

**UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD**

ROKU, INC.,
Petitioner,

v.

UNIVERSAL ELECTRONICS INC.,
Patent Owner.

Case IPR2022-01289
Patent No. 9,847,083

PATENT OWNER'S RESPONSE

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TABLE OF EXHIBITS

Exhibit No.	Description
2001	Declaration of Dr. Michael S. Scordilis in Support of Patent Owner's Response
2002	Transcript of the June 7, 2023 Deposition of Bruce McNair
2003	U.S. Patent No. 9,716,853 to Arling et al.
2004	Excerpts from Deller, John et al., "Discrete-Time Processing of Speech Signals," Macmillan Publishing Company, 1993
2005	Peacocke, Richard D. et al., "An Introduction to Speech and Speaker Recognition," IEEE Computer, Volume 23, Issue 8, August 1990
2006	Mariani, J., "Recent Advances in Speech Processing," IEEE International Conference on Acoustics, Speech, and Signal Processing, 1989
2007	Martin, E. A. et al., "Dynamic Adaptation of Hidden Markov Models for Robust Isolated-Word Speech Recognition," IEEE International Conference on Acoustics, Speech, and Signal Processing, 1988
2008	Bahl, L. R. et al., "Some Experiments with Large-Vocabulary Isolated-Word Sentence Recognition," IEEE International Conference on Acoustics, Speech, and Signal Processing, 1984

I. INTRODUCTION

Petitioner Roku, Inc. (“Petitioner”) has petitioned for *Inter Partes* Review of Claims 1-19 (“Challenged Claims”) of U.S. Pat. No. 9,847,083 (“the ‘083 patent”), which is owned by Patent Owner Universal Electronics Inc. (“Patent Owner”). The Board should confirm the patentability of the Challenged Claims because Petitioner has failed to meet its burden of proving that the Challenged Claims are invalid as obvious.

First, Petitioner has failed to show that its asserted obviousness combinations disclose, teach, or suggest every limitation of the Challenged Claims.

Second, Petitioner has failed to identify sufficient reasons why one of ordinary skill in the art would have been motivated to combine the asserted prior art references to arrive at the claimed invention. Petitioner’s “reasons” for combining the asserted references lack a rational underpinning, are conclusory and unsupported, and exhibit classic hindsight bias that the Federal Circuit has cautioned against. In some instances, Petitioner has failed to identify any reason whatsoever why a POSITA would have been motivated to combine or modify the asserted prior art.

Accordingly, Patent Owner respectfully requests that the Board confirm the patentability of the Challenged Claims.

II. BACKGROUND

A. The '083 Patent And The Challenged Claims.

The '083 patent, entitled "System and Method for Voice Actuated Configuration of a Controlling Device," was issued on December 19, 2017 from U.S. Patent Application No. 13/298,629 (filed November 17, 2011). (EX1001 at [21], [22], [45], [54].)

The '083 patent and the Challenged Claims generally relate "to 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." (*Id.* at 1:7-12.) According to the '083 patent, "it has been seen that 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." (*Id.* at 2:14-17.) "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; a personal computer and/or Internet access may not be readily available at the location of the appliances to be controlled; etc." (*Id.* at 2:17-23.) Thus, the '083 patent recognized the need "for a simplified and more user friendly system and method for conveniently setting up and configuring a controlling device." (*Id.* at 2:23-25.)

The '083 patent created "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." (*Id.* at 2:34-41.) This "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, defining activities, etc." (*Id.* at 2:47-51.)

The '083 patent also created an appliance command code database for use in conjunction with the controlling device, wherein the command code database "may comprise a series of brand records 702 each of which points to a group of model records 704 specific to that brand, each model record in turn pointing to a codeset record 706 containing ... [data] applicable to that specific brand and model of appliance." (*Id.* at 9:55-62.) "[E]ach code set record 706 may comprise ... 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..." (*Id.* at 10:47-51.) "Following block 752 may be a series of individual command function entries 754." (*Id.* at 10:54-55.) "Each entry may comprise a standard function ID 756, ... a function name 758 ... together with its

phonetic representation 760; and command data 762.” (*Id.* at 10:56-65.) “In some embodiments, multiple instances of function name 758 and associated phonetic representation 760 may be present to cater for synonyms and/or regional differences.” (*Id.* at 11:1-3.) An example codeset record 706 of the ‘083 patent is shown below:

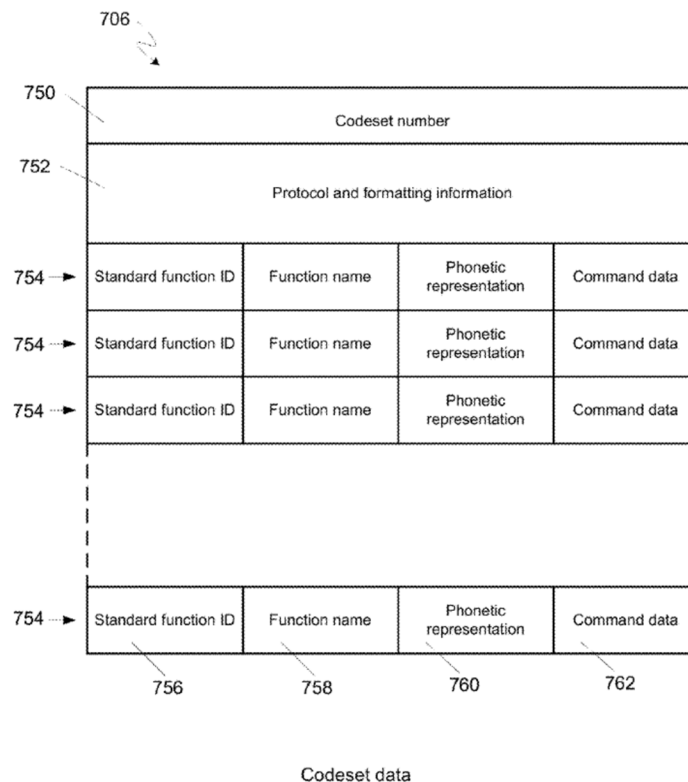


Figure 7b

(*Id.* at FIG. 7b.)

According to the ‘083 patent, “the information contained in the identified codeset record may be transferred to the controlling device being configured.” (*Id.* at 11:5-7.) “Furthermore, in order to identify user-requested extended command

functions, the phonetic representations 758 corresponding to the command function entries of the codeset number corresponding to the currently configured appliance may be searched by the speech recognition means ... and the matching command data returned to the requesting controlling device.” (*Id.* at 11:13-20.)

Independent Challenged Claims 1 and 12 of the ‘083 patent are reproduced below:

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

causing a codeset record to be provisioned to the controlling device for use in commanding functional operations of the target appliance, the provisioned codeset record comprising protocol and formatting information and a plurality of individual command function entries wherein each of the plurality of individual function entries within the codeset record comprises command data, a standard function identifier, data which comprises a phonetic representation of a function name corresponding the standard function identifier, 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;

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 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

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.

(*Id.* at claim 1.)

12. A system for configuring a controlling device to command functional operations of a target appliance, the system comprising:

a processing device having associated instructions stored on a non-transient readable media which instructions, when executed by the processing device, cause a codeset record to be provisioned to the controlling device for use in commanding functional operations of the target appliance wherein the provisioned codeset record comprises protocol and formatting information and a plurality of individual command function entries wherein each of the plurality of individual function entries within the codeset record comprises command data, a standard function identifier, data which comprises a phonetic representation of a function name corresponding to the standard function identifier, 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; cause less than all of the individual command codes from within the provisioned codeset record to each be mapped to one or more of a plurality of user input elements of the controlling device wherein 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 corresponding 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 elements activated, and cause 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.

(*Id.* at claim 12.)

As shown above, Challenged Claims 1 and 12 of the '083 patent recite a controlling device with a codeset record comprising protocol and formatting information and a plurality of command function entries. (*Id.* at claims 1, 12.) Each of the command function entries comprises, *inter alia*, a phonetic representation of a function name and phonetic representations of a plurality of synonyms of the function name. (*Id.*) When a speech recognition engine recognizes a function name (or a synonym of a function name) in user-provided voice data, the data in the command function entry having the phonetic representation of the recognized function name (or a synonym of the function name) is used to cause the controlling device to transmit a command communication to a target appliance. (*Id.*)

Challenged Claims 1 and 12 of the '083 patent expressly require that the claimed phonetic representations of the function name and the synonyms of the function name be stored in a very precise location within the controlling device. (*Id.*)

Not only must the phonetic representations be stored in a specific codeset record (*i.e.*, the codeset record provided to the controlling device for use in commanding functional operations of the target appliance and comprising protocol and formatting information and a plurality of command function entries), but they must also be stored in a specific location within the specific codeset record (*i.e.*, in each of the command function entries within the provided codeset record). (*Id.*)

B. The Level Of Ordinary Skill In The Art.

For the purposes of this proceeding only, Patent Owner adopts Petitioner's proposed level of ordinary skill in the art. (Petition at 19.)

