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Paper No. ____

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ROKU, INC.,
Petitioner,

v.

UNIVERSAL ELECTRONICS INC.,
Patent Owner.

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

PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE

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<i>Xerox Corp. v. Bytemark, Inc.</i> , IPR2022-00624, Paper 9 (8/24/2022)	30

LISTING OF EXHIBITS

Exhibit	Description
1001	U.S. Patent No. 9,847,083 (“’083”)
1002	File History of U.S. Application No. 13/298,629, which led to U.S. Patent No. 9,847,083
1003	Declaration of Mr. Bruce McNair (“McNair”)
1004	U.S. Patent No. 8,995,981 (“Aginsky”)
1005	U.S. Patent No. 6,839,670 (“Stammmler”)
1006	U.S. Patent Application Publication No. US 2012/0271639 (“Hanson”)
1007	U.S. Patent Application Publication No. US 2003/0103088 (“Dresti”)
1008	U.S. Provisional Patent Application No. 61/422,537 (“Aginsky Provisional”)
1009	Claim Chart Showing <i>Aginsky</i> is Entitled to the Priority Date of <i>Aginsky Provisional</i>
1010	Roberto Pieraccini, <i>From AUDREY to Siri. Is speech recognition a solved problem?</i> (presentation), International Science Institute at Berkeley (archived Jun. 26, 2013) (accessed Apr. 6, 2022), available at https://web.archive.org/web/20130626012955/https://www1.icsi.berkeley.edu/pubs/speech/audreytosiri12.pdf
1011	<i>Pioneering Speech Recognition</i> , IBM (accessed Apr. 6, 2022), available at https://www.ibm.com/ibm/history/ibm100/us/en/icons/speechreco/transform/
1012	B.H. Juang & Lawrence R. Rabiner, <i>Speech Recognition, Automatic: History</i> , in <i>ENCYCLOPEDIA OF LANGUAGE & LINGUISTICS</i> 806-819 (2d ed. 2006)
1013	<i>History of Speech & Voice Recognition and Transcription Software</i> , Dragon Naturally Speaking (archived Mar. 19, 2005) (accessed Apr. 6, 2022), available at https://web.archive.org/web/20050319025603/http://www.dragon-medical-transcription.com/history_speech_recognition.html
1014	Xuedong Huang & Li Deng, <i>An Overview of Modern Speech Recognition</i> , in <i>HANDBOOK OF NATURAL LANGUAGE PROCESSING</i> 339, 339-363 (2d ed. 2010) (accessed June 12, 2022), available at https://www.microsoft.com/en-us/research/wp-content/uploads/2016/02/Book-Chap-HuangDeng2010.pdf
1015	[Intentionally omitted]

Exhibit	Description
1016	<i>Lecture 12: An Overview of Speech Recognition</i> , available at https://web.archive.org/web/20210423171339/https://www.cs.rochester.edu/u/james/CSC248/Lec12.pdf
1017	Scanlon et al., Using Broad Phonetic Group Experts for Improved Speech Recognition, IEEE TRANSACTIONS ON AUDIO SPEECH & LANGUAGE PROCESSING (Mar. 2007), available at https://academiccommons.columbia.edu/doi/10.7916/D84F219Z/download
1018	Latanya Sweeney & Patrick Thompson, Speech Perception Using Real-Time Phoneme Detection: The BeBe System (1997), available at https://web.archive.org/web/20100712042339/http://publications.csail.mit.edu/lcs/pubs/ps/MIT-LCS-TR-736.ps
1019	Cheng et al., Voice-to-Phoneme Conversion Algorithms for Voice-Tag Applications in Embedded Platforms, EURASIP J. ON AUDIO SPEECH & MUSIC PROCESSING (2008), available at https://asmp-urasipjournals.springeropen.com/articles/10.1155/2008/568737
1020	U.S. Patent Application Publication No. 2008/0059193 (“Huang-193”)
1021	U.S. Patent No. 6,584,439 (“Geilhufe”)
1022	U.S. Patent No. 7,689,417 (“Huang-417”)
1023	U.S. Patent No. 7,944,370 (“Harris”)
1024	U.S. Patent No. 5,247,580 (“Kimura”)
1025	International Patent Publication No. WO2008096944 (“Lee”)
1026	U.S. Patent No. 6,397,186 (“Bush”)
1027	U.S. Patent Application Publication No. 2006/0235701 (“Cane”)
1028	U.S. Patent Application Publication No. US 2006/0041655 (“Holloway”)
1029	U.S. Patent Application Publication No. US 2009/0254778 (“Huang-778”)
1030	U.S. Patent Application Publication No. US 2005/0216606 (“Hayes”)
1031	European Patent No. 1,209,661 (“Hayes-661”)
1032	U.S. Patent No. 6,748,361 (“Comerford”)
1033	U.S. Patent Application Publication No. 2002/0095286 (“Ross”)
1034	U.S. Patent Application Publication No. 2008/0133244 (“Bodin”)
1035	U.S. Patent Application Publication No. US 2007/0052549 (“Le”)
1036	U.S. Patent No. 7,259,710 (“Kisliakov”)
1037	U.S. Patent No. 7,046,161 (“Hayes-161”)

Exhibit	Description
1038	GROTH ET AL., NETWORK+ STUDY GUIDE DELUXE EDITION (2d ed. 2005), available at https://www.google.com/books/edition/Network+_Study_Guide/eldC-w9SN-0C?hl=en&gbpv=1
1039	Declaration of Gordon MacPherson in support of the public accessibility of: Scanlon et al., Using Broad Phonetic Group Experts for Improved Speech Recognition, IEEE TRANSACTIONS ON AUDIO SPEECH & LANGUAGE PROCESSING (Mar. 2007), available at https://academiccommons.columbia.edu/doi/10.7916/D84F219Z/download
1040	Affidavit of Nathaniel E Frank-White
1041	Declaration of Dr. Gretchen Hoffman
1042	Declaration of Dara Del Rosario
1043	Transcript of September 21, 2023 Deposition of Dr. Michael Scordilis
1044	U.S. Patent No. 4,623,887 (“Welles”)
1045	Redline comparison of Patent Owner Response and Scordilis Declaration

I. INTRODUCTION

The challenged claims of the ‘083 are directed to content of a codeset record including command function entries that enable remote control operations of a target device, and protocol and formatting information used in the transmission process. ‘083, claims 1, 12. There is no dispute that **Aginsky’s** codeset record discloses the same content. Paper 2 (“Pet.”) 20-29; Paper 15 (“POR”) 21-22. For this reason, Patent Owner *now* insists its claims be recast to require extensive additional limitations and “separate and distinct” storage structures found nowhere in the intrinsic record of the ‘083 patent. POR 12-21.

