

United States Patent and Trademark Office
Before the Patent Trial and Appeal Board

ROKU, INC.,
(Petitioner)
V.
UNIVERSAL ELECTRONICS, INC.
(Patent Owner)

Inter Partes Review

No. IPR2022-01289 | **U.S. Patent No. 9,847,083**

Petitioner's Demonstrative Exhibits

Roku Exhibit 1046
Roku v. Universal Elect.
IPR2022-01289

Petition Grounds

GROUND	REFERENCE(S)	CLAIM(S)	BASIS
1	Aginsky as modified by Stammeler	1-6, 8-10, 12-18	§103
2	Aginsky as modified by Stammeler in further view of Dresti	7, 11, 19	§103
3	Aginsky as modified by Hanson	1-6, 8-10, 12-18	§103
4	Aginsky as modified by Hanson in further view of Dresti	7, 11, 19	§103

Claim 1 and Figure 5a of the '083 patent

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 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.

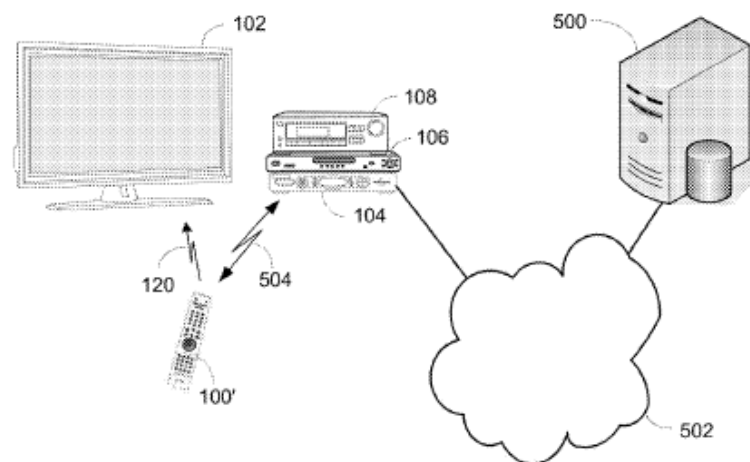


Figure 5a

Petition Grounds - Aginsky

100
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	ZZ2	ON	BUTTON - CENTER BOTTOM
INPUT	XY3	OFF	-

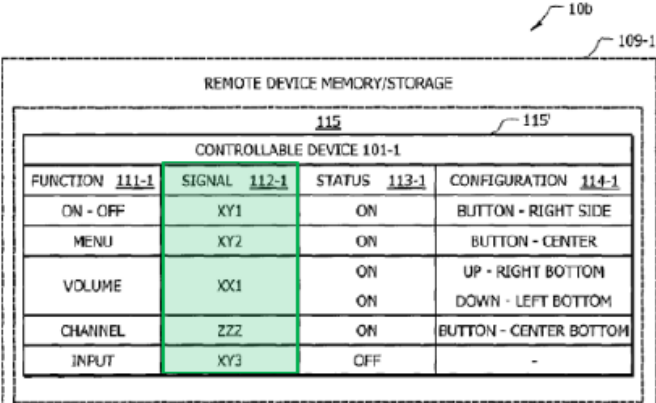
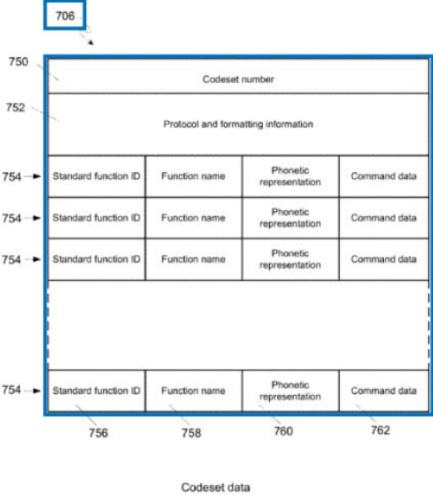
Aginsky (Ex. 1004), Fig 1B (partial) (cited at Petition, page 26, 21-22, 26-29, 35, 37-40, 43-44)