C. Petitioner's Asserted Prior Art References.

1. U.S. Patent No. 8,995,981 ("Aginsky")

Aginsky is generally directed to "systems and methods in which a controllable device transfers to [a] remote device, such as to a remote control application ('app') located on a smartphone, 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." (EX1004 at Abstract.) "The remote device, upon accepting input directly from the remote device, can then allow the remote device user to select how controls of the various functions are to be configured and presented to, or otherwise selectively arranged for a user on a user interface of the remote device." (*Id.*)

Aginsky discloses that a data structure may identify information such as exemplary functions (*e.g.*, on-off, menu, volume, channel, and input) and exemplary command signals (*e.g.*, XY1, XY2, XX1, ZZZ, and XY3). (*Id.* at 8:21-28.) The command signals “denote the type of signal as well as the code or code sequence of the signal.” (*Id.* at 9:9-10.) The command signals cause a function to be carried out when transmitted from the remote device 107-1 to a controllable device 101-1. (*Id.* at 8:28-30.) The data structure may also identify “the appearance, arrangement, and/or assignment of function controls (*e.g.*, left, center, right, button, up, down, button, arrow, one-click, two-click, key word) for a specific function of a controllable device, and an associated status (*e.g.*, on or off).” (*Id.* at 9:24-28.) Aginsky discloses that the memory 109-1 of the remote device 107-1 stores multiple data structures. (*See, e.g., id.* at 2:44-46 (“Small data files also enable the remote device to store many different data structures”); *see also id.* at 7:58-64.)

Aginsky generally discloses that the remote device 107-1 is capable of voice control. (*Id.* at 6:1-6, 8:8-12, 9:61-65.) However, Aginsky ***does not*** disclose, teach, or suggest that its data structures include any information relating to voice control technology or how any such data structures are constructed. (*See generally id.* at 7:58-10:2; EX2001, ¶ 44.)

2. U.S. Patent No. 6,839,670 (“Stammler”)

Stammler is generally directed to “a process for automatic control of one or several devices by speech commands or by speech dialog in real-time operation.” (EX1005 at 1:12-14.) Stammler’s system “permits a speech command input or speech dialog control that is for the most part adapted to the natural way of speaking, and that an extensive vocabulary of admissible commands is made available to the speaker for this.” (*Id.* at 2:61-65.) “The extensive vocabulary is used to increase the user friendliness by using synonymous words or different variations in the pronunciation.” (*Id.* at 6:8-10.)

3. U.S. Patent App. Pub. No. 2012/0271639 (“Hanson”)

Hanson is generally directed to “a solution for permitting automated speech command discovery via manual event to function mapping.” (EX1006 at [0008].) “In the solution, a manual event (e.g., manually performed operation) within a computing system can be mapped to a function within a speech interface.” (*Id.*) “The mapping can trigger speech command discovery via one or more customizable rulesets” such as “using a grammar tree, utterance length, text strings, and the like.” (*Id.*) The mapping can support synonyms and/or alternative commands for a function. (*Id.* at [0037].) In one example of Hanson’s method, “when a user opens a car window via toggling an electronic power window switch, a speech interface

can audibly present an appropriate voice activated command to the user.” (*Id.* at [0018].)

4. U.S. Patent App. Pub. No. 2003/0103088 (“Dresti”)

Dresti “relates generally to hand-held electronic devices and, more particularly, relates to a user interface for an universal remote control application resident on the hand-held electronic device.” (EX1007 at [0002].) The user interface “functions to display[] operational mode information to a user.” (*Id.* at Abstract.) “The graphical user interface may be used, for example, to setup the remote control application to control appliances for one or more users in one or more rooms, to perform activities, and to access favorites.” (*Id.*)

III. LEGAL STANDARDS

In an *Inter Partes* Review, the Petitioner bears the burden of persuasion to prove unpatentability by a preponderance of the evidence. *See Dynamic Drinkware, LLC v. Natl. Graphics, Inc.*, 800 F.3d 1375, 1379 (Fed. Cir. 2015). The Board “will not consider arguments and information that are not presented and developed in the Petition...” *See DIRECTV, LLC v. Qurio Holdings, Inc.*, Case IPR2015-02007, Paper No. 6 at 14 (PTAB April 4, 2016). “[T]he Board is not bound by any findings made in its Institution Decision.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1376 (Fed. Cir. 2016). “The Board is free to change its view of the merits after further development of the record.” *Id.*

To establish a *prima facie* case of obviousness, the Petitioner must show “how the prior art references, either alone or in combination, teach or suggest the claimed invention.” *See In re Bell*, 991 F.2d 781, 783 (Fed. Cir. 1993); *see also Metalcraft of Mayville, Inc. v. The Toro Co.*, 848 F.3d 1358, 1367 (Fed. Cir. 2017) (petitioner must persuasively explain how the references would be combined to arrive at the claimed invention). The Petitioner must also demonstrate “that a skilled artisan would have had reason to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success from doing so.” *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Pat. Litig.*, 676 F.3d 1063, 1068-69 (Fed. Cir. 2012); *see also Orexo AB v. Actavis Elizabeth LLC*, 903 F.3d 1265, 1271 (Fed. Cir. 2018) (holding that a finding of obviousness requires a showing “that a person of ordinary skill would have selected and combined and modified the subject matter of the references in the manner of the claimed invention, with a reasonable expectation of success.”).

IV. CLAIM CONSTRUCTION

A. The Claimed “protocol and formatting information” Is Separate And Distinct From The Claimed “plurality of individual command function entries” And The Data Contained In The Command Function Entries.

Based on the plain language of the Challenged Claims, as well as the specification and prosecution history of the ‘083 patent, the Board should construe

the Challenged Claims to clarify that the claimed “protocol and formatting information” is separate and distinct from the claimed “plurality of individual command function entries” and the data contained in the command function entries. (EX2001, ¶ 50.)

First, the plain language of the Challenged Claims confirms that the claimed “protocol and formatting information” is separate and distinct from the claimed “plurality of individual command function entries” and the data contained in the command function entries. (EX2001, ¶ 51.) Challenged Claims 1 and 12 recite: “the provisioned codeset record comprising protocol and formatting information and a plurality of individual command function entries” and “the provisioned codeset record comprises protocol and formatting information and a plurality of individual command function entries,” respectively. (EX1001 at claims 1 and 12.) Crucially, the claimed “protocol and formatting information” and the claimed “plurality of individual command function entries” are recited as separate and distinct elements of the claimed “codeset record.” (*Id.*; EX2001, ¶ 52.) Petitioner’s expert, Mr. McNair, confirmed during his deposition that the claimed “protocol and formatting information” and the claimed “plurality of individual command function entries” are separate and distinct. (EX2002 at 15:1-8, 15:17-20.)

Moreover, Challenged Claims 1 and 12 further specify that each of the claimed “plurality of individual command function entries” comprises data such as

“command data” and “a standard function identifier.” (EX1001 at claims 1 and 12.) Notably, however, the Challenged Claims do not recite that the claimed “protocol and formatting information” is part of the claimed “plurality of individual command function entries.” (*Id.*; EX2001, ¶ 53.)

Additionally, Challenged Claims 1 and 12 recite that the controlling device transmits a command communication using the claimed “protocol and formatting information,” as well as “command data” from one or more of the “plurality of individual command function entries.” (EX1001 at claims 1 and 12.) According to the Challenged Claims, the same “protocol and formatting information” is used to transmit a command communication regardless of which individual command function entries and their corresponding command data are used therewith. (*Id.*; EX2001, ¶ 54.) That the same “protocol and formatting information” is used to transmit a command communication regardless of which individual command function entries and their associated command data are used further confirms that the “protocol and formatting information” is separate and distinct from the “plurality of individual command function entries” and the data contained in the command function entries. (*Id.*)

Second, the specification of the ‘083 patent confirms that the claimed “protocol and formatting information” is separate and distinct from the claimed

“plurality of individual command function entries” and the data contained in the command function entries. (EX2001, ¶ 55.)

