

**UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C.**

**Before the Honorable Cameron Elliot
Administrative Law Judge**

**IN THE MATTER OF CERTAIN AUDIO
PLAYERS AND COMPONENTS
THEREOF II**

Investigation No. 337-TA-1330

COMPLAINANT'S REBUTTAL MARKMAN BRIEF

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1	U.S. Patent No. 9,632,748
2	U.S. Patent No. 9,812,128
3	U.S. Patent No. 11,024,311
4	U.S. Patent No. 11,050,615
5	<i>The Smart Audio Report</i> , NPR (2020)
6	Declaration of David V. Anderson in Support of Complainant's Initial Markman Brief ("Anderson I")
7	Fernández et al., <i>An Application of Recurrent Neural Networks to Discriminative Keyword Spotting</i> , ICANN 2007
8	U.S. Patent No. 9,318,107
9	Morgan and Bourlard, <i>Continuous Speech Recognition</i> , IEEE Signal Processing Magazine (May 1995)
10	Attachment A (Excerpts) to Sonos's December 7 Supplemental Responses to Google's First Interrogatories (Invalidity Contentions)
11	Keshet, <i>Automatic Speech and Speaker Recognition</i> (2009)
12	File History (Excerpts) of U.S. Patent No. 11,024,311
13	U.S. Patent App. Pub. No. 2022/0244905
14	U.S. Patent App. Pub. No. 2022/0224971
15	MIT Blossoms Initiative: Math & Science Video Lessons for High School Students
16	Rebuttal Declaration of David V. Anderson ("Anderson II")
17	Declaration of Mark Mahon, Ph.D ("Mahon")
18	615 File Excerpt- 08-20-20 NFOA
19	790 File Excerpt- 01-03-16 NFOA
20	1330 Sonos Response to Complaint
21	Invalidity Contentions - Ex. D-3
22	JCCS - 2021-02-05 DN 66 Claim Construction Statement and Appendix
23	U.S. Patent Pub. No. 2014/0273857A1
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25	Zimmerman, Personal Area Networks: Near-Field Intra-Body Communication, Feb. 1980
26	IEEE - 802.15.1-2002
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28	Infrared Data Association Serial Infrared Physical Layer Specification, v1.4, May 30, 2001
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30	Forum Nokia Bluetooth Overview
31	High-rate wireless personal area networks
32	Bluetooth Low Energy Finally Earns Some Respect
33	An Introduction to RFID Technology

34	Overview and Evaluation of Bluetooth Low Energy Wireless Technology
35	ZigBee-IEEE802.15.4 Summary 2004
36	Low-Power Wireless Sensor Networks: Protocols, Services, and Applications
37	ERCREC 70-03E
38	Near Field Communication – Interface and Protocol, ECMA-340
39	Bluetooth Low Energy Fundamentals
40	Zigbee Standard RF4CE Specification, Version 1.01
41	Z-Wave Node Type Overview and Network Installation Guide
42	IEEE Std 802.15.4 (2011)

TABLE OF CITATIONS

Abbreviation	Meaning
CBR.	Complainant's Initial Markman Brief
RBr.	Respondent Sonos, Inc.'s Opening Claim Construction Brief
Anderson I	Ex. 6, Decl. of David V. Anderson in Support of Complainant's Initial Markman Brief
Anderson II	Ex. 16, Declaration of David V. Anderson in Support of Complainant's Rebuttal Markman Brief
Mahon	Ex. 17, Declaration of Mark Mahon, Ph.D. Regarding Claim Construction of U.S. Patent No. 11,050,615
White	RBr. Ex. F, Decl. of Dr. Jules White

I. INTRODUCTION

Respondent Sonos, Inc.’s (“Sonos”) Opening Brief confirms that its proposed claim constructions and indefiniteness arguments are both untethered to the claim language and unsupported by the intrinsic record. As Complainant Google LLC (“Google”) explained in its Initial Brief, most of the disputed terms are easily understood and do not require construction; two terms of the ’311 patent include clerical errors that a POSITA would easily recognize as such from the intrinsic evidence. Google respectfully requests that the ALJ adopt its proposals.

II. ’748 PATENT

A. “predetermined spoken audio command” (All Claims)

As set forth in Google’s opening brief, the term “predetermined spoken audio command” should be given its plain and ordinary meaning: a spoken utterance that includes a directive for the claimed computing device to execute an associated action. CBr. 17-19 & Anderson I ¶¶ 66-69. Sonos’s construction seeks to limit this term to audio input that “initiate[s] interaction with a computing device”—or, a hotword. *See* CBr. 4-6 & Anderson I, ¶¶ 39-43. Sonos contends that the patentee acted as its own lexicographer, proposing as a construction a phrase from the specification. RBr. 9-10. But Sonos fails to establish that the test for lexicography is met here, where the specification couches Sonos’s proposed construction as what a “predetermined audio command” “*generally, may be.*” ’748 at 3:67. Sonos’s proposed construction would exclude embodiments with commands the patent makes clear are *not* used to “initiate interaction with a computing device.”

First, Sonos asserts that the following sentence is definitional: “A predetermined audio command, generally, may be any audio input (e.g., a word, a phrase, etc.) that is usable to initiate interaction with a computing device.” RBr. 9. The standard for lexicography is exacting—the patentee must “*clearly* set forth a definition of the disputed claim term” and “must ‘clearly express

an intent’ to redefine the term.” *Thorner v. Sony Computer Ent. Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (citations omitted).¹ The sentence on which Sonos relies explains what “**generally, may be**” a “predetermined audio command.” This permissive phrase does not rise to the level of a clear definition. It does not state what the term “means,” what it “is,” or how it is “defined.” Compare, e.g., *Cadence Pharms. Inc. v. Exela Pharmsci Inc.*, 780 F.3d 1364, 1369 (Fed. Cir. 2015) (“may be” not lexicography; “it would not be ‘proper to import from the patent’s written description limitations that are not found in the claims themselves’”) with *Biogen MA Inc. v. EMD Serono, Inc.*, 976 F.3d 1326, 1335 (Fed. Cir. 2020) (cited by Sonos; patentee “explicitly defined” term). Although an input usable to initiate interaction may be an example of a “predetermined audio command,” the claimed “command” is not so restricted.

Second, Google’s plain and ordinary meaning proposal is confirmed by the ’748 specification, which identifies a number of predetermined audio commands other than hotwords (*i.e.*, inputs usable to initiate interaction with a computing device). For example, after the language relied on by Sonos, the specification explains “[o]ther examples of predetermined audio inputs and associated actions may include a word or phrase (e.g., “answer”) that causes a computing device to answer a telephone call, a word or phrase (e.g., “navigation,” “directions,” etc.) that causes a computing device to provide directions, a word or phrase (e.g., “send email,” “send text message,” etc.) that causes a computing device to send a message, and others.” ’748 at 4:14-21; see also *id.* at 9:61-62, 20:15-18, 24:41-46. These examples of predetermined audio commands do not necessarily “initiate interaction with a computing device” because all can be uttered after the user initiates interaction (e.g., via a hotword). Yet even though the specification describes these examples with the permissive “may” language that Sonos contends is definitional, Sonos

¹ All emphasis herein is added unless otherwise indicated.

improperly excludes them from its proposed construction. *In re Katz Interactive Call Processing Pat. Litig.*, 639 F.3d 1303, 1324 (Fed. Cir. 2011).

