

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TIKTOK INC.,

Petitioner,

v.

NTECH PROPERTIES, INC.,

Patent Owner.

Case No. IPR2024-01340

U.S. Patent No. 8,145,704

**REPLY DECLARATION OF KEVIN ALMEROOTH, PH.D.
IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NOS. 8,145,704**

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EXHIBIT LIST

Ex.	Description
EX1001	U.S. Patent No. 8,145,704 (“’704 patent”)
EX1002	Declaration of Kevin Almeroth, Ph.D.
EX1003	U.S. Pat. No. 8,555,318 (“Whitehead”)
EX1004	U.S. Pat. Pub. No. 2002/0152117 (“Cristofalo”)
EX1005	U.S. Pat. Pub. No. 2006/0015904 (“Marcus ’904”)
EX1006	U.S. Patent No. 6,177,931
EX1007	Int’l Publ. No. WO 00/40021
EX1008	U.S. Pat. No. 6,032,156 (“Marcus ’156”)
EX1009	Provisional Application for U.S. Pat. No. 8,145,704 (U.S. Prov. Appl. No. 60/934,456)
EX1010	D. Wilkerson, “ACTV hopes to steal print's thunder” (Dec. 8, 2000)
EX1011	Amended Complaint in <i>NTECH Properties, Inc. v. ByteDance Ltd. et al.</i> , No. 2:24-cv-00130 (E.D. Tex.)
EX1012	B. Hammerseley, “Audible revolution” (Feb. 11, 2004)
EX1013	U.S. Pat. No. 6,388,714
EX1014	U.S. Pat. No. 7,467,398
EX1015	Verizon, “Verizon Unlocks Full Potential of Fiber-Based FiOS Internet and Video Services With Advanced 100-Mbps Broadband Home Router” (June 28, 2006)
EX1016	Prosecution History for U.S. Pat. No. 8,145,704
EX1017	Prosecution History for U.S. Pat. No. 8,886,753

EX1018	Prosecution History for U.S. Pat. No. 9,215,261
EX1019	Prosecution History for U.S. Pat. No. 9,923,947
EX1020	List of Recent Expert Witness Engagements of Dr. Kevin Almeroth
EX1021	Curriculum Vitae of Dr. Kevin Almeroth
EX1022	Americans' Use of Mobile Technology and Home Broadband, <i>Pew Research Center</i> , January 31, 2024
EX1023	Supplemental Declaration of Kevin Almeroth, Ph.D.
EX1024	NTECH Properties, Inc.'s Infringement Claim Chart for U.S. Patent No. 8,145,704
EX1025	IETF RFC 791: Internet Protocol (https://datatracker.ietf.org/doc/html/rfc791)
EX1026	IETF RFC 793: Transmission Control Protocol (https://datatracker.ietf.org/doc/html/rfc793)
EX1027	https://www.zdnet.com/article/movie-screen-advertising-reached-438-mln-in-2004/
EX1028	Transcript of Deposition of Dr. Goodrich on September 11, 2025
EX1029	U.S. Pat. Pub. No. 2005/0050027A1
EX1030	"Geolocation: Don't Fence Web In", WIRED (2004)

I, Dr. Kevin Almeroth, declare as follows:

1. In my prior declaration (EX1002), I provided an overview of my background and qualifications, the materials consideration, legal principles, U.S. Patent Nos. 8,145,704 (“the ’704 patent”), and the prior art. I also provided my opinions on the specific grounds of invalidity for the ’704 patent. I hereby incorporate those materials as if fully set forth herein.

2. After I submitted my prior declaration EX1002, the Board issued an Institution Decision (ID) granting review of the ’704 Petition. Subsequently, the Patent Owner (PO) submitted its Patent Owner Response (POR), along with a declaration from Dr. Michal Goodrich (EX2014). I have been asked by the Petitioner to evaluate PO’s arguments in the POR and Dr. Michael Goodrich’s declaration (EX2014) in support of the POR.

I. CLAIM CONSTRUCTION

A. “media stream”

3. Dr. Goodrich opines that the term “output signal” recited in claim 19 should be construed as “a continuous sequence of media data” as PO proposes. EX2014, ¶¶ 33-41. I disagree with Dr. Goodrich.

4. As an initial matter, in Patent Owner’s Preliminary Response (POPR), PO previously proposed to construe the term “media stream” as “refers to a concatenated set of media elements.” POPR, 8. I understand that the Board rejected

PO's prior construction of "media stream" in the POPR. ID, 7-9. During his deposition, Dr. Goodrich stated that PO's current post-ID construction for "media stream" is just "a little cleaner and clearer" version of the pre-ID construction. EX1028, 31:7-32:15. While PO seeks to construe "media stream" as "continuous sequence of media data," PO's focus is on adding a requirement that "the media stream must ... include a plurality of media elements at the time selected from 'a plurality of media stream.'" POR 4-5. In my opinion, the record does not require a media stream to at all times contain specific media elements. According to Dr. Goodrich, PO is using the term "media data" in its construction interchangeably with the term "media element." EX1028, 42:3-6. There is no record that says a "media stream" stops being a "media stream" whenever it does not contain specific media elements.

5. I note that claim 19 requires "presenting a plurality of media streams to a user," receiving "a selection of one of the media streams," and then "assembl[ing] the selected media stream and other media elements" into "media programming." Claims 1 and 23 also include similar requirements. Claims 1 and 23 recite that the "media programming" is "concatenat[ed]," while Claim 19 requires that it is "assembl[ed]." But according to Dr. Goodrich, "'assemble' in Claim 19 of the '704 Patent ... requir[es] concatenating." EX1028, 25:3-9. I note that the claim language does not require that the "selected media stream" must consist of an already-selected

set of media elements / data. Indeed, claim 17 recites “media streams compris[ing] media elements.” Thus, applicant knew how to specifically claim media elements, including a stream containing the same (though claim 17 remains agnostic as to when specific media elements are added to streams). But the applicant chose not to do so for the “media stream” selected by the user.

6. In my opinion, even assuming that the “media stream” must contain “media elements” at the time it is assembled with “other media elements,” that does not require that it *always* contain specific media elements. The claims do not prohibit the “media stream” from being selected first and then populated with specific media elements later but still prior to being concatenated with “other media elements.” It is still the same “media stream” at both points in time.

7. The '704 specification uses the term “stream” as synonymous with “feed.” *Compare* EX1001, FIG. 7 (showing “user-specific **feed**”) *with* 13:17-20 (describing the same as “a user-specific **stream**”). The '704 specification then describes these streams or feeds as corresponding to “sources of media content,” such as an “XML feed.” EX1001, 6:4-15. Therefore, a POSITA would understand that such feeds and streams are **containers** for media but do not necessarily include media at all times, as required by PO’s construction.

8. I also note that the '704 specification explicitly discloses that a feed or stream can be **first** selected by a user and only **then** generated:

EPG 410 serves the function of an aggregator. EPG 410 may cause **a list of feeds to be displayed** on television 415, and the user may be able to navigate and **select the list of feeds** employing user input 420.... The set top box then provides the selection and user information to ... cable provider 430 or satellite provider 440. Cable provider 430 and satellite provider 440 each have processors and software suitable for **generating feeds** based on existing channels and/or additional stored media elements; the **selected feed is then provided** as a customized channel to the user.