First, PO argues that the broadly recited “protocol and formatting information” be replaced with the narrowed language: “a 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.” POR 19-21. Incredibly, PO’s source for these new claim limitations is a general explanation of data communication offered by petitioner’s technical expert during deposition (*id.*)—claim interpretation simply does not work that way.

Next, PO argues that its codeset content must be further limited to require specific storage configurations. POR 12-19. That is, protocol and formatting information must be stored in the codeset record in a “separate and distinct” manner from the command function entries. *Id.* But again, PO offers no rational

legal explanation for infusing additional structural limitations to the content language requirements claimed. *Id.* Regardless, the Petition further identifies protocol and formatting information of **Aginsky's** codeset record separate and distinctly stored from the command data entries. Pet. 34-37.

The claims of the '083 patent are unpatentable and should be cancelled.

II. THE '083 PATENT CLAIMS RECITE THE CONTENT OF A CODESET RECORD

The '083 defines its codeset record by its contents, not by structural storage configuration. '083, claims 1, 12. The independent claims of the '083 recite:

the provisioned codeset record compris[ing/es] 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 iden[t]ifier, and a plurality of data ...

Id., claims 1 and 12.

III. PO'S UNSUPPORTED CLAIM CONSTRUCTIONS SHOULD BE REJECTED

PO advances two narrowing claim construction arguments. POR 12-21.

- “protocol and formatting information” means “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”
- “protocol and formatting information” should be limited to a separate and distinct storage structure relative to the “plurality of individual command function entries”

These constructions should be rejected as improperly importing limitations from the specification. *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 904 (Fed. Cir. 2004). PO also looks to extrinsic evidence to rewrite entire passages of its claims, again inconsistent with claim construction law.

A. There Is No Basis to Construe “Information” to a “Set of Procedures...”

The ‘082 independent claims recite *protocol and formatting information*. *See, e.g.*, claims 1, 12. Since **Aginsky** plainly discloses such information (Section IV(A)(1)), PO argues that “protocol and formatting information” should be replaced with “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.”

PO has not presented a basis to drastically diverge from ordinary and customary meaning of “protocol and formatting information.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005). The specification nowhere suggests,

PO's narrowing construction and "[e]xpert testimony may not be used to diverge significantly from the intrinsic record." *Genuine Enabling Tech. LLC v. Nintendo Co.*, 29 F.4th 1365, 1373 (Fed. Cir. 2022) (rejecting construction incorporating limitation based on expert testimony lacking intrinsic support).

PO's narrowing construction is derived exclusively from *Petitioner's expert's* deposition statements. POR 19-21. Yet, Petitioner's expert, Mr. McNair, was not asked to perform claim construction and did not testify on claim construction. At deposition, McNair explained he was speaking "technically" and "in the abstract, not necessarily in the context of this patent." EX2002, 34:5-20. Statements not even directed to claim language cannot replace the language of the claims. Tellingly, PO offers no legal justification for this curious argument. Moreover, as a technical expert, McNair's testimony—at best, extrinsic evidence—cannot be treated as a legal opinion on claim construction. *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 325 (2015) ("the ultimate question of the proper construction of the patent [is] a question of law"). McNair's deposition statements—not even directed to claim language—cannot supersede actual claim language.

PO does not point to any lexicographic definition or waiver in the specification, but instead alleges that "[t]he specification and claims of the '083 patent are *consistent with*" its limiting construction. POR 20. But, identifying

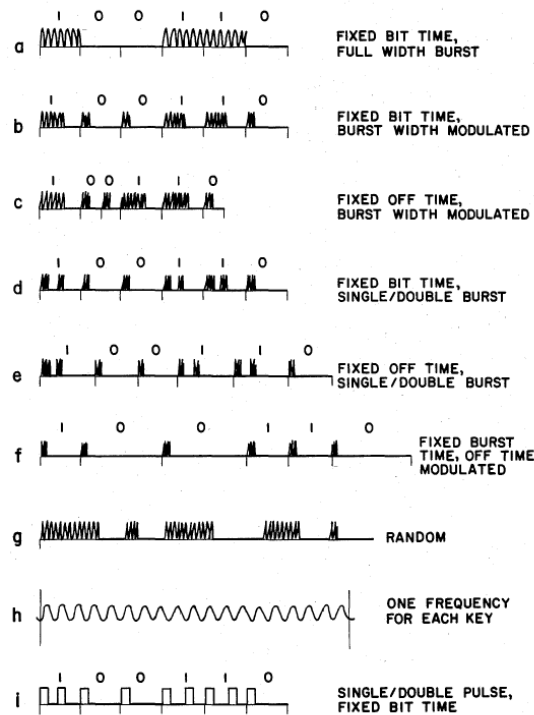
potential support for hypothetical claim language is irrelevant. PO cannot rewrite its claims because it can argue some consistency or “support” for narrower features.

Moreover, the ‘083 is clear that its examples of protocol and formatting information are *not* limiting. PO relies on a passage in which the ‘083 discusses “protocol and formatting information 752 *which may* describe the physical protocol requirements for transmitting the command data elements which comprise this codeset” (EX1001, 10:47-54), but PO deliberately omits (via ellipses) the key words “which may” (POR 20). The remaining examples are introduced with “for example.” EX1001, 10:52. Rather than support a limiting construction, the ‘083 demonstrates the opposite: examples of “protocol and formatting information” are exemplary and not exclusive. PO cannot rely on extrinsic evidence inconsistent with the claims and specification to “vary[] or contradict[] the terms of the claims”. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 981 (Fed. Cir. 1995). PO offers no rational basis, let alone legal basis, to replace broadly recited “information” with the narrowed “set of procedures.” PO’s attempt to rewrite its claims by attorney argument fails.