B. “[perform/performing] speech recognition” (All Claims)

Sonos argues the patentee expressly defined “speech recognition” in the ’748 patent, again seeking to narrow the meaning of a plainly understood term. CBr. 2-7. Although Sonos’s proposed construction may be one example of how “speech recognition” could be used in a system, Sonos offers no evidence or legal authority to establish that the patentee acted as its own lexicographer such that the phrase “speech recognition” should be so defined. A POSITA would understand the term “speech recognition,” as used in the patent, to refer to a process for transforming speech to corresponding text. CBr. 12-15, & Anderson I ¶¶ 45-46, 52-56.

As set forth in Google’s opening brief, the ’748 patent uses the term consistent with the plain and ordinary meaning that would be given to the term by a POSITA. For example, the specification states that the claimed computing devices’ “audio input modules may be operable to utilize *speech recognition techniques to determine text from obtained audio input.*” ’748 at 4:57-59. Extrinsic evidence confirms this plain meaning. CBr. 12-13 & Anderson I ¶ 52.

Sonos nevertheless contends that the term “speech recognition” is “explicitly define[d]” (RBr. 11) by the patent. Sonos selectively quotes two patent excerpts, ignoring language in each that is fatal to its argument. For example, Sonos relies on the patent’s statement that “one or more computing devices from a plurality of computing devices may designate a particular computing device . . . to process audio input to determine whether the audio input includes a predetermined audio command.” RBr. 11 (citing ’748 patent, 6:61-66) (emphases removed). This sentence fails to even mention “speech recognition,” let alone establish a clear definition of “speech recognition.” Sonos also cites the following excerpt: “For instance, audio input modules may be operable to utilize speech recognition techniques . . . to determine whether the obtained audio input

includes a predetermined audio command.” ’748 at 4:57-63. This passage uses permissive, or exemplary, language—“[f]or instance” and “may be operable”—and is thus not definitional. *Cadence Pharms.*, 780 F.3d at 1369; *Nevro Corp. v. Boston Sci. Corp.*, 955 F.3d 35, 43-44 (Fed. Cir. 2020).² Moreover, the complete excerpt—much of which Sonos replaces with ellipsis or leaves out altogether—establishes that Google’s construction is correct. The full passage states: “For instance, audio input modules may be operable to utilize speech recognition techniques *to determine text from obtained audio input, and compare the text to a set of predetermined audio commands (e.g., stored at the respective computing device or other location)* to determine whether the obtained audio input includes a predetermined audio command.” ’748 at 4:57-63. As the second sentence confirms, “speech recognition techniques” are used to determine text from obtained audio input. To the extent a determination is made whether “the obtained audio input includes a predetermined audio command,” this is a separate operation from “speech recognition.” *See* ’748 at cls. 1, 7, 11 (reciting separate steps).

Finally, the extrinsic evidence Sonos cites does not support its construction.³ Sonos points to several Google patents in which Google purportedly “admitted that ‘[perform/performing] speech recognition’ means ‘processing spoken audio to determine whether it includes a predetermined spoken audio command.’” RBr. 11-12. As an initial matter, because the patents are unrelated to the ’748 patent and name different inventor(s), they cannot contain any “admission” as to the ’748 patent, or otherwise contradict the ’748 patent disclosure. *See Emerson Elec. Co. v. SIPCO, LLC*, 826 F. App’x 904, 914 (Fed. Cir. 2020); *Profectus Tech. LLC v. Huawei Techs. Co.*, 823 F.3d 1375, 1380 (Fed. Cir. 2016) (“Extrinsic evidence may not be used ‘to

² Sonos identifies two other passages: the first (10:1-7) does not mention speech recognition. The other (10:21-25) uses the term “speech recognition” but does not discuss its meaning. RBr. 11.

³ Sonos’s reliance on extrinsic evidence undermines its assertion that the ’748 “explicitly defines” speech recognition. *Seabed Geosolutions (US) Inc. v. Magseis FF LLC*, 8 F.4th 1285, 1287 (Fed. Cir. 2021).

contradict claim meaning that is unambiguous in light of the intrinsic evidence.”) (quoting *Phillips*, 415 F.3d at 1324). Moreover, none of the extrinsic patents even uses the term “predetermined spoken audio command,” let alone mirrors Sonos’s construction.⁴

Sonos’s extrinsic evidence includes a district court decision construing “speech recognition operations.” RBr. 12 (citing *Phoenix Sols., Inc. v. DirecTV Grp., Inc.*, No. CV08-0984-MRPSSX, 2008 WL 5727419, at *15 (C.D. Cal. Nov. 4, 2008)). This case also supports Google’s proposed construction, not Sonos’s—as the court’s explanation makes clear, “symbols contain[ed] in the speech utterance” *correspond to words*. *Id.* at *4 n.3.

C. “[determine/determining] ... based at least in part on information received from the one or more additional computing devices, whether the first computing device should perform speech recognition on the spoken audio input” (All Claims)

This claim term is clear on its face and requires no construction. Notwithstanding Sonos’s admonition that “the words of the claims themselves provide substantial guidance as to the meaning of particular claim terms” (RBr. 12 (citation omitted)), Sonos’s construction would both broaden and narrow the claim scope: it seeks to broaden by removing the limitation “based at least in part on information...,” and narrow by adding a negative limitation, “without any of the plurality of computing devices [performing speech recognition].”⁵ Sonos argues that its changes are

⁴ Sonos appears to rely on disclosures in Exhibits A and B to show that “speech recognition” encompasses the distinct concepts of keyword/hotword detection. RBr. 11-12. But although speech recognition can be *used* to identify whether a keyword was spoken in some applications, keyword (hotword) detection and speech recognition are distinct. *E.g.*, RBr. Ex. A, 5:2-5 (“Each time the word ‘Google’ is spoken, it is picked up by one of the microphones 112, 114, conveyed to the server 108, which performs speech recognition techniques to determine whether the keyword was spoken.”); RBr. Ex. C, 16:1-8 (“As discussed above, the task of keyword detection is an important component in some speech recognition applications.”). Keyword detection can also be performed without speech recognition. RBr. Ex. C, 6:34-35 (“The computing device 106 will *initiate speech recognition* on audio data received *after the hotword*.”), 7:66-8:2 (“The hotworder computes a hotword confidence score and if the hotword confidence score satisfies a threshold, *then the computing device performs speech recognition on speech following the hotword*.”); RBr. Ex. D (same specification as Ex. C).