The specification discloses a codeset record 706 that comprises “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...” (EX1001 at 10:47-51.) The specification further discloses that *following block 752* is “a series of individual command function entries 754.” (*Id.* at 10:54-55.) As shown below, the “protocol and formatting information 752” is separate and distinct from the “plurality of individual command function entries 754” and the data contained in the command function entries 754:

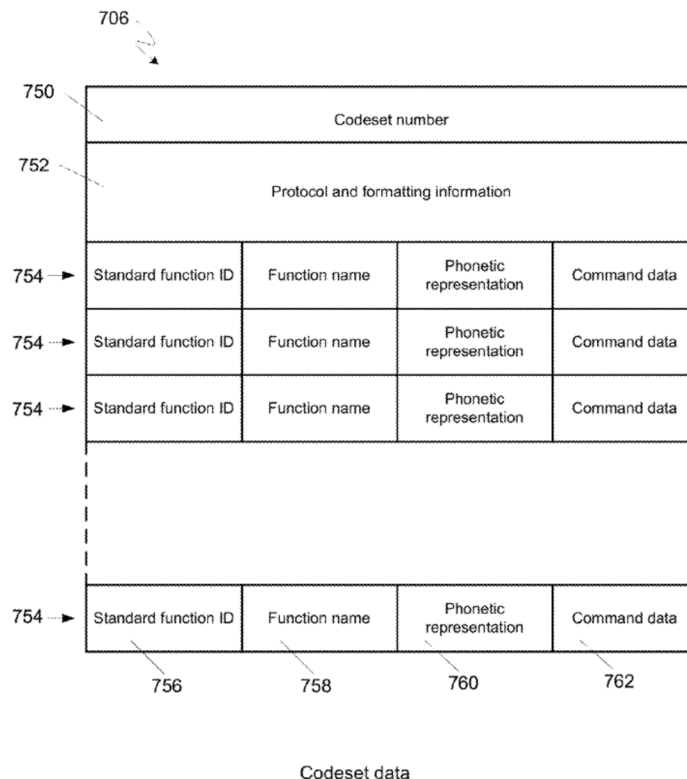


Figure 7b

(*Id.* at FIG. 7b; EX2001, ¶ 57.)

Notably, the specification of the ‘083 patent does not disclose that the “protocol and formatting information” can be part of the “plurality of individual command function entries.” (EX1001 at FIG. 7b, 10:47-11:3; EX2001, ¶ 58.) Rather, the specification uniformly discloses that the “protocol and formatting information” is separate and distinct from the “plurality of individual command function entries” and the data contained in the command function entries. (*Id.*)

Third, the prosecution history of the ‘083 patent confirms that the claimed “protocol and formatting information” is separate and distinct from the claimed

“plurality of individual command function entries” and the data contained in the command function entries. (EX2001, ¶ 59.)

The limitation “the provisioned codeset record comprising protocol and formatting information and a series of individual command function entries” was added during prosecution to overcome a prior art obviousness rejection. (EX1002 at 165-173.) Notably, the Applicant argued several times that the prior art “does not disclose providing *individual command function entries* within a codeset record, i.e., a data structure that also provides protocol and formatting information...” (*Id.* at 255 (emphases in original); *see also id.* at 267, 282, 352, 397-398, 426.) The Applicant’s argument and the claim amendment again confirm that the claimed “protocol and formatting information” and the claimed “individual command function entries” are separate and distinct components of the claimed codeset record. (*Id.*; EX2001, ¶ 60.)

Accordingly, the Board should construe the Challenged Claims to clarify that the claimed “protocol and formatting information” is separate and distinct from the claimed “plurality of individual command function entries” and the data contained in the command function entries.

B. The Claimed “protocol and formatting information” Must Be Included In The Claimed “provisioned codeset record” Itself.

Based on the plain language of the Challenged Claims, as well as the specification of the ‘083 patent, the Board should construe the Challenged Claims

to require that the claimed “protocol and formatting information” be included in the claimed “provisioned codeset record” itself. (EX2001, ¶ 61.)

Challenged Claims 1 and 12 recite: “the provisioned codeset record comprising protocol and formatting information” and “the provisioned codeset record comprises protocol and formatting information,” respectively. (EX1001 at claims 1 and 12.) Thus, the Challenged Claims are clear and unambiguous that the claimed “protocol and formatting information” must be included in the claimed “provisioned codeset record” itself. (EX2001, ¶ 63.)

The specification of the ‘083 patent further confirms that the claimed “protocol and formatting information” must be included in the claimed “provisioned codeset record” itself. The specification teaches a codeset record 706 that comprises “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...” (EX1001 at 10:47-51.) As shown below, the “protocol and formatting information 752” is included in codeset record 706:

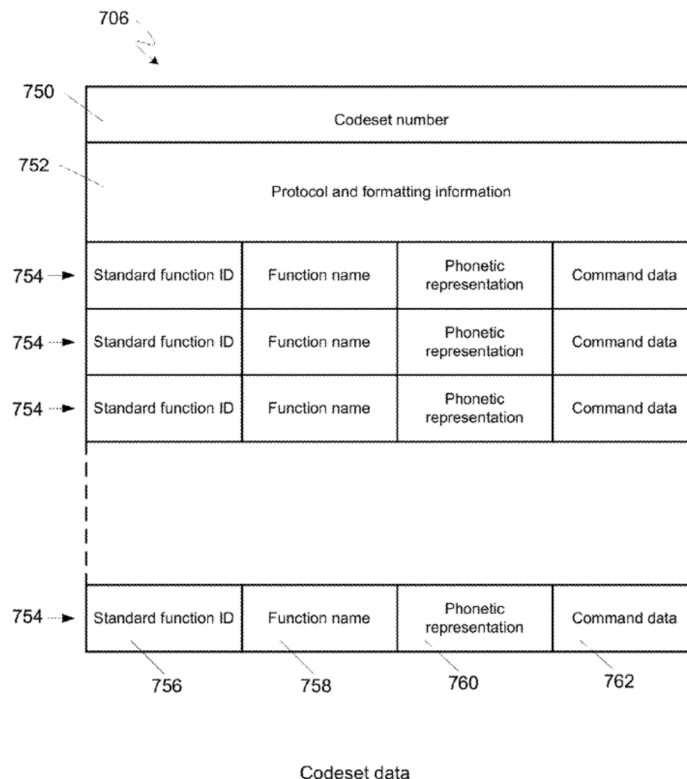


Figure 7b

(*Id.* at FIG. 7b; EX2001, ¶ 65.)

- C. The Claimed “protocol and formatting information” Is “the set of procedures needed to transmit commands from one device to another in a way that the receiving device can make sense of and use the commands.”**

The Board should construe the term “protocol and formatting information” as “the set of procedures needed to transmit commands from one device to another in a way that the receiving device can make sense of and use the commands.” (EX2001, ¶ 66.)

Petitioner’s expert, Mr. McNair, testified that protocol and formatting information is the set of procedures needed to transmit commands from one device

to another in a way that the receiving device can make sense of and use the commands. (*See, e.g.*, EX2002 at 32:19-33:3, 33:22-34:9, 36:5-21.) At a high level, Mr. McNair is correct. (EX2001, ¶ 67.) Protocol information is the set of procedures needed to establish a link between two or more electronic devices for the purpose of communication and information exchange. (*Id.*, ¶ 68.) Formatting information is the set of procedures for transforming digital data into a physical signal (*e.g.*, pulse timing, shaping and duration, the type of carrier to use such as radio or light waves, carrier frequencies, modulation scheme, etc.). (*Id.*, ¶ 69.)

The specification and claims of the '083 patent are consistent with the parties' experts' understanding of the term protocol and formatting information. (EX2001, ¶¶ 70-71.) The Challenged Claims specify that the claimed protocol and formatting information is information that is used, along with command data, to transmit a command communication from the controlling device. (EX1001 at claims 1 and 12.) Similarly, the specification of the '083 patent teaches that protocol and formatting information describes the physical protocol requirements for transmitting the command data elements (*e.g.*, command codes or code sequences) in the codeset record. (EX1001 at 10:47-54 ("protocol and formatting information ... describe[s] the physical protocol requirements for transmitting the command data elements which comprise this codeset").) The specification also teaches that the claimed protocol and formatting information may include "items such as carrier frequency,

bit encoding, data frame size and structure, appliance address, parity or CRC requirements, etc.” (*Id.*)

Accordingly, “protocol and formatting information” is “the set of procedures needed to transmit commands from one device to another in a way that the receiving device can make sense of and use the commands.”

V. PETITIONER HAS FAILED TO SHOW THAT THE CHALLENGED CLAIMS OF THE ‘083 PATENT ARE UNPATENTABLE AS OBVIOUS UNDER 35 U.S.C. § 103.

A. Ground 1: Petitioner Has Failed To Show That Aginsky In Combination With Stammler Renders Challenged Claims 1-6, 8-10, And 12-18 Obvious.

1. Petitioner Has Failed To Show That Aginsky In Combination With Stammler Discloses, Teaches, Or Suggests Every Limitation Of Challenged Claims 1 And 12.

(a) Petitioner Has Failed To Show That Aginsky Discloses, Teaches, Or Suggests “the provisioned codeset record comprising protocol and formatting information.”

(i) Petitioner Has Failed To Show That Aginsky Discloses, Teaches, Or Suggests “the provisioned codeset record comprising protocol and formatting information” Under Patent Owner’s Construction.

Petitioner relies solely on Aginsky for the limitation “the provisioned codeset record comprising protocol and formatting information.” (Petition at 36-37.) Petitioner asserts that Aginsky “discloses the provisioned codeset record comprising protocol and formatting information.” (*Id.*)

Petitioner has failed to show that Aginsky discloses, teaches, or suggests “the provisioned codeset record comprising protocol and formatting information” under Patent Owner’s construction.

As discussed above, the Board should construe the Challenged Claims to clarify that the claimed “protocol and formatting information” is separate and distinct from the claimed “plurality of individual command function entries” and the data contained in the command function entries.