Even if this extensive rewriting were possible, PO does not explain how it would distinguish over the signals of **Aginsky’s** codeset record given **Aginsky’s** explanation that the command signals of SIGNAL columns 112-1 and 112-2 “can

be any type of signal required for control purposes” such as frequency sets, coded IR signals, or Bluetooth signals. Pet. 25 (citing Aginsky, 8:63-9:7). Coded IR includes within the signal all formatting and protocols necessary for an appropriately configured device to recognize the signal. Pet. 37. **Aginsky** incorporates U.S. 4,623,887 (“Welles”), which is directed to a reconfigurable remote control having “the ability to learn, store and repeat the remote control codes from any other infrared transmitter.” McNair, ¶107 (citing Aginsky, 8:63-9:7); EX1044, Welles, Title, Abstract. Welles explains that coded IR signals incorporate protocol and formatting information such that the signal may be read by the receiver. Welles, 5:29-6:34. Welles illustrates the well-known (and various) formats of coded IR (including carrier signals, and modulation schemes/formats):

FIG. 1
MODULATION SCHEMES



Welles, Fig. 1.

Accordingly, even if PO's extreme argument were accepted (and it should not be), the art would still not be distinguished.

B. "Separate and Distinct" Finds No Basis in the Record

PO's attempt to require that the "protocol and formatting information" be "separate and distinct" from the "plurality of individual command and function entries" (POR 12-17) is likewise nowhere recited in the claims.

PO seeks to interpret the claims as if the embodiment depicted in the '083's Fig. 7b (reproduced below) was required. But, the claims are not so limited.

Phillips, 415 F.3d at 1323 (claims need not be limited to single embodiment).

Accordingly, for the reasons explained below, PO's attempt fails.

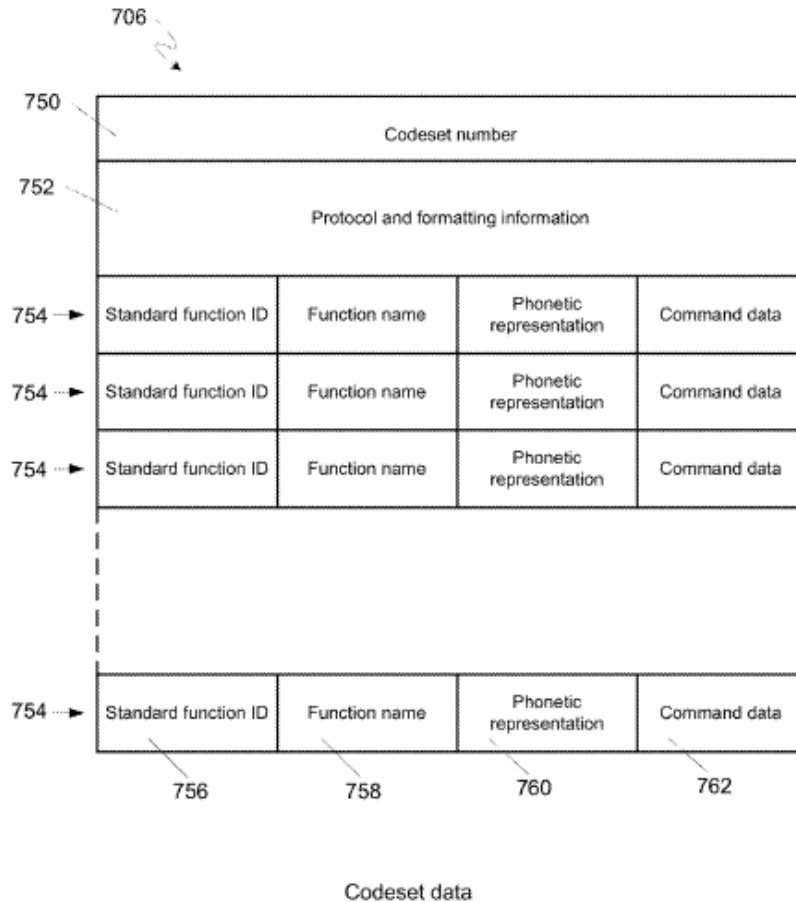


Figure 7b

'083, Fig. 7b.

1. "Separate and Distinct" is not Recited by the Claims

a. Different content descriptors do not convey "separate and distinct" storage structures

First, PO argues that "protocol and formatting information" and "plurality of individual command function entries" are "recited as separate and distinct

elements” and alleges that McNair “confirmed” this. POR 13. This circular “different descriptor” argument is unavailing. *See Skedco, Inc. v. Strategic Operations, Inc.*, 685 F. App'x 956, 960 (Fed. Cir. 2017). Taking PO’s argument to logical conclusion, protocol information would be separate and distinctly stored from format information since these are also “separate recitations.” Of course, no such rule exists.

b. “Comprising” Cannot be Rewritten to “Consists”

Next, PO argues because the “plurality of individual command function entries” must comprise certain data types, and the required data types do not include “protocol and formatting information,” then “protocol and formatting information” is necessarily excluded. *Id.* Again, PO’s argument is contrary to the law.

