

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ROKU INC.,
Petitioner,

v.

UNIVERSAL ELECTRONICS INC.,
Patent Owner.

IPR2022-01289
Patent 9,847,083 B2

Before AMBER L. HAGY, SHARON FENICK, and RUSSELL E. CASS,
Administrative Patent Judges.

CASS, *Administrative Patent Judge.*

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. Background

Roku Inc. (“Petitioner”) filed a Petition requesting an *inter partes* review of claims 1–19 (the “challenged claims”) of U.S. Patent No. 9,847,083 B2 (Ex. 1001, “the ’083 patent”). Paper 2, 1 (“Pet.”). Universal Electronics Inc. (“Patent Owner”) filed a Preliminary Response. Paper 9 (“Prelim. Resp.”).

An *inter partes* review may not be instituted unless it is determined that “the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314 (2018); *see also* 37 C.F.R § 42.4(a) (2021) (“The Board institutes the trial on behalf of the Director.”). The reasonable likelihood standard is “a higher standard than mere notice pleading,” but “lower than the ‘preponderance’ standard to prevail in a final written decision.” *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29 at 13 (PTAB Dec. 20, 2019) (precedential).

For the reasons provided below and based on the record before us, we determine that Petitioner has demonstrated a reasonable likelihood that it would prevail in showing the unpatentability of at least one of the challenged claims. Accordingly, we institute an *inter partes* review on all grounds set forth in the Petition.

B. Real Parties in Interest

Petitioner states that the real party in interest is Roku, Inc. Pet. 3. Patent Owner states that Universal Electronics, Inc. is the real party in interest. Paper 4, 1.

C. Related Proceedings

Petitioner states that it is not aware of any related matters. Pet. 3. Patent Owner lists numerous district court litigations and *inter partes* review proceedings, but does not identify any of them as involving the '083 patent. Paper 4, 1–3.

D. The '083 Patent (Ex. 1001)

The '083 patent “generally relates to a remote control systems and, more particularly, to a system and method for setting up and configuring a controlling device such as a universal remote control to command functions of one or more types of remotely controllable appliances of one or more manufacturers.” Ex. 1001, 1:7–12. Examples of appliances include “televisions, AV receivers, cable or satellite set top boxes (STBs), DVD players, digital video recorders (DVRs), thermostats, [and] game consoles.” *Id.* at 1:12–15. According to the '083 patent, “the process of setting up and configuring a controlling device such as a universal remote control [is] demanding, exacting, and generally frustrating for many users” because, for example, “user manuals or other documents containing setup codes and entry instructions may be lost or misplaced, or may be superseded as brand and/or model names evolve or controllable functions are added,” and “a personal computer and/or Internet access may not be readily available at the location of the appliances to be controlled.” *Id.* at 2:14–23. “Accordingly,” the '083 patent states, “a need exists for a simplified and more user friendly system and method for conveniently setting up and configuring a controlling device.” *Id.* at 2:23–25.

To address this perceived need, the '083 patent describes “a controlling device . . . provisioned with means to receive voice input from a

user, e.g., a microphone, such that when placed in a setup mode the controlling device may solicit spoken appliance descriptive information, for example brand and model number, to be processed by a speech recognition system in order to identify the appliance to be controlled and the command data to which it is responsive.” Ex. 1001, 2:34–41. The speech recognition capability “may be extended to allow a user to further refine the controlling device configuration,” for example by “assigning extended functionality to certain keys,” “verbally accessing infrequently used functions,” or “defining activities.” *Id.* at 2:47–51.

The ’083 patent also discloses an appliance command-code database for use with the controlling device that may include brand records, each of which points to a group of model records specific to each brand, and each model record in turn pointing to a codeset record including data applicable to that specific brand and model of appliance. Ex. 1001, 9:55–62. The ’083 patent shows codeset records to be used with the controlling device in Figure 7b, reproduced below.

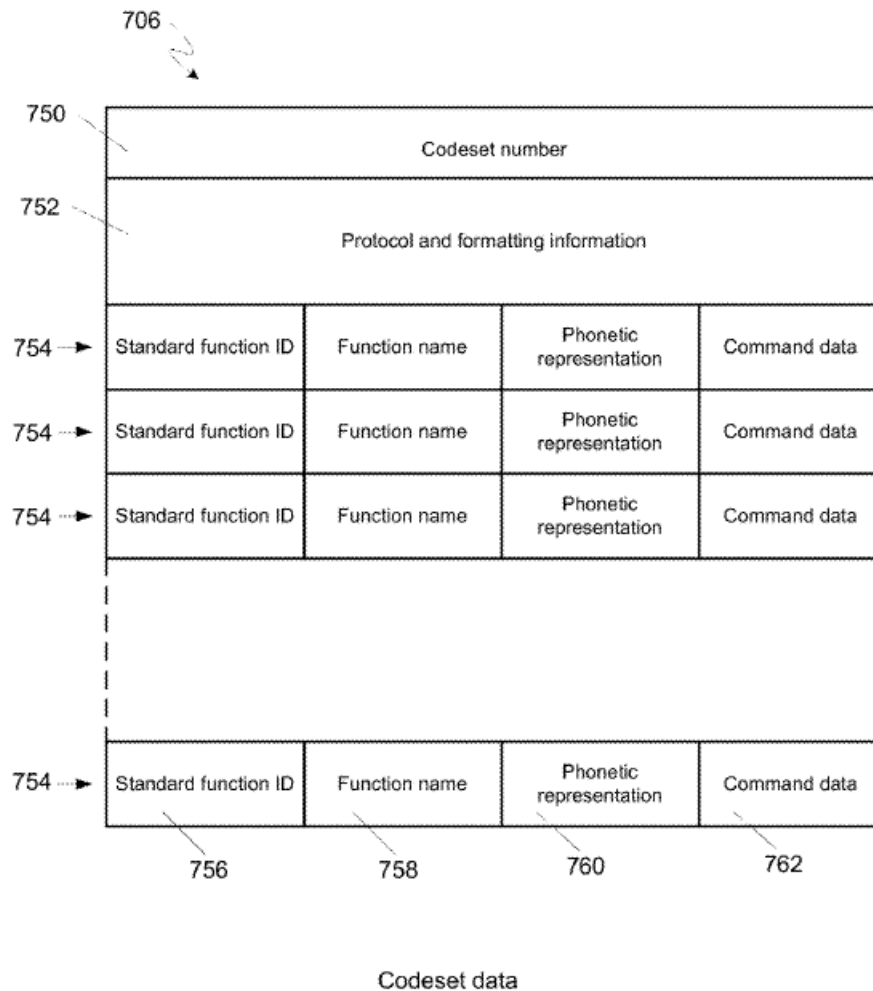


Figure 7b

Figure 7b of the '083 patent discloses codeset records to be used with the controlling device. Ex. 1001, Fig. 7b, 10:47–48.

As shown in Figure 7b, “each code set record 706 may comprise a unique codeset identity number” and “a block of protocol and formatting information 752 which may describe the physical protocol requirements for transmitting the command data elements which comprise this codeset.” Ex. 1001, 10:47–51. These physical protocol requirements may include “items such as carrier frequency, bit encoding, data frame size and structure, appliance address, parity or CRC requirements.” *Id.* at 10:52–54.

“Following block 752 may be a series of individual command function entries 754,” each of which may include “standard function ID 756,” “function name 758,” “phonetic representation 760,” and “command data 762.” *Id.* at 10:54–65. Standard function ID 756 “may be a normalized tag indicative of the function or operation invoked by this command (i.e. so that within a universal remote control system the same functionality may be mapped to a key regardless of any variations in appliance manufacturer-specific nomenclature.” *Id.* at 10:56–61. Function name 758 “correspond[s] to the name by which that function is commonly referenced by th[e] appliance’s manufacturer” and is stored “together with its phonetic representation 760.” *Id.* at 10:62–65. Command data 762, “when transmitted using the protocol specifications of block 752, will command the appliance to perform the indicated action.” *Id.* at 10:65–67.

The ’083 patent also explains that “all or part of the information contained in the identified codeset record may be transferred to the controlling device being configured.” Ex. 1001, 11:4–7. Additionally, “in order to identify user-requested extended command functions,” a speech recognition means may search “the phonetic representations . . . corresponding to the command function entries of the codeset number corresponding to the currently configured appliance” and return “the matching command data” to “the requesting controlling device.” *Id.* at 11:13–20.

E. Illustrative Claims

Of challenged claims 1–19, claims 1 and 12 are independent. For purposes of the issues raised at this stage of the proceeding, claim 1 is illustrative and is reproduced below.

1. [pre] A method for configuring a controlling device to command functional operations of a target appliance, the method comprising:

- [a.1] causing a codeset record to be provisioned to the controlling device for use in commanding functional operations of the target appliance,
- [a.2] the provisioned codeset record comprising protocol and formatting information
- [a.3] and a plurality of individual command function entries
- [a.4] wherein each of the plurality of individual function entries within the codeset record comprises command data,
- [a.5] a standard function identifier,
- [a.6] data which comprises a phonetic representation of a function name corresponding to the standard function identifier,
- [a.7] and a plurality of data each of which comprises a phonetic representation of a unique one of a plurality of synonyms of the function name;
- [b.1] causing less than all of the individual command function entries from within the provisioned codeset record to each be matched to one or more of a plurality of user input elements of the controlling device
- [b.2] whereupon a subsequent activation of a one of the plurality of user input elements will cause the controlling device to transmit a command communication by using the protocol and formatting information and the command data of a one or more of the plurality of individual command function entries from within the provisioned codeset record that was mapped to the one of the plurality of user input element activated; and
- [c] causing the controlling device to transmit a command communication by using the protocol and formatting information and the command data of a one of the one or more of the plurality of individual command function entries from within the provisioned codeset record having

a phonetic representation of the function name or a synonym of the function name which corresponds to voice data provided to a speech recognition engine.

Ex. 1001, 11:54–12:22 (indents and bracketed paragraph identifiers added).

F. Applied References

Petitioner relies upon the following references:

Aginsky, US 8,995,981 B1, issued March 31, 2015 (Ex. 1004, “Aginsky”);

Stammler, US 6,839,670 B1, issued January 4, 2005 (Ex. 1005, “Stammler”);

Hanson, US 2012/0271639 A1, published October 25, 2012 (Ex. 1006, “Hanson”);

Dresti, US 2003/0103088 A1, published June 5, 2003 (Ex. 1007, “Dresti”).

Pet. ii, 5–6. Petitioner submits the Declaration of Bruce McNair (Ex. 1003), as well as declarations from Gordon MacPherson (Ex. 1039), Nathaniel E. Frank-White (Ex. 1040), and Gretchen Hoffman (Ex. 1041) addressing issues relating to the public availability of various references.

G. Asserted Grounds of Unpatentability

Petitioner challenges the patentability of claims 1–19 of the ’083 patent based on the following grounds:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–6, 8–10, 12–18	103	Aginsky, Stammler
7, 11, 19	103	Aginsky, Stammler, Dresti
1–6, 8–10, 12–18	103	Aginsky, Hanson
7, 11, 19	103	Aginsky, Hanson, Dresti

Pet. 6.