⁵ Sonos imports its incorrect construction of “speech recognition” into its proposed construction of this term. RBr. 13 n.6. Sonos’s construction of “speech recognition,” though incorrect, is immaterial to this

appropriate because (1) the claim language requires the “determin[ation] . . . whether to perform speech recognition” to be achieved without performing any speech recognition, and (2) the specification does not include an embodiment that makes the determination that way. But Sonos’s proposal would redraft the claim language to omit necessary requirements and ignore important context in the specification, all of which undermines its construction.

The plain language of the claim could easily be understood by a POSITA, and therefore there is no reason to construe it. CBr. 19-20 & Anderson I ¶ 72. The identified phrase simply specifies whether a “first computing device” should do something—i.e., perform speech recognition. This first computing device determines whether to perform speech recognition based at least in part on information received from other devices. Nothing more is required. And Sonos does not dispute this meaning—the first portion of its construction merely restates this determination.

Sonos’s construction departs from the plain language of the claims, however, by eliminating the “based at least in part...” requirement from its construction altogether. Sonos does not address this portion of the claim in its brief. But “each element contained in a patent claim is deemed material to defining the scope of the patented invention.” *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950 (Fed. Cir. 2006). See CBr. 19-23 & Anderson I ¶¶ 72-75.

Sonos’s proposed construction also seeks to narrow the claims by adding a requirement that is unrelated to the disputed claim language, i.e., that the determination to be made “without any of the plurality of computing devices processing the spoken audio input to determine whether

dispute. That is because the claims require the first computing device, if it determines it should perform speech recognition on the spoken audio input, to also determine, “based on performing speech recognition on the spoken audio input, whether the spoken audio input includes a predetermined spoken audio command” per the penultimate claim element in each independent claim. Thus, the claims already require the secondary operation of “processing” audio input, as described above in Section II.B.

it includes a predetermined audio command.” Sonos’s construction is incorrect for two reasons. First, it seeks to introduce a negative limitation without basis. Negative limitations must be supported either by “the words of the claim” or through an “express disclaimer or independent lexicography in the written description that would justify adding that negative limitation.” *Omega Eng’g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1323 (Fed. Cir. 2003). No such support is present anywhere in the intrinsic record, and Sonos does not attempt to identify any. Second, it would restrict the operation of the claimed “first computing device” based on characteristics of the rest of the plurality of devices, which are not part of the claims. Reading operations of other computing devices into claims focused on the operation of a “first computing device” would be improper. *See, e.g.*, ’748 at cl. 7 (“A first computing device, comprising...”); *see also id.*, cl. 1 (“receiving,” “determining,” “sending,” “performing,” etc., all “by [a/the] first computing device”), cl. 11.

Sonos attempts to justify its importation of a negative limitation by relying on claim language and portions of the specification, none of which actually support Sonos’s construction. For example, Sonos argues the claims require that, if the first computing device “determin[es] that [it] should perform speech recognition on the spoken audio input,” the “other computing devices should ‘refrain from performing speech recognition.’” RBr. 12-13. But that is beside the point. To determine whether a first computing device practices the claim, the behavior of other computing devices of the plurality of computing devices need not be assessed. The claim language Sonos cites confirms this—it focuses on the first computing device sending a command, not on what other devices in the plurality do. The “words of the claim” thus do not support Sonos’s negative limitation.

Nor is Sonos’s negative limitation required or supported by the specification. Sonos argues that “there is no disclosure in the specification of any determination of ‘whether the first computing device should perform speech recognition on the spoken audio input’ based on performing speech

recognition on the spoken audio input.” RBr. 14. This is a straw man—nothing in the claim language requires that the determination whether to perform speech recognition involves performing speech recognition in the first place. *See, e.g.*, ’748 at cl. 1 (“determining, by the first computing device and based at least in part on information received from the one or more additional computing devices, whether the first computing device should perform speech recognition”). The specification is therefore consistent with the claims in leaving this question open. “Courts may not rewrite claim language based on what has been omitted from a claim.” *Resonate Inc. v. Alteon Websystems, Inc.*, 338 F.3d 1360, 1365 (Fed. Cir. 2003).

D. “a command to temporarily refrain from performing speech recognition” (All Claims)

Sonos’s proposed construction changes the words of the claim, but does not clarify its meaning or change the scope in any apparent way. No construction is needed—this term is clear on its face. Sonos argues that “any other interpretation” than its own construction “would be illogical” and “would fail to meet the desired goals” of the ’748 patent. RBr. 15. It is not clear how Sonos’s construction, adding “any and all” to the claim, differs in any meaningful way from the plain language or would clarify the claims’ scope for a POSITA. Even if Sonos’s construction somehow affected the claims’ scope, it would be improper to restrict the claims to general advantages described in the specification, as Sonos suggests. RBr. 15-16.

Google’s proposal is both logical and consistent with the ’748 patent specification. Once a computing device is designated to monitor for and/or process audio input, the other devices “may temporarily cease to monitor for audio input.” ’748 at 2:52-57. One way this can be accomplished is for the designated computing device to send instructions (a command) to the other, non-designated computing devices informing them that they should temporarily cease monitoring for audio input. *Id.*, 9:36-41. *See* CBr. 16 & Anderson I ¶¶ 61-63. For good measure, Google’s proposal is also consistent with Sonos’s identified “goals” of the ’748 patent: “not wasting power,

energy, and battery life and avoiding duplicative/parallel processing” when only one device monitors for and/or processes audio input to determine whether it includes a predetermined spoken audio command. RBr. 17 (citing ’748 at 5:31-39, 10:7-12).

Sonos does not explain why the above objectives can be achieved only by its construction or what the phrase “any and all” actually adds or means. RBr. 17 (arguing that Sonos’s construction “is the only way to ensure that the ’748 Patent’s ‘overriding purpose’ . . . is achieved”). *See Hoganas AB v. Dresser Indus., Inc.*, 9 F.3d 948, 950 (Fed. Cir. 1994) (“It is improper for a court to add ‘extraneous’ limitations to a claim, that is, limitations added ‘wholly apart from any need to interpret what the patentee meant by particular words or phrases in the claim.’”). Regardless, claim construction is not an exercise in redrafting otherwise clear patent claims to advance the goals of the patent. *Phillips*, 415 F.3d at 1326-27 (citation omitted); *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1370 (Fed. Cir. 2003).

III. ’128 AND ’311 PATENTS

A. **“other devices of the plurality of electronic devices” / “quality scores generated by the other devices of the plurality of electronic devices” (’128 All Claims) / “second values ... from other electronic devices” / “second values from other electronic devices of the plurality of electronic devices” (’311 All Claims)**

All asserted claims recite a “plurality” of electronic devices (*i.e.*, “two or more”), including a “first electronic device” and “other devices” that generate “quality scores” or “values.” CBr. 26-27. Sonos contends that the recitation of “other devices”/“quality scores”/“second values” in these claims must refer to two or more “other devices”/“quality scores”/“second values” because the terms are plural. RBr. 18-19. But Sonos ignores the clear guidance in the claims and specification that each of these terms may refer to just **one** or more device/score/value. Sonos’s proposed construction would mandate that the claimed “plurality” of electronic devices be three or more

(rather than two or more) electronic devices. In doing so, Sonos's construction would also read the embodiment of Figure 6 out of the claims. CBr. 28.