Claims 1 and 12 use the open transition “comprises” before enumerating required data types, meaning the individual command function entries may include other information, including protocol and formatting information. *Crystal Semiconductor Corp. v. TriTech Microelectronics Int’l, Inc.*, 246 F.3d 1336, 1348 (Fed. Cir. 2001) (“‘comprising’ creates a presumption ... that the claim does not exclude additional, unrecited elements”). PO asks the Board to ignore the open transition and imagine the command entries *consist*, or *consist essentially of*, the listed components, excluding protocol and formatting information. But the claims

are not so limited and individual command function entries may comprise, among other things, protocol and formatting information. *See Ethicon LLC v. Intuitive Surgical, Inc.*, No. 2020-1600, 2021 WL 960766 (Fed. Cir. Mar. 15, 2021).

c. The “transmit” limitation does not dictate location of protocol and formatting information

Finally, PO argues the limitation “causing the controlling device to transmit a command communication by using the protocol and formatting information and the command data . . .” (*see, e.g.*, claim 1), somehow requires the “protocol and formatting information” be separate and distinct. POR 14. This basically repeats the “different descriptor” argument above. That is, use of different content descriptors implies separate and distinct structural storage of the underlying content. No such relationship is shown in the record, let alone required by the claims.

2. Specification Cannot be Read into the Claims

PO’s argument that the claims should be limited to “separate and distinct” based on the embodiment of Fig. 7b (POR 14-16) is legally flawed: claim scope is not limited to a single embodiment absent “a clear intention.” *Info-Hold, Inc. v. Applied Media Techs. Corp.*, 783 F.3d 1262, 1267 (Fed. Cir. 2015). Block diagram 7b (reproduced above), shows protocol and formatting information 752 and individual command function entries 754 as separate blocks. POR 14-16. But, PO identifies no intention or guidance in the specification limiting claims that do

not recite storage structure to somehow require separate and distinct storage of protocol and formatting information. Instead, the ‘083 specification provides that blocks of block diagram 7b can be combined. ‘083, 11:30-34 (“one or more of the described functions and/or features may be integrated in a single physical device and/or a software module ...”).

PO ignores other aspects of Fig. 7b to selectively extract its “separate and distinct” theory. For example, block diagram 7b shows individual command function entries 754 follow protocol and formatting information 752 and comprise a specific sequence of sub-blocks (standard function ID, function name, phonetic representation, and command data). ‘083, Fig. 7b. Yet, PO ignores these limitations. At deposition, PO’s expert admitted he did not believe that Fig. 7b supported incorporating these limitations. *See* Section III.C.

3. Prosecution History Also Disproves PO’s Theory

PO’s “separate and distinct” theory finds no support in the prosecution history. During examination, “protocol and formatting” was added by amendment. EX1002, 164-173. Subsequently, the Examiner mapped US 2009/0254778 (“Huang”), relying on Huang’s disclosure of coded IR. *Id.*, 185; *see* EX1029, [0152] (disclosing coded IR). In response, PO did *not* argue that “protocol and formatting” included any storage structure distinguishing the coded IR command entry claim mapping. EX1002, 217-225; 253-256; 265-268. PO repeatedly

acquiesced that disclosure of coded IR signals constitutes protocol and formatting information. *Id.* PO appealed to the PTAB and again failed to raise any such distinction. *Id.*, 277-284. PO lost its appeal. *Id.*, 363-367. The case was subsequently allowed based on voice command mapping arguments unrelated to the “protocol and formatting” limitation. *Id.*, 425-427. Accordingly, the prosecution history nowhere supports PO’s argument that protocol and formatting information must be read to include separate and distinct storage structure. *See SunRace Roots Enter. Co. v. SRAM Corp.*, 336 F.3d 1298, 1307 (Fed. Cir. 2003) (applicant’s failure to argue for patentability based on absence of feature in prior art undercut litigation position that feature was required).

PO is administratively estopped from arguing that protocol and formatting information requires separate and distinct storage because it already appealed patentability to this Board *ex parte* and *failed* to argue that protocol and formatting information must be separate and distinct when mapped to a coded IR command entry (as here, *see* Section IV(A)(1)). Pet. 25, 27; Paper 10 (“DI”) 22. PO is not entitled to another bite at the apple. *SynQor, Inc v. Vicor Corp.*, 988 F.3d 1341, 1354 (Fed. Cir. 2021).

C. PO Expert Cannot Construe Claims

As outlined above, PO relies on testimony by its expert, Dr. Scordilis, in support of its claim constructions. POR 12-21. This extrinsic evidence should be

disregarded as inconsistent with the claims, written description, and prosecution history, as explained above. *Phillips*, 415 F.3d at 1318. For example, although Scordilis took the position that the alleged “separate and distinct” protocol and formatting information from Fig. 7b needed to be incorporated into the claims, he merely cherry-picked that aspect of Fig. 7b, while ignoring other aspects of Fig. 7b, to suit PO’s purposes, as his testimony showed:

Q. ... Do you understand the claims of the ‘083 patent to require that the series blocks in 754 follow the protocol and formatting information block 752? ...

A. Well, geometrically or a physical location follow or precede is, you know, really irrelevant here. ...

EX1043, 17:25-18:9.

Q. ... So do you understand the claims to require a standard function ID to be first followed by the function name followed by the phonetic representation followed by the command data?

A. In my opinion this is just a pictorial representation. I mean, you could change the ordering in every row of 754. That would be of no significance whatsoever because what is important here is how the processor ... uses those blocks. ...

Id., 18:19-19:4.

Scordilis also ignored the statement in the ‘083 patent that “one or more of the described functions and/or features may be integrated in a single physical device and/or a software module ...’ ‘083, 11:30-34.

IV. PETITION GROUNDS REMAIN UNREBUTTED

The Petition grounds render obvious the corresponding challenged claims and PO’s arguments do not rebut the grounds.