In the Petition, Petitioner asserts that “Aginsky discloses data structures in tables 115’ and 116’” and that “[e]ach row of the data structures represents an individual command function entry...” (Petition at 37-38.) Petitioner also asserts that Aginsky’s alleged “individual command function entries” include “protocol and formatting information.” (*Id.* at 36-37.) Petitioner does not assert that Aginsky discloses, teaches, or suggests any “protocol and formatting information” that is separate and distinct from Aginsky’s alleged “plurality of individual command function entries.” (*Id.*)

Because the claimed “protocol and formatting information” must be separate and distinct from the claimed “plurality of individual command function entries” and the data contained therein under the proper interpretation of the Challenged Claims, Petitioner has not shown (and cannot show) that Aginsky discloses, teaches, or

suggests “the provisioned codeset record comprising protocol and formatting information.” (EX2001, ¶ 76.)

(ii) Petitioner Has Failed To Show That Aginsky Discloses, Teaches, Or Suggests “the provisioned codeset record comprising protocol and formatting information” Under Any Construction.

Even if the Board does not adopt Patent Owner's proposed construction, Petitioner has still failed to show that Aginsky discloses, teaches, or suggests “the provisioned codeset record comprising protocol and formatting information.”

Challenged Claims 1 and 12 recite that the codeset record provided to the controlling device must comprise protocol and formatting information. (EX1001 at claims 1 and 12.)

As discussed above, the Challenged Claims are clear and unambiguous that both the claimed protocol information and formatting information *must be in the claimed codeset record itself*. (*Id.*; see also *id.* at FIG. 7b; EX2001, ¶ 78.)

Further, as discussed above, the claimed protocol and formatting information is the set of procedures needed to transmit commands from one device to another in a way that the receiving device can make sense of and use the commands. (*See, e.g.*, EX2002 at 32:19-33:3, 33:22-34:9, 36:5-21; EX1001 at 10:47-54; EX2001, ¶ 79.)

According to Petitioner, Aginsky's data structures 115' and 116' (*i.e.*, the alleged codeset records) include “SIGNAL columns 112-1 and 112-2” that “denote

the type of signal as well as the code or code sequence of the signal,” and that the ***type of signal*** denoted in Aginsky’s SIGNAL columns 112-1 and 112-2 ***discloses*** the claimed protocol and formatting information. (Petition at 36-37 (citing EX1004 at 8:63-9:10); *see also id.* at 25; EX2002 at 28:14-29:1.)

Petitioner does not assert that “the code or code sequence of the signal” reads on the claimed “protocol information and formatting information.” (Petition at 36-37; EX2002 at 46:16-47:2, 47:11-20.) Petitioner also does not propose modifying Aginsky to meet the “protocol information and formatting information” limitation. (*Id.*)

Petitioner asserts that the type of signal denoted in 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.” (Petition at 36-37.) Petitioner also asserts that IR and Bluetooth include a protocol and a format, and thus a POSITA would have understood that Aginsky’s example signal types (*i.e.*, frequency set, IR, and Bluetooth) “require protocol and formatting information as defined in [the] ‘083 [patent].” (*Id.* at 37.)

Petitioner has failed to show that Aginsky discloses, teaches, or suggests “the provisioned codeset record comprising protocol and formatting information” because Petitioner has failed to show (and cannot show) that the type of signal

denoted in Aginsky's SIGNAL columns 112-1 and 112-2 discloses both protocol information and formatting information stored in the alleged codeset record itself.

As Petitioner notes, Aginsky's SIGNAL columns 112-1 and 112-2 denote the type of signal that is used to communicate with a controllable device for control purposes. (EX1004 at 8:63-9:10.) The indicated signal type may be a frequency set, a coded IR signal, or a Bluetooth signal. (*Id.*) However, an indication of a **type** of signal that is transmitted (*e.g.*, frequency set, coded IR, Bluetooth, etc.) is **not** itself the set of procedures needed to transmit commands from one device to another via the indicated signal type (*i.e.*, protocol and formatting information). (EX2001, ¶¶ 83-84.) The actual set of procedures must still be received, obtained, looked up, etc. (*Id.*) Thus, a POSITA would not have considered an indication of the type of signal that is transmitted to disclose the claimed protocol and formatting information. (*Id.*)

Petitioner's assertion that Aginsky's example signal types "require protocol and formatting information" is irrelevant to the Challenged Claims and fails to fill in the gaps in Aginsky's disclosure. (Petition at 37.) As noted above, the Challenged Claims expressly recite and require that the claimed protocol information and formatting information ***must be stored in the claimed codeset record itself.*** (EX1001 at claims 1 and 12; EX2001, ¶ 85.) The Challenged Claims also expressly distinguish between the claimed protocol and formatting information stored in the codeset record and a command communication transmitted from the controlling

device. (*Id.*) That a Bluetooth or IR transmission allegedly requires protocol and formatting information has no bearing on whether Aginsky's data structures 115' and 116' (*i.e.*, the alleged codeset records) store **any** protocol and formatting information **anywhere**—let alone in Aginsky's SIGNAL columns 112-1 and 112-2, as per Petitioner's theory. (EX2001, ¶ 85.) Aginsky's SIGNAL columns 112-1 and 112-2 merely indicate a signal type and a code or code sequence (EX1004 at 9:8-10), neither of which reads on the claimed protocol and formatting information. (EX2001, ¶ 85.) Aginsky simply does not disclose, teach, or suggest that protocol or formatting information is stored in Aginsky's SIGNAL columns 112-1 or 112-2, and Petitioner has identified no such disclosure, teaching, or suggestion. (EX2001, ¶¶ 86, 89-91; Petition at 25-26, 36-37.)

Additionally, Petitioner's statement that Aginsky discloses that its data structure may include "protocols, rules, or other information useful to carrying out remote control of the controllable device" is misleading and does not help Petitioner. (Petition at 26 (quoting EX1004 at 13:40-43).) The "protocols" and "rules" mentioned in the above quote refer to (i) user/device permissions and restrictions (*e.g.*, password requirements, child permissions, etc.); and (ii) customized control layouts for devices (*e.g.*, how the buttons are arranged). (EX1004 at 6:7-7:16, 9:15-28, 10:27-50, 11:49-54; *see also id.* at FIG. 1C (at 121-1 and 121-2); EX2001, ¶ 87.) These "protocols" and "rules" are in no way related to the claimed protocol and

formatting information, which again is the set of procedures needed to transmit commands from one device to another. (EX2001, ¶ 87.) Tellingly, Petitioner does not assert that the “protocols” and “rules” mentioned in Aginsky read on the claimed protocol and formatting information, and does not even mention these “protocols” and “rules” in its analysis of the protocol and formatting information limitation. (Petition at 26, 36-37.)

Thus, Petitioner has failed to show that Aginsky discloses, teaches, or suggests “the provisioned codeset record comprising protocol and formatting information.”

(b) Petitioner Has Failed To Show That Aginsky In Combination With Stammler Discloses, Teaches, Or Suggests “wherein each of the plurality of individual function entries within the codeset record comprises ... data which comprises a phonetic representation of a function name corresponding to the standard function identifier, 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” (“Phonetic Representations Limitation”).

Petitioner has failed to show that Aginsky in combination with Stammler discloses, teaches, or suggests the Phonetic Representations Limitation of Challenged Claims 1 and 12.

Petitioner relies on Aginsky in combination with Stammler for the Phonetic Representations Limitation. (Petition at 40-42.) Petitioner asserts that Aginsky as modified by Stammler “teaches” the Phonetic Representations Limitation. (*Id.*)

According to the Phonetic Representations Limitation, each of the plurality of individual command function entries within the claimed codeset record must comprise, *inter alia*:

- (i) *a phonetic representation of a function name*; and
- (ii) *phonetic representations of a plurality of synonyms of the function name*. (EX1001 at claims 1, 12; EX2001, ¶¶ 93-94.)

According to the Phonetic Representations Limitation, the claimed phonetic representations *must be stored*:

- (i) *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 and formatting information and a plurality of command function entries); and
- (ii) *in a specific location within that specific codeset record* (*i.e.*, in each of the command function entries within the provisioned codeset record). (*Id.*)

Petitioner reads the claimed codeset record on either of the data structures in tables 115' and 116' of FIG. 1B of Aginsky. (Petition at 21-23, 35, 37.) Petitioner also asserts that each row in tables 115' and 116' represents an individual command function entry. (*Id.* at 27, 37-38.)

Petitioner asserts that Aginsky's remote device 107-1 is generally capable of voice control (*id.* at 40 (citing EX1004 at 6:2-6, 8:8-12, 9:60-65)), but concedes that

Aginsky does not disclose, teach, or suggest the Phonetic Representations Limitation. (*Id.* at 40, 42; *see also id.* at 20-29 (Petitioner failing to assert that Aginsky's data structures include any information relating to voice commands); *see generally* EX1004 at 7:58-10:2 (Aginsky failing to disclose, teach, or suggest that its data structures include any information relating to voice commands).)