Aginsky

discloses that Signal 112-1, which is part of the codeset record (the data structure including table 115' of Aginsky) ^① “can be any type of signal required for control purposes,” such as “a frequency set or coded IR signal” or a signal with a proprietary structure, such as a Bluetooth signal, and that ^② “the notation used in SIGNAL columns 112-1 and 112-2 denote the type of signal as well as the code or code sequence of the signal.” Ex. 1004, 8:63–9:10. Aginsky also discloses that the data structure may “include ^③ protocols, rules or other information useful to carrying out remote control of the controllable device.” *Id.* at 13:40–43. Additionally, Mr. McNair testifies that a coded IR signal “includes a coded (format) protocol (IR),” and that “Bluetooth also includes a protocol and format.” Ex. 1003 ¶ 124. Mr. McNair further testifies that one of ordinary skill “would have understood that Aginsky’s examples—frequency set, IR, and Bluetooth—require protocol and formatting information as defined” in the '083 patent. *Id.*

Institution Decision, page 22.
See also Reply, 14-16.

Patent Owner's Narrowing Construction

“protocol and formatting information”	
Petitioner’s Construction	Patent Owner’s Construction
Plain meaning  Aginsky (Ex. 1004), Fig 1B (partial) (cited at Petition, page 26, 21-22, 26-29, 35, 37-40, 43-44)	“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; and stored separately and distinctly in the codeset record from the command function entries.”  '083 patent, Figure 7b (cited at Petition, page 2)

See Reply, 3.

Separate & Distinct is not a Patentable Distinction

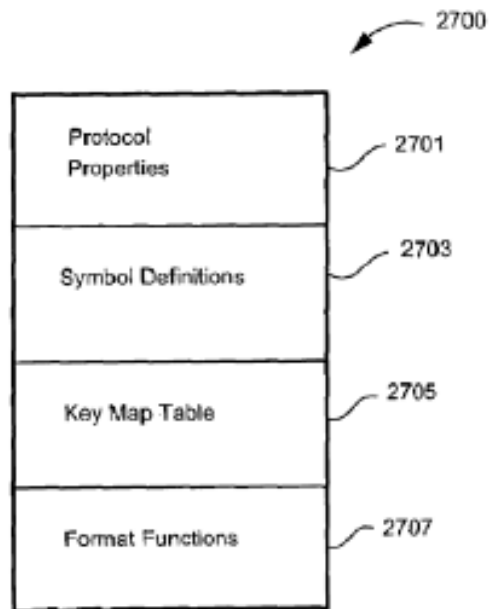


Fig. 27

See Reply, page 20; Kisliakov, Fig. 27, cited in EX1003, MacNair Decl. ¶65.