EX1001, 5:7-17. In my opinion, this confirms that the '704 specification does not require that the claimed "media stream" contain specific media elements at the time of selection.

9. I also disagree with PO's position that a "channel" is not a stream or feed. POR, 17. The '704 specification frequently describes media streams or feeds as channels. EX1001, 5:16-17, 7:8-10 ("Alternatively, communication from a user may permit a user to select between one or more **streams, feeds or channels** of media programming."), 9:52-57, 11:34-35. During his deposition, Dr. Goodrich tried to defend PO's construction of "media stream," and stated that the selection of a channel at night (if there is no scheduled programming) does not qualify as a selection of a "media stream," but did not dispute that selection of that **same** channel during the day (when there is scheduled programming) does. EX1028, 28:18-22,

53:9-25. The '704 patent specification made no such distinction on when a user selection of a channel does or does not qualify as selecting a stream/feed – rather, the specification always equates channels to streams/feeds. In my opinion, the absurd outcome as illustrated by Dr. Goodrich's contradictory statement shows that PO's construction is incorrect.

10. PO also offered dictionary definitions of the term “media stream,” including Exhibit 2020, which defines it as “[a] continuous sequence of audio or audio-and-video **through a network.**” In my opinion, this addresses **how** a “media stream” is received and does not negate that a “media stream” can be selected **before** it is received in this manner. Therefore, in my opinion, the “output signal” in claim 19 does not require receiving a “single signal” over a single path and at a single time.

B. “output signal”

11. Dr. Goodrich opines that the term “providing an output signal including data indicative of the selection and of user data” recited in claim 19 should be construed as “a single signal that includes **both** data indicative of the selection and user data ” as PO proposes. EX2014, ¶¶ 42-46. I disagree with Dr. Goodrich.

12. **First**, I disagree with Dr. Goodrich that the claim language of claim 19 requires “a single signal.” EX2014, ¶43. I note that the language of claim 19 does not explicitly recite “a single signal.” Based on the wording of the language, a POSITA would understand that the use of open-ended phrase “an output signal”—

which could be one of multiple output signals—means that the claim does not necessarily require “a single signal” to include both data types (i.e., “selection” and “user data”) as Dr. Goodrich opines.

13. **Second**, even if the claims required a “single signal,” PO reads this construction to further require receiving that “single signal” over a single path and at a single time. POR, 8. I disagree with PO’s interpretation. Such requirement is not included in the language of claim 19 itself.

14. As the ’704 specification states, the aggregator communicates with the user device via the “Internet.” EX1001, 3:6-10. A POSITA would understand that data sent over the Internet uses the TCP/IP protocol to transmit the data from a sending device to a receiving device. TCP (Transport Control Protocol) and IP (Internet Protocol) were adopted by the Internet Engineering Task Force (IETF) in the early 1980s and are the foundations of data transmission on the Internet. EX1025, EX1026. Fundamentally, the Internet is a packet-switched computer communication network. With the TCP/IP transmission protocols, data transmitted from a sending device is divided into multiple small chunks called “packets.” *Id.* These packets are then sent separately through different routes over the Internet to a receiving device, where the packets usually arrive at the receiving device at different times. Once all packets are received, the receiving device combines the packets together to recover the original data from the sending device. *Id.* Thus, a POSITA would understand

that the claimed “output signal” encompasses multiple pieces of data that traverse different paths over the Internet and are received at different times.

C. “accessing”

15. Dr. Goodrich opines that the term “accessing by the aggregator” in claim 1 requires “the aggregator using media streams ” as PO proposes. EX2014, ¶¶ 47-51. I disagree with Dr. Goodrich.

16. As an initial matter, I note that PO argues that this term requires that the aggregator “use” the media streams to generate “media programming” (POR 10), and the PTAB previously rejected PO’s argument in the Institution Decision. ID, 26.

17. I disagree with Dr. Goodrich that the term “accessing” requires more than obtaining or retrieving the media stream. I note that the language of claim 1 recites “accessing ... *over the network*,” which indicates that the media stream is merely *retrieved* over the network. A POSITA would understand that it makes little sense to require that the media stream be further *used* over the network, especially in view of the specification’s teachings that the stream is manipulated *on the aggregator or the user device* to generate the media programming, not over the network. EX1001, 9:43-48.

18. In my opinion, Dr. Goodrich and PO’s interpretation of the term is also contradicted by the ’704 specification. For example, the ’704 specification expressly

distinguishes “access[ing]” stored information from then “employ[ing]” the same to “generat[e] a feed.” EX1001, 9:1-4.

19. In my opinion, the dictionary definitions cited by Dr. Goodrich do not support PO’s construction of “access.” For example, EX2022 define the term as “ability to **obtain** ... something”; EX2027 defines it as “**open[ing]** a computer file”; and EX2028 defines it as “**retriev[ing]** data.” In my opinion, all these dictionary definitions contradicts PO’s construction of “access” to also require “use.”

II. GROUND 1: WHITEHEAD

A. Whitehead Discloses “Selection of One of the Media Streams” (Claims 19 and 23)

20. Dr. Goodrich opines that Whitehead does not disclose the publisher receiving “data indicative of the selection” and provide[ing] media programming” by “assembl[ing] the selected media stream and the other media elements,” as required in claims 19 and 23. EX2014, ¶¶ 60-73. I disagree with Dr. Goodrich.

21. As an initial matter, I note that the Petition provided two mappings for “media streams” for Whitehead: Media Stream Mapping 1 (where the “media streams” are the custom media channels 170) and Media Stream Mapping 2 (where the “media streams” are the content sources 135). Pet. 12-15. Dr. Goodrich’s opinions on both Media Stream Mapping 1 and 2 rely on PO’s overly narrow claim construction of “media stream.” EX2014, ¶¶ 60-73. Dr. Goodrich does not dispute that Whitehead meets this limitation if a “media stream” need not contain specific

“media elements” at the time of the user selection. Particularly, Dr. Goodrich admits that “[a] POSITA would understand that for a user to be able to select a custom media channel from a menu, then some form of custom media channel *must* exist *prior* to the content information device 110 receiving the menu.” EX2014 ¶87 (emphasis in original). In my opinion, Whitehead’s user selection of a custom media channel matches embodiments in the ’704 patent specification. *See, e.g.*, EX1001, 6:17-22 (describing claimed selection as a “channel selection”).

22. Dr. Goodrich’s only opinion applicable under the plain meaning is that, instead of selection of the channel, the user selects a “characteristic” of the channel. EX2014, ¶73. I disagree. Whitehead is clear that the user sends a “request to access *the* channel 170,” and that the user may select custom media channels 170 “according to names or identifier” assigned to the channels. EX1003, 11:43-45, 16:5-9 (“[C]ustom media channels 170 may be listed according to names or identifiers selected by a user when creating channel profiles 160.”). Thus, it is not simply a “characteristic” that is selected, but a specific custom media channel itself.