A. A Codeset Record Comprising Protocol and Formatting Information is Shown by Aginsky

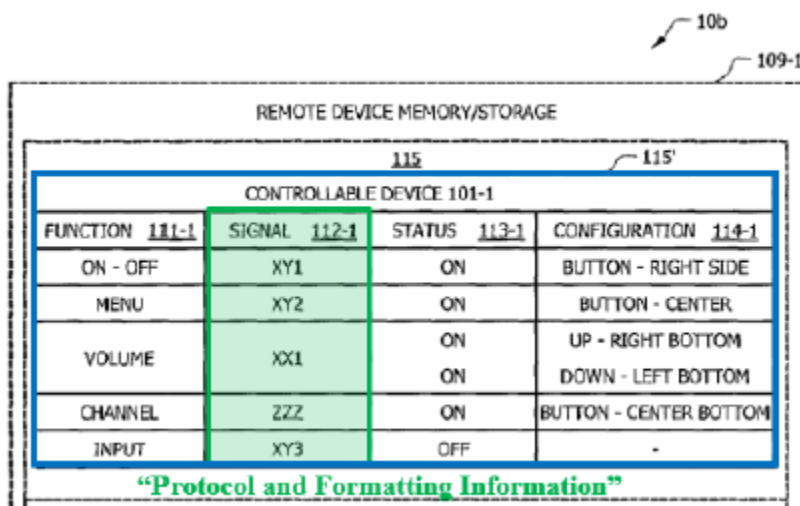
1. Aginsky Teaches the Claimed Protocol and Formatting Information

As noted above, PO’s argument that the combinations fail to teach a “provisioned codeset record *compris[ing/es] protocol and formatting information* ...” as recited in claims 1 and 12 (POR 21-27), is based on impermissible claim construction theories with no support in the record or in law.

As the Board agreed at institution, and now unrebutted, **Aginsky** discloses the protocol and formatting limitation in at least three ways. First, **Aginsky’s** command itself includes protocol and formatting information. **Aginsky** discloses that the command signals of **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. Pet. 25 (citing Aginsky, 8:63-9:7). The Board found this disclosure shows Signal 112-1 can be a “type of signal required for control

purposes.” DI 22 (quoting Aginsky, 8:63-9:10). As discussed above, Section III.A, **Aginsky** explains that command signals of **SIGNAL columns 112-1 and 112-2** “can be any type of signal required for control purposes” such as frequency sets, a coded IR signals, or Bluetooth signals. Pet. 25 (citing Aginsky, 8:63-9:7). Coded IR includes within the signal all formatting and protocols necessary for an appropriately configured device to recognize the signal. Pet. 37; *see* Section III.A.

Second, the Petition explained, “**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.” Aginsky, 9:7-10; McNair, ¶124; *see* Pet. 36-37. **SIGNAL column 112-1** is shown in Fig. 1B, reproduced below. The Board also noted this disclosure from **Aginsky** and McNair’s testimony that a coded IR signal and a Bluetooth signal include protocol and formatting information. DI 22.



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 DOWN - LEFT BOTTOM
CHANNEL	ZZZ	ON	BUTTON - CENTER BOTTOM
INPUT	XY3	OFF	-
“Protocol and Formatting Information”			

Aginsky, Fig. 1B (partial).

Further, denoting “Bluetooth” or “coded IR” conveys protocol and formatting to a POSITA as these are well-known standards. *Id.* As explained in the Petition, “a POSITA would have understood that **Aginsky’s** examples—frequency set, IR, and Bluetooth—require protocol and formatting information as defined in ’083. ’083, 10:47-54; McNair, ¶124.” Pet. 37. PO does not—and cannot—contest these facts. *See, e.g.*, EX1043, 21:24-22:13 (Scordilis agreeing that Bluetooth is a standard protocol). The Board cited this testimony and concluded 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’).” DI 22-23. Nothing since institution calls that initial determination into question.

As explained above, PO’s constructions of “protocol and formatting information” should be rejected. *See* Section III.

Even if command entries and protocol and formatting information were required to be separate and distinct, which they are not, **Aginsky** also teaches additional protocols used in transmission as a transmission security protocol Pet. 26 (citing Aginsky, 13:32-43). As the Petition explains, this information may include “protocols, rules, or other information useful to carrying out remote control of the controllable device.” *Id.*

PO purports to argue that **Aginsky** fails to meet the “protocol and formatting information” limitation under “[a]ny [c]onstruction,” but relies on its “set of procedures ...” constructions throughout this argument. POR 23-27. The claims do not require these limitations. *See* Section III. Under the plain and ordinary meaning, **Aginsky** teaches protocol and formatting information as claimed for at least the three reasons above, as the Board found in the Institution Decision.

As explained in the Petition, **Aginsky’s** disclosure that “the exchanged data structure may ... include protocols, rules, or other information useful to carrying out remote control of the controllable database” also constitutes protocol and formatting information. Pet. 26 (citing *Aginsky*, 13:34-43, 9:30-33). PO argues the “protocols, rules, or other information” disclosed by **Aginsky** are user/device permissions or customized control layouts, and therefore not protocol and formatting information, as claimed. POR 26. However, the “protocols, rules, or other information” are used in transmission and nothing more is required. **Aginsky** specifically teaches the “command signal is checked by process 307 to determine if it is ‘legal’” and then “[i]f the received signal corresponds to a proper command then process 309 performs the command ...” *Id.*, 12:31-40. Even under PO’s narrowing “set of procedures ...” construction, **Aginsky’s** procedures for determining whether a command signal is ‘legal’ constitutes a “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” at least because it is used by process 307 to determine if the command is legal. *Id.*, 12:31-40.

Accordingly, **Aginsky** also teaches the claimed “protocol and formatting information” with this disclosure.¹

2. “Separate and Distinct” is Not a Patentable Distinction in Any Event

Even if the claims did require separate and distinct structural storage, and they do not (see Section III.B), the challenged claims would still be obvious. *See Axonics, Inc. v. Medtronic, Inc.*, 75 F.4th 1374, 1384 (Fed. Cir. 2023) (petitioner may offer evidence and argument in reply following PO’s new construction).

As explained above, **Aginsky’s** disclosure that “the exchanged data structure may ... include protocols, rules, or other information useful to carrying out remote control of the controllable database” also constitutes protocol and formatting information. Pet. 26 (citing *Aginsky*, 13:34-43, 9:30-33). The “protocols, rules, or other information” are separate and distinct from **Aginsky’s** commands.

Accordingly, the proposed construction does not distinguish **Aginsky**.