Petitioner also asserts that Stammmler “discloses a speech dialog system for automatic control or operation of one or more devices by voice commands” that may be based on “phonetic word subunits” and may include “synonymous words.” (Petition at 29-30.) According to Petitioner, “Stammmler specifically teaches data structure inputs that would allow Aginsky's system and methods to advantageously implement voice control.” (*Id.* at 32.)

Petitioner has failed to show that Aginsky in combination with Stammmler discloses, teaches, or suggests the Phonetic Representations Limitation because neither Aginsky nor Stammmler discloses, teaches, or suggests phonetic representations of function names (or synonyms of function names) stored in a codeset record (or in command function entries within a codeset record), as the Challenged Claims require.

With respect to Aginsky, Petitioner concedes that Aginsky does not disclose, teach, or suggest that its alleged codeset records include any information related to voice commands. (Petition at 40, 42; *see also id.* at 20-29 (Petitioner failing to assert

that Aginsky's data structures include any information relating to voice commands); *see generally* EX1004 at 7:58-10:2 (Aginsky failing to disclose, teach, or suggest that its data structures include any information relating to voice commands).) Petitioner also concedes that Aginsky does not disclose, teach, or suggest phonetic representations of function names (or synonyms of function names). (Petition at 20-29, 40-42.)

With respect to Stammler, Petitioner argues that "Stammler explicitly discloses storing phonetic representations in memory..." (Petition at 41 (citing EX1005 at 12:19-27).) Petitioner is wrong because the cited portion of Stammler does not "explicitly disclose[] storing phonetic representations in memory." (EX2001, ¶ 100.) Rather, the cited portion of Stammler merely discloses that a memory may be connected to Stammler's digital signal processor. (*Id.*; EX1005 at 12:19-27.) In any case, Stammler does not disclose, teach, or suggest storing phonetic representations in a codeset record (or in command function entries within a codeset record). (EX2001, ¶ 101.) Indeed, Stammler does not even disclose, teach, or suggest a codeset record. (*Id.*)

Accordingly, Petitioner cannot show that Aginsky in combination with Stammler discloses, teaches, or suggests the Phonetic Representations Limitation.

(c) Petitioner Has Failed To Show That Aginsky In Combination With Stammler Discloses, Teaches, Or Suggests “a speech recognition engine.”

Petitioner has failed to show that Aginsky in combination with Stammler discloses, teaches, or suggests “a speech recognition engine.” Independent Challenged Claims 1 and 12 both recite providing voice data to a “speech recognition engine.” (EX1001, ‘083 patent, at claims 1 and 12.)

Petitioner does not assert that Aginsky discloses, teaches, or suggests a “speech recognition engine.” (Petition at 45-46; *see also id.* at 51 (“Aginsky does not explicitly disclose how remote device 107-1 receives voice input or creating voice data.”).)

While Petitioner asserts that Stammler discloses a “speech recognition engine,” Petitioner does not propose modifying Aginsky to have a “speech recognition engine.” (*Id.* at 45-46; *see also id.* at 32 (Petitioner only proposing to modify Aginsky in view of Stammler to include phonetic representations in Aginsky’s data structure).) Petitioner’s failure to identify any reason why a POSITA would have modified Aginsky to have a “speech recognition engine” further confirms that Petitioner has not proposed modifying Aginsky to have a “speech recognition engine.” (*Id.* at 45-46; *see also* EX1003, ¶¶ 149-151.)

Because Aginsky does not disclose, teach, or suggest a “speech recognition engine,” and because Petitioner has not proposed modifying Aginsky in view of

Stammler to include a “speech recognition engine,” Petitioner cannot show that Aginsky in combination with Stammler discloses, teaches, or suggests “a speech recognition engine.” For the same reasons, Petitioner has also failed to explain how the references would be combined to arrive at the claimed invention. *See Metalcraft*, 848 F.3d at 1367.

(d) Petitioner Has Failed To Show That Aginsky Discloses, Teaches, Or Suggests “a processing device having associated instructions stored on a non-transient readable media which instructions, when executed by the processing device, cause a codeset record to be provisioned to the controlling device” (“Processing Device Limitation”).

Petitioner has failed to show that Aginsky discloses, teaches, or suggests the Processing Device Limitation of Challenged Claim 12.

Petitioner relies solely on Aginsky for the Processing Device Limitation. (Petition at 46-47.) Petitioner asserts that Aginsky discloses the Processing Device Limitation. (*Id.*)

According to the Processing Device Limitation, a processing device must execute stored instructions that cause a codeset record to be provisioned to a controlling device. (EX1001 at claim 12.)

Petitioner asserts that Aginsky discloses a controllable device 101-1 that includes a processor 102-1 and a memory 103-1, and that “[p]rocessors execute various logical operations of controllable devices and are well-known to operate on

an instruction set.” (Petition at 47.) However, regardless of whether processors purportedly “execute various logical operations of controllable devices,” Petitioner has provided ***no evidence or argument*** that Aginsky discloses, teaches, or suggests a processor on controllable device 101-1 that specifically causes a codeset record to be provisioned to a controlling device, as the Challenged Claims require. (*Id.*) Thus, Petitioner has failed to show that Aginsky discloses, teaches, or suggests the Processing Device Limitation.

2. Petitioner Has Failed To Show That A POSITA Would Have Been Motivated To Combine Aginsky With Stammler To Arrive At The Claimed Invention Of The ‘083 Patent.

Petitioner has failed to show that Aginsky in combination with Stammler renders Challenged Claims 1-6, 8-10, and 12-18 obvious because Petitioner has failed to show that a POSITA would have been motivated to combine Aginsky with Stammler to arrive at the claimed invention of the ‘083 patent.

In an obviousness analysis, the petitioner must demonstrate that a POSITA would have been motivated to pick out the references relied upon and combine them in the manner claimed. *Personal Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 993-94 (Fed. Cir. 2017). It is not enough to merely show that a POSITA, “once presented with the two references, would have understood that they *could be* combined.” *Id.* at 993 (emphasis in original).

(a) Petitioner Has Failed To Show That A POSITA Would Have Been Motivated To Combine Aginsky With Stammler To Arrive At The Phonetic Representations Limitation.

The claimed invention of the '083 patent requires that phonetic representations of a function name and synonyms of the function name be stored *in a specific codeset record* on the controlling device (*i.e.*, the codeset record provisioned to the controlling device for use in commanding functional operations of the target appliance and comprising protocol 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). (EX1001 at claims 1 and 12; EX2001, ¶ 110.)

According to Petitioner, a POSITA would have been motivated to modify Aginsky in view of Stammler: (i) to enable voice control in general, which was purportedly a known replacement for the alleged drawbacks of user interfaces (Petition at 32-33; *see also id.* at 40 (“such that voice command is enabled”), 41 (“to enable voice commands”)); and (ii) to take advantage of Stammler’s larger, expanded vocabulary to improve upon prior speech dialog systems that allegedly suffered from limited vocabularies, which would purportedly have improved command recognition accuracy and user friendliness (*id.* at 32; *see also id.* at 33 (“the use of numerous different voice commands”), 41 (“responsive to a variety of voice command inputs”), 42 (“allow a user to use alternate words or phrases”).)

Petitioner has failed to show that a POSITA would have been motivated to combine Aginsky with Stammler to arrive at the Phonetic Representations Limitation because (i) Petitioner's asserted reasons for modifying Aginsky in view of Stammler fail to explain why a POSITA would have modified Aginsky in the specific manner of the claimed invention; and (ii) a POSITA would not have used Stammler's alleged phonetic representations in the data structures provisioned to Aginsky's controlling device.

First, Petitioner's asserted reasons for modifying Aginsky in view of Stammler fail to explain why a POSITA would have modified Aginsky *in the specific manner of the claimed invention*. Petitioner fails to explain why a POSITA would have added phonetic representations to the specific data structures on Aginsky's controlling device 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). (Petition at 31-33, 40-42.) Similarly, Petitioner fails to explain why a POSITA 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.*)

Rather than explain why a POSITA would have modified Aginsky in the specific manner of the claimed invention, at best, Petitioner has merely provided generic reasons for adding voice control support and synonym support to Aginsky in general, which cannot support a finding of obviousness as a matter of law. *See ActiveVideo Networks, Inc. v. Verizon Commun., Inc.*, 694 F.3d 1312, 1328 (Fed. Cir. 2012) (“testimony [that] is generic and bears no relation to any specific combination of prior art elements” is insufficient); *Toyota Motor Corp. v. General Electric Co.*, Case IPR2019-00018, Paper 7 at 15 (PTAB May 7, 2019) (denying institution of review where petitioner’s expert’s testimony “merely provide[d] generic reasons for adding another converter in Mitsutani’s hybrid vehicle 100, but not specifically for connecting Mitsutani’s AC power generator to the DC/DC converter via port 4 in Robinson.”). Adding voice control support to Aginsky is also a legally insufficient reason to combine because, as Petitioner admits, Aginsky already discloses voice control support (Petition at 3, 18, 25), and the Federal Circuit has held that a POSITA would not be motivated to modify a prior art reference to add a feature the reference already has. *See, e.g., Henny Penny Corp. v. Frymaster LLC*, 938 F.3d 1324, 1332 (Fed. Cir. 2019); *In re Anova Hrg. Labs, Inc.*, 809 Fed. Appx. 840, 843 (Fed. Cir. 2020).