1. Whitehead Discloses this Limitation Under Media Stream Mapping 1

23. Dr. Goodrich characterizes Whitehead as disclosing two separate embodiments for custom media channels: real-time channels and pre-generated channels. EX2014, ¶¶ 60-71. With respect to pre-generated channels, however, Whitehead discloses that upon “receipt of [a] message,” such as the user selecting

and updating a profile corresponding to a particular custom media channel, the mixing server can “invoke a process for creating **or modifying** one or more custom media channels 170 based on a profile 160 provided in the message.” EX1003, 11:43-49, 11:59-63, 12:14-17. In fact, even Dr. Goodrich acknowledges that Whitehead discloses “updated pre-generated custom media channels” where “mixing server 130 ... queries media content to determine whether new media content 155 can be included in the custom media channel.” EX2014, ¶80. Thus, in my opinion, even under PO’s incorrect construction of “media stream,” Whitehead discloses selection of a pre-generated custom media channel (*media stream*) and **then** concatenating that channel with new media content (*other media elements*) based on updated user profile information.

2. Whitehead Discloses this Limitation Under Media Stream Mapping 2

24. Regarding Media Stream Mapping 2, Dr. Goodrich does not dispute that Whitehead’s content sources 135 are existing “media streams.” EX2014, ¶¶72-73. Instead, Dr. Goodrich opines that Whitehead’s user selects a custom media channel rather than a particular content source. *Id.* I disagree with Dr. Goodrich. Particularly, Dr. Goodrich agrees that Whitehead discloses “a scenario where there is a custom media channel 170 that has a one-to-one mapping with a profile of 160, and that profile 160 identifies one content source 135 providing media content.” EX1028, 20:5-10. And this is clearly disclosed in Whitehead. See, e.g., EX1003,

6:10-12, 7:5-18 (profile identifies “**one** or more content sources” in addition to other user data such as “a username”), EX1003, 10:51-54 (profile for custom media channel “may indicate an interest in receiving content broadcast from a particular content source 135” in addition to other “interest[s]”). Therefore, a POSITA would understand that by selecting the custom media channel 170, a user also selects the specific content source 135 (“*media stream*”) corresponding to that channel.

B. “Output Signal Including Data Indicative of the Selection and of User Data” (Claim 19)

25. Dr. Goodrich opines that Whitehead does not disclose “an output signal including data indicative of the selection and of user data” from an aggregator,” as required in claim 19. EX2014, ¶¶ 74-98. I disagree with Dr. Goodrich.

26. Dr. Goodrich’s opinion that Whitehead does not disclose or render obvious this limitation relies on PO’s narrow construction of the term “output signal,” which requires “a single signal” that includes both selection and user data. *Id.* Dr. Goodrich does not dispute that Whitehead discloses this limitation under the correct construction. Particularly, I note that just like the ’704 specification, Whitehead discloses that the user profile can be “stored in memory at ... [a] server” before subsequent receipt of a user selection of a media stream. *See* EX1001, 3:59-61 (“[U]ser information may be stored in memory at ... the server 220.”); EX1003, 2:25-30 (“[A] user may submit information ...to a mixing server 130 and/or a profile server 165.”).

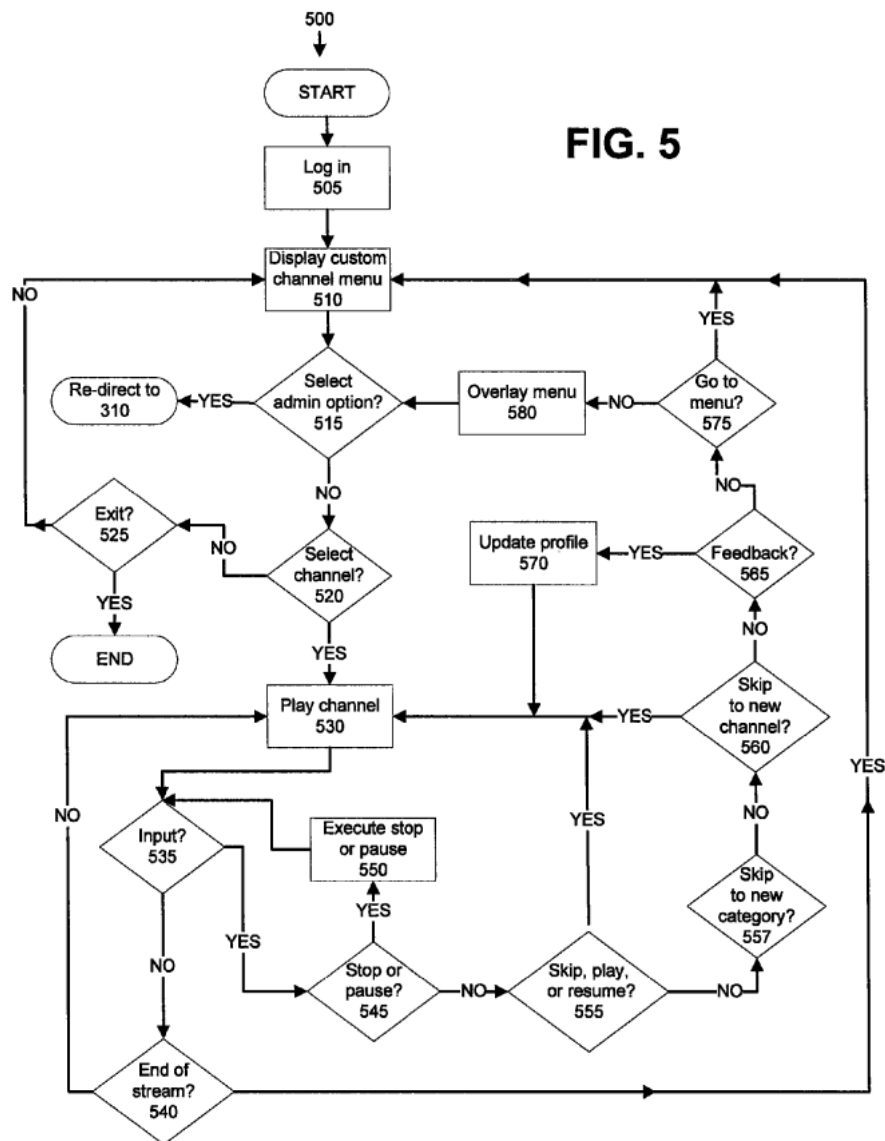
27. Moreover, in my opinion, Whitehead discloses or renders obvious this limitation even under PO's improperly narrow construction of "output signal":

1. Response to Arguments Purporting to Apply to Output Signal Mappings 1 and 2 Under PO's Construction of "Output Signal"

28. **First**, Dr. Goodrich opines that Whitehead cannot receive profiles after the selection of a media stream because "the profiles are used to generate the channels." EX2014, ¶78. I disagree. To the extent Dr. Goodrich is arguing that there is no selectable custom media channel until after a profile has been created, this is a strawman. The Petition never mapped providing the **entire** profile 160 at the time a custom media channel is first created to the claimed "user data." Petitioner's theory is based on selecting a previously-created custom media channel and then providing either updates or portions of the profile 160 (e.g., user feedback, updated profile information, or user location information) or a locally-stored copy of profile 160 to the mixing server. In each instance, a custom media channel was previously generated, and the user is merely accessing the same.