In a codeset having command entries and protocol and formatting information, if the protocol and formatting information is not expressed in a same

¹ Contrary to PO’s assertion that Petitioner does not cite this as disclosure of protocol and formatting information, Petitioner’s includes the disclosure in its “Protocol and Formatting Information” section. *See* Pet. 25-26 (citing *Aginsky*, 13:34-43, 9:30-33).

storage location as the entries, by definition, it must be outside. These are the only two options. Scordilis admitted as much. EX1043, 14:1-5 (Q. ... So it's either going to be inside or outside, fair? A. Well if you have – that's right. ...").

But, *KSR* tells us that presence of only “a finite number of identified, predictable solutions” favors obviousness and choosing between these two, finite alternatives would be obvious to POSITA. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007).

The separate option was already well-known, as explicitly demonstrated in this record. As McNair explained, EX1036, U.S. 7,259,710 (“Kisliakov”) discloses that its user input device is a “remote control device” configured to communicate “protocol data and an associated format function” with a plurality of apparatus. EX1003, ¶65 (quoting Kisliakov, 6:20-30). Kisliakov's Fig. 27 discloses a “protocol module” including “protocol properties” and “format functions.” EX1003, ¶65 (quoting Kisliakov, 41:29-48, Fig. 27); *see* Kisliakov, 41:29-49:45.

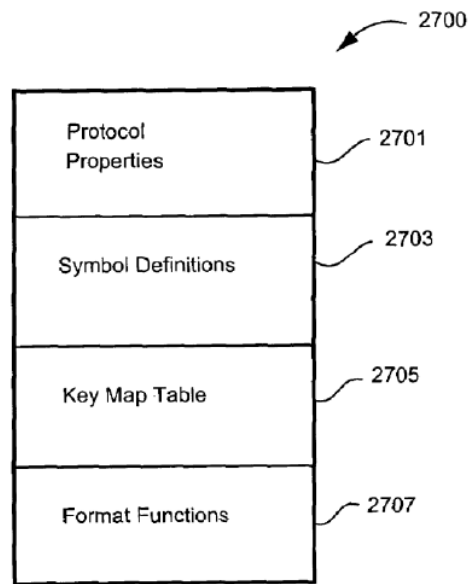


Fig. 27

Kisliakov, Fig. 27.

Kisliakov's protocol properties are separate and distinct at least for the same reasons PO argues the '083 discloses separate and distinct protocol and formatting information. *Compare* Kisliakov, Fig. 27 (showing protocol properties 2701 and format functions 2707 in separate diagram blocks) *with* POR 15-16 (arguing '083's Fig. 7b shows "'protocol and formatting information 752' is separate and distinct ..."). Because separate and distinct protocol and formatting information was well-known, it is not a patentable distinction.

B. The Combined References of the Grounds Teach Phonetic Representations in the Codeset Record

PO argues that **Aginsky** in combination with **Stammler** fails to disclose, teach, or suggest that “each of the plurality of individual function entries within the codeset record” comprise “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.” POR 27-30.

PO’s argument attacks references in isolation, with PO first arguing that **Aginsky** does not recite voice commands within a data structure and then arguing that **Stammler** does not disclose a codeset record, as claimed. POR 29-30. As explained in the Petition, **Aginsky** teaches data structures including function columns and teaches that “voice commands...can be used for one or more of the functions performed by the **remote device**.” Pet. 40 (quoting Aginsky, 9:60-65). **Stammler** teaches a voice command system, including storing phonetic representations in memory. Pet. 41.² PO does not dispute that **Stammler** teaches the phonetic representation set forth in claims 1 and 12. As Petitioner further

² PO’s argument that **Stammler** does not teach storing the phonetic representations *in memory* (POR 30) focuses on one sentence to the exclusion of other citations. Stammler states that “[t]he memory (data/program RAM 65 and ROM 60) connected to the DSP [data signal processor] *serves as data and program storage for the DSP*.” Stammler, 12:20-25 (emphasis added); *see also* Pet. 41. **Stammler’s** DSP “can process all functions shown in FIG. 2.” *Id.*, 11:21-23. Fig. 2 includes **Stammler’s** speech recognizer using phonetic representations and synonyms. *See* Pet. 45-46 (citing Fig. 2).

explained, “[a] POSITA would have been motivated to apply **Stammler’s** teachings in implementing **Aginsky’s** data structure” to enable **Aginsky’s** disclosed voice control and thus “further **Aginsky’s** goal of providing a more flexible and customizable universal remote programming method.” Pet. 41. Accordingly, the limitation is taught by **Aginsky** in combination with **Stammler**.

C. The Speech Recognition Engine Limitation is Met

The ‘083 specification provides that the speech recognition engine is an appropriately programmed processor. ‘083, 6:24-31 (“said speech recognition processing may be performed by programming on the controlling device itself”). Nothing more is required. Scordilis testified that ‘083’s speech recognition engine is provided in the processor and is “a generic turnkey type of solution” or “generic service engine” for which “no customization” or “[v]ery little customization” is required. EX1043, 6:24-8:24. He further testified that instructions for a speech recognition engine “are well known in the art.” *Id.*, 8:22-24. The ‘083 claims do not require the speech recognition engine have any particular components. *See, e.g.,* claim 3. The ‘083 patent provides no explanation of (software) and in fact, is the same level of disclosure as **Aginsky**.

PO’s argument that **Aginsky** lacks a “speech recognition engine” (POR 31-32) fails as it is the same disclosure as the ‘083 patent for this well-known solution.

Aginsky discloses a processor with voice processing capacity at the same level of detail as the '083. Pet. 31-32. Moreover, the Petition explains that **Stammler's** "speech recognizer" to correlate and recognize speech commands teaches the claimed "speech recognition engine," providing more detailed instructions than the '083. Pet. 29-33; 45-46. Similarly, **Hanson** explicitly discloses a "speech engine" that applies algorithms, such as phonetic algorithms, to recognize speech commands, and "automatically trigger the execution of [a] function." Pet. 67 (citing Hanson, ¶¶[0021], [0040]; McNair, ¶233). **Hanson** passes speech data 230 to speech engine 254 which outputs function data 232, as shown in Fig. 2. Pet. 76; Hanson, Fig. 2, ¶¶[0040], [0017], [0021]. Accordingly, **Aginsky** in view of **Stammler** or **Hanson** satisfies the speech recognition engine requirement.

