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## I. INTRODUCTION

Promptu invites the Court to ignore the law of claim construction and to adopt constructions lacking any support in the patent or in technical publications.<sup>1</sup> The error in its constructions is particularly egregious for “head-end unit” in the ’538 patent, and “back channel” and “multiplicity of identified speech channels” in the ’196 patent, where Promptu’s only support comes from the opinion of its lawyer-expert, Michael Shamos.<sup>2</sup> Promptu may believe its constructions provide it with a better chance of proving infringement, but that is not the standard for claim construction.

As Promptu itself explains, claim terms “are generally given their ordinary and customary meaning” absent a “clear and unmistakable disclaimer” or a definition of the disputed term that is “clearly set forth.” Promptu’s Opening Claim Construction Brief (Doc. 106) (“P’s Op. Brf.”) at 1; *see also Unwired Planet, LLC v. Apple Inc.*, 829 F.3d 1353, 1358 (Fed. Cir. 2016) (ordinary meaning controls absent clear lexicography). But, as Promptu’s own expert admits, the patents do **not** “clearly set forth” any lexicography for “head-end unit” or “back channel” or “multiplicity of identified speech channels.” Adopting Promptu’s admittedly “non-standard” constructions for such terms based solely on its expert’s declaration would be unprecedented. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1318 (Fed. Cir. 2005) (“[C]onclusory, unsupported assertions by experts ... are not useful to a court.”); *see also Aristocrat Techs. Austl. Pty Ltd. v. Int’l Game Tech.*, 709 F.3d 1348, 1360 (Fed. Cir. 2013).

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<sup>1</sup> The patents-in-suit are U.S. Patent Nos. 7,260,538 (“the ’538 patent”); 7,047,196 (“the ’196 patent”); and related RE44,326 (“the ’326 patent”). *See* Lam Decl. Exhs. 1-3 (Docs. 106-3, 106-4, 106-5). Promptu asserts claims 2, 6, 19, 34, and 40 of the ’538 patent; claims 1-2, 4-5, 12-15, 18, 25, 27, 28, 31, 39-40, 53-54, 61-62, and 65 of the ’196 patent; and claims 8, 11-12, 18, and 21 of the ’326 patent.

<sup>2</sup> By his own definition, Dr. Shamos was **not** a person of ordinary skill in the art as of the filing dates of the patents-in-suit. *See* Shamos Dep. (Lam Resp. Decl. Exh. 22) at 55:19-56:1, 111:20-112:3. He was and is, however, a licensed lawyer. *See id.* at 8:15-21, 10:12-18.

## II. CLAIM TERMS AT ISSUE

### A. “head-end unit” (’538 claims 2, 6, 9)

Comcast	Promptu
central unit in a cable-TV network that processes and delivers cable-TV signals to subscribers	component of a cable system that is remote from the television controller or receiver

#### 1. The ’538 patent does not redefine the customary understanding of a head-end.

Promptu and its expert cannot dispute that the term “head-end” has always had and continues to have a well-understood meaning in the context of cable-TV systems. *See Bove Resp. Decl.* ¶ 4. Indeed, Promptu and its expert concede, as they must, that the head-end provides cable-TV programming to subscribers. *See Shamos Dep. (Lam Resp. Decl. Exh. 22)* at 24:13-26:2, 34:24-35:3, 97:2-20. As Promptu’s expert also concedes, the ’538 inventors used the term “head-end” precisely *because* it was understood by those skilled in the art. *See Shamos Dep.* at 75:18-23. This understanding that a head-end delivers cable-TV signals to subscribers is confirmed by every technical reference cited by either party.<sup>3</sup> And neither Promptu nor its expert contends that the inventors redefined the term “head-end unit” in the patent. *See Shamos Dep.* at 28:23-30:2, 73:24-74:6. Rather, the inventors merely added voice-recognition functionality to the head-end. *See id.* at 74:11-75:1. In fact, the inventors explicitly confirmed this understanding in their other patents-in-suit. *See* ’196 at 2:15-17 (“Headend ... in most cable television networks serves as the source of television programming and other signaling”), 2:51-53 (“downstream video signals, digital or analog, are sent from the Headend to hubs or nodes via

<sup>3</sup> *See* Lam Decl. Exhs. 5 (Doc. 104-7) (“point of origination of the cable TV signals before they are transmitted out on the system”), 6 (Doc. 104-8) (“Where cable-TV signal processing takes place”), 7 (Doc. 104-9) (“The originating point in a communications system. In cable TV, the head end is where the cable company has its satellite dish and TV antenna for receiving incoming programming ...”), 8 (Doc. 104-10) (“originating point of a signal in cable TV systems”), 10 (Doc. 104-12) (cited by Promptu in Joint Statement (Doc. 99-1): “A cable system consists of a headend, where video signals are collected and modulated in a frequency stack known as the channel lineup. This signal is sent to every home in the franchise area over coaxial cable.”).

fiberoptic cable”). For these reasons alone, the Court should adopt Comcast’s construction. *See InterDigital Commc’ns, LLC v. ITC*, 690 F.3d 1318, 1324 (Fed. Cir. 2012) (plain meaning controls unless patentee acted as lexicographer and provided special definition).