29. **Second**, Dr. Goodrich opines that Whitehead, in one embodiment, updates the profiles (i.e., user data) before a user selects that channel, citing to the flow chart in FIG. 5. EX2014, ¶80. In my opinion, this argument is irrelevant to Output Signal Mapping 1, which does not rely on manually updating a profile 160. In addition, for Output Signal Mapping 2, this argument ignores that both steps 515

and 520 of Whitehead include a user selection of custom media channel 170 from a menu followed by receiving and playing that channel at step 530. EX1003, 10:33-39, 16:38-43, Fig. 5 (below). Moreover, FIG. 5 shows that “update profile 570” and “select channel 520” are performed in parallel and both lead to the “play channel 530,” allowing the profile update and channel selection to be performed at the same time and thus both be sent in one single message. EX1003, Fig. 5.



30. **Third**, Dr. Goodrich opines that Whitehead discloses, again in one embodiment, generating a custom media channel “using only profile 160” and that “the only message received by mixing server ... *is* the profile message from profile server 165.” EX2014, ¶83. In my opinion, for Output Signal Mapping 1, this argument ignores Whitehead’s other embodiment where “content processing device 110 sends a request for a custom media channel 170 to mixing server 130.” EX1003, 9:32-37. And for Output Signal Mapping 2, this argument ignores that, even in the embodiment by Dr. Goodrich, the “profile message from profile server 165” to mixing server 130 is triggered by a corresponding message from content processing device 110 to profile server 165. EX1003, 11:40-45 (“In step 405, mixing server 130 receives an instruction, e.g., a message triggering it to create one or more custom media channels 170 based on one or more custom channel profiles 160. In some embodiments, the trigger to create a custom media channel 170 results from a user request to access the channel 170.”), 10:29-67 (describing user accessing profile server via content processing device 110,” selecting a profile corresponding to a particular custom media channel, and then updating various fields in the profile), 11:61-63 (“mixing server could receive a message from profile server 165 that a custom channel profile 160 has been ... revised”).

2. Response to Arguments Purporting to Apply to Output Signal Mapping 1 Under PO's Construction of "Output Signal"

31. I disagree with Dr. Goodrich's opinion that Petitioner's proposed modifications of Whitehead under Output Signal Mapping 1 are based on improper hindsight. EX2014, ¶¶ 84-95. The Petition explained how Whitehead renders obvious including both the selection and user data in the "request for a custom media channel 170" sent by content processing device 110 to mixing server 170. Pet. 16-20, 22-24; EX1003, 9:32-37. Dr. Goodrich's opinion and PO's arguments fail to address the substance of my analysis.

32. **First**, I disagree with PO's statement that Whitehead's "profile 160 is provided to mixing server 130 before the custom media channels are created." POR, 27. PO's argument contradicts Whitehead's disclosure. For example, Whitehead discloses that "[i]n step 405, mixing server 130 receives an instruction," such as "a user request to access the channel 170." EX1003, 11:40-45. This user "request" can be sent by the content processing device 110 to mixing server 130. EX1003, 9:30-37. In my opinion, this request necessarily or at least obviously includes the claimed "*data indicative of a selection.*" Pet. 16-20. Whitehead further discloses that the mixing server also receives the profile **in the very same message**. EX1003, 12:18-20 ("[M]ixing server 130 analyzes the custom channel profile 160 **received in step 405** to formulate a query of media metadata 150."); EX1003, 12:14-17 ("Receipt of

the message may then cause mixing server 130 to invoke a process for creating or modifying one or more custom media channels 170 **based on a profile 160 provided in the message.**"). Moreover, Whitehead discloses that this profile 160 itself includes both a "name[] or identifier[]" selected for the selected custom media channel ("*data indicative of a selection*") as well as a username and other data regarding the user's "interest[s]" ("*user data*"). EX1003, 6:10-12, 7:5-18, 10:49-67, 16:5-9. Thus, in my opinion, Whitehead expressly discloses including profile 160 ("*user data*") in the same request ("*output signal*") that includes the claimed "*data indicative of a selection.*"

33. In the most likely scenario, a POSITA would naturally and logically implement Whitehead's express disclosure by having content processing device 110 store a copy of profile 160 for inclusion in its "request for a custom media channel 170" sent to mixing server 170. Indeed, I note that it is not likely that Whitehead's express disclosure can be implemented *without* doing so. Mixing server 130 requires a profile 160 to generate custom media channel 170, and in the embodiment where the user request is sent by the content processing device to the mixing server (EX1003, 9:32-37), there is no disclosure of somehow separately receiving the profile 160 in step 405. Coupled with Whitehead's express disclosure of no retrieval of a profile in step 405, a POSITA would conclude or at least be motivated to have content processing device 110 provide that profile as part of its request.

34. Alternatively, if Whitehead's step 405 is interpreted to include some undisclosed separate retrieval a profile 160 from profile server 165 after receiving the "request" from content processing device 110 (no such separate retrieval is described in connection with step 405), then Whitehead still renders obvious this limitation for the reasons below.

35. **Second**, I also disagree with PO's argument that Petitioner is "misus[ing] common sense to supply a missing limitation." POR 28. In my opinion, Whitehead itself discloses each of the claimed "data indicative of a selection" and "user data." Pet., 16-17, 21-22. Whitehead also discloses that the request that triggers generation of custom media channel 170 contains the corresponding profile 160. EX1003, 11:40-45, 12:14-20. Finally, Whitehead expressly discloses that a user may "submit user information" to mixing server 130 instead of profile server 165. EX1003, 2:25-30. Thus, Whitehead itself discloses all elements of the claim language.

36. **Third**, PO argues that receiving "user data" alongside a selection would improve efficiency is somehow "flawed." POR, 28-29. I disagree. Whitehead discloses that mixing server 130 creates and delivers the custom media channel 170 "in real-time or near real-time" upon a user request (e.g., sent through content processing device 110). EX1003 at 11:40-58. A POSITA would understand that it would improve the efficiency of Whitehead's system to include some user data, such

as the username or other types user identifier, to help the system quickly identify the profile associated with the user. With a user identifier, the profile server would be able to index into the subset of profiles belonging to a specific user, and only search that subset of channels for the right profile, whereas without the user identifier the profile server would need to always search all profiles for the desired one. Indeed, it is not clear, or even possible, how Whitehead's system can generate custom channels "in real time or near real time" without including such user identification information. Even if Whitehead were able to generate a custom media channel at least in "near real-time" without receiving user identification information (such as a username), including user identification information in the request to mixing server would improve efficiency by committing fewer resources to the mixing server and thereby reducing costs of the system. Specifically, the mixing server faced with a shorter delay for looking up a specific profile could take more time to generate the custom media channel (meaning it could use less CPU resources or fewer instances) and yet arrive at the same aggregate delay as a more powerful mixing server that needs to compensate for a longer delay to look up a specific profile. And more CPU power or mixing server instances translates to either higher hardware costs or hosting costs, depending on the specific deployment.