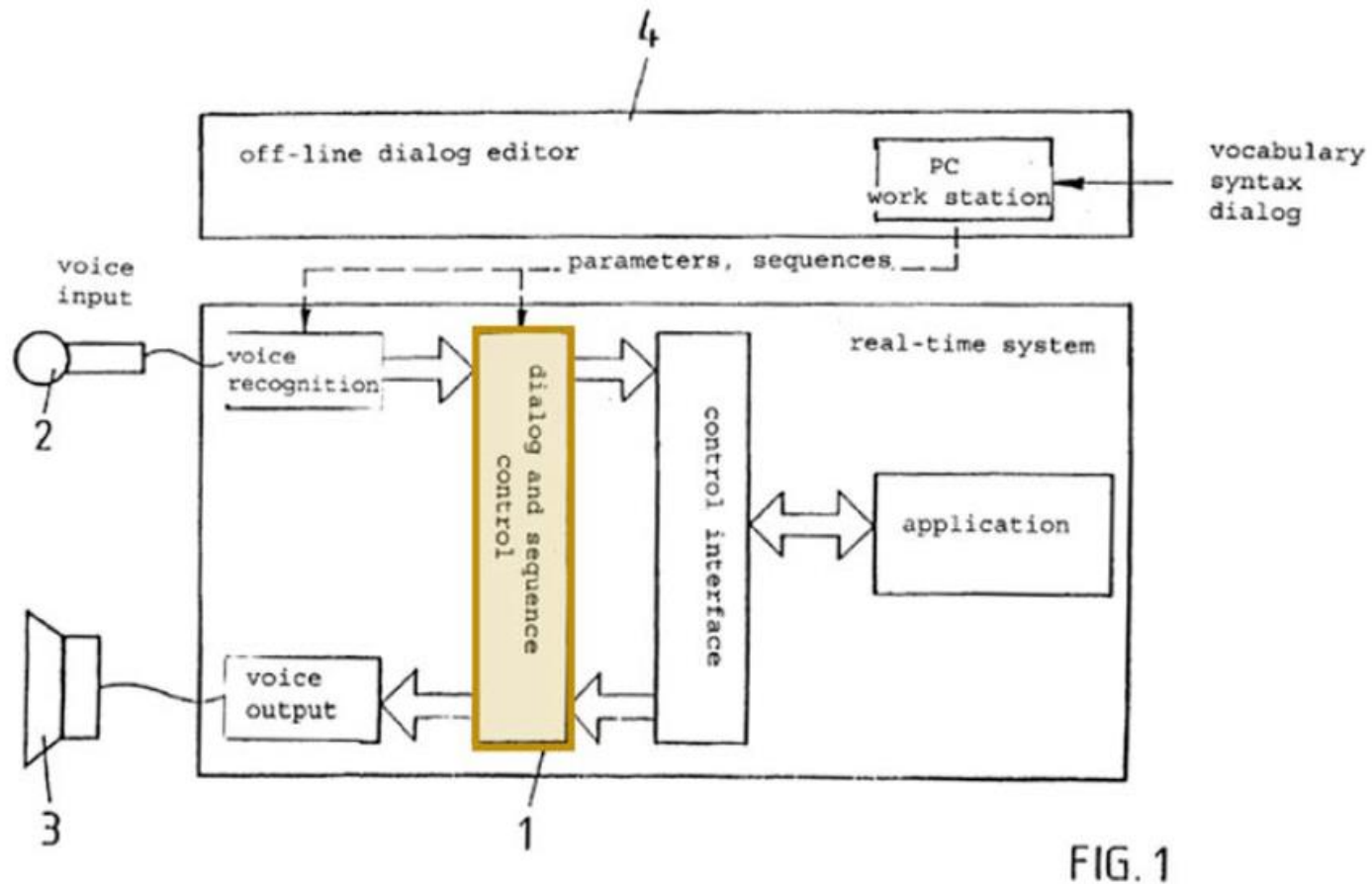
Petition Grounds – MTC (Phonetic feature)

Aginsky left

it to a POSITA to implement a data structure to execute its disclosed voice-control, and in the same field of endeavor, **Stammler** specifically teaches data structure inputs that would allow **Aginsky**'s system and methods to advantageously implement voice control. McNair, ¶114; *see* McNair, ¶¶33-78.

Stammler teaches that it is advantageous for a voice command system to have a large vocabulary. Stammler, 5:65-6:10. To realize a larger, expanded vocabulary, **Stammler** teaches a cost-effective system which uses "*phonetic word subunits*," such as phonemes, to understand an "extensive vocabulary of admissible commands." *Id.*, 8:53-57, 2:56-67; McNair, ¶115. As such, a POSITA would have been motivated to modify **Aginsky** with the teachings of **Stammler** to include phonetic representations and synonyms as elements of **Aginsky**'s dataset to facilitate an extensive range of voice commands and map them to the correct remote command functionality. McNair, ¶115; *see id.*, ¶¶33-78. This is because **Stammler** teaches that prior speech dialog systems suffered from limited vocabularies resulting in higher user dissatisfaction and modifying **Aginsky** with **Stammler** would better improve upon **Aginsky**'s goal of providing a more flexible and customizable universal remote programming method. *Id.* (citing Hanson, ¶¶[0017], [0021], [0023], [0033], [0037], [0040]); *see KSR*, 550 U.S. at 420.