Sonos's argument that "other devices," because written in the plural form, **must** be more than one object (RBr. 18-19) is contrary to the Federal Circuit's guidance. *See, e.g., Dayco Prods., Inc. v. Total Containment, Inc.*, 258 F.3d 1317, 1328 (Fed. Cir. 2001); *Versa Corp. v. Ag-Bag Int'l Ltd.*, 392 F.3d 1325, 1330 (Fed. Cir. 2004); *Omeprazole Patent Litigation*, 84 F. App'x 76, 80 (Fed. Cir. 2003). Sonos's lead case, *Apple Inc. v. MPH Tech, Oy*, made clear that the plural term "fields" referred to two or more fields only because there was "no express language [in the specification] indicating the plural should include the singular or broadly describing the invention as containing one or more fields." 28 F.4th 254, 261-62 (Fed. Cir. 2022).⁶ Here, both the claims and specification make clear that the claims encompass embodiments of a "plurality of electronic devices" in which there is only a single "other device," "second value," or "quality score." CBr. 26-28. Sonos's claim that the use of the plural forms was intentional rather than a "typographical error" also misses the point. RBr. 19. As explained above, the drafters' clear intent in using "plurality of electronic devices" followed by the plural terms was to refer to two or more electronic devices comprised of one "first electronic device" and "one or more" additional devices, scores, or values. CBr. 26-28.

Sonos next argues that, because the patentee **could** have used the phrase "one or more" devices, scores, or values terms, the terms cannot mean "one or more" other devices, quality scores, or values. RBr. 20. But the fact that the applicant **could** have used a different formulation does

⁶ Similarly, the dispute in *Leggett & Platt, Inc. v. Hickory Springs Mfg. Co.* centered on whether "support wires" "included an assembly of separate wires welded together" or whether they were a "continuous strand[s] of wire" with "only two ends," not on whether "support wires" could be a single wire. 285 F.3d 1353, 1358 (Fed. Cir. 2002). Unlike in the present case, the court in *Leggett & Platt* did not identify any evidence suggesting that "support wires" was intended to refer to a single support wire. *Id.*

not overcome the claims and specification’s disclosure or preclude a plurality of electronic devices including “one or more” devices, scores, or values beyond the first electronic device and its own score/value. *See, e.g., Cohesive Techs., Inc. v. Waters Corp.*, 543 F.3d 1351, 1368, (Fed. Cir. 2008). Sonos’s position that the applicant cannot have meant for the disputed plural terms to refer to “one or more [scores/devices/values]” because it used singular nouns or the phrase “one or more” in the specification is equally unconvincing. RBr. 20-22. By the same token, the claims could have recited a “plurality” of “other devices,” “quality scores,” or “second values,” mandating two or more such devices/scores/values, but they do not.

Sonos’s final argument—that the claims must refer to a three-device system because Figure 4 shows a three-device system—is simply wrong. RBr. 21. It is fundamental that claims should not be restricted based on a single disclosed embodiment. *See TalexMedical, LLC v. Becon Med. Ltd.*, No. 2021-2069, 2022 WL 2898934, at *5 (Fed. Cir. July 22, 2022). The patents never state, or even imply, that Figure 4 discloses the minimum number of devices that can be used in the claimed system. In fact, Figure 6, which Sonos agrees is a claimed embodiment, confirms that the claim language encompasses a two-device embodiment. *See* RBr. 36. Sonos’s proposed construction would read this embodiment out of the claims without basis.

**B. “forgo outputting an audible response” / “forgoing outputting a response”
(’128 All Claims) / “[forgoing / forgo] responding” (’311 Claims 2, 3, 12)**

Sonos mischaracterizes the parties’ dispute regarding the “forgo”/“forgoing” terms. The dispute is not whether a device “need only refrain from one instance or type of response while allowing the device in question to engage in a virtually unlimited number of other types of responses,” as Sonos contends. RBr. 23. Google does not assert that a device that forgoes outputting a response to a detected voice input can nonetheless respond to the detected voice input in some other way, and still fall within the scope of the claims. Instead, the dispute relates to the meaning of “responding” or “outputting a response” to a “detected voice input.” CBr. 29-30.

Sonos conflates the distinct concepts of responding to detected voice input with fulfillment of a user's request, and its construction should be rejected.

First, Sonos's attempt to inject "any and all" into the claim language, and its arguments in support, reveal that its goal is to narrow the claims such that a device that forgoes responding to a detected voice input is precluded from performing any action whatsoever, including actions that are not responses to a detected voice input. This interpretation ignores the plain language of the claims and would frustrate what Sonos itself acknowledges is the stated purpose of the invention, i.e., to "reduce user confusion." RBr. 23-24 (citing '311 patent, 1:67-2:3).

For example, a user may have multiple voice-assistant enabled devices in a space within her home (e.g., a "Living Room" device and a "Kitchen" device), each of which performs the claimed operations. If the user makes a voice request (e.g., "Ok Computer, play music in the Living Room"), and that voice input is detected by both devices, the devices will make a determination as to which one should be the leader to respond to that voice input (e.g., interact with the user). If the "Kitchen" were the leader, then under Sonos's interpretation, the system *could not satisfy* the user's request because "any and all" operation of the Living Room device must be precluded. As a result, Sonos's interpretation would only serve to *increase* user confusion, preventing the fulfillment of the request from being performed at the intended device. *Apple Computer, Inc. v. Articulate Sys., Inc.*, 234 F.3d 14, 25 (Fed. Cir. 2000).

Second, Sonos achieves its overly narrow claim interpretation by conflating the claim requirement of "responding to [a] detected voice input" with performing other actions.⁷ This is

⁷ For this reason, Sonos's reliance on *Imaginal* is misplaced. RBr., 26 (citing *Imaginal Systematic, LLC v. Leggett & Platt, Inc.*, 805 F.3d 1102, 1109 (Fed. Cir. 2015)). The court held that "moving the fastening tool without the use of a vision guidance system" precluded use vision guidance systems generally, not just the system disclosed in the patent. 805 F.3d at 1109. This holding is inapposite because Google does not contend that forgoing outputting a response to a detected voice only precludes certain types of responses to voice inputs. Rather, the parties' dispute concerns what constitutes a response to a voice input.

confirmed by Sonos's identification of what it asserts are "many types of responses" in the patents' disclosures. RBr. 27-29. For example, Sonos points to the patents' description of "fulfillment." RBr. 28 (citing '311, 10:29-34). As discussed in Google's opening brief, however, the patents make clear that "fulfillment" is distinct from responding to a voice input, and a POSITA would understand that the claims do not preclude a forgoing device from fulfilling a user request. CBr. 31-32, Anderson I ¶¶ 101-04.