In the Institution Decision, the Board stated that “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.” (Institution Decision (“ID”) at 32 (citing Petition at 25).) However, there is simply no evidence or argument in the Petition that Aginsky purportedly “suggests” that voice command-relevant information for a particular command would be included in the command function entry for that command. (*See generally* Petition at 25, 31-33, 40-42.) At best, Petitioner broadly states that Aginsky “leaves it to a POSITA to ... integrate[] voice command-relevant information into the data structure...” (Petition at 25 (citing EX1004 at 9:30-33, 13:34-36).) As noted above, however, the Phonetic Representations Limitation requires that the claimed phonetic representations be stored *in a specific location* within a specific codeset record. (EX2001, ¶ 113.) Merely adding voice command information is not enough. (*Id.*)

Second, a POSITA would not have used Stammmler's alleged phonetic representations in the data structures provisioned to Aginsky's controlling device. (EX2001, ¶ 114.)

In the speech recognition field, vocabulary size is a critical factor in the selection of the type of basic units used for speech recognition. (EX2001, ¶ 115.) The vocabulary in Aginsky's remote-control system is limited to a small, pre-defined collection of individually-spoken words (*e.g.*, “on,” “off,” “menu,” etc.). (*See, e.g.*,

EX1004 at FIGS. 1B-1C; EX2001, ¶ 118.) A POSITA would have known that whole-word models are particularly useful for remote-control applications such as Aginsky's where the vocabulary used is limited to a small, pre-defined collection of individually-spoken words. (EX2001, ¶ 117.) Specifically, in this vocabulary range such models (i) have relatively simple and fast computational requirements, making them very efficient; (ii) have a relatively short development time, resulting in efficiencies in development cost; (iii) have relatively small memory requirements; and (iv) can be implemented on simpler and less expensive hardware platforms. (*Id.*, ¶ 116.)

Unlike Aginsky, Stammer's phoneme-based system incorporates a large vocabulary and is designed to process conversational speech. (EX2001, ¶ 119.) While Stammer's phoneme-based model is useful in such an application, Stammer's phoneme-based dialog system is undesirable when it comes to handling a limited vocabulary of individually spoken commands because the efficiencies in development cost, computational load, and memory use that a whole-word model provides cannot similarly be achieved with Stammer's phoneme-based model. (*Id.*)

Because Aginsky's vocabulary is limited to a relatively small, pre-defined collection of individually-spoken words, a POSITA would not have been motivated to modify Aginsky to use Stammer's phoneme-based model. (EX2001, ¶ 120.) Instead, a POSITA would have used a whole-word model to take advantage of the

efficiencies in development cost, computational load, and memory use that whole-word models provide over phoneme-based models. (*Id.*) Simply put, in a remote-control application such as Aginsky, Stammmler's phoneme-based approach would have been considered unsuitable and unnecessary. (*Id.*)

Accordingly, Petitioner has failed to show that a POSITA would have been motivated to combine Aginsky with Stammmler to arrive at the claimed invention of the '083 patent.

(b) Petitioner Has Failed To Show That A POSITA Would Have Been Motivated To Modify Aginsky To Have A “speech recognition engine.”

Petitioner has failed to identify *any reason* why a POSITA would have modified Aginsky to have a “speech recognition engine.” (Petition at 45-46; *see also* EX1003, ¶¶ 149-151.)

In the Institution Decision, the Board stated that a POSITA “would have understood that a mechanism for recognizing voice commands would have been necessary.” (ID at 37.) However, there is no evidence in the Petition or supporting expert declaration to support this finding. (*Id.* (Board failing to cite to any record evidence); Petition at 45-46; EX1003, ¶¶ 149-151.) Neither Petitioner nor its expert asserted that a mechanism for recognizing voice commands would have been necessary. (*Id.*) Further, even if there were evidence in the record demonstrating that an unspecified “mechanism” would be necessary for recognizing voice

commands (there is none), there is certainly no evidence that this unspecified “mechanism” must be the claimed “speech recognition engine.” (*Id.*) Indeed, a “speech recognition engine” is not necessary. (EX2001, ¶ 123.)

Thus, Petitioner has failed to show that a POSITA would have been motivated to modify Aginsky to have a “speech recognition engine.” *In re Cyclobenzaprine*, 676 F.3d at 1068-69 (holding that a petition must demonstrate “that a skilled artisan would have had reason to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success from doing so.”)

3. Petitioner Has Failed to Show That Aginsky In Combination With Stammler Renders Dependent Challenged Claims 2-6, 8-10, And 13-18 Obvious.

Petitioner has failed to show that Aginsky in combination with Stammler renders dependent Challenged Claims 2-6, 8-10, and 13-18 obvious in view of their dependency on Challenged Claims 1 and 12. Additionally, Petitioner has failed to show that Aginsky in combination with Stammler renders dependent Challenged Claims 2-6, 8-10, and 13-18 obvious for the reasons discussed below.

(a) Challenged Claims 6 And 18.

Petitioner has failed to show that Aginsky in combination with Stammler discloses, teaches, or suggests every limitation of Challenged Claims 6 and 18.

For Challenged Claims 6 and 18, Petitioner and its expert rely entirely on their analysis of Challenged Claim 1. (Petition at 55 (“See [1.b.1], [1.c].”); *id.* at 59 (“See [1.c], [6].”); EX1003, ¶¶ 170-171, 215-216.) But Challenged Claims 6 and 18 are materially different than Challenged Claim 1. (EX2001, ¶¶ 127-129.) Challenged Claim 1 recites, *inter alia*, “voice data provided to a speech recognition engine.” (EX1001 at claim 1.) Challenged Claims 6 and 18, on the other hand, recite, *inter alia*, receiving at the speech recognition engine voice data for “***map[ping] each of the less than all of the individual command function entries ... to the one or more of the plurality of user input elements of the controlling device.***” (EX1001 at claims 6 and 18 (emphasis added).) Petitioner has failed to explain how any received voice data is used for mapping anything, let alone mapping command function entries to user input elements as claimed. (Petition at 43-46, 55, 59.) Thus, Petitioner cannot show that Challenged Claims 6 and 18 are obvious.

(b) Challenged Claims 8-10.

Petitioner has failed to show that Aginsky in combination with Stammeler renders Challenged Claims 8-10 obvious. Challenged Claim 8 recites, *inter alia*, “receiving ... voice data indicative of at least a brand of the target appliance” and “us[ing] the voice data indicative of at least a brand of the target appliance to identify

within a library of codeset records the codeset record that is caused to be provisioned to the controlling device.” (EX1001 at claim 8.)¹

Petitioner argues that it “would have been obvious to a POSITA to use voice data associated with at least a brand name of a controllable device 101-1 to identify the desired controllable device 101-1, and accordingly, a data structure associated with controllable device 101-1 to be provisioned to remote device 107-1” because “each controllable device 101-1 may contain multiple data structures ... specialized for ‘a specific brand, model, or category of remote devices 107-1 to 107-N.’” (Petition at 56 (quoting EX1004 at 5:22-42).)

Petitioner's logic is flawed. Aginsky *does not disclose* that controllable device 101-1 (*i.e.*, the alleged “target appliance”) stores data structures related to other controllable devices. (EX1004 at 5:18-45, FIG. 1C; EX2001, ¶ 133.) Rather, Aginsky discloses that controllable device 101-1 stores data structures specific to remote devices 107-1 to 107-N and/or to specific users. (*Id.*)

¹ Challenged Claims 9 and 10 are dependent on Challenged Claim 8, and Petitioner has failed to prove these claims obvious because of their dependency on Challenged Claim 8. (EX1001 at claims 9-10.)

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CONTROLLABLE DEVICE MEMORY/STORAGE		
REMOTE DEVICE 107-1 = NAME : MASTER		
FUNCTION 119-1	STATUS 120-1	RULES 121-1
ON - OFF	YES	UNLIMITED
VOLUME	YES	UNLIMITED
MENU	YES	-
CHANNEL	YES	ALL
INPUT	NO	-
REMOTE DEVICE 107-2 = NAME : CHILD 1		
FUNCTION 119-2	STATUS 120-2	RULES 121-2
ON - OFF	YES	NOT AFTER MIDNIGHT
VOLUME	YES	OFF AFTER 9PM
MENU	NO	-
CHANNEL	YES	NOTHING ABOVE 100 NO PREMIUM NO PAY-PER-VIEW
INPUT	NO	-

FIG. 1C

(*Id.* at FIG. 1C.)