II. DISCUSSION

A. *Claim Construction*

A claim “shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b).” 37 C.F.R. § 42.100(b). At this stage of the proceeding, neither party presents any claim terms for construction. Pet. 20; Prelim. Resp. 12. Based on the present record, we determine that it is not necessary to provide an express interpretation of any claim terms at this time. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1374 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’”) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng ’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

B. *Principles of Law*

A claim is unpatentable under 35 U.S.C. § 103 if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, objective evidence of non-obviousness.¹ *Graham v. John Deere Co. of Kansas City*, 383 U.S.

¹ At this stage of the proceeding, Patent Owner has not presented objective evidence of non-obviousness.

1, 17–18 (1966). When evaluating a combination of teachings, we must also “determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). Whether a combination of prior art elements would have produced a predictable result weighs in the ultimate determination of obviousness. *Id.* at 416–417.

In an *inter partes* review, the petitioner must show with particularity why each challenged claim is unpatentable. *Harmonic, Inc. v. Avid Technology, Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016); 37 C.F.R. § 42.104(b) (2020). The burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

We analyze the challenges presented in the Petition in accordance with the above-stated principles.

C. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art at the time of the alleged invention would have had “a bachelor’s degree in computer science, in electrical engineering, or a related field, and approximately three years of experience or equivalent study in voice-controlled devices in universal remote controlled systems.” Pet. 19. Petitioner further states that “[a]dditional graduate education could substitute for professional experience, or significant experience in the field could substitute for formal education.” *Id.* (citing Ex. 1003 ¶¶ 24–30). Patent Owner states that “[f]or the purposes of this preliminary response only,” it “adopts Petitioner’s proposed level of ordinary skill in the art.” Prelim. Resp. 8.

For purposes of this Decision, we adopt the assessment of the level of ordinary skill in the art proposed by Petitioner and adopted by Patent Owner.

D. Ground 1:² Asserted Obviousness of Claims 1–6, 8–10, and 12–18 Based on Aginsky in view of Stammler

Petitioner contends that claims 1–6, 8–10, and 12–18 would have been obvious over Aginsky in view of Stammler. Pet. 20–60. Patent Owner disagrees, arguing that Petitioner has failed to establish that these claims would have been obvious based on Aginsky and Stammler. Prelim. Resp. 13–26.

1. Overview of Aginsky (Ex. 1004)

Aginsky is directed to systems and methods for configuring a remote control device. Ex. 1004, codes (54), (57). More specifically, “a controllable device (controlled device) is responsible for specifying functions available for control by a remote device (controlling device), while the remote device is responsible for creating a graphical representation and applying visual effects that will be presented to the user at the remote device.” *Id.* at 2:18–24. To carry out these functions, the controllable device transfers to the remote device “a data structure identifying various functions that can be controlled by [the] remote device, together with the identity of the signal type that will achieve the desired operation.” *Id.* at 2:31–36. Upon receiving input, the remote device can allow the user “to select how controls of the various functions are to be configured and presented to” the user. *Id.* at 2:36–40.

² Here, and elsewhere in the Decision, the identification of the grounds using designations such as “Ground 1” and “Ground 2” refers to the designation of the grounds as presented in the Petition.

An overview of Aginsky's system is shown in Figure 1, reproduced below:

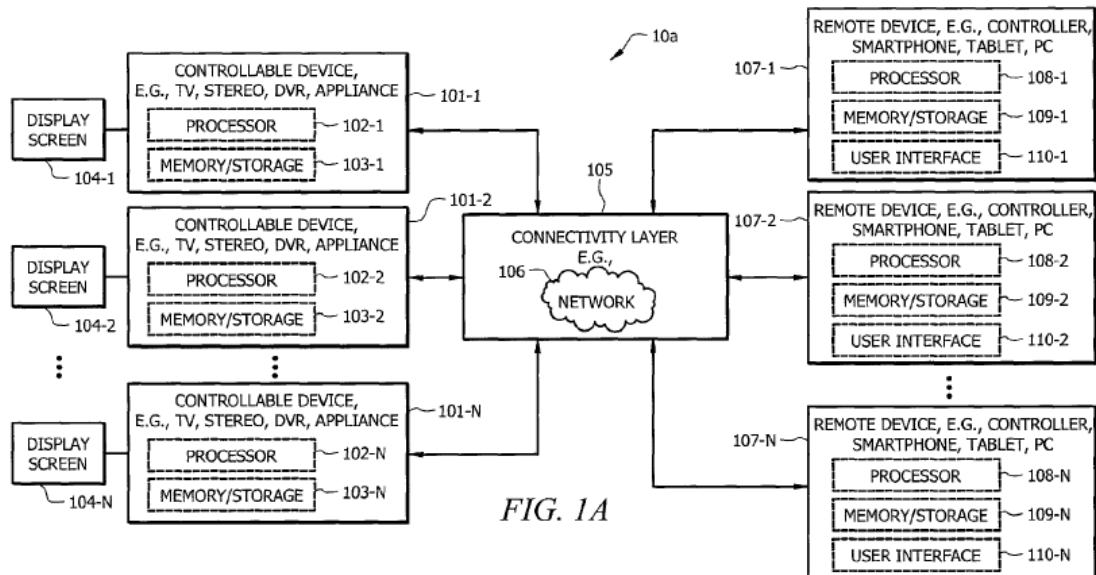


Figure 1A shows an embodiment of Aginsky's system.

Ex. 1004, 3:64–65, Fig. 1A.

As shown in Figure 1A, system 10a includes one or more controllable devices 101-1 to 101-N that are capable of being paired with one or more remote devices 107-1 to 107-N via connectivity layer 105, “such that a remote device may be used to control specific operations and functions of the controllable device during a paired session.” Ex. 1004, 3:64–4:4.

Controllable devices 101-1 to 101-N may be a variety of processor controlled programmable devices including, for example, set-top boxes, cable boxes, televisions, digital video recorders, appliances, and vehicles.

Id. at 4:12–16. Controllable devices 101-1 to 101-N include memory/storage 103-1 to 103-N (respectively), which may store “data structures that are available for communication to one or more remote devices 107-1 to 107-N.” *Id.* at 4:65–5:1. Remote devices 107-1 to 107-N may be, for example, a smart clicker, smartphone, tablet computer, tablet

computer, or other programmable processor-based device, and include user interfaces “that allow a user to control operation of a paired controllable device by various methods, including buttons (via touch screen or mechanical), voice, and motion.” *Id.* at 5:46–49, 6:2–6.

An embodiment of a portion of memory of a remote device that has been “programmed” with the data structure from two controllable devices is shown in Figure 1B, reproduced below.

10b
109-1

REMOTE DEVICE MEMORY/STORAGE			
115			
CONTROLLABLE DEVICE 101-1			
FUNCTION 111-1	SIGNAL 112-1	STATUS 113-1	CONFIGURATION 114-1
ON - OFF	XY1	ON	BUTTON - RIGHT SIDE
MENU	XY2	ON	BUTTON - CENTER
VOLUME	XX1	ON	UP - RIGHT BOTTOM
		ON	DOWN - LEFT BOTTOM
CHANNEL	ZZZ	ON	BUTTON - CENTER BOTTOM
INPUT	XY3	OFF	-
116			
CONTROLLABLE DEVICE 101-2			
FUNCTION 111-2	SIGNAL 112-2	STATUS 113-2	CONFIGURATION 114-2
ON - OFF	XX3	ON	RIGHT SIDE
VOLUME	XY5	ON	UP - DOWN - TOP
START	AB1	ON	GREEN LIGHT
STOP	AB2	ON	RED LIGHT
FAST FORWARD	AB3	ON	ARROW - RIGHT
FAST REWIND	AB4	ON	ARROW - LEFT
PAUSE	AB5	ON	BARS - BOTTOM
RECORD	XY6	ON	BUTTON RED

FIG. 1B

Figure 1B shows an embodiment of a portion of memory of Aginsky’s remote device that has been “programmed” with data structures from two controllable devices. Ex. 1004, 3:32–35, Fig. 1B.

As shown in Figure 1B, two portions of memory/storage 109-1 of remote device 107-1 have been programmed with data structures of two controllable devices. Ex. 1004, 7:58–61. Memory portion 115 has been programmed with table 115' containing a data structure for controllable device 101-1, and memory portion 116 has been programmed with table 116' containing a data structure for controllable device 101-2. *Id.* at 7:61–63. When a remote device controls multiple controllable devices, a user will typically be presented with an option, via a user interface “to select (e.g., by touch, voice, and/or motion) the controllable device to be controlled.” *Id.* at 8:8–12.

As further shown in Figure 1B, “FUNCTION columns 111-1 and 111-2 and SIGNAL columns 112-1 and 112-2 contain the data structures delivered from their respective controllable devices 101-1 and 101-2.” Ex. 1004, 8:21–24. The data structure in table 115' “identifies a plurality of exemplary functions or commands (e.g., on-off, menu, volume, channel, input) associated with a plurality of exemplary command signals (e.g., XY1, XY2, XX1, ZZZ, XY3) that[,] when sent from remote device 107-1 to controllable device 101-1,” carry out the function or command. *Id.* at 8:24–30. Similarly, the data structure in table 116' identifies exemplary functions or commands that, when sent from remote device 107-2 to controllable device 101-2, carry out the function or command. *Id.* at 8:30–37. For example, a user may enter a command to turn a TV on by pressing a button on remote device 107-1, which will be converted to command signal XY1 and sent to the TV (controllable device 101-1), causing the TV to turn on. *Id.* at 8:38–45.

Command signals “can be any type of signal required for control purposes,” including “a frequency set or a coded IR signal generated in the

well-known manner by, for example, remote device 107-1.” Ex. 1004, 8:63–9:1. “Alternatively, the data structure can be a new or proprietary structure known only to a specific controllable device or to a family of controllable devices,” such as “a Bluetooth signal.” *Id.* at 9:3–7. The “notation used in SIGNAL columns 112-1 and 112-2 denote the type of signal as well as the code or code sequence of the signal.” *Id.* at 9:8–10. Additionally, “[a]lthough CONFIGURATION columns 114-1 and 114-2 shown in FIG. 1B assume buttons, bars and arrows” that “are physically pushed or touched by the user,” “[a]ny type of input from the user can be utilized,” including “voice commands” for performing “one or more of the functions performed by the remote device.” *Id.* at 9:56–65.

2. Overview of *Stammler* (Ex. 1005)

Stammler is directed to a “[p]rocess for automatic control of one or more devices by voice commands or by real-time voice dialog.” Ex. 1005, code (54). More specifically, *Stammler* discloses a speech dialog system characterized by “fixed syntax structure and a fixed command structure as well as by a combination of fixed vocabulary” and “freely definable vocabulary,” which “is a precondition for a high recognition capacity with an extensive vocabulary.” *Id.* at 5:65–6:5. This “extensive vocabulary is used to increase the user friendliness by using synonymous words or different variations in pronunciation.” *Id.* at 6:8–10. *Stammler* further discloses that “[p]redetermined synonymous words can be used,” and “[t]he same function can be realized through commands with a different number of words.” *Id.* at 16:17–20.