D. Aginsky Teaches a Processing Device to "Cause a Codeset Record to be Provisioned ..."

PO argues the Petition fails to show where **Aginsky** discloses instructions to "cause a codeset record to be provisioned to the controlling device", as recited in claim 12. POR 32-33. In fact, the Petition explains that "**Aginsky** discloses that **controllable device 101-1** provisions a codeset record to **remote device 107-1**." Pet. 47. The Petition also references sections [1.a]-[1.c], in which the "to be provisioned" limitation is discussed. Pet. 47. There the Petition explains specifically that "**Aginsky** teaches that **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 Aginsky, 5:22-38, 8:57-65; McNair, ¶122). PO simply ignores the petition. Accordingly, this argument fails.

E. Aginsky in Combination with Hanson Renders Obvious the Challenged Claims

PO recycles arguments discussed above against the combination of **Aginsky** with **Hanson**, arguing **Aginsky** and **Hanson** do not render obvious the “protocol and formatting information” limitation (POR 48), the phonetic representations (POR 49-50), the speech recognition engine (POR 51-52), and the processing device limitation (POR, 52). These arguments fail for the reasons above. Sections IV(A)-(D).

F. Motivation to Combine (1) Aginsky with Stammler and (2) Aginsky with Hanson

The Petition explains that a POSITA would be motivated to combine **Stammler** with **Aginsky** because **Aginsky** discloses “voice commands ... can be used for one or more of the functions performed by the remote device” and leaves to POSITA to implement a data structure to execute that voice control. Pet., 31 (quoting Aginsky, 6:2-6). **Stammler**, in the same field, teaches specific data structure inputs to implement voice control. Pet., 32 (citing Stammler, 5:65-6:10).

Modifying **Aginsky** with **Stammler** supports **Aginsky's** goal of providing flexible and customizable universal remotes. *Id.*, 32.

PO alleges that motivation to combine **Stammler's** phonetic representation is insufficiently precise. POR 36-37. On the contrary, the Petition's discussion of limitation [1.a.6] expressly begins: "**Aginsky** as modified by **Stammler** teaches 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 the standard function identifier." Pet. 40 (emphasis added). The Petition later explains that "a POSITA would have been motivated to apply **Stammler's** teachings ..." Pet. 41 (citing Stammler, 12:19-27; McNair, ¶ 137).

PO argues a POSITA would lack motivated to use **Stammler's** phoneme-based system because a POSITA would favor a whole-word model for alleged efficiencies and cost savings. POR 38-39. PO's argument is beside the point. The Petition does *not* propose to bodily incorporate **Stammler's** device into **Aginsky's** device. Instead, the Petition states "a POSITA would have been motivated to *modify Aginsky* with the teachings of **Stammler** to include phonetic representations and synonym as elements of **Aginsky's** dataset ..." Pet. 32 (emphasis added); *see* Pet. 41.

PO's challenge to motivation to combine **Aginsky** with **Hanson** fails for the same reasons. POR 53-54. In view of **Aginsky's** disclosure of voice commands

and data structure, it would be obvious to modify **Aginsky's** system using **Hanson's** teaching of automated speech command discovery. Pet., 66-71; *see* McNair, ¶¶235-236; 245 (“**Hanson** discloses ‘Command Mapping 240,’ where each row (‘command data 246’) of that mapping represents an individual command function entry.”).

Finally, PO argues Petitioner failed to identify why a POSA would modify **Aginsky** to include a speech recognition engine. POR 39-40. **Aginsky** already teaches voice functionality, including the processor and instructions, and explicitly discloses that remote device 107-1 allows for voice command of controllable devices. Pet. 25 (citing **Aginsky**, 9:60-65, 6:2-6, 8:8-12). There need be no motivation to do what is expressly taught.

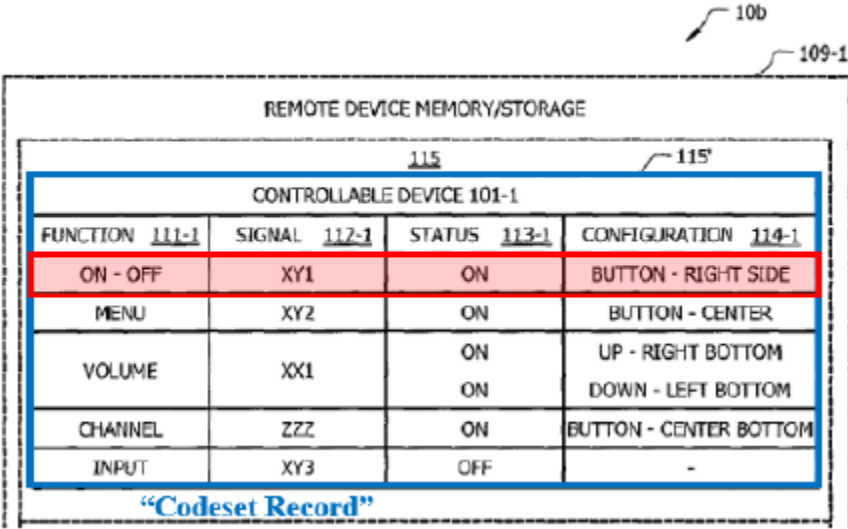
V. DEPENDENT CLAIMS

PO's arguments with respect to dependent claims fail to overcome the grounds for the reasons below. Because PO's arguments are substantially similar, they are grouped below for convenience.

A. Claims 6 and 18

PO argues some additional showing is required to map command function entries to user input elements of the controlling device, as recited in claims 6 and 18. POR, 40-41. In fact, the Petition references sections [1.b.1] and [1.c.] (Pet. 55, 59), which explain “**Aginsky** discloses a plurality of individual command function

entries in each row of a **data structure**. McNair, ¶144.” Pet. 43. Fig. 1B, below, shows individual command function entries mapped to user input elements, i.e., buttons listed under “CONFIGURATION.” Pet. 43-44 .