37. Dr. Goodrich attacks my opinions on the motivation to move Whitehead's profile server to the content processing device and a POSITA would

instead store the profiles in the backend systems (i.e., on profile server 165) for security reasons. EX2014, ¶¶ 88-93. I disagree with Dr. Goodrich. As an initial matter, I want to clarify that my original opinion in EX1002 did not suggest that the content processing device 110 contain user profiles for *every* user of the system, but rather only the profiles of the users of that particular device. Whitehead also discloses that the content processing device 110 can provide profile information. EX1003, 2:27-30 (“[A] a user may submit information concerning media of interest, and for submitting such information to a mixing server 130 and/or a profile server 165 to be stored in a custom channel profile 160.”). Thus, Whitehead recognizes that the content processing device 110 can be trusted with user profile information. In fact, a distributed system where user information is stored in multiple user devices associated with the particular user (such as the content processing device 110) has improved overall security compared to a central system where a central server stores user information for all users. For example, user information stored at a central server is susceptible to malicious access by hackers, including not only attempts to gather user information but also service interruptions and denial of service attacks. Further, since all users have access to the central profile server 165, storing every user’s profile on that server makes that server publicly-accessible by multiple users and can act as a single point of failure. Therefore, in my opinion, in the instance where the request is sent from content processing device 110 to mixing server 130,

rather than requiring a separate step to retrieve the profile, processing is accelerated by including the profile in the request itself – just as Whitehead teaches at 11:40-45, 12:14-20.

38. **Fourth**, Dr. Goodrich also attacks my opinions on the motivation to include geographic location information (i.e., user data) to improve targeting where a user is using a mobile device. EX2014, ¶¶ 94-95. I disagree with Dr. Goodrich. The motivation for this proposed modification flows from two distinct teachings in Whitehead: (1) using a “geographic location of interest to the user” for targeting content (EX1003, 7:8-18), and (2) using the “user’s geographic location” for targeting advertisements that may have “geographic association[s]” (EX1003, 4:64-5:3, 12:50-55). Dr. Goodrich states that “Whitehead teaches only that geographic information may associated with certain content or be of general interest to a user” not “ geographic information associated with user devices.” That is not true. Whitehead explicitly discloses that a user’s “profile might contain demographic information such as a **user’s location**.” EX1003, 12:50-55.

39. Dr. Goodrich further attacks my opinions on using IP address for indicating a user’s geographic location, stating that “IP addresses are poor proxies for geographic locations.” EX2014, ¶¶ 95. I disagree with Dr. Goodrich’s opinion.

40. First, Dr. Goodrich’s opinion regarding reliability of IP geolocation does not negate the fact that it was widely available and used as a tool for targeting

advertisements at the relevant time, as shown by PO's own evidence. As explained in Exhibit 2005, which Dr. Goodrich relies on, "IP geolocation techniques" are "a key enabler for many" "Internet services requiring location information," including for "targeted advertising." *Id.* As Dr. Goodrich conceded, "many" of the IP geolocation services cited in Exhibit 2005, including "free or commercial tools," "c[a]me before the priority date." EX1028, 59:1-19. And the "study from 2008" and "study from 2011" cited by PO's expert to argue IP geolocation was unreliable both have "publication date[s]" after the priority date of the '704 patent. EX1028, 54:12-23, 56:7-15. Indeed, even as late as 2011, "[f]ew works focused on geolocation databases **and their accuracy.**" EX2005. Thus, Dr. Goodrich's non-obviousness arguments are not reflective of what a POSITA as of the priority date of the '704 patent would have found obvious.

41. At the relevant time, a POSITA would be aware that IP geolocation was widely used for targeting advertisements. For example, EX1029 is a patent publication that was published in 2005 and discloses using targeting advertisement based on geolocation information of a user and the user's geolocation may be estimated based on their IP address. EX1029, ¶¶ 39, 50 ("It may include information, such as an IP address, from which a user location can be estimated."); *see also* EX1030 (2004 article describing prevalence and capabilities of targeting ads based on IP addresses, including how IP geolocation providers can flag suspect locations

to address any potential reliability issues, such as the small minority of users that purposely try to avoid having their location known). In fact, I personally recall the prevalence of IP geotargeting for targeted advertising and recall analyzing the same as part of my work in 2007 and before. Therefore, a POSITA would not be compelled by isolated studies, especially ones published later, to avoid this much-used approach to targeting advertisements.

42. Second, even if a POSITA at the relevant time knew that IP geolocation had *some* unreliability issues, that would still not change the fact that a POSITA would incorporate this technology to ascertain a “user’s location” for targeted advertising, as it beats having **no** mechanism for dynamically adjusting the user’s location as the user is travels with a mobile device or relying on user’s to voluntarily update their profiles every time they travel.

43. Third, my broader point is that it would be desirable and obvious to include the user’s location in the request from the content processing device. IP geolocation is just one example of how that can be implemented, but neither the claims nor the proposed modification are limited to that specific mechanism. For example, the same result can be achieved by using a GPS location of the computer device 105 (which a user uses to run the media player 115) or requiring the user to input or confirm their current location.

3. Response to Arguments Purporting to Apply to Output Signal Mapping 2 Under PO's Construction of "Output Signal"

44. Dr. Goodrich opines that Whitehead's content processing device 110 does not provide the profiles to the alleged publisher via a signal that also includes the data indicative of the selection. EX2014, ¶¶96-98. I disagree.

45. Under Output Signal Mapping 2, the user selects a profile 160 corresponding to a particular custom media channel 170 to update, and updated profile information then sent to mixing server is the "output signal." Pet., 22-23; EX1003, 10:33-39, 16:38-43. Whitehead further discloses that custom media channels 170 are identified "according to names or identifiers selected by a user when creating channel profiles 160." EX1003, 16:5-9. Thus, a POSITA would have understood that a profile 160 includes "names or identifiers" for custom media channels 170—in addition to other data on the users "interest[s]"—and that it would be necessarily or obvious to send an identifier of the selected channel alongside any new user profile information to profile server 165; otherwise, the profile server would not know which profile 160 to update. Pet., 22-23. Updating a profile 160 on profile server 165 causes mixing server 130 to "receive a message from profile server 165 that a custom channel profile 160 has been created or revised" and "to invoke a process for creating or modifying one or more custom media channels 170 based on profile 160 provided in the message." EX1003, 11:40-43, 11:59-63, 12:14-17. And

when mixing server 130 receives that profile 160, the mixing server receives both an identifier for the custom media channel the profile pertains to (“*data indicative of a selection*”) and other user data, including a user name and the user’s “interest[s]” (“*user data*”). Pet., 22-23; EX1003, 6:10-12, 7:5-18, 10:49-67, 16:5-9.

46. Contrary to Dr. Goodrich’s opinion, as I explained, Whitehead discloses that the content processing device would send to the mixing server (via the profile server) new or updated user profile information (e.g., as part of updating a profile 160), and that it would be obvious to include an “identifier” indicative of the channel in the message from content processing device 110 to profile server 165 and the profile 160 then forwarded to mixing server 130. EX1002, ¶¶ 92-93.