Stammler explains that, due to its “larger vocabulary,” the system is based on “phonetic word subunits” such as phonemes, diphones (double

phonemes), or phoneme transitions, and “[a] word to be recognized” is “represented by the linking of the respective models for word subunits.” *Id.* at 8:53–59. Additionally, “owing to [its] vocabulary of, for example, up to several hundred words, a plurality of functions for each language can be operated.” *Id.* at 6:33–35.

3. *Motivation to Combine Aginsky and Stammmler*

Petitioner argues that Aginsky broadly discloses having a controllable device transfer to a remote device a data structure identifying various functions that can be controlled by the remote device, and that the data structure can include information such as the names of functions (commands) and signals related to the transmission of each function, among others. Pet. 31. Petitioner also asserts that Aginsky discloses that “voice commands . . . can be used for one or more of the functions performed by the remote device” using an interface “that allow[s] a user to control operations of a paired controllable device by various methods, including . . . voice.” *Id.* at 31–32 (citing Ex. 1004, 6:2–6, 8:8–12, 9:60–65). However, according to Petitioner, “Aginsky left it to a [person of ordinary skill in the art] to implement a data structure to execute its disclosed voice-control, and in the same field of endeavor, Stammmler specifically teaches data structure inputs that would allow Aginsky’s system and methods to advantageously implement voice control.” *Id.* at 32 (citing Ex. 1003 ¶ 114).

Petitioner argues that “Stammmler teaches that it is advantageous for a voice command system to have a large vocabulary” and, to that end, “teaches a cost-effective system which uses ‘phonetic word subunits,’ such as phonemes, to understand an ‘extensive vocabulary of admissible commands.’” Pet. 32 (citing Ex. 1005, 2:56–67, 5:65–6:10, 8:53–57). “As

such,” Petitioner asserts, a person of ordinary skill “would have been motivated to modify Aginsky with the teachings of Stammmler to include phonetic representations and synonyms as elements of Aginsky’s dataset to facilitate an extensive range of voice commands and map them to the correct remote command functionality.” *Id.* (citing Ex. 1003 ¶ 115). According to Petitioner, “[t]his is because Stammmler teaches that prior speech dialog systems suffered from limited vocabularies resulting in higher user dissatisfaction[,] and modifying Aginsky with Stammmler would better improve upon Aginsky’s goal of providing a more flexible and customizable universal remote programming method.” *Id.* “In fact,” Petitioner contends, “the advantages of voice control were well-known,” and a person of ordinary skill “would have understood that voice control was becoming increasingly expected in consumer devices to replace the known drawbacks suffered by awkward, user-unfriendly interfaces.” *Id.* at 32–33 (citing Ex. 1003 ¶ 115).

Petitioner further argues that “[m]odifying Aginsky’s data structure with voice command function in mind with the teachings of Stammmler would have been well within the ability of a [person of ordinary skill in the art] given Stammmler’s guidance, and Aginsky’s open data structure design that specifically contemplates a ‘data structure [with] any desired function, signal, and/or other structure.’” *Id.* at 33 (citing Ex. 1004, 13:34–35). “[I]ndeed,” Petitioner contends, one of ordinary skill “would have had a reasonable expectation of success in so applying Stammmler’s teachings to Aginsky’s flexible data structure.” *Id.* (citing Ex. 1003 ¶ 116). According to Petitioner, “[a]pplying the teachings of Stammmler to Aginsky would yield the predictable result of enabling Aginsky’s universal remote to control the

function of a variety of devices manufactured by various brands through the use of numerous different voice commands.” *Id.* (citing Ex. 1003 ¶ 116).

Patent Owner argues that Petitioner has failed to show that one of ordinary skill would have been motivated to combine Aginsky with Stammler in order to arrive at certain claim limitations, specifically a “speech recognition engine,” and the “phonetic representations limitation.” Prelim. Resp. 21–26.

Based on the present record, Petitioner has made a sufficient showing that it would have been obvious for one of ordinary skill to combine Aginsky and Stammler as a general matter. We will address Patent Owner’s motion to combine arguments concerning specific claim limitations in our discussions relating to those limitations. *See infra* §§ II.D.4(g), II.D.4(j).

4. *Analysis of Independent Claim 1*

- a) 1[pre]: “[a] method for configuring a controlling device to command functional operations of a target appliance, the method comprising:”

Petitioner argues that, “[t]o the extent the preamble is limiting, Aginsky discloses a method for configuring a controlling device (*e.g.*, ‘a remote device’) to command functional operations of a target appliance (*e.g.*, ‘methods in which a controllable device transfers to the remote device . . . a data structure identifying various functions that can be controlled by a remote device’).” Pet. 33–34 (emphasis omitted). According to Petitioner, “Aginsky discloses systems and methods in which controllable device 101-1 is paired with remote device 107-1 such that remote device 107-1 may control specific operations and functions of one or more controllable device 101-N.” *Id.* at 34 (citing Ex. 1004, 3:66–4:4, Fig. 1A; Ex. 1003 ¶¶ 118–119) (emphasis omitted).

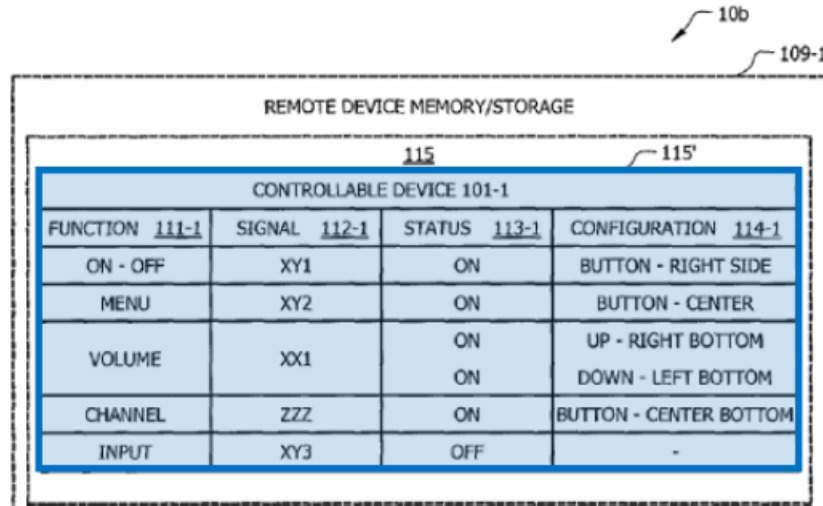
Patent Owner does not present arguments regarding the preamble.
See Prelim. Resp. 13–26.

We determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding the preamble.³

b) 1[a.1]: “causing a codeset record to be provisioned to the controlling device for use in commanding functional operations of the target appliance,”

Petitioner argues that “Aginsky discloses causing a codeset record (*e.g.* ‘a data structure’) to be provisioned to the controlling device for use in commanding functional operations of the target appliance (*e.g.* ‘data structures that are available for communication to one or more remote devices’ ‘such that a remote device may be used to control specific operations and functions of the controllable device’).” Pet. 34–35. More specifically, Petitioner asserts that “Aginsky discloses pairing controllable device 101-1 to remote device 107-1 such that remote device 107-1 may control specific operations and functions of controllable device 101-1.” *Id.* at 35 (citing Ex. 1004, 3:66–4:4). According to Petitioner, Aginsky “discloses that controllable device 101-1 can be a TV, DVR, computer, kitchen appliance, or automobile, among other devices.” *Id.* (citing Ex. 1004, 2:59–61, Fig. 1A). Petitioner also contends that Aginsky “discloses that controllable device 101-1 store[s] ‘data structures,’ in the form of tables 115’–116’ in memory/storage,” as shown in blue in Petitioner’s annotated version of Aginsky’s Figure 1B, reproduced below. *Id.* (citing Ex. 1004, 4:65–5:1; Ex. 1003¶ 121).

³ Because we are persuaded that Petitioner has sufficiently shown that Aginsky teaches the subject matter recited in the preamble, we need not decide whether the preamble is limiting for purposes of this Decision.



Aginsky, Fig. 1B (partial).

Petitioner’s annotated version of a portion of Aginsky’s Figure 1B showing a “data structure” in the form of table 115’ colored in blue. Pet. 35.

Petitioner argues that “Aginsky further discloses a process by which a data structure is provisioned to remote device 107-1,” in which “controllable device 101-1 selects a data structure based upon the brand, model, etc. of remote device 107-1, and delivers the data structures to remote device 107-1 through connectivity layer 105.” Pet. 35–36 (citing Ex. 1004, 5:22–38, 8:57–65, 12:26–27, Fig. 3; Ex. 1003 ¶ 122). According to Petitioner, “[t]he data structures may be provisioned on an as-needed basis from controllable device 101-1 (*e.g.*, Aginsky 2:41–44), or they can be ‘programmed’ to remote device 107-1 and provisioned from local memory/storage 109-1 (*e.g.*, Aginsky, 7:58–63).” *Id.* (citing Ex. 1004, Fig. 1A; Ex. 1003 ¶¶ 57–78, 120-122).

Patent Owner does not present arguments directed to this limitation. See Prelim. Resp. 13–26.

We determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding this limitation.

c) 1[a.2]: “the provisioned codeset record comprising protocol and formatting information”

Petitioner argues that “Aginsky discloses the provisioned codeset record comprising protocol and formatting information (e.g. ‘*SIGNAL* columns 112-1 and 112-2’ ‘denote the type of signal’).” Pet. 36. More specifically, Petitioner asserts that “Aginsky teaches that ‘*SIGNAL* columns 112-1 and 112-2’ ‘can be any type of signal required for control purposes’ such as a frequency set, a coded IR signal, or a Bluetooth signal.” *Id.* at 37 (citing Ex. 1004, 8:63–9:7). According to Petitioner, “Aginsky further discloses that the ‘*SIGNAL* columns 112-1 and 112-2’ of the data structures ‘denote the type of signal as well as the code or code sequence of the [command] signal.’” *Id.* (citing Ex. 1004, Fig. 1B; Ex. 1003 ¶ 124). Additionally, Petitioner contends, Aginsky “explains that *SIGNAL* 112-1 may typically be a coded IR signal, which includes a coded (format) protocol (IR),” and that one of ordinary skill “would have recognized that Bluetooth also includes a protocol and format as defined in the ’083 patent.” *Id.* (citing Ex. 1004, 8:63–9:3; Ex. 1003 ¶ 124). “Accordingly,” Petitioner argues, one of ordinary skill “would have understood that Aginsky’s examples—frequency set, IR and Bluetooth—require protocol and formatting information” as defined in the ’083 patent.” *Id.* (citing Ex. 1001, 10:47–54; Ex. 1003 ¶¶ 64–65, 123–124).