Petition Grounds - Stammler



Stammler (Ex. 1005), Fig 1 (cited at Petition, page 31)

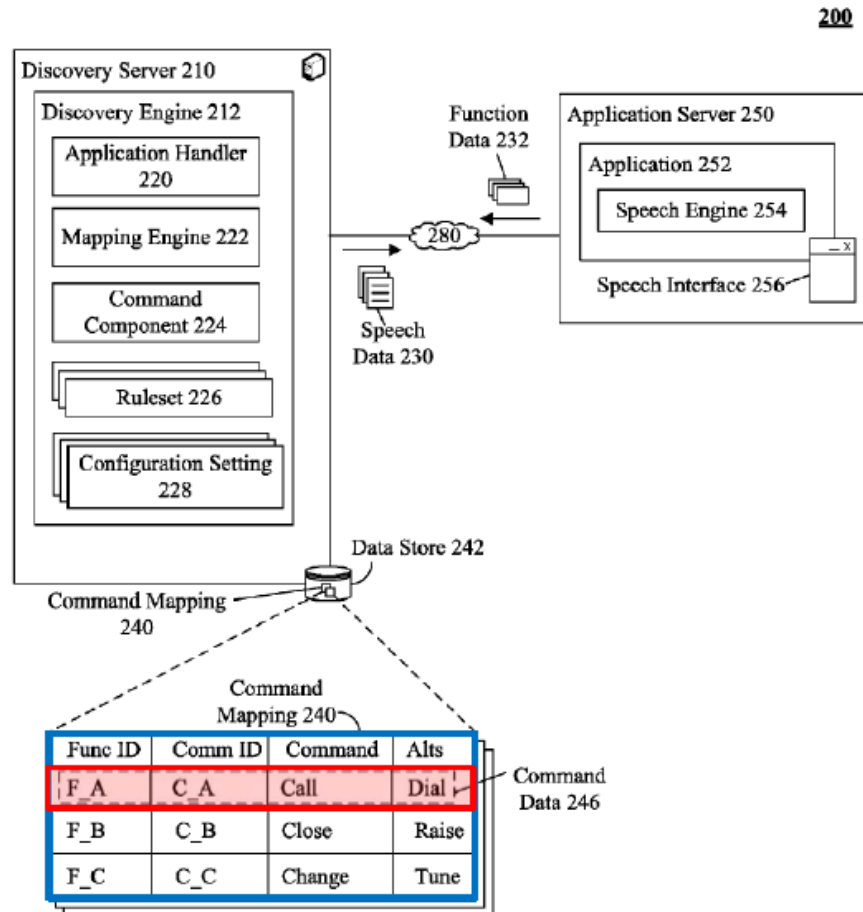
Petition Grounds – MTC (Phonetic feature)

Hanson explains that voice control system users often use synonymous terms to try to execute a command. *Id.*, ¶[0002]. A POSITA would have been motivated and found it obvious to modify **Aginsky's** methods and system to provide **Hanson's** synonymous command teachings in a

dataset. **Aginsky** broadly teaches voice control, but leaves it to a POSITA on how to implement such control and to include the requisite information within its dataset. **Hanson** teaches that it would be desirable to include in a dataset a variety of command data, including command synonyms, and that voice commands may be process by a speech engine implementing phonetic algorithms. A POSITA would have been motivated to apply **Hanson's** teachings in implementing **Aginsky's** device because doing so would predictably result in improved voice control systems and methods that may execute a command in response to a variety of synonymous commands. *See KSR*, 550 U.S. at 420; *McNair*, ¶235. Moreover, applying **Hanson's** teachings of phonetic algorithms to process voice commands (and therefore phonetic representation algorithm inputs) and synonyms in implementing **Aginsky's** methods and systems would be the mere application of a known technique (implementing a data set with phonetic representations and synonyms) to **Aginsky's** disclosed data set. *See KSR*, 550 U.S. at 417; *McNair*, ¶235.

Petition, pages 69-70

Petition Grounds - Hanson



Hanson (Ex. 1006), Fig 2 (cited at Petition, page 68, 72-76, 78-79)