C. Whitehead Discloses “Accessing ... Media Streams” (Claim 1)

47. I disagree with Dr. Goodrich’s opinion that Whitehead does not disclose “accessing by an aggregator . . . the plurality of media streams” as required in claim 1. EX2014, ¶¶ 99-103.

48. **First**, Dr. Goodrich’s opinion is based on PO’s incorrect narrow constructions of “access” and “media streams,” which is wrong for the reasons I provided above in Section I.

49. **Second**, Dr. Goodrich opines that opines that “[r]ather than use a plurality of *media streams* to determine a temporal sequence of media programming *comprising the media streams*, Whitehead uses individual media elements stored in

a database to form custom media channels.” EX2014, ¶¶99. But during his deposition, Dr. Goodrich admits that “a single clip” can constitute “a media stream.” EX1028, 42:7-11. Thus, Dr. Goodrich’s (and PO’s) distinction between “individual media elements” and “media streams” is illusory. In my opinion, according to Dr. Goodrich’s own testimony, using a clip stored in database 156 to generate a custom media channel 170 (EX1005, 5:24-36) qualifies as “accessing” a “media stream” under PO’s interpretations.

50. **Third**, in my opinion, Whitehead’s disclosure of populating its content database with media content from content sources 155 tracks claim 18 of the ’704 patent. In claim 1, the media stream is “accessed,” and claim 18 further specifies that this media stream is then “cach[ed]” (i.e., stored) and then later used to generate media programming by “switching” between streams. Whitehead does the same: mixing server accesses the broadcast channels from content sources 135, temporarily stores the obtained media content 155 to database 156, and then later uses that media content to generate a custom media channel. Pet. at 51.

D. Claim 13: Whitehead Discloses “Predetermined Media Programming” and “Media Programming Responsive to the User information” During First and Second Time Periods

51. **First**, as to anticipation, Dr. Goodrich offers his opinion that Whitehead provides only a single custom media channel instead of furnishing two different media programming at different time periods. EX2014, ¶¶104-07. Dr. Goodrich

argued that “a single clip” can be “a media stream” (Goodrich Tr. at 39:7-11) while PO alleges that claim 24 does not require anything beyond what is recited in claim 23 (EX1024, 135 (sole basis for arguing infringement of claim 24 is “See claim 23”)). Thus, under PO and Dr. Goodrich’s own interpretation, Whitehead discloses streaming and playing (i.e., “*providing*”) first advertising content 140 (“*first media programming*”) at a first point in time (e.g., blue box annotated in the custom media channel of Fig. 2 shown below) followed by second media content 155 (“*second media programming*”) at a second point in time (e.g., green box annotated in the custom media channel of Fig. 2 shown below):

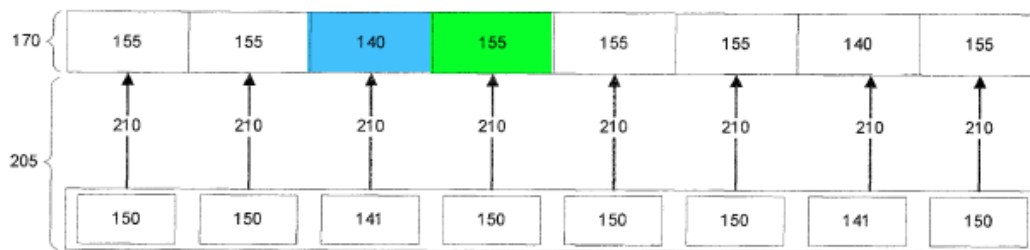


FIG. 2

52. Moreover, Whitehead discloses that the advertising content 140 need not be targeted based on user profile information (i.e., it may be “*predetermined*”), whereas the media content 155 is selected based on profile 160 (i.e., it is “*responsive to the user information*”). Pet., 46-47. In my opinion, that is all claim 13 requires under PO’s interpretations. Importantly, PO and Dr. Goodrich provide no explanation why a single custom media channel 170 cannot contain both a first and

second media programming, such as advertising content 140 and media content 155, respectively.

53. Dr. Goodrich also provides his opinion that Whitehead does not disclose “providing predetermined media programming” and “media programming responsive to the user information” as required in claim 13 of the ’704 patent. EX2014, ¶¶ 104-107. Dr. Goodrich opines that “a POSITA would not have found it obvious to furnish a predetermined advertisement before the custom media channel.” *Id.*, ¶107. I disagree. Whitehead specifically discloses that custom media channel 170 may be dynamically generated in “near real-time” (EX1003 at 11:40-58), thus, there is a short interval after the user selects the custom media channel 170 and before that custom media channel 170 is generated. As I stated in my opening declaration, showing a predetermined advertisement to the user in that short interval instead of forcing the user to wait while the custom media channel 170 is being created would have generated additional advertising revenue and lowered the likelihood of the user losing interest while waiting for custom media channel 170. Further, a POSITA would be well aware of the practice of playing a predetermined advertisement before media programming selected by a user, including the common practice of movie theaters to play advertisements and trailers before a movie. *See* EX1027.

54. PO argues in its POR that Petitioner did not estimate the length of such delay in Whitehead's system and whether a predetermined advertisement could fill that time. POR 39. It is my opinion that any amount of delay is undesirable, and a POSITA would be motivated to fill in any such delay with advertisement to at least generate advertising revenue, even if that means extending the delay to fit the full advertisement. Moreover, that delay is a factor of the user's Internet speed, the number of users accessing the servers, the bandwidth of the servers, and whether the user is receiving the custom media channel as a single custom-generated file, as disclosed in Whitehead. Where an eight clip custom media channel (EX1003, Fig. 2) is "instantiated as a single multimedia file" (EX1003, 8:53-59) encoding and transferring that file may require up to four minutes. Specifically, in 2006, the year when Whitehead was filed, an average Internet connection was about 2 Mbps (though likely less, see <https://www.ooma.com/blog/average-us-internet-speeds-over-time/>), assuming an average size of a video was 10 MB (see <https://conferences.sigcomm.org/imc/2007/papers/imc78.pdf>, Table 6, showing mean file size of about 10MB for videos download at a college campus from YouTube in 2007), and 6 "media content 150" video clips (I am not counting the two advertising content clips to compensate for the fact that the predetermined advertisement would also need to be transferred) would be around 60 MB. The time required to download 60 MB would be around 320 seconds: 60 MB x 8 (1 byte = 8

bits) / 2 Mbps = 240 seconds. And this is based on conservative estimates, since it does not account for additional delay from retrieving profile 160, querying a database to identify the appropriate content, retrieving that content from another database, encoding that content into a single file, and then accounting for packet overhead, TCP congestion control, queuing delays, etc. But even if my conservative estimate is off by almost a full order of magnitude, this would leave ample time to first transmit and play a predetermined 30-second advertisement (not to mention a 15-second advertisement).

E. Claim 18: Whitehead Discloses “Caching” and “Switching Between Streams”

55. Dr. Goodrich opines that Whitehead does not disclose this limitation because it teaches caching of “individual media elements” rather than “media streams.” EX2014, ¶¶108-109. I disagree.