**2. Promptu has crafted an artificial construction that is infringement-driven and unsupportable.**

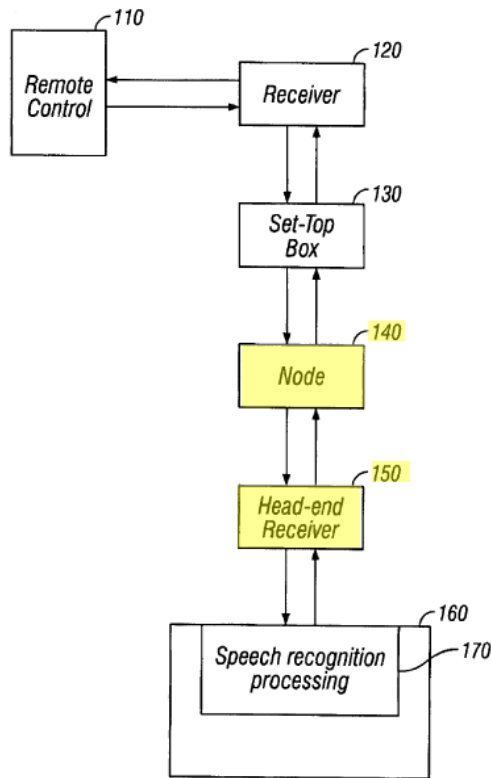
Promptu ignores the common understanding of a head-end and urges an overtly result-oriented construction. Promptu’s construction allows *any selection of disparate elements* within the cable company’s “control” to be called a “head-end unit”—regardless of function or in how many different locations this “unit” purportedly resides. *See* Shamos Dep. at 77:10-17, 104:14-105:2. According to Promptu, a head-end unit can mean anything and everything remote from the subscriber necessary to deliver cable services. Promptu’s goal is to have the Court declare that “head-end unit” refers to any collection of parts that performs voice recognition so “long as it’s not in the customer premises.” Shamos Dep. at 77:18-78:12; *see also id.* at 23:1-23, 77:10-17. In short, the only principle Promptu follows is to preserve the ability to call most anything or any collection of things a head-end unit for purposes of its infringement case. To serve this goal, Promptu contrives an artificial cable architecture that only “comprises two components”—(1) “user premises equipment”; and (2) “*everything else* ... remote from the user premises” that Promptu then calls a “head-end unit.” P’s Op. Brf. at 3 (emphasis added); *see also* Declaration of Michael Shamos (Doc. 106-1) (“Shamos Decl.”) ¶ 30.<sup>4</sup> The Court should reject this artifice, which finds no support in the intrinsic or extrinsic evidence.

Nowhere does the ’538 patent suggest (let alone explicitly define) that “head-end” or “head-end unit” means “everything else” other than user-premises equipment. *See* Shamos Dep. at 54:14-21. To the contrary, the patent makes clear that the “head-end unit” is only one part of

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<sup>4</sup> Promptu’s expert changed his position regarding “two *components*” to “two *portions*” at his deposition (*see* Shamos Dep. at 52:22-53:9), but this change does not make Promptu’s argument more supportable.

the componentry outside the user premises. Figure 1 (below) refers to non-user equipment as



**FIG. 1**

“Node 140” and “Head-end Receiver 150” and a different non-user block (160) as the “head-end unit.” ’538 at Fig. 1 (highlighting added), 4:7-10; *see also* Shamos Dep. at 40:1-41:18; Bove Resp. Decl. ¶ 6. Thus, Promptu’s construction does not cover even the first figure in the patent, where the inventors distinguish the head-end unit (160) from other equipment not located in the user premises.<sup>5</sup>

As Promptu’s expert admits, the inventors chose a term the public understood, and they did not tell the public they intended to redefine that term. *See* Shamos Dep. at 73:24-74:6. Likewise, had the patent intended to claim any collection or number of multiple

elements, it would have used plural or agnostic terms like “componentry” instead of a word that connotes singularity like “unit” (which the patent makes no attempt to redefine with specific lexicography). Promptu cannot point to a single reference in support of its assertion that “head-end unit” means anything and everything that is not part of the user-premises equipment. *See* Shamos Dep. at 104:9-13.<sup>6</sup>

<sup>5</sup> Indeed, Promptu’s construction fails even to define what a head-end unit is, or where it is. Promptu only defines where the head-end is not, which is akin to defining a sofa as “furniture outside of the kitchen,” or a hotel as “place other than your home.” Of course, these are not definitions at all. The Court should reject Promptu’s construction for the same reason.

<sup>6</sup> Promptu mischaracterizes the patent in other ways as well. For example, Promptu asserts that “the specification describes the head-end unit as including speech processing components and video delivery components, as well as possibly other components.” P’s Op. Brf. at 5. This is demonstrably false; nowhere does the ’538 patent say that the head-end includes video-delivery and “possibly other components.” In any event, Promptu’s recognition that the head-end delivers video programming only proves the customary understanding of a head-end. *See*

**3. The Court should disregard Promptu’s strawman critiques of Comcast’s proposed construction.**

Promptu falsely argues that Comcast’s construction excludes video delivery from the functions of a head-end unit, even though the language “delivers cable-TV signals” is central to Comcast’s construction. *See* P’s Op. Brf. at 7. Moreover, Comcast has not foreclosed the head-end unit from performing voice recognition—the claims themselves require the head-end unit to do so, and indeed Comcast submits this is the main point of the supposed invention.<sup>7</sup> In short, these criticisms by Promptu are baseless.

