclosure that users exchange video or cable television delivery, as opposed to delivery from a head-end to the users for example. *Id.* Further, the limitation “physical transport” does not add clarification to the construction of “wireline node” either, as the specification describes “physical transport” in terms of both “wireline or wireless physical transport.” ’196 Patent, 10:64-65.

**F. multiplicity of received identified speech channels**

<b>Claim Phrase</b>	<b>Promptu’s Proposed Construction</b>	<b>Comcast’s Proposed Construction</b>
<b>multiplicity of received identified speech channels</b> (in Claims 1, 2, 13, 14, 15, 27, 28, 53, 54, 62 of the ’196 Patent)	plurality of streams of communications received by a speech processing system or engine identified as originating from specific user sites	at the wireline node, multiple different channels to carry speech data from set-top boxes, wherein each channel is assigned to a particular set-top box  “channel” means “a band of frequencies or designated time slot(s) for transmitting signals”

Those of ordinary skill in the art would understand the term “multiplicity of received identified speech channels,” in the context of the ’196 Patent, to mean “plurality of streams of communications received by a speech processing system or engine identified as originating from specific user sites.” As previously discussed, the plain meaning of the term “channels” in the ’196 Patent is a “stream of communication.” *See* Section IV.D. (“back channel”) above; Shamos Decl., ¶ 63. The specification consistently refers to the identified speech channels being received by a speech processing system or engine:

“Uplink 1204 communication includes a back channel. This back channel includes multiple identified speech channels from multiple user sites (STBs) 1100, as shown

in FIGS. 21 and 22. Receiver 1322 provides 1326 a back channel to speech engine 1330.” ’196 Patent, 30:4-8; *See also* ’196 Patent, 22:13-15, 31:25-32.

Moreover, the claims and specification explicitly refer to the “identified” speech channels as being identified as originating from specific user sites. The preamble of claim 1 recites “a multiplicity of identified speech channels from a multiplicity of user sites.” The specification further indicates that, in some embodiments, an “[o]peration 2392 performs processing the received speech channels from the user site based upon a natural language for the user site to create the speech content identified as to the user site.” ’196 Patent, 25:59-62; *See also Id.*, 22:13-15, 30:4-8. Thus, the ’196 Patent unequivocally articulates that “multiplicity of received identified speech channels” means “plurality of streams of communications received by a speech processing system or engine identified as originating from specific user sites.”

Comcast’s proposed construction, in contrast, violates basic claim construction principles by rendering other claim limitations superfluous and excluding disclosed embodiments. Nothing in the claimed phrase specifies the place from which the identified speech channels are received (i.e., “at the wireline node”). Shamos Decl., ¶ 64. In particular, some claims describe that the “received back channel” is received at the wireline node (e.g., Claims 14 and 53), while other claims explicitly do not (e.g. Claims 1 and 27). Comcast’s proposed construction renders such differences in claim language superfluous, which should be disfavored in a proper construction. *See Merck & Co.*, 395 F.3d at 1372. Thus, “at the wireline node” should be excluded.

Furthermore, the term should not be limited to being “assigned to a particular set-top box.” Shamos Decl., ¶ 65. “Set-top box” is not included in any claims of the ’196 Patent. It appears Comcast is inappropriately attempting to indirectly construe “a multiplicity of user sites,” which was not proffered by either party. The term “assigned” is similarly not described in the claims and is also not used in the specification to describe the identified speech channels. Comcast appears to rely upon the following portion of the specification:

“In cable systems, several downstream data channels that send channel and synchronization information are often transmitted in a previously reserved band of frequencies. They are typically assigned for rebroadcasting FM channels over cable in the United States.” ’196 Patent, 2:40-44.

The “reserved band of frequencies” being assigned for rebroadcasting channels, however, is irrelevant to the construction of the present claim term. The plain meaning of “identified” in the “multiplicity of received identified speech channels,” should mean “identified as originating from specific user sites,” as described above.

Again, the term “channel” should not be interpreted as meaning “a band of frequencies or designated time slot(s) for transmitting signals.” Shamos Decl., ¶¶ 66-68. Comcast cites six dictionary definitions of the term “channel,” all of which contradict the usage of the term “channel” in the ’196 Patent. *See Id.*, ¶¶ 56-57. Instead, it is clear that what Comcast refers to as a “channel” was described by the ’196 Patent as a “return path.” *Id.*, ¶ 56.

#### **G. speech recognition engine**

<b>Claim Phrase</b>	<b>Promptu’s Proposed Construction</b>	<b>Comcast’s Proposed Construction</b>
<b>speech recognition engine</b> (in Claim 12 of the ’326 Patent) (Ex. 9)	computer running software that accepts spoken language as input and determines (or identifies) what words and phrases or semantic information are present	a computer running software at a central location that processes speech packets to create speech content and to formulate the response to the speech content for each of the user sites

The parties agree that the term “speech recognition engine” should be construed to include “computer running software.” Shamos Decl., ¶ 69. One having ordinary skill in the art at the time of the invention would understand that a “speech recognition engine” is a computer running software “that accepts spoken language as input and determines (or identifies) what words and phrases or semantic information are present.” Claim 12 recites, “transferring said speech information in an unrecognized state from said first device via a first network path to a speech recognition engine” and “at said speech recognition engine, recognizing said speech information and effecting information

delivery to a second device.” It is clear from the plain meaning of the claims that the speech recognition engine accepts spoken language as input, and recognizes information in that input. *See* ’326 Patent, 5:22-27.