56. **First**, according to Dr. Goodrich’s own testimony, “a single clip” can be “a media stream.” EX1028, 42:7-11. Thus, Dr. Goodrich’s distinction between “individual media elements” and “media streams” is illusory under PO’s interpretation.

57. **Second**, Dr. Goodrich or PO does not dispute that content sources 135 provide “media streams.” Therefore, in my opinion, there is no basis for contending that the content from a content source 135 stops being a “media stream” solely on account that it is being stored in media database 156. In fact, there is no distinction

between the '704 patent's storing of media streams (the claimed "caching") and the storing performed by Whitehead. For example, the '704 patent does not disclose any special format for storing a received "media stream" that would entitle it to remain a "media stream" even after storage but that would not also apply to Whitehead's teachings.

F. Claim 24: Whitehead Discloses "Switching ... Between the Selected Media Stream and [a] Second Media Stream"

58. Dr. Goodrich opines that Whitehead's disclosure of skipping media content is not switching media streams. EX2014, ¶¶ 110-111. I disagree.

59. Dr. Goodrich opines that Whitehead's does not disclose switching media streams because all media content in Whitehead is "provided [in] the same playlist." EX2014, ¶ 111. But Dr. Goodrich provides no justification for why the first and second "media stream[s]" cannot be part of the same "playlist." Dr. Goodrich's opinion also contradicts his own position that "a single clip" can be "a media stream." EX1028, 42:7-11.

60. In addition, Whitehead explicitly discloses skipping to different channels (i.e., streams), for example, by "a command to skip directly to a media channel 170 other than the media channel 170 that is presently playing, e.g., by selecting a different channel" (EX1003, 20:55-59), or a command to skip from streams in one media category to streams in another media category. EX1003, 18:26-34 ("to move from a "sports" category to a "weather" category; or from the current

category to the next category”); see also Ex1003, 19:59-63 (“switching to another custom media channel 170”). Thus, Whitehead discloses switching between media streams according to a temporal sequence.

III. GROUND 2: WHITEHEAD AND MARCUS ’904

A. Claim 1: Whitehead and Marcus ’904 Render Obvious Claim 1

61. Dr. Goodrich opines that combination with Marcus ’904 “does not resolve the deficiencies noted above with custom media channels containing only individual media elements.” EX2014, ¶ 112. I disagree. As explained above, Goodrich’s admitted during his own deposition that “a single clip” can be “a media stream.” EX1028, 42:7-11.

62. To the extent PO now contends that claim 1’s “accessing” requires using “media streams” to generate “media programming” without, e.g., first storing their content in a database, Marcus ’904 discloses this requirement and renders it obvious in combination with Whitehead for the same reasons that Marcus ’904 renders obvious switching between different “media streams” to generate “media programming,” thereby “accessing” and “using” those “media streams” under PO’s construction. Pet., 54-55; EX1005, ¶251 (disclosing generating “programming by means of ... switching between streams of ... un-cached programming”).

B. Claims 18 and 24: Whitehead and Marcus '904 Render Obvious Claims 18 and 24

63. Petitioner's Ground 2 also challenged claims 18 and 24 as obvious over Whitehead and Marcus '904. Pet. 54-55. PO does not address Petitioner's Ground 2 beyond asserting the same arguments as Ground 1. POR 42. Thus, PO does not dispute that Marcus '904 discloses caching and switching of channels (*see, e.g.*, EX1005, ¶251, ¶641), or that it would be obvious to combine those teachings with Whitehead. EX1028, 44:6-12, 45:1-9.

64. I note that neither Dr. Goodrich nor PO address Petitioner's Ground 2 beyond asserting the same arguments as Ground 1. POR 42. Nevertheless, in my opinion, Marcus '904 discloses caching and switching of channels. *See* Ex1005, ¶251 (“[R]eorganize the linear stream of programming by means of either or both caching of a given stream, or switching between streams of cached and/or un-cached programming arriving from other transmitted channels of the same, or different, providers and/or transmission media”); ¶641 (“[A] switching system allows the user access to the appropriately conditioned media streams arriving into the configurable receivers”).

IV. GROUND 3: CRISTOFALO AND MARCUS '904

A. Claims 19 and 23: Cristofalo in View of Marcus '904 Discloses a “Publisher”

65. I note that Dr. Goodrich opines that Cristofalo's transmitting system cannot be the recited “publisher” because it is Cristofalo's *receiving system* which

“finalizes its final media programming provided to the user.” EX2014, ¶116-22. I disagree with Dr. Goodrich. Dr. Goodrich’s argument rests on the unstated assumption that a “publisher” somehow must be construed to generate and provide the “final” media programming. However, there is no “final” requirement (i.e., that this media programming cannot be further customized prior to playback) anywhere in the claims or the specification. As the Board has already warned, “[w]e encourage the parties to raise all claim construction issues in sections of their briefs devoted to that purpose during trial,” because “[c]laim construction arguments buried in merits arguments tend to be conclusory and unpersuasive.” ID, 7 n.6.

66. Cristofalo repeatedly discloses that its transmitting system also customizes media content. EX1004, ¶¶ 9 (“user-profiling information is utilized by the receiving system *and/or the transmitting system* to determine which of a plurality of media objects”); 35 (“a national television advertisement for a Ford Mustang® might include a media object directing a San Diego network affiliate’s *transmitting system 102* to select from a national data feed media objects (i.e., a data packet) depicting a convertible in San Diego”); 40 (“the media object creators 108 and *transmitting system 102* suitably create media objects for predetermined profiles”), 47 (“The present invention enables content creators to specify from which soft drink can the actor drinks by using media objects which are *selected by the transmitting system* or the receiving system based upon a user

profile.”), 49 (“The selection of the media objects may be accomplished...*in conjunction with the transmitting side.*”), 54 (“when a bi-directional communications link is provided between the transmitting side and the receiving system, media objects might actually *be modified by the transmitting side* prior to transmission”). In the combination presented in the Petition, the transmitting side’s customization merely extends to selecting media elements for concatenating with a user-selected media stream (*e.g.*, a channel selected in a program guide), as taught by Marcus ’904. Nothing more is required.

67. Dr. Goodrich also argues that the Petition did not provide a sufficient rationale to combine Cristofalo’s “transmitting system” and Marcus ’904’s “receiver.” EX2014, ¶¶123-26. I disagree with Dr. Goodrich. Here, I described combining Cristofalo’s transmitting system with Marcus’s algorithm, not its physical receiver. And the Petition further explained that Marcus ’904 provides detail regarding how content can be targeted to users. EX1002, ¶¶ 169-176. For example, whereas Cristofalo focuses on “selection of the media objects ... by the receiving system, in conjunction with the user profiling system, and/or in conjunction with the transmitting side” (EX1004, ¶¶40, 49), Marcus ’904 explains how to use user information to select media content that better targets the user. *See, e.g.*, EX1005 ¶¶37-40, FIG. 4 (describing in detail a “process of using user data and media tags to assemble [customized] programming for a user” utilizing data such as

“demographic information (e.g., age, sex, race, location, interests, etc.),” data indicating “a desired level of advertising content,” data indicating “a desired look and feel for the programming,” and data indicating “desired content for the programming”). Thus, as asserted in the Petition, the combination would “lead[] to better customization of media programming” and “unlock new revenue sources” given its improved advertisement targeting system over Cristofalo. Pet. 57. Even though Cristofalo provides targeted advertisements to users (*see* ID, 32), it does so only by modifying portions of an advertisement via “media objects.” In contrast, Marcus ’904 describes in detail how to targeting advertisement by caching and switching between streams of programming (EX1005, ¶¶251-52, 641), tagging media contents for efficiently targeting advertisement to users (EX1005 ¶¶32-40), reserving extra channels or spaces in channels for more targeted advertisement insertions (EX1005, ¶142), and splitting the same advertisement into sub-groups for more accurate targeting (EX1005, ¶312). In my opinion, the proposed combination therefore captures the best of both worlds by first allowing the Cristofalo’s transmitting system to select a particular advertisement based on user profile information, as taught by Marcus ’904, and then allowing Cristofalo’s receiving system to further customize that advertisement using media objects, as taught by Cristofalo.