Patent Owner argues that the Petition fails to show that Aginsky discloses or suggests this limitation. Prelim. Resp. 19. According to Patent Owner, “[t]he Challenged Claims are clear that both the claimed (i) protocol information and (ii) formatting information ***must be in the claimed codeset record itself.***” *Id.* (citing Ex. 1001, claims 1, 12, Fig. 7b). However, Patent Owner contends, “Petitioner fails to present any evidence that Aginsky

stores both protocol information and formatting information in the alleged codeset record itself.” *Id.* at 20 (citing Pet. 37). According to Patent Owner, the fact that “protocol and formatting information may be required to transmit Aginsky’s example signal types from the remote is not the same thing as what the claim requires, namely, storing the claimed protocol information and formatting information in the codeset record itself.” *Id.*

Based on the present record, we determine that Petitioner has made a sufficient showing as to this limitation for purposes of institution. Aginsky discloses that Signal 112-1, which is part of the codeset record (the data structure including table 115’ of Aginsky) “can be any type of signal required for control purposes,” such as “a frequency set or coded IR signal” or a signal with a proprietary structure, such as a Bluetooth signal, and that “the notation used in SIGNAL columns 112-1 and 112-2 denote the type of signal as well as the code or code sequence of the signal.” Ex. 1004, 8:63–9:10. Aginsky also discloses that the data structure may “include protocols, rules or other information useful to carrying out remote control of the controllable device.” *Id.* at 13:40–43. Additionally, Mr. McNair testifies that a coded IR signal “includes a coded (format) protocol (IR),” and that “Bluetooth also includes a protocol and format.” Ex. 1003 ¶ 124. Mr. McNair further testifies that one of ordinary skill “would have understood that Aginsky’s examples—frequency set, IR, and Bluetooth—require protocol and formatting information as defined” in the ’083 patent. *Id.* Patent Owner does not present contrary evidence at this stage of the proceeding, but instead relies only on attorney argument. Prelim. Resp. 19–21.

We determine that Petitioner’s evidence sufficiently shows for purposes of institution that Aginsky discloses the storage of at least some protocol and formatting information relating to Signal 112-1 within the codeset record (the data structure including table 115’).

d) 1[a.3]: “and a plurality of individual command function entries”

Petitioner argues that “Aginsky discloses a plurality of individual command function entries (e.g., ‘a plurality of exemplary functions or commands’ and corresponding signals, statuses, and configurations).” Pet. 37. Petitioner illustrates Aginsky’s disclosure of this limitation using a colored and annotated version of Figure 1B, reproduced below.

116			
CONTROLLABLE DEVICE 101-2			
FUNCTION 111-2	SIGNAL 112-2	STATUS 113-2	CONFIGURATION 114-2
ON - OFF	XX3	ON	RIGHT SIDE
VOLUME	XY5	ON	UP - DOWN - TOP
START	AB1	ON	GREEN LIGHT
STOP	AB2	ON	RED LIGHT
FAST FORWARD	AB3	ON	ARROW - RIGHT
FAST REWIND	AB4	ON	ARROW - LEFT
PAUSE	AB5	ON	BARS - BOTTOM
RECORD	XY6	ON	BUTTON RED

“Codeset Record” FIG. 1B

“Individual Command Function Entries”

Aginsky, Fig. 1B (partial).

Petitioner’s annotated version of a portion of Aginsky’s Figure 1B showing a “codeset record” in blue and an “individual command function entry” in red. Pet. 38.

Referring to Aginsky’s Figure 1B, Petitioner asserts that “Aginsky discloses data structures in tables 115’ and 116,” where each row “represents an individual command function entry, which includes information such as function or command, signal, status, and

configuration—all information related to a particular command.” *Id.* at 37–38 (citing Ex. 1004, 8:21–37, Fig. 1B; Ex. 1003 ¶ 126). “For example,” Petitioner continues, “Aginsky discloses that ‘the data structure in table 115’ identifies a plurality of exemplary functions or commands . . . associated with a plurality of exemplary command signals . . . that when sent from remote device 107-1 to controllable device 101-1, the function/command is carried out.” *Id.* at 38 (citing Ex. 1004, 8:21–37). According to Petitioner, this disclosure “mirrors [the] ’083’s disclosure that individual command function entries 754 simply includes a row of information related to a command.” *Id.* (citing Ex. 1001, 10:47–11:3; Ex. 1003 ¶¶ 66–78, 125–127).

Patent Owner does not present arguments directed to this limitation. *See* Prelim. Resp. 13–26.

We determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding this limitation.

e) 1[a.4]: “wherein each of the plurality of individual function entries within the codeset record comprises command data,”

Petitioner argues that “Aginsky discloses [‘]wherein each of the plurality of individual function entries within the codeset record comprises command data[’] (*e.g.*, native command data underlying ‘SIGNAL 112-1’).” Pet. 38. More specifically, Petitioner contends that Aginsky discloses a “‘data structure in table 115’ [that] identifies a plurality of exemplary functions or commands . . . associated with a plurality of exemplary command signals.” *Id.* (citing Ex. 1004, 8:21–30). According to Petitioner, “[w]hen these command signals are sent from the remote device to the controllable device, the function/command is carried out.” *Id.* (citing Ex. 1004, 8:21–30; Ex. 1003 ¶ 129).

Petitioner also argues that Aginsky teaches that a user's command, "such as 'FAST FORWARD,'" is converted by remote device 107-1 to a command signal based on the data structure of the controllable device, which, in the case of the exemplary data structure '116 is command signal AB3. Pet. 39 (citing Ex. 1004, 8:38–45, Fig. 1B). Petitioner asserts that one of ordinary skill "would have recognized that the signal AB3 must contain underlying native command data that commands controllable device 101-1 to execute a fast forward function," which "tracks [the '083 patent's] definition of 'command data.'" *Id.* (citing Ex. 1004, 8:32–42; Ex. 1001, 10:65–67; Ex. 1003 ¶ 130). Therefore, Petitioner contends, command signal AB3 is "sent to the applicable controllable device and the underlying native command data causes the controllable device to fast forward." *Id.*

Patent Owner does not present arguments directed to this limitation. See Prelim. Resp. 13–26.

We determine that, on the record before us, Petitioner's cited evidence sufficiently supports its contentions regarding this limitation.

f) 1[a.5]: "a standard function identifier,"

Petitioner argues that "Aginsky discloses [']wherein each of the plurality of individual function entries within the codeset record comprises . . . a standard function identifier['] (e.g. 'each function could further include a code or other identification marker related to the operation of that function control.')." Pet. 39. More specifically, Petitioner asserts that "Aginsky discloses that the configuration for each function could include an 'identification marker related to the operation of that function control.'" *Id.* at 39–40 (citing Ex. 1004, 9:34–35). "For example," Petitioner argues, "Aginsky discloses that for a fast-forward function, a tag

such as ‘FF’ would be associated with the fast-forward function across controllable devices.” *Id.* (citing Ex. 1004, 9:39–47). According to Petitioner, one of ordinary skill “would have understood that Aginsky broadly teaches use of an identification marker for managing similar functionality across codesets.” *Id.* (citing Ex. 1004, 9:34–47; Ex. 1001, 10:56–58; Ex. 1003 ¶ 132).

Patent Owner does not present arguments directed to this limitation. See Prelim. Resp. 13–26.

We determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding this limitation.

g) 1[a.6]: “*data which comprises a phonetic representation of a function name corresponding to the standard function identifier,*”

1[a.7] “*and a plurality of data each of which comprises a phonetic representation of a unique one of a plurality of synonyms of the function name;*”

Petitioner argues that the Aginsky-Stammler combination teaches these limitations, which Patent Owner refers to collectively as the “phonetic representations limitation.” Pet. 40–43; Prelim Resp. 13. Referencing its argument for limitation 1[a.5], Petitioner argues that “Aginsky discloses that data structures include FUNCTION columns 111-1 and 111-2 identifying various exemplary functions,” each having a name, such as “FAST FORWARD” which “may correspond to an identification marker (*i.e.*, standard function identifier), such as ‘FF.’” *Id.* (citing Ex. 1004, 4:6–10, 8:21–62, Fig. 1B; Ex. 1003 ¶ 134). Petitioner also contends that “Aginsky teaches that ‘voice commands . . . can be used for one or more of the functions performed by the remote device.’” *Id.* (citing Ex. 1004, 6:2–6, 8:8–12, 9:60–65). Petitioner acknowledges that “Aginsky does not

explicitly disclose that its data tables include information related to voice commands,” but argues that “Aginsky broadly teaches that any desirable information may be included within the data structures.” *Id.* (citing Ex. 1004, 9:30–33, 13:34–36; Ex. 1003 ¶ 135). Thus, Petitioner contends, “Aginsky at least teaches a data structure with voice command function in mind, and it would have been obvious to modify the data structure to include phonetic representations of each command such that voice command is enabled.” *Id.* (citing Ex. 1003 ¶ 136).

Petitioner also argues that “modifying Aginsky’s data structure with the teachings of Stammmler would have been well within the ability of a [person of ordinary skill in the art] given Stammmler’s guidance, and its applicability to Aginsky’s design.” Pet. 40–41 (citing Ex. 1003 ¶ 136). Petitioner asserts that “Stammmler teaches that ‘reliable control or operation of devices by speech command or real-time speech dialog is possible with relatively low expenditure,” and that this is an “essential advantage of the invention.” *Id.* at 41 (citing Ex. 1005, 2:56–59; Ex. 1003 ¶ 137). According to Petitioner, “Stammmler explicitly discloses storing phonetic representations in memory by which it may recognize voice commands,” and one of ordinary skill “would have been motivated to apply Stammmler’s teachings in implementing Aginsky’s data structure(s) to enable voice commands.” *Id.* (citing Ex. 1005, 12:19–27; Ex. 1003 ¶ 137). “Indeed,” Petitioner contends, “Stammmler discloses a speech dialog system for automatic control of one or more devices by voice commands that may be recognized according to ‘phonetic word subunits’ such as phonemes.” *Id.* (citing Ex. 1005, 1:1–5, 3:9–16, 8:53–57, Fig. 1; Ex. 1003 ¶ 137).

Petitioner argues that “Stammler specifically teaches advantageous methods for speech recognition systems for voice-activated control of various devices, such as using phonetic word subunits, including phonemes, to realize speech recognition,” and one of ordinary skill “would have been motivated to apply Stammler’s teachings in implementing Aginsky’s data structure because doing so would allow Aginsky to enable its disclosed voice control over multiple devices responsive to a variety of command inputs.” Pet. 41. “This in turn,” Petitioner contends, “would further Aginsky’s goal of providing a more flexible and customizable universal remote programming method.” *Id.* (citing Ex. 1004, 1:43–45, 2:15–30, 3:50–63).

Specifically with respect to limitation 1[a.7], Petitioner acknowledges that Aginsky does not “expressly teach or suggest using a unique one of a plurality of synonyms of the function name,” but argues that it would have been obvious to a person of ordinary skill “to apply Stammler’s teachings of using synonyms, and phonetic representations thereof, in Aginsky’s systems and methods in order to allow a user to use alternate words or phrases to activate a particular command.” Pet. 42 (citing Ex. 1003 ¶ 140). In particular, Petitioner argues that Stammler teaches the use of an “extensive vocabulary of admissible commands” to “increase the user friendliness by using synonym words or different variations in pronunciation.” *Id.* (citing Ex. 1005, 2:60–65, 5:65–6:10). Petitioner also points to Stammler’s disclosure that “[p]redetermined synonymous words can be used” and “[t]he same function can be realized through commands with a different number of words,” an approach that is “advantageous.” *Id.* (citing Ex. 1005, 6:18–19, 16:17–20; Ex. 1003 ¶ 141). Petitioner further argues that one of ordinary

skill “would have been motivated to apply Stammmler’s speech dialog system utilizing synonyms in implementing Aginsky’s data structure in order to improve command recognition accuracy and user friendliness.” *Id.* (citing Ex. 1005, 6:8–10; Ex. 1003 ¶ 142).