Sonos also identifies "changing a state or operating one or more other connected devices within the operating environment 100 (e.g., turning lights, appliances or media devices on/off, locking/unlocking a lock, opening windows, etc.)." RBr. 28 (citing '311, 7:48-63). Although a device can respond to a detected voice input by changing a state of another device (e.g., turning on lights), the other device's fulfillment of that request is not itself a response to the detected voice input. Anderson I ¶¶ 101-04. In other words, in the previous example, the Living Room device does not respond to the detected voice input; it fulfills the request by playing music based on the instruction received from the responding Kitchen device.

And Sonos refers to "visual indications," again broadly characterizing them as "responses to voice inputs," but the intrinsic record confirms that too is not accurate. RBr. 28-29. For example, Sonos relies on incorporated-by-reference Application No. 62/336,566, which describes voice assistant devices having multiple states, including a "Hot word detection state and listening state," a "Thinking mode or working mode," and a "Responding mode or speaking mode." The '566 application explains that the claimed device can show different visual indications depending on the device state, but only uses the term "responding" in describing the "Responding mode or speaking mode" state (i.e., when the device is responding to a detected voice input). '566 Application, ¶ 92, ¶¶ 96-101. The '566 application therefore confirms that visual indications can be used for purposes other than "responding to a voice input" (e.g., to indicate a device is listening).

- C. **“in accordance with a determination that the quality score generated by the first electronic device is the highest ... in accordance with a determination that the quality score generated by the first electronic device is not the highest...”** (’128 Claims 1, 2, 3, 5) / **“in accordance with a determination that the first value is higher than the second values ... in accordance with a determination that the first value is not higher than the second scores”** (; ’311 Claim 2)

Although Sonos acknowledges that the claims recite the performance of “two alternative” steps, Sonos nevertheless insists that the performance of those steps is “impossible” and “contradictory” such that a POSITA could not understand the scope of the claims. RBr. 32-33. But the claim language would be clear to a POSITA, especially in light of the specification. As the Abstract explains, the device with the higher “score” among a plurality of devices responds to a detected input. ’311 patent, Abstract. The “in accordance with” limitations effectuate this purpose by providing one set of actions to take when a device’s score or value “is higher than the second [scores/values]” and an alternative set of actions to take when a device’s score or value “is not higher than the second [scores/values].”

Sonos and its expert, Dr. Jules White, offer several implausible reasons that the “in accordance with” limitations could not be readily understood as reciting two alternative steps. For example, Dr. White asserts that the “in accordance with” limitations are shown in Figure 6 as sequential steps in “rectangle-shape” boxes. White ¶¶ 70-72. According to Dr. White, limitations in the alternative would have been placed in “diamond” shaped boxes to “indicate a decision.” *Id.* at ¶ 72. Dr. White’s focus on shapes in the flow chart rather than on the language of Figure 6 and the corresponding description in the specification is misplaced. Dr. White’s sole support is a “Flowchart Resource” diagram that has no tie whatsoever to any patents, let alone the ’128 and ’311 patents, is undated, has no listed author, and comes from a website that provides “Math & Science Video Lessons for High School Classes.” *See* Ex. 15 (blossoms.mit.edu). This extrinsic evidence cannot outweigh the actual text of Figure 6 and its supporting description confirming that

the recited steps are in the alternative. ’128 patent, 29:32-40; 29:59-67. Anderson II ¶ 25. Dr. White also argues that the specification’s explanation that “if” may be construed to mean “in accordance with a determination that” does not “offer any help” in ascertaining the scope of the claims. White ¶¶ 75-77. But a POSITA would understand that equating “if” with “in accordance with a determination that” in the specification further supports that the “in accordance with” limitations describe alternative functionalities. Anderson II ¶ 26.

Sonos appears to argue that method claims including conditional language must be indefinite because “method or process claims require the performance of each and every recited step.” RBr. 31. That is incorrect; method claims may include alternative steps. *See* CBr. 34-35 (citing *Hytera Commc’ns Co. v. Motorola Sols., Inc.* 841 F. App’x 210 (Fed. Cir. 2021); *Interdigital Tech. Corp. v. Lenovo Holding Co., Inc.*, No. CV 19-1590-LPS, 2021 WL 1856937 (D. Del. May 10, 2021)). The case cited by Sonos, *NTP, Inc. v. Research in Motion, Ltd.*, is not to the contrary. 418 F.3d 1282, 1318 (Fed. Cir. 2005). *NTP* did not address method claims with conditional or alternative limitations; it held only that there was no direct infringement of a patent where the alleged infringer did not perform each method step. *Id.*

Because the disputed terms would be understood by a POSITA to recite logical alternative functionalities, the claims are neither “impossible” nor “nonsensical.” Each of Sonos’s cited cases held that the method claims at issue were indefinite because they required actual logical impossibilities. RBr. 31-32; *see, e.g., Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1359 (Fed. Cir. 1999) (“[C]ause [d] require[d] . . . $A = A + B$, which is impossible, where, as here, B is not equal to zero.”); *Trustees of Columbia Univ. in City of New York v. Symantec Corp.*, 811 F.3d 1359, 1367 (Fed. Cir. 2016) (claim impossible to perform because it “describes the step of extracting machine code instructions from something that does not have machine code instructions.”); *Synchronoss Techs., Inc. v. Dropbox, Inc.*, 987 F.3d 1358, 1364 (Fed. Cir. 2021)

(claim impossible because it required a “digital media file” to “contain a directory of digital media files”). None of Sonos’s cases holds that a method claim reciting two alternative paths is indefinite.

D. “cause the electronic device” (’128 Claims 11, 12, 13, 15)

Sonos incorrectly contends that there are two “equally plausible” interpretations of “cause the electronic device,” rendering the claims indefinite. RBr. 35. But only one of the two interpretations that Sonos describes is plausible and supported by the intrinsic record, and that is the plain and ordinary meaning articulated by Google.

Sonos’s first interpretation is that “the electronic device” refers to the recited “first electronic device.” RBr. 35-36. For the reasons described in Google’s opening brief, that is how a POSITA would understand the claim, and is the only interpretation supported by the intrinsic record. CBr. 27-29; Anderson I ¶¶ 124-28. Claim 11 only specifies one device of “a plurality of electronic devices”—“the first electronic device”—and a POSITA would thus understand “the first electronic device” to be the only possible antecedent basis for “the electronic device.” *See Joy MM Delaware Inc. v. Cincinnati Mine Mach. Co.*, No. CIV.A. 09-1415, 2010 WL 3984822 (W.D. Pa. Oct. 9, 2010), *aff’d*, 497 F. App’x 970 (Fed. Cir. 2012). Sonos concedes that this interpretation is consistent with the claimed invention, stating that it would result in a claim scope similar to that of claim 1 of the ’128 patent. RBr. 35-36.