Likewise, Promptu’s insistence that the common understanding and definitions of “head-end” have no bearing on the meaning of “head-end *unit*” fails to withstand scrutiny. *See* P’s Op. Brf. at 6; Shamos Decl. ¶ 36. The ’538 patent itself repeatedly and interchangeably refers to “head-end” with and without the word “unit.” ’538 at Fig. 2 (depicting block 460 as “Head End” without “unit,” while referring to same block as “head end unit” and “head-end unit” in patent specification at 4:26 and 4:61 respectively), 2:39 (“head end” without “unit”), 5:45 (“head-end” without “unit”); Bove Resp. Decl. ¶ 7.<sup>8</sup>

**B. “centralized processing station” (’538 claims 34, 40)**

<b>Comcast</b>	<b>Promptu</b>
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	portion of a cable television system at which voice commands are received and command functions are transmitted

There are both structural and functional aspects to the parties’ dispute over the claimed

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Shamos Dep. at 70:14-71:7.

<sup>7</sup> Ironically, Promptu and its expert criticize Comcast for construing “head-end unit” by referring to its function—*i.e.*, what it does (*see* P’s Op. Brf. at 2; Shamos Decl. ¶ 34)—yet they then propose construing the next disputed term (“centralized processing station”) by its function.

<sup>8</sup> Finally, the Court should reject Promptu’s assertion that the language “cable-TV network” in Comcast’s construction could be confused to refer to “AMC or MTV, as opposed to a cable system.” P’s Op. Brf. at 7. The language “cable television network” comes from the claims themselves; and Promptu’s own expert has dismissed Promptu’s feigned confusion. *See* ’538 at 9:43 (claim 2), 11:56 (claim 19); Shamos Dep. at 100:19-102:1.



“centralized processing station.” Structurally, Promptu’s expert admits that the centralized processing station is located at a head-end unit. *See* Shamos Dep. at 134:11-:23, 135:23-136:1.<sup>9</sup> But, as with “head-end unit” above, Promptu construes “centralized processing station” to cover any collection or number of elements it takes (or that Promptu might select) to perform the claimed functions. *See* Shamos Dep. at 108:19-109:7, 110:21-111:15, 143:10-144:20. The Court should reject Promptu’s construction, as neither the patent nor anything else in the intrinsic or extrinsic evidence imparts such a uniquely loose meaning to the term. Indeed, by purporting to cover a *de*-centralized collection of elements at different locations, Promptu’s construction reads the words “centralized” and “station” (a singular noun) out of the term “centralized processing station” altogether.

Functionally, Comcast’s proposed construction tracks the explicit language of the claims, which require that the centralized processing station “*receive and process* ... output from ... set top boxes by *applying voice recognition* ... to identify user-intended voice commands”; and “*derive set-top-box-compatible instructions* to carry out the identified voice commands, and *returning signals representing the instructions* to respective top [sic] boxes ....” ’538 at 13:51-58 (claim 34); *see also id.* at 14:52-59 (same language in claim 40). In other words, as Comcast proposes, the claimed station must receive voice commands and perform voice recognition on them to generate and return instructions to set-top boxes to carry out the commands.

Under Promptu’s construction, however, the centralized processing station need not perform voice recognition at all, even though the claim specifically requires that the centralized

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<sup>9</sup> Claims 34 and 40 use the term “centralized processing station” and not “head-end unit”; and, vice versa, claims 2 and 19 use “head-end unit” and not “centralized processing station.” But the ’538 patent makes clear that the “centralized processing station” is at least located at, if not coextensive with, the head-end unit. The term appears in only two patent excerpts—the first excerpt referring to “central processing station located at a cable television head-end unit”; and the second excerpt actually referring to block 160 in Figure 1 both as “central processing station 160” and as “head end unit 160” interchangeably. *See* ’538 at 2:31-33, 4:7-23.

processing station perform the function of “applying voice recognition ... to identify user-intended voice commands.” Per Promptu’s expert, this claimed invention is so inconsequential that the language requiring the centralized processing station to “apply[] voice recognition” requires no more than passing the voice signals to *something else* to perform the voice recognition. *See* Shamos Dep. at 120:5-121:13, 122:5-13. The Court should reject Promptu’s attempts to render explicit claim language meaningless. *See* Bove Resp. Decl. ¶¶ 8-9.

**C. “voice recognition [processing]” (’538—all asserted claims)**

<b>Comcast [modifications underlined]</b>	<b>Promptu</b>
conversion of <u>a user’s speech</u> into computer text or other representation of the contents of <u>the speech</u>	understanding by a computer of spoken words for the purpose of receiving commands and data input from the speaker

Promptu’s expert admits that “voice recognition” requires determining what a user said from the user’s spoken words (*i.e.*, the user’s speech). *See* Shamos Dep. at 148:15-149:12. The user’s speech must be interpreted (regardless of whether the speech is translated into computer text) in order to “determine what the user said,” as Promptu’s expert acknowledges. Shamos Dep. at 148:15-149:12; *see also id.* at 152:21-153:10.<sup>10</sup> In an effort to construe “voice recognition” agreeably to both parties, Comcast has modified its proposed construction accordingly as shown above. *See* Bove Resp. Decl. ¶ 10.

Despite the admissions of Promptu’s expert, Comcast is concerned that Promptu’s language—“understanding ... spoken words”—could be manipulated at trial to cover instances in which the claimed system does not actually determine the contents of the speech or the user’s intent from the speech. This is particularly problematic in light of Promptu’s interpretation of “centralized processing station,” for which Promptu’s expert opines that relying on something

<sup>10</sup> Promptu’s reliance on the ’538 patent’s discussion and citation to another patent regarding “cepstral” analysis is a red herring. As explained in the cited patent, cepstral processing is a filtering technique to extract relevant signal features from an audio waveform to present to the voice-recognition processor—*i.e.*, it is a *pre*-voice-recognition technique. *See* U.S. Patent No. 5,509,103 (Lam Resp. Decl. Exh. 23) at 4:18-25 (cited by ’538 patent at 5:57-6:3).

else to perform voice recognition fulfills the claim requirement of “applying voice recognition to identify user-intended voice commands.” Promptu’s vague interpretation of “voice recognition” could be another attempt to eliminate the function of voice recognition from the claim, allowing Promptu to argue here that “understanding spoken words” is satisfied by the system relying on *something else*’s determination of the meaning of the spoken content. *See* Bove Resp. Decl.

¶ 11. The Court should not risk this improper evisceration of the claim’s key element.

**D. “back channel” (’196—all asserted claims)**

Comcast	Promptu
a band of frequencies or designated time slot(s) for transmitting signals from set-top boxes	stream of communications from user sites to a speech processing system or engine

The parties’ dispute as to this term of the ’196 patent concerns only the meaning of the word “channel.” The parties agree that “back” specifies that this “channel” involves transmissions upstream from set-top boxes (or user sites) to a speech recognition system. *See* Shamos Dep. at 154:9-16.

As with its construction of “head-end unit,” Promptu ignores a commonly-understood term of art (“channel”), and instead crafts an entirely unique meaning that comes from nowhere other than the words of its lawyer-expert. In so doing, Promptu eviscerates the purported novelty of the claim and violates basic rules of claim construction.

Promptu and its expert agree that the ordinary meaning of “channel” in the relevant art is a band of frequencies for transmitting data, as the IEEE Dictionary defines it. *See* Shamos Decl.

¶ 51; Shamos Dep. at 208:17-209:1.<sup>11</sup> And Promptu’s expert admits that the construction he and Promptu endorse is “non-standard” (Shamos Dep. at 158:14-25) and “different from the way one

<sup>11</sup> Promptu’s expert also described the ordinary meaning of “back channel” as a mode of communication—“if, for example, I found out that the United States had a back channel to North Korea, it would mean there would be some mode by which we could communicate with North Korea. It’s a back channel.” Shamos Dep. at 156:15-22. Although not a technical use of the term, his description is consistent with a “channel” being a mode, not the contents.

ordinarily might understand it.” (*id.* at 156:10-22).

Promptu does not cite a single excerpt from the '196 patent or other intrinsic evidence that defines “back channel.” The patent never uses the phrase “stream of communications” to describe a “channel” or a “back channel”; nor does it ever state that a channel or “back channel” means the *contents* of the transmission. *See* Shamos Dep. at 164:14-165:16. Surely if the inventors intended to use a common technical term in such an uncommon way, they would have made that clear in the specification. The Court should therefore reject Promptu’s invitation to fashion new and different meaning of this common term based only on its expert’s declaration.

Promptu’s construction is not only legally novel, it is also factually wrong. Promptu argues that the conventional meaning of the term does not make sense if inserted into the '196 claim language or specification. *See* P’s Op. Brf. at 11-13. To the contrary, the conventional meaning is entirely consistent with the patent’s usage of “back channel.”

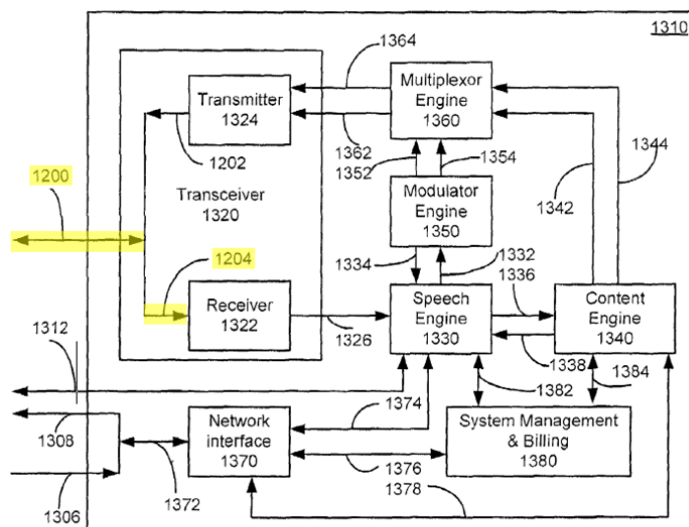


Fig. 23

For example, the '196 patent describes the location of the “back channel” with respect to Figures 23-24 and 26-27, representing headends and augmented nodes. That description refers to “wireline physical transports” 1200 and 1204 (as highlighted in Figure 23, left), and explains: “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 at 30:4-9. This description is

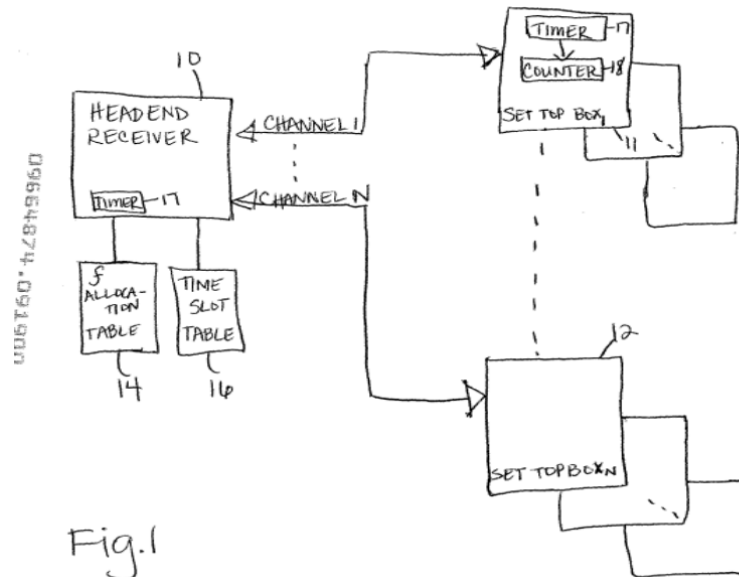
repeated almost verbatim for other similar figures. *See id.* at 32:37-41 (describing prior-art head-end of Figure 25), 34:6-11 (describing augmented head-end of Figure 26). When pressed, Promptu's expert admitted that reading this portion of the specification, one of ordinary skill "would probably say, oh, the back channel is the transport mechanism, not the content." Shamos Dep. at 185:13-15; *see generally id.* at 182:22-188:19. Thus, Comcast's construction is not just equally plausible but is the more likely understanding of one of ordinary skill in the art. Promptu cannot justify a non-standard meaning when the conventional meaning makes sense.

Promptu's "non-standard" construction also dilutes the purported invention, ignores *how* the speech is transmitted, and instead simplifies the claim to nothing more than the fact that the speech is transmitted upstream, regardless how it is done. But that indifference contradicts the patent's "Background of the Invention," which explains that a main challenge to performing voice recognition remotely from the subscriber is the limited upstream bandwidth from cable set-top boxes.<sup>12</sup> The patent notes how "upstream data transmission, i.e., from subscriber to cable plant, is much more restrictive, supporting only limited bandwidth." '196 at 2:63-65. And for new interactive services, "sufficient upstream bandwidth must be made available." *Id.* at 2:65-3:3. The patent then goes on to explain in detail the technical reasons for the limited upstream bandwidth in then-existing cable systems. *See id.* at 3:4-41. In summarizing how the invention improved upon the prior art, the patent claims the invention is "unique in that the speech command ... is sent upstream via the return path (often 5 to 40 MHz)"; is "capable of processing thousands of speech commands simultaneously and offering a low latency entertainment experience ...." *Id.* at 5:23-31. The channel (frequency) partitioning is the purported innovation

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<sup>12</sup> The challenge of transporting large data files of spoken words upstream was one of the main concerns identified by the inventor, Mark Foster, in contemporaneous documents. *See* Foster Dep. (Lam Resp. Decl. Exh. 25) at 138:24-140:25; Foster Dep. Exh. 26 (Lam Resp. Decl. Exh. 26) at 6 ("Upstream bandwidth very limited"; "Bandwidth is still the primary concern"; "need dramatically higher bandwidth."); Foster Dep. Exh. 27 (Lam Resp. Decl. Exh. 27) at 3 ("Two Major Challenges ... limited return-path bandwidth").

that allowed Promptu to make these claims of an improved voice-recognition service. *See Bove Resp. Decl.* ¶ 14.



Therefore, Promptu's construction is incorrect for the additional reason that it sweeps aside any technical innovation associated with the back channel (and speech channel) aspect of the invention. *See Trading Techs. Int'l, Inc. v. eSpeed, Inc.*, 595 F.3d 1340, 1354-55 (Fed. Cir. 2010) (rejecting definition that defied invention's improvement over prior art); *see also Unwired Planet*, 829 F.3d at 1358 (district court erred by construing "voice input" to mean "voice channel"). The purported innovation in upstream transmission is explained in further detail in the related application entitled "Increased Bandwidth in Aloha-Based Frequency-Hopping Transmission Systems," App. No. 09/664,874 ("Increased Bandwidth application").<sup>13</sup>

The Increased Bandwidth application discloses an attempt to solve the upstream bandwidth problem by reconfiguring the upstream in several important ways. First, it "replaces the existing headend receiver with one that is capable of simultaneously receiving data from all

<sup>13</sup> *See* '196 at 1:14-16. The '196 patent later extensively incorporates by reference discussions of the upstream transmission in the Increased Bandwidth application, but misidentifies the application number (although specifying its correct title and contents). *See id.* at 27:48-29:18.

of the possible upstream channels.” Lam Decl. Exh. 13 (Doc. 104-15) at 3. So instead of tuning to and receiving just a single channel, the receiver can tune to multiple channels. Second, the head-end receiver “determine[s] how many set-top boxes are active in th[e] node” and then “partitions the total number of set-top boxes into an approximately equal number ... for each of the available upstream data channels. That is, the boxes are assigned a transmission channel.” *Id.* at 4. These improvements increase the upstream channels from two “to perhaps sixteen channels.” *Id.* at 8.<sup>14</sup> Drawn Figure 1 of the application (below) depicts the architecture contemplated by this invention. Plainly the inventors in this incorporated application are using “channel” in its conventional sense. Moreover, applying Promptu’s non-standard construction to this discussion would make no sense. And this entire concept of partitioning for purposes of assigning set-top boxes to specified channels (bands of frequencies) is lost under Promptu’s interpretation.

As further proof of the error of Promptu’s non-standard construction, the ’196 patent’s use of “channel” elsewhere in the patent itself contradicts Promptu’s construction, and confirms Comcast’s. The ’196 patent states (with all emphases added) that common set-top box “hardware is capable of selecting twenty different 256K bps **channels**.” ’196 at 3:11-12. Although the “hardware is capable of frequency-hopping to avoid **channels** which are subject to interference,” it typically only uses “two active upstream communications **channels**.” *Id.* at 3:11-17. The patent goes on to describe the inefficiencies of existing systems, which “leads to typical **channel** utilization on the order of just 30%.” *Id.* at 3:37-38. Only a conventional meaning of “channel”—as in “bands of frequencies for transmitting signals”—makes sense here. In fact, inventor Mark Foster repeatedly used “frequency” as a ready substitute for “channel”

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<sup>14</sup> Lastly, the receiver also assigns each set-top box “a specific transmission time slot,” which allows “multiple set-top boxes to transmit in sequential time slots” without collisions. Lam Decl. Exh. 13 at 4-5.

when explaining the meaning of this identical language. *See* Foster Dep. (Lam Resp. Decl. Exh. 25) at 56:15-23, 57:9-12, 59:15-19, 87:16-88:16, 89:4-14, 140:12-25, 144:12-16. Applying Promptu’s construction to this section of the patent makes no sense because one would not try to “avoid” a “stream of communications,” nor would one refer to a low “utilization” of a “stream of communication.” The inventors had frequency bands in mind here, not contents.<sup>15</sup>

Promptu’s arguments about purported “contradictions” from applying the conventional meaning of “channel” to the usage in the patent are fabrications.<sup>16</sup> Promptu cites a sentence referring to “downstream data channels that send channel and synchronization information.” ’196 at 2:40-42. The patent explains that set top-boxes transmit this “synchronization information” in channels of a “previously reserved band of frequencies.” *Id.* Comcast’s construction makes perfect sense here: the channels used for synchronization information are often designated frequencies. There is nothing contradictory about Comcast’s usage here.

Promptu states, with no support other than its expert, that Comcast’s construction does not make sense in the context of “receiving” a back channel (claims and Figure 10). But this sophistry ignores the Increased Bandwidth application, which discloses that Promptu purported to invent a new “headend receiver” that “is capable of simultaneously receiving data from all of the possible upstream channels.” Lam Decl. Exh. 13 at 3. This is the receiver for the claimed back channel, and the multiple identified speech channels that are part of the back channel. It is not improper usage to refer to receiving a “band of frequencies for transmitting signals,” because

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<sup>15</sup> There are other instances in the patent too numerous to recite in which “channel” is plainly used in its conventional sense and would make no sense if construed as Promptu suggests. For example, the patent refers to downstream data containing “upstream *channel* allocation information.” ’196 at 11:34-37 (emphasis added). Systems can and do allocate “bands of frequencies for transmission,” but it makes no sense to allocate a stream of communication or contents in the same context.

<sup>16</sup> To the extent the Court deems any usage of “back channel” or “speech channels” in the patent awkward or contradictory, that is, of course, the fault of the patent inventors or drafters, not Comcast’s or the public’s.



in the transmissions contemplated by the patent, the channels carry signals (a “carrier signal”) at the designated frequency regardless of whether data is being transmitted. *See* Bove Resp. Decl.

¶ 15. It is akin to a warehouse dock “receiving” trucks, whether the trucks are empty or full. In both cases, one can refer to “receiving” the mode of transport (band of frequencies, or truck), not just the contents that are transported. Likewise, the warehouse may “partition” the group of incoming trucks into smaller groups of trucks assigned to specialized receiving docks for designated products. So too, the claimed invention “partitions” the received back channel into narrower bands of frequencies assigned to set-top boxes. In the case of each action (receiving, partitioning), there is nothing illogical about referring to the mode of transport rather than the contents being transported.

**E. “wireline node” (’196—all asserted claims)**

<b>Comcast</b>	<b>Promptu</b>
a network node providing video or cable television delivery to multiple users using a wireline physical transport between those users at the node	node connected by a wire, as opposed to a wireless connection

Comcast adopts the patent’s express lexicography. While Promptu acknowledges that it is the “single best guide to the meaning of a disputed patent term” (P’s Op. Brf. at 1), Promptu nonetheless ignores the patent specification for various reasons, none of which is justified.

*First*, Promptu admits (as it must) that the patent provides an express definition meant to be used throughout the patent, but argues that the definition is only for “centralized wireline node” rather than “wireline node.” *See* Shamos Dep. at 209:13-15, 214:12-17. The very goal of the ’196 patent is to solve “the problems of speech recognition at a centralized **wireline node** in a network supporting video delivery or cable television delivery.” ’196 at 1:63-65 (emphasis added). In the very next sentence, the patent defines: “For the purposes of the discussion herein, a centralized wireline node refers to a network node providing video or cable television delivery to multiple users using a wireline physical transport between those users at the node.” *Id.* at

1:66-2:2. The patent then proceeds to describe the claimed invention with reference to the term “wireline node” throughout the specification and claims and consistent with this definition and Comcast’s construction,<sup>17</sup> but does not use the word “centralized” again to refer to the wireline node.<sup>18</sup> According to Promptu, the omission of the word “centralized” elsewhere in the patent renders this clear definition meaningless, but the Court should reject Promptu’s highly strained reading of the patent. It would make no sense to define a term for “purposes of the discussion herein” and then, as Promptu suggests, never rely on that definition again. *See Bove Resp. Decl.*

¶ 19. Promptu’s expert’s baseless hypothesis that this definition was left in due to poor patent editing by the drafters (*see* Shamos Dep. at 210:24-211:6, 214:22-215:3) is not a reason to ignore the more natural reading that the wireline nodes discussed in the patent refer back to, and are thus subject to the express definition of, the centralized wireline node.<sup>19</sup>

*Second*, Promptu asserts that using the express definition of wireline node would render claim language superfluous. Not so. When Comcast’s construction is inserted into the preamble of claim 1, it is apparent that the construction is proper because it elaborates on the structure of the two-way communication in a cable-TV network and clarifies the type of node in the network

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<sup>17</sup> *See e.g.*, ’196 at 5:11-15 (“The invention comprises a multi-user control system ... that incorporates a speech recognition system that is centrally located in or near a wireline node, and which may include a Cable Television (CATV) Head-end.”), 7:42-47 (“a method using a back channel from a multiplicity of user sites containing a multiplicity of identified speech channels presented to a speech processing system at a wireline node in a network supporting cable television delivery in accordance with the invention”), 18:20-24 (“A Speech Packet Processor may be centrally located in or near a wireline node specifically to capture and prepare the upstream speech packets that are to be fed to the Speech Recognition Engine.”).

<sup>18</sup> The patent also describes the claimed invention with reference to an “augmented” node. *See, e.g.*, ’196 at 27:35-58, 28:3-23, 28:67-29:3, 29:23-26, 31:64-67, Figs. 21-24.

<sup>19</sup> It is hornbook law that “a patent must be precise enough to afford clear notice of what is claimed, thereby ‘appris[ing] the public of what is still open to them.’” *Nautilus, Inc. v. Biosig Instruments*, 134 S.Ct. 2120, 2123 (2014) (quoting *Markman v. Westview Instruments, Inc.*, 517 U. S. 370, 373 (1996)); *see also Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950–51 (Fed. Cir. 2006) (patent must give notice “to the public at large, including potential competitors”); *PSC Computer Prods., Inc. v. Foxconn Int’l, Inc.*, 355 F.3d 1353, 1359 (Fed. Cir. 2004) (patent specification can “assist the public in understanding the notice given in the claims”).

that the claim requires.<sup>20</sup> Moreover, the authority cited by Promptu is inapposite. *See Merck & Co. v. Teva Pharm. USA, Inc.*, 395 F.3d 1364, 1365 (Fed. Cir. 2005). In *Merck*, unlike here, the patentee did not provide an express definition of the term at issue, and the construction that was adopted was incompatible with the specification and the claim language.

*Third*, the fact that a “wireline physical transport” refers to a wire connection between two points, while a “wireless physical transport” refers to a connection between two devices without a wire (*see e.g.*, ’196 at 10:62-65), does not make it improper to construe “wireline node” using the phrase “physical transport.” This phrase is applicable to both types of connections. *See* Bove Resp. Decl. ¶ 20.

**F. “multiplicity of received identified speech channels” (’196—all asserted claims)**

Comcast	Promptu
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”	plurality of streams of communications received by a speech processing system or engine identified as originating from specific user sites

Comcast’s construction adheres to both common meaning and the patent’s usage, while Promptu’s construction of “multiplicity of received identified speech channels” suffers from the same underlying defect regarding “back channel”—*i.e.*, Promptu fabricates a non-standard definition of “channel” without any definitional support in the patent. *See* P’s Op. Brf. at 15. As explained above, this construction has no basis in either the intrinsic or extrinsic evidence, and must be rejected. *See* Shamos Dep. at 158:14-24 (admitting Promptu’s construction is “non-standard”), 164:14-165:16 (admitting the patent does not expressly define the term); Bove Resp.

<sup>20</sup> “A method of using a back channel containing a multiplicity of identified speech channels from a multiplicity of user sites presented to a speech processing system at a [network node providing video or cable television delivery to multiple users using a wireline physical transport between those users at the node] in a network supporting at least one of cable television delivery and video delivery ....” ’196 at 50:62-67.

Decl. ¶¶ 21-23.

In addition, Promptu’s construction ignores where the “multiplicity of received identified speech channels” are received. The claims and specification, as cited by both parties, make clear that the “identified speech channels” are received by the speech recognition system at or coupled to the “wireline node.” *See* ’196 at 50:62-65 (claim 1—“multiplicity of identified speech channels ... presented to a speech processing system at a wireline node”), 52:65-66 (claim 14—“speech recognition system coupled to a wireline node”), 55:11 (claim 27—“speech recognition system coupled to a wireline node”). Promptu agrees that “the specification consistently refers to the identified speech channels being received by a speech processing system or engine” (P’s Op. Brf. at 15), but fails to mention that the very figures it cites show the speech recognition engine is located at the augmented node. *See* ’196 at Fig. 23, 30:4-14 (depicting and describing speech engine 1330 within augmented node 1310).

The parties also disagree about whether the speech channels are associated with “user sites” or “set-top boxes.” The patent repeatedly clarifies that the less precise “user sites” actually means “STBs,” *i.e.*, set-top boxes. *See* ’196 at 30:4-7 (“multiple user sites (STBs)”), 32:39 (“multiple user sites STBs”), 34:6-9 (“multiple user sites (STBs)”). Even Promptu’s expert agrees that “user sites” in the Abstract of the patent refers to set-top boxes. *See* Shamos Dep. at 181:23-24 (“Back channel from multiple user sites, and those user sites are those STBs”). Comcast’s construction clarifies this agreed-upon understanding and should be adopted.

**G. “speech recognition engine” (’326—all asserted claims)**

Comcast	Promptu
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	computer running software that accepts spoken language as input and determines (or identifies) what words and phrases or semantic information are present

The parties agree that a “speech recognition engine” as claimed in the ’326 patent must

determine what is being said. *See* Shamos Dep. at 229:5-10. Promptu’s construction, however, omits the central location and key functionality of the “speech recognition engine” as defined by both the specification and the claims. The patent expressly requires that the speech recognition engine (1) be centrally located, and (2) “process[] speech packets to create speech content and formulate the response to the speech content for each of the user sites.” ’326 at 18:23-25. The Court should reject Promptu’s efforts to side-step the term’s meaning in the patent for at least the following reasons.

*First*, the central location of the “speech recognition engine” is not, as Promptu argues, a mere “embodiment” of the claims; it is in fact a *fundamental premise* of the purported invention. *See* Bove Decl. (Doc. 104-1) ¶ 69; Bove Resp. Decl. ¶ 25. A centrally located speech recognition engine was necessary to host the “processing software and hundreds of megabytes of RAM” that natural language processing requires, but transmitting the speech data to the central location for recognition was difficult because of limited upstream bandwidth, which is a problem that the patent purports to solve. *See* ’326 at 5:7-10 (“The invention comprises a multi-user control system ... that incorporates a speech recognition system that is *centrally located* in or near a wireline node, and which may include a Cable Television (CATV) Headend”) (emphasis added). Indeed, the patent describes the speech recognition engine and/or system as centrally located **15** times, starting in the Background of the Invention and continuing throughout the specification.<sup>21</sup> Likewise, the predecessor application that the ’326 patent claims a priority date

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<sup>21</sup> *See* ’326 at 2:5-7 (“voice recognition at a *centralized* wireline node”), 5:8-9 (“speech recognition system that is *centrally* located”), 5:11-13 (“speech recognition system may also be *centrally* located in or near a server farm a web-site hosting facility, or a network gateway”), 5:18-22 (“*central* speech recognition and identification engine”), 5:54-56 (“At least two operations are performed at a server-center located at a *central* location: upstream recognition of speech commands and performing speech command protocol(s).”), 6:45-47 (“possibly involving speech, when it is sent to the *central* location and recognized at the *central* location”), 6:63-64 (“*centrally* located speech recognition system”), 10:20-21 (“The microphone in the remote relays the subscriber's speech commands to the *central* speech recognition engine”), 10:52-54 (“speech recognition and identification engine located in the cable Headend or other *centralized*”).

from is titled, “Method and Apparatus for **Centralized** Voice-Driven Natural Language Processing”; and every embodiment disclosed in that application is likewise centrally located:

Certain embodiments include a multi-user control system for audio visual devices incorporating a voice recognition system that is **centrally** located. Certain further embodiments include **centrally** locating the voice recognition system in or near Cable Television (CATV) headend. Certain other further embodiments include **centrally** locating the voice recognition system in or near a server farm. Certain other further embodiments include **centrally** locating the voice recognition system in or near a web-site. Certain other further embodiments include **centrally** locating the voice recognition system in or near a gateway.

Provisional Application No. 60/210,440 (Lam Resp. Decl. Exh. 24) at 2 (all emphases added).

Promptu’s expert discounts this clear guidance, insisting instead that the claimed speech recognition engine could be located “anywhere” except the user premises, even across multiple remote locations in a cable-TV network. *See* Shamos Dep.at 217:18-218:2, 220:18-221:13; Shamos Decl. ¶ 29. But there is not a single reference in the patent or anywhere else in the intrinsic record to a speech recognition engine that is “remotely located” or remotely “distributed all over the place.” Shamos Dep. at 220:18-221:13; *see* Bove Resp. Decl. ¶ 25. *See SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1342-45 (Fed. Cir. 2001) (specification’s reference to inflation lumen “separate from” guide wire lumen disclaimed reference to “dual” lumen configuration). “Where the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question.” *Id.* at 1341; *see also Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1348 (Fed. Cir. 2004)

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location.”), 11:8-10 (“transmit speech and subscriber address data to the **centralized** location or Headend for speech recognition and identification”), 12:17-29 (“are input to the speech recognition engine in the **central** location” where “a **central** location may include a node, Headend, or metropolitan Headend for a residential broadband network”), 18:18-22 (“The speech recognition system may be **centrally** located in or near a server farm. The speech recognition system may be **centrally** located in or near a web-site hosting location. The speech recognition system may be **centrally** located in or near a gateway”), 18:36-37 (“A large capacity, **centrally** located, natural speech recognition engine”) (all emphases added).

(repeated, clear statements describing particular way of practicing invention led to “inescapable conclusion” that communications between sites of claimed invention must occur directly over telephone line even though claim language was not expressly limited).

*Second*, the patent claims and specification make clear that the speech recognition engine must perform two functions, but Promptu’s construction only includes one. All asserted claims of the ’326 patent require that the speech recognition engine perform the functions of “recognizing said speech information *and* effecting information delivery to a second device,” but Promptu ignores the second function. *See* P’s Op. Brf. at 18; Lam Resp. Decl. ¶ 9, Exh. 29 (clean version of asserted claim language stripped of formatting typefaces in printed copy of ’326 patent). Consistent with the claim language, the specification explains that the speech recognition engine “formulate[s] the response to the speech content for each of the user sites” (’326 at 18:23-25) and performs the function of “responding to identified speech content” (*id.* at 29:58-59, Fig. 10). The term “speech recognition engine” therefore should be construed in accordance with its dual functions.

#### **H. “network path” (’326—all asserted claims)**

Promptu’s expert has proposed a compromise construction of “network path” to mean “physical route through which data is transmitted from [a] source to [a] destination.” Shamos Dep. at 239:11-13. Comcast would agree to this construction of “network path” and respectfully requests that the Court construe the term accordingly.

### **III. CONCLUSION**

For the foregoing reasons, the Court should adopt Comcast’s proposed constructions.

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