Patent Owner argues that Petitioner fails to show that the Aginsky-Stammmler combination teaches limitations 1[a.6] and 1[a.7], and fails to show that it would have been obvious to combine the references to arrive at these limitations. Prelim. Resp. 13–18, 22–26. Patent Owner argues that these limitations “expressly require[] that the claimed phonetic representations be stored **in a specific codeset record** (*i.e.*, the codeset record provisioned to the controlling device for use in commanding functional operations of the target appliance and comprising protocol information and formatting information and a plurality of command function entries), and **in a specific location within that specific codeset record** (*i.e.*, in each of the command function entries within the provisioned codeset record).” *Id.* at 15–16 (citing Ex. 1001, claims 1, 12). According to Patent Owner, the Petition “broadly asserts” that one of ordinary skill “would have modified Aginsky in view of Stammmler to include phonetic representations in an unspecified location in one of Aginsky’s unspecified data structures,” but “fails to specify **which data structure** it proposes adding phonetic representations to, and **where in this unspecified data structure** it proposes storing the phonetic representations.” *Id.* at 16 (citing Pet. 32, 40, 42). Patent Owner argues that this is “particularly problematic” because “Aginsky’s remote device stores **multiple data structures** in memory,” but “Petitioner reads the claimed codeset record only on Aginsky’s data

structures 115' and 116' in FIG. 1B.” *Id.* at 17 (citing Pet. 35, 57; Ex. 1004, 2:44–46).

Patent Owner also argues that “Petitioner fails to explain why a [person of ordinary skill in the art] would have added phonetic representations to the specific data structures that Petitioner relies on in its obviousness analysis (*i.e.*, either of the data structures in tables 115'–116'), as opposed to different data structures in the controlling device's memory, some construct in the controlling device's memory other than a data structure, or to a different device altogether (*e.g.*, to a remote server).” Prelim. Resp. 24 (citing Pet. 31–33, 40–42). “Similarly,” Patent Owner contends, “Petitioner fails to explain why a [person of ordinary skill in the art] would have specifically added phonetic representations to each of the alleged command function entries in these data structures, as opposed to some other location in the data structures, to only a subset of the alleged command function entries, etc.” *Id.*

On the balance of the evidence at this stage of the proceeding, Petitioner has made a sufficient showing for limitations 1[a.6] and 1[a.7] for purposes of institution. We reach our determination even considering Patent Owner's argument that Petitioner “fails to specify **which data structure** it proposes adding phonetic representations to.” Prelim. Resp. 16. Petitioner states that “Aginsky's **data structures** are represented by tables 115'–116' of Fig. 1B,” indicating that Petitioner is using the term “data structure” to refer to these tables. Pet. 21 (emphasis added). Petitioner goes on to explain that “it would have been obvious to modify the **data structure** to include phonetic representations of each command” and that “modifying Aginsky's **data structure** with the teachings of Stammmler would have been well within

the ability” of a person of ordinary skill (Pet. 40–41). Because Petitioner earlier explained that Aginsky’s data structures are represented by tables 115’ and 116’, we understand Petitioner to be arguing that it would have been obvious to include the phonetic representations within these tables.

In reaching our determination, we have also considered Patent Owner’s argument that “Petitioner fails to specify . . . where in this . . . data structure it proposes storing the phonetic representations.” Prelim. Resp. 14–16. In addressing limitation 1[a.6], Petitioner states that Aginsky’s data structures “include FUNCTION columns 111-1 and 111-2 identifying various exemplary functions” and discloses that “voice commands” can be used for one or more of these functions. Pet. 40. Petitioner also states that although “Aginsky does not explicitly disclose that its data tables include information related to voice commands,” it “would have been obvious to modify the data structure to include phonetic representations of each command such that the voice command is enabled.” *Id.* Petitioner further states that it would have been obvious to include Stammer’s phonetic representations and synonyms “as elements of Aginsky’s dataset,” which we understand to refer to the entries in tables 115’ and 116’. *Id.* at 32. Based on these statements, we understand Petitioner to be arguing that it would have been obvious to include the phonetic representations in the table entry for the function that corresponds to the voice command.

Finally, we have also considered Patent Owner’s argument that Petitioner has not provided a reason why one of ordinary skill would have included the phonetic representations and synonyms into the specific data structures and command function entries disclosed in Aginsky. Prelim. Resp. 23–24. Contrary to Patent Owner’s assertion, Petitioner suggests that

one of ordinary skill would have included the phonetic representations corresponding to commands within the command function entries because that is where data relating to the commands is stored. More specifically, Petitioner points to the command function entries in Aginsky's data structure tables 115' and 116' as including commands and "various types of data related to the commands" including "specialized information, preferences, associations, and/or restrictions" and "any desired function, signal, and/or other structure." Pet. 22 (citing Ex. 1004, 9:30–33, 13:34–36; Ex. 1003 ¶ 103). Petitioner goes on to state that each "command function entry" in the data structure tables 115' and 116' "includes data related to a particular function or command." *Id.* at 27. And, Petitioner argues that Aginsky leaves it to one of ordinary skill to "implement known methods of . . . integrating voice command-relevant information **into the data structure**" (which includes the command function entries). *Id.* at 25 (citing Ex. 1004, 9:30–33, 13:34–36; Ex. 1003 ¶¶ 31–78, 106). From these statements, we understand Petitioner to be asserting that Aginsky suggests that the voice command-relevant information for a particular command would be included in the command function entry for that command in tables 115' and 116,' because the command function entry includes data related to that particular command. *Id.* Therefore, on the present record and sufficiently for the purposes of institution, Petitioner provides a reason why one of ordinary skill would have included the phonetic representations in the command function entries of data structures 115' and 116'—namely, because that is where the data relating to a particular function or command is stored.

Consequently, we determine that Petitioner sufficiently shows for purposes of institution that limitations 1[a.6] and 1[a.7] would have been obvious over the combination of Aginsky and Stammeler.

h) 1[b.1]: “causing less than all of the individual command function entries from within the provisioned codeset record to each be matched to one or more of a plurality of user input elements of the controlling device”

Petitioner argues that “Aginsky teaches causing less than all of the individual command function entries from within the provisioned codeset record (*e.g.* ‘the data structure . . . may include only a subset of all possible functions’ or be “restricted by a protocol’) to each be matched (*e.g.* ‘a plurality of exemplary functions or commands associated with a plurality of exemplary command signals’) to one or more of a plurality of user input elements of the controlling device (*e.g.* ‘buttons, bars, and arrows, whether hard or programmable, that are physically pushed or touched by the user,’ ‘voice commands,’ or ‘[a]ny type of input from the user’).” Pet. 43.

Specifically, Petitioner argues that, as discussed in connection with limitation 1[a.3], “Aginsky discloses a plurality of individual command function entries in each row of a data structure.” Pet. 43 (citing Ex. 1003 ¶ 144). According to Petitioner, “Aginsky further discloses that ‘function controls (for inputting commands)’ are illustrated in the data structure tables by way of ‘CONFIGURATION columns 114-1 and 114-2 of FIG. 1B,’” and that these configuration columns “represent the user input, which could be ‘buttons, bars, and arrows, whether hard or programmable, that are physically pushed or touched by the user,’ ‘voice commands,’ or ‘[a]ny type of input from the user.’” *Id.* (citing Ex. 1004, 6:16–17, 9:56–65, 8:38–41).

Petitioner further argues that “[a]s shown in Fig. 1B, CONFIGURATION 114-1 includes entries for several functions that correlate to buttons,” but “the ‘INPUT’ row of Table 115’ does not have a corresponding CONFIGURATION column 114-1 entry, indicating that there is not a physically pushed or touched button (*i.e.*, ‘input elements of the controlling device’) related to the ‘INPUT’ function.” Pet. 44 (citing Ex. 1004, 9:56–10:2; Ex. 1003 ¶¶ 144–146. “Accordingly,” Petitioner argues, one of ordinary skill “would have understood that the ‘INPUT’ function is not matched to a physical user input element such as a button, located on remote device 107-1, and therefore, less than all of the individual command functions are matched to a user input.” *Id.* (citing Ex. 1003 ¶ 146).

Patent Owner does not present arguments directed to this limitation. See Prelim. Resp. 13–26.

We determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding this limitation.

- i) 1[b.2]: “whereupon a subsequent activation of a one of the plurality of user input elements will cause the controlling device to transmit a command communication by using the protocol and formatting information and the command data of a one or more of the plurality of individual command function entries from within the provisioned codeset record that was mapped to the one of the plurality of user input element activated; and”

Petitioner argues that “Aginsky discloses whereupon a subsequent activation of a one of the plurality of user input elements (*e.g.* ‘pressing a . . . button’) will cause the controlling device to transmit a command communication by using the protocol and formatting information and the command data (*e.g.* ‘command will be converted to a command signal’ and

‘sent to the TV’) of a one or more of the plurality of individual command function entries from within the provisioned codeset record that was mapped to the one of the plurality of user input element activated (*e.g.* ‘data structures’ containing ‘a plurality of exemplary functions or commands associated with a plurality of exemplary command signals’).” Pet. 44.

Referencing its arguments for limitations 1[a.2], 1[a.3], 1[a.4], and 1[b.1], Petitioner argues that “Aginsky discloses that activation of a user input element will cause remote device 107-1 to transmit a command communication by using protocol and formatting information and command data.” Pet. 44 (citing Ex. 1004, 8:21–62). Petitioner also asserts that “Aginsky discloses that a user may use remote device 107-1 to enter a command, such as ‘turn TV on,’ by pressing or touching a button on the smartphone’s user interface.” *Id.* (citing Ex. 1004, 8:38–45). “Further,” Petitioner continues, “Aginsky broadly teaches user input elements may be ‘buttons, bars, and arrows, whether hard or programmable, that are physically pushed or touched by the user,’ ‘voice commands,’ or ‘[a]ny type of input from the user.’” *Id.* at 44–45 (citing Ex. 1004, 9:56–65; Ex. 1003 ¶ 148). “Once such a user input is activated,” Petitioner contends, “a command correlated to the user input is converted to the proper command signal based on the data structure and sent to controllable device 101-1, causing the controllable device 101-1 to execute the command.” *Id.* at 45 (citing Ex. 1004, 8:38–62, 9:61–65; Ex. 1003 ¶ 148).

Additionally, Petitioner argues, “Aginsky discloses that it uses the information in SIGNAL columns 112-1 and 112-1 (*i.e.*, ‘protocol and formatting information’),” as discussed with respect to limitation 1[a.2], “and data transmitted with a SIGNAL (*i.e.*, ‘command data’),” as discussed

with respect to limitation 1[a.4]), “related to an activated input element to transmit a command to controllable device 101-1.” Pet. 45 (citing Ex. 1003 ¶ 148).

Patent Owner does not present arguments directed to this limitation. See Prelim. Resp. 13–26.

We determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding this limitation.

j) *1[c]: “causing the controlling device to transmit a command communication by using the protocol and formatting information and the command data of a one of the one or more of the plurality of individual command function entries from within the provisioned codeset record having a phonetic representation of the function name or a synonym of the function name which corresponds to voice data provided to a speech recognition engine.”*

Petitioner argues that Aginsky as modified by Stammer teaches this limitation. Pet. 45. Referencing its arguments for limitations 1[a.6] and 1[a.7], Petitioner asserts that “Stammer discloses a speech dialog system for automatic control of one or more devices by voice commands which utilizes phonetic representations and synonyms.” *Id.* (citing Ex. 1005, 1:1–20, 2:25–33, 5:65–6:10, 8:53–55, 15:19–16:26; Ex. 1003 ¶ 150). “As part of that system,” according to Petitioner, “Stammer discloses a microphone . . . that receives voice commands that are converted into digital signals (via an analog/digital, or A/D, converter) with underlying speech data (*i.e.*, ‘voice data’).” *Id.* (citing Ex. 1005, 3:56–58, 11:49–58; Ex. 1003 ¶ 151).

Petitioner contends that “[t]he speech data are then transmitted to a ‘speech recognizer’ (*i.e.*, ‘speech recognition engine’).” *Id.* at 45–46 (citing Ex. 1005, 2:26–54, 11:44–58, 15:15–16:25, Figs. 1–2, claim 1). According to Petitioner, “[t]his allows Stammer’s disclosed system to correlate and

recognize speech commands.” *Id.* at 46 (citing Ex. 1005, 2:29–33, Fig. 2; Ex. 1003 ¶ 151).

Patent Owner argues that Petitioner has failed to show that Aginsky in combination with Stammler discloses or suggests a “speech recognition engine.” Prelim. Resp. 18–19, 22. Patent Owner acknowledges that “Petitioner asserts that Stammler discloses a ‘speech recognition engine,’ but asserts that “Petitioner does not propose modifying Aginsky to have a ‘speech recognition engine.’” *Id.* at 18 (citing Pet. 32, 45–46). Patent Owner further contends that Petitioner has failed “to identify any reason why [a person of ordinary skill] would have modified Aginsky to have a ‘speech recognition engine,’” and that this failure “further confirms that Petitioner has not proposed modifying Aginsky to have a ‘speech recognition engine.’” *Id.* at 18, 22 (citing Pet. 45–46; Ex. 1003 ¶¶ 149–151).

Based on the present record, we determine that Petitioner has made a sufficient showing as to this limitation for purposes of institution. Petitioner argues that Aginsky discloses that “voice commands . . . can be used for one or more of the functions performed by the remote device” but left it to a person of ordinary skill in the art to implement the details of voice control. Pet. 31–32. Petitioner then relies on Stammler to supply those details, including phonetic representations and subunits and transmission of speech data to a speech recognition engine. *Id.* at 32–33, 45–46. We determine that, at this stage of the proceeding, Petitioner’s showing is sufficient to show a motivation to include a speech recognition engine in the remote device to recognize Aginsky’s “voice commands,” as one of ordinary skill would have understood that a mechanism for recognizing voice commands would have been necessary. We also note that Patent Owner does not

provide any argument or evidence suggesting that it would not have been obvious to include in the combination a speech recognition engine to recognize the voice commands.

k) Summary for Claim 1

For the foregoing reasons, Petitioner's cited evidence and reasoning demonstrates a reasonable likelihood that Petitioner would prevail in its contentions regarding claim 1.

5. Claims 2–6, 8–10, and 12–18

Petitioner contends that claims 2–6, 8–10, and 12–18 are unpatentable over Aginsky in view of Stammler. Pet. 46–60. Patent Owner relies on its arguments concerning claim 1 for these claims. See Prelim. Resp. 13–26. Based on the evidence of record, we determine that Petitioner has demonstrated a reasonable likelihood that claims 2–6, 8–10, and 12–18 are unpatentable over Aginsky in view of Stammler.

E. Ground 2: Obviousness of Claims 7, 11, and 19 Based on Aginsky, Stammler, and Dresti

Petitioner contends that dependent claims 7, 11, and 19 would have been obvious over Aginsky in view of Stammler and Dresti. Pet. 60–66. Patent Owner relies on its arguments concerning claim 1 for these claims. See Prelim. Resp. 26–27. Based on the evidence of record, we determine that Petitioner has demonstrated a reasonable likelihood that claims 7, 11, and 19 are unpatentable over Aginsky in view of Stammler and Dresti.

F. Ground 3: Obviousness of Claims 1–6, 8–10, and 12–18 Based on Aginsky in View of Hanson

Petitioner contends that claims 1–6, 8–10, and 12–18 would have been obvious over Aginsky in view of Hanson. Pet. 66–80. Patent Owner

disagrees, arguing that Petitioner has failed to establish that these claims would have been obvious based on Aginsky and Hanson. Prelim. Resp. 27–35.

1. Overview of Hanson (Ex. 1006)

Hanson relates to a system “for permitting automated speech command discovery via manual event to command mapping.” Ex. 1006 ¶ 4. The system can receive an input from a manually initiated action within a computing system associated with a system function linked to a function identifier, and translate that function identifier to command data, which can be a speech command. *Id.* “Command mapping can link a system function to a speech command which can automatically trigger the execution of the function.” *Id.* ¶ 21. For example, “a user can speak a command to lock a door by uttering ‘Lock doors.’” *Id.* ¶ 17. Hanson also discloses a “speech engine” that “can include one or more speech processing algorithms including, but not limited to, phonetic algorithms, keyword spotting algorithms, large-vocabulary, continuous speech recognition algorithms, and the like” that allows for “speech recognition.” *Id.* ¶ 40.

An embodiment of Hanson’s use of command mapping is shown in Figure 2, reproduced below.

200

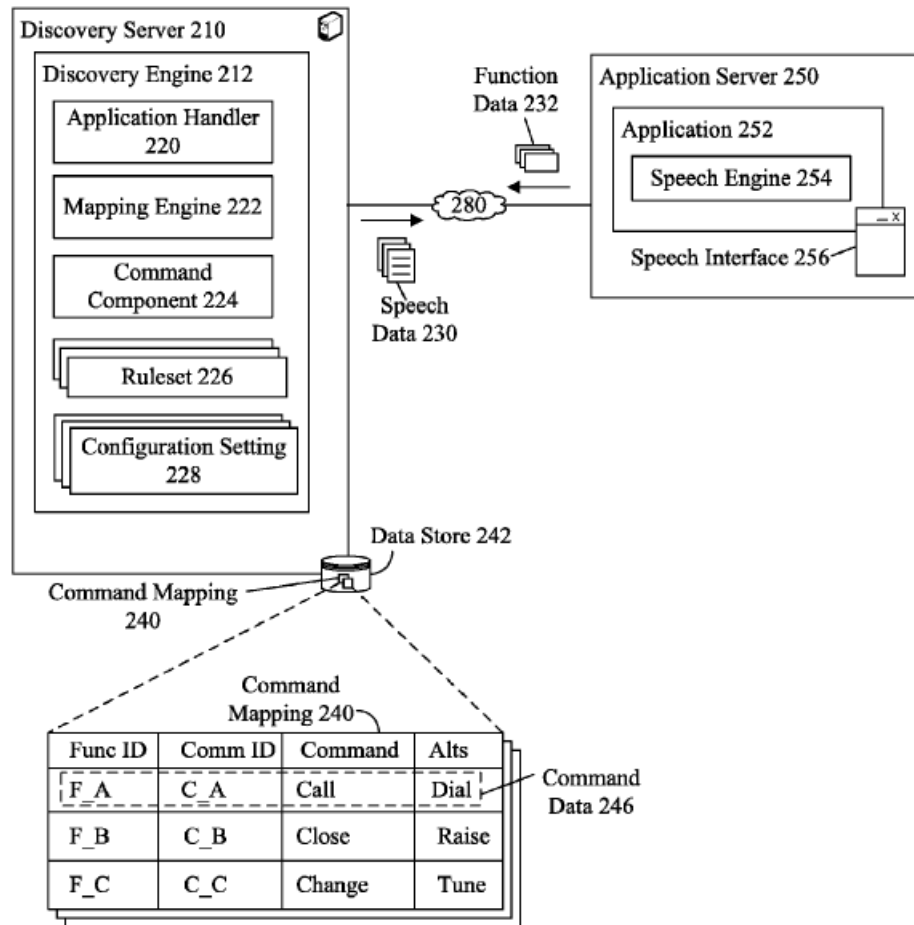


FIG. 2

Figure 2 illustrates Hanson’s use of command mapping.

Ex. 1006 ¶¶ 7, 26, Fig. 2.

As shown in Figure 2, discovery server 210 is communicatively linked with application server 250, and “can permit automated discovery of speech commands associated with application 252 and/or speech interface 256.”

Ex. 1006 ¶ 26. “Function data 232 associated with a manual event can be received from application server 250 and can be processed to identify a speech command data 246” which “can include a speech command

associated with the manual event.” *Id.* Command data 246 “can be conveyed as speech data 230 which can be processed to determine a relevant speech command to be presented via speech interface 256.” *Id.* Speech data 230 “can be one or more entities for identifying a speech command linked to an application function triggered by a manual event.” *Id.* ¶ 29. “Command mapping 240 can be a data set permitting associating of a manual event with a speech command within an application 252,” and “can support [an] arbitrary quantity of commands, synonyms, and/or alternative commands for a function.” *Id.* ¶ 37. For example, as shown in Figure 2, “a function associated with identifier F_A can be linked to a ‘Call’ command and an alternative command ‘Dial.’” *Id.* ¶ 33.

2. Motivation to Combine Aginsky and Hanson

Petitioner argues that “Aginsky broadly discloses systems and methods of controlling multiple devices with a universal remote control,” but leaves it to a person of ordinary skill to implement a data structure using known speech recognition techniques. Pet. 69. Petitioner asserts that, “[i]n the same field of endeavor, Hanson discloses a voice control system that uses a variety of information to identify and map voice commands to particular functions and ‘automatically trigger the execution of [a] function’ upon reception of a voice command.” *Id.* (citing Ex. 1006 ¶¶ 17, 21, 33, 37, 40). According to Petitioner, “Hanson explains that voice control system users often use synonymous terms to try to execute a command,” and one of ordinary skill “would have been motivated and found it obvious to modify Aginsky’s methods and system to provide Hanson’s synonymous command teachings in a dataset.” *Id.* at 69–70 (citing Ex. 1006 ¶ 2).

Petitioner also argues that “Aginsky broadly teaches voice control,” but leaves it to a person of ordinary skill “on how to implement such control and to include the requisite information within its dataset.” Pet. 70.

Petitioner asserts that “Hanson teaches that it would be desirable to include in a dataset a variety of command data, including command synonyms, and that voice commands may be process[ed] by a speech engine implementing phonetic algorithms.” *Id.* According to Petitioner, one of ordinary skill “would have been motivated to apply Hanson’s teachings in implementing Aginsky’s device because doing so would predictably result in improved voice control systems and methods that may execute a command in response to a variety of synonymous commands.” *Id.* (citing Ex. 1003 ¶ 235).

“Moreover,” Petitioner contends, “applying Hanson’s teachings of phonetic algorithms to process voice commands (and therefore phonetic representation algorithm inputs) and synonyms in implementing Aginsky’s methods and systems would be the mere application of a known technique (implementing a data set with phonetic representations and synonyms) to Aginsky’s disclosed data set.” *Id.* (citing Ex. 1003 ¶ 235).