The diagram shows a hierarchical structure of memory storage. At the top is a box labeled 'REMOTE DEVICE MEMORY/STORAGE' with reference numeral 109-1. Inside this box is a sub-section labeled '115' which contains a table titled 'CONTROLLABLE DEVICE 101-1'. The table has four columns: 'FUNCTION 111-1', 'SIGNAL 112-1', 'STATUS 113-1', and 'CONFIGURATION 114-1'. The first row is highlighted in red and contains the values 'ON - OFF', 'XY1', 'ON', and 'BUTTON - RIGHT SIDE'. The second row contains 'MENU', 'XY2', 'ON', and 'BUTTON - CENTER'. The third row contains 'VOLUME', 'XX1', 'ON', and 'UP - RIGHT BOTTOM' and 'DOWN - LEFT BOTTOM'. The fourth row contains 'CHANNEL', 'ZZZ', 'ON', and 'BUTTON - CENTER BOTTOM'. The fifth row contains 'INPUT', 'XY3', 'OFF', and '-'. Below the table is the label '“Codeset Record”'. To the right of the table, a red text label reads '“Individual Command Function Entries”'.

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 DOWN - LEFT BOTTOM
CHANNEL	ZZZ	ON	BUTTON - CENTER BOTTOM
INPUT	XY3	OFF	-

“Individual Command Function Entries”

Pet. 43 (citing Aginsky, Fig. 1B.).

Grounds 1 and 3 include **Stammler’s** and **Hanson’s** teachings regarding speech recognition. Pet. 45-46; 75-76. **Stammler** discloses a system to correlate and recognize speech commands, such as commands corresponding to **Aginsky’s** “CONFIGURATION” data. Pet. 45-46. **Hanson** teaches that its speech engine utilizes command mapping 240 and command data 246 to process speech. Pet. 67 (citing Hanson, ¶¶ [0021], [0033], [0040]). **Hanson’s** “[c]ommand mapping can link a system function to a speech command ...” Hanson, ¶¶ [0021]. “Applying **Hanson’s** teachings of phonetic algorithms to process voice commands ... 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.” Pet. 70.

Accordingly, a POSITA would appreciate that **Aginsky** in view of **Stammler** and **Hanson** teaches this limitation.

B. Claims 7, 11, and 19

PO's argument that **Dresti** does not teach provisioning code sets to the remote control based on selection of a region is once again attacking individual references of a combination. POR 46-48, 57. The Petition explains **Aginsky** discloses provisioning the data structure to the remote device, while **Dresti** teaches use of location data for selecting universal remote control presets. Pet. 35-36; 64-65. To the extent PO argues “provisioning” requires a particular process, this is inconsistent with the '083. "'083 broadly explains that “[a]s appropriate for the particular implementation, provision may comprise downloading the data itself, supply of a pointer to an entry in a local database, etc.” Pet. 35 n.6 (quoting '083, 9:40-43). Accordingly, Petitioner demonstrates how **Dresti's** teachings would be combined.

C. Claims 8-10

PO argues that Petitioner has not identified use of a brand in speech recognition engine voice data as recited in claim 8. In fact, **Aginsky** discloses that one well-known way to identify a controllable device is by brand. Pet. 56 (citing **Aginsky**, 1:26-29 (describing a “known method” for “select[ing] form a menu or

list of codes related to the brand of electronic device”)). PO has not rebutted that use of a brand was known. *See* POR 43. Further, **Aginsky** discloses that multiple data structures for different controllable devices 101-1 (*i.e.*, “a library” of data structures) may be transmitted, “programmed” to remote device 107-1, and stored in memory 109-1. Pet. 57 (citing Aginsky, 7:58-63). PO’s argument that this disclosure is irrelevant (POR 44) misses the point: **Aginsky** teaches that selecting from among codesets by voice command is known. Pet. 56-57; 25. The content of the command is non-functional descriptive material that is not entitled to patentable weight. *Ex Parte Nehls*, No. 2007-1823, 88 U.S.P.Q.2d 1883 (B.P.A.I. January 28, 2008) (precedential) (no patentable weight for non-functional descriptive material in claim to computer-based system).

D. Claims 13 and 14

Claim 13 recites “the instructions are downloaded to the controlling device in a downloadable app.” PO argues, without explanation, that **Aginsky**’s disclosure of downloading the *application* is distinct from ‘083’s downloading *instructions*. POR 45-46. PO also ignores ‘083’s admission that it was well-known in the art to download and install a control app. Pet. 58 (quoting ‘083, 5:42-45). The Petition explains that **Aginsky** discloses “download[ing] ... a control application” wherein the “downloaded control application, typically in code

format, is stored in a memory,” thereby meeting the “instructions are downloaded” limitation. Pet. 58 (quoting Aginsky, Abstract, 7:36-57).

VI. DR. SCORDILI’S DECLARATION LACKS SUPPORTING DETAIL

Scordilis’s declaration essentially parrots PO’s brief. An expert declaration that “does not cite to any additional supporting evidence or provide any technical reasoning ... is entitled to little weight.” *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9, 15 (8/24/2022). Here, Scordilis’s declaration is little more than a verbatim repetition of the POR and should not be given weight. *See* EX1045, Redline.

Respectfully submitted,
Roku, Inc.

Date: September 29, 2023

/Scott A. McKeown/

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CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24, the undersigned certifies that the foregoing **PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE** contains 5,599 words excluding; a table of contents, a table of authorities, a certificate of service or word count, or appendix of exhibits or claim listing. Petitioner has relied on the word count feature of the word processing system used to create this paper in making this certification.

Date: September 29, 2023

/MacAulay Rush/
MacAulay Rush
Paralegal
WOLF, GREENFIELD & SACKS, P.C.

CERTIFICATE OF SERVICE UNDER 37 C.F.R. § 42.6 (e)(4)

I certify that on September 29, 2023, I will cause a copy of the foregoing document, including any exhibits filed therewith, to be served via electronic mail, as previously consented to by Patent Owner, upon the following:

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