B. Claim 19: Cristofalo Discloses an “Output Signal”

68. Dr. Goodrich first argues that Cristofalo’s receiving system does not provide the user data to the transmitting system, only the user profiling system. However, in my opinion, nothing in the claim language precludes Cristofalo’s receiving system to provide the user data to the transmitting system **via the profiling system**. Moreover, Figure 1 depicts the user data being sent to the user profiling system, and Cristofalo specifically states that the user profiling system is “preferably co-located” with the transmitting system. EX1004, ¶37. Though the Board expressed doubt as to the meaning of “co-located” (ID, 30), it is my opinion that a POSITA would understand that this means the user profiling system and the transmitting system are located on the same physical server, not merely on the same network and/or in physical proximity. Accordingly, both the user data and selection data are sent from the same receiving system to the same transmitting system. EX1004, ¶¶28 (“receiving system 104, as desired, may be configured to transmit information to the transmitting system 102 and/or the user profiling system 106.”), 40 (“user profiling system 106 is preferably configured to interface with both the transmitting system 102 and the receiving system 104”), 45 (“[p]referably, the user profiles are determined at the transmitting system”), 46 (“the user's choice of programming is communicated to the transmitting side”), 53 (“[t]he process also provides information about the user's selections to the transmitting side”).

69. Dr. Goodrich next argues that the output signal must be construed as a single signal that must be received together, which Cristofalo does not teach as the selection data and user data are sent separately. EX2014, ¶¶131-32. As discussed above, this construction should be rejected. In any case, the Petition explained why it would be obvious to deliver that data in a single signal received together, including that simultaneous transmission would reduce delay. In addition, it is my opinion that a POSITA would be motivated to include user information with the user selection as it would provide the transmitting system the capability of determining which user profile to access. Indeed, PO admits that in Cristofalo, “the receiving system determines user profile information and thereafter allows a user to select their desired programming such that when advertisements are pushed to the receiving system it can select ones based on the user profile information.” POR 52-53 (citing EX1004, ¶¶45-46). Yet without user data submitted with the selection data, the transmitting system has no mechanism to associate the selection data with the user profile. In my opinion, this is especially true in a system with a large number of users that may asynchronously receive selection data from numerous users along with numerous user profiles. There must be a way to properly identify which information came from which user.

C. Claim 1: Cristofalo in View of Marcus '904 Renders Obvious Claim 1¹

70. Cristofalo teaches that the receiving system “receives a program containing multiple video and audio objects,” *i.e. data relating to a plurality of media streams*. EX1004, ¶41; *see also* ¶¶40, 42, 48. In addition, Dr. Goodrich and PO do not dispute that Marcus '904 discloses receiving tags (“data”) related to media streams at its receiver. Pet. 71, (citing EX1005 ¶34).

71. However, Dr. Goodrich argues that Cristofalo’s media objects are individual media elements instead of the claimed “media streams.” EX2014, ¶¶137-44. Dr. Goodrich’s argument here improperly challenges Cristofalo in isolation and fails to dispute Marcus '904’s specific disclosure of “media programming comprising the media streams.” Pet. 71. Dr. Goodrich also argues that Marcus '904 uses individual media elements to form its programming instead of streams. EX2014, ¶¶138-40. Yet as PO’s own quotations (POR, 55) make clear, the content is contained within “a media stream.” EX1005, ¶48 (“a media stream containing content ... is received by receiver.”). In my opinion, when Cristofalo’s receiving system is modified to incorporate Marcus '904’s disclosure of performing the customization using different media streams rather than just Cristofalo’s media objects, the result renders this limitation obvious. Pet. 56-58.

¹ Both of positions discussed here were taken by PO and Dr. Goodrich the first time only **after** the Petition was already filed.

72. Finally, Dr. Goodrich and PO cite their discussion on lack of motivation to combine for claims 19 and 23 (POR, 65; EX2014, ¶142), but those arguments are based on Marcus '904 implementing its algorithm in a receive, which allegedly would render it non-obvious to implement that same argument in Cristofalo's transmitting system) and are inapplicable to claim 1, which proposes instead implementing that algorithm in Cristofalo's receiving system. Pet. 56-58. And to the extent any of Dr. Goodrich's arguments on claims 19 and 23 apply to claim 1, they fail for the reasons presented above in connection with claims 19 and 23.

D. Claim 13: Cristofalo in View of Marcus '904 Renders Obvious Claim 13

73. Dr. Goodrich's argument here is premised on claim 13 allegedly requiring "providing two streams of media programming to the client." POR, 57; EX2014, ¶¶143-44. However, no such requirement can be found in claim 13, which only refers to two different types of "media programming." In my opinion, nor is there anything in the claim language that precludes the "predetermined media programming" and the "media programming responsive to the user information" of claim 1 from both being part of the same "user-specific ... media programming" recited in claim 1, as alleged by Dr. Goodrich. EX2014, ¶¶143-44.

E. Claim 18: Cristofalo in View of Marcus '904 Renders Obvious Claim 18

74. I disagree with Dr. Goodrich's argument here. **First**, as discussed above, I disagree with Dr. Goodrich's argument on motivation to combine (referenced in the POR as "Section VIII.A.2"). **Second**, as I have explained in Section V.C, above, the combination of Cristofalo and Marcus '904 results in media programming comprising media streams. Dr. Goodrich does not dispute that Marcus '904 discloses "caching by the aggregator the media streams" and "switching between the streams." **Third**, Dr. Goodrich's argument on Cristofalo's disclosure, alone, fails to address the obviousness combination, where Marcus '904 is used to target advertisements by "caching and switching."

V. CONCLUSION

75. In signing this declaration, I recognize that the declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I also recognize that I may be subject to cross-examination in the case and that cross-examination will take place within the United States. If cross-examination is required of me, I will appear for cross-examination within the United States during the time allotted for cross-examination.

* * *

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on the information and belief are believed to be

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Decl. of Dr. Kevin Almeroth

true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Respectfully submitted,

September 19 , 2024

A handwritten signature in blue ink that reads "Kevin C Almeroth". The signature is written in a cursive, flowing style.

Kevin C. Almeroth, Ph.D.