Additionally, Petitioner argues that “Aginsky explains a data structure with voice command function in mind, and modifying that structure with the teachings of Hanson would have been well within the ability of a [person of ordinary skill in the art] given Hanson’s explanation of the clear benefits, and its applicability to Aginsky’s design.” Pet. 70 (citing Ex. 1003 ¶ 236). “[I]ndeed,” according to Petitioner, one of ordinary skill, “would have had a reasonable expectation of success in so applying Hanson’s teachings to Aginsky’s data structure.” *Id.* “Applying the teachings of Hanson to Aginsky,” Petitioner contends, “would yield the predictable result of

enabling Aginsky’s universal remote to control the function of a variety of devices manufactured by various brands through the use of numerous different voice commands.” *Id.* (citing Ex. 1006 ¶¶ 232, 236, 321).

Patent Owner argues that Petitioner has failed to show that one of ordinary skill would have been motivated to combine Aginsky with Hanson in order to arrive at certain claim limitations, specifically a “speech recognition engine,” and the “phonetic representations limitation.” Prelim. Resp. 31–35.

Based on the present record, Petitioner has made a sufficient showing that it would have been obvious for one of ordinary skill to combine Aginsky and Hanson as a general matter. We will address Patent Owner’s motion to combine arguments concerning specific claim limitations in our discussions relating to those limitations. *See infra* §§ II.F.3(e), (g).

3. *Analysis of Independent Claim 1*

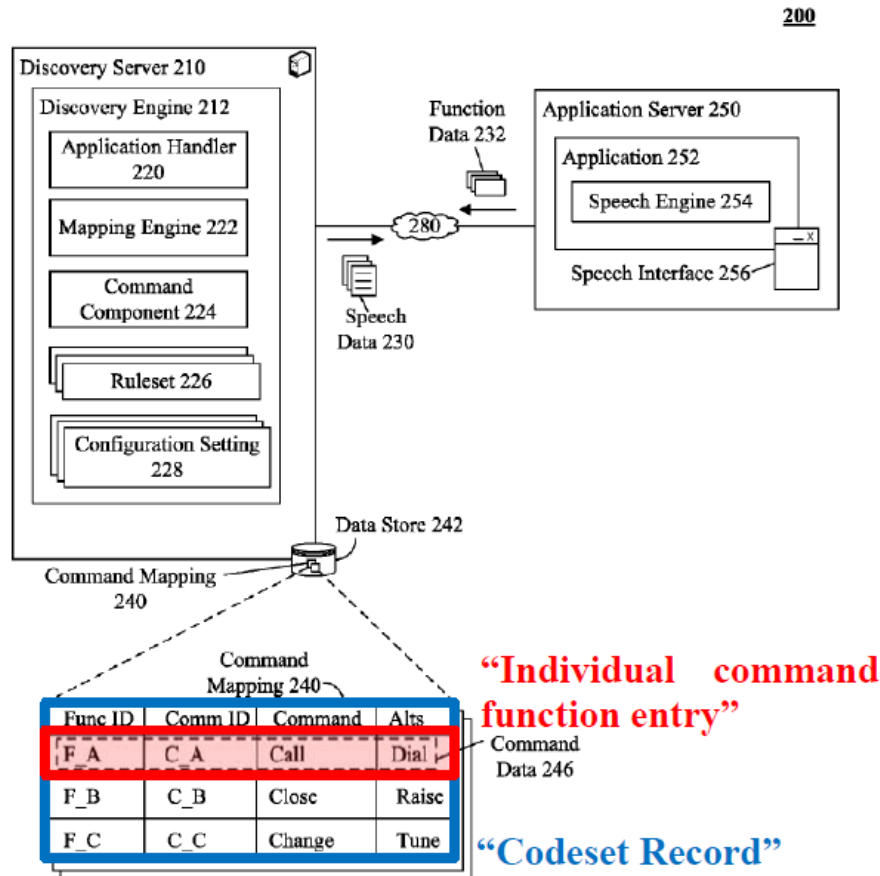
a) *1[pre], 1[a.1], and 1[a.2]*

For the preamble, and limitations 1[a.1] and 1[a.2], Petitioner relies on the arguments it made in Ground 1 based on the Aginsky-Stammler combination. Pet. 71. Patent Owner does not present arguments specifically directed to the preamble and limitation 1[a.1] at this stage of the proceeding. *See* Prelim. Resp. 27–34. With respect to limitation 1[a.2], Patent Owner again argues that Petitioner has failed to show that Aginsky discloses or suggests “the provisioned codeset record comprising protocol and formatting information,” relying on the same argument it made for Ground 1. Prelim. Resp. 30–31. For the reasons discussed earlier with respect to Ground 1, and based on the present record, Petitioner has made a sufficient showing for

the preamble and limitations 1[a.1] and 1[a.2] at this stage of the proceeding.
See supra §§ II.D.4(a)–(c).

b) 1[a.3]: “*and a plurality of individual command function entries*”

For this limitation, Petitioner relies on its argument for Ground 1.
Pet. 71. Petitioner also argues that, to the extent “Aginsky does not disclose a plurality of individual command function entries as part of a codeset record, Hanson discloses ‘Command Mapping 240,’ where each row (‘command data 246’) of that mapping represents an individual command function entry.” *Id.* (citing Ex. 1003 ¶ 245). Petitioner illustrates Hanson’s “codeset record” and individual command function entries in its annotated version of Hanson’s Figure 2, reproduced below.



Hanson, Fig. 2.

Petitioner’s annotated version of Hanson’s Figure 2 showing the “codeset record” in blue and an “individual command function entry” in red. Pet. 72.

Petitioner argues that one of ordinary skill “would have recognized that command mapping 240 teaches a codeset record, as it ‘contain[s] command code data, function labels, etc.’” *Id.* at 72 (citing Ex. 1001, 9:55–67, Fig. 7b; Ex. 1006 ¶ 37, Fig. 2). “Further,” according to Petitioner, one of ordinary skill “would have recognized command data 246 more broadly teaches individual command function entries as disclosed by ’083” and, “[i]n fact, ’083’s command data is a part of an individual command function entry.” *Id.* (citing Ex. 1001, 9:55–67, 10:47–67, Fig. 7b; Ex. 1006 ¶ 37, Fig. 2; Ex. 1003 ¶ 246).

Petitioner also contends that, as explained above with respect to motivation to combine, “it would have been obvious to implement Hanson’s teachings of using synonyms for commands to enable recognition of numerous phrases related to the same command in implementing Aginsky’s systems and methods.” Pet. 72 (citing Ex. 1003 ¶ 247).

Patent Owner does not present arguments specifically directed to this limitation at this stage of the proceeding. See Prelim. Resp. 27–34.

We determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding this limitation.

c) *1[a.4]: “wherein each of the plurality of individual function entries within the codeset record comprises command data,”*

For this limitation, Petitioner relies on its argument for Ground 1. Pet. 73. Petitioner also argues that, to the extent “Aginsky does not disclose command data, Hanson expressly discloses ‘command data’ that ‘can be a speech command registered within the speech component.’” *Id.* (citing Ex. 1006 ¶¶ 4, 26 (“Command data 246 can include a speech command associated with the manual event.”), 33). According to Petitioner, one of ordinary skill “would have understood that such command data would command a controllable appliance to perform the function related to that command data.” *Id.* (citing Ex. 1003 ¶ 250).

Patent Owner does not present arguments specifically directed to this limitation at this stage of the proceeding. See Prelim. Resp. 27–34.

We determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding this limitation.

d) 1[a.5]: “*a standard function identifier,*”

For this limitation, Petitioner relies on its argument for Ground 1. Pet. 73. Petitioner also argues that, to the extent Aginsky does not disclose a “standard function identifier,” Hanson “expressly discloses a ‘function identifier,’ denied as ‘Func ID’ in Command Mapping 240 of Fig. 2 that is indicative of a particular command.” *Id.* (citing Ex. 1006, Abstract, ¶¶ 4–5, 21, 28, 33, 39, Fig. 2).

Patent Owner does not present arguments specifically directed to this limitation at this stage of the proceeding. See Prelim. Resp. 27–34.

We determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding this limitation.

e) 1[a.6]: “*data which comprises a phonetic representation of a function name corresponding to the standard function identifier,*”
1[a.7] “*and a plurality of data each of which comprises a phonetic representation of a unique one of a plurality of synonyms of the function name;*”

For these limitations, Petitioner relies on its arguments for Ground 1. Pet. 73–74. With respect to limitation 1[a.6], Petitioner additionally argues that, to the extent Aginsky’s voice commands do not disclose phonetic representations, Hanson discloses that “‘speech data 230,’ ‘Command Mapping 240,’ and ‘speech engine 254’ process speech through ‘phonetic algorithms.’” *Id.* at 73–74 (citing Ex. 1006 ¶¶ 26, 40, Fig. 2). According to Petitioner, one of ordinary skill “would have understood that ‘phonetic algorithms’ index and recognize words according to phonetic representations, such as phonemes,” and “would have been motivated to apply Hanson’s teachings in implementing Aginsky’s systems and methods

to achieve the predictable result of using phonetic representations to process voice commands.” *Id.* at 74 (citing Ex. 1006 ¶ 40, Fig. 2; Ex. 1003 ¶ 256).

With respect to limitation 1[a.7], Petitioner argues that, “[w]hile Aginsky does not explicitly disclose or teach the use of synonyms of a function name, Hanson discloses [that] ‘[m]apping 240 can support [an] arbitrary quantity of commands, synonyms, and/or alternative commands for a function.’” Pet. 74 (citing Ex. 1006 ¶ 37). “These synonyms” according to Petitioner, “are denoted by the ‘Alts’ column of Command Mapping 240” in Figure 2 of Hanson, and Hanson “explicitly that ‘Alts’ includes synonyms of the Command.” *Id.* at 74–75 (citing Ex. 1006, Fig. 2, ¶ 23). For example, Petitioner contends, “a function associated with identifier F_A can be linked to a ‘Call’ command and an alternative command ‘Dial.’” *Id.* at 75 (citing Ex. 1006 ¶ 33). “Hanson discloses that implementing such synonyms,” Petitioner continues, “reduces ‘troublesome . . . scenarios’ in which the voice control system is unable to recognize a command.” *Id.* (citing Ex. 1006 ¶¶ 2, 3). Thus, Petitioner argues, one of ordinary skill “would have been motivated to apply these teachings of Hanson to implement a more user-friendly, voice-controlled Aginsky system.” *Id.* (citing Ex. 1003 ¶ 259).

For these limitations, Patent Owner raises similar arguments as the ones it relied on for Ground 1. Prelim. Resp. 27–29. Specifically, Patent Owner argues that these limitations “expressly require[] that the claimed phonetic representations be stored ***in a specific codeset record*** (*i.e.*, the codeset record provisioned to the controlling device for use in commanding functional operations of the target appliance and comprising protocol information and formatting information and a plurality of command function

entries), and ***in a specific location within that specific codeset record*** (*i.e.*, in each of the command function entries within the provisioned codeset record).” *Id.* at 28 (citing Ex. 1001, claims 1, 12). According to Patent Owner, the Petition “broadly asserts” that one of ordinary skill “would have added Hanson’s ‘synonymous command teachings’ or ‘phonetic representations and synonyms’ to an unspecified location in one of Aginsky’s unspecified data structures,” but “fails to specify ***which data structure*** it proposes adding Hanson’s phonetic representations to, and ***where in this unspecified data structure*** it proposes storing the phonetic representations.” *Id.* (citing Pet. 70, 72, 74).