If a user were to provide voice data indicative of a brand of controllable device 101-1, such voice data would not identify a specific data structure within the plurality of data structures stored in controllable device 101-1 because every data structure stored in controllable device 101-1 is related to controllable device 101-1. (EX2001, ¶ 134.) Instead, only an indication of a specific remote device or user would identify a data structure within the plurality of stored data structures because the data structures in controllable device 101-1 are specific to remote devices 107-1 to 107-N and/or to specific users. (*Id.*; EX1004 at 5:18-45, FIG. 1C; *see also* Petition at 36 (“controllable device 101-1 selects a data structure based upon the brand, model, etc. *of remote device 107-1*”).) Thus, it would not have been obvious to use voice data *indicative of a brand of controllable device 101-1* (*i.e.*, the alleged “target

appliance”) to identify a data structure within the plurality of data structures stored in controllable device 101-1 to be provisioned to remote device 107-1 (*i.e.*, the alleged “controlling device”), as claimed. (EX2001, ¶ 134.)

Alternatively, Petitioner argues that “[w]here remote device 107-1 is ‘programmed’ with a library of the applicable data structures, it would have been obvious to a POSITA to use a brand identification to identify the appropriate data structure entry within memory 109-1.” (Petition at 57.) Petitioner’s alternative argument is without merit because it is conclusory and irrelevant to the claims.

Challenged Claim 8 requires that “the speech recognition engine use[] the voice data ... to identify ... the codeset record ***that is caused to be provisioned to the controlling device.***” (EX1001 at claim 8 (emphasis added).) Merely identifying a codeset record is insufficient. (*Id.*; EX2001, ¶ 136.) While Petitioner argues that it would have been obvious “to use a brand identification to identify the appropriate data structure entry within memory 109-1,” Petitioner does not identify any subsequent provisioning of a “data structure” to a controlling device. (Petition at 57.) In Petitioner’s example, the data structures (*i.e.*, the alleged “codeset records”) have already been provisioned to memory 109-1 of remote device 107-1 (*i.e.*, the alleged “controlling device”). (*Id.*; EX2001, ¶¶ 137-138.)

Further, Petitioner’s alternative argument simply concludes, without explanation, that “it would have been obvious to a POSITA to use a brand

identification to identify the appropriate data structure entry within memory 109-1.” (Petition at 57.) Petitioner does not explain *why* it allegedly would have been obvious to use a brand identification to identify a data structure in memory. (*Id.*) Petitioner’s conclusory argument is legally insufficient to establish obviousness. *ActiveVideo Networks*, 694 F.3d at 1327.

(c) Challenged Claims 13 And 14.

Petitioner has failed to show that Aginsky in combination with Stammeler discloses, teaches, or suggests every limitation of Challenged Claims 13 and 14.

Challenged Claim 13 recites that the claimed “instructions” that, when executed by the processing device, cause a codeset record to be provisioned to the controlling device, “are downloaded to the controlling device in a downloadable app.” (EX1001 at claims 12-13.) Challenged Claim 14 depends from Challenged Claim 13, and thus incorporates every limitation of Challenged Claim 13. 35 U.S.C. § 112(d).

According to Petitioner, “Aginsky discloses transferring [a] data structure to ‘a remote control application’” and downloading to remote device 107-1 “a control application that is designed to control controllable devices” from an “app store.” (Petition at 58; EX1003, ¶¶ 203-206.) However, Petitioner does not assert—and provides no evidence to demonstrate—that the claimed “instructions” are

“downloaded to the controlling device in a downloadable app,” as the Challenged Claims require. (*Id.*)

B. Ground 2: Petitioner Has Failed To Show That Aginsky In Combination With Stammler And Dresti Renders Challenged Claims 7, 11, And 19 Obvious.

Petitioner has failed to show that Aginsky in combination with Stammler and Dresti renders Challenged Claims 7, 11, and 19 obvious in view of their dependency on Challenged Claims 1 and 12. Petitioner has also failed to show that Aginsky in combination with Stammler and Dresti discloses, teaches, or suggests every limitation of Challenged Claims 7, 11, and 19.

Challenged Claim 7 recites “using at least location data to identify the codeset record that is caused to be provisioned to the controlling device.” (EX1001 at claim 7.) Challenged Claims 11 and 19 include similar limitations (*id.* at claims 11 and 19), and Petitioner relies entirely on its analysis of Challenged Claim 7 for these claims. (Petition at 66.)

Petitioner concedes that “neither Aginsky nor Stammler explicitly disclose using location data to identify [a] codeset record.” (Petition at 64.) Nevertheless, Petitioner asserts that Dresti “teaches a universal remote provisioned with particular code sets *after a user selects an appropriate region.*” (*Id.* (citing EX1007 at [0321]).)

Petitioner is wrong. Dresti discloses a remote control application that “may be shipped with a world-wide IR code database.” (EX1007 at [0321]; EX2001, ¶

147.) The user may select a region and, “[b]ased on this input, the behavior of the remote control application may be adjusted.” (*Id.*) “For example, the order in which IR device codes are presented to the user for testing ... during device setup may be varied from region to region.” (*Id.*)

Crucially, Dresti does not teach provisioning code sets to the remote control application based on the selection of a region. (EX2001, ¶ 148.) As noted above, Dresti’s remote control application is *shipped* with a comprehensive “world-wide IR code database.” (*Id.*) The selection of a region does not cause additional code sets or code databases to be provisioned to the remote control application. (*Id.*) Thus, the prior art does not disclose, teach, or suggest using location data to identify a codeset record that is caused to be provisioned to a controlling device, as claimed. (*Id.*)

Additionally, Petitioner has failed to explain how Aginsky would be combined with Stammeler and Dresti to arrive at the claimed invention. *Metalcraft*, 848 F.3d at 1367 (party asserting obviousness must explain how references would be combined to arrive at claimed invention). According to Petitioner, “[i]t would have been obvious to a POSITA to implement Aginsky’s methods and systems as modified by Stammeler to thus include location data.” (Petition at 65.) However, Petitioner does not explain how “location data” would (or could) be used in Aginsky as modified by Stammeler to identify a codeset record that is caused to be provisioned

to a controlling device. (*Id.*) The alleged codeset records stored on Aginsky's controllable device 101-1 are specific to remote devices 107-1 to 107-N and/or to specific users. (EX1004 at 5:18-45, FIG. 1C; EX2001, ¶ 149.) "Location data" would not identify any of these alleged codeset records—only an indication of a specific remote device or user would. (EX2001, ¶ 149.)

C. Ground 3: Petitioner Has Failed To Show That Aginsky In Combination With Hanson Renders Challenged Claims 1-6, 8-10, And 12-18 Obvious.

1. Petitioner Has Failed To Show That Aginsky In Combination With Hanson Discloses, Teaches, Or Suggests Every Limitation Of Challenged Claims 1 And 12.

(a) Petitioner Has Failed To Show That Aginsky Discloses, Teaches, Or Suggests "the provisioned codeset record comprising protocol and formatting information."

Petitioner failed to show in Ground 1 that Aginsky discloses, teaches, or suggests "the provisioned codeset record comprising protocol and formatting information." In Ground 3, Petitioner relies entirely on its Ground 1 analysis for this limitation. (Petition at 71.) Thus, for the reasons discussed above regarding Ground 1, Petitioner has again failed to show that Aginsky discloses, teaches, or suggests "the provisioned codeset record comprising protocol and formatting information" in Ground 3.

(b) Petitioner Has Failed To Show That Aginsky In Combination With Hanson Discloses, Teaches, Or Suggests The Phonetic Representations Limitation.

Petitioner has failed to show that Aginsky in combination with Hanson discloses, teaches, or suggests the Phonetic Representations Limitation because neither Aginsky nor Hanson discloses, teaches, or suggests phonetic representations of function names (or synonyms of function names) stored in a codeset record (or in command function entries within a codeset record), as claimed.

As noted above, Aginsky alone indisputably does not disclose, teach, or suggest the Phonetic Representations Limitation. (Petition at 40, 42; *see also id.* at 73-75; *see generally* EX1004 at 7:58-10:2.)

With respect to Hanson, Petitioner argues that Hanson discloses a “command mapping 240 [that] is a ‘data set’ that includes an ‘arbitrary quantity of commands, synonyms, and/or alternative commands for a function.’” (Petition at 68.) Petitioner also asserts that Hanson discloses that speech can be processed through “phonetic algorithms” and that a “POSITA would have understood that ‘phonetic algorithms’ index and recognize words according to phonetic representations, such as phonemes.” (*Id.* at 73-74.)

While Hanson’s command mapping 240 is a data set, command mapping 240 is not a codeset record. (EX2001, ¶ 154.) According to Hanson, command mapping 240 enables automated discovery of speech commands in response to a manual event

by associating a manual event with an available speech command. (EX1006 at [0030], [0037].) For example, when a driver adjusts the air conditioning temperature manually, the command mapping 240 can be used to inform the driver that speech commands are available to adjust the air conditioning. (*Id.* at [0008].) Crucially, Hanson's command mapping 240 does not contain any command codes, and thus it is not a codeset record. (EX2001, ¶ 154; EX2002 at 14:5-14.)