Sonos’s second interpretation is that “the electronic device” is meant to be plural, i.e., “the electronic devices.” RBr. 36. Under this interpretation, “the electronic device” would refer to all the devices of the “plurality electronic devices.” This is not plausible for several reasons. First, if claim 11 were interpreted in this manner, it would require that execution of instructions by *one* device—the “first electronic device”—causes *all* devices in the “plurality of electronic devices” to perform the recited operations. This has no support in the intrinsic record and does not make sense. Sonos cites a single portion of the specification, asserting that it “explains that each device

in the plurality can engage in the leader determination process by carrying out the steps of the process.” RBr. 36-37 (citing ’128 patent, 20:55-21:32). But this disclosure does not describe *one* device executing instructions that cause *all* devices to perform the claimed operations. *See, e.g.,* ’128 patent, 21:1-3 (“In some implementations, *each of the electronic devices determines* a level of quality of the respective sample of the voice input captured by the electronic device.”). The specification allows for the possibility that, at any given time, any of the plurality of devices can be the “first electronic device” and nothing more. This is confirmed by portions of the specification—not cited by Sonos—that describe devices separately capable of executing instructions to perform the disclosed functionality. *See id.*, 28:63-29:5 (describing a method where “each device” includes “one or more processors and memory storing one or more programs for execution by the one or more processors”).

Sonos asserts that if “the electronic device” were construed as “the electronic devices,” claim 11 would be similar to claim 6 (RBr. 36-37), and that if claim 6 makes sense as written, claim 11 could be structured in the same way. *Id.* But Sonos’s argument misunderstands how construing “the electronic device” as “the electronic devices” would affect claim 11. Under Sonos’s proposed construction, claim 11 would require that the *first device has memory storing the relevant programs* and that the execution of those programs *by the first device* causes *the other devices* to perform operations. As explained above, this makes little sense. In contrast, claim 6 recites a “first electronic device of a plurality of electronic devices” where *each of the plurality of electronic devices includes memory storing programs comprising instructions for performing operations*. *See* ’128 patent, 21:1-3, cl. 6, 28:63-29:5. In claim 6, each device has instructions stored in its own memory for performing the relevant operations.

Dr. White provides a cursory discussion of this term, citing no disclosure from the intrinsic record to support his conclusion that a POSITA would understand the claim as Sonos proposes.

RBr., Ex. F, ¶¶ 33-39. Contrary to these unsupported statements, a POSITA would understand the plain meaning of this term. Anderson I ¶¶ 122-29.

E. “the second scores” (’311 Claims 2, 3)

Sonos contends that because *another* claim of the ’311 patent refers to a “quality score,” the applicant may have intended to refer to “second scores” in claim 2. RBr. 38. But that “the second scores” should be corrected to recite “the second values” is not subject to reasonable debate, and the prosecution history supports the correction. CBr. 40-42.

Sonos’s reliance on claim 17, which recites that the “first value comprises a first quality score of the voice input,” is misplaced. Claim 17 simply demonstrates that the “first value” of claim 16 may be or include a “quality score,” limiting the scope of independent claim 16 as dependent claims do. *See* 35 U.S.C § 112(d); *Monsanto Co. v. Syngenta Seeds, Inc.*, 503 F.3d 1352, 1357 (Fed. Cir. 2007). Claim 2, which neither depends from claim 17 nor is an claim from which claim 17 depends, arises in a different context. Independent claim 1 recites responding to a detected input if the “first value” is higher than the “second values,” and claim 2 concerns “forgoing responding to the detected input.” Against that backdrop, it makes no sense for claim 2 to recite foregoing responding to a detected input if a “first value” is not higher than the “second *scores*.” Claim 2, which recites the alternative to the determination in claim 1 that “first value” is higher than a “second value,” only makes sense if the “second scores” is “second values” (an apples-to-apples comparison consistent with claim 1, from which it depends).

Sonos next argues that the prosecution history “suggests a different interpretation of the claims” because the applicant had an opportunity to correct the error but did not. RBr. 38-39. But the fact that the applicant sought to correct “score” to “value” is exactly the point here: the applicant changed every other instance of “score” to “value” in claims 1 and 2, and Sonos identifies no plausible reason that the applicant would have deliberately left “the second scores” unamended

and without antecedent basis. (Anderson I ¶¶ 135-38); White ¶ 47. *Adaptix, Inc. v. Apple, Inc.*, No. 5:13-CV-01776-PSG, 2014 WL 5473027, at *4 (N.D. Cal. Oct. 27, 2014) (“correction of the language in claim 7 but not in claim 36 ... ha[d] no bearing on the propriety of the proposed correction”). The only plausible interpretation of the prosecution history is that the applicant inadvertently failed to change “second scores” to “second values.” Otherwise, every prosecution error is “intended,” and corrections could never be allowed. That is not the law.

F. “the detected output” (’311 Claim 12)

Claim 12 as written requires “communicating to the other devices of the plurality of electronic devices to forgo responding to the detected *output*.” Sonos argues that the correction of “the detected output” to the “the detected input” is subject to reasonable debate because the claims recite “both inputs and outputs” generically, e.g., “detecting a voice input” (cl. 1) and “outputting an audible and/or visual response to the detected voice input” (cl. 8). RBr. 40. But neither the claims nor the specification ever discloses *detecting* outputs. CBr. 43-44. “Detecting” in the ’311 patent is focused exclusively on *inputs*, and a POSITA would understand claim 12 accordingly. *Id.*; Anderson I ¶ 140. The only “outputs” described in the specification are responses from one of the electronic devices, if it is decided that the device will respond to a detected *input*; nowhere does the patent ever describe detecting an output audible and/or visual response, and it would be nonsensical to do so within the context of the patent. *AIA Eng’g Ltd. v. Magotteaux Int’l S/A*, 657 F.3d 1264, 1276 (Fed. Cir. 2011) (“We strive, where possible, to avoid nonsensical results in construing claim language.”); Anderson II ¶ 46.

Sonos argues that even if corrected, the antecedent basis would still be unclear because claim 1 recites “detecting a *voice* input” and then “detected input,” which is somehow inconsistent.

RBr. 40 Not so. A POSITA would understand “the detected input” refers to “the detected voice input” recited in claim 1’s step of “detecting a voice input from a user.”⁸ Anderson II ¶ 47.