Likewise, the specification explains that “the speech recognition engine may determine partial matches to more than one possible phrase, returning the text of several possible matches.” *Id.*, 16:48-52. The recognition thus includes determining or identifying what words and phrases or semantic information are present. *Id.*; *See* Speech Glossary (Microsoft.Speech) definition of “speech recognition engine” (“Software that accepts spoken language as input, determines what words and phrases or semantic information are present, and outputs a text transcription of the result”) (Ex. 5). The only dictionary cited by Comcast that defines “speech recognition engine” is consistent with the ’196 Patent’s use of the term. *See* Microsoft definition of “speech recognition engine”.

Comcast’s proposed construction unduly limits the term by including extraneous and improper limitations, such as “central location,” “speech packets,” or “formulating responses.” The specification does explicitly disclose that the speech processing *may* be centrally located: “A speech processor system may be centrally located in or near a wireline node, which may include a Cable Television (CATV) central location.” ’326 Patent, 18:16-18. But the plain meaning of the claims does not describe where the “speech recognition engine” is located, thus it is improper to import such limitations from the specification without unambiguous disclaimer. Shamos Decl., ¶ 70; *See DSW, Inc. v. Shoe Pavilion, Inc.*, 537 F. 3d 1342, 1347 (Fed. Cir. 2008).

Similarly, Comcast attempts to import limitations from the specification regarding software that “processes speech packets to create speech content and formulate the response to the speech content for each of the user sites.” ’326 Patent, 18:23-25. Such description does not purport to define a “speech recognition engine,” which to a person of ordinary skill in the art is an engine that recognizes speech. Shamos Decl., ¶¶ 71-72. While the claims and specification make clear that the

speech recognition engine must take in a spoken input and determine or identify words and phrases or semantic information present, the intrinsic record does not constrain the term with Comcast's other proposed limitations. *Id.* None of Comcast's cited dictionaries, aside from the dictionary previously mentioned, actually define the claim term but instead describe "engines" or "speech recognition." Such dictionary definitions support an arbitrary construction based on individual words alone, divorced from the meaning present in the intrinsic record. *Phillips*, 415 F.3d at 1321; Shamos Decl., ¶¶ 72-73.

#### H. network path

Claim Phrase	Promptu's Proposed Construction	Comcast's Proposed Construction
<b>network path</b> (in Claim 12 of the '326 Patent)	sequence of network nodes through which data is routed from source to destination	the physical route a telecommunications signal follows between two nodes in a given network

The parties appear to at least agree that a "network path" is a sequence of network nodes. Shamos Decl., ¶ 74. A person of ordinary skill in the art would understand the term to mean a "sequence of network nodes through which data is routed from source to destination." The specification describes an example network path in Figure 2: "The hierarchical coupling of Node 126 with Headend 104 is carried out along distinct paths through this loop. Communication from Headend 104 to Node 126 follows a path 130-132-134. Communication from Node 126 to Headend 104 follows the path 136." '326 Patent, 4:39-43; Shamos Decl., ¶ 77. Furthermore, the type of information which is routed through the network path should be considered "data," rather than a "telecommunications signal," because the term "telecommunications signal" never appears in the '326 Patent. Shamos Decl., ¶ 78. Instead, the specification recites:

"A scaling methodology including another reliability mechanism is desirable. It is achieved at no appreciable increase in the usual systems overhead issues, latency, bandwidth, creating communication bottlenecks or adding significant additional computational loads to the network node components." '326 Patent, 49:1-6.

A person of ordinary skill in the art would understand that the recited “computational loads” refer to the processing of data. Shamos Decl., ¶ 79. The specification further describes the paths between network nodes in terms of “data flows,” “data from several nodes,” and even “data paths.” *See* ’326 Patent, 3:53-56, 12:43-47, and 47:58-61.

Comcast’s proposed construction improperly limits the construction of “network path” by requiring a “telecommunications signal” to follow a physical route between two nodes. While data may be routed through the network path, the specification makes clear that the signal that enters a node is not necessarily the same signal that leaves the node:

“Most current cable systems use the popular HFC architecture so that the downstream video signals, digital or analog, are sent from the Headend to hubs or nodes via fiberoptic cable. At the receiving side of the node, the optical signal from the fiber gets converted to an electrical signal containing all of the analog, digital video RF carriers and program/ service information. This signal, in turn, is amplified and distributed via coaxial cable to the appropriate subscribers connected to the node.” ’326 Patent, 2:55-63; Shamos Decl., ¶¶ 74-75.

Comcast’s proposed construction explicitly contradicts the specification, which describes that incoming signals into a node may be converted and transmitted as a different signal (e.g., receiving an optical signal and transmitting an electrical signal). *Id.* Moreover, Comcast cites to no intrinsic evidence as to why a “network path” must be a “physical route.”

Comcast cites to several dictionaries for terms other than the claim term. Shamos Decl., ¶ 76. Dictionary definitions of “path” are likely outside the scope of the ’326 Patent, specifically since the definition of “path” varies quite dramatically, even in the computing domain. Instead, the Dictionary of Information Science and Technology, 2<sup>nd</sup> ed. (Ex. 6), defines the term “network path” in line with Promptu’s construction. The use of “telecommunications signal” in Comcast’s proposed construction is an arbitrary limitation from Newton’s Telecom Dictionary, which is not found in the ’326 Patent. Comcast’s proposed construction must be rejected.



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Respectfully Submitted,

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**CERTIFICATE OF SERVICE**

The undersigned attorney certifies that on March 19, 2018, a true and correct copy of Plaintiff's Opening Claim Construction Brief and Exhibits 1-9 are served upon the Defendants' counsel by filing the same via the Court's ECF system:

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