Additionally, Hanson does not disclose, teach, or suggest that its command mapping 240 contains phonetic representations of commands. (EX2001, ¶ 155.) Hanson's command mapping 240 contains whole words, not phonetic representations of words. (*Id.*; EX1006 at FIG. 2.) While Hanson discloses that its speech engine 254 can include "phonetic algorithms," the "phonetic algorithms" are used to process the user's speech. (EX2001, ¶ 155; EX1006 at [0040].) The command mapping 240, on the other hand, is used to present available speech commands to the user that correspond with a manual event. (EX2001, ¶ 155.) The "phonetic algorithms" in the speech engine 254 are unrelated to the command mapping 240 and do not demonstrate that Hanson discloses, teaches, or suggests that its command mapping 240 contains phonetic representations of commands. (*Id.*)

Accordingly, Petitioner has failed to show that Aginsky in combination with Hanson discloses, teaches, or suggests the Phonetic Representations Limitation.

(c) Petitioner Has Failed To Show That Aginsky In Combination With Hanson, Discloses, Teaches, Or Suggests “a speech recognition engine.”

Petitioner has failed to show that Aginsky in combination with Hanson discloses, teaches, or suggests the claimed “speech recognition engine.”

As noted above, Petitioner does not assert that Aginsky discloses, teaches, or suggests a “speech recognition engine.” (Petition at 75-76; *see also id.* at 51 (“Aginsky does not explicitly disclose how remote device 107-1 receives voice input or creating voice data.”).) While Petitioner asserts that Hanson discloses a “speech recognition engine,” Petitioner does not propose modifying Aginsky to have a “speech recognition engine.” (*Id.*; *see also id.* at 69-70 (Petitioner proposing only to modify Aginsky in view of Hanson to include phonetic representations in Aginsky’s “data set” or “data structure”).) Again, Petitioner’s failure to identify any reason why a POSITA would have modified Aginsky to have a “speech recognition engine” further confirms that Petitioner has not proposed modifying Aginsky to have a “speech recognition engine.” (*Id.* at 69-70, 75-76.)

Because Aginsky alone does not disclose, teach, or suggest a “speech recognition engine,” and because Petitioner has not proposed modifying Aginsky to include a “speech recognition engine,” Petitioner cannot show that Aginsky in combination with Hanson, discloses, teaches, or suggests “a speech recognition engine.” For the same reasons, Petitioner has also failed to explain how the

references would be combined to arrive at the claimed invention. *See Metalcraft*, 848 F.3d at 1367.

(d) Petitioner Has Failed To Show That Aginsky In Combination With Hanson Discloses, Teaches, Or Suggests The Processing Device Limitation.

Petitioner failed to show in Ground 1 that Aginsky discloses, teaches, or suggests the Processing Device Limitation. In Ground 3, Petitioner primarily relies on its Ground 1 analysis for this limitation. (Petition at 76.) While Petitioner adds that Hanson generally discloses “computer program instructions” (*id.*), Petitioner fails to fill in the gaps in its Ground 1 analysis. (EX2001, ¶ 158.) Thus, Petitioner has failed to show that Aginsky in combination with Hanson discloses, teaches, or suggests the Processing Device Limitation.

2. Petitioner Has Failed To Show That A POSITA Would Have Been Motivated To Combine Aginsky With Hanson To Arrive At The Claimed Invention Of The ‘083 Patent.

Petitioner has failed to show that Aginsky in combination with Hanson renders Challenged Claims 1-6, 8-10, and 12-18 obvious because Petitioner has failed to show that a POSITA would have been motivated to combine Aginsky with Hanson to arrive at the claimed invention of the ‘083 patent.

(a) Petitioner Has Failed To Show That A POSITA Would Have Been Motivated To Combine Aginsky With Hanson To Arrive At The Phonetic Representations Limitation.

The claimed invention of the '083 patent requires that phonetic representations of a function name and synonyms of the function name must 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 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). (EX1001, '083 patent, at claims 1, 12; EX2001, ¶ 159.)

According to Petitioner, a POSITA would have been motivated to modify Aginsky in view of Hanson: (i) to achieve a voice control system that executes a command in response to a variety of synonymous commands, which purportedly would have increased user friendliness (Petition at 70, 75, 77; *see also id.* at 72 (“to enable recognition of numerous phrases related to the same command”)); (ii) because “implementing a data set with phonetic representations and synonyms” would have been “the mere application of a known technique” (*id.* at 70); and (iii) “to achieve the predictable result of using phonetic representations to process voice commands” (*id.* at 74).

As with Ground 1, Petitioner has failed to show that a POSITA would have been motivated to combine Aginsky with Hanson to arrive at the Phonetic Representations Limitation because (i) Petitioner's asserted reasons for modifying Aginsky in view of Hanson fail to explain why a POSITA would have modified Aginsky in the specific manner of the claimed invention; and (ii) a POSITA would not have used Hanson's alleged phonetic representations in the data structures provisioned to Aginsky's controlling device.

First, Petitioner's asserted reasons for modifying Aginsky in view of Hanson fail to explain why a POSITA would have modified Aginsky *in the specific manner of the claimed invention*. Petitioner fails to explain why a POSITA would have added phonetic representations to the specific data structures on Aginsky's controlling device 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). (Petition at 69-70, 73-75.) Similarly, Petitioner fails to explain why a POSITA 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.*)

Rather than explain why a POSITA would have modified Aginsky in the specific manner of the claimed invention, Petitioner's asserted reasons for modifying Aginsky amount to nothing more than generic reasons for adding synonym support to Aginsky in general, which cannot support a finding of obviousness as a matter of law. *See ActiveVideo Networks*, 694 F.3d at 1328; *Toyota Motor Corp.*, Case IPR2019-00018, Paper 7 at 15.

Further, "achiev[ing] the predictable result of using phonetic representations" is a legally insufficient reason to combine because it merely repeats the proposed modification to Aginsky (*i.e.*, adding phonetic representations to Aginsky), fails to explain why a POSITA would have made such a modification, and does not result in the claimed invention. Similarly, whether "implementing a data set with phonetic representations and synonyms" was purportedly a "known technique" cannot support a finding of a motivation to combine because merely demonstrating that something was known in the art is insufficient. *See Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, 688 F.3d 1342, 1369 (Fed. Cir. 2012).

Second, for the same reasons discussed above in Ground 1, a POSITA would not have used Hanson's alleged phonetic representations in the data structures provisioned to Aginsky's controlling device. (EX2001, ¶ 161.)

Accordingly, Petitioner has failed to show that a POSITA would have been motivated to combine Aginsky with Hanson to arrive at the claimed invention of the '083 patent.

(b) Petitioner Has Failed To Show That A POSITA Would Have Been Motivated To Modify Aginsky To Have A “speech recognition engine.”

As with Ground 1, Petitioner has failed to identify *any reason* why a POSITA would have modified Aginsky to have a “speech recognition engine.” (Petition at 69-70, 75-76.) Thus, Petitioner has failed to show that a POSITA would have been motivated to modify Aginsky to have a “speech recognition engine.”

3. Petitioner Has Failed to Show That Aginsky In Combination With Hanson Renders Dependent Challenged Claims 2-6, 8-10, And 13-18 Obvious.

Petitioner has failed to show that Aginsky in combination with Hanson renders dependent Challenged Claims 2-6, 8-10, and 13-18 obvious in view of their dependency on Challenged Claims 1 and 12.

Additionally, with respect to dependent Challenged Claims 6, 8-10, 13-14, and 18, Petitioner relies entirely on its Ground 1 analysis for these claims. (Petition at 79-80; EX1003, ¶¶ 278-285, 309-312, 319-320.) For the same reasons discussed above regarding Ground 1, Petitioner has again failed to show that dependent Challenged Claims 6, 8-10, 13-14, and 18 are obvious.

D. Ground 4: Petitioner Has Failed To Show That Aginsky In Combination With Hanson And Dresti Renders Challenged Claims 7, 11, And 19 Obvious.

Petitioner has failed to meet its burden of showing that Aginsky in combination with Hanson and Dresti renders Challenged Claims 7, 11, and 19 obvious in view of their dependency on Challenged Claims 1 and 12.

Additionally, in Ground 4 Petitioner relies entirely on its Ground 2 analysis. (Petition at 80; EX1003, ¶¶ 322-323.) Thus, for the same reasons discussed above regarding Ground 2, Petitioner has failed to show that Aginsky in combination with Hanson and Dresti renders Challenged Claims 7, 11, and 19 obvious.

VI. CONCLUSION

Accordingly, for at least the foregoing reasons, Patent Owner respectfully requests that the Board confirm the patentability of the Challenged Claims of the '083 patent.

Respectfully submitted,

Dated: July 7, 2023

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CERTIFICATE OF COMPLIANCE

This paper complies with the requirements of 37 C.F.R. § 42.24 and contains 11,963 words (exclusive of the table of contents, the table of authorities, the table of exhibits, the certificate of service, and this certification).

This paper complies with the typeface requirements of 37 C.F.R. § 42.6 and has been prepared in 14 point Times New Roman proportionally spaced typeface with normal spacing.

Respectfully submitted,

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