IV. 615 PATENT

A. “short range signal transmission path” (All Claims)

Sonos complains “short-range signal transmission path” is “a term of degree” (RBr. 41) with no rigid “distance boundary” (RBr. 43), but this search for a numerical bound ignores the law: terms of degree are not “inherently indefinite,” and “mathematical precision” is not required. *Sonix Tech. Co. Ltd. V. Publications Int’l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017). The Federal Circuit upheld a similar term of degree, “visually negligible,” against indefiniteness attacks where the specification (1) disclosed “requirements” for “graphical indicators being negligible to human eyes,” along with (2) “*two specific examples* of visually-negligible indicators.” *Id.* at 1379 (term of degree definite in view of “statements that provide guidance on how to create visually-negligible indicators, and specific examples that provide points of comparison for the result”). The same is true here; the ’615 patent discloses requirements for a short-range signal—specifically, that it be a “*proximity-based* communication channel” (’615 patent, 8:9-13)—and further provides *six specific examples* of short-range signals: “near field communication (NFC), RF identification (ID), BLUETOOTH LOW ENERGY, Zigbee, radio frequency for consumer electronics (RF4CE), Z-Wave.” ’615 patent, 8:62-67; *see also id.*, cl. 5).⁹ One of skill can readily use the ’615 patent’s guidance on “proximity-based” communication

⁸ Sonos’s position on the precise phrasing of “a voice input” versus “the detected input” is inconsistent with its position regarding “predetermined spoken audio command.” Sonos contends that the difference between a “predetermined audio command” and a “predetermined *spoken* audio command “is of no consequence and does not alter” its claim construction analysis. RBr. 10 n.5; *supra* § IV.C. Here, when it argues indefiniteness, Sonos makes much of the difference, but does not explain why. Neither is significant. *See Intelligent Computer Solutions, Inc. v. Voom Techs., Inc.*, 509 F. Supp. 2d 847, 859 (C.D. Cal. 2006).

⁹ Sonos’s discussion of operating ranges (at 42-43) undermines its arguments: Sonos *admits* a POSITA would know signals in the specification have known operating ranges (*e.g.*, 0.1 meters for NFC, 150 meters

and analyze the multiple examples of “proximity-based” signals in the specification to determine whether a given signal is a “short-range” signal. Mahon ¶ 52.¹⁰

The prosecution history undercuts Sonos’s assertion (RBr. 43) that persons of skill cannot understand “short-range signal” and lack “reasonable certainty” when using the term. In the ’615 file history, and in the prosecution of its parent application, the PTO had no concerns with “short-range signal” as indefinite, and the Examiner identified short-range signals in the prior art – demonstrating the term is understood to one of skill. Ex. 18 (’615 prosecution history excerpt) at 3-6, Ex. 19 (prosecution history excerpt for parent U.S. Patent No. 9,485,790) at 6-7, Mahon ¶ 54. *Cf. Sonix*, 844 F.3d at 1379 (file history confirmed definiteness where “[n]o one involved in either the first or the second reexamination had any apparent difficulty in determining the scope of ‘visually negligible,’” and “the USPTO did not express any uncertainty as to the scope of ‘visually negligible,’ or encounter any apparent difficulty in applying the term”).

Sonos likewise had no problem understanding “short-range signals” in its Response to the Complaint (Ex. 20) or in its invalidity contentions (Ex. 21), arguing in each that Wi-Fi signals are “short-range signals” within the meaning of the ’615 patent claims. Sonos’s own patents likewise use the phrase or near-identical phrases with no difficulty (CBr. 47 & n.19). In parallel litigation, Sonos had no trouble identifying a “short-range communication link” and contending what is and

for Bluetooth). It does not matter that one might construct mesh *networks* using these signals, or that those *networks* could cover vast distances; each leg of such a network would be comprised of individual signals covering “short-range” distances. Mahon ¶ 53. Sonos’s reference to the 433/868 MHz *band* is also inapposite; this is a general frequency band for communication, not a signal, and a POSITA would not classify a signal as “short-range” based on its operating frequency, such as 433/868 MHz, as opposed to its distance. *See* Mahon ¶ 53.

¹⁰ *Accord Enzo Biochem, Inc. v. Applera Corp.*, 599 F.3d 1325, 1336 (Fed. Cir. 2010) (“not interfering substantially” was definite where “examples in the specification” set out boundaries for comparison by one of skill to “determine whether interference ... is substantial”); *Commil USA, LLC v. Cisco Sys., Inc.*, No. 2:07-CV-341, Dkt. No. 193 (E.D. Tex. Dec. 29, 2010) (“short-range communication protocol” was definite; “the use of the term ‘short-range’ in the claim does not render the claim insolubly ambiguous”).

is not such a link.¹¹ And even in this Investigation, although Sonos’s expert Dr. Jules White now claims “short-range signal” is indefinite, Dr. White filed multiple patent applications before this litigation began that use the phrase “short-range signal” just as the ’615 Patent does.¹² This dooms Sonos’s indefiniteness allegations. *Sonix*, 844 F.3d at 1380 (claim definite where experts and parties “had no difficulty in applying” term).

Sonos’s authorities are inapposite. Its only case involving “short-range” ***did not find the term indefinite***. *Uniloc 2017 LLC v. Google LLC*, No. 2:18-cv-00493-JRG-RSP, 2020 U.S. Dist. LEXIS 7948 (Ed. D. Tex. Jan. 20, 2020) (construing term as “wireless personal area network technology,” and noting “Bluetooth” was an example). And in *GE Lighting Sols., LLC v. Lights of Am. Inc.*, 663 F. App’x 938 (Fed. Cir. 2016) there were ***no*** examples of an “elongated” core ***at all*** in the patent or file history for one of skill to analyze – a far cry from the ’615, where multiple short-range signals are identified using well-known protocols.¹³

Finally, Sonos never even ***addresses*** dependent claim 5, much less tries to meet its burden of clear and convincing proof of indefiniteness. Sonos solely attacks independent claims—ignoring that even on Sonos’s own theory, dependent claim 5 supplies the very boundaries that are supposedly lacking in those independent claims. ’615 patent, cl. 5 (specifying that the “short-range signal path” is “based on one of Bluetooth communication, radio frequency identification (RFID), Zigbee, radio frequency for consumer electronics (RF4CE), Z-Wave, and near-field communication”). Sonos does not, and cannot, claim that Bluetooth, RFID, Zigbee, RF4CE, Z-

¹¹ Ex. 22 (Sonos II JCCS, Appendix A).

¹² Ex. 23 (U.S. Patent App. No. 2014/0273857A1), [0023], cl. 1 (application for “methods to secure ***short-range proximity signals***,” using “***a short-range signal as a claim term***,” and disclosing that “transmissions between the communication facility 108 and the network may utilize one or more ***short-range proximity signals, such as, but not limited to, cellular, Bluetooth, Bluetooth LE, near-field communication, RFID, Wi-Fi, infrared, and an acoustic signal***”).

¹³ See *GE*, 663 F. App’x at 940-41 (“Elongated appears nowhere in the specification, nor, as GE admits, are the core’s dimensions otherwise described in text or drawings.”).