As in Ground 1, Patent Owner also argues that “Petitioner fails to explain why a [person of ordinary skill in the art] would have added Hanson’s phonetic representations to the specific data structures that Petitioner reads on the claimed codeset record (*i.e.*, either of the data structures in tables 115’–116’), as opposed to different data structures in the controlling device’s memory, some construct in the controlling device’s memory other than a data structure, or to a different device altogether (*e.g.*, to a remote server).” Prelim. Resp. 33–34 (citing Pet. 69–70, 73–75). “Similarly,” Patent Owner contends, “Petitioner fails to explain why a [person of ordinary skill in the art] would have specifically added Hanson’s phonetic representations to each of the alleged command function entries in these data structures, as opposed to some other location in the data structures, to only a subset of the alleged command function entries, etc.” *Id.* at 34.

Based on the present record, Petitioner has made a sufficient showing for limitations 1[a.6] and 1[a.7] for purposes of institution. For similar

reasons as explained in Ground 1, on this record we find Petitioner’s arguments sufficient even given Patent Owner’s argument that Petitioner “fails to specify **which data structure** it proposes adding phonetic representations to.” Prelim. Resp. 16. Petitioner argues that Aginsky leaves it to a person of ordinary skill to implement a data structure that allows the use of known speech recognition techniques, and that one of ordinary skill “would have been motivated and found it obvious to modify Aginsky’s methods and system to provide Hanson’s synonymous command teachings in a dataset.” Pet. 69–70. Petitioner also asserts that “Hanson teaches that it would be desirable to include in a dataset a variety of command data including command synonyms,” and that it would have been obvious to include in Hanson’s “command mapping 240 a phonetic representation [of] each speech command, such as a phoneme.” *Id.* at 69 (citing Ex. 1003 ¶ 234), 70. Petitioner further argues that one of ordinary skill “would have recognized that command mapping 240 teaches a codeset record, as it ‘contain[s] command code data, function labels, etc.’” *Id.* at 72 (citing Ex. 1011, 9:55–67, Fig. 7b; Ex. 1006 ¶ 37). These statements sufficiently explain that Petitioner’s combination proposes including the phonetic representations and synonyms in a data structure like Hanson’s command mapping 240.

In reaching our determination, we have also considered Patent Owner’s argument that Petitioner “has failed to specify . . . where in this . . . data structure it proposes storing the phonetic representations.” Prelim. Resp. 32–33. Petitioner points to command data 246 in an individual command function entry stored in command mapping 240, and argues that Hanson expressly discloses that this command data 246 “can be a speech

command registered within the speech component.” Pet. 72–73 (citing Ex. 1006 ¶¶ 4, 26, 33). Based on the present record, this showing is sufficient to specify where in the data structure Petitioner proposes storing the phonetic representations.

Finally, we have considered Patent Owner’s argument that Petitioner has not provided a reason why one of ordinary skill would have included the phonetic representations and synonyms into the specific data structures and command function entries disclosed in Aginsky. Prelim. Resp. 33–35. Petitioner argues that Aginsky leaves it to one of ordinary skill to implement a data structure allowing use of known speech recognition techniques, and that Hanson discloses such a data structure including “a variety of command data, including command synonyms.” Pet. 69–70. Petitioner also argues that using Hanson’s data structure with phonetic representation was predictable and would be “the mere application of a known technique (implementing a data set with phonetic representations and synonyms) to Aginsky’s disclosed data set.” *Id.* at 70. For purposes of institution, we find that these reasons are sufficient to support a motivation to incorporate Hanson’s data structure, including phonetic representations, into the combination with Aginsky.

Consequently, we determine that Petitioner’s evidence sufficiently shows for purposes of institution that limitations 1[a.6] and 1[a.7] would have been obvious over the combination of Aginsky and Hanson.

f) 1[b.1] and 1[b.2]

For these limitations, Petitioner relies on the arguments it made in Ground 1 based on the Aginsky-Stammler combination. Pet. 75. Patent Owner does not present arguments specifically directed to these limitations.

See Prelim. Resp. 27–34. For the reasons discussed earlier with respect to Ground 1, and based on the present record, Petitioner has made a sufficient showing for these limitations at this stage of the proceeding. See *supra* §§ II.D.4(h)–(i).

- g) *1[c]: “causing the controlling device to transmit a command communication by using the protocol and formatting information and the command data of a one of the one or more of the plurality of individual command function entries from within the provisioned codeset record having a phonetic representation of the function name or a synonym of the function name which corresponds to voice data provided to a speech recognition engine.”*

For this limitation, Petitioner relies on its arguments for Ground 1. Pet. 75. Petitioner additionally argues that, “[t]o the extent Aginsky does not explicitly disclose ‘a speech recognition engine,’ Hanson discloses voice data (*e.g.* ‘speech data 230’) provided to a speech recognition engine (*e.g.* ‘speech engine 254’).” *Id.* (citing Ex. 1006, Fig. 2; Ex. 1003 ¶ 266.) According to Petitioner, Hanson also discloses that “speech engine 254 includes speech processing algorithms—such as phonetic algorithms—to recognize a user’s voice commands, such as ‘Lock doors.’” *Id.* at 76 (citing Ex. 1003 ¶¶ 17, 21, 40). Petitioner further contends that Hanson discloses that “‘Speech data 230’ can include ‘linguistic analysis information, wave form data, and the like,’” which one of ordinary skill “would have understood to include voice data.” *Id.* (citing Ex. 1006 ¶ 29; Ex. 1003 ¶ 266).

For this limitation, Patent Owner raises a similar argument as the one it relied on for Ground 1. Prelim. Resp. 29–30. Specifically, Patent Owner argues that, although Petitioner asserts that Hanson discloses a “speech recognition engine,” “Petitioner does not propose modifying Aginsky to

have a ‘speech recognition engine’” and fails to identify any reason why one of ordinary skill in the art would have modified Aginsky to have a “speech recognition engine.” *Id.* at 29–31.

Based on the present record, we determine that Petitioner has made a sufficient showing for this limitation for purposes of institution. Petitioner argues that Aginsky “broadly discloses systems and methods of controlling multiple devices with a universal remote control,” as well as “voice control,” but leaves it to a person of ordinary skill to implement the details of voice control, including “known speech recognition techniques.” Pet. 69–70; see *id.* at 75–76 (To the extent argued Aginsky does not explicitly disclose a ‘speech recognition engine,’ Hanson discloses voice data (*e.g.* ‘speech data 230’) provided to a speech recognition engine (*e.g.* ‘speech engine 254’).”). We determine that, at this stage of the proceeding, Petitioner’s showing is sufficient to show a motivation to include a speech recognition engine in the remote device to recognize Aginsky’s voice commands. We also note that Patent Owner does not provide any argument or evidence suggesting that it would not have been obvious to include in the combination a speech recognition engine to recognize the voice commands.

h) Summary for Claim 1

For the foregoing reasons, Petitioner’s cited evidence and reasoning demonstrates a reasonable likelihood that Petitioner would prevail in its contentions regarding claim 1.

4. Claims 2–6, 8–10, and 12–18

Petitioner contends that claims 2–6, 8–10, and 12–18 are unpatentable over Aginsky in view of Hanson. Pet. 76–80. Patent Owner relies on its arguments concerning claim 1 for these claims. See Prelim. Resp. 27–35.

Based on the evidence of record, we determine that Petitioner has demonstrated a reasonable likelihood that claims 2–6, 8–10, and 12–18 are unpatentable over Aginsky in view of Hanson.

G. Ground 4: Obviousness of Claims 7, 11, and 19 Based on Aginsky, Hanson, and Dresti

Petitioner contends that dependent claims 7, 11, and 19 would have been obvious over Aginsky in view of Stammler and Dresti, relying on the same arguments as for Ground 2. Pet. 80. Patent Owner relies on its arguments concerning claim 1 for these claims. See Prelim. Resp. 35–36. Based on the evidence of record, we determine that Petitioner has demonstrated a reasonable likelihood that claims 7, 11, and 19 are unpatentable over Aginsky in view of Hanson and Dresti.

H. Patent Owner’s Argument That Petitioner Failed to Support Its Petition With the Testimony of a Person of Ordinary Skill in the Art

Patent Owner argues that Petitioner’s expert, Mr. McNair, is not a person of ordinary skill in the art, and that we should deny the Petition on that basis. Prelim. Resp. 36–37. Patent Owner asserts that Petitioner’s definition of the level of ordinary skill requires “approximately three years of experience or equivalent study in voice-controlled devices in universal remote control systems,” but that Mr. McNair has failed to demonstrate that he has that experience. *Id.* According to Patent Owner, Mr. McNair makes no mention of universal remote controls in either the “Background and Qualifications” section of his declaration or in his CV, and fails to establish that he has at least “three years of experience in voice-controlled devices of any kind.” *Id.* at 37. Citing *Kyocera Senco Industrial Tools Inc. v. International Trade Commission*, 22 F.4th 1369, 1377–78 (Fed. Cir. 2022), Patent Owner argues that “it is an abuse of discretion to admit expert

testimony ‘on any issue that is analyzed through the lens of an ordinarily skilled artisan’ (*e.g.* invalidity) where the expert ‘does not have ordinary skill in the art.’” *Id.* at 36 (quoting *Kyocera* at 1377–78),

Based on the present record, there appears to be sufficient evidence that Mr. McNair is a person of ordinary skill for us to consider his declaration for purposes of institution. Mr. McNair’s declaration offers the same level of ordinary skill set forth in the Petition and states that “[b]efore November 17, 2011, my level of skill in the art was at least that of a person of ordinary skill.” Ex. 1003 ¶¶ 29–30. Mr. McNair also describes a variety of work he did in the areas of voice control and speech recognition, including supervising a Bell Labs group investigating speech recognition, which included work on voice control features of the AT&T 3450 mobile cellular phone that would accept voice control for dialing and call control. *Id.* ¶¶ 8–10. During the trial, the parties may further address the level of skill of one of ordinary skill in the art and the issue of whether Mr. McNair possesses at least the qualifications of a person of ordinary skill, including examining Mr. McNair on his relevant qualifications and experience. The parties may also address the legal implications of any potential deficiencies in Mr. McNair’s qualifications or experience on this proceeding.

III. CONCLUSION

After considering the evidence and arguments presented in the current record, we determine that Petitioner has demonstrated a reasonable likelihood of success in proving that at least one of the challenged claims of the ’083 patent is unpatentable. We therefore institute trial on all challenged claims and grounds raised in the Petition.

At this stage of the proceeding, we have not made a final determination as to the patentability of any challenged claim or as to the construction of any claim term. Any final determination will be based on the record developed during trial. We place Patent Owner on express notice that any argument not asserted in a timely-filed Response to the Petition, or in another manner permitted during trial, shall be deemed waived, even if that argument was presented in the Preliminary Response.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–19 of the '083 patent is instituted with respect to all grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '083 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

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