Wave, or NFC are indefinite; thus, even on Sonos's own theory, dependent claim 5 is valid as definite, as it further narrows the scope of "short-range signal transmission path" and in so doing supplies the boundaries Sonos asserts are missing from the independent claims. *See, e.g., Default Proof Credit Card Sys., Inc. v. Home Depot U.S.A., Inc. (d/b/a The Home Depot)*, 412 F.3d 1291, 1297 (Fed. Cir. 2005) (finding independent claims indefinite, but not disturbing lower court's conclusion that dependent claims were definite).¹⁴

B. "in response to receiving the request, receiving one or more network configuration packets" (All Claims)

Sonos oddly starts its indefiniteness argument by admitting Sonos understands the phrase's meaning: "the phrase calls for the target device to receive something (*i.e.* configuration packets) 'in response to' receiving something else (*i.e.* a request to initiate a commissioning process)," and "therefore requires two inbound transmissions to the target device in which the second one is 'in response to' the first." RBr. 46. This undermines Sonos's assertion of indefiniteness; Sonos, like any other person reading the '615 patent claims, understands their scope. Sonos's real complaint is not *what* the claim means but *how* it is accomplished: "it is not at all clear *how* a target device could be said to receive network configuration packets as a result of receiving a request to start the commissioning process." *Id.* That is an enablement attack, not an indefiniteness one, and should be rejected out of hand at the claim construction stage.¹⁵

The claim construction position Sonos *actually* presents is an improperly narrow reading

¹⁴ Sonos's claims of linguistic confusion (RBr. 41) fare no better than its other failed arguments. "Short-range" modifies "signal" in the claims, and limits the range of the signal transmitted along the transmission path. The claim does not say "short-range path," and Sonos ignores rules of English grammar by feigning not to know what "short-range" modifies.

¹⁵ *See TQ Delta, LLC v. 2Wire, Inc.*, 373 F. Supp. 3d 509, 524 (D. Del. 2019) ("[t]he asserted claims are clear on their face as to what is claimed" and an argument that "no embodiment demonstrate[s] *how* to" perform the claim term "is not an issue of whether a person of ordinary skill in the art would understand the claim scope, but an issue of whether that claim is properly supported by written description or enabled by the patent specification").

of “in response to” that seems to prohibit any intervening act between the first and second “receiving” steps. As Sonos puts it, “it makes no sense from a technical standpoint to say that the target device received a network packet in response to receiving a request to initiate a commissioning process – any more than it makes sense to say that you received your holiday gifts in the mail on Tuesday in response to receiving your mail on Monday.” RBr. 46. But this analogy proves the point: if “your mail on Monday” is a request for permission to deliver packages to you on Tuesday, and you respond “yes” to that Monday request, your Tuesday packages are of course “in response to” receiving (and accepting) Monday’s delivery request. The same is true in the ’615 patent. The first request in the claims is “a *request to initiate a commissioning process* with the target device.” ’615 patent, cl. 1, 11, 16 (emphasis added). Nothing in the ’615 claims precludes *accepting* this request to initiate commissioning; to the contrary, the ’615 patent claims expressly uses “comprising” language.¹⁶ Moreover, multiple ’615 patent embodiments use network protocols that *require* a response to the initial request to initiate commissioning to acknowledge (or “ack”) receipt and confirm the request had been successfully received before further steps take place. Mahon ¶ 61. The ’615 patent expressly states some embodiments *require* multiple messages like this to conduct commissioning, and further explains some embodiments *need* to put the target device in a “commissioning mode” before configuration data is sent. ’615 patent, 11:40-48. Sonos ignores this to manufacture its indefiniteness argument. But a POSITA would expect intervening steps, like an acknowledgement or “ack” of the request to initiate commissioning, before network configuration packets are received. Mahon ¶ 61.

This all comports with the ordinary meaning of “in response to”—which courts have identified as “*caused by*” or “*a result of*.” See, e.g., *GSI Tech., Inc. v. Cypress Semiconductor*

¹⁶ “The well-established meaning of ‘comprising’ in a method claim indicates that the claim is open-ended and allows for additional steps.” *Solvay S.A. v. Honeywell Int’l Inc.*, 742 F.3d 998, 1005 (Fed. Cir. 2014).

Corp., IPR2014-00427, Paper 7, at 4 (Aug. 11, 2014) (rejecting construction of “in response to” that would require “direct causation, i.e., without any intervening event,” since “direct causation would be improper, as the claims and specification do not indicate that direct causation is required,” and the phrase “*in response to*” was instead more properly understood as “initiated as a result of”).¹⁷ The claim means what it says: network configuration packets are received as a result of, and because of, the request to initiate commissioning.

Sonos’s indefiniteness position implicitly tries to narrow “in response to” as only including an immediate, direct response, and excluding any intervening act – foreclosing any causal chain that could occur because of an initial request to initiate commissioning. The ‘615 patent simply does not accord with that reading. Multiple ‘615 embodiments require an intervening response, Mahon Decl. ¶ 63, and without some teaching or definition to the contrary, “in response to” does not require that “no other event may intervene, or have any impact whatsoever on, the occurrence of the second event.” *Optis Wireless Tech., LLC v. Huawei Device Co. Ltd.*, No. 2:17-CV-123-JRG-RSP, 2018 WL 476054, at *35-36 (E.D. Tex. Jan. 18, 2018).¹⁸

V. CONCLUSION

For the reasons discussed above, Complainant respectfully requests that the ALJ adopt Complainant’s proposed constructions.

¹⁷ Even Sonos seems to admit this in passing, noting (at 48) “the causality required by the ordinary meaning of the phrase ‘in response to’.” Sonos is right: “causality” is all that “in response to” implies.

¹⁸ Not even Sonos’s legal citations (RBr. 47-48) support its arguments. Its main case, *Trusted Knight Corp. v. IBM*, No. 14-1063-LPS-CBJ, 2015 U.S. Dist. LEXIS 156414 (D. Del. 2015), involved a claim that rendered the “in response to” phrase “mere surplusage” because nothing was responding to anything. *Id.* at *12. Here there is no such surplusage; network configuration packets are received in response to receiving the earlier request to initiate commissioning, which initiates the commissioning process. Nor is this similar to *USB Bridge Sols. LLC v Buffalo Inc.*, No. 1-17-cv-0011558, 2020 U.S. Dist. LEXIS 67678 (W.D. Tex. Apr. 17, 2020), where the term “conversion logic” was entirely unexplained and the patent “does not explain what the ‘conversion logic’ is or what it does, resulting in a person of ordinary skill in the art struggling to understand the meaning of the term with reasonable certainty.” *Id.* at *20. Here Sonos’s only complaint is *how* steps could be performed, not *what* the steps describe, and even Sonos’s claimed confusion on “how” rests on ignoring embodiments and intervening steps.

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Respectfully submitted,

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CERTAIN AUDIO PLAYERS AND COMPONENTS THEREOF (II)

Inv. No. 337-TA-1330

CERTIFICATE OF SERVICE

I, Jeffrey Matthews, hereby certify that on December 22, 2022, copies of the foregoing documents were served upon the following parties